MARINE MAMMAL PROTECTION ACT

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS

OF THE

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U.S. HOUSE OF REPRESENTATIVES

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OVERSIGHT HEARING ON THE MARINE MAMMAL PROTECTION ACT

Thursday, October 11, 2001
U.S. House of Representatives
Subcommittee on Fisheries Conservation, Wildlife and Oceans
Committee on Resources
Washington, DC

The Subcommittee met, pursuant to call, at 10:05 a.m., in Room 1324, Longworth House Office Building, Hon. Wayne Gilchrest [Chairman of the Subcommittee] presiding.

STATEMENT OF THE HON. WAYNE GILCHREST, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Mr. GILCHREST. Good morning, everyone. The Subcommittee on Fisheries Conservation, Wildlife and Oceans will come to order.

What I would like to do this morning, just before we begin, if we could have a moment of reverent silence, the tragedy that has occurred a month ago today. There will be, as you all know, memorial services in New York and at the Pentagon. A moment of silence.

[Moment of silence.]

Mr. GILCHREST. I am pleased to convene today's hearing. This will be a comprehensive review of the Marine Mammal Protection Act and issues for its reauthorization. We have a great number of witnesses scheduled to testify, and therefore we will quickly move through our opening statements.

The Marine Mammal Protection Act was first enacted in 1972, to ensure that marine mammals are either restored or maintained at healthy population levels. The act was last amended in 1994, and we will hear testimony on how the agencies have implemented these changes.

There are a number of topics before us today. We will hear testimony on two marine populations, California sea lions and Pacific harbor seals, whose population numbers have increased to the point where there is growing concern about their interactions with humans. We will also discuss success or failure of the experimental sea otter population off the coast of California and what, if anything, needs to be done to address this matter.

We will be enlightened on the issue of Take Reduction Teams and how they have worked to develop management plans to reduce interactions between commercial fishing activities and marine mammal populations. I am interested to hear about the efforts

being take to disentangle whales from fishing gear, as well as the need for a new Polar Bear Treaty, and issues of concern to the environmental and public display communities.

The last topic of discussion will be on the sonar technology used by the Navy, specifically the use of Surveillance Towed Array Sensor System Low Frequency Array, or SURTASS LFA. The use of this sonar has been controversial due to its possible adverse effects on marine mammal populations. I hope the discussion will shed some light on the issue and help us to understand what type of research has been done to assess the effects of this sonar on marine mammals and on other marine life.

I look forward to the testimony this morning and this afternoon as a very positive exchange of information. We can learn from your testimony, and hopefully you can learn from the interactions with us, as well, and move forward in a better understanding of the life as we know it in many various ways to be very fragile, and how we can be very positive in our efforts to protect that fragility in the ecosystems and also especially in the area of the economy of many communities and the defense of this country. We can not only find a middle ground on all of these issues, but we can find the highest plane, the best direction to proceed.

I now yield to the gentleman, Mr. Underwood.

[The prepared statement of Mr. Gilchrest follows:]

Statement of the Honorable Wayne Gilchrest, A Representative in Congress from the State of Maryland

Good morning, I am pleased to convene today's hearing. This will be a comprehensive review of the Marine Mammal Protection Act and issues for its reauthorization. We have a great number of witnesses scheduled to testify and, therefore, I will quickly go through my opening statement.

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I now recognize the Ranking Member, Mr. Underwood, for his opening statement.

STATEMENT OF THE HON. ROBERT UNDERWOOD, A REPRESENTATIVE IN CONGRESS FROM GUAM

Mr. UNDERWOOD. Thank you, Mr. Chairman, and I am impressed by the turnout today, both in the number of witnesses that we have scheduled and in the number of people in the audience. I think this

turnout again demonstrates the deep and abiding interests of millions of Americans in the long-term protection and well-being of marine mammals.

Panel by panel, we will move from general oversight to more specific issues, some controversial, others less so. But that there is some controversy is not surprising to me, for very few species of wildlife generate the same type of passion among human beings as whales, sea lions, and sea otters, to name only a handful of the more charismatic species.

Congress passed the Marine Mammal Protection Act in 1972 to rectify our Nation's sorry historical record of marine mammal management, a record punctuated more frequently by episodes of unregulated massacre than by attempts at thoughtful and sustainable conservation. Today we will review what the act has done in order to help recover marine mammal populations.

And certainly we should all take pride in the recovery of some populations such as the Pacific gray whales and California sea lions. But ironically, we will also learn that despite these successes, other problems, either perceived or real, have arisen through the recovery of formerly depleted marine mammal populations.

We cannot escape the looming human paradox that confronts this Committee. For if we, as the ultimate users of ocean resources, are going to coexist sustainably with recovered or robust populations of marine mammals, we are going to need to find new ways to restrain ourselves, not marine mammals. If we ever hope to meet both the demands of a growing human population and the overarching need to maintain a healthy marine environment on which both humans and marine mammals are mutually dependent, we must meet this challenge.

With that thought in mind, I will conclude simply by saying that I look forward to hearing from everyone this morning. I hope to work with all of you and with all other stakeholders as we begin the important process to reauthorize the Marine Mammal Protection Act. Thank you.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Underwood follows:]

Statement of the Honorable Robert Underwood, A Delegate to Congress from Guam

Thank you, Mr. Chairman. I'm impressed by the turnout today, both in the number of witnesses we have scheduled, and in the number of people in the audience. I think this turnout again demonstrates the deep and abiding interest of millions of Americans in the long-term protection and well-being of marine mammals.

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Mr. GILCHREST. Thank you, Mr. Underwood. I want to thank Mr. Pombo from California for joining us this morning.

We will first recognize The Honorable Patsy Mink from the great State of Hawaii. Welcome, Mrs. Mink, for coming to testify this morning.

STATEMENT OF THE HON. PATSY MINK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF HAWAII

Mrs. MINK. Thank you very much, Mr. Chairman, Ranking Member Underwood, Mr. Pombo, members of the Subcommittee. I am enormously grateful for this opportunity to testify before this Subcommittee on your embarking on very, very important oversight hearings about the efficacy of the Marine Mammal Protection Act and how it is being administered.

I am especially grateful because included in your oversight hearings, you have included a panel that will discuss the U.S. Navy's Surveillance Towed Array Sensor System Low Frequency Active sonar, that we refer to as SURTASS LFA, and its impact on our marine environment. I am deeply concerned about the potential harm that the deployment of this technology could have on marine mammals.

Never in my 23 years of service in the Congress has there been such an enormous outpouring of concern from citizens all over the country, but primarily those from my district. I had my staff this morning sort of look through the computer statistics on the number of times that we have been contacted about this issue, and the number exceeds 3,500, which is far more than what we received during impeachment or any of the other controversial issues. So the concerns are there and I think are very real.

The Navy's final EIS statement acknowledges that they really don't know how this technology is affecting, or will affect ultimately, marine life in the areas where they are conducting this experiment. We do have instances where we have seen the consequences, in the Bahamas and elsewhere, and other witnesses on panel five will undoubtedly discuss and explore those ramifications where the use of sonar has resulted in deaths of whales and strandings and other kinds of physical manifestations of the impact on them. During the testing in Hawaii in 1998, numerous witnesses reported that the whales fled the area where the sonar testing was being conducted.

Sound is an integral part of the daily life of marine mammals. Low-frequency broadcasts such as the Navy's SURTASS LFA sonar could endanger the delicate balance between the habitat and these species.

Research suggests that the first indicator of physical damage to the whales from low-frequency sound is a temporary hearing loss. At higher levels, there is tissue damage to the lungs, heart, and nervous system.

The unusual feature of this sonar is not its volume or its loudness, but the low frequency at which it operates, 100 to 150 Hz. Sound energy in the high frequencies, typical of most sonar, is absorbed by seawater, but low frequency sounds can travel and be detected hundreds of miles away. Not only does this sonar disrupt the behavior of animals at relatively low levels, the behavioral disruption can occur over a large proportion of the species' habitat, and it could have very strange behavioral changes and could impact on the breeding and raising of the young.

Disruption of behavior of endangered marine mammals and the assault on their habitat is a violation of the Marine Mammal Protection Act, which is designed to protect the habitat of these species. More egregious is that some of these species that frequent the waters of Hawaii are endangered, so there is a double responsibility on the part of the protectors that have been commissioned as responsible under the Federal Government to protect the humpback whale, not only endangered but the Congress established a national sanctuary for these species because they are so highly endangered.

It is true that the sonar experiment does not engage itself within the sanctuary, but there is no traffic cop there to tell the endangered species specifically the zone which they may occupy at any given time. So we are very concerned that even with the exclusion of the testing within the zone area excluded as a sanctuary, its mere permission in the area, and in the area which the humpback whale transverses between Hawaii and its northern climates, is an area of tremendous concern.

I would like to submit for the record extensive research as conducted by one of my constituents, Mr. Lanny Sinkin of the Big Island, Hawaii. I would like to have permission to include this material as part of my testimony today.

Mr. GILCHREST. Without objection, so ordered.

Mrs. MINK. Thank you very much.

Furthering my inquiry in this whole subject as to the responsibility of the Federal agencies, I have asked the General Accounting Office to undertake a study, and I hope that this study will be available to Members of Congress and others within a year. They have Committee themselves to conduct this investigation, and I would certainly be happy to have this Committee join in that inquiry and perhaps have them expand on it.

Under the act, the Secretary of Commerce, acting through the National Marine Fisheries Service, is responsible for the conservation and management of whales, dolphins, all of the marine mammals, and it is vital for this agency to stand up and exercise its responsibility of protection, not to concur in the EIS documents that are being proffered by the Navy to permit it to conduct its experiments.

So I think that this Committee can have a very large impact on the adherence of our numerous, various national agencies, on their responsibilities to marine mammals. I would hope that this Com-

mittee would engage itself in looking specifically at areas in which those responsibilities commissioned to these various agencies cam be tightened up, made more specific, and indeed in the preparing of EIS's, to assume full responsibility for their content, direction, and recommendations, rather than to simply be added on as a concurrent partner.

So, with those remarks I certainly leave with you a tremendous appreciation on the part of thousands of my constituents, and the hope that as a result of these oversight hearings we will have a better view of what this particular experiment is doing to our marine mammal population, and to be ever vigilant if there should be others that are proposed, recognizing, of course, that there are two responsibilities that are colliding.

We have the national security argument which we explored in the Government Reform Committee, where the Navy insisted that this was absolutely essential for them to do. And so you have really a struggle of responsibilities here, and I look upon this Committee to be able to work through it and come up with some way in which the species that we are commissioned to protect will indeed have better protection.

Thank you very much.

[The prepared statement of Mrs. Mink follows:]

Statement of the Honorable Patsy T. Mink, a Representative in Congress form the State of Hawaii

Mr. Chairman,

I want to thank you for the opportunity to testify today before the Subcommittee on Fisheries Conservation, Wildlife, and Oceans as part of the oversight hearings on Reauthorization of the Marine Mammal Protection Act.

I especially want to thank you for including a panel to look at the impact of deployment of the U.S. Navy's Surveillance Towed Array Sensor System Low Frequency Active Sonar (SURTASS LFA) on our marine environment. And I thank you for inviting Dr. Hal Whitehead of Dalhousie University to testify before the Subcommittee.

I am deeply concerned about the potential harm that deployment of this technology could have on marine mammals. In the Navy's Final EIS, it acknowledges that they really do not know how this technology will affect marine life. But we do know that there have been several instances, in the Bahamas and elsewhere, where use of sonar has resulted in whale deaths and strandings. During the testing in Hawaii in 1998, numerous witnesses reported that whales fled the area when sonar testing began.

Sound is an integral part of the daily life of whales, dolphins, and other marine life. Low-frequency broadcasts, such as the Navy's SURTASS LFA sonar, could endanger the delicate balance between the natural habitat and these species.

Research suggests that the first indicator of physical damage to whales from low-frequency sounds is temporary hearing loss, which can occur from exposures to 185–200 dB. At higher levels, tissue damage in the lungs, heart, and nervous system can occur.

The unusual feature of this sonar is not its volume, but the low frequency at which it operates (100–150 Hz). Sound energy at the high frequencies typical of most sonar is absorbed by seawater, but low frequency sounds can travel and be detected hundreds of miles away.

Not only does this sonar disrupt the behavior of animals at relatively low levels, the behavioral disruption can occur over a large proportion of a species' habitat. It could change behaviors related to breeding and raising. of young.

Disruption of the behavior of endangered marine mammals and the assault on their habitat is a violation of the Marine Mammal Protection Act, which is designed to protect these species from man-made harm.

The Navy claims that the effect of LFA sonar on marine animals is negligible. I frankly worry about having the agency that is committed to deploying a technology so intimately involved in deciding whether it is environmentally safe.

I submit for the record a statement and detailed critique of the Navy's Environmental Impact Statement prepared by one of my constituents, Lanny Sinkin of Hilo, Hawaii. Mr. Sinkin is an attorney whose legal work has been in the areas of the environment, national security, and civil rights. From his research, Mr. Sinkin has gained a broad knowledge of the history of the LFA program and of the evidence that SURTASS LFA is too dangerous to deploy. Mr. Sinkin's research supports the conclusion that had the Navy complied with environmental laws early in the LFA process, they-would have avoided expenditure of hundreds of millions of dollars on the development of LFA and pursued other technologies that have, in fact, proven capable of achieving the same purpose.

I have asked the General Accounting Office to undertake a study of the Navy's SURTASS LFA sonar program. I asked them to investigate the potential environmental costs of deploying this technology and to examine whether the close relationship between the Navy and the National Marine Fisheries Service (NMFS) in preparing the EIS represents a conflict of interest.

Under the Act, the Secretary of Commerce, acting through the National Marine Fisheries Service, is responsible for the conservation and management of whales, dolphins, porpoises, seals, and sea lions. It is vital that the agency responsible for protecting these species maintain the highest possible standards in assessing possible harmful effects. Perhaps another agency, like the National Ocean Service, which has more of a conservation focus and manages our National Marine Sanctuaries, should be given responsibility for conservation and management of these species.

Clearly, the Navy's first responsibility is to protect our nation from attack. And they have invested millions of dollars in developing and testing this technology. We all support a strong national defense, especially in light of the horrific events of a month ago today. But this does not mean that we can shirk our responsibilities as stewards of our environment. We must ask ourselves: Is' deployment of LFA sonar truly essential to protect us from the security challenges facing our nation today? Wouldn't these funds be better spent on improved intelligence and on deployment of a environmentally safer passive sonar system? Must we endanger the well-being of our magnificent marine mammals—a heritage that belongs to all the world—to effectively protect ourselves?

Hawaii is home to many endangered species. We are host to the largest Pacific population of the endangered humpback whale during the months of November through May. The Navy's application specifically excludes deployment of SURTASS LFA in the Penguin Banks area of the Hawaiian Islands during this period, but they would still be able to deploy the system beyond the 12-mile limit surrounding the islands.

Many other endangered species are found in the waters surrounding Hawaii, including the Hawaiian Monk seal, several species of dolphins, and endangered and threatened sea turtles.

I oppose deployment or further testing of SURTASS LFA Sonar in the open oceans surrounding Hawaii. I urge the Subcommittee to maintain and strengthen our commitment to protecting marine mammals from harassment and harm as you study how to improve the Marine Mammal Protection Act.

[The statement of Mr. Sinkin follows:]

Statement of Lanny Sinkin, Attorney at Law, Hilo, Hawai'i

As an attorney, I have filed three separate legal actions challenging the U.S. Navy's testing and planned deployment of its Surveillance Towed Array Sensor System Low Frequency Active Sonar (SURTASS LFAS). In the course of preparing and pursuing that litigation, I have extensively researched the history of this program, the evidence available regarding potential impacts from deployment of this system, and the regulatory actions of agencies having a legal responsibility to conduct oversight of this program. I have also spent well over 100 hours analyzing the draft and final Overseas Environmental Impact Statement/Environmental Impact Statement (OEIS/EIS).

I am also aware of the U.S. military's campaign to convince Congress that environmental laws are hampering military preparedness and that the controversy over SURTASS LFA is cited as an example.

I understand that in these terrible times the military has strong support in Congress and that there is a reluctance to question any program the military says is necessary to national security. I consider the health of the marine environment es-

sential to national security. I urge the subcommittee to remain objective about this particular technology and exercise its legitimate oversight function.

Based on my research, I believe that SURTASS LFA demonstrates quite clearly the value of having the military obey current environmental laws. Had the U.S. Navy conducted a full environmental evaluation of the potential harm from SURTASS LFA prior to investing $350 million in this technology, I am convinced the Navy would have looked harder at alternative technology that could achieve the same purpose without the adverse effects on marine life. In fact, the Navy did develop passive alternatives capable of achieving the stated purpose of SURTASS LFA - the detection of silent submarines in the littoral environment.

The Navy ignored numerous environmental laws and made their investment in design, engineering, construction, testing, and other activities designed to produce a deployable LFA system. With the investment made, the Navy prepared an OEIS/EIS that is replete with false statements, contradictions, misuse of science, and other indicators of a document structured to justify a past decision, rather than an objective analysis prior to making major commitments. Cf. 42 U.S.C. § 4332(C)(v) (prohibiting irreversible and irretrievable commitments of resources prior to the preparation of an EIS).

I have prepared an extensive analysis of the flaws in the OEIS/EIS that will be submitted for the record of this hearing. As illustrations of the nature of the OEIS/EIS, I offer two examples:

1. Faced with potential litigation, the Navy agreed to prepare an OEIS/EIS. As part of that process, the Navy agreed to study the potential impact of SURTASS LFA on whales. In the subsequent Scientific Research Program (SRP), the Navy identified four species of whales as indicator species for all the others. One of the four is the Gray Whale. OEIS/EIS at pages 1–20. 4.2–27 and 28, and Comment Response 4–5.2 on page 10–100. The selection of these four species "was a critical element of the logic of the LFS SRP." OEIS/EIS at 4.2–27.

When a comment filed on the draft OEIS/EIS raised the evidence that Gray Whales avoid sound at 115 to 120 decibels - far below acceptable levels for LFA deployment - the OEIS/EIS took the position that "[tg]ray whales inhabit a unique environment, and all research conducted to date indicates that their behavior does not generalize to other species." Comment 4–4.18 at page 10–96.

The selection of the four indicator species was a "critical element of the logic" of the SRP because the Navy needed to answer criticism that studying so few species in such a limited fashion did not provide adequate information to reach conclusions about the impacts on other species. When one of those species, however, turned out to be very sensitive to sound, suddenly that species was not an indicator any more.

2. The OEIS/EIS section titled "Definition of Biological Risk and Determination of Risk Function" states: "Based on the MMPA (Subchapter 1.3.3.1), the potential for biological risk was defined as the probability for injury or behavioral—harassment of marine mammals." OEIS/EIS at 4.2–20 (emphasis added).

Subchapter 1.3.3.1 accurately states that the MMPA contains two categories of harassment. Ibid. at 1–16. The first is injury (Level A). Id. The second is disruption of important behavioral patterns. (Level B).—Id.

The OEIS/EIS "defines the potential for biological risk as "potentially caus[ing] hearing, behavioral, psychological, or physiological effects." Ibid. at 4.2–20.

The OEIS/EIS then states that the analysis of biological risk assumes "all marine mammals exposed to RLs [the level received by the marine mammal] > 180 dB are evaluated as if they are injured." Id. (emphasis added).

What the OEIS/EIS has done is to combine Level A and Level B harassment into one risk assessment and address mitigation of injury only. The underlying assumption must be that mitigating injury will also mitigate disruption of important behavioral patterns.

This assumption is the exact reverse of the correct assumption. Mitigation preventing disruption of behavioral patterns would significantly mitigate the potential for injury. Mitigation preventing injury takes effect long after the biological effects level is passed.

Disruption of singing, mating, feeding, migration, and other biological activities will take place well below the physical injury level.

In the Section titled "Determining Risk Function," the OEIS/EIS provides a graph (Figure 4.2–2b at 4.2–24) that purports to show the Single Ping Equivalent Risk Function. The x axis of the graph is the "Received Level (RL) SPE - dB." The y axis is "Risk of Significant Change in Biologically Important Behavior." This graph uses the 180 dB RL as the point of 95% probability of changing a biologically significant behavior. As noted above, however, that level is the 95% probability level for injury, not for causing a significant change in biologically important behavior. As also noted above, the 95% level for such potential behavioral change takes place well below 180

dB. The graph's y axis, therefore, falsely represents that the graph shows the probability of changing biologically important behavior.

The false analysis continues with the following statement: "The risk continuum modeled a smooth increase in risk that culminates in a 95 percent level of risk of significant change in biologically important behavior at 180 dB." OEIS/EIS at 4.2–29. Again, the sound pressure level creating a 95 percent probability of injury is very different from the level creating a 95 percent probability of changing biologically important behaviors.

Obviously the chart presents an increase in risk until the level that the Navy defined as injury , not the level of significant change in biologically important behavior. This single instance of attempting to conceal the actual science on the central question calls the integrity of this entire process into question.

These flaws in the OEIS/EIS represent the best efforts of those preparing the document to avoid the obvious evidence that SURTASS LFA poses a significant threat to marine life. This avoidance simply mirrors the experiences we had during and after the litigation in Hawaii.

The Navy came to Hawaii to test SURTASS LFA in March of 1998. Soon after the testing began, I began receiving reports that the Humpback Whales had left the test area. Eventually, I accumulated 14 different observer reports from people who have spent much of their lives observing whales in the area. This response by the whales is highly significant because the test area is a prime breeding and birthing area for this endangered species.

I received other reports of unusual activity in the test area, such as hammerhead sharks schooling in areas where such behavior had never been seen before.

I also received a report of a snorkeler exposed to an LFA broadcast, who suffered physiological and psychological damage compared by a doctor to that of a trauma patient in a hospital.

We brought all this information to the Navy (and NMFS). The Navy never made any attempt to contact the whale watch captains and shore observers who had noted the departure of the whales from the test area. Instead, the Navy issued an "information paper" claiming that there was no scientific data to support the claim that the whales left the test area. I had provided declarations from the observers. Had the Navy wished to follow up to determine the accuracy of their observations, the Navy could have contacted these observers. The Navy made no attempt to do so.

Similarly with the injured snorkeler, the Navy never contacted her, never sought to have their medical officers examine her, and never inquired as to her health subsequent to the exposure.

A truly objective scientific research project would have pursued further information on both these serious indicators of adverse effects.

From the refusal to pursue such information, a clear picture emerges of an agency that prematurely invested in a technology only to find the technology unacceptably hazardous. The OEIS/EIS attempts to justify this mistake by ignoring the evidence.

[An attachment to Mr. Sinkin's statement, "Comments of Lanny Sinkin on National Marine Fisheries Service Proposed Rule, Docket No. 990927266-0240-02," has been retained in the Committee's official files.]

Mr. GILCHREST. Thank you very much, Mrs. Mink. We can assure you that this Committee will be vigilant. We would be happy to continue to pursue this issue in all the avenues that you have suggested.

Mrs. MINK. I would especially welcome your joining in on the GAO report, because I do think that they will provide an impartial kind of view and analysis of what is going on, and the degree to which this test that the Navy is conducting is in fact essential for national security.

Mr. GILCHREST. We will be happy to be a part of that.

Mrs. MINK. Thank you very much.

Mr. GILCHREST. Mr. Underwood, any questions?

Mr. UNDERWOOD. I don't have any questions, but I certainly want to thank Mrs. Mink for bringing these issues to the surface.

And I understand that she would like to join us at some point in time, perhaps in one of the panels.

Mrs. MINK. When the Committee takes up panel five, I would like to return to the Committee room to listen to the statements at that time.

Mr. GILCHREST. We will be sure to let you know about that.

Mrs. MINK. If it is all right.

Mr. GILCHREST. Yes, ma'am.

Mrs. MINK. Thank you.

Mr. UNDERWOOD. Thank you very much, and it is a critical issue that we find a way to balance the need for national security as well as to obey our own laws, the laws that we have passed, and I certainly look forward to joining in that challenge. Thank you.

Mr. GILCHREST. Thank you very much, Mrs. Mink.

Mrs. MINK. Thank you.

[The prepared statement of Mr. Miller follows:]

Statement of the Hon. George Miller, a Representative in Congress from the State of California

POLAR BEARS. NO ICE

"It is strange to envision polar bears in Puerto Rico. But they are top attractions in the traveling Suarez Circus. The U.S. Fish and Wildlife Service and the Animal and Plant Health Inspection Service (APHIS), have approved permits which allow the Suarez Circus to keep these huge and powerful animals in transient facilities without adequate access to water or cool air. This is disturbing.

"Empowered by CITES to regulate the import and exports of animals into the United States, the Fish and Wildlife Service approved a permit in May to import seven polar bears, of dubious origin, into Puerto Rico despite numerous concerns raised by the Marine Mammal Commission and animal welfare organizations. In August, the Puerto Rican Department of Natural Resource (DNR) filed charges with Suarez Circus regarding the mistreatment of these polar bears. According to the DNR, polar bears were held for approximately 24 hours in 113 degree heat without water or air conditioning to cool themselves.

"Despite documentation of substandard care for these magnificent animals, the circus maintains it's permit. It is my understanding that APHIS is adding to this problem by issuing a variance to this permit allowing for a transient facility.

"It is disturbing that the two federal agencies responsible for protecting polar bears would allow arctic animals to be held captive in tropical climates. If lax enforcement of federal standards meant to ensure the humane care of these animals is compounding the problem, then this situation cries out for better congressional oversight. Even if you don't care about the humane treatment of wild animals, everyone on this committee should be concerned about government accountability. We need a thorough review of current compliance with law and regulations. I hope to work with the majority in addressing this issue."

Mr. GILCHREST. Our next panel, Dr. Bill Hogarth, the Administrator of the National Marine Fisheries Service, accompanied by Dr. Don Knowles, Director, Office of Protected Resources; Mr. Marshall Jones, Acting Director, U.S. Fish and Wildlife Service; Dr. John Reynolds III, Chairman, Marine Mammal Commission; Ms. Margaret Hayes, Director of Office of Ocean Affairs, Bureau of Oceans and International Environmental and Scientific Affairs, U.S. Department of State.

You may come forward, lady and gentlemen. The next time we have this hearing, we may have to hold it in the Ways and Means Committee hearing room.

[Laughter.]

We want to welcome all of you here this morning, appreciate very much your attendance, and look forward to your testimony. Dr. Hogarth, you may begin.

STATEMENT OF WILLIAM T. HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL MARINE FISHERIES SERVICE, ACCOMPANIED BY DON KNOWLES, DIRECTOR, OFFICE OF PROTECTED RESOURCES

Mr. HOGARTH. Thank you, Mr. Chairman, members of the Subcommittee. I appreciate being here today and testifying on the Marine Mammal Protection Act, MMPA. I am Bill Hogarth, the Assistant Administrator for Fisheries in the Department of Commerce.

NMFS and the Fish and Wildlife Service jointly administer the MMPA, under which NMFS is responsible for the management and conservation of over 140 stocks of marine mammals. Today I will discuss NMFS's implementation of the 1994 amendments, and areas of MMPA that could be addressed to improve the agency's ability to fulfill its responsibilities.

In passing the MMPA in 1972, Congress found that certain species and population stocks of marine mammals were or may be in danger of extinction or depletion as a result of man's activities. Additionally, Congress found that marine mammals have proven to be international resources of great aesthetic, recreational, economic, and ecosystem significance. These findings and objectives still guide NMFS in implementation of the MMPA.

While there have been numerous changes to the MMPA since 1972, the 1994 amendments were the most comprehensive. They included provisions directed toward the entire spectrum of marine mammal programs that NMFS conducts.

NMFS has made significant progress in implementing the amendments. However, there continue to be a few issues that still need to be resolved and areas that we continue to work to improve. We have made significant progress in governing the take of marine mammals incidental to commercial fisheries, through the use of stock assessments, fishery monitoring, vessel registration and authorization, and take reduction plans.

Take reduction plans have been completed for Pacific offshore cetaceans, Atlantic large whales, the harbor porpoise in the Mid-Atlantic and Gulf of Maine. We will also be convening a team to address the take of bottlenose dolphin in the Atlantic.

Through the dedication of participants from a wide range of stakeholder groups, we are seeing real progress. Specifically, the Pacific offshore cetacean and the harbor porpoise take reduction plans have significantly reduced the take of marine mammals.

Unfortunately, other plans have not been as successful. For example, we are struggling to find an effective strategy to reduce the take of right whales through the Atlantic Large Whale Take Reduction Plan. We are also looking for ways to improve the take reduction process through the development of new gear technologies, expanded stakeholder participation, and providing more technical and outreach expertise to the participants during their deliberations.

NMFS believes that the take reduction team approach is the right way to reduce marine mammal backcatch and maintain sta-

ble fisheries. Marine mammal stock assessment reports are vital to the success of take reduction efforts. By 1996, NMFS scientists had completed 140 assessment reports for marine mammal stocks in U.S. waters.

However, these assessments revealed that for many marine mammal stocks, information critical to managers, such as abundance and distribution patterns, is virtually nonexistent. With the funds Congress has provided, we have focused on about 20 stocks that are of the highest priority due to their interaction with fisheries. We have varying levels of information for the remaining stocks, and we are exploring ways to improve our capabilities with new and more cost-effective technologies.

Through the Fishery Observer Program we have collected detailed information on fishery and protected resource interactions by use of the take reduction process. We have focused our observer programs and coverage on the fisheries experiencing frequent interactions with marine mammals. We have also been discussing the alternative monitoring techniques that will allow for expanded coverage and improved data collection.

We have made strides since 1994 to implement the changes to the public display, scientific research and enhancement provisions of MMPA. One outstanding issue has been clarification of the public display requirements. I am happy to report that earlier this year we published a proposed rule to implement the amendments affecting marine mammals held captive for public display. The comment period on this proposed rule ends on November the 2nd.

One area of difficulty for NMFS is the implementation and enforcement of the definition of "harassment" as an element of "taking." The two-tiered definition is complex and somewhat ambiguous. For example, the definition equates changes in individuals with profound changes in populations. In some cases scientists or photographers must obtain permits, while other activities which would more likely have an adverse impact on marine mammals are not necessarily controlled if they are not clear acts of "pursuit, torment or annoyance."

The 1994 amendments also provide for cooperative agreements between NMFS and Alaska native organizations to co-manage subsistence use by Alaska natives. Over the years, NMFS has worked with the Alaska native organizations to conserve marine mammals. However, a general shortcoming with the existing system is that co-management agreements will be successful only if all hunters voluntarily abide by them, or if the native organizations entering into the agreement can effectively exert control over all native hunters.

In addition, we are working to assure that applications for small take and harassment incidental to defense and energy-related activities are processed as quickly as possible.

Mr. Chairman, over the years the benefits of the MMPA on marine mammal stocks in the U.S. have been significant, and its impacts around the world are surely immeasurable. However, I am concerned that the MMPA remains unauthorized.

NMFS is working with both the Fish and Wildlife Service and the Marine Mammal Commission to develop an administration proposal to amend the MMPA. We hope to transmit legislation to Con-

gress as soon as the proposal is reviewed by all affected agencies. In the interim, I welcome the opportunity to discuss the issues that I raised today with you and with all stakeholders, to work toward an effective resolution of these and other important marine mammal conservation issues.

Mr. Chairman, this concludes my testimony. I look forward to answering any questions you or other members of the Subcommittee may have. Thank you.

[The prepared statement of Mr. Hogarth follows:]

Statement of Dr. William T. Hogarth, Assistant Administrator for Fisheries, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce

Mr. Chairman and members of the Subcommittee, thank you for inviting me to testify before the Subcommittee today on the Marine Mammal Protection Act (MMPA). I am William Hogarth, Assistant Administrator for Fisheries in the National Oceanic and Atmospheric Administration, Department of Commerce.

The National Marine Fisheries Service (NMFS), along with the U.S. Fish and Wildlife Service (FWS), administers the MMPA, which is the principal Federal legislation that guides marine mammal protection and conservation policy in U.S. waters. Under the provisions of the MMPA, NMFS is responsible for the management and conservation of over 140 stocks of whales, dolphins and porpoises, as well as seals, sea lions and fur seals. The remaining marine mammal species (polar bears, walruses, manatees, dugongs, and sea and marine otters) are under the jurisdiction of the FWS.

I welcome the opportunity to discuss with you NMFS' implementation of the 1994 amendments and the positive impacts this legislation has had on marine mammal conservation and management. I will also discuss those areas of the MMPA that could be addressed to improve the Agency's ability to fulfill its responsibilities.

Background of the MMPA

The MMPA was enacted in 1972, largely due to public response to the high levels of dolphin mortality in the Eastern Tropical Pacific tuna purse seine fishery, the harvest of harp seals in Canada, and continuation of commercial whaling.

In passing the MMPA, Congress found that certain species and population stocks of marine mammals were or may be in danger of extinction or depletion as a result of man's activities. Additionally, it was found that marine mammal species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part. Consistent with the major objective of preventing this stock depletion, Congress found that the populations should not be permitted to diminish below their optimum sustainable population level, and measures should be taken immediately to replenish any species or population stock which had already been diminished below this level. Congress also found that there was inadequate knowledge of the ecology and population dynamics of such marine mammals and of the factors which bear upon their ability to reproduce themselves successfully. Finally, Congress found that marine mammals have proven themselves to be international resources of great aesthetic, recreational and economic significance. These findings and objectives still guide NMFS in its implementation of the MMPA.

While there have been numerous changes to the MMPA since 1972, the MMPA Amendments of 1994 were by far the most comprehensive. They required NMFS to establish a long-term regime for protecting marine mammals in U.S. waters and included provisions directed toward the entire spectrum of marine mammal programs that NMFS conducts. These requirements included determining the status of marine mammal stocks, establishing new requirements for categorizing commercial fisheries, registering and reporting of vessels relative to their level of serious injury and mortality of marine mammals, monitoring incidental take through observer programs, and developing take reduction plans. The MMPA Amendments of 1994 also prohibited intentional lethal take during commercial fishing operations, and mandated changes to many of the Act's permit provisions.

Implementation of these changes has required a substantial amount of additional work from the Agency. NMFS has made significant progress in fulfilling these and other mandates of the MMPA. However, there continue to be a few implementation issues that still need to be resolved and areas that we continue to work to improve.

HIGHLIGHTS OF THE MARINE MAMMAL PROTECTION ACT AMENDMENTS OF 1994 AND ITS IMPLEMENTATION

Commercial Fisheries Incidental Take Regime (Sections 117 and 118)

The new approach to govern the taking of marine mammals incidental to commercial fisheries, developed in cooperation with governmental agencies, the commercial fishing industry, and environmental organizations, reaffirmed the MMPA goal to reduce incidental mortality and serious injury to insignificant levels. This section directs the Secretary to authorize the taking of marine mammals incidental to commercial fishing, with restrictions where necessary to ensure that such mortality and serious injury would not prevent marine mammal stocks from recovery to their optimum sustainable population levels. There are a number of elements that contribute to effective management of this regime: stock assessment, fishery monitoring, vessel registration and authorization, and take reduction plans.

Marine Mammal Stock Assessments

Under section 117, NMFS has carried out the 1994 requirements to assess the status of marine mammal stocks and increase stakeholder involvement in the decision-making process through the development of a series of scientific review groups. These groups review agency research and management needs relative to marine mammals. NMFS, in consultation with these groups and the public, prepares and revises stock assessment guidelines.

NMFS is required to review stock assessments annually for strategic stocks, at least once a year for stocks for which significant new information is available, and at least once every three years for all other stocks. A strategic stock is defined as one that is listed as endangered or threatened under the Endangered Species Act (ESA), declining and likely to be listed under the ESA in the foreseeable future, designated as depleted under the MMPA, or for which human-caused mortality exceeds the estimated Potential Biological Removal (PBR) level. The PBR level is the number of animals that may be removed from the stock while allowing it to reach or maintain its optimum sustainable population level.

A marine mammal stock assessment incorporates several types of information essential to carrying out the incidental take regime: an estimation of abundance from surveys; an estimation of mortality and serious injury from observer data and other sources; an estimation of the stock's PBR level; and, determination of stock structure. Stock structure can be analyzed using a variety of methods, including telemetry, genetic analysis, and photo identification.

Within two years of enactment of the 1994 amendments, NMFS completed over 140 marine mammal assessment reports for marine mammal stocks in U.S. waters. These assessments revealed that for many marine mammal stocks, information critical to managers, such as abundance and distribution patterns, is virtually non-existent. For example, abundance estimates are not available for 33 stocks (23%) of marine mammals. Of the 144 stocks under NMFS jurisdiction (57 in the Atlantic and Gulf of Mexico, 55 in the Pacific, and 32 in Alaska), 39 are designated as strategic under the MMPA. Of the 39 strategic stocks, 22 are classified as endangered, two are classified as threatened, and three others are classified as depleted.

Abundance and Stock Structure

In 1998 we developed a rotational schedule to conduct abundance surveys for all stocks on a three - 10 year cycle. With the funds provided, we have focused on about 20 stocks that are of highest priority due to their interaction with fisheries. The information on these stocks is limited B for many of the stocks we have gaps in trends, population structure, and habitat needs.

Overall, we believe the stock assessment process, specifically the abundance and trends analysis, and the underlying science and methodologies for determining PBR are scientifically sound. We continue to try to improve our stock assessment capabilities by utilizing more cost-effective techniques, such as acoustic monitoring.

Fisheries Monitoring and Observer Programs

One challenge created by the MMPA Amendments of 1994 is the requirement for NMFS to establish a program to monitor incidental mortality and serious injury of marine mammals in the course of commercial fishing operations. The purposes of fishery monitoring programs are to obtain statistically reliable estimates of incidental mortality and serious injury of marine mammals in commercial fisheries; to determine the reliability of reports submitted by fishermen; and to identify possible changes in fishing methods or technology that may decrease incidental mortality and serious injury. NMFS' monitoring programs are generally in the form of at-sea observer programs. These programs collect marine mammal and environmental data, as well as information on fishing technique characteristics, to help determine

factors that may contribute to these interactions. As a result of the monitoring and observer programs established by the 1994 amendments, NMFS has collected detailed information on fisheries for which few data previously existed concerning protected species interactions.

Those fisheries experiencing frequent interactions with marine mammals have received priority for observer program coverage. NOAA has identified or classified over 30 fisheries that have a significant impact on protected species based on observer information. We have adequate estimates of the level or characteristics of this take for eight of those fisheries. The impacts of the remaining 22 are poorly understood.

Right now, the funding for marine mammal observer programs is focused in the Alaskan salmon gillnet rotational observer program, Northeast and Mid–Atlantic gillnet fisheries, the California/Oregon drift gillnet fishery, the Monterey Bay set halibut gillnet fishery, the southeast Atlantic shark drift gillnet/strike net fishery, the Atlantic pelagic longline fishery, and the Atlantic squid, mackerel, and butterfish trawl fishery.

NMFS has been discussing the exploration of new technologies for alternative monitoring of fisheries. There are many instances where it is either not practicable or possible to have an observer on board a fishing vessel. This situation leads to reduced monitoring coverage and inadequate data collection. The development of alternative remote monitoring systems would allow for expanded coverage and improve data collection.

Classification of Fisheries

The MMPA Amendments of 1994 also established new procedures to address marine mammal interactions with commercial fisheries. The Secretary is required to publish, and annually update, a list of fisheries with frequent (Category I), occasional (Category II) or remote likelihood (Category III) of incidental mortality and serious injury of marine mammals. Those in Category I or II fisheries are required to register and shall be issued an authorization to incidentally take marine mammals. Category I and II fisheries are required to carry an observer, if requested, and comply with any take reduction plan regulations. All commercial fisheries, regardless of category, must report takings of marine mammals. This fishery classification system consists of a two-tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock, and then addresses the impact of individual fisheries on each stock. Through this approach, NMFS can focus on species of particular concern relative to fisheries interactions, and then examine the various sources of injury or mortality.

Information collected about the fisheries includes the geographic range of the fisheries, the seasons during which the fisheries operate, what type of gear is used, how the gear is fished, the number of participants in each fishery, what species of fish are targeted in each fishery, and what type of management program exists for each fishery. These data allow NMFS to more effectively manage fisheries while minimizing the impacts to the overall industry. They also allow NMFS to work with fishermen to identify and develop gear technologies that will reduce their interactions with marine mammals. For instance, NMFS worked closely with fishermen in the Gulf of Maine to develop acoustic deterrence devices, "pingers," that can be used by fishermen to decrease marine mammal interactions with certain types of gear.

Registration and Reporting of Fisheries

Section 118 also requires fishermen to submit reports of marine mammal injury and mortality, providing additional information about marine mammal interactions with fisheries. Under this provision, all fishermen must report to NMFS any marine mammal mortalities or injuries that occur incidental to commercial fishing operations within 48 hours of the vessel's return to port. Fishermen participating in Category I or II fisheries must register under the Marine Mammal Authorization Program to engage in lawful incidental take of marine mammals.

Although this process has been working reasonably well, in some fisheries, not all vessel owners required to register have been doing so. Also, inasmuch as the requirement to carry observers only applies to registered vessels, the ability to monitor some fisheries has been compromised by the lack of full compliance with the registration requirement. In addition, compliance with the registration requirement is inconsistent, making available data for some fisheries less than complete. We may consider clarifying that it is a violation to engage in a Category I or II fishery without having registered under Section 118(c)(2) to eliminate any ambiguity regarding this important aspect of the incidental taking regime. Further, we may consider clarifying the requirement that to carry an observer applies to all participants in Category I and II fisheries.

Take Reduction Plans

The MMPA Amendments of 1994 also require NMFS to convene take reduction teams (TRTs) to develop draft plans for reducing bycatch of marine mammals in Category I and II fisheries that interact with strategic stocks. The goals of the plans are to reduce the mortality and serious injury incidental to commercial fishing below the PBR level within six months, and to insignificant levels within five years. Priority for developing plans is given to stocks for which incidental mortality exceeds PBR, those that have a small population size, and those declining most rapidly.

Take reduction plans have been completed and implemented by final regulations for Pacific offshore cetaceans, Atlantic large whales, and harbor porpoise in the Mid–Atlantic and the Gulf of Maine. We have also recently convened a new team to address the take of bottlenose dolphin in the Atlantic. These plans are complex, and sometimes controversial, since they attempt to meet both marine mammal conservation requirements and the needs and concerns of the fishing industry. However, through the dedication of participants from a wide-range of stakeholder groups, we are seeing some real successes in the present stages of implementation. Specifically, measures within the Pacific Offshore Cetacean Take Reduction Plan reduced marine mammal interactions by an order of magnitude in only two years of implementation. Using this plan, commercial fishermen have reduced their interactions with whales and dolphins from approximately 500 per year in the early 1990s to about 50 in 1998. Things are also looking good for harbor porpoise. Takes have been reduced from a pre-take reduction plan level of an average of 1,521 animals per year, to 323 animals in 1999 and 529 animals in 2000.

NMFS believes that the TRT approach makes best use of resources and stakeholders' input to reduce marine mammal bycatch and maintain sustainable fisheries for the long term. This is an excellent example of NMFS' attempts to meet the mandates under the MMPA as well as the Magnuson- Stevens Fishery Conservation and Management Act. As we gain more experience, we are also learning better ways to implement the teams. In 1998, NMFS surveyed participants of the existing TRTs to evaluate the take reduction process. NMFS is working to implement some of the suggestions. For example, NMFS sponsored two workshops before convening the bottlenose dolphin TRT to ensure that participants were knowledgeable about bottlenose dolphin science and were prepared for the negotiations.

Despite our success in some areas, we are still faced with challenges in others. For example, we are still struggling with finding an effective strategy to reduce the take of right whales in the Atlantic Large Whale Take Reduction Plan. So far this year, at least four right whales have become entangled in fishing gear. The PBR level for this highly endangered species is zero.

One area for improvement that we have been discussing is to provide more technical and outreach expertise to take reduction teams during their deliberations. This step is expected to ensure that all participants fully understand current practices, and can make informed recommendations regarding any changes in fishing practices.

Increasingly, new gear technologies are being looked to as a means of reducing entanglements and allowing fishers to continue operating in areas frequented by marine mammals. We are discussing ways to encourage new research and speed the development of new gear technologies.

Zero Mortality and Serious Injury Rate Goal (ZMRG)

One of the most difficult challenges remaining in carrying out the 1994 amendments is how to reduce levels of marine mammal mortality and serious injury to approach the zero mortality and serious injury rate goal (ZMRG). The key to success is to evaluate and clarify the concept of ZMRG and its implications for marine fisheries. Since 1994, we have focused on the immediate goal of reducing take to PBR which has taken all of our resources to this point. However, now that we are achieving success in meeting the first goal, we intend to move on to addressing the long-term goal.

Exclusions

There are some noteworthy exclusions from the 1994 incidental take regime. It does not govern the incidental taking of California sea otters which remain subject to Public Law 99–625. While fishery related mortality is suspected as a cause of the otters' recent decline, NMFS holds that all elements of section 118 are currently inapplicable to the California sea otter.

Another exclusion that it does not address is the incidental take of marine mammals from non- commercial fisheries even though this is an increasing problem in coastal areas. Currently the taking of marine mammals in the course of non-commercial fishing is not covered under the Section 118 exemption and those fisheries

are subject to the enforcement provisions of the MMPA. NMFS is considering ways to address this issue and educate non-commercial fishers to ensure the conservation of marine mammals.

Increasing Seal and Sea Lion Populations

The importance of marine mammals as significant functioning elements of marine ecosystems has been an underlying tenet of the MMPA since its enactment. The section 120 amendments in 1994 identified specific objectives to assess the role of seals and sea lions in their ecosystems, including assessment of interactions between increasing stocks of seals and sea lions and anadromous fish on both coasts of the United States. Section 120 also authorized the intentional lethal taking of individual pinnipeds which are having a significant, adverse affect on the salmonid stocks. Upon request from any State, the Secretary would establish and convene a task force to recommend whether to authorize the requested lethal take or some other alternative. Section 101(a)(4) also authorized fishermen to use non-lethal means to deter a marine mammal from damaging their gear or catch.

Responding to this issue on the West Coast, NMFS submitted to Congress the second of two reports on West Coast interactions in 1999. This report found that although seal and sea lion predation did not cause the decline of endangered salmonid species on the West Coast, it may be affecting the recovery of already depressed populations. This document recommends implementing expanded lethal removal authority of the MMPA for certain situations. The report also recommends the development of safe, effective non-lethal deterrence measures, site-specific management of these interactions, and identifies information needs for conducting further research and streamlining the process for States to obtain authority for lethally removal of nuisance pinnipeds.

NMFS also investigated this issue on the East Coast and in 1997 submitted the first of two reports to Congress which concluded that more information is needed on seal and sea lion interactions with salmonids and the East Coast aquaculture industry. The report also concluded that deterrence technologies should be enhanced before any significant management actions can be taken.

The Secretaries of Commerce and the Interior were required to publish guidelines on measures to deter marine mammals safely and to prohibit any form of deterrence that would have a significant adverse impact on marine mammals. For species listed as threatened or endangered under the ESA, the Secretaries were to specify non-lethal deterrence measures that may be used.

NMFS issued proposed deterrence regulations in 1995, but did not publish final regulations because of the difficulty in identifying measures for safely deterring endangered and threatened marine mammals. The issue of deterrence and how to deal with expanding populations of marine mammals will continue to be a management challenge. NMFS will continue to study and work with other interested organizations to find effective measures for non-lethal deterrence.

Permitting and Captive Display and Release

The MMPA Amendments of 1994 also made significant changes to the permitting provisions of section 104 of the MMPA, which governs permits for public display, scientific research, and enhancement of marine mammal species and stocks and made a related change to the Acts enforcement provisions in section 102. These amendments: 1) simplified the procedures for authorizing transfers of marine mammals among public display facilities and substantially reduced NMFS role in the oversight of the care and maintenance of captive marine mammals; 2) established a streamlined General Authorization procedure for scientific research activities that have the potential to disturb, but not to injure, marine mammals not listed under the ESA; 3) created a new permit category for photography of non-listed marine mammals for commercial and educational purposes; and, 4) established a prohibition on exports of marine mammals and marine mammal parts, except for purposes of public display, scientific research, or enhancement.

On May 10, 1996, NMFS published a final rule amending the regulations for permits to reflect many of the 1994 changes. The rule updated and consolidated the regulations for special exception permits and established basic permit requirements applicable to all permits to take, import, and export marine mammals and marine mammal parts for purposes of scientific research and enhancement, photography, and public display. It also provided permit criteria specific to scientific research and enhancement.

A Memorandum of Agreement among NMFS, FWS, and the USDA's Animal and Plant Health Inspection Service to clarify federal responsibilities pertaining to the oversight of marine mammals on public display was completed in July 1998. On July 3, 2001, NMFS published a proposed rule to implement the 1994 amendments

to the MMPA affecting marine mammals held captive for public display purposes, and clarify the public display requirements relating to: 1) permits to capture or import marine mammals, 2) transport or transfer of marine mammals, 3) export and, 4) marine mammal inventories. The public comment period on this proposed rule closes November 2, 2001.

Issues also have arisen concerning the intent of Congress with regard to the release of marine mammals being held for purposes of public display to the wild and the export of such marine mammals to foreign facilities. Section 104(c)(9) of the MMPA added in 1994, specifies that no marine mammal may be exported from the United States for the purpose of public display, scientific research, or enhancing the survival or recovery of a species or stock, unless the receiving facility meets standards that are comparable to those applicable to U.S. facilities. The primary focus of this amendment was on exports for purposes of public display. There has been some debate as to whether this is a continuing obligation on the part of the receiving facility. The rulemaking currently underway may resolve these issues regarding exports for public display.

In addition, the 1994 Amendments, as part of a package of permit-related amendments, added a prohibition to section 102 on exporting marine mammals. Although some provisions of section 104 of the Act were amended to reflect this new prohibition, corresponding changes were not made elsewhere in the Act, which has led to some confusion. For example, there is uncertainty as to whether handicrafts being made and sold by Alaska Natives under section 101(b) may be exported from the United States.

There is also a need to add certainty to the Act with regard to the release of captive marine mammals to the wild. Within the scientific community, the release of marine mammals held in captivity for extended periods of time is widely regarded as potentially harmful to both the animals released and wild populations they encounter. Fundamental questions remain as to the ability of long-captive marine mammals to forage, avoid predators, and integrate with wild populations. Moreover, release creates the risk of disease transmission, inappropriate genetic exchanges, and disruption of critical behavioral patterns and social structures in wild populations.

Definition of Harassment

The 1994 amendments added several new definitions to the MMPA. For the most part, these definitions pertain to the new regime governing the taking of marine mammals incidental to commercial fishing operations or the revisions to the Act's permit provisions. One definition, however, has broad applicability throughout the Act—that of "harassment," which is an element of "taking." The definition was subdivided into "Level A" and "Level B" harassment. Level A harassment is defined as "any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild." Level B harassment is defined as "any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."

NMFS has experienced difficulties with respect to interpretation, implementation, and enforcement of the current definition of harassment. The two-tiered definition is complex and is somewhat ambiguous. For example, the definition equates changes in individuals (*e.g.*, momentary disturbance of an animal's breathing pattern) with profound changes in populations (*e.g.*, disrupting an animal, or a group of animals from migrating to a feeding or breeding area). Scientists and photographers must obtain permits for Level B harassment, but activities which may be more likely to affect marine mammals are not necessarily controlled if they are not clearly acts of "pursuit, torment or annoyance."

Small–Take Provisions

Amendments were also made to section 101(a)(5), the Act's so-called "small-take provision," under which the taking of small numbers of marine mammals incidental to activities other than commercial fishing may be authorized if the activities are expected to have a negligible impact on the affected stocks and will not have any unmitigable impacts on the availability of marine mammals for Native subsistence in Alaska. Prior to the 1994 amendments, such authorizations could be issued only by regulation. In 1994, a streamlined mechanism for authorizing incidental takes by harassment for a period of up to one year, requiring public notice and opportunity for comment, but not rulemaking, was enacted.

In general, the new provision has worked well and has succeeded in shortening the time required to issue incidental harassment authorizations (IHAs). The prob-

lem is that the number of applications - both IHAs (1 year harassment only authorizations) and Letters of Authorization (5 year incidental take authorizations) has increased significantly so that the effect of the 1994 streamlining is being overcome by the increased workload. We are discussing ways to enhance the ability of the program to analyze and process applications in a timely manner.

Gulf of Maine and Bering Sea Ecosystem Studies

Section 110 of the Act, which governs marine mammal research grants, was amended in 1994 to require the Secretary of Commerce, in consultation with the Marine Mammal Commission, adjacent coastal States, environmental organizations, the fishing industry, and other appropriate groups and individuals, to convene a regional workshop to assess human-caused factors affecting the health and stability of the Gulf of Maine marine ecosystem. A workshop was held in 1995 and NMFS transmitted a report to Congress that same year.

The recommendations included the need to identify the critical linkages between contaminants and other stressors and their impacts on biologically and economically important species and habitats. The recommendations also highlighted the importance of basing management actions on a precautionary principle, reflecting the level of uncertainty concerning the status of, and linkages among, various ecosystem components.

Another provision of this section required the Secretary, in consultation with pertinent organizations, to conduct a research program to monitor the health and stability of the Bering Sea marine ecosystem and to resolve uncertainties concerning the causes of observed declines in populations of marine mammals, sea birds, and other living resources.

NMFS prepared a draft Bering Sea ecosystem study plan in 1995. Although the plan was never finalized, research has been conducted through the North Pacific Marine Research Initiative administered by the University of Alaska.

Cooperative Agreements in Alaska

The 1994 amendments provided for cooperative agreements between NMFS and Alaska Native organizations to conserve marine mammals and to co-manage subsistence use by Alaska Natives. On April 29, 1999, NMFS and the Alaska Native Harbor Seal Commission signed an agreement to work together in developing a co-management plan for harbor seals. NMFS has also reached an agreement with several parties interested in beluga conservation, including the Cook Inlet Marine Mammal Council, on appropriate levels of beluga whale harvest in Cook Inlet, Alaska, for 2001–2004. NMFS and the Alaska Beluga Whale Committee have signed a co-management agreement for beluga whales outside of Cook Inlet as well.

A general shortcoming with the existing co-management system is that co-management agreements, to the extent that they are intended to regulate or limit subsistence taking, will be successful only if all hunters voluntarily abide by those limits or the Native organization entering into the agreement can effectively exert control over all Native hunters, such as is the case with the Alaska Eskimo Whaling Commission. While Alaska Natives traditionally have demonstrated a willingness to act responsibly in conserving marine mammals and other resources, the recent experience with Cook Inlet belugas demonstrates the delicate underfooting that exists. For some marine mammals, all it takes is a few hunters refusing to act responsibly to put a stock at risk.

Enforcement

While the 1994 amendments have been effective in clarifying and strengthening regulatory processes under the MMPA, some aspects could be updated. For example, the penalties for violations of the MMPA have remained unchanged since 1972. It may be worthwhile to discuss increasing penalties and other means of improving enforcement capabilities.

Conclusion

The MMPA Amendments of 1994 made significant strides forward in marine mammal conservation. Since then, NMFS has been working to implement these changes. Over the years, the benefits of the MMPA on marine mammal stocks in the United States have been significant, and its indirect impacts on the status and conservation of marine mammal species around the world are surely immeasurable. Since its passage, other countries have not only looked toward the United States for guidance on marine mammal conservation issues, but have established policies of their own modeled after the MMPA. We will continue to face emerging issues and new threats to marine mammals and the MMPA will need to evolve to effectively protect marine mammal populations, while balancing human needs.

As you know, Mr. Chairman, the MMPA needs to be reauthorized. I am pleased to note that NMFS is working with both the FWS and the Marine Mammal Commission to develop an Administration proposal to amend the MMPA. Of course, the Department of Justice will be involved in the development of any proposal to ensure that it meets constitutional scrutiny under the Commerce and other clauses. We hope to transmit legislation to the Congress as soon as a proposal is developed and reviewed by all affected agencies. In the interim, I welcome the opportunity to discuss the issues I have raised here today in detail with you and stakeholders to work toward effective resolution of these and other important marine mammal conservation issues.

Mr. Chairman, this concludes my testimony. Again, thank you for the opportunity to be here today. I look forward to answering any questions you or other members of the Subcommittee may have.

Mr. GILCHREST. Thank you very much, Dr. Hogarth.

Mr. Jones?

STATEMENT OF MARSHALL JONES, ACTING DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

Mr. JONES. Thank you, Mr. Chairman. A great pleasure to be here with you today to provide testimony on reauthorization of the Marine Mammal Protection Act and on the agreement negotiated between the United States and Russia on polar bear conservation.

Over the past several months, the Fish and Wildlife Service has been working diligently with the National Marine Fisheries Service, the Marine Mammal Commission, other Federal agencies, and our Alaska native partners to identify areas of the Marine Mammal Act which might benefit from well-considered changes. Today I will discuss a few of the key areas that are under consideration for changes. The statement we have submitted for the record provides information on other areas of the act where recommendations for changes are under consideration, as well as our involvement in monitoring the status of marine mammal populations and our implementation of the 1994 amendments to the act.

Mr. Chairman, one of the most significant amendments made to the act in 1994, Section 119, authorized cooperative agreements with Alaska native organizations for co-management of subsistence use of marine mammals. Through this provision, we have further developed working relationships with our native partners, very similar to what Dr. Hogarth has outlined, and we have reaped the benefits for their enhanced capability to gather and disseminate information. We have also cooperatively developed local management strategies for subsistence harvest. We believe that these cooperative agreements have been a positive addition to the act.

One change to the act now under consideration within the administration would build on the strengths of Section 199 to address a significant limitation elsewhere in the act, the inability to actively manage subsistence harvest of marine mammal stocks unless or until those stocks have been designated as depleted.

We agree with our Alaska native partners that sound management of marine mammal harvests should occur well before they are in serious decline, but today the lack of enforceable management measures on nondepleted stocks could lead to such sharp declines in those stocks. Active management of the harvest of marine mam-

mals, in cooperation with Alaska native organizations, we believe is the best way to ensure their continued health.

We are now considering a mechanism that would enable native organizations to initiate the development of expanded co-management agreements. These agreements would manage subsistence harvest, and would be administered by either the tribal or Federal signatories to the agreement. Under this concept, violations of the terms of the agreement or of tribal ordinances enacted to enforce the agreement would be violations of the act.

An additional amendment we are now contemplating relates to the export of marine mammal products. The 1994 amendments added some new prohibitions on export, but inadvertently omitted some corresponding changes to clearly exempt certain otherwise authorized export situations from the new prohibition. This has resulted in confusion for the regulated public. The changes now being considered would address these current inconsistencies in the act.

Yet another area under review is the definition of the term "harassment." We have been considering ways to clarify the definition to provide greater notice and predictability to the regulated community, and to improve the ability of Federal agencies to comply with the prohibition on harassment, while continuing to protect marine mammals in the wild and allow agencies to accomplish their missions.

Mr. Chairman, let me conclude my remarks by discussing an international agreement that we believe represents a very significant step forward for the conservation of polar bears.

In February 1998, representatives from the United States and Russia negotiated a bilateral agreement on the conservation and management of the shared Alaska-Chukotka polar bear population. The agreement was signed by the two nations in Washington, D.C. in 2000. The purpose of the agreement is to ensure long-term conservation of the shared polar bear population, in particular to address the widely different harvest provisions and practices of the United States and Russia.

As I previously mentioned, U.S. law does not allow restrictions on subsistence harvest unless a polar bear population has been designated as depleted under the Marine Mammal Protection Act. On the other side of the border, the Russian Federation will soon open a polar bear subsistence hunting opportunity for native Chukotkans. The bilateral agreement will create a management framework to prevent any possibility of an unsustainable combined harvest. Draft legislation to implement the agreement is currently undergoing review within the administration.

Mr. Chairman, in closing I would like to emphasize that this administration is committed to conserving and managing marine mammals by working with our partners in a cooperative fashion. In particular, I want to emphasize our ongoing commitment to work with our Alaska native partners to enhance their role in the conservation and management of marine mammals. We look forward to working with you and the members of the Subcommittee and the full Committee on legislation which will improve the Marine Mammal Protection Act and implement the bilateral agreement during this session of Congress.

Mr. Chairman, that concludes my remarks, but I would be happy to answer any questions.

[The prepared statement of Mr. Jones follows:]

Statement of Marshall Jones, Acting Director, U.S. Fish and Wildlife Service, Department of the Interior

Mr. Chairman, I am grateful for the opportunity to provide testimony on the Marine Mammal Protection Act (MMPA or Act) of 1972 and implementation issues related to the recently negotiated U.S. - Russia agreement on polar bear conservation.

The MMPA establishes a federal responsibility, shared by the Secretaries of the Interior and Commerce, for the management and conservation of marine mammals. The Secretary of the Interior, through the U.S. Fish and Wildlife Service (Service), protects and manages polar bears, sea and marine otters, walruses, three species of manatees, and dugong. As the Subcommittee is aware, the MMPA is currently due to be reauthorized. While the Administration is in the early stages of its review of the Act, the Department has been working diligently with the National Marine Fisheries Service (NMFS), the Marine Mammal Commission, the Navy, Alaska Natives and others to identify areas of the Act that might benefit from well-considered changes.

Mr. Chairman, you asked the Administration to discuss whether any changes are needed to the Act at this time. The Administration does believe that the Act can be improved upon in a way that will enhance the conservation of marine mammals, improve implementation of the Act generally, and strengthen relationships with our non-federal partners. However, as noted above, because the Administration has not yet completed its review of the Act, my testimony today necessarily must focus only on the types of changes that have been under consideration, and not on specific recommendations. I will also provide the Subcommittee information on areas where we have made significant progress in implementing the 1994 amendments beyond that reported to the Subcommittee at hearings on June 29, 1999 (regarding implementation of the 1994 amendments), and on April 6, 2000 (regarding implementation of Section 119 of the MMPA).

Section 119

Currently, Section 119 of the MMPA authorizes the Secretaries of the Interior and Commerce to enter into cooperative agreements with Alaska Native Organizations to conserve marine mammals taken for subsistence and handicraft purposes. Marine mammals are a vitally important cultural and subsistence resource for Alaska Natives, and are visible indicators of changes in the marine environment. Given the size and remoteness of the marine systems in Alaska, monitoring the health and status of marine mammal populations, discussed briefly later in this testimony, is a highly challenging endeavor. Alaska Natives, as subsistence users, are often first to note changes in marine mammals that are important to assessing conditions in the marine environment. Section 119 recognizes these connections, and allows their potential benefits to be realized by providing a mechanism to access information available only to Native Alaskans.

Current Section 119 Successes and Limitations

Under this section and the existing cooperative agreements that it authorizes, the Administration works with its Native partners to develop management strategies that are implemented through existing authorities, such as tribal ordinances. The Administration believes that these cooperative agreements have been a positive addition to the Act. However, the conservation benefits provided by these management strategies are limited for several reasons. They are strictly voluntary endeavors carried out on a village-by-village basis, with further limitations related to the varying levels of compliance.

From a conservation standpoint, actively managing the harvest of marine mammal stocks is the best way to ensure their continued health. Currently, this is not possible because the MMPA does not allow subsistence harvests of marine mammal stocks to be managed unless those stocks are designated as depleted under the Act. The current lack of management measures on non-depleted stocks of marine mammals can lead to sharp declines in those stocks. Both the Department and our Alaska Native partners agree that it is essential that sound management of marine mammal harvests occur prior to depletion, in order to avoid depletion.

Last year, before this Subcommittee, the Department discussed the benefits of Section 119 and progress made in working with its Native partners in a number of areas. At that time, Chairman Young challenged those directly involved in marine

mammal management in Alaska to develop a proposal supporting management of subsistence harvest by Alaska Natives. We have been working hard with our federal and non-federal partners to meet that challenge.

In this vein, a proposal has been considered by this group that would provide a mechanism for Alaska Native Organizations to initiate the development of co-management agreements containing management restrictions, related to subsistence harvest, which would be administered by either the tribal or federal signatories to the agreement. Under this proposal, violations of the terms of the agreement, or of tribal ordinances enacted pursuant to the agreement, would be violations of the Act.

Implementation of Section 119

The Service currently has three cooperative agreements in place: (1) for sea otters, with the Alaska Sea Otter and Steller Sea Lion Commission; (2) for polar bears, with the Alaska Nanuuq Commission; and (3) for Pacific walruses, with the Eskimo Walrus Commission. These agreements have been in place since 1997 and provide a contractual framework for accomplishing specific activities, which are detailed through "scopes-of-work" attached to the cooperative agreement. Agreements are reviewed and implemented annually. A basic benefit of these agreements and the resources they provide is improved communication not only between the Commissions and ourselves, but also among the Commission members and hunters.

Both the Alaska Sea Otter and Steller Sea Lion Commission and the Service emphasize involving local Native organizations in the management of activities that affect sea otters throughout the State of Alaska. Such efforts include: development of local sea otter management plans; collection of traditional knowledge regarding sea otter distribution and abundance; and projects to assess local sea otter population status and health. Small boat surveys, conducted by local residents in their areas on an annual basis and following protocols developed in cooperation with the Service, have the potential to provide an important long-term data base for tracking population trends. In addition, the surveys provide a mechanism for incorporating local, traditional knowledge. This past year, funding through Section 119 also supported participation of the Commission in an international workshop on sea otters that focused in part on the ongoing decline of sea otters in the Aleutians.

The Alaska Nanuuq Commission (ANC) was formed in 1994 to represent Alaska Native hunters from 16 coastal communities in Alaska on polar bear matters. Our cooperative agreement with the ANC supports polar bear conservation through the direct involvement of subsistence users. A highlight of our work with the ANC has been its support in developing the bilateral agreement with Russia on the conservation of the Alaska–Chukotka polar bear population. The ANC coordinated meetings, conducted negotiations, and is developing a Native-to–Native agreement with Russia's Chukotka Natives to assist in implementing the agreement between countries. Another accomplishment of working with the ANC has been the expansion of the effort to study and compile traditional ecological knowledge of polar bear habitat use to include Chukotka, Russia. This expanded effort is being conducted in partnership with the National Park Service. An upcoming project for the ANC is a planned workshop to provide technical assistance to representatives from Chukotka to develop a harvest monitoring program in Chukotka.

Our agreements with the Eskimo Walrus Commission (EWC) relating to Pacific walrus support communications with village hunters, provide assistance with biological and contaminant monitoring, and promote sustainable harvest and conservation actions. An accomplishment of our partnership is the collection of information on Russian harvest of a shared U.S. - Russian population of walrus. The data collection effort began two years ago with the training of Russian harvest monitors in an Alaskan village during the Russian Spring harvest. We now have two years of Russian harvest data and an expanding program in Chukotka that provides important information on this shared population. Another focus of the EWC is to expand the harvest monitoring program in Alaska. To achieve this, joint efforts have been undertaken to include additional villages in the collection of specific harvest information and biological samples.

In sum, Mr. Chairman, while improvements to Section 119 have been discussed, that section does provide substantial benefits for marine mammal conservation, in addition to helping us forge and strengthen essential relationships with our Alaska Native partners. We believe Section 119 should be retained, even in the event that legislation relating to co-management is ultimately enacted. This would allow continued authorization of cooperative research and monitoring activities related to subsistence use even when the parties desire something less than full "co-management" of a marine mammal stock.

Monitoring Marine Mammal Populations

As I have mentioned, one of the benefits provided by Section 119 is the ability for the Service to access data collected by Alaska Natives. This data is used as a compliment to that collected by the Service through its own programs. The Service uses a variety of approaches to monitor populations of sea otter, polar bear, and Pacific walrus in Alaska. Sea otters are most commonly censussed using aerial and shipboard surveys. The advantage of aerial surveys is the ability to cover vast distances in a relatively short period of time. Shipboard surveys are generally less expensive than aerial surveys, and are typically used to monitor population trends in specific areas. Polar bear populations are monitored by aerial surveys and mark-recapture methods. In recent years, the Service has conducted surveys of polar bears in the southern Beaufort sea using helicopters flown from the deck of a Coast Guard icebreaker. Staff of the U.S. Geological Survey, Biological Resources Division have an ongoing mark-recapture study of polar bear populations with over 20 years of data.

The Pacific walrus population is perhaps the least studied of the Service's trust species of marine mammals. The last range-wide aerial survey of walrus was conducted in 1990, and as a result, the current population size is unknown. The aerial survey technique used at that time is generally considered to be inadequate for detecting population trends, and the Service is in the process of developing better survey methods for Pacific walrus. In the absence of range-wide population surveys, the Service monitors the walrus population by recording the numbers of male walrus that come ashore at several locations in Bristol Bay, Alaska. While this is not an estimate of the overall walrus population, biologists believe that it is a useful index of population trends.

In addition to monitoring the status and trend of the living population, the Service also records the number of marine mammals removed for subsistence purposes. In 1988, the Service initiated the Marine Mammal Marking, Tagging, and Reporting Program (MTRP). The program requires Alaska Natives to present the hide and skull of sea otters and polar bears, or the tusks of the Pacific walrus to a Service representative within 30 days of harvest. The representative attaches permanent tags to the specified items, and records basic biological information about the animal such as age class and gender. The MTRP currently has taggers in over 100 villages throughout coastal Alaska. The MTRP database contains records for 1,000 polar bears, 8,000 sea otters, and 20,000 walrus harvested by Alaska Natives. In addition to the MTRP, the Service also conducts and additional program to monitor the annual spring harvest of Pacific walrus in selected villages in the Bering sea. The Walrus Harvest Monitor Project collects basic harvest information and sample materials such as teeth for age determination and female reproductive tracts for life history analysis.

Export Prohibition

One of the 1994 amendments to the MMPA added to Section 102 a prohibition on exporting marine mammals. At that time, certain provisions of Section 104 of the Act, which authorizes the issuance of permits for various activities, were amended to reflect the new prohibition on exports. However, other appropriate corresponding changes were inadvertently not made in the Act. This has resulted in confusion for the regulated public. For example, Section 101(a)(6), also added in 1994, authorizes Native inhabitants of Russia, Canada, and Greenland to import marine mammal products into the United States in conjunction with personal travel. However, Section 101(a)(6) neglects to address the export of those imported products at the termination of the travel within the U.S. Similarly, the export prohibition added uncertainty as to whether handicrafts made and sold by Alaska Natives under Section 101(b) may be exported from the United States. The implementing agencies have been considering ways to clarify these ambiguities.

Southern Sea Otter - Fishery Interaction Data

Mr. Chairman, you requested that we provide testimony on the management of southern sea otters. This testimony will be presented later today by a different Service witness as part of the panel on California issues. However, I do want to briefly touch on one issue related to southern sea otters.

Pursuant to Section 118 of the Act, the Department is interested in gathering information on fishery interactions with southern sea otters. It is known that southern sea otters are incidentally taken in fishing operations. MMPA reauthorization may provide an opportunity to enhance efforts to assess the impact of commercial fisheries on this threatened sea otter population.

Polar Bear Trophy Permits

In 1994, Congress added a provision to the Act that allows the issuance of permits for the importation of certain trophies of sport-hunted polar bears. These trophies must be taken legally in Canada, and from populations for which certain findings have been made. The 1994 amendments specified that applications for such permits do not require review by the Marine Mammal Commission. However, the application process does require that public notice be given prior to, and after, issuance or denial of the permits.

In recent years, the Service has processed more than 100 applications annually for sport-hunted polar bear trophy importation permits. Although notice of each application has been published in the Federal Register, we have not received any public comments responding to these notices. MMPA reauthorization might provide an opportunity to streamline this process. One possible approach would be to consolidate the public notice requirement to a semi-annual listing in the Federal Register. Such an approach would also have an additional benefit of reducing administrative expenses associated with the public notice requirement.

Research Grants

The Administration also continues to be interested in the potential for research grants as described in Section 110(a). For example, one change to this provision that might be considered is a clarification that research grants authorized under this provision may be targeted at plant or animal community-level problems.

Community-level research could prove especially important in light of the significant, but poorly understood, environmental changes occurring off Alaska in the Bering Sea and Chukchi Sea regions. These environmental changes, which include rapid and extensive sea ice retreat, extreme weather events, and diminished benthic productivity, could have widespread effects. There is a pressing need to monitor the health and stability of these marine communities, and to resolve uncertainties concerning the causes of population declines of marine mammals, sea birds, and other living resources of these communities. Because residents of these regions largely depend upon marine resources for their livelihoods, research on subsistence uses of such resources, and providing ways for the continuation of such uses, should be integral parts of the effort to study these communities.

Similarly, there is concern over possible widespread changes to the California coastal marine community. These changes may be adversely affecting prospects for recovery of the threatened southern sea otter population. This community would similarly benefit from a system-wide study.

Definition of Harassment

Finally, the participating agencies have been looking at ways that the definition of the term "harassment," found in Section 3(18)(A) of the Act, can be clarified. The provision, added to the Act as part of the 1994 amendments, is viewed by some as ambiguous and confusing. Many also believe that it could be amended to provide greater notice and predictability to the regulated community and to improve the ability of federal agencies to enforce the prohibition on harassment, while continuing to protect marine mammals in the wild.

U.S. - Russia Polar Bear Agreement

Lastly, amendments to Section 113(d) enacted in 1994 authorized the Service, for the United States, to enter into negotiations with Russia to enhance the conservation and management of polar bear stocks. We have acted on this authorization. Since 1990, the Service has worked to improve cooperative research and management programs with Russia for the conservation of polar bears. Significant progress has been made in this effort. Building on this progress, United States and Russian representatives negotiated a bilateral agreement on the conservation and management of the shared Chukchi/Bering Seas polar bear population in February 1998. That agreement was signed by the two nations in Washington, D.C., on October 16, 2000.

The purpose of the Polar Bear Agreement is to ensure long-term, science based conservation of the Alaska–Chukotka polar bear population. A particular concern addressed by the agreement is the widely different harvest provisions and practices of the U.S. and Russia. Unknown (but potentially significant) levels of illegal harvest are occurring in Chukotka. While lawful harvest by Alaska Natives for subsistence purposes occurs in Alaska, as discussed above, United States law does not allow restrictions of this harvest unless a polar bear population becomes "depleted" under the MMPA. The Russian Federation will soon open a lawful polar bear hunting opportunity for the subsistence purposes of native Chukotkans. When this happens, there will be an immediate, pressing need for the coordination of harvest re-

strictions on both sides of the border to prevent an unsustainable combined harvest that could lead to the Alaska–Chukotka polar bear population becoming depleted under the MMPA and threatened or endangered under the Endangered Species Act. The Agreement will create a management framework to prevent this from happening.

In order for the Agreement to be implemented a number of steps still need to be taken: submission of the Agreement to the United States Senate by the Administration; ratification of the Agreement by the Senate; enactment of necessary implementing legislation and promulgation of regulations.

The Administration is also developing draft legislation to implement the Agreement; that legislation is currently undergoing review. The draft legislation will be consistent with, and will carry forward the spirit and stated intent of, the 1973 multi-lateral Agreement on the Conservation of Polar Bears, as well as domestic legislation. Of course, before any legislation is put forward, both it and any proposed amendments to the MMPA will undergo review by all federal agencies, including Department of Justice, who will review the package for legal sufficiency. The Agreement and the draft implementing legislation represent a major step forward for polar bear conservation, and enhance our collaborative efforts with Russia to conserve shared natural resources. The Administration looks forward to working with the Subcommittee to ensure introduction and passage of this legislation.

Conclusion

Mr. Chairman, in closing, I would like to state that this Administration is committed to conserving and managing marine mammals by working with our partners in a cooperative fashion. In particular, I want to emphasize the commitment to continued collaboration with our Alaska Native partners to further enhance their role in the conservation and management of marine mammals. We believe we can be more effective at addressing our responsibilities in marine mammal conservation, and look forward to working with you and members of the Subcommittee and full Committee to enact meaningful improvements to the Act during this Congress.

Mr. Chairman, this concludes my remarks. I would be happy to answer any questions.

Mr. GILCHREST. Thank you very much, Mr. Jones.

Dr. Reynolds?

STATEMENT OF JOHN E. REYNOLDS III, CHAIRMAN, MARINE MAMMAL COMMISSION

Mr. REYNOLDS. Thank you, Mr. Chairman, for inviting the Marine Mammal Commission to testify on the 1994 amendments to the Marine Mammal Protection Act and on further changes that we believe can make programs under the act even more effective.

At previous hearings in 1999 and 2000 we submitted detailed statements concerning implementation actions. I therefore am appending the commission's earlier statements to today's testimony, which focuses on recent actions, to provide the Committee with a complete picture of what has been accomplished and what remains to be done. I request that all three statements be included in the record.

Among the recent actions that have been taken to implement the 1994 amendments, I call your attention to the following. When I last testified before this Committee, not enough had been done to reduce the taking of Gulf of Maine harbor porpoise incidental to commercial fishing. Now it appears that the incidental mortality of this stock has been reduced to below the potential biological removal level.

My previous testimony also highlighted the need to establish a take reduction team to address the incidental taking of bottlenose dolphins associated with various fisheries along the Atlantic Coast. Now such a team has been established.

Regarding permits, the National Marine Fisheries Services, as we have heard, has published proposed revisions to its public display regulations to reflect the changes made by the 1994 amendments, and the Fish and Wildlife Service has taken action in response to recent information concerning the status and composition of the M'Clintock Channel polar bear population, and suspended the authorization to import trophies from this Canadian management unit.

Finally, amendments to Section 113 of the act called on the Secretary of the Interior, in consultation with the commission and others, to pursue cooperative research and management programs with Russia concerning the shared population of polar bears. As Mr. Jones has described, the result was a bilateral agreement to promote the conservation and management of the Alaska-Chukotka population of polar bears, which was signed last October. Ratification documents and proposed implementing legislation should be transmitted to Congress shortly.

Although progress toward full implementation of the 1994 amendments has certainly been made, several actions remain to be taken. These are identified in my full statement. Among these is the need to assess progress toward achieving the zero incidental mortality and serious injury rate goal for commercial fisheries, which under the 1994 amendments was to have been met by April of this year.

The commission was also asked to include in its testimony any changes in the act that we believe the Committee should consider during the current reauthorization of the act. In this regard, the commission has worked extensively with other agencies and with representatives of Alaska native organizations to identify all of the areas where the act needs to be strengthened or clarified, and to fashion a comprehensive legislative proposal to address those concerns.

Over the past few months, the National Marine Fisheries Service and the Fish and Wildlife Service, along with the commission, have been revisiting the bill submitted to Congress last session, and pending review within the administration, we expect to provide a new proposal to Congress shortly. On completion of that review, however, it would be inappropriate for me to discuss specific legislative proposals.

I can, however, identify a few problems that have been encountered and general areas that the commission will seek to have addressed in an administration bill. Among the key issues discussed in my full statement are the following:

First, whether refinements are needed to improve the take reduction team process;

Second, whether there is a need to clarify and enhance the registration and observer provisions of Section 118;

Third, whether California sea otters should be considered when categorizing fisheries and making decisions regarding observer placement;

Fourth, how to address incidental taking by recreational and other noncommercial fisheries which may be using identical or similar gear and fishing methods in the same areas as commercial fishermen;

Fifth, how to address the problems created by the 1994 amendments, which added an export prohibition to the act but which provided only limited exceptions as to when exports are or may be authorized;

Sixth, whether statutory provisions to address releases of captive marine mammals and traveling exhibits are needed;

Seventh, what actions may be necessary to ensure that the Animal and Plant Health Inspection Service has sufficient authority to regulate specific activities that present risk to captive marine mammals;

Next, whether clarification of the act's harassment definition is needed;

Ninth, how to improve upon the authority of Section 119 to provide a mechanism for concluding enforceable co-management agreements between Federal agencies and native Alaskan subsistence hunters;

Tenth, whether to update the ex-penalty provisions and other monetary limitations to reflect economic changes since 1972;

And, finally, how to improve enforcement of and compliance with the act.

Mr. Chairman, this concludes my presentation. I thank you for the opportunity to discuss these issues with you, and would be pleased to answer any questions you or the Committee may have.

[The prepared statement of Mr. Reynolds follows:]

Statement of Dr. John E. Reynolds, III, Chairman, Marine Mammal Commission

Thank you for providing the Marine Mammal Commission with the opportunity to advise the Committee on actions that have been taken to implement the 1994 amendments to the Marine Mammal Protection Act, problems that have arisen concerning implementation, and possible amendments. The Commission submitted a comprehensive statement concerning these subjects to the Committee on 29 June 1999 and provided additional testimony at a 6 April 2000 hearing that reviewed progress being made to implement the regime governing the taking of marine mammals incidental to commercial fishing operations. Rather than revisiting these matters, the Commission asks that its previous statements, which are appended, be made a part of the record of this hearing. This will enable us to provide an update, focusing on more recent developments, those places where action is still needed, and proposed amendments.

Since the earlier hearings, the Commission has worked extensively with other agencies and with representatives of Alaska Native organizations to identify all of the areas where the Act needs to be strengthened or clarified and to fashion a comprehensive legislative proposal to address those concerns. During the previous session of Congress, the Secretaries of Commerce and the Interior transmitted a proposed bill to this Committee and its Senate counterpart for their consideration. Over the course of the past few months, the National Marine Fisheries Service and the Fish and Wildlife Service, along with the Commission, have been reworking the bill and, pending review within the Administration, expect to be able to provide a revised proposal to Congress shortly. Of course, the Department of Justice will be involved in the development of any such proposal to ensure that it meets Constitutional scrutiny under the Commerce and other clauses.

Taking Incidental to Commercial Fisheries, Sections 117 and 118

As of the 6 April 2000 hearing on implementation of the incidental take regime for commercial fisheries, the National Marine Fisheries Service had established five take reduction teams to help develop plans to reduce the mortality and serious injury of strategic marine mammal stocks to below the stock's potential biological removal level, and eventually to a level approaching a zero rate. As noted in our earlier testimony, the Atlantic Offshore Cetacean Take Reduction Team was disbanded after the Service closed the swordfish gillnet fishery and portions of other fisheries that were to be the focus of the plan. At that time, the Service indicated that it

intended to reconstitute the team to address remaining issues. The team, however, has yet to be reconvened and the Service's plans in this regard remain uncertain.

Recently, the Service has initiated the process of establishing a bottlenose dolphin take reduction team to address the incidental taking of this species in a variety of fisheries along the Atlantic coast. Several general meetings were held to provide background information to potential team members, and a team, which includes the Commission's chairman and a Commission staff member, has now been selected. The first meeting of the team, originally scheduled for 12–13 September 2001, is expected to occur in the near future. Preparation of a take reduction plan for bottlenose dolphins sufficient to meet the mandates of the Act will be particularly challenging because of uncertainties concerning the stock structure of the species and incomplete information on the numbers of dolphins being killed or seriously injured incidental to fishing operations and on the locations and circumstances surrounding those takings. In this regard, the Commission encourages the Service to complete the analyses that will enable it to make better use of existing data and expand its observer programs for the suspected fisheries to obtain this essential information and to monitor the effectiveness of the take reduction measures that are eventually adopted.

Since the April 2000 hearing, it has become apparent that efforts to reduce the incidental mortality and serious injury of Gulf of Maine harbor porpoises have proven successful, and it is now believed that the level of such taking is below the stock's potential biological removal level. Although some of this reduction can be attributed to measures adopted under the take reduction plan, a large part appears to be due to measures taken under the Magnuson–Stevens Fishery Conservation and Management Act to reduce fishing effort. While the statutory and regulatory basis for the actions leading to the reductions may not matter, it should be recognized that fishery management plans are subject to different procedural and substantive standards and that the measures taken to reduce fishing effort could change in the future, possibly affecting the incidental take of harbor porpoises. This being the case, the Commission has recommended that the take reduction plan and its implementing regulations be amended to consolidate the take reduction gains under the Marine Mammal Protection Act authority.

As the Committee is well aware, the process for convening take reduction teams, translating the team's recommendations into a final plan, and promulgating implementing regulations has not always gone smoothly. To help address these problems, the responsible agencies are reviewing the take reduction team process. Among the possible refinements currently under consideration are directing the Service to appoint an individual with commercial fishing expertise to serve as a technical liaison to each take reduction team and requiring the Service, once it has formulated proposed implementing regulations, to reconvene or otherwise consult with the involved take reduction team to explain and solicit advice concerning any deviations from the draft take reduction plan submitted by the team.

The Commission also believes that review of other aspects of section 118 may be warranted. As the Commission has advocated in the past, we think that this provision may need to specify that a take reduction plan need not be prepared for those strategic stocks for which mortality or serious injury related to fisheries is inconsequential. We also believe that consideration should be given to an amendment to clarify that it constitutes a violation of the Act to participate in any category I or category II fishery without having registered as required by section 118, regardless of whether incidental takes occur. Other possible changes that would strengthen this provision also need to be reviewed. Among the proposals meriting consideration are to specify that all participants in category I or category II fisheries, whether registered or not, are subject to the observer requirements of section 118 and that fishery-related mortalities and injuries of California sea otters should be factored into determinations with respect to listing fisheries and placing observers under section 118.

Another problem that has been identified is that coverage of the section 118 incidental take regime is limited to commercial fisheries. However, in some cases, recreational and other non-commercial fishermen are using identical or similar gear and fish for the same species in the same areas. Although these fisheries presumably present incidental take problems similar to their commercial counterparts, they are not included within the coverage of the Act's incidental taking authorization and have no responsibility to register, carry observers, report marine mammal injuries and mortalities, or comply with the terms of take reduction plans. The responsible agencies are currently reviewing this issue.

The Commission's June 1999 testimony noted that available funding has not always been sufficient to place observers within all fisheries that need to be monitored or to place them at levels needed to provide statistically reliable results. We again

call this issue to the Committee's attention, requesting that it explore possible solutions. One possible solution would be to require a contribution from the involved fisheries to help support a more comprehensive monitoring program.

As a housekeeping measure, we recommend that section 114 of the Act, which established the pre-existing, interim exemption for commercial fisheries, be struck, along with references to that section in other statutory provisions. Similarly, section 120(j), pertaining to the Gulf of Maine harbor porpoise, is no longer operative and should be deleted.

The Commission would also like to take this opportunity to update the Committee on the outstanding issues preventing full implementation of section 118. Section 118(b) mandates that commercial fisheries reduce the incidental mortality and serious injury of marine mammals to insignificant levels approaching a zero mortality and serious injury rate within seven years of enactment of the 1994 amendments that is, by 30 April 2001. Further, the National Marine Fisheries Service was to review the progress toward meeting that goal on a fishery-by-fishery basis and submit a report of its findings to Congress by the end of April 1998. Although considerable work was done on the report, it has yet to be completed and transmitted to Congress.

In hindsight, the zero mortality and serious injury rate goal appears to have been overly ambitious. While this goal likely has been achieved for some fisheries, it remains a considerable challenge to bring mortality and serious injuries down to such a level across the board. Although the existing statutory deadlines have passed, the Commission believes that a comprehensive progress report on where we stand with respect to meeting the goal, as originally envisioned by Congress in the 1994 amendments, continues to be a worthwhile undertaking and should be pursued under a revised schedule. Likewise, we encourage the Committee to adopt a revised schedule for meeting the zero mortality and serious injury rate goal and provide sufficient resources to enable the agencies and fishermen to adhere to that schedule.

One of the problems that has been encountered with respect to determining if the zero mortality and serious injury rate goal has been met is the lack of clear guidance as to how it should be quantified. We encourage the Committee, in consultation with the responsible agencies and other interested parties, to provide such guidance during the reauthorization process. In this regard, the Commission has endorsed a two-tiered approach that equates the goal with reducing mortalities and serious injuries to some biologically insignificant level (*e.g.*, 10 percent of a stock's potential biological removal level) for most stocks, but that also establishes a numerical cap to ensure that the taking of large numbers of marine mammals from abundant stocks would not be deemed as meeting the goal.

Another related issue that has yet to be fully resolved is the delineation of when an injury to a marine mammal is to be considered serious. Under section 118, fishermen are required to report all injuries, but only mortalities and serious injuries are to be considered when classifying fisheries and developing take reduction plans and in determining if the zero mortality rate goal has been achieved. Although the National Marine Fisheries Service, in its implementing regulations, has defined "serious injury" as any injury that will likely result in mortality, it is not always apparent at the time a marine mammal is released from fishing gear whether its injuries are life-threatening. To address this issue, the Service held a workshop in 1997 to establish more definitive criteria for differentiating between serious and non-serious injuries. It was expected that the workshop would enable the Service to publish clear guidelines for determining when injuries are to be considered serious. However, such guidelines, which the Commission still believes would be useful, have yet to be issued.

Taking of Endangered and Threatened Species Incidental to Commercial Fisheries, Section 101(a)(5)(E)

Section 101(a)(5)(E) directs the National Marine Fisheries Service to authorize the incidental taking of marine mammals listed as endangered or threatened if it determines that 1) the incidental mortality and serious injury from commercial fisheries will have a negligible impact on the species or stocks; 2) a recovery plan has been, or is being, developed for the species or stock under the Endangered Species Act; and 3) where required under section 118, a monitoring program has been established, the vessels are registered, and a take reduction plan has been, or is being, developed. The Service is to publish a list of the fisheries to which the authorization applies and, for vessels required to register under section 118, issue appropriate permits. Vessels participating in fisheries included on the list, but which are not required to register, are covered by the authorization, provided that they report any incidental mortality or serious injury.

The most recent authorizations under this provision were published by the Service in October 2000. They authorize the incidental taking of fin, humpback, and sperm whales and Steller sea lions in the California/Oregon drift gillnet fishery for thresher shark and swordfish.

Pinniped–Fisheries Interactions, Section 120

Section 120, added by the 1994 amendments, called on the Secretary of Commerce to study pinniped-fishery interactions and provided a mechanism for authorizing the lethal removal of individual pinnipeds that are adversely affecting certain salmonid stocks without obtaining a waiver of the Act's moratorium on taking. As discussed in the Commission's previous testimony before this Committee, the National Marine Fisheries Service provided a report to Congress in 1997 on the findings of a task force established to examine interaction problems between pinnipeds and aquaculture operations in the Gulf of Maine. In 1999, a report on the impacts of California sea lions and Pacific harbor seals on salmonid stocks and West Coast ecosystems was also provided to Congress. The Commission expects that this Congress will consider those reports as it fashions a reauthorization bill. We welcome the opportunity to work with the Committee on specific proposals if it determines that amendments to address these issues are needed.

Non–Lethal Deterrence of Marine Mammals, Section 101(a)(4)

Section 101(a)(4), as amended in 1994, authorizes fishermen to use non-lethal means to deter a marine mammal from damaging their gear or catch. This provision also authorizes owners of private property or their agents to use non-lethal means to deter marine mammals from damaging that property and government employees to deter marine mammals from damaging public property. Non-lethal deterrence of marine mammals to prevent endangerment of personal safety also is authorized under this provision. In each case, however, the deterrence measures used must not result in the death or serious injury of a marine mammal.

To implement this provision, the Secretaries of Commerce and the Interior, in consultation with appropriate experts, were required to publish guidelines setting forth the measures that may be taken to deter marine mammals safely and to prohibit, by regulation, any form of deterrence that is determined to have a significant adverse effect on marine mammals. For species listed as threatened or endangered under the Endangered Species Act, the Secretaries were to specify non-lethal deterrence measures that may be used.

The National Marine Fisheries Service issued proposed deterrence regulations in 1995, but has yet to publish final regulations. No measures for safely deterring endangered and threatened marine mammals have been proposed. In this regard, it should be noted that, even if the Service were to identify measures for safely deterring endangered and threatened species under the Marine Mammal Protection Act, employing such measures likely would constitute a violation of the Endangered Species Act, which contains no similar provision authorizing intentional taking. The Fish and Wildlife Service has yet to take any action to implement the deterrence provision.

Permits for Public Display, Scientific Research, and Other Purposes, Section 104

The 1994 amendments included changes to most of the Act's permit provisions and added authority for the issuance of permits for commercial and educational photography and the importation of polar bear trophies from Canada. Some, but not all, of the actions needed to implement these provisions have been taken by the regulatory agencies.

The National Marine Fisheries Service, some time ago, revised its regulations concerning general permitting issues and scientific research permits. Also, as required by the 1994 amendments, the Service published an interim final rule in 1994 implementing the general authorization for scientific research involving only Level B harassment. We understand that the Service intends to replace the interim regulations with a permanent rule, but it has yet to do so. Recently, the Service published proposed revisions to its public display regulations to reflect the 1994 amendments. Those regulations are currently open for public comment. We have been advised that the Service also intends to issue specific regulations concerning permits for educational and commercial photography to supplement its existing general regulations.

The Fish and Wildlife Service has concentrated its efforts on implementing the 1994 amendment concerning the importation of polar bear trophies legally taken in Canada's sport hunts. Regulations authorizing imports from 5 of Canada's 12 management units were published in 1997. Affirmative findings with respect to two additional management units were published in 1999. A recent survey of the M'Clintock Channel polar bear population, one of the originally approved manage-

ment units, indicated that it was less abundant than originally believed and that the population was heavily skewed toward females, suggesting that the number of males had been reduced by hunting. This prompted the Service, on 10 January 2001, to publish an emergency interim rule rescinding the previous finding for this population.

The 1994 amendments directed the Fish and Wildlife Service to undertake a scientific review of the impact of issuing import permits on the polar bear populations in Canada. No further import permits could be issued if the review indicated that allowing polar bears to be imported into the United States is having a significant adverse effect on Canadian polar bear stocks. The review originally was to have been completed by 30 April 1996. Inasmuch as regulations authorizing any imports had yet to be finalized by that date, however, the Service indicated in its 1997 final rule that it would delay the review for two years. We understand that the Service has been working on this review but, as of yet, it has not been completed.

The Fish and Wildlife Service has yet to amend its permit regulations to reflect any of the 1994 amendments to section 104. As such, implementation of these provisions has largely been on an ad hoc basis. Among other things, the Service needs to promulgate regulations governing the general authorization for scientific research created under the 1994 amendments as specifically required by section 104(c)(3)(C) of the Act.

The Commission believes that several amendments related to the Act's permit provisions are warranted. First, we think that sections 101(a) and 104 should be amended to clarify that permits can be issued to authorize the export, as well as the taking and importation, of marine mammals.

The Commission notes that little purpose seems to be served by the publication and comment requirements of section 104 as they pertain to permits for the importation of polar bear trophies from Canada. The crucial question is whether to approve a population for import, a determination that would remain subject to public notice and comment. At the permitting stage, however, the only question is whether the bear to be imported was taken legally from an approved population. More than 400 polar bear trophy import permits that have been issued since 1997, and the Fish and Wildlife Service has received no substantive comments on any of them. Considerable costs could be avoided by eliminating the publication requirement for this class of permits. Nevertheless, it is important that the public continue to have access to information on the numbers of permits issued and on the ages, sexes, and taking locations of the bears authorized to be imported.

As detailed in prior Commission testimony, the return of captive marine mammals to the wild has the potential to pose significant risks to the animals unless it is well planned, the animals are thoroughly prepared, and there is adequate post-release monitoring. Moreover, the released animals may present a risk to humans they encounter and to wild marine mammal populations. The Commission continues to believe that this is an issue that merits review.

Also as previously discussed by the Commission, traveling marine mammal exhibits, by their very nature, present special problems for successful maintenance of the animals. We believe that, at least with respect to cetaceans, the risks to the animals in mobile or transient facilities are unacceptably high and that such displays should not be allowed. This view is shared by the National Marine Fisheries Service, which, until nullified by the shift in agency responsibilities under the 1994 amendments, had in place a policy not to authorize traveling cetacean exhibits. Such matters now are solely within the jurisdiction of the Animal and Plant Health Inspection Service, which has taken the position that it does not have authority under the Animal Welfare Act to prohibit such exhibits. While we disagree with this interpretation, and believe that this issue could be addressed by regulation, given the agency's view of its authority, we believe that a statutory clarification may be necessary.

More recently, serious questions have arisen concerning the level of care being provided to polar bears in a traveling exhibit currently touring Puerto Rico. The types of problems that have been encountered (*e.g.*, maintaining temperatures within acceptable levels) seem to be related, at least in part, to the transitory nature of the display. This being the case, the Committee, as it considers this issue, might want to consider a ban on traveling exhibits that includes taxa other than cetaceans. We note, however, that polar bears, in general, are hardier than cetaceans and that the problems associated with the polar bear exhibit might be more a function of the individual facility and the fact that a polar species is being housed outdoors in a tropical climate. With respect to this last point, the Commission has recommended that the Animal and Plant Health Inspection Service, in consultation with independent experts, review the appropriateness of allowing polar species to be maintained in outdoor tropical environments and, as warranted based on the results of that review, revise its care and maintenance standards accordingly.

The Service has replied that such an evaluation would be worthwhile, but concluded that it is beyond the scope of its authority under the Animal Welfare Act to prohibit such a practice. Again, the Commission disagrees with the Service's conclusions concerning the breadth of the actions that can be taken under the Animal Welfare Act. In this regard, we note that, under the 1994 amendments to the Marine Mammal Protection Act, the Animal Welfare Act is left as the sole federal authority available to ensure the well-being and humane maintenance of captive marine mammals. While we are not advocating a return to the shared jurisdiction over captive marine mammals that existed prior to 1994, we recommend that the Committee review the scope of the Animal Welfare Act as it pertains to marine mammals and provide additional guidance, as appropriate, either through amendment or in report language.

Prohibitions—Exports of Marine Mammals, Section 102(a)(4)

The package of permit-related amendments enacted in 1994 also amended section 102(a)(4) of the Act to add a prohibition against exporting any marine mammal or marine mammal product taken in violation of the Act or for any purpose other than public display, scientific research, or species enhancement. The language of this provision is problematic in two ways. As noted in our 1999 testimony, the amendment resurrected an enforcement problem that previously had been fixed in 1981 by reinstating the requirement that, to bring an action for the otherwise illegal transport, purchase, sale, or export of a marine mammal product, the government must show that the underlying taking was also in violation of the Act. As noted in the legislative report accompanying the 1981 amendment, this confounds enforcement actions by enabling marine mammals originally taken for legitimate purposes (*e.g.*, Native subsistence) to be diverted to other ends. The Commission continues to believe that this is an issue warranting review.

The second problem noted in our earlier testimony is that the language of the 1994 amendment restricts exports to those made for purposes of public display, scientific research, or species enhancement. Exports for other purposes (*e.g.*, for cultural exchanges, associated with personal foreign travel, or pursuant to a waiver of the Act's moratorium on taking and importing marine mammals) technically are not permissible. There also exists some question as to whether the export prohibition applies to handicrafts made and sold by Alaska Natives pursuant to section 101(b) of the Act. The Commission, along with the Fish and Wildlife Service and the National Marine Fisheries Service, has conducted a comprehensive review of the Act to help ensure that exports and other transactions involving marine mammals can continue to occur as Congress apparently intended prior to 1994. The Commission intends to pursue this issue as the Administration considers reauthorization proposals.

Imports Associated with Personal Travel and Cultural Exchanges, Section 101(a)(6)

In addition to highlighting the problems associated with exporting items allowed to be imported or exchanged under section 101(a)(6), the Commission's previous testimony recommended that the National Marine Fisheries Service and the Fish and Wildlife Service explore the appropriateness of developing a registration and tracking program to monitor compliance with this provision and consider whether the benefits of such a program would outweigh the costs. To date, neither agency has responded to this recommendation, and we are unaware of any analysis that has been done to assess the merit of such a program. Other than an amendment to overcome the export problem noted above, no changes are needed to this section.

Definitions, Section 3

The Commission's 1999 testimony noted that the definition of "harassment" added to section 3 in 1994 had created some practical difficulties related to interpretation and enforcement. We anticipate that any reauthorization bill forthcoming from the Administration will address this issue.

Small–Take Provisions, Section 101(a)(5)

The 1994 amendments added a new provision to section 101(a)(5) allowing the National Marine Fisheries Service and the Fish and Wildlife Service to use streamlined procedures (notice and comment) to authorize the taking of small numbers of marine mammals by harassment incidental to otherwise lawful activities when such taking will have negligible impacts on marine mammal populations. Prior to enactment of those amendments, such taking could only be authorized by regulation. As noted in our 1999 testimony, the National Marine Fisheries Service has revised its small-take regulations to reflect the new provisions. However, the Fish and Wildlife Service has yet to update its regulations.

The Commission, in its 1999 testimony, noted one possible problem with the new authority. Incidental harassment authorizations are limited to one-year periods. As

such, some applicants are segmenting long-term projects into one-year intervals and seeking a separate authorization for each such period. By doing so, it becomes difficult for the reviewing agencies to assess possible long-term and cumulative impacts that could have more than negligible impacts on marine mammal populations. The Commission reiterates its recommendation that Congress consider ways to address this problem, for example, by lengthening the period for which such authorizations may be issued.

Polar Bear Agreements, Section 113

Amendments to section 113 enacted in 1994 called on the Secretary of the Interior to undertake two reviews with respect to the Agreement on the Conservation of Polar Bears. Section 113(b) required the Secretary, in consultation with the other four parties to the agreement, to review the effectiveness of the agreement and to establish a process for conducting future reviews. Although all parties have been consulted, preparation of a final report is awaiting an official response from one of the parties.

The Secretary in consultation with the Secretary of State and the Marine Mammal Commission, was also directed to undertake a review of domestic implementation of the polar bear agreement, with special attention to be given to the agreement's habitat protection mandates. A report on the results of that review was to be submitted to Congress by 1 April 1995. Although the Fish and Wildlife Service convened a workshop in 1995 to review U.S. implementation of the agreement and circulated a draft report in 1996,the report it has yet to be finalized and transmitted to Congress.

The 1994 amendments also called on the Secretary of the Interior, acting through the Secretary of State and in consultation with the Marine Mammal Commission and the State of Alaska, to consult with appropriate Russian officials in an effort to develop and implement enhanced cooperative research and management programs for conserving the shared population of polar bears. A report on the consultations and periodic progress reports on research and management actions taken under this provision are to be provided to Congress. Pursuant to this directive, the United States has negotiated a bilateral agreement with the Russian Federation, which was signed by the two parties last October. The advice and consent of the Senate is needed before the agreement enters into force. It is expected that the ratification documents, along with proposed implementing legislation, will be transmitted to Congress shortly.

Co–Management Agreements, Section 119

Both the Fish and Wildlife Service and the National Marine Fisheries Service have entered into cooperative agreements with various Alaska Native organizations to promote the conservation and co-management of marine mammal stocks taken for subsistence. Since 1997, the Fish and Wildlife Service has entered into annual agreements with the Eskimo Walrus Commission, the Alaska Sea Otter and Steller Sea Lion Commission (for sea otters), and the Nanuuq Commission (for polar bears). The National Marine Fisheries Service has concluded agreements with the Alaska Native Harbor Seal Commission and with the Alaska Beluga Whale Commission. In addition, the Service has entered into a co-management agreement with the Cook Inlet Marine Mammal Council to authorize the limited taking of beluga whales from this depleted stock, which otherwise is prohibited by section 627 of Public Law 106–553, enacted last December. This year, the strike of a single Cook Inlet beluga whale was allocated to the Native Village of Tyonek, which successfully harvested the whale in July. The National Marine Fisheries Service is also working to conclude a cooperative agreement with the Alaska Sea Otter and Steller Sea Lion Commission for Steller sea lions and with tribal governments in the Pribilof Islands for fur seals and Steller sea lions.

Despite the success of the Services and Alaska Native groups in concluding agreements and carrying out actions of mutual interest under them, both the government agencies and the Native groups recognize that much more could be accomplished in appropriate instances if the Act provided a mechanism to make co-management agreements enforceable among and between the parties. For example, the overharvesting of the Cook Inlet beluga whales by a few hunters during the late 1990s, which reduced the population by half in only four years and which led to the stock's designation as depleted, likely could have been avoided had there been such an authority in the Act at that time.

At the April 2000 hearing of this Committee, the former chairman urged the responsible government agencies to work with the affected Native groups to develop a proposal for such legislation. Pursuant to that charge, the Fish and Wildlife Service, the National Marine Fisheries Service, and the Marine Mammal Commission

held a two-day session with representatives of the Indigenous People's Council for Marine Mammals (IPCoMM). Over the course of subsequent weeks, a preliminary consensus concerning the details of the joint proposal was reached among the negotiating parties. The agreement was carefully crafted to achieve the joint goals of marine mammal conservation and protection of Native subsistence practices. We will consider this agreement in our review of the Administration bill.

Authorization of Appropriations

The Marine Mammal Protection Act contains several authorization provisions, including those for general appropriations under sections 116 and 207 pertaining to the activities of the Department of Commerce, the Department of the Interior, and the Marine Mammal Commission under the Act. The Commission recommends that appropriations be reauthorized for a five-year period. Also coverage could include section 405 to authorize the Secretary of Commerce to allocate appropriated funds toward responses to unusual mortality events. Currently, only donations and specifically earmarked monies can be placed in the response fund.

Other Issues Meriting Attention

As the Commission noted in 1999, several provisions of the Act setting monetary limits have not been updated to reflect economic changes since they were enacted in 1972. These include the Act's penalty provisions, which establish upper limits on fines that are quite low as compared with other natural resources statutes. We recommend that the provisions of sections 105 and 106 be reviewed and that increases to the available penalties be considered. We also recommend that Congress review section 206(4), which places a limit of $100 per day on the amount the Commission can expend in procuring the services of outside experts and consultants, and consider ways to place the Commission on an equal footing with other agencies when seeking such services.

The Commission supports the freestanding provision enacted in 1999 and codified as part of the Marine Mammal Protection Act (16 U.S.C. § 1375a) that allows fines collected by the Fish and Wildlife Service for violations of the Act to be used for activities directed at the protection and recovery of manatees, polar bears, sea otters, and walruses. We believe that similar authority for the National Marine Fisheries Service, enabling it to use penalties collected under the Marine Mammal Protection Act for the conservation of species under its jurisdiction, would likewise benefit the agency's ability to carry out its mandates under the Act .

The Commission also believes that the Committee should consider ways for improving compliance with, and enforcement of, the Act. Such proposals might usefully include adding a prohibition against interfering with enforcement investigations, increasing penalties for violations that harm or threaten enforcement officials, and allowing seizure and forfeiture of a vessel's cargo for fishing in violation of the requirements of section 118.

Another provision that merits overhauling by the Committee is section 110, which identifies specific research projects to be carried out by the regulatory agencies. The time frames for completing the existing activities set forth in this section have elapsed. As such, those provisions that are no longer operative should be deleted. In their place, the Committee should consider a more generic directive to the agencies, enabling the agencies to pursue pressing, broad-scale projects. Among the studies that might be worthwhile are an investigation of ecosystem-wide shifts in the Bering and Chukchi Seas and an examination of possible changes in the coastal California marine ecosystem that may be contributing to the recent declines in the California sea otter population.

[Attachments to Mr. Reynolds statement follow:]

STATEMENT OF THE MARINE MAMMAL COMMISSION

Submitted to the House Committee on Resources, Subcommittee on Fisheries Conservation, Wildlife, and Oceans, for the Oversight Hearing Regarding Implementation of the 1994 Amendments to the Marine Mammal Protection Act

29 June 1999

Pursuant to section 204 of the Marine Mammal Protection Act, the Marine Mammal Commission transmits to Congress, by January 31 of each year, a report describing its activities and accomplishments during the preceding year and setting forth the recommendations made by the Commission to other Federal agencies along with their responses thereto. The Commission's annual report for calendar year 1998 was transmitted to this Committee earlier this year. Among the other duties of the Commission, as set forth in section 202(a) of the Act, is to recommend to the Secretaries of Commerce and the Interior and other Federal officials such steps as it deems necessary or desirable for the protection and conservation of marine mammals. Further, the Commission is tasked with recommending to the Secretaries and to Congress such additional measures as it deems necessary or desirable to further the policies of the Act, including provisions for the protection of Indians, Eskimos, and Aleuts, whose livelihood may be adversely affected by actions taken under the Act. In furtherance of these obligations, the Commission has prepared this statement reviewing steps taken to implement the 1994 amendments to the Marine Mammal Protection Act, to identify actions that remain to be completed, and to highlight areas in which we believe Congress should focus its attention as it considers reauthorization of the Act.

The Marine Mammal Protection Act Amendments of 1994, Public Law 103-238, made extensive changes to the Marine Mammal Protection Act. The amendments included the addition of four new sections to the Act and revisions to 15 pre-existing sections.

Taking Incidental to Commercial Fisheries, Sections 117 and 118

The centerpiece of the 1994 amendments was the adoption of a new regime to govern the take of marine mammals incidental to commercial fishing operations. The new regime was structured in part upon scientifically based guidelines developed by the Commission and represented a compromise approach embraced by commercial fishing interests and environmental and animal welfare organizations. Rather than requiring fishermen to demonstrate that affected marine mammal stocks are at optimum sustainable population levels and will not be disadvantaged before any incidental taking could be authorized, as had been the case until 1988, the amendments allow incidental taking subject to the requirements that incidental mortality and serious injury of marine mammals be reduced to levels below a stock's potential biological removal level and, ultimately, to insignificant levels approaching a zero mortality and serious injury rate. A stock's potential biological removal level is calculated using a statutorily defined formula designed to ensure that any stock currently within its optimum sustainable population range will remain so, and that any stock below its maximum net productivity level will increase toward that level. The Commission believes that the current methodology for determining potential biological removal levels is scientifically sound, appropriately takes into account the amount and quality of information regarding a population, is appropriately conservative, and should be left unchanged.

The new incidental take regime replaced the interim exemption enacted in 1988 as section 114 of the Act. Inasmuch as section 114 is no longer in effect, the Commission recommends that, as a housekeeping measure, it be repealed. Conforming changes to other provisions that reference section 114, *e.g.* section 102(a), would also be necessary.

a. Stock assessments

Section 117, added by the 1994 amendments, requires the National Marine Fisheries Service and the Fish and Wildlife Service to publish and periodically update an assessment for each stock of marine mammal that occurs in U.S. waters. Among other things, the assessments are to provide a minimum population estimate and determination of current population trend, estimate annual human-caused mortality and serious injury, estimate the stock's potential biological removal level, and indicate whether or not the stock is a strategic stock. A strategic stock is defined as one that is listed as endangered or threatened under the Endangered Species Act or declining and likely to be listed in the foreseeable future, designated as depleted under the Marine Mammal Protection Act, or for which human-caused mortality exceeds the estimated potential biological removal level. Section 117 also required the National Marine Fisheries Service to establish three regional scientific review groups to advise the Service on the information to be included in the stock assessments and on research needs. The Commission believes that the process for preparing and obtaining expert scientific review of stock assessments is working well and does not recommend any amendment of section 117.

b. Incidental take authorization

Section 118 sets forth the operational requirements of the new incidental take regime. It requires the National Marine Fisheries Service to classify commercial fisheries according to the frequency with which marine mammals are killed or seriously injured. Fishermen operating in fisheries that frequently or occasionally kill or seriously injure marine mammals (category I and II fisheries) are required to register and, when requested, carry observers on their vessels. All fishermen are required to report any marine mammal mortalities and injuries that occur incidental to their operations.

This process has been working reasonably well. In some fisheries, however, not all vessel owners required to register have been doing so. In this regard, the National Marine Fisheries Service apparently believes that there is some ambiguity as to whether it is a violation of the Marine Mammal Protection Act to conduct fishing operations in a category I or II fishery without first registering and obtaining an authorization certificate. As a result, the Service has been reluctant to take enforcement actions against these fishermen. Also, inasmuch as the requirement to carry observers only applies to registered vessels, the Service's ability to monitor some fisheries has been compromised by the lack of full compliance with the registration requirement.

The Commission believes that the applicable provision of the Act is clear. Section 118(c)(3)(C) specifies that it is a violation of the Act to engage in a category I or II fishery without having obtained the required authorization — *i.e.*, without having registered. Failure to register constitutes a serious violation of the Act and should be treated as such, with the assessment of a substantial penalty under section 105. Although we believe that the existing provision is clear, this is an important enough issue that clarification, either by amendment or in report language, is appropriate. In addition, the Commission believes that Congress should consider strengthening the incentive for fishermen to register by amending section 106 of the Act to enable the Service to seek the forfeiture of the catch from any fishing operations conducted without obtaining the required authorization or to assess a substantial fine against the vessel.

The Commission also notes that available funding does not seem to have been sufficient to place observers within all fisheries and on all fishing vessels that need to be monitored or to place them at levels needed to provide statistically reliable results. To address this, the Commission recommends that Congress consult with the National Marine Fisheries Service to determine the cost of an adequate observer program and to explore alternatives that would require a contribution from the involved fisheries.

The amendments directed the National Marine Fisheries Service to develop and implement a take reduction plan for each strategic stock that interacts with a category I or category II fishery. The initial objective of a take reduction plan is to reduce incidental mortality and serious injury to less than the stock's potential biological removal level within six months of implementing the plan. The long-term goal is to reduce, within five years of the plan's implementation, incidental mortality and serious injury to insignificant levels approaching a zero mortality and serious injury rate. Each plan is to be developed based upon the recommendations of a take reduction team consisting of representatives of Federal and State agencies, fishery management councils, academic and scientific organizations, environmental groups, commercial and recreational fishermen, and, when appropriate, Alaska Native organizations or Indian tribes.

c. Take reduction plans

To date, the National Marine Fisheries Service has established five take reduction teams, all of which have submitted a recommended take reduction plan. In all but one case the Service has issued a final plan and has published regulations to implement the plan. The one exception is the Atlantic Offshore Cetacean Take Reduction Plan, which, because of restrictions on the swordfish gillnet fishery imposed under the Magnuson-Stevens Fishery Conservation and Management Act, is no longer pertinent to the primary threat it was designed to address. This being the case, the National Marine Fisheries Service intends to reconstitute the take reduction team to consider whether the plan needs to be revised to reduce the taking of cetaceans in other offshore fisheries.

Among the plans that have been implemented, the most successful has been the Pacific Offshore Cetacean Take Reduction Plan. Regulations instituted in 1997 to require nets to be set at least 36 feet below the ocean surface and to require the use of pingers appear to have succeeded in reducing mortalities and serious injuries to less than the potential biological removal level for all strategic stocks. Although regulations establishing time and area closures and requiring that pingers be placed on nets have been adopted to implement the take reduction plans aimed at reducing the mortality and serious injury of harbor porpoises in the Gulf of Maine and in mid-Atlantic gillnet fisheries, it remains unclear that these measures will be effective in reducing take levels to anywhere near the stock's potential biological removal level. Also, the effectiveness of the Atlantic Large Whale Take Reduction Plan, aimed at reducing the take of right and humpback whales in coastal gillnet and lobster pot fisheries, is questionable. Thus far this year, at least four right whales have become entangled in gear from these fisheries. The potential biological removal level for this highly endangered species is less than one. While some progress has been made toward meeting the take reduction mandates of section 118, oftentimes actions have taken too long to implement and have not fully addressed the fishery-marine mammal interaction problems.

Of particular concern to Congress when it passed the 1994 amendments was the high level of take of harbor porpoise from the Gulf of Maine stock. Although a special provision was included to enable the National Marine Fisheries Service to expedite publication of the assessment of this stock, the Service did not avail itself of that opportunity. Congress also recognized the special difficulty there might be in reducing fishery-related mortality and serious injury of Gulf of Maine harbor porpoises to below the stock's potential biological removal level and allowed the Service to extend the time needed to meet that goal until 1 April 1997. Despite this specific time frame, mortality and serious injury have continued to exceed the stock's potential biological removal level by a considerable amount.

The Commission is hopeful that additional measures instituted by the Service earlier this year, including time and area closures and requirements to deploy pingers on nets, will result in substantial reductions in the number of harbor

porpoises incidentally killed and injured. However, it is doubtful that those measures alone will be sufficient to achieve the required reductions. Under a settlement agreement reached between the Service and environmental groups that challenged its failure to reduce the incidental take of harbor porpoise within the statutorily mandated time frame, estimates of mortalities and serious injuries for the first four months of this year are to be made available by the end of July.

As the Act is currently written, the National Marine Fisheries Service is required to prepare and implement a take reduction plan for all strategic stocks that interact with a category I or II fishery. It should be noted, however, that for some stocks, the frequency of interaction may be relatively low and that the reason a stock is considered strategic (*e.g.* it is listed as endangered or threatened) may have nothing to do with taking incidental to commercial fisheries. Although section 118(f)(3) assigns highest priority to developing plans for those stocks for which fisheries-related taking exceeds the potential biological removal level, those that have a small population size, and those that are declining most rapidly, there should be some recognition that some strategic stocks simply will not benefit from development of a take reduction plan. The Commission therefore recommends that the Act be amended to specify that plans need not be prepared for those strategic stocks for which mortality or serious injury resulting from commercial fisheries is inconsequential.

The Commission believes that certain stocks of bottlenose dolphins, which are taken in a variety of fisheries along the Atlantic Coast, can benefit from the development and implementation of a take reduction plan. Although it has been difficult to assess the impact of commercial fisheries and other human activities on this species because of considerable uncertainty regarding stock structure, based on the number of bottlenose dolphin carcasses recovered with net markings or other evidence of having been entangled in fishing gear, the impact could be substantial. In addition to preparation of a take reduction plan, it would be useful for the Service to institute an expanded observer program to get a better handle on the number of bottlenose dolphins being taken in commercial fisheries along the Atlantic coast.

d. Zero mortality rate goal

Regulations implementing most provisions of section 118 were issued by the Service in 1995. A couple of issues, however, remain outstanding. Section 118(b) mandates that commercial fisheries reduce the incidental mortality and serious injury of marine mammals to insignificant levels approaching a zero mortality and serious injury rate within seven years — that is, by 30 April 2001. Beginning in 1997, the National Marine Fisheries Service was to review the progress toward meeting that goal on a fishery by fishery basis and submit a report of its findings to Congress by the end of April 1998. Although considerable work has been done, the report has yet to be completed. As we understand it, one of the sticking points has been how to quantify the zero mortality rate goal. In commenting on an earlier Service proposal, the Commission noted that, while it may be appropriate to equate the goal with reducing mortalities and serious injuries to some biologically insignificant level (*e.g.*, 10 percent of a stock's potential biological removal level), for certain large stocks, this would still allow large numbers of animals to be taken. The Commission therefore favors a two-tiered approach, pegged not only to some percentage of a stock's potential biological removal level, but to some numerical limit.

e. Serious injuries

Another issue that has yet to be fully resolved is determining when an injury to a marine mammal is to be considered serious. Under section 118, fishermen are required to report all injuries, but only mortalities and serious injuries are to be considered when classifying fisheries and developing take reduction plans and in determining if the zero mortality rate goal has been achieved. Implementing regulations define "serious injury" as any injury that will likely result in mortality. However, it is not always apparent at the time a marine mammal is released from fishing gear whether its injuries are life threatening. To address this issue, the National Marine Fisheries Service held a workshop in 1997 to establish more definitive criteria for differentiating between serious and non-serious injuries. The Service intends to draw on the report from that workshop to establish guidelines for determining when injuries will be considered serious. The Commission believes that the conclusions set forth in the workshop report are reasonable and encourages the Service to publish guidelines without delay.

f. Exclusions

There are also some noteworthy exclusions from the new incidental take regime. It does not govern the incidental taking of California sea otters, which remain subject to Public Law 99-625, or the taking of marine mammals in the eastern tropical Pacific fishery for yellowfin tuna, which is subject to separate provisions of the Act. Also, it prohibits fishermen from intentionally taking marine mammals by lethal means to protect fishing gear or catch. Further, the taking of marine mammals listed under the Endangered Species Act is authorized not only by section 118, but by special requirements set forth in section 101(a)(5)(E).

The National Marine Fisheries Service has interpreted the sea otter exclusion as being applicable to all elements of section 118. While documented mortalities and serious injuries of California sea otters are noted in the most recent list of fisheries, the Service does not factor such takes into its fishery categorizations or into its decisions with respect to allocating observers. For the past four years the California sea otter population, listed as threatened under the Endangered Species Act, has been declining. Among the suspected causes of the decline is fisheries-related mortality. To resolve the issue, the Marine Mammal Commission has recommended that an observer program be implemented for those fisheries that may be taking California sea otters, including pot and trap fisheries and the halibut gillnet fishery, which has expanded into the Monterey Bay area. Although observers are being deployed in the halibut fishery this year, this is primarily to monitor the take of harbor porpoises. If the level of harbor porpoise mortality detected is low, this observer program may be discontinued at the end of the year even if sea otter take is high. The Commission believes that there needs to be a better mechanism for documenting and addressing fishery-related takes of California sea otters. One way in which this could be accomplished would be to specify that this species is to be factored into classifications in the list of fisheries and decisions regarding observer placement even though no taking is authorized.

Taking of Endangered and Threatened Species Incidental to Commercial Fisheries, Section 101(a)(5)(E)

Section 101(a)(5)(E) directs the National Marine Fisheries Service to authorize the incidental taking of marine mammals listed as endangered or threatened if it determines that 1) the incidental mortality and serious injury from commercial fisheries will have a negligible impact on the species or stocks; 2) a recovery plan has been, or is being, developed for the species or stock under the Endangered Species Act; and 3) where required under section 118, a monitoring program has been established, the vessels are registered, and a take reduction plan has been, or is being, developed. The Service is to publish a list of the fisheries to which the authorization applies and, for vessels required to register under section 118, issue appropriate permits. Vessels participating in fisheries included on the list, but which are not required to register, are covered by the authorization provided that they report any incidental mortality or serious injury.

In 1995, the Service made the required findings and authorized taking from three stocks — the eastern and western stocks of Steller sea lion and the central North Pacific stock of humpback whale. These authorizations, originally set to expire at the end of 1998, have been extended through the end of this month. On 27 May 1999 the Service published a proposal to extend these authorizations for three years and to issue authorizations allowing the incidental taking of fin whales from the western north Atlantic stock and humpback whales from the North Atlantic stock.

Pinniped-Fisheries Interactions, Section 120

Section 120, added by the 1994 amendments, called on the Secretary of Commerce to study pinniped-fishery interactions and provided a mechanism for authorizing the lethal removal of individual pinnipeds that are adversely affecting certain salmonid stocks, without obtaining a waiver of the Act's moratorium on taking.

a. Lethal removal authority

Under section 120(b), States may apply to obtain authorization for the intentional lethal taking of pinnipeds when individually identifiable animals are having a significant negative impact on the decline or recovery of a salmonid stock that is listed as endangered or threatened, that is approaching endangered or threatened status, or that migrates through Seattle's Ballard Locks. Such authorization may not be granted if the pinniped stock is listed as threatened or endangered under the Endangered Species Act, is designated as depleted under the Marine Mammal Protection Act, or is determined to be a strategic stock. If the National Marine Fisheries Service determines that the State has made the required showings, it is to establish a Pinniped-Fishery Interaction Task Force to examine the problem and recommend whether or not to approve the proposed lethal removal. If lethal removal is recommended, the task force is to include a description of the individual pinnipeds to be removed, the proposed location, time, and method of removal, criteria to be used to evaluate the success of the action, and the duration of the lethal taking authority. The task force is also to suggest any available and practicable nonlethal alternatives to address the problem. The Service is to take final action on the application within 30 days of receiving the task force's recommendation.

To date, only Washington State has applied for pinniped removal authority, this to remove sea lions preying upon steelhead salmon migrating through Ballard Locks. Although lethal removal was authorized in that instance, non-lethal deterrence, along with the non-lethal removal of three problem animals to a public display facility, proved effective in addressing the situation. As demonstrated by this situation, it is possible for only a few individual pinnipeds to have a considerable impact on dwindling salmonid stocks at some sites. This being the case, such occurrences may be relatively simple to address by removing those problem animals and instituting deterrence measures to prevent others from taking their place. The Commission therefore recommends retaining the lethal removal authority unchanged to enable the Service and States to respond to specific problems involving localized predation of endangered, threatened, or declining salmonid stocks.

b. Pacific fisheries

The amendments also directed the National Marine Fisheries Service to undertake further study of pinniped-fishery interactions. Section 120(f) required the Service to investigate whether California sea lions and Pacific harbor seals are having significant negative impacts on the recovery of salmonid stocks that are listed under the Endangered Species Act or that are approaching endangered or threatened status. The Service was also to investigate the broader impacts that these pinnipeds may be having on the coastal ecosystems of Washington, Oregon, and California. The results of these studies were to be reported to Congress, along with recommendations developed by the Service in consultation with the Pacific States Marine Fisheries Commission to address the identified problems.

The Service transmitted its report to Congress earlier this year. The report concluded that, although pinniped predation did not appear to be a cause of any of the salmonid declines in California, Oregon, and Washington, such predation could have negative effects on salmon stocks in those areas where physical conditions (*e.g.*, bottlenecks) cause the fish to concentrate during their migrations. This conclusion was based primarily on the experience at Ballard Locks, where California sea lions had been preying upon a significant proportion of the few returning winter-run steelhead. Among other things, the Service recommended that State and Federal resource agencies be authorized to kill California sea lions and harbor seals in areas where they are known or believed to be preying on depleted salmonid stocks when 1) there are no non-lethal means available to address the problem as effectively or as economically, 2) a salmonid conservation or recovery plan is in place or under development, and 3) recovery efforts to address other factors affecting the stock's status are underway.

The Commission shares the view that resource agencies should be given authority to stop pinniped predation that is preventing or impeding the recovery of depleted salmonid stocks and that lethal methods are appropriate when non-lethal measures are not likely to be practical or effective. However, the Commission believes that such authority should be available only in those instances when a conservation or recovery plan that appropriately addresses all factors

responsible for the salmonid stock's depressed status is in place, the plan has been made available for review by interested parties and approved by the Service, and procedures have been established to verify that the authorized management actions have the expected results.

Section 120(g) authorized, but did not require, the Service to undertake an additional regionwide pinniped-interaction study. The study would examine at least three high predation areas along migratory corridors used by anadromous fish in the Pacific Northwest to evaluate fish behavior in the presence of predators, holding times and passage rates of anadromous fish in areas where they are vulnerable to predation, and whether facilities exist or could be developed to improve escapement. No such study has been undertaken.

c. Gulf of Maine aquaculture

Section 120(h) required the Service to establish a Pinniped-Fishery Interaction Task Force to examine problems involving pinnipeds in the Gulf of Maine that may be interacting in a dangerous or damaging manner with aquaculture resources. The Service provided Congress with a report of its findings, including recommendations regarding alternatives for mitigating such interactions, in August 1997. The report noted that both pinniped populations and aquaculture operations in the Northeast have grown in recent years. Along with this growth has come an increasing number of complaints that seals are targeting penned fish. Aquaculture operators report that fish are not only eaten or injured, but escape when net pens are damaged. Also, the presence of seals in and around pens is believed to expose the fish to stress, which makes them more susceptible to diseases and less marketable. While resulting economic losses may be substantial, the report concluded that better data on the nature and extent of damage being caused by seals was needed and called on the industry to collect and provide additional information. The report also placed responsibility on the industry to develop facilities and deterrence technologies that will prevent seals from getting to penned fish. The Service concluded that, in those instances when a seal manages to enter a pen despite the operator having done everything feasible to prevent the entry, and when efforts to remove the seal could jeopardize human safety, lethal removal authority should be provided. The Commission concurs with this conclusion but stresses that, before being given such authority, an operator should be required to meet certain standards with respect to pen design and construction.

Non-Lethal Deterrence of Marine Mammals, Section 101(a)(4)

As noted previously, the new incidental take regime for commercial fisheries specifically excluded authorization for intentional lethal taking of marine mammals to protect fishing gear or catch. However, under section 101(a)(4), as amended in 1994, fishermen are authorized to use non-lethal means to deter a marine mammal from damaging their gear or catch. This provision also authorizes owners of private property or their agents to use non-lethal means to deter marine mammals from damaging that property and government employees to deter marine mammals from damaging public property. Non-lethal deterrence of marine mammals to prevent endangerment of personal safety was also authorized by the amendment. In each case, however, the deterrence measures used must not result in the death or serious injury of a marine mammal.

The Secretaries of Commerce and the Interior, in consultation with appropriate experts, were required to publish guidelines setting forth the measures that may be taken to deter marine mammals safely and to prohibit, by regulation, any form of deterrence that is determined to have a significant adverse effect on marine mammals. For species listed as threatened or endangered under the Endangered Species Act, the Secretaries were to specify nonlethal deterrence measures that may be used.

The National Marine Fisheries Service issued proposed deterrence regulations in 1995, but has yet to publish final regulations. No measures for safely deterring endangered and threatened marine mammals have been proposed. In this regard, it should be noted that, even if the Service were to identify measures for safely deterring endangered and threatened species under the Marine Mammal Protection Act, employing such measures likely would constitute a violation of the Endangered Species Act, which contains no similar provision authorizing intentional taking. The Fish and Wildlife Service has yet to take action to implement any portion of the deterrence provision.

Permits for Public Display, Scientific Research, and other Purposes, Section 104

The 1994 amendments included changes to most of the Act's permit provisions and added authority for the issuance of permits for commercial and educational photography and the importation of polar bear trophies from Canada. Among other things, the amendments resolved the issue of whether the Marine Mammal Protection Act confers authority for supplementing the care and maintenance requirements established by the Animal and Plant Health Inspection Service under the Animal Welfare Act. Permits issued under the Marine Mammal Protection Act may continue to impose conditions pertaining to the methods of capture, supervision, care, and transportation as they apply to the authorized taking or importation, but may not specify how a collector is to maintain marine mammals once they are housed in the captive facility.

In some instances, the Animal and Plant Health Inspection Service has not acted quickly enough to fill the void left by the nullification of National Marine Fisheries Service policies regarding captive marine mammals. For example, at the time the 1994 amendments were enacted, permits issued by the National Marine Fisheries Service to facilities conducting swim-with-the-dolphin programs included conditions designed to minimize the potential for harmful or dangerous interactions between human participants and dolphins. In addition, the Service contracted for a study of these programs by a marine mammal behaviorist, which raised safety concerns regarding the design of certain types of programs. The 1994 amendments ceded full authority for these programs to the Animal and Plant Health Inspection Service, which indicated its intent to issue regulations promptly to govern swim programs. Although such regulations were issued late in 1998, their applicability was suspended earlier this year. While the Service has been monitoring swim-with-the-dolphin programs for compliance with its general marine mammal care and maintenance regulations, the Commission urges the Service to speed its issuance of specific regulations for these activities in order to clarify safe program expectations and responsibilities.

Another issue that has arisen in the past few years concerns traveling marine mammal exhibits. Although a limited number of such shows involving pinnipeds have been permitted over the years, recently an exhibitor sought authorization for a traveling show involving dolphins. Recognizing the high level of stress and other undue risks to cetaceans presented by traveling exhibits, the National Marine Fisheries Service published a policy statement in 1974 announcing that it would not issue permits authorizing such exhibits. The applicability of that policy, however, was nullified by the 1994 amendments, which no longer allow permit denials to be based on animal care concerns other than those addressed in standards adopted under the Animal Welfare Act.

In commenting on this permit request, the Marine Mammal Commission noted that traveling cetacean exhibits, by their very nature, pose unacceptably high risks and recommended that the permit be denied. The Commission also recommended that the Animal and Plant Health Inspection Service adopt a policy statement or issue regulations to the effect that traveling cetacean exhibits are likely to cause the animals excessive stress and will not be licensed. Although this particular application ultimately was denied, the Animal and Plant Health Inspection Service declined to address the issue generically as the Commission recommended, stating that it did not have authority to prohibit such exhibits. The Commission disagrees with the conclusion reached by the Service concerning the breadth of its authority. We believe that the Animal Welfare Act provides clear authority for the Service to prohibit any type of exhibit that poses significant risks to the animals involved and that there is a sufficient basis for determining that traveling cetacean exhibits pose such risks. Regardless of how it is accomplished, action needs to be taken to ban traveling cetacean exhibits.

Another situation that put marine mammals at risk involved bottlenose dolphins being maintained at a facility under a public display permit for possible reintroduction to the wild. The facility argued that the 1994 amendments to the Marine Mammal Protection Act had invalidated pre-existing permit conditions established by the National Marine Fisheries Service that required additional authorization prior to releasing the dolphins into the wild. It also challenged the authority of the Animal and Plant Health Inspection Service to limit its activities related to the release of the dolphins. The ambiguities concerning the applicable law and their respective authorities dissuaded either agency from taking swift and decisive action to prevent the unauthorized release of the animals. As a result, the two dolphins were transported offshore and released, despite the fact that they had not been properly prepared to fend for themselves in the wild. Although the dolphins were ultimately recaptured, both sustained serious injuries. In addition, the dolphin that remained in the wild the longest was emaciated when it was recaptured and likely would have died of starvation. Not only does premature release of captive marine mammals pose risks to the animals involved but, without proper medical screening, may expose wild populations to disease. Also, some marine mammals, unless undesirable behaviors have been extinguished prior to release, may pose a safety hazard to people they encounter.

In the case involving the released dolphins, the facility operators ultimately were found to have violated the Animal Welfare Act and the Marine Mammal Protection Act and civil penalties were assessed. Nevertheless, the Commission believes that the provisions of the Marine Mammal Protection Act should be strengthened by adding a specific prohibition against releasing captive marine mammals, other than those being maintained under the stranding and rehabilitation program, absent specific authorization (*e.g.*, a scientific research permit structured to require sufficient preparation, medical screening, and monitoring of released animals).

Furthermore, the experience regarding the release of the dolphins points out the desirability of providing the National Marine Fisheries Service and the Fish and Wildlife Service and/or the Animal and Plant Health Inspection Service with explicit authority to seek injunctive relief to prevent anticipated violations of the Animal Welfare Act or Marine Mammal Protection Act when such violations pose risks to the welfare of the animals, the public, or wild marine mammal populations. Including authority to seek injunctions under the Marine Mammal Protection Act would be consistent with the provisions of the Endangered Species Act and other natural resource statutes.

In making these recommendations, the Marine Mammal Commission is not advocating a return to the shared jurisdiction over captive marine mammals that existed prior to 1994. Rather, we are recommending specific solutions to specific problems that have arisen since enactment of the 1994 amendments.

a. Public display

Under the 1994 amendments, there are three primary requirements that must be met by a facility holding marine mammals for purposes of public display. The facility must offer an education or conservation program based on professionally recognized standards of the public display community, be registered or licensed under the Animal Welfare Act, and be open to the public on a regularly scheduled basis. The National Marine Fisheries Service has interpreted the requirement that a facility be registered or licensed under the Animal Welfare Act as limiting the availability of public display permits to exhibits of live marine mammals and has published a regulatory definition to that effect. The Marine Mammal Commission believes that, in some instances, there may be merit to displays of parts from dead marine mammals. For example, educational and other benefits could be provided by allowing exhibition of artifacts containing marine mammal parts made by Natives in other countries. Thus, the Commission recommends that the public display provision of the Act be broadened, or a new provision added, that would allow for the issuance of permits for the display of marine mammal parts or products. In making this recommendation, the Commission cautions that any such amendment should be narrowly drawn so as not to allow such permits to be used as a subterfuge for the importation of hunting trophies or commercial products that otherwise could not be authorized.

b. Scientific research

The key amendment to the provisions governing the issuance of scientific research permits was the addition of a general authorization for research expected to take marine mammals by Level B harassment only (*i.e.*, harassment that may disturb, but not injure, a marine mammal). It was believed that compliance with the otherwise applicable permitting requirements and procedures unnecessarily delayed research that was likely to have only minimal

impacts on marine mammals and marine mammal stocks. Since its enactment, approximately 50 research projects, such as aerial surveys and photo-identification studies, have gone forward under the general authorization. One shortcoming of the existing provision, however, is that it is not available for research on marine mammals listed as endangered or threatened under the Endangered Species Act. Endangered Species Act permits are still required for these species. The Commission thinks that it would be appropriate to expand the general authorization to include those marine mammals listed under the Endangered Species Act.

Although required by statute to have promulgated regulations establishing and implementing the general authorization within 120 days of enactment of the 1994 amendments, the Fish and Wildlife Service has yet to publish a proposed rule. The National Marine Fisheries Service issued interim regulations implementing the general authorization in 1994, but has yet to finalize those regulations.

c. Exports of marine mammals

Section 104(c)(9) of the Marine Mammal Protection Act, added in 1994, specifies that no marine mammal may be exported from the United States for the purpose of public display, scientific research, or enhancing the survival or recovery of a species or stock, unless the receiving facility meets standards that are comparable to those applicable to U.S. facilities. Although applicable to all three permit types, the primary focus of this amendment was on exports for purposes of public display. While the statute is clear that the comparability requirement must be met at the time of the export, there has been some debate as to whether this is a continuing obligation on the part of the receiving facility. Relying in part upon the language of section 104(c)(2)(D), which authorizes the Secretary to revoke any applicable permit and/or seize the marine mammals of any facility that no longer meets the statutory criteria applicable to public display facilities, the National Marine Fisheries Service has determined that compliance with the Marine Mammal Protection Act is a continuing obligation of the foreign facility. That is, the United States continues to exert authority over marine mammals after they are exported.

Although we concur in theory with the Service's interpretation of the applicable statutory provisions regarding exports, the Commission also believes that once a marine mammal has been delivered to a foreign country, practically speaking, control has been lost. Also, while we believe that the Service's insistence that the government of the country to which the marine mammal will be exported submit a statement indicating that it will afford comity to any enforcement action taken or permit sanction imposed by U.S. authorities is reasonable given the statutory requirements, we think it is of questionable practical value and limited effectiveness in guaranteeing the continued welfare of marine mammals once they are exported. As a practical matter, the responsible U.S. agencies do not have sufficient resources to monitor continued compliance with the comparability requirements of the Marine Mammal Protection Act once an animal has been exported. Also, it remains unclear, notwithstanding the comity statements, that enforcement actions against foreign facilities would be an effective means of achieving compliance with the Marine Mammal Protection Act. As a further complication, once a marine mammal has been exported to a foreign facility there is no available means to ensure that it is not subsequently transferred to a facility with no jurisdictional tie to the United States.

Another shortcoming of the existing system regarding exports is that comparability determinations generally are based entirely on written submissions from the facility. Although the Animal and Plant Health Inspection Service requires that these submissions be certified by the responsible foreign government, it is not clear that such certifications are based on a physical inspection of the facility. Thus, in contrast to domestic facilities, which are subject to periodic inspections to ascertain compliance with Animal Welfare Act standards, it is not apparent that foreign facilities are even inspected in the first instance. We believe that a better method for verifying the accuracy of the information submitted by a foreign facility, and upon which a comparability determination is based, is needed.

The Marine Mammal Commission suggests that the Committee consider two possible ways in which the provisions applicable to marine mammal exports might be improved. Under both alternatives, the United States would recognize the futility of trying to retain adequate oversight of marine mammals after they have been exported to foreign facilities. Under the first approach, as a tradeoff to yielding jurisdiction over a marine mammal once it has been exported, the United States would strengthen the reliability of its comparability determination by requiring a physical inspection of the facility prior to approving an export. Any such amendment should specify that the inspection is to be conducted by an Animal and Plant Health Inspection Service inspector or an inspector trained and certified by the Service and that the cost of the inspection is to be borne by the receiving facility.

Under the second alternative, the United States would not look at the adequacy of a receiving facility at all. Rather, exports of marine mammals would be restricted to those countries that have demonstrated that they have in place a program for overseeing the welfare of captive marine mammals comparable to that established by the United States under the Animal Welfare Act. Presumably, a country, before being certified as having a comparable program, would need to demonstrate that, among other things, it has adopted minimum requirements for facility construction and other aspects of care and maintenance, that those requirements are enforced through periodic inspections, and that it has in place an effective means of preventing exports of marine mammals to facilities in other countries that did not meet certain minimum standards.

d. Educational and commercial photography

A new permit category, allowing permits to be issued to authorize educational or commercial photography was added to the Marine Mammal Protection Act by the 1994 amendments. Under the statutory provision, applicants for such permits must demonstrate that any taking will be limited to Level B harassment and must indicate the manner in which the films, photographs, or videotapes will be made available to the public. To date, neither the National Marine Fisheries Service nor the Fish and Wildlife Service have promulgated regulations to govern the issuance of photography permits. Further in this regard, the Fish and Wildlife Service has yet to publish any revisions to its Marine Mammal Protection Act permit regulations to reflect the substantial changes made to the Act's permit

provisions in 1994. The National Marine Fisheries Service has updated some of its permit regulations, but has yet to revise its regulations to reflect the amendments pertaining to public display. We understand, however, that proposed regulations are nearly complete and should be made available for public review and comment shortly.

e. Polar bear trophies

The 1994 amendments also added a new permitting authority under which polar bear trophies may be imported from Canada. Before such imports could be authorized, the Fish and Wildlife Service, in consultation with the Marine Mammal Commission, was required to determine that 1) Canada has a monitored and enforced sport hunting program consistent with the purposes of the Agreement on the Conservation of Polar Bears, 2) the Canadian sport hunting program is based on scientifically sound quotas that ensure the maintenance of the affected population stocks at sustainable levels, 3) the export from Canada and import into the United States are consistent with the Convention on International Trade in Endangered Species of Wild Fauna and Flora and other international agreements and conventions, and 4) the export and subsequent import are not likely to contribute to illegal trade in bear parts. The Service published a finding in 1997 that allowed trophies taken from five Canadian management units to be imported into the United States. Believing that the Service had interpreted the 1994 amendment too narrowly, Congress amended the trophy provision in 1997 to clarify that polar bear trophies legally taken in Canada from any management unit prior to enactment of the 1994 amendments may be imported into the United States.

At about that same time the amendment was being considered in 1997, the Marine Mammal Commission contracted for a report to evaluate Canada's polar bear management program and consider whether the programs in place for other Canadian management units might not also meet the statutory criteria. Based on that report, the Commission recommended that findings be made for two additional management units. Final regulations allowing imports from those areas were issued by the Service earlier this year.

The 1994 amendments directed the Fish and Wildlife Service to charge "a reasonable fee" for the issuance of polar bear import permits to be used for developing and implementing cooperative research and management programs for the conservation of polar bears in Alaska and Russia. That fee has been set at $1,000 per permit and, to date, almost $200,000 has been collected to be used for conservation efforts.

The 1994 amendments also directed the Service to undertake a scientific review of the impact of issuing import permits on the polar bear populations in Canada. No more import permits could be issued if the review indicated that allowing polar bears to be imported into the United States is having a significant adverse effect on Canadian polar bear stocks. The review originally was to have been completed by 30 April 1996. However, regulations authorizing any imports had yet to be finalized by that date. The Service therefore indicated in its 1997 final rule that it would delay the review for two years. The Service has not yet made public the results of any review.

Prohibitions — Exports of Marine Mammals, Section 102(a)(4)

The portions of the 1994 amendments directed at the Marine Mammal Protection Act's permit provisions also included changes to the Act's prohibitions section. Section 102(a)(4) was amended to add a prohibition against exporting any marine mammal or marine mammal product taken in violation of the Act or for any purpose other than public display, scientific research, or species enhancement. The Commission agrees with the thrust of this change — exporting, as well as taking or importing a marine mammal, absent some sort of authorization, should be considered a violation of the Act. Unfortunately, the 1994 amendment was geared exclusively to the Act's permit provisions, and exports for purposes other than those recognized in section 104 were precluded. For example, the 1994 amendments added a provision allowing U.S. citizens traveling outside the United States to re-import any legally possessed marine mammal product they exported in conjunction with their travel. However, under section 102, the marine mammal item, subsequent to enactment of the 1994 amendments, could not have been legally exported in the first place. Similarly, the 1994 amendments made provision for Native inhabitants of Russia, Canada, or Greenland to import marine mammal products into the United States for non-commercial purposes in conjunction with personal travel or as part of a cultural exchange. However, no provision was included allowing them to take the marine mammal products with them when they leave.

The Marine Mammal Protection Act also recognizes other instances when exporting marine mammals or marine mammal products might be appropriate. For example, sections 101(a)(3) and 103 allow the Act's moratorium on taking and importing marine mammals to be waived in certain instances. These provisions could be used, among other things, to authorize the commercial harvest of marine mammals. However, as section 102 was amended in 1994, products from these animals could not be exported for sales overseas. Also, there is some question as to whether exports of handicrafts made from marine mammals by Alaska Natives may inadvertently have been limited by the 1994 amendments. The Commission believes that the Act should be amended to delineate clearly that exports for such purposes are permissible.

A second, perhaps unintentional, impact of the change to section 102(a)(4) was raising the evidentiary burden when bringing enforcement actions under this provision. This provision was amended in 1981 specifically to address enforcement difficulties by clarifying that the government need not prove that the underlying taking of a marine mammal was illegal in order to proceed against individuals who are otherwise in violation of the Act. For instance, under this section as it now reads, it arguably would not be a violation to engage in the unauthorized sale of a marine mammal part if it had been legally taken in the first instance, *e.g.*, for Native subsistence. This is a potentially major loophole that was closed once and that should be closed again.

Both of the identified problems with the amendments to section 102(a)(4) appear to be unforeseen consequences of focusing entirely on the permit-related aspects of these amendments. We believe that they need to be corrected and

can be corrected simply. This could be done by deleting subparagraphs (A) and (B) in section 102(a)(4) and adding clarifying language to each of the sections noted in the introductory clause of section 102(a) for which exports would be appropriate, that exports are permissible.

Definitions, Section 3

The 1994 amendments added several new definitions to the Marine Mammal Protection Act. For the most part, these definitions pertain to the new regime governing the taking of marine mammals incidental to commercial fishing operations or the revisions to the Act's permit provisions. One definition, however, has broad applicability throughout the Act — that of "harassment," which is an element of "taking." The definition was subdivided into "Level A"and "Level B" harassment. Level A harassment is defined as any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild. Level B harassment is defined as any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. The definition, however, has created some practical difficulties related to interpretation and enforcement.

There are those who believe that certain activities, such as swimming in close proximity to wild marine mammals or releasing captive marine mammals, clearly have the potential to injure or disturb marine mammals in the wild and should be considered to be forms of harassment. On the other hand, others argue that the definition must be literally construed and that such activities fit within the scope of the definition only if they constitute an act of pursuit, torment, or annoyance. Applying a liberal reading of these requirements (*e.g.*, by characterizing an act of annoyance as anything that disturbs a marine mammal) probably would solve the problem and could be done in report language. Absent this, it may be necessary to clarify the definition by amendment. This could be done by revising the phrase "any act of pursuit torment, or annoyance which has the potential to injure [or disturb] a marine mammal or marine mammal stock in the wild..." to read "any act which has the potential to injure [or disturb] a marine mammal or marine mammal stock in the wild...."

Imports Associated with Personal Travel and Cultural Exchanges, Section 101(a)(6)

As noted above, the 1994 amendments included provisions allowing marine mammal products to be imported into the United States for purposes of cultural exchanges or in conjunction with personal travel. Under section 101(a)(6) U.S. citizens may import marine mammal products they legally possessed and exported from the United States in conjunction with foreign travel. Also, Alaska Natives may import marine mammal items they received outside the United States as part of a cultural exchange. Similarly, Native inhabitants of Russia, Canada, and Greenland may import marine mammal products for non-commercial purposes in conjunction with travel to the United States or as part of a cultural exchange with Alaska Natives. Although not specifically required by the 1994 amendments, the Commission believes that the establishment of a registration and tracking system would be a useful means of monitoring compliance with these provisions. With respect to imports by U.S. citizens, it would provide a means of documenting that an item was legally possessed in the United States prior to export, while helping to ensure that items obtained abroad are not imported illegally. As for cultural exchanges, a tracking system would help ensure that imported items are not impermissibly used for commercial purposes. The Commission recommends that the National Marine Fisheries Service and the Fish and Wildlife Service explore the appropriateness of developing a registration and tracking program and consider whether the benefits of such a program would outweigh the costs.

Small-Take Provisions, Section 101(a)(5)

Amendments were also made to section 101(a)(5), the Act's so-called "small-take provision," under which the taking of small numbers of marine mammals incidental to activities other than commercial fishing may be authorized if it is expected to have a negligible impact on the affected stocks and will not have any unmitigable impacts on the availability of marine mammals for Native subsistence in Alaska. Prior to the 1994 amendments, such authorizations could be issued only by regulation. In 1994, a streamlined mechanism for authorizing incidental takes by harassment for a period of up to one year, requiring public notice and opportunity for comment, but not rulemaking, was enacted. While the National Marine Fisheries Service has revised its implementing regulations to reflect these amendments, the Fish and Wildlife Service has yet to do so.

In general, the new provision has worked well and has succeeded in shortening the time required to issue authorizations. The Commission is concerned, however, that applicants are sometimes availing themselves of the streamlined authorization process by segmenting long-term activities into one-year intervals and seeking a separate authorization for each, or by seeking a separate authorization for each of several similar or related activities, which by itself has only negligible impacts. When projects are segmented this way, it often becomes difficult for the responsible agencies to assess and determine how best to avoid possible non-negligible cumulative impacts of the activities. Possible ways of addressing this problem include amending the Act to lengthen the period for which harassment-only authorizations may be issued or to require the analyses of effects to consider all related activities that may cumulatively result in more than a negligible impact.

Gulf of Maine and Bering Sea Ecosystem Studies, Section 110

Section 110 of the Act, which governs marine mammal research grants, was amended in 1994 to require the Secretary of Commerce, in consultation with the Marine Mammal Commission, adjacent coastal States, environmental organizations, the fishing industry, and other appropriate groups and individuals, to convene a regional workshop to assess human-caused factors affecting the health and stability of the Gulf of Maine marine ecosystem. The goals of the workshop were to identify such factors and to recommend a research and management program designed to restore or maintain the ecosystem. The amendment also required the Secretary to submit a report of the workshop

results to Congress, including proposals for regulatory or research actions and any recommended legislative action.

Under contract to the National Marine Fisheries Service, the Regional Association for Research on the Gulf of Maine (RARGOM) held the workshop in September 1995. Based on that workshop, the Service prepared and in late 1995 transmitted to Congress its report, which identified the major human-caused stressors affecting the Gulf of Maine ecosystem and made several research and management recommendations. Among the activities identified as affecting the health and stability of the ecosystem were overfishing and certain fishing practices such as bottom trawling, which adversely affects benthic communities. The report also noted that environmental pollution, including the introduction of toxic chemicals and other contaminants from both point and non-point sources, and coastal and offshore development were having negative effects on the ecosystem.

The Service recommended that research be directed at identifying the critical linkages between contaminants and other stressors and their impacts on biologically and economically important species and habitats. The Service also indicated that management actions should be based on a precautionary principle, reflecting the level of uncertainty concerning the status of, and linkages among, various ecosystem components. Among the specific actions recommended in the report was concluding agreements with Canada for the joint management of shared fishery resources and marine mammal stocks and for controlling non-point source pollution. With respect to marine mammals, the report called for continuing efforts to identify and minimize the effects of human activities on the highly endangered northern right whale, the harbor porpoise, and pinniped species that are important components of the Gulf of Maine ecosystem.

Another provision added to section 110 in 1994 required the Secretary of Commerce, in consultation with the Secretary of the Interior, the Marine Mammal Commission, the State of Alaska, and Alaska Native organizations to undertake a research program to monitor the health and stability of the Bering Sea marine ecosystem and to resolve uncertainties concerning the causes of observed declines in populations of marine mammals, sea birds, and other living resources. The Secretary of Commerce, the Secretary of the Interior, and the Marine Mammal Commission were directed to include discussions of the status and findings of this research program in their annual reports to Congress.

In furtherance of this requirement, the National Marine Fisheries Service prepared and in 1995 circulated to the Commission and others a draft Bering Sea ecosystem study plan. Although the Commission commented on the draft plan and a workshop to discuss the plan was held, the plan was never finalized. Nevertheless, much of the anticipated research has gone forward or is in the process of being funded through the North Pacific Marine Research Initiative administered by the University of Alaska.

Polar Bear Agreements, Section 113

In addition to the inclusion of the permit provision for polar bear trophies discussed above, other amendments enacted in 1994 addressed issues specific to this species. In response to concerns that the Agreement on the Conservation of Polar Bears may not have been fully implemented by the United States and other parties, section 113 of the Marine Mammal Protection Act was amended to require the Secretary of the Interior to conduct two reviews. Section 113(b) was added to require the Secretary, in consultation with the other contracting parties, to review the effectiveness of the Agreement. Also, the Secretary was directed to work with the contracting parties to establish a process by which future reviews of the Agreement will be conducted. The Fish and Wildlife Service has initiated this review and has received submissions from all but one of the other parties. A report setting forth the Service's conclusions will be prepared once all of the parties have responded and the submissions have been analyzed.

The 1994 amendments also added section 113(c), which directed the Secretary, in consultation with the Secretary of State and the Marine Mammal Commission, to undertake a review of domestic implementation of the Polar Bear Agreement, with special attention to be given to the habitat protection mandates of the Agreement. A report on the results of that review was to be submitted to Congress by 1 April 1995.

The Service convened a workshop in 1995 to review U.S. implementation of the Agreement and, based on the results of that meeting, circulated a draft report in 1996. The report identified certain areas in which the provisions of U.S. law needed to be reconciled with those of the treaty. For example, the draft report noted that, although the Agreement and resolutions adopted by the parties to the Agreement prohibit airborne hunting and the taking of cubs, female bears with cubs, and denning bears, the Marine Mammal Protection Act exemption for taking by Alaska Natives contains no such limitations. As noted by the Service in the draft report, however, these issues had been addressed for the Beaufort Sea polar bear population through a Native-to-Native agreement entered into by Alaska's North Slope Borough and Canada's Inuvialuit Game Commission. Similarly it was believed that these issues could be addressed satisfactorily for the Bering Sea-Chukchi Sea polar bear population through a bilateral agreement being negotiated with the Russian Federation. Although the report apparently is close to completion, it needs to be completed and transmitted to Congress.

The 1994 amendments also called on the Secretary of the Interior, acting through the Secretary of State and in consultation with the Marine Mammal Commission and the State of Alaska, to consult with appropriate Russian officials in an effort to develop and implement enhanced cooperative research and management programs for conserving the shared population of polar bears. A report on the consultations and periodic progress reports on research and management actions taken under this provision are to be provided to Congress.

In furtherance of this directive, United States officials entered into negotiations with their Russian counterparts in an effort to conclude a bilateral polar bear agreement. The two delegations reached an *ad referendum* agreement in February 1998, setting forth the text of the bilateral agreement. Formal adoption of the agreement, however, is awaiting official approval by the respective governments. Following signature, the agreement will be forwarded to the Senate for its advice and consent. It is expected that the United States will need to enact implementing legislation. This being the case, it makes sense to defer making any

amendments to U.S. law relative to the U.S.-Russian agreement or that may be needed to reconcile U.S. law with the terms of the multilateral Agreement on the Conservation of Polar Bears until the bilateral agreement has been concluded.

Co-Management Agreements, Section 119

Section 119 was added to the Act to authorize funding for and to encourage development of cooperative agreements between the National Marine Fisheries Service and the Fish and Wildlife Service and Alaska Native organizations designed to conserve marine mammals and provide co-management of subsistence use by Alaska Natives. Under such agreements, the Services may make grants to Alaska Native organizations for, among other purposes, collecting and analyzing data on marine mammal populations, monitoring the taking of marine mammals for subsistence purposes, participating in marine mammal research, and developing marine mammal co-management programs with Federal and State agencies. Supplemental appropriations of $1.5 million per year for the Department of Commerce and $1.0 million per year for the Department of the Interior were authorized for establishing such agreements and providing such grants.

The Fish and Wildlife Service has aggressively pursued co-management agreements for the three Alaska marine mammal species under its jurisdiction. Beginning in 1997, the Service sought and received an annual appropriation of $250,000 specifically earmarked for co-management activities. Using these funds, the Service has entered into agreements with Alaska Native organizations and supported cooperative activities for polar bears, sea otters, and walruses. The Fish and Wildlife Service has also instituted a marking and tagging program, as authorized by section 109(i) of the Act, to obtain reliable information on the numbers, ages, sex, and condition of polar bears, sea otters, and walruses being taken by Native hunters.

The National Marine Fisheries Service, too, is moving forward to conclude co-management agreements for species under its jurisdiction. Earlier this year, the Service entered into an agreement with the Alaska Harbor Seal Commission to develop an action plan for harbor seals in Alaska. The Commission understands that the Service is also working with Native organizations on agreements for fur seals, Steller sea lions, and beluga whales. Although the National Marine Fisheries Service has not sought specific funding under section 119, its budget for fiscal year 1999 contains a specific line item of $750,000 to support the activities of various Native organizations involved in marine mammal management.

While the Marine Mammal Commission is encouraged by the actions being taken by the National Marine Fisheries Service to work cooperatively with Native organizations to conserve and manage several marine mammal species, we are concerned that, in some cases, the Service still lacks basic information on the level of taking from the various stocks. In this regard, the Marine Mammal Commission has recommended that the Service institute a marking and tagging program akin to that established by the Fish and Wildlife Service to obtain reliable information on the marine mammals under its jurisdiction being taken by Alaska Natives for subsistence and handicraft purposes. The Commission believes that establishment of such a program is important and suggests that Congress consider ways in which action by the Service might be encouraged.

The National Marine Fisheries Service has been pursuing a co-management agreement with the Cook Inlet Marine Mammal Council in an effort to stem the serious overharvest of beluga whales from the Cook Inlet population. To date, those efforts have proved unsuccessful because not all hunters have been willing to commit voluntarily to harvest limits and because the Council is unable to exercise jurisdiction over the hunters. This experience points out a general shortcoming with the existing co-management system. Co-management agreements, to the extent that they are intended to regulate or limit subsistence taking, will be successful only if all hunters voluntarily abide by those limits or the Native organization entering into the agreement can effectively exert control over all Native hunters, such as is the case with the Alaska Eskimo Whaling Commission. While Alaska Natives traditionally have demonstrated a willingness to act responsibly in conserving marine mammals and other resources, the recent experience with Cook Inlet belugas demonstrates the delicate underfooting that exists. For some marine mammals, all it takes is a few hunters refusing to act responsibly to put a stock at risk. The Commission therefore recommends that Congress consider ways in which the co-management provisions of the Marine Mammal Protection Act might be strengthened to provide effective enforcement mechanisms for agreements entered into between the responsible Federal agencies and Native organizations.

For the time being, the situation with respect to Cook Inlet beluga whales has been addressed by a free-standing amendment enacted as part of Public Law 106-31, the 1999 Emergency Supplemental Appropriations Act. Section 3002 of that Act specifies that, until 1 October 2000, the taking of a beluga whale from the Cook Inlet stock will be lawful only if it occurs pursuant to a cooperative agreement between the National Marine Fisheries Service and the affected Alaska Native organizations. While this amendment has given a push for concluding a co-management agreement and has given any such agreement the needed teeth to make it enforceable, it is unclear what will happen after the provision lapses in October 2000. Unless the provision is extended legislatively, co-management agreements in general are made more enforceable, the commercial incentive behind the beluga whale hunt is eliminated, or the Service completes a formal rulemaking under section 101(b) to regulate Native harvest from this stock, we may be faced with a similar conservation problem 15 months from now when the provision in Public Law 106-31 expires.

Other Amendments

Other amendments enacted in 1994 1) clarified and strengthened the Act's general policy regarding habitat protection and specifically authorized conservation and management measures for alleviating impacts on rookeries, mating grounds, or other areas of similar ecological significance that may be causing the decline or impeding the recovery of a strategic stock of marine mammals, 2) authorized the taking of a marine mammal when "imminently necessary" in self-defense or to save the life of another person in immediate danger, 3) established a heightened evidentiary standard for certain actions or

findings affecting species taken by Alaska Natives, 4) negated special regulations applicable to areas in Hawaii where humpback whale cow/calf pairs commonly occur, and 5) extended for five years certificates of exemption issued under the Endangered Species Act that authorize the possession and sale of pre-Act scrimshaw products or raw materials for making such products. No specific actions to implement these provisions were required.

Authorization of Appropriations

The amendments reauthorized appropriations for a six-year period to enable the Department of Commerce, the Department of the Interior, and the Marine Mammal Commission to carry out their responsibilities under the Act. General appropriations authorized by section 116(a) for the Department of Commerce were set at $12,138,000 in fiscal year 1994 and increased in each subsequent year to $14,768,000 in fiscal year 1999. The amendments also authorized an additional appropriation of $20 million to the Department of Commerce for each fiscal year from 1994 through 1999 to carry out the requirements of sections 117 and 118, the new fisheries incidental take regime. Appropriations for the Department of the Interior authorized by section 116(b) ranged from $8,000,000 in fiscal year 1994 to $10,296,000 in fiscal year 1999. Authorized appropriations for the Marine Mammal Commission under section 207 were set at $1,500,000 in fiscal year 1994 and increased incrementally to $1,750,000 in fiscal year 1999.

The Commission recommends that the Marine Mammal Protection Act be amended to authorize appropriations for the Department of Commerce, the Department of the Interior, and the Marine Mammal Commission for a five-year period.

Other Possible Amendments

In addition to the recommendations provided above, the Commission believes that certain provisions of the Act need to be updated to reflect economic changes since they were enacted in 1972. For example, the penalties established under section 105 and the fines that may be levied under section 106 have never been increased. While substantial in 1972, they now may be viewed by some potential violators as no more than an acceptable cost of doing business. Similarly, section 206(4) authorizes the Marine Mammal Commission to procure the Service of outside experts and consultants, but limits the amount of compensation to $100 per day. This provision needs to be updated to reflect prevailing rates for such services.

As a more general issue, the Commission notes that most research and conservation actions are undertaken in response to acute, often controversial, conservation issues. Agency mandates, budgets, and programs largely reflect this reactive approach to resource conservation. Nevertheless, the agencies responsible for marine mammal programs recognize the desirability of anticipating problems and taking steps to prevent such situations from developing in the first place and are trying to move in that direction. For example, the Commission, along with the National Marine Fisheries Service, the U.S. Geological Survey, and the Environmental Protection Agency, recently convened a meeting of international experts to identify and provide advice on resolving uncertainties concerning the possible effects of persistent ocean contaminants on marine mammals. The Commission recommends that Congress consider the need for broad-based, interdisciplinary, anticipatory research that will allow the government to take action to address potential issues before they become serious problems.

STATEMENT OF THE MARINE MAMMAL COMMISSION

Statement of John E. Reynolds, III, Ph.D.
Chairman, Marine Mammal Commission
Submitted to the House Committee on Resources,
Subcommittee on Fisheries Conservation, Wildlife, and Oceans
6 April 2000

Thank you, Mr. Chairman and Members of the Committee. The Marine Mammal Commission is grateful for the opportunity to provide information and share its views on the status of efforts to develop and implement take reduction plans to reduce the incidental mortality and serious injury of marine mammals in commercial fishing operations as prescribed by the 1994 Marine Mammal Protection Act amendments. The Commission has been represented on two of the five take reduction teams established to date and has closely followed the development of the other take reduction plans. My comments today will focus principally on the effectiveness of the Atlantic Large Whale Take Reduction Plan and the Gulf of Maine Harbor Porpoise Take Reduction Plan, the plans developed by the take reduction teams on which a member of the Commission staff participates.

Current Requirements

The requirements pertaining to take reduction plans are set forth in section 118(f) of the Marine Mammal Protection Act. That provision requires the Secretary of Commerce to develop and implement take reduction plans to reduce the incidental taking of marine mammals from "strategic" marine mammal stocks by commercial fisheries. Such plans are required for all fisheries classified as frequently (Category I) or occasionally (Category II) killing or seriously injuring marine mammals from strategic stocks. Strategic stocks are defined in the Act as those (1) for which the level of human-caused mortality from fisheries and/or other causes exceeds the stock's potential biological removal level, (2) that are designated as depleted under the Marine Mammal Protection Act, or (3) that are listed or likely to be listed as endangered or threatened under the Endangered Species Act. The National Marine Fisheries Service has classified 6 U.S. fisheries as Category I fisheries and 26 as Category II fisheries. The immediate goal of each take reduction plan, as specified in section 118(f)(2), is to reduce incidental fishing-related mortality and serious injury to levels below the potential biological removal levels of the affected stocks within six months of plan implementation. The long-term goal is to reduce incidental fishery-related mortality and serious injury to levels approaching zero within five years of the plan's implementation.

To assist in the preparation of a take reduction plan, section 118(f)(6) requires that the Secretary of Commerce establish a take reduction team to develop a draft plan. Take reduction teams are to be composed of members representing all fisheries groups and gear types that incidentally take marine mammals from the stocks of concern, relevant federal and state agencies, regional fishery management councils, environmental groups, academic and scientific organizations, and, when applicable, interstate fishery commissions and Alaska Native organizations. The time frame for developing a take reduction plan depends on the magnitude of fishery-related mortality and serious injury from the affected stocks.

For strategic stocks with fishery-related mortality and serious injury that exceed the stock's potential biological removal level, section 118(f)(7) requires that a take reduction team, once established, submit a draft take reduction plan to the Secretary within six months. The draft plan is to include recommended regulatory and voluntary measures for reducing fishery-related mortality and serious injury to less than the stock's potential biological removal level within six months of its implementation. Within 60 days of receiving a team's draft plan, the Secretary is required to publish it for public comment in the *Federal Register*, along with proposed implementing regulations and an explanation for any changes to the draft plan proposed by the Secretary. The comment period is not to exceed 90 days and, within 60 days of the close of the comment period, a final plan and accompanying regulations are to be adopted. After a plan is adopted, the take reduction team is to meet every six months, or at such other intervals as the Secretary deems necessary, to monitor plan implementation until its objectives have been met. For stocks with fishery-related mortality and serious injury that are less than the potential biological removal level, section 118(f)(8) allows a somewhat longer time frame for developing take reduction plans.

Section 118(f)(9) identifies the types of measures that may be adopted to implement take reduction plans. It authorizes regulatory measures to (1) limit incidental taking of marine mammals in fisheries by time or area, (2) require the use or encourage the development of alternative fishing gear or techniques less likely to take marine mammals, (3) educate fishermen on the importance of reducing marine mammal bycatch, and (4) monitor the effectiveness of take reduction actions. Section 118(g) directs the Secretary of Commerce to issue emergency regulations when necessary to reduce mortality and serious injury of marine mammals incidental to commercial fisheries that are having immediate and significant adverse effects on a marine mammal stock.

Efforts to Develop and Implement Take Reduction Plans

In furtherance of these requirements, the National Marine Fisheries Service has, to date, established five take reduction teams. They are (1) the Atlantic Large Whale Take Reduction Team, (2) the Gulf of Maine Harbor Porpoise Take Reduction Team, (3) the Mid-Atlantic Coastal Gillnet Take Reduction Team, (4) the Pacific Offshore Cetacean Take Reduction Team, and (5) the Atlantic Offshore Cetacean Take Reduction Team. To organize and support team activities, the Service contracted with professional facilitators to lead meeting discussions and prepare team reports. A representative of the Marine Mammal Commission has participated as a member of the Atlantic Large Whale and Gulf of Maine Harbor Porpoise Take Reduction Teams.

The facilitators used by the Service to help structure and lead discussions of the take reduction teams have served the teams well and have been a great help in preparing reports that accurately reflect the members' discussions and views. While each of the teams has submitted a draft plan to the Service consistent with the requirements of Section 118, adoption and implementation of final plans have not always been accomplished within the mandated time frames and, in some cases, have not satisfied the objective of reducing mortality and serious injury to below a stock's potential biological removal level. The problems that have been encountered appear to be due to a combination of factors related to the complexity of the issues involved, concern about the economic impact of possible mitigation measures, and an inability to meet tightly drawn statutory deadlines.

Pacific Offshore Cetacean Take Reduction Plan: A team to develop a draft plan to reduce the incidental take of several whale species in the California/Oregon shark drift gillnet fishery was established in February 1996. The team submitted a draft plan to the Service in August 1996 at the end of the six-month development period. The Service responded promptly and, early in 1997, published implementing regulations requiring (1) the use of pingers on all nets, (2) the setting of nets at a minimum depth below the surface, (3) fishing boat operators to attend educational workshops, and (4) steps to limit entry into the fishery. As we understand it, the measures are working well and have significantly reduced marine mammal incidental take.

Atlantic Offshore Cetacean Take Reduction Plan: This plan addresses the incidental taking of northern right whales, humpback whales, and sperm whales, as well as the taking of several species of small cetaceans, in pair trawl, longline, and drift gillnet fisheries for swordfish, sharks, and tuna in U.S. waters off the Atlantic coast. A take reduction team was established on 23 May 1996 and submitted its draft plan on 22 November 1996, within the established six-month development period. However, before the plan was finalized, the Service initiated steps in 1997 to permanently close the swordfish gillnet fishery and, early in 1998, to close large segments of other drift gillnet fisheries. These closures were expected to substantially reduce the incidental take of marine mammals and, in light of the changed circumstances, the Service indicated its intention to reconstitute and reconvene the team to address remaining issues. To our knowledge, however, no such action has yet been taken.

Atlantic Large Whale Take Reduction Plan: This plan was developed to reduce the incidental take of several large whale species, including northern right whales, in gillnet and lobster trap fisheries along the East Coast. On 6 August 1996, the Service established a take reduction team to develop a draft plan. Because of the critically endangered status of northern right whales, almost all of the team's attention has been devoted to reducing incidental take of that species.

The potential biological removal level for the western North Atlantic right whale population, the stock affected by these fisheries, was calculated in the original stock assessment to be 0.4 whale per year. It is expected that the potential biological removal level for this stock will be reduced to zero in the next update of the stock assessment. Despite the urgent need to reduce right whale mortality and serious injury, efforts to identify and implement measures to reduce incidental take below the stock's potential biological removal level have been unsuccessful.

With a population of about 300 whales ranging seasonally from Florida to Maine, the team's challenge has been enormous – identifying measures that will prevent perhaps 5 to 10 serious or fatal right whale entanglements per year in more than three million lobster traps and tens of thousands of gillnet sets along the entire U.S. East Coast. Although the team was unable to reach consensus on all needed measures, it submitted its findings and recommendations to the Service on 3 February 1997, within the statutory time frame. The team recommended (1) requiring gear modifications that could possibly reduce entanglement risks, although their effectiveness was untested and unknown, (2) further gear modification research, (3) efforts to locate and free entangled whales, and (4) seasonal fishery closures in those parts of designated right whale critical habitat that would least affect commercial fishing.

Based on the team's recommendations, the Service published a proposed take reduction plan and implementing regulations on 7 April 1997, within the statutory time frame. The Service's proposal relied heavily on the effectiveness of untested gear modifications and elicited thousands of letters of opposition, primarily from participants in the Maine lobster fishery, who objected to the expense associated with proposed fishing gear modifications. The Marine Mammal Commission also believed that it was premature to propose extensive gear modifications without first determining their likely costs and effectiveness. In a 5 June 1997 letter commenting on the proposed plan, the Commission recommended that the Service (1) defer imposing most gear modification requirements until more is known about their likely effectiveness, (2) reduce entanglement risks by expanding fishery closures in right whale critical habitat to better cover those times and areas in which right whales are likely to occur, and (3) implement an aggressive gear research program.

The Service published an interim final rule on 22 July 1997, relaxing the proposed gear requirements to a point where few modifications would be required. However, the Service incorporated no offsetting changes to the proposed fishery closures in right whale critical habitats to reduce the potential for whale entanglements. Although the Service made commitments to support further gear research and to increase whale disentanglement efforts, implementation of the plan did little to reduce entanglement risks. Instead, the Service relied on efforts to disentangle whales and on further gear research that it hoped would identify a long-term solution.

To date , the Service has not been able to undertake all of the gear research recommended by the take reduction team and its subsidiary gear advisory group. In 1998 and 1999, agency resources were focused on addressing other pressing right whale recovery efforts and enlisting the assistance of fishermen in reporting and releasing whales entangled in fishing gear. Although some important gear research and testing has been done, much remains to be accomplished.

Despite implementation of the take reduction plan, whale entanglements continue to occur. In 1999 at least six right whales (as well as other whale species) were observed to have been entangled. Three of these whales were initially sighted last spring in the Great South Channel critical habitat area. However, they may have become entangled elsewhere. While funding for disentanglement operations has at times been uncertain, these operations appear to have been adequately funded during both 1998 and 1999. Despite full funding, whale disentanglement efforts have proven to be difficult. Although several right whales and other whales have been successfully disentangled, and some whales have been able to free themselves, others have been hard to relocate, compromising the Service's ability to monitor their status or undertake disentanglement efforts. Last October, after several unsuccessful attempts to remove entangling gear from one right whale, it was found dead.

Disentangling large whales is expensive, risky to the human rescuers, and not an entirely effective means for saving the whales. Thus, at present, the only proven way to reduce right whale entanglement risks is to reduce the presence of potentially hazardous fishing gear at times and in areas where the whales are most likely to occur. Because of the high number of entanglements that occurred in 1999, the Marine Mammal Commission recommended on 1 October, and again on 23 November 1999, that the Service use its emergency rulemaking authority to close the entire area in the Great South Channel designated as right whale critical habitat to gillnet fishing by the spring of 2000 when right whale concentrations in that area would next reach their peak. Although the Service reconvened the Atlantic Large Whale Take Reduction Team on 22-24 February 2000, it has taken no further steps to implement either the Commission's recommendations or other measures to reduce entanglement risks. Inasmuch as the Atlantic Large Whale Take Reduction Team was unable to address the issue of further closures at its February 2000 meeting, it remains uncertain whether and, if so, when the Service will act to strengthen its take reduction plan. In the interim, one right whale entangled in fishing gear died off Rhode Island in mid-January 2000, and another, badly entangled whale seen alive in February in Cape Cod Bay has not been relocated.

The Commission appreciates that reducing incidental taking of northern right whales in fishing gear presents an extraordinarily difficult challenge. Nevertheless, it seems that more must be done to meet the challenge presented by the 1994 Marine Mammal Protection Act amendments. In particular, we believe that the Service should use its emergency regulatory authority under section 118 to augment its implementation of the existing take reduction plan.

Gulf of Maine Harbor Porpoise Take Reduction Plan: This plan is designed to reduce the incidental take of harbor porpoises in the sink gillnet fisheries for groundfish and other species off New England. To help develop the plan, the Service established a take reduction team on 12 February 1996. At that time, an estimated 1,500 harbor porpoises were being killed annually in gillnet fisheries in New England, mid-Atlantic, and Canadian waters. This far exceeded the potential biological removal level for the affected stock, then calculated to be 403 porpoises per year. The vast majority of the porpoise mortality, estimated at 1,200 animals per year, was occurring off New England.

Because of the urgent need to reduce this take, the 1994 amendments to the Marine Mammal Protection Act authorized the Service to expedite the process for publishing a stock assessment and developing a take reduction plan for the Gulf of Maine harbor porpoise. The amendments also recognized that reducing the take of harbor porpoises in these fisheries could prove particularly difficult and gave the Service flexibility to extend the time by which mortality and

serious injury were to be reduced below the stock's potential biological removal level. Nevertheless, the amendments directed the Service to develop and implement a take reduction plan for harbor porpoises by 1 April 1997. While progress has been made in reducing harbor porpoise bycatch, it remains unclear whether efforts to date will prove successful in bringing the number of mortalities and serious injuries to less than the potential biological removal level of the stock.

The take reduction team submitted a consensus draft plan to the Service on 7 August 1996, within the statutory six-month time frame. As core measures, the draft plan recommended regulations to establish two types of management zones. For some zones, all fishing was to be prohibited on a seasonal basis. For others, fishing was to be allowed, but only if fishermen used nets fitted with newly developed acoustic deterrent devices (*i.e.*, pingers) intended to keep harbor porpoises away from nets. The management zones recommended by the take reduction team expanded on fishery closures previously established by the Service under the Magnuson-Stevens Fishery Conservation and Management Act to protect groundfish stocks and other closures established specifically to reduce harbor porpoise bycatch. The draft plan also recommended (1) studies to further test the effectiveness of pingers, (2) a census of the gillnet fleet, (3) a mandatory training and certification program for fishermen on the use of pingers, (4) actions to ensure enforcement of management measures, (5) more timely analysis of data on harbor porpoise bycatch levels, and (6) studies to determine the effects of pingers on harbor porpoises and other organisms in the marine environment.

The team's work was complicated by uncertainty concerning the New England Fishery Management Council's plans for recommending new closures to protect depleted groundfish stocks. The team recognized that the closures recommended by the Council to conserve groundfish would correspondingly reduce harbor porpoise bycatch, but, absent information as to where and when they were likely to occur, the team was unable to predict the extent to which they would do so. Further complicating the matter, the Council was unwilling to consider harbor porpoise take reduction needs specifically as it designed its system of closures.

Shortly after the team submitted its draft plan, the Council recommended, and the Service adopted, a system of gillnet fishery closures that included most, but not all, of the management zone measures recommended in the team's draft plan. Apparently in light of this action, the Service deferred action on the team's recommended plan for one year, thereby missing the statutorily mandated deadline for developing the take reduction plan. During this period, the Service did take action to implement some of the team's other recommendations, such as conducting research on habituation of harbor porpoises to pinger sounds, but did not address other recommendations, such as establishing a mandatory pinger certification program, developing mechanisms for enforcing take reduction measures, and assessing the effect of pingers on the distribution of harbor porpoises.

By the spring of 1998 it was clear that the measures that had been initiated were insufficient, as harbor porpoise bycatch continued to exceed the stock's potential biological removal level by more than a factor of two. The Service therefore published a proposed take reduction plan that adopted most, but not all, of the measures included in the draft plan submitted by the team a year earlier. By then, however, it was apparent that even if all of the team's recommendations were implemented, they would be insufficient to reduce harbor porpoise mortality and serious injury to the required level. The Service therefore decided to defer action again, opting to reconvene the team in December 1997. Frustrated by the closures implemented in response to the Fishery Management Council's recommendations and the likely adoption of further restrictions to protect harbor porpoises, several fishing industry representatives chose not to attend the meeting. While participating members considered alternative time/area closures at that meeting, no recommendations were put forward. The Service therefore continued to defer action on the proposed plan throughout the first half of 1998 while it considered alternative measures. In the interim, the New England Fishery Management Council recommended a new system of fishery closures to protect groundfish stocks that further reduced fishing effort in areas of high harbor porpoise bycatch.

Dissatisfied with the Service's progress in adopting a take reduction plan that fully met the Act's take reduction goals within the statutorily mandated time frame, environmental groups filed a lawsuit on 21 August 1998. As part of a settlement agreement reached in the case, the Service agreed to publish a new plan promptly and to develop harbor porpoise bycatch estimates on a more timely basis to help assess progress towards reducing incidental mortality and serious injury. On 13 September 1998 the Service published a new proposed harbor porpoise take reduction plan that included measures applicable to waters off both New England and the U.S. mid-Atlantic states (see Mid-Atlantic Coastal Gillnet Take Reduction Plan below).

The plan, adopted on 2 December 1998, significantly expanded the fishing areas subject to pinger requirements. These requirements were established under the authority of the Marine Mammal Protection Act. However, to reach the initial goal of reducing harbor porpoise bycatch to less than the stock's potential biological removal level, the plan also relied on fishery closures recommended by the New England Fishery Management Council to protect depleted groundfish stocks and adopted by the Service under the Magnuson-Stevens Fishery Conservation and Management Act. The adopted take reduction plan also included a mandatory training program for fishermen on the use and maintenance of pingers, a program to randomly test the functioning of deployed pingers, efforts to develop

hydrophones that could be used to enforce the pinger requirements, a commitment to provide bycatch estimates in a more timely manner, and further research on the habituation of harbor porpoises to pinger sounds and the effects of those sounds on other components of the ecosystem.

To review progress in implementing the plan, the Service sought to reconvene the team in the summer and fall of 1999. However, several fishery representatives, dissatisfied with the adopted plan, resigned from the team. To enable the Service to identify and appoint new representatives and resolve scheduling conflicts, the team did not meet until 14-15 December 1999. By that time, recently collected data suggested that bycatch had been substantially reduced during the first three-quarters of 1999 and was approaching the harbor porpoises' potential biological removal level. At about the same time, however, the New England Fishery Management Council was again considering changes to the fishery closures instituted to protect groundfish, and the Service did not yet have data to evaluate how much of the estimated bycatch reduction was attributable to fishery closures and how much was attributable to mandatory pinger use under the harbor porpoise take reduction plan. As a result, the team was unable to provide advice on whether or how to alter the management zones established by the regulations implementing the take reduction plan. It remains uncertain whether or when the Service plans to make any adjustments to the plan.

During the December meeting, the Service advised the team that, although it had purchased hydrophones to help enforce pinger requirements at certain times and in certain areas, the Coast Guard was reluctant to use them based on its concerns regarding the enforceability of the applicable regulations, questions concerning the reliability of the hydrophones, lack of training in hydrophone use, and the value of hydrophone recordings as evidence in enforcement proceedings. Because of these concerns, the Coast Guard requested that a Service enforcement agent or the affected fishermen be present at the time the hydrophones were used to ensure that they were deployed properly. Because the Service does not have enforcement agents available to assign to the task, apparently no efforts have been made to conduct checks to ensure that pingers are in fact being used on deployed nets. The Service also advised the team that it had been unable to randomly collect deployed pingers and replace those determined to be faulty because fishermen believed the replacement pingers to be inferior models and were unwilling to accept them in exchange. As a result, little was done in 1999 to check the durability of pingers under routine industry use.

While significant steps had been taken to reduce harbor porpoise mortality and serious injury, it is unclear whether actions taken to date have successfully achieved the Act's initial objective of reducing these types of takings to below the stock's potential biological removal level. In part, the delay in meeting the statutory goal is attributable to a delay in publishing a take reduction plan. Despite a specific statutory deadline, a plan was not adopted until December 1998, approximately 16 months late.

Much remains to be accomplished to implement the harbor porpoise take reduction plan fully and greater efforts need to be directed at developing bycatch estimates on a timely basis, monitoring and enforcing applicable pinger requirements, testing pinger reliability under operational conditions, and conducting research to assess the effects of pinger sounds on the distribution of harbor porpoises and other species. The slow pace of implementation has frustrated team members, apparently contributing to some resignations from the team, and has resulted in a lawsuit being filed. In addition, data have yet to be developed that would enable the Service to differentiate the extent to which bycatch levels have been reduced as a result of measures in the harbor porpoise take reduction plan as compared to those measures implemented for fishery management purposes, which are subject to change.

Mid-Atlantic Coastal Gillnet Take Reduction Plan: The Service originally planned to convene a take reduction team to address the incidental take of harbor porpoises from the Gulf of Maine stock and bottlenose dolphins in coastal gillnet fisheries for dogfish, monkfish, shad, and other species off the U.S. mid-Atlantic coastal states. Because information on bycatch rates in these fisheries was limited, however, the Service delayed establishment of a take reduction team until 25 February 1997 to enable it to collect and analyze additional observer data. Those data provided a sufficient basis to begin addressing the regional bycatch of harbor porpoises, but not bottlenose dolphins. The Service therefore decided to defer development of a take reduction plan for bottlenose dolphins pending collection of additional data on bycatch rates and better delineation of bottlenose dolphin stock structure along the mid-Atlantic coast.

The take reduction team submitted its draft plan for harbor porpoises to the Service on 25 August 1997, within the statutorily mandated time frame. The plan, reflecting a consensus of team members on most measures, did not recommend mandatory pinger use. Rather, it relied on seasonal gear requirements (*e.g.*, net twine diameters, net numbers and length, and mesh size) that observer data suggested were less likely to catch harbor porpoises. Apparently in the interest of combining harbor porpoise take reduction measures for the New England and the mid-Atlantic regions into a single plan, the Service deferred action to adopt the recommended measures until 25 September 1998, when it published a proposed plan covering both areas. That plan was adopted on 2 December 1998, as noted above.

Although required by the Marine Mammal Protection Act to carry observers to monitor marine mammal bycatch when requested by the Service, some fishermen have refused

to do so. Nevertheless, the observer data that have been collected are believed to reflect bycatch rates for most regional gillnet fishing operations. Based on those data, the Service has estimated harbor porpoise bycatch levels in the mid-Atlantic region at 572 and 446 porpoises for 1997 and 1998, respectively. Bycatch for 1999 appears to have declined to well below 100 animals although a final estimate is not yet available.

Although take reduction measures for harbor porpoises off the mid-Atlantic states, deferred for a year after submission of the take reduction team's draft plan, are now in place and appear to have significantly reduced regional bycatch levels, the Commission is concerned that the refusal of some fishermen to carry observers might be skewing bycatch estimates. Despite the apparent success in reducing harbor porpoise bycatch in the mid-Atlantic region, we are concerned that steps to address the bycatch of bottlenose dolphins have not yet been taken and that it remains unclear when a take reduction team for this species will be established. In this regard, the Commission believes that current incidental take levels may be high enough to be causing population declines and that development of a take reduction plan cannot wait until the uncertainties concerning stock structure are resolved.

Conclusions

The requirements for developing and implementing take reduction plans and convening take reduction teams set forth in section 118 of the Marine Mammal Protection Act appear to be appropriate and fundamentally sound. Among other things, the Commission believes that involving all stakeholders in the development of plans ensures that all views are identified and considered in the process of plan development and that plans consequently are more likely to be successfully implemented.

As noted in the Commission's 29 June 1999 testimony before this Committee on implementation of the 1994 amendments, one change that may be warranted concerns the requirement to prepare plans for all strategic stocks taken in Category I or Category II fisheries. Some stocks are considered strategic solely by virtue of being listed as endangered or threatened under the Endangered Species Act or designated as depleted under the Marine Mammal Protection Act, not because of a significant level of fishery-related mortality or serious injury. In cases where there is a very low level of taking incidental to commercial fisheries, the stocks would benefit little from the preparation of take reduction plans. To ensure the best use of limited agency resources, the Commission recommends that the Act be amended to specify that plans need not be prepared for those strategic stocks for which mortality and serious injury resulting from commercial fishing are inconsequential.

Although the requirements for preparing take reduction plans seem conceptually sound, implementation has been inconsistent and there has been difficulty in meeting the requirements of section 118 in a timely manner. These difficulties seem to be undermining the confidence of some team members in the process and, in certain cases, their willingness to participate. Unless these deficiencies are corrected, progress in adopting and implementing plans is likely to continue at a slower-than-expected pace and may expose the Service to litigation risks. In the case of the northern right whale, delay in initiating an effective take reduction plan may be significantly affecting the species' prospects for recovery.

With regard to regulatory measures needed to implement the Atlantic Large Whale Take Reduction Plan, Congress should call on the Service to take all necessary steps to implement fishery closures designed to eliminate hazardous fishing gear from designated right whale critical habitat during those times when right whales are most likely to be present. The Service also should be encouraged to develop adaptive regulatory procedures that enable it to institute temporary restrictions in other areas during periods when concentrations of right whales are detected. Preventing hazardous fishing gear from being deployed in areas where right whales are most likely to occur currently is the only way to ensure that entanglement risks for this species are reduced. Based on the fact that right whales continue to get entangled in fishing gear and that some of these entangled whales do not survive, the Commission believes that further remedial actions are essential.

With regard to the Gulf of Maine Harbor Porpoise Take Reduction Plan, the Service needs to ensure that all measures necessary to achieve take reduction goals are reflected in the plan and are addressed in its implementing regulations. Due to constantly changing fishery closures recommended by the New England Fishery Management Council to conserve fish stocks, which affect harbor porpoise bycatch levels, the ability of take reduction teams to provide timely advice on regulatory measures needed to achieve take reduction goals has been impaired.

As we begin to get a handle on reducing fisheries-related mortality and serious injury to biologically insignificant levels, we should not lose sight of other, sometimes more significant, threats to marine mammals. For example, an average of one manatee is hit and killed by a boat in Florida every four or five days. Further, the size of the human population in Florida is increasing and, as this occurs, both the number of boats and the level of risks to manatees continue to increase. Also, as the human population grows, human-related destruction and degradation of essential manatee habitats are likely to increase. Thus, the survival of the species will depend on effective use of the Endangered Species Act and the Marine Mammal Protection Act to reduce human-caused mortalities and to prevent destruction and degradation of critical habitats and habitat components.

Another problem that is becoming increasingly apparent is point and non-point source pollution, which may be having significant adverse effects on marine mammals and other components of marine ecosystems. Both the consequences and uncertainties concerning the sources and effects of ocean contaminants on marine mammals were pointed out by participants in the October 1998 *Workshop on Marine Mammals and Persistent Ocean Contaminants*, sponsored jointly by the Commission, the Biological Resources Division of the U.S. Geological Survey, the National Marine Fisheries Service, the Environmental Protection Agency, and the National Fish and Wildlife Foundation. More recently, I learned that due to the presence of chemical contaminants, people have been warned to limit their consumption of fish caught in Galveston Bay, Texas, to two per month to avoid possible health consequences. In Sarasota Bay, Florida, a presumably much less polluted area, older bottlenose dolphin males – the individuals that in normal populations appear to sire the most calves – are showing signs of immune system dysfunction, possibly as a consequence of local pollution. How pollution may be affecting bottlenose dolphins in the Galveston area and other parts of their range in coastal U.S. waters can only be guessed at present.

Apparent contaminant-related problems also are surfacing elsewhere. In California, for example, it has been suggested that the ongoing decline of the southern sea otter, designated as threatened under the Endangered Species Act, may be a direct consequence of environmental contaminants or due to increased susceptibility to disease because of contaminant-related suppression of their immune systems. It also is possible that the apparent decline in reproductive success among right whales in the western North Atlantic is due, at least in part, to direct contaminant effects or to the effects of contaminants on key prey species.

In this regard, the Commission notes that most research and conservation actions are undertaken in response to acute, often controversial conservation issues. Agency mandates, budgets, and programs largely reflect this reactive approach. The Commission recommends that Congress consider the need to provide direction for development and implementation of more effective recovery and conservation plans for endangered, threatened and depleted marine mammals, as well as take reduction plans for stocks being significantly affected by commercial fisheries. The Commission further believes that there is a need for broad-based, interdisciplinary, anticipatory research that will allow the government to take action to address potential conservation problems before they become serious and controversial. If you would like, we would be happy to discuss the possibilities with committee members and staff at your convenience.

Mr. GILCHREST. Thank you very much, Dr. Reynolds.

Ms. Hayes, welcome.

STATEMENT OF MARGARET HAYES, DIRECTOR, OFFICE OF OCEAN AFFAIRS, BUREAU OF OCEANS AND INTERNATIONAL ENVIRONMENTAL AND SCIENTIFIC AFFAIRS, U.S. DEPARTMENT OF STATE

Ms. HAYES. Thank you, Mr. Chairman, and members of the Subcommittee. Thank you for the opportunity to share the State Department's views on the U.S.-Russia agreement on the conservation and management of the Alaska-Chukotka polar bear population. Mr. Jones and Dr. Reynolds have briefly summarized that agreement, and I would like to expand on their summary for a couple of minutes.

Polar bears are an internationally protected species that live in the circumpolar north, in five countries: the United States, Russia, Canada, Norway, and Greenland. An important part of a sensitive ecosystem, polar bears recognize no national boundaries. They are essential to the survival of native people, including Alaskans, as a renewable subsistence resource upon which these people have depended for centuries.

The United States has long had an interest in the responsible management of shared polar bear resources. We have been party since 1973 to the Agreement on the Conservation of Polar Bears, along with Russia, Canada, Norway, and Denmark on behalf of Greenland. The 1973 agreement explicitly provides for the possibility that the parties might establish new measures so as to provide more stringent controls than those required under the provisions of this 1973 agreement.

The U.S. and Russia signed the bilateral agreement a year ago. It is designed to afford protection, additional to that provided by the 1973 agreement, to the polar bears shared between our two countries. It also addresses the present day concerns of Alaska and Chukotka natives, as well as social, economic, environmental, and technological developments since 1973. Additional protection is needed to ensure that the subsistence take of polar bears by native people in Alaska and in the Chukotka region, together with mortality from other activities, continue to promote a sustainable approach to management of this population.

Informal discussions between the U.S. and Russia on a bilateral treaty to conserve our shared polar bear population began in 1992. Formal negotiations were led jointly by the State Department and the Department of the Interior. Alaska and Chukotka natives took part directly in these negotiations. U.S. participants included the Alaska Nanuuq Commission, the North Slope Borough, the State of Alaska's Department of Fish and Game, the Marine Mammal Commission, and the National Audubon Society.

We agreed with Russia that sustainable management of this population requires a legally binding instrument for the two countries to jointly determine and allocate subsistence take from that population. U.S. negotiators specifically sought and achieved in the bilateral agreement the inclusion of the following elements:

Recognition of the right of subsistence use of polar bears from this population by native people of both countries;

Inclusion of a definition of sustainable harvest level, reflecting a clear obligation to conserve the population;

Establishment of a management mechanism in the form of a joint commission that can establish binding quotas to ensure that subsistence take of polar bears from the Alaska-Chukotka population is consistent with maintenance of that population at sustainable population levels;

Full involvement of the native people of Alaska and Chukotka in the implementation of the agreement, including a provision that each party will include in its national section in the commission a representative of its native people;

And additional studies and research relating to the conservation and management of this population, including collection of data necessary for regular and accurate population assessment and harvest monitoring.

In all these respects, the bilateral agreement fulfills the spirit and intent of the 1973 agreement. The bilateral agreement, which we hope to submit to the Senate soon for advice and consent to ratification, is in many ways a potential model of international cooperation. Not only will this agreement serve our continued interest in conserving our magnificent polar bears, but it will also ensure the continuance of a subsistence way of life that depends on the bear's existence.

We and the Russians have agreed on common principles and set out a fair and reasonable mechanism for allocating limited resources between the Russia and Alaska natives. Our success can serve as a basis for cooperation in other areas of mutual interest.

Thank you very much. I would be pleased to respond to any questions you may have.

[The prepared statement of Ms. Hayes follows:]

Statement of Margaret F. Hayes, Director, Office of Oceans Affairs Bureau of Oceans and International Environmental and Scientific Affairs, U.S. Department of State

Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to share the State Department's views on the "Agreement between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska–Chukotka Polar Bear Population" (hereinafter referred to as the bilateral Agreement.)

Polar bears are an internationally protected species that live in the circumpolar North in five countries: the United States, Russia, Canada, Norway, and Greenland. An important part of a sensitive ecosystem, polar bears know no national boundaries. They continue to be essential to the survival of native people, including Alaskans, as a renewable subsistence resource upon which they have depended for centuries.

The United States has long recognized our common interest in the responsible management of shared polar bear resources. We have been party to the Agreement on the Conservation of Polar Bears since 1973, along with Russia, Canada, Norway, and Denmark (on behalf of Greenland). The 1973 Agreement explicitly provides for the possibility that the Parties might establish new measures "so as to provide more stringent controls than those required under the provisions of this Agreement." Article VII of the 1973 Agreement further mandates that the Parties coordinate research, consult on management, and exchange information. The bilateral Agreement furthers the objectives of these provisions of the 1973 Agreement.

The United States and Russia signed the bilateral Agreement in October 2000. It is designed to afford protection additional to that provided by the 1973 Agreement to the polar bears shared between our two countries, while addressing the present-day concerns of Alaska and Chukotka Natives, as well as social, economic, environ-

mental, and technological developments since 1973. Additional protection is needed to ensure that the subsistence take of polar bears by native people in Alaska and in the Chukotka region, and other activities, are consistent with a sustainable approach to the management of this population. The 1973 Agreement allows taking of polar bears for subsistence purposes by native people, as does our domestic legislation—the Marine Mammal Protection Act (MMPA)—in respect of Alaska Natives.

Informal discussions between the United States and Russia on a bilateral treaty to conserve our shared Alaska–Chukotka polar bear population began in 1992. Formal negotiations began in 1998 and were led jointly by the State Department (OES) and the Department of the Interior (Fish and Wildlife Service). Other U.S. participants included the Alaska Nanuuq Commission, the North Slope Borough, the State of Alaska's Department of Fish and Game, the Marine Mammal Commission, and the National Audubon Society. Thus, the bilateral Agreement is the result of eight years of discussions and negotiations with the Russian Federation, and involving the direct participation of Alaska and Chukotka Natives.

We agreed with Russia that sustainable management of the Alaska–Chukotka polar bear population requires a legally binding instrument for the two countries to jointly determine and allocate subsistence take from that population.

U.S. negotiators specifically sought and achieved in the bilateral Agreement the inclusion of the following elements:

- Recognition of the right of subsistence use of polar bears from the Alaska–Chukotka population by native people of Alaska and Chukotka;
- Inclusion of a definition of sustainable harvest level reflecting a clear obligation to conserve the population;
- Establishment of a joint management mechanism, in the form of a bilateral commission, that can establish binding quotas to ensure that subsistence take of polar bears from the Alaska–Chukotka population is consistent with maintenance of that population at sustainable population levels;
- Full involvement of the native people of Alaska and Chukotka in the implementation of the Agreement, including a provision that each party will include in its national section in the commission a representative of its native people (as well as a representative of the national government); and
- Additional studies and research relating to the conservation and management of the Alaska–Chukotka polar bear population, including collection of data necessary for regular and accurate population assessment and harvest monitoring.

The Administration believes that U.S. interests will be served through the responsible management of the Alaska–Chukotka polar bears at sustainable population levels. The bilateral Agreement provides for long-term joint programs, such as conservation of ecosystems and important habitat areas, setting of sustainable harvest levels, collection of biological information, and increased partnerships with local and private interests. It is also designed to ensure that subsistence take from this population is by the native people of Alaska and Chukotka only, and to provide for equitable allocation of such take between them. Further, it incorporates mechanisms for the continued research and assessment of the status of this population. In all these respects, it fulfills the spirit and intent of the 1973 Agreement.

The bilateral Agreement, which we hope to submit to the Senate soon for advice and consent to ratification, is in many ways a potential model of international cooperation. Not only will this Agreement serve our continued interest in conserving our magnificent polar bears, but it will also ensure the continuance of a way of life that depends on the bears, existence. Furthermore, there is benefit in reaching this consensus on shared interests with Russia. We have agreed on common principles and set out a fair mechanism for allocating limited resources in good faith between the legitimate claims of Russia and Alaska Natives. Our success here can serve as a basis for cooperation in other areas of mutual interest.

Thank you very much; I would be pleased to respond to any questions you may have.

Mr. GILCHREST. Thank you, Ms. Hayes. Ms. Hayes, can you give us some idea of when Russia will implement the treaty? Have they implemented it? Do we have some idea of when they will?

Ms. HAYES. Well, the treaty of course is not in effect yet on either side. I mean, both sides have to take steps to ratify it. We expect

that once that is done, both the U.S. and Russia will take all the necessary steps to implement it.

Mr. GILCHREST. But the process is ongoing, and do we have any idea when the treaties may be ratified, and if the Russians will then—I guess two questions. Have the discussions with the Russians gone very well? Are they difficult? Are there some roadblocks on either side, ourselves or the Russians, native Alaskans or the natives on the Russian side? And can you predict if this time next year the treaty will have been ratified and both the United States and Russia will implement it?

Ms. HAYES. I am not going to attempt a prediction. I think that the negotiations went very well. I think the relationship between the native peoples is particularly strong and productive. There are always difficulties, I think, in these situations, particularly when you are talking about populations in such remote areas. Enforcement mechanisms may not be ideal, perhaps on either side. But I think we do have the commitment of the Russian Government to do its best to implement this agreement.

Mr. GILCHREST. Now, who is involved in this process with us on our side? Is it NMFS, Fish and Wildlife?

Ms. HAYES. It is Fish and Wildlife Service, the Marine Mammal Commission, the State of Alaska, and the native organizations.

Mr. GILCHREST. Well, if you need anybody up there with snowshoes, Mr. Underwood and I are ready to go.

[Laughter.]

Ms. HAYES. We will give you a call.

Mr. GILCHREST. He has a lot of experience in that arena, I think.

Mr. JONES. Mr. Chairman, if I could add, first of all, we would love to have the opportunity for you and any other members of the Committee who could join you to come up and see this in Alaska. As Ms. Hayes has said, we can't predict what the fate will be of the legislation and the treaty, once it is presented to the other body here, and to you in terms of the legislation.

But we do believe that this is a very strong agreement, and it is an unprecedented one because it was not just a government-to-government negotiation, but also it was a native-to-native negotiation done simultaneously. So the U.S. delegation included both governmental and native organization representatives, the same on the Russian side.

So we believe there is a tremendous commitment on the part of native organizations to be the masters of their own fates and take responsibility for management of marine mammals, in this case polar bears, on both sides of the border. That is why we think this agreement is so important, Mr. Chairman, and we look forward to having the opportunity to discuss it with you in more detail once the implementing legislation has been presented by the administration, and the treaty itself to the Senate for ratification.

Mr. GILCHREST. Thank you, Mr. Jones.

Ms. Hayes, sometimes these small obscure agreements have much more—a broader array of positive spinoffs, and I have a feeling this one might as well.

Dr. Hogarth, can you briefly describe, you mentioned in your testimony the networks that are in the process of being developed and have been developed to discuss an array of issues, but specifically

can you tell us how the network would respond to the entangled whale problem, whales that are entangled in fishing gear?

Mr. HOGARTH. The right whale problem, yes, sir. Well, we have a network set up so that they go out and rescue, like we did for a number of times with the Churchill, which is the latest one that we spent a number of days with the consortium looking at the entanglement.

And we have set up a take reduction team to look at how to manage the effort, so to speak. If the right whales are in a certain area, we would have seasonal areas we close. We would have dynamic management areas, where we are getting ready to implement, that we would do surveys and then we would close those areas based on the number of right whales.

We are also in the process now of having an outside consultant look at the ship traffic, the impact of ship traffic on right whales, and to give us a report on how we can deal with that. So we have two issues we are dealing with, the entanglement and also ship strikes. Both of them are problems with right whales.

Mr. GILCHREST. Could you just briefly respond to any—there has been some criticism that in the process of the development of the network toward certain issues, the criticism has been that NMFS has not always listened to the various interest groups involved in developing a policy. Now, if you haven't heard any criticism, well, we will just move on.

[Laughter.]

Mr. HOGARTH. No, we have heard more criticism. I was trying to address that, but thinking about that, at the same time we have had criticism of how we do the various research, you know, how the funding is done of the research and how we implement what comes out of that with the consortium. We have, I think, worked through that problem for this year.

There is a great concern over right whales, and I think there is a lot of opinions of what should be done. You know, when you look at—we know we have problems with ship traffic, and how do you manage ship traffic from an international standpoint?

Mr. GILCHREST. Is that the biggest problem with right whales, ship traffic coming and going to the various ports?

Mr. HOGARTH. That is one of the big problems. We know we have had two to four ship strikes this year, you know, for example. So yes, that is one of the big problems, and entanglements have been another problem, and we are looking at various types of fishing gear, you know, modifications there. There is money being spent to look at the type of lines, breakaway lines, but all of that has potential problems, too.

So we are trying to redo the right whale process and get more input in to look at what we can do. It has not been successful, if that is your question, too. You know, we still have less than 300 right whales. It has been listed for a number of years. And you are dealing with one of the largest fisheries in the lobster fisheries, about 17,000 fishermen, but also the ship strikes.

Calving last year was only about, I think last year it was about four calves; this year it is probably about 20. But the population itself is not responding. We have got a problem to deal with, yes, sir.

Mr. GILCHREST. We will help you work with it.

My time is up. We may have a second round if that is needed, but I would like to yield to Mr. Underwood.

Mr. UNDERWOOD. Thank you, Mr. Chairman, and I ask unanimous consent to allow the ranking member of the full Committee to sit with us, Mr. Miller.

Mr. GILCHREST. I will ask unanimous consent for Mr. Miller to sit up here on the dias and ask questions. Is there an objection?

Hearing none, at least none that is serious, I guess, so ordered.

Mr. UNDERWOOD. If I could just ask a quick question of Ms. Hayes, in the U.S.-Russia polar bear treaty I know that there is a lot of expression of goodwill in terms of trying to deal with this issue, and high levels of cooperation between the native organizations. But is it your opinion that the Russian Federal Government will provide the necessary resources for research, management and education? And is it implied in the agreement that the U.S. would shoulder primarily the financial burden to support this new commission?

Ms. HAYES. Well, all I can say is that the Russian Federation did sign the agreement. I believe they have every intention of doing their share to implement it.

Mr. Jones, do you have—

Mr. UNDERWOOD. Is that outlined in the emerging agreement?

Mr. JONES. The agreement, Mr. Underwood, provides that each side would bear its own share of the expenses. Now, it has been clear over the past decade, since the dissolution of the Soviet Union, that the capacity of the Russians to undertake conservation agreements has been seriously eroded. That has been a problem that we have acknowledged.

On the other hand, we believe that they are committed to implementing this agreement because they have as much to gain from its successful implementation as we do, and they have just as much to lose, too. There always are issues in any international context, and certainly dealing with a country that is under financial stress, about whether they would do everything that we would hope they would do, and we can't guarantee that.

But we do believe that the Russians negotiated this in good faith. They attended, participated actively. They made the arrangements for the natives from Chukotka to be part of that. And we believe that, working together, that we will be better off with this agreement than without this agreement, because without the agreement we have no ability to have the good things happen. With the agreement, we have that possibility, and we would work actively.

That doesn't mean that we think we would need to pay all the expenses for Russia. We do have a program. We have appropriated funds in the Fish and Wildlife Service from Congress specifically which helps us with a cooperative program with the Russians, and we use those funds to implement high priority projects. So we might provide some financial assistance, but we would expect the Russians would have to pay their share, and we think they would do that.

Mr. UNDERWOOD. Okay. Thank you. I yield to Mr. Miller.

Mr. MILLER. I thank my colleague for yielding, and I am sorry to run in and out like this but I am caught between a couple of

meetings. But I wanted to raise an issue and a question with you that a number of my colleagues have asked me about, and that is, apparently deals with the treatment of some polar bears in this circus in Puerto Rico, this Suarez Circus. Marshall, I don't know if you are aware of this, or Mr. Reynolds, if you are.

But my understanding is that there have been at least two inspections where this facility has been found wanting. We haven't had a qualified vet go in and look at these animals. There are questions being raised about the provenance of at least one of the bears, and maybe another, whether or not those documents have been falsified. Obviously this is a traveling circus, and there is concern among myself and some other Members here about whether or not we can quickly make some determinations about the care of these bears, their health, their lineage, if you will, whether or not they are here with falsified documents.

Are you aware of this, Marshall, and can you help me on this? I think there is going to be a letter coming to you that will be more specific on this, but they wanted it raised in this hearing.

Mr. JONES. Mr. Miller, we are familiar with this in some great detail, and you have outlined two different issues that are involved here.

Mr. MILLER. There are two, yes.

Mr. JONES. One issue is the issue of the humane treatment—

Mr. MILLER. Right.

Mr. JONES. —the care of the animals. The other is whether or not the animals are what they said they were in the permit applications. We issued permits for these animals based on applications which said they were—one of the animals, for example, was reported to have originated in the Atlanta Zoo, then went to Germany, and we issued a permit for it to come back.

We now have a review, which does involve both our biologists and our law enforcement division, looking at whether or not in fact the information that was presented in the permit applications was accurate. If that information is not, then we would determine what the appropriate course of action would be, and we are doing that in close consultation with the Puerto Rico Department of Natural Resources, but we do have a special agent on Puerto Rico who is actively involved.

Now the other issue, Mr. Miller, has to do with the humane treatment of the animals, and for that we are not the experts, and we generally in those matters defer to the Department of Agriculture for animal welfare issues.

Mr. MILLER. Right.

Mr. JONES. And it is my understanding that the latest report from the Department of Agriculture is that they believe that the conditions for the animals are acceptable. Puerto Rico has also been conducting inspections, and I think they are doing that on a routine basis, maybe on a weekly basis.

We are reviewing those reports, but we believe that it would be up to the Department of Agriculture to make the determination about whether or not the conditions meet the requirements under the Animal Welfare Act which are different than our permit requirements. And so far the information, the latest information that

we have from APHIS would indicate that the conditions for the animals are acceptable.

We have a concern about whether or not that will be maintained, and we are certainly going to continue to monitor that situation, but we are looking to the Department of Agriculture to give us advice about that. That is separate from the investigation about whether the animals are the ones that they were said to be.

Mr. MILLER. While the first part, while the law enforcement investigation is going on as to whether or not the permit was fraudulently presented to you or not, I assume the Department of Natural Resources in Puerto Rico can keep the circus from leaving until that is resolved, because obviously if they move on to another country, what have you, and it is a traveling circus, we would lose jurisdiction at that point. Has some arrangement been made to see that that doesn't happen until this issue can be resolved?

Mr. JONES. Yes, sir. That would have to be done under permit, so—

Mr. MILLER. Let me just ask, if I might, Mr. Chairman, just one final point here. I realize that APHIS has the jurisdiction here to make this determination as to treatment, but let me ask you, what is your situation? What is your authority under current law, if you give a permit and then an animal is mistreated under that permit? Do you have the right to revoke that permit? Do you have a right to ensure, separate from APHIS, that there is proper treatment of the animal under that permit, or is that delegated to the Department of Agriculture under APHIS?

Mr. JONES. I think that is a gray area. Generally speaking, we have said that for animals that are under the jurisdiction of the Animal Welfare Act, that is an APHIS responsibility. Now, in our permit regulations we do have a provision which says that if there is a really blatant case of inhumane treatment, we could revoke a permit. To our knowledge, we haven't exercised that recently, and it is very possible that if we did try to exercise that, there would be some legal challenge to that by the permittee—

Mr. MILLER. I am sure of that. Polar bears are—

Mr. JONES. —because of its being sort of an unprecedented action. That is why we—we don't have veterinarians. We are not the experts in humane care, and we look to APHIS to advise us.

Now, if we got a report from APHIS that said the care was not adequate, and that they were issuing notices of violation or taking steps, then I think we would feel that we have certainly the authority to revoke a permit under those conditions.

Mr. MILLER. I would just, I guess I would make this point, that clearly we can't be in a position where we allow animals to come in under your permits, then to have harm done to those animals. I am encouraged by your response suggesting that APHIS now thinks that the care has improved, but clearly subsequent to that finding, if that is their tentative finding, that was not the situation down there, because it is fairly well catalogued here in terms of the abuses of these animals, in terms of the humane treatment.

I guess what I am asking is, I assume that you will then be able to sort of make an independent judgment based upon the APHIS findings, and/or if you are not satisfied with that, you have some authority to figure out how to make that independent judgment as

to whether or not these animals are being abused under the permit, because you obviously can't have a permit that allows that to continue.

Mr. JONES. Right.

Mr. MILLER. I think in fact the law wouldn't allow that.

Mr. JONES. I think that is correct. We have some authority. It is a gray area. We don't know exactly where the boundaries of that authority are, but we are going to monitor this. We have a task force that is continuing, almost on a daily basis, to monitor this with APHIS and with the Commonwealth of Puerto Rico.

And clearly if we got evidence that indicated the animals were being mistreated, and that that was leading to harm, we would consider then what legal steps we could take to try to stop that. If we got to that point, then a lot of other issues come up about what would be the right disposition of the animals, and those are not easy issues.

Mr. MILLER. Thank you for your response. I know Mr. Pallone on this Committee is also very interested in this, as are some other Members, and if you could just kind of keep us informed—

Mr. JONES. We will.

Mr. MILLER. —as to how this progresses, because we would hate to see that we lose jurisdiction over these animals and then they fall back into that kind of mistreatment that they were experiencing earlier. Thank you.

Mr. GILCHREST. Thank you, Mr. Miller.

Mr. UNDERWOOD. Thank you.

Mr. GILCHREST. Was that your time, Mr. Underwood?

Mr. UNDERWOOD. That was my time, but if I could just add 30 seconds to that—

Mr. GILCHREST. I will give you a few more minutes. Okay, 30 seconds to Mr. Underwood. Sixty seconds to Mr. Underwood.

Mr. UNDERWOOD. No, I just wanted to express my concerns along the lines that have just been expressed by our colleague from California, and I know that we had invited APHIS to come here and they have declined to come here to explain this situation. No? They are here?

Ms. KOHN. No, we were not invited to speak. We have submitted written testimony. My name is Barbara Kohn. I am from APHIS. And we were told to submit written testimony.

Mr. GILCHREST. Okay, regular order. Actually, we may ask you some questions. As a matter of fact, if Mr. Underwood has a question, we will yield first to Mr. Pombo from California, but if anybody has any questions here later on to APHIS, we will bring you up to the table, ma'am.

Mr. UNDERWOOD. Very good. Thank you.

Mr. POMBO. Mr. Chairman, if the ranking member has a question that he wants to deal with, I will yield for the time being for him to deal with that.

Mr. GILCHREST. Mr. Underwood, do you have a question to APHIS?

Mr. UNDERWOOD. Did you want to ask a question?

Mr. GILCHREST. Mr. Miller?

Mr. MILLER. Thank you. I appreciate the extension of time here. I guess I would be interested in a comment on the events as out-

lined by Marshall here, if in fact that is an accurate interpretation of what your findings to date are and what you plan to do with them.

Ms. KOHN. Okay, yes. I have been asked to clarify my name. My name is Barbara Kohn, K-O-H-N, and I work for APHIS Animal Care. Since the circus, Circus Suarez, has entered the country in early June, APHIS has been there to inspect them at least 11 times. Our average inspection rate for a facility is once a year, so we are committed to making sure that these animals are being treated appropriately under the Animal Welfare Act.

I must make the statement that the Animal Welfare Act is an act of minimum standards as designed by Congress, so that minimum standards do not necessarily equate to people's perception of the ideal way to maintain any animal, across the board for the number of species that we regulate.

The facility's inspection history has been one of being in compliance; being out of compliance in some areas on the next inspection; the facility working hard to fix those areas, being okayed on a following inspection; and bouncing back and forth. As a result of this, APHIS has instigated, has initiated an investigation of the facility's compliance history. Because the facility is under investigation, I am limited in what I can say, but I do want to assure the Committee that APHIS has been monitoring the situation.

We have consulted with experts in the field of polar bear management whenever we have had questions. One of the things, we have made the facility provide chillers for their pools; fans and air conditioners. We admittedly are not there 24 hours a day, and there have been instances where some of those devices have not been used.

Mr. GILCHREST. Will the gentleman yield?

First of all, the staff does inform me that APHIS was invited to attend, to testify, but the person was not available to do that, so we appreciate—

Ms. KOHN. I appreciate—

Mr. GILCHREST. The other question is, if you normally investigate a facility once a year, and this seemed to warrant 11 inspections, there must be something significantly wrong. And perhaps if minimum standards are not what we consider to be ideal, maybe minimum standards should be improved, and I guess that would be our responsibility, working with you. Certainly minimum standards should not be bad standards. But if you went back 11 times, there was something clearly wrong.

Ms. KOHN. The frequency of inspection has been in response to public concerns for what is going on there, and the only way for us to state equivocally what we feel is going on there is to inspect. This facility also has moved, because it is a traveling exhibitor, has moved a number of times, and we have tried to be on site soon after the move at each time. And so they, I believe, have moved three or four times already.

I am getting a very dry mouth, so excuse me if my voice is changing.

And so a lot of this has been in response. As Mr. Jones has indicated, his agency as well as APHIS has received a large number of inquiries and letters and e-mails on this topic, and we have re-

sponded as we would to any situation where we have a lot of public interest, where we will go and make sure that things are moving ahead.

When the facility first arrived, we did do a couple of inspections to make sure that they were truly set up as their plans and as their protocols had been directed, because we could not inspect the facility until the animals were there. I mean, we could not do a total inspection until the animals were actually in the country. And so we were down there initially, and then in response to not only other Federal agencies but the public, animal welfare groups who have expressed their concerns, we have been back there monitoring the situation closely.

Mr. MILLER. If I just might follow up on a point that the Chairman made—and, Marshall, this may go a little bit to your jurisdiction—and I appreciate that this is being raised without notice. I mean, this isn't about mousetrapping.

Ms. KOHN. Sure.

Mr. MILLER. It is just about a number of us in the Congress are getting those same e-mails and letters of concern and all the rest of that, and this was an opportunity, and I appreciate your answers.

I guess the question is, as the Chairman said, if you went back 11 times and you have compliance, noncompliance, compliance, noncompliance, we are talking about very unique animals here.

And, you know, you start off with the idea that if a polar bear is in Puerto Rico, you know, something is amiss unless, you know, global warming or something has changed. If polar bears could send postcards, right, hey. But anyway, sorry. I can't get over a polar bear in Puerto Rico. But let's start over again.

This raises the question of whether or not the permit should, at a minimum, be modified. I would raise the question whether the permit should be revoked. But it would seem to me, Marshall, that if you are giving a permit and you are asking that a polar bear go to Puerto Rico, you have got to think what are the special conditions or something that have to be put on this permit to make this work?

Apparently they didn't have chillers, they didn't have air conditioning, they didn't have pools of water. They were basically caged animals for the traveling purposes at the outset. That is probably not the conditions under which you would want to let the permit go through.

And I am second-guessing this, okay, and I appreciate that. But I am also thinking that we have the authority for permit modification and/or even revocation. I appreciate people sue you. They will sue you either way. If you want to keep the permit, you are going to get sued; if you want to revoke the permit, you are going to get sued.

But we have really got to go to the humane treatment of these animals. And so I would just hope that as you follow on this and keep up, that you would think about maybe 11 visits tells you that you have got to rethink about the conditions that must be in place and must be met, or there will be a revocation of this.

And, again, I recognize this is a traveling circus and it may leave Puerto Rico to go somewhere else, and leave the country, and we

ought to make sure that this is cleared up before that happens and they not be allowed to take this, especially with the criminal investigation opened as to the provenance of these bears.

So I will leave it there, and I just thank you, Mr. Chairman, for your intervention there, because I think it does raise the question about the conditions of this permit. And thank you, the gentlewoman from APHIS. Thank you.

Mr. GILCHREST. Thank you, Mr. Miller.

Mr. Pombo?

Mr. POMBO. I thank the Chairman. I just caution my colleagues that the purpose of the permit is a different reason than the Animal Welfare Act, and you have different agencies with different responsibilities. You know, this may be an issue with APHIS and not necessarily an issue with dealing with the permit, and so we better not confuse those two issues and try to use one agency against another in that particular case.

The United States as a Nation has a history of supporting sustainable use of renewable wildlife and marine resources under appropriate professional management conditions, but it is my understanding that at a recent conference held in Iceland on Responsible Fisheries and the Ecosystem, which was sponsored by the U.N. Food and Agriculture organization and co-sponsored by Iceland and Norway, that the U.S. delegation took a position that there are certain species of marine mammals that the U.S. would oppose harvesting regardless of the science justifying such managed harvest. And my question is, is that a formal U.S. position? Dr. Hogarth?

Mr. HOGARTH. I am really not aware. I will have to get back to you on that. I am not aware of that agreement, or which one you are referring to.

Mr. POMBO. Well, it was at a conference, and I received reports back that that was the position that the U.S. delegation took, and I was somewhat surprised by that because it was, I think, contrary to what U.S. law is and what international law is. And I have a number of questions dealing with that that I would like to submit to you for the record.

Mr. HOGARTH. Thanks, and we will respond, but I am really not prepared right now.

Mr. POMBO. It is my understanding that the State Department had the lead on that issue. Can you answer?

Ms. HAYES. The State Department certainly had some members on the delegation. This was the conference that was to be investigating ecosystem approaches to the management of fisheries.

My understanding is that at the conference there were some delegations from some countries who wanted to use the conference as an opportunity to push particular theories about interaction between marine mammals and fishery stocks. Our delegation believed that that was getting the conference kind of off track, and tried to keep the conference focused on its original purpose, which was, as I said, to investigate ecosystem management of fish stocks. So certainly there were, I think, interventions made about the appropriateness or inappropriateness of focusing on how much fish might be eaten by whales, for example.

Mr. POMBO. Can you tell me, did the U.S. delegation take the position that there were certain marine mammals that were off lim-

its, or is—this is the report that I got back, and I am just trying to figure out, because I wasn't there, so I am trying to figure out what role the U.S. played in that and if that was their position.

Ms. HAYES. I think it would be safer for me to investigate exactly what was said on that subject and get back to you.

Mr. POMBO. Okay. I appreciate that, because it is a concern of mine, and I would like to know where we are going in that regard.

Mr. Chairman, I have a number of questions that I would like to submit for the record for the U.S. agencies, if I may do that, and have some kind of a written response.

Mr. GILCHREST. Sure. Without objection, I am sure the panel would like to respond to those issues.

I think Dr. Hogarth wanted to make another comment, Rick.

Mr. HOGARTH. The one thing that came out of that was, Japan continued to follow up from the IWC on whale hunts, and they tried to take the argument that had been lost at the IWC, the International Whaling Commission, and take it to this meeting to try to get some other agreement that they should be hunting for certain whales that we feel like that are not at the level that should be hunted.

And that was one of the issues, but I didn't know we took a position that there are certain ones that should never be hunted. But there is the level of hunt and all, and Japan was trying to argue from the standpoint of how much fish they may eat, and there should be—we should not care about the hunting of whales. They want to reopen all whale hunting, for example, and they tried to take the argument from one commission and carry it to another proposal. But we will answer your questions in detail.

Mr. POMBO. Are you saying that what they were trying to do was increase?

Mr. HOGARTH. Yes.

Mr. POMBO. And that the U.S. had taken a position opposed to the increase?

Mr. HOGARTH. At the International Whaling Commission, we had a position there that there should not be an increase in the take, is my understanding. And Japan wants to increase the whaling, and they were trying to get another avenue to get agreement with this.

Mr. POMBO. Now, in that particular case, is the U.S. position based upon some scientific study or—

Ms. HAYES. The U.S. position at the International Whaling Commission is that the moratorium on commercial whaling should be continued until the commission completes its work on what is called the revised management scheme. That is the system where any commercial harvest would be monitored, would be followed from the whaling vessels through to distribution in the marketplace, and we are still working with the other members of the IWC to complete that mechanism before we face the question of what position the U.S. should take on lifting the commercial moratorium.

Mr. POMBO. Thank you, Mr. Chairman.

Mr. GILCHREST. Thank you, Mr. Pombo.

Just a follow-up question from Mr. Pombo. The team or the group of countries involved in this issue, Ms. Hayes, you made some comment about the U.S. won't take a final position until a

mechanism has been agreed to. What does that mean? As far as the mechanism, does that mean a monitoring scheme, an assessment of the type of whales that might be taken and what their populations are and what the interactions are with the rest of the marine ecosystem?

Ms. HAYES. The commission has already adopted in principle what is called the revised management procedure, and that has all the scientific part of assessing whale populations and deciding, how you go about deciding on an appropriate quota for any particular population. But the part that is missing is this monitoring mechanism. We don't yet have agreement on such things as how many—

Mr. GILCHREST. Who would go on whose vessel, from what country?

Ms. HAYES. Who would go on whose vessel. You know, if—

Mr. GILCHREST. Would a visa be required?

Ms. HAYES. Well, for example, if it is a very small vessel and there is only room for one additional enforcement person, should it be the national inspector or should it be the international observer? We don't have agreement yet on whether following distribution through to the marketplace is a legitimate part of this monitoring system. Of course, the U.S. thinks that it is, that that is the only way you can make sure that there isn't any cheating going on. Another issue is who pays for this observation scheme.

But we are going, we are sending a delegation to a meeting in Cambridge at the end of this month to continue, in a small group of experts, to try to finish this revised management scheme.

Mr. GILCHREST. Maybe we should go to Iceland as well.

Mr. POMBO. Mr. Chairman, if I may just—I know I have no time left, but—

Mr. GILCHREST. You have all the time you need, Mr. Pombo.

Mr. POMBO. I was at a previous hearing. I was told that this study on the management scheme was imminent, and I believe that was almost a year ago. And Mr. Swingle and Mr. Barry, I believe, both testified that they were working toward the end of that and that it should be any day now at that time, and that was a year ago. From my understanding of what you are saying, we still don't have that. Is there a reason why? Are we working toward a conclusion on that?

Ms. HAYES. The U.S. delegation is working very hard on that. We have offered a lot of different, what we thought were creating solutions to the problems that have been presented to us by the whaling countries, but so far we haven't been able to arrive at solutions to those problems that are acceptable to both sides. I hope that progress will be made in Cambridge at the end of the month.

Mr. POMBO. Well, as long as the positions that we take are based on the science that is there, what is provided to us or what our own research is, as long as our positions are based upon that, then I don't have a problem with it. But if you are unilaterally making political decisions within the agencies, then I do have a problem with it. And that is why a year ago I asked the questions I did, and it doesn't seem like we are any closer to coming to a scientific answer, but political decisions are being made.

Ms. HAYES. Well, I wouldn't really agree with that assessment because we are just, as I said, not at the point of making that polit-

ical decision. As long as there is no monetary scheme agreed to, we think it would be dangerous and irresponsible to lift the moratorium on commercial whaling because we have no way of ensuring that the same sort of decimation of the whale populations didn't recur.

Mr. GILCHREST. Thank you, Mr. Pombo. I think some of us—Mr. Underwood, any follow-up questions?

Mr. UNDERWOOD. I just wanted to make a couple of final points, and that is, one, would the woman from APHIS provide us with a report on the 11 inspections, kind of a summary report, just so that it can enhance our understanding of what is going on with the polar bears in Puerto Rico?

Ms. KOHN. Sure, we would very pleased to provide you the information we have to date.

Mr. UNDERWOOD. Okay, and just as a follow-up on the issues raised by Mr. Pombo, my understanding of the whaling issue, and it may be limited, but certainly it is the law of the land that we take, the U.S. takes the position that the moratorium on commercial whaling be continued. That is correct.

But we are not by definition closing the door to changes in scientific whaling. You know, it seems to me that at some point in time, if we are talking about ecosystem management of marine resources, that the whales themselves would have an impact on the entire system. So we are not, just by definition, closing that door, are we?

Ms. HAYES. No, I wouldn't say we have closed that door.

Mr. UNDERWOOD. And is the kind of regulatory activities which pertain to fisheries, is there any reason to suspect that the whaling countries like Norway and Japan are not amenable to the kinds of regulatory activities that normally occur with other kinds of fishing vessels? Would you like to explain that a little bit?

Ms. HAYES. Yes. In fact, we have been a little surprised that some of the suggestions, some of the elements that we think are necessary for this monitoring scheme, and that exist in fisheries management organizations internationally and accepted by some of those whaling countries, have not proved to be acceptable in the context of a scheme to monitor whaling activities. In other words, we don't think we are asking for anything so unusual or out of the way.

Mr. UNDERWOOD. And in the interests of time, I would like a written response to actually a real legislative issue the Subcommittee is confronted with, and that is, what are the definitions that we would like to see, changes in the meaning of the term "harassment," because I think that is really key to our work. I know we have gone a little bit far afield this morning, but thank you very much.

Mr. GILCHREST. Thank you, Mr. Underwood.

I think maybe we just should have held today's hearing with this panel. But there are numerous follow-up questions certainly dealing with harassment, with Navy sonar, with the take reduction teams that are out there, with a full range of issues, also with APHIS, and you can be sure that in the coming days we will be corresponding with all of you. We appreciate your testimony, and look forward to working with you certainly in the near future.

But thank you all for coming this morning, and you did a fine job. Thank you.

Our next panel will be Mr. Charlie Johnson, Ms. Sharon Young, Mr. George Mannina, and Mr. Rick Marks.

I ask unanimous permission to submit for the record the statement by the Honorable Mr. Jones.

Hearing no objection, so ordered.

[The prepared statement of Mr. Jones follows:]

Statement of the Honorable Walter B. Jones, a Representative in Congress from the State of North Carolina

Thank you, Mr. Chairman, for holding this important hearing.

The Marine Mammal Protection Act was created to ensure that there is an abundance of species in our oceans. However the Act is so inflexible and jurisdiction so unclear, that many of my constituents feel their needs and professional opinions are not adequately addressed when decisions directly impacting their lives are made.

North Carolina's commercial fishing industry is already in dire economic straits and with the approaching and some say current recession, North Carolina's recreation fishing industry can't be far behind. Eastern North Carolina has lost thousands of jobs in the textile industry and thousands of jobs in the tobacco industry. And now. we're on the threshold of losing commercial and recreational fishing j obs.

These are small, family-owned businesses that have been fishing these waters for a century. My constituents cannot be easily placed elsewhere in today's economy. The Marine Mammal Protection Act and the Endangered Species Act have been very successful in putting many North Carolinians out of work and have done little to restore healthy species to the marine ecosystem.

In November 2001, a Take Reduction Team will meet to determine the number of bottlenose dolphins that may be "taken" under the authority of the Marine Mammal Protection Act. My concerns with this process are twofold: That the stock assessment being utilized by the Take Reduction Team may be outdated and that my constituents receive fair, equitable and scientifically-based treatment from the National Marine Fisheries Service and the Office-of Protected Resources.

1 want to discuss one more item of concern. Recently, the National Marine Fisheries Service closed the summer flounder fishery in Pamlico Sound. However, some but not all of my constituents were notified the day of the closure by radio. I guess if you didn't have your radio on, you didn't know about the closure. While the closure was imminent, there was no warning and no advance notice. The closure took place on Friday, September 28, 2001, yet most of my constituents were not notified until Monday, October 2, 2001.

I would respectfully request that my natural resource-dependent constituents receive better treatment from their federal government. As this Subcommittee all-too-well knows, fishermen face daunting regulations and mortal danger as a part of their livelihood. If my constituents are going to be able to ever trust a federal agency, that federal agency must be accountable. To provide an unbiased, equitable and accountable process is the *most important service* you can provide, a process designed to allow input from the fishermen who pay the bills of the National Marine Fisheries Service, the Fish & Wildlife Service and the Animal and Plant Health Inspection Service.

Mr. Chairman, I would respectfully request that I submit the following questions for the record. I look forward to seeing the responses, particularly from my friend Dr. Bill Hogarth and those directly impacted by the Marine Mammal Protection Act.

Mr. UNDERWOOD. I ask unanimous consent to enter a statement by the Earth Island Institute.

Mr. GILCHREST. Hearing no objection, so ordered.

[The information referred to follows:]

Statement of David Phillips, Director, The International Marine Mammal Project, Earth Island Institute

Thank you for the opportunity to present our views on the reauthorization of the Marine Mammal Protection (MMPA). The International Marine Mammal Project of Earth Island Institute has worked to protect dolphins, whales and other marine mammals around the world, and much progress has been made in recent years to

reduce the killing and harassing of these unique marine species. Yet, new challenges persist, and there is no room for complacency.

The Threat of LFA Sonar:

Earth Island Institute is opposed to the deployment and continued testing of the Navy's Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active ,(LFA) Sonar.

Noise pollution in the oceans constitutes a growing environmental threat that is not being adequately addressed. The Navy's planned LFA Sonar system will add tremendously to the problem of ocean noise pollution through the use of very high energy soundblasting coupled with the long-range underwater effects characteristic of low frequency sound. (See attached chart of sound levels comparison with the Navy's LFA SURTASS sonar system prepared by acoustician Michael Stocker.)

Virtually nothing is known about the short-term, long-term, or cumulative effects of LFA Sonar on the ocean ecosystems, or how the LFA Sonar soundblasting will interact with other noise sources underwater.

What little that has been determined through limited research by the Navy suggests we should be deeply concerned. Instead, the Navy has cavalierly pronounced the LFA Sonar's effects as variously "negligible," "minimal," and "not biologically significant." This does not suggest .to us that the Navy can be counted on to fairly judge the results of deployment or to adequately monitor the effects. Nor does it give us faith that the conclusions of the Navy's own biological assessments and Final Environmental Impact Statement (FEIS) can be given credence.

There is no scientific justification for the Navy or the National Marine Fisheries Service (NMFS) to claim that there will be no adverse impact on whales or other marine life at LFA Sonar sound levels of 180 dB.

According to the Navy's FEIS, the sound levels used in experimentation on whales was 120 to 155 dB, far lower than the effective operating level of 242 dB at maximum for the LFA Sonar system and far lower than the 180 dB deemed acceptable by the Navy. Even at lower levels of 120 to 155 dB, the Navy's experiments noted "short-term behavioral responses" to the noisemakers. Furthermore, the Navy notes that "avoidance responses were sometimes obvious in the field" for migrating gray whales. However, these changes in behavior are dismissed as "no significant change in biologically important behavior", a point on which we clearly disagree. If singing of mating humpback whales or migration of gray whales is not considered "biologically significant", it is hard to understand what the Navy would consider "significant".

(It is important to note that causing "short-term behavioral responses" in whales is a violation of the MMPA when applied to whalewatching operations, as determined by NMFS guidelines and, in the case of Hawai'i, regulations. Such disturbance of behavior, however, under whalewatching conditions usually is limited to one or a few animals, not to whole populations throughout the world's oceans as the Navy proposes with the LFA Sonar system.)

Extrapolation of this limited data to claim "no harm" at sound levels up to 180 dB violates the basis premises of science, not to mention the Precautionary Principle.

Alternatives to LFA Sonar:

There are several strategic alternatives available to the use of LFA Sonar that involve substantial improvement of existing passive sonar systems.

For example, RADM Malcolm I Fages, U.S. Navy Director, Submarine Warfare Division, Office of the Chief Of Naval Operations (N87) and RADM J. P. Davis, U.S. Navy Program Executive Office for Submarines, provided the following assessment before the House Armed Services Committee, Military Procurement Subcommittee on Submarine Force Structure and Modernization (June 27, 2000):

"Acoustic Superiority. The Submarine Force is. making significant, rapid improvements in acoustic sensors and processing. In real-world exercises and operations, both the TB–29 towed array and the new Acoustic Rapid Commercial–Off–The–Shelf (COTS) Insertion (ARCI) sonar system have unequivocally demonstrated our submarines retain a clear acoustic advantage. Use of COTS equipment in ARCI (and in a modified TB–29 array) has substantially reduced costs with significantly improved processing capability. Each ARCI ship-set costs only a small fraction of the price of its predecessor, yet improves processing power by an order of magnitude. This faster and more robust processing power enables us to use powerful new algorithms that result in significantly improved towed array detection ranges. Each modified TB–29 towed array will cost one- half of the price of its predecessor, yet provides equivalent performance. We are also working with the Navy's Chief Technology Officer and the Office of Naval Research to develop even more affordable and

reliable towed arrays, specifically fiber optic towed arrays. Fleet Commanders have repeatedly requested ARCI systems at a rate faster than we can afford to provide them.

"Surveillance Towed Array Sensor System (SURTASS) Twin Line operations in 1998 and 1999 demonstrated the ability to detect advanced diesel submarines at substantial ranges in the littoral environment where contact was previously thought to be 'unobtainable' by the operational commander. Two twin-line systems have been delivered using current technology arrays. No additional systems will be delivered next year due to funding constraints. However, follow-on SURTASS twin lines will leverage the submarine TB–29 developments by fielding twin TB–29 arrays. The COTS version of the Fixed Distributed System (FDS–C) starts in—water testing this year. This use of COTS equipment has also resulted in substantially reduced costs with no reduction in fielded capability. Development of the new Advanced Deployable System (ADS) will provide a rapidly deployable acoustic array installed on the ocean floor that provides littoral undersea wide-area surveillance and real time cueing. ADS development is moving along smoothly with potential for accelerated capability development."

Furthermore, the Defense Advanced Research Projects Agency (DARPA), the central research and development organization for the Department of Defense (DOD), has made great progress-in developing passive sonar systems. It manages and directs selected—basic and applied research and development projects for DOD, and pursues research and technology where risk and payoff are both very high and where success may provide dramatic advances for traditional military roles and missions.

Dr. THOMAS J. Green of DARPA made the following address to the DoD (September 6–8, 2000):

"Good afternoon ladies and gentlemen! My name is Tom Green and I'm the Program Manager for the Robust Passive Sonar Program, otherwise known as R–P–S.

"The focus of R–P–S is to develop innovative, optimal end-to-end processing approaches that exploit tactical acoustic sensors to produce dramatic gains in passive detection against quiet targets operating in shallow water "littoral" environments. In recent years there has been much emphasis on achieving tactical control of shallow water, littoral regions against quiet diesel electric submarines. Towards this end, there has been substantial fundamental work aimed at developing advanced processing techniques to exploit the propagation characteristics of these regions. In addition, new sensors are being developed and deployed that have the necessary characteristics to support many of these processing techniques. We believe there is an opportunity now to realize significant acoustic gain by applying these and other advanced signal processing techniques to emerging sensors within an end-to-end sonar system context and by so doing to achieve substantial tactical advantage over future submarine threats."

Soundblasting of the oceans threatens marine life, while alternative systems can provide for national security without harming the ocean ecosystem upon which we all depend.

Tuna/Dolphin Fishery: Do Not Weaken Protections for Dolphins:

Recently the Circuit Court of Appeals unanimously upheld a decision reached in Earth Island Institute's lawsuit "Brower v. Evans" (formerly "Brower v. Daley"). to maintain the current strong standards for the "Dolphin Safe" tuna label under U.S. law (see attached copy of court decision). The courts have made it clear that all of the evidence assembled by the NMFS research program on dolphins has indicated that the chasing and netting of dolphins continues to cause harm to these species, especially to depleted populations in the Eastern Tropical Pacific tuna fishery. Despite the fact that only 2–3,000 dolphins are reported killed annually in tuna nets, dolphin populations do not appear to be recovering from depleted status. There is growing evidence that chasing and netting dolphins causes harm to dolphins and interferes with-their reproduction (*e.g.* through the separation of mothers from dependent calves).

In this light, we believe any weakening of the MMPA protections for dolphins is inappropriate at this time. The standards-for the "Dolphin Safe" tuna label, which now prohibit use of the label on- any tuna caught by chasing, netting, or killing dolphins, should remain in force, as ordered by the courts (see next section below).

Furthermore, we strongly believe that the provision for sundown sets should remain "...30 minutes before sundown..." (Section 303 MMPA; emphasis added), rather than weakening the definition to one half-hour AFTER sundown, as proposed by the Clinton Administration last year. Historically, more than three times as many dolphins die in sundown sets as die in net sets made during daylight hours. In the tropics, light fades rapidly after sunset, causing problems with manipulating and

avoiding mortality of dolphins in net sets made deliberately on schools of dolphins. With depleted dolphin populations showing little recovery from the fishery, any additional sources of mortality should be eliminated. This is not a time to weaken dolphin protection provisions of the MMPA.

Tuna Tracking System is Broken:

The MMPA provides for a tuna tracking system to ensure that tuna caught in the Eastern Tropical Pacific Ocean can be guaranteed to be "Dolphin Safe" when it carries that label on supermarket shelves in the U.S.

The U.S. government is required to adhere to the original strong standards for "Dolphin Safe" labeling established by Congress in the MMPA. These standards provide that tuna may be labeled "Dolphin Safe" only if "no tuna were caught on the trip in which [it] was harvested using a purse seine net intentionally deployed on or to encircle dolphins, and . . . no dolphins were killed or seriously injured during the sets in which [it was] caught." (Emphasis added; PL 105–42., Section 5.)

However, forms supplied by onboard Inter–American Tropical Tuna Commission (IATTC) observers no longer specify whether dolphins were encircled during a fishing trip. This change was made pursuant to a June 1999 IATTC resolution, which the U.S. delegation to the IATTC supported, to alter the tuna tracking and verification system such that: "Processed dolphin safe tuna destined for export shall be accompanied by appropriate certification of such status issued by the competent national authority ... provided that such documentation shall not reference details of fishing operations, except as relates to identification of types of fishing gear." (System for Tracking and Verifying Tuna, Section 6.-. Part d, emphasis added. See attached copy as amended June 2001.) This language effectively precludes any communication to U.S. tuna processors, consumers, or U.S. regulatory agencies (NMFS and U.S. Customs Service) about whether or not any fishing trip involved encirclement of dolphins, thus preventing identification of such tuna as "Dolphin Safe" under the U.S. and the American tuna processors' standards.

Moreover, in June 2001 - again with the support of the U.S. Delegation - the IATTC adopted several resolutions further restricting onboard observers from reporting on any fishing practices outside of the IATTC's narrow "Dolphin Safe" definition. (See "Resolution on Amending the Rules of Confidentiality of the Agreement on the International Dolphin Conservation Program," 20 June 2001, attached.) Therefore, the IATTC onboard observers cannot report as to whether encirclement of dolphins occurred during a fishing trip, and the U.S. standards for non-encirclement cannot be fully verified. Instead, the IATTC observers prepare documents that only verify whether any dolphin mortality was observed in any dolphin net sets. We believe this is insufficient for purposes of U.S. law and for proper dolphin conservation.

Earth Island Institute maintains monitors around the world to independently check on the status of tuna to maintain the integrity of the "Dolphin Safe" tuna label. However, the IATTC fails to provide information on whether or not a tuna vessel has a Dolphin Mortality Limit (DML, an IATTC "quota" of dolphin mortalities the tuna vessel can cause during a fishing trip) or whether a tuna vessel has used any of their DMZ's during a particular trip. This hampers efforts to verify "Dolphin Safe" status of tuna shipments. Key details regarding the numerous violations of the IATTC's international tuna and dolphin regulations by vessels and companies are also withheld, such as the name of vessel and company involved.

Support for these measures by the U.S. delegation to the IATTC has seriously undercut the efforts of U.S. tuna fishermen and U.S. tuna processors, not to mention U.S. tuna consumers, to adhere to the Congressionally-mandated standards for "Dolphin Safe" tuna. Virtually all of the 7 million+ dolphins killed in the Eastern Tropical Pacific tuna fishery over the past four decades died in purse-seine nets deliberately set by the dolphin-encirclement method. Yet, efforts by U.S. tuna fishermen and the industry to adhere to strong standards to protect dolphins have been undermined by a dysfunctional International Tuna Tracking System which forbids, with the active support of the U.S. delegation, dissemination of information to track truly "Dolphin Safe" tuna.

For these reasons, our organizations are deeply concerned that the U.S. Department of Commerce is not able to fulfill the Congressional mandates of the MMPA and verify that tuna entering the United States is meeting. current U.S. Dolphin Safe standards.

Thank you for your consideration of our comments for the record of this hearing.

[Attachments to Mr. Phillips' statement follow:]

[The attachment, *Brower, et al. v. Evans, et al.* has been retained in the Committee's official files.]

Comparative Chart of Airborne and Underwater Noise Sources[1]

Air Sound Level and Intensity re: 20 uPA[2,4]	Air Source or Environment	Ocean Sound Level and Intensity re: 1 uPA[3,4]	Underwater Source or Environment
	Humans submerged in a calm sea will hear their own heartbeats over the	46	Ambient level in a calm sea
	sound of the sea.	56	Ambient level w/ Beaufort wind force 2. Small wavelets, not breaking
		66	Ambient level w/ Beaufort "5" - Whitecaps, some spray
10	Soundproof vault. Threshold of human audibility.	71	Coastal bay w/ snapping shrimp ambient noise
15		76	Ambient at Beaufort "8" - Very rough, wave to 20' "Fresh gale"
20	Whisper or rustle of leaves. Motion picture sound stage.	81	Shipping channel ambient level, "normal" shipping density.
30	Country Residence, empty concert hall, speaking range 10 - 30 ft.	91	Shipping channel ambient level, "heavy" shipping density.
40	Private office, Library, Movie theater.	101	
45	Classroom, Auditorium, Conference room.	106	
50	Typical office, Hotel Lobby, Bank.	111	
55	Department store, Laboratory.	116	Avoidance behavior noticed in Bowhead whales
60	Busy dining room, Kitchen, very noisy office, Telephone use difficult.	121	Avoidance behavior noticed in various whales and dolphins
65	Computer room with pressurized floor cooling.	126	
70	City street, automobile interior 35 MPH with windows down	131	
75	Busy machine shop, Raised voice range 2 ft.	136	Avoidance behavior in 80% of migrating gray whales
80	Motorbus, Noisy factory	141	
85	Vehicular tunnel, Voice communication impractical.	146	Maximum allowable exposure to U.S. Navy Divers
90	Super highway, New York subway	151	Snapping Shrimp at "striking range" (~1 inch)
95	Large tractor or truck at 1 meter.	156	
100	Busy woodworking shop	161	
110	Riveting shop or forge	171	Tug and barge underway, 18 km/hr
120	Propeller plane takeoff, at 100 ft. (30 m)	180[5]	Loudest sounds produced by blue whales - or any living organism.
125	Threshold of Pain in human hearing	186	Large tanker underway
130	Jet Plane takeoff at 100 ft. Def Lepard on stage, 1 minute hearing damage.	191	
135		196	Icebreaker, ATOC (another Navy noise source)
154		215	**Individual SURTASS speaker effective source level (1 of 18)**
160	Ram jet at 1 meter (F-16 with after-burners at 1 meter)	221	
180	10 lbs. (4.5 kg) of TNT at 10 feet.	241	**SURTASS/LFA system effective source level**
195	Saturn Rocket at 1 meter, 50 lbs. (22.6 kg) of TNT at 10 feet (3 m)	256	50 pounds (22 kg) of TNT at 2 mi. (3 km)
210		271	4 lb. (2 kg.) TNT at 1 meter

Example: A Riviting shop (110 dB in air) would measure 171 dB underwater, A tug and barge underway (171 dB in water) would measure 110 dB in air.

Notes:

1) This chart is only for a sense of approximate comparisons. As humans and airborne sounds are poorly adapted to the undersea environment, and sea creatures and underwater noise sources are poorly adapted to terrestrial sound perception and generation, comparisons on this chart are speculative in regard to impact.

2) 0dB re: 20 microPascals refers to the convention of measuring human perceived sounds relative to the threshold of human audibility

3) 0dB re: 1 microPascals refers to the convention of measuring underwater sound relative to a known convenient reference point.

4) "Sound intensity" expresses a physical property of sound transmission relative to the density of the transmission medium.

5) 180 dB re: 1 uPA is the proposed SURTASS/LFA mitigation zone at 1 km from the ship.

AGREEMENT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

RESOLUTION ON AMENDING THE RULES OF CONFIDENTIALITY OF THE AGREEMENT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

20 JUNE 2001

The Parties to the Agreement on the International Dolphin Conservation Program (AIDCP), at the 5th Meeting of the Parties, held June 15, 2001, in San Salvador, El Salvador,

Hereby agree to amend the Rules of Confidentiality of the AIDCP, adopted in October 2000, as follows:

1. Change Paragraph 1 to: "The following information associated with the responsibilities and activities of the On–Board Observer Program, and with the activities of the Secretariat in connection with the AIDCP Dolphin Safe Certification procedures, shall be treated as confidential:"

2. Change Paragraph 2 to: "All information collected by the On–Board Observer Program, or by the Secretariat in connection with the AIDCP Dolphin Safe Certification procedures, shall be made available to the government under whose jurisdiction the vessel operates."

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INTERNATIONAL DOLPHIN CONSERVATION PROGRAM REVISED SYSTEM FOR TRACKING AND VERIFYING TUNA JUNE 2001

1. DEFINITIONS

The terms used in this document are defined as follows:

a. Dolphin safe tuna is tuna captured in sets in which there is no mortality or serious injury of dolphins;
b. Non-dolphin -safe tuna is tuna captured in sets in which mortality or serious injury of dolphins occurs;
c. Agreement Area is the area covered by the AIDCP;
d. AIDCP is the Agreement on the International Dolphin Conservation Program;
e. Party or Parties are the Parties to the AIDCP ;
f. State is a sovereign state or a regional economic integration organization to which its member States have transferred competence over matters covered by the AIDCP;
g. National authority is the department of government or other entity designated by each Party as responsible for implementing and operating the tuna tracking and verification program described in this document;
h. IATTC is the Inter–American Tropical Tuna Commission;
i. Secretariat is the staff of the IATTC;
j. Captain is the person aboard the vessel who has legal responsibility for the vessel while at sea and in port;
k. Engineer is the person aboard the vessel responsible for preparation of wells and the loading of the catch into the prepared wells;
l. Observer is the person assigned to the vessel by the IATTC or the Party's national observer program to record the vessel's fishing activities;
m. Vessel includes any vessel which catches, stores, or transports tuna covered by this tracking and verification program;
n. Well is any compartment on a purse-seine vessel in which tuna is stored in a freezing brine solution;
o. Set is the act of deploying and retrieving the purse seine in order to catch tuna;
p. Bin is any container used to store tuna after unloading, during cold storage, or for transport to processing.
q. A fishing trip terminates when a vessel unloads two-thirds or more of its catch, during a single unloading or during a series of partial unloadings.

2. GENERAL

This document describes a system for tracking tuna caught in the Agreement Area by vessels fishing under the AIDCP. The sole purpose of this system is to enable dolphin safe tuna to be distinguished from non-dolphin safe. tuna from the time it is caught to the time it is ready for retail sale. This system is based on the premise that dolphin safe tuna shall, from the time of capture, during unloading,

storage, transfer, and processing, be kept separate from non-dolphin safe tuna. To this end the system shall be based on a Tuna Tracking Form (TTF) and additional verification procedures described in this document or developed by individual Parties for use within their respective territories.

The national authority of the Party under whose jurisdiction a fishing vessel operates shall be responsible for tracking the tuna caught, transported, or unloaded by that vessel, but may, by mutual consent, delegate the observation of unloadings and transfers to the national authority of the Party in which the unloading or transfer takes place. The national authority of the Party in which the tuna is processed becomes responsible for the tracking and verification of the dolphin-safe status of all such tuna when it enters a processing plant located in the jurisdiction of that Party, regardless of the flag of the catcher vessel, and for communicating the information to the Secretariat.

It shall be the responsibility of each national authority to establish and maintain the systems, databases, and regulations necessary to implement the system in areas under its jurisdiction. Each Party shall provide to the Secretariat a report detailing the tracking and verification program established by that Party under its national laws and regulations.

Each Party shall provide to the Secretariat, and update as necessary, the name, mailing address, telephone and fax numbers, and e-mail address of a designated contact person at its national authority who shall be responsible for all matters pertaining to the program described in this document, and the Secretariat shall circulate a list of all such contact persons to all national authorities.

3. TUNA TRACKING FORM (TTF)

The Secretariat shall be responsible for producing the TTFs, which shall be in both English and Spanish, in sufficient quantity to be used throughout the Agreement Area by all the Parties; for distributing the forms to the national authorities; for training a representative of each national authority in the proper use and handling of the form; and for maintaining physical control of all completed TTFs, once they are returned to the Secretariat by the national authority in accordance with its national laws and regulations.

1. TTFs utilized during a trip shall be identified by a unique number, which shall be the IATTC cruise number to which, it corresponds, and shall have provision for recording and endorsing information concerning each set made during a fishing trip which would enable the contents of any., of the vessel's wells to be identified as dolphin safe or non-dolphin safe.
2. Dolphin safe and non-dolphin safe tuna caught in the course of a trip shall be recorded on separate TTFs.
3. The Secretariat shall issue the TTFs to observers, except that in cases where the Party with jurisdiction over the vessel has a national observer program in operation, the pertinent national authority shall issue the TTFs to observers of its national observer program. The cruise number shall be recorded on the TTF at the beginning of each trip, and all tuna caught during that trip shall be recorded on the relevant TTF.
4. After a trip, the original TTF(s), with total confirmed quantities of tuna unloaded or transferred from that trip, shall be retained by the competent national authority, as follows:

a. If the tuna is to be processed within the territory of the Party under whose jurisdiction the fishing vessel operates, the original TTF(s) shall be submitted to the national authority of that Party;
b. If the tuna is to be processed within the jurisdiction of a Party other than the Party under whose jurisdiction the fishing vessel operates, at the completion of unloading the tuna the responsibility for tracking passes to the national authority of the. Party in whose territory the tuna is to be processed. In such a case, the original TTF(s) is (are) submitted to the national authority. of the Party under whose jurisdiction the tuna is to be processed, and a copy of the TTF(s) is (are) provided to the national authority of the Party under whose jurisdiction the vessel operates.

5. Within ten days of receipt of a TTF, the competent national authority shall transmit the TTF to the Secretariat.
6. TTFs shall be treated by the competent national authority as confidential official documents of the IDCP, consistent with Article XVIII of the AIDCP, and the AII)CP Rules of Confidentiality.

4. FISHING OPERATIONS

1. At sack up during each set, and prior to brailing or loading of tuna aboard the vessel and into wells, the observer determines whether or not dolphin mortality

or serious injury has occurred in the set and notifies the captain immediately of his determination.

2. On the basis of the observer's determination, the tuna is designated either dolphin safe or non-dolphin safe. The tuna is brailed and loaded into a prepared well or wells which already contain either dolphin safe tuna or non-dolphin safe tuna, as applicable, or into a prepared but empty well or wells which shall then be designated dolphin safe or non-dolphin safe, as applicable.
3. At the completion of brailing, when there is no further question as to whether the tuna is dolphin safe or not, the observer, in consultation with the engineer, shall record on the appropriate TTF the species and estimated quantity of tuna loaded into each well used in that set. Both the observer and the engineer shall initial the entry for each set.
4. Within a reasonable period after the completion of loading of non dolphin safe tuna, the observer may confirm the number(s) of the well(s) receiving the tuna by noting the subsequent change in temperature in the well(s).
5. Transfers of tuna from the net of one fishing vessel to another fishing vessel at sea in the course of a trip shall be documented on the M(s), specifying the quantity, species, and dolphin safe status of the tuna being transferred. The transfer shall be documented on the TTF(s) of both the transferring and receiving vessels.
6. At the end of each fishing trip, when no more sets are to be made, the observer and the captain shall review the TTT(s), make any additional notes, and both will sign the form.

5. UNLOADING

1. The captain, managing owner, or agent of a vessel returning to port to unload part or all of its catch shall provide sufficient notice of the vessel's intended place and schedule of unloading to the competent national authority to allow for preparations to be made for monitoring the unloading of that tuna.
2. If a trip terminates when a vessel enters port to unload part of its catch, new TTF(s) shall be assigned to the new trip, and the information concerning any tuna retained on the vessel shall be recorded as the first entry on the TTF(s) for the new trip. If the trip is not terminated following a partial unloading, the vessel shall retain the original TTF(s) and shall submit a copy of that TTF(s), with original signatures, to the national authority of the Party where the tuna was unloaded. In either case, the species, dolphin safe status, and amount of tuna unloaded shall be noted on the respective original TTF(s).
3. If tuna is unloaded from a fishing vessel in port and subsequently loaded aboard a carrier vessel for transport to a processing location, the Party under whose jurisdiction the fishing vessel operates shall be responsible for obtaining the TTF(s), retaining documentation of the unloading, including recording of the total confirmed scale weight if the tuna is weighed at that time, verifying that the dolphin safe tuna is kept separated from the non-dolphin safe tuna during the carrier loading and transporting process, and transmitting all relevant documentation to the Secretariat. Dolphin safe tuna and non-dolphin safe tuna may be stored in the same -hold on a carver vessel provided that the two are kept physically separate, using netting or similar material, and the non-dolphin safe tuna is clearly identified as such.
4. If the tuna is unloaded directly to a processing facility, the national authority of the Party in whose area of jurisdiction the tuna is to be processed shall be responsible for retaining documentation of the unloading of the tuna and recording of the separate confirmed scale weight for dolphin safe and non dolphin safe tuna. The competent national authority shall be responsible for returning the original

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Mr. GILCHREST. Mr. Charlie Johnson, Executive Director, Alaska Nanuuq Commission, Indigenous Peoples Council on Marine Mammals; Ms. Sharon Young, Field Director for Marine Issues, The Humane Society of the United States; Mr. George Mannina, American Zoo and Aquarium Association and the Alliance of Marine Mammal Parks and Aquariums; Mr. Rick Marks, member of the Take Reduction Team—oh, a member, an actual live member—

Mr. MARKS. Teams. That is plural, Mr. Chairman.

Mr. GILCHREST. —of the Take Reduction Teams, Garden State Seafood Association. Is that New Jersey?

Mr. MARKS. Yes, Mr. Chairman.

Mr. GILCHREST. The Garden State. Thank you for coming.

I think what we will do, to give people a heads-up, no need to rush this panel, but at the end of this panel, whenever that might be, we will take an hour for lunch. Since The Humane Society is here, that is the humane thing to do, I think.

Mr. Johnson, welcome. You may begin, sir.

STATEMENT OF CHARLES JOHNSON, EXECUTIVE DIRECTOR, ALASKA NANUUQ COMMISSION, AND MEMBER, INDIGENOUS PEOPLES COUNCIL ON MARINE MAMMALS

Mr. JOHNSON. Thank you, Mr. Chairman, honorable members of the Committee. I am Charles Johnson, the executive director of the Alaska Nanuuq Commission. I also serve on the Indigenous Peoples Council for Marine Mammals.

The commission was formed in June 1994 to represent the villages and the hunters of north and northwest Alaska on matters concerning the conservation of polar bear. The commission is now in its fourth year of a co-management agreement with the U.S. Fish and Wildlife Service. This agreement is to represent the villages in the range of the polar bear, and to assist the service in the development of a bilateral treaty with Russia.

The commission also has a cooperative agreement with the National Park Service's Beringia Program to collect polar bear habitat use in Chukotka from the traditional knowledge of native hunters. This program is now in its third and final year, and we hope to publish our report by the end of this year.

I testified before this Committee on April 6th of 2000 and gave a detailed report of the co-management needs and desires of the Alaska Nanuuq Commission. The commission, as I mentioned, is a member of the Indigenous Peoples Council on Marine Mammals, or IPCoMM, which was formed in the early '90's to advocate for the co-management rights of Alaska native people in regard to marine mammals. IPCoMM represents most of the Alaska native organizations involved in marine mammal conservation.

Since the April 6, 2000 hearing of this Committee, IPCoMM has worked very diligently with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to develop mutually acceptable language for the reauthorization of MMPA. The agencies are to be commended for their efforts, forthrightness, and willingness to compromise. As a result of these efforts to find common ground, IPCoMM supports the language that the U.S. Fish and Wildlife Service and NMFS are proposing to amend MMPA.

First, each village has a tribal council that is federally recognized. Every Alaska Native Marine Mammal Commission gets its authority to enter into co-management agreements for marine mammals from these tribal councils. This is a reality of life in Alaska, and IPCoMM strongly urges that language which specifies that co-management agreements must be with tribal organizations replaces language that specifies "Alaska native organizations."

IPCoMM feels that Section 101(b), which recognizes the right of Alaska natives to harvest marine mammals for subsistence, remain. That section is vital to maintaining our subsistence culture and way of life.

We also recognize that there are times when we may want to limit the harvest for conservation purposes, and for this reason we support the introduction of the new Section 119(a), which allows for management of marine mammals before depletion through co-managements with Alaska native tribes or tribally authorized organizations. A co-management agreement must be in place before depletion takes place.

IPCoMM also supports the prohibition section of 119(a), which states that Alaska natives hunting in an area with a co-management agreement must abide by that agreement. Had this been in place in Cook Inlet, we may have been able to avoid the current situations with beluga whales being hunted to dangerously low numbers.

Alaska Native Marine Mammal Commissions have accomplished a very great deal with very limited funding. It is now up to Congress to adequately fund the co-management programs with the $3 to $5 million that is requested or is proposed by Interior and Commerce.

The Alaska Federation of Natives recognizes the effectiveness of co-management agreements between government agencies and Alaska natives, and has proposed co-management as a solution to the State's current subsistence divisiveness. In fact, AFN strongly supports preemption of State laws to provide a subsistence priority, should the State not find the will to bring itself back into compliance with Federal law.

I would like to introduce a paper that was produced by AFN into the record, and it is a paper on preemption of State law for providing a subsistence priority.

The Alaska Nanuuq Commission has been an equal partner with the U.S. Fish and Wildlife Service in negotiating the polar bear treaty with Russia. The treaty was signed on October 16, 2000 in Washington, D.C. As a result, Alaska natives and natives of Chukotka will have equal representation on a joint commission created to set harvest limits of the shared polar bear population in Alaska and Chukotka.

The treaty also allows for a native agreement to implement the treaty. The Alaska Nanuuq Commission is now developing its agreement with the Association of Traditional Marine Mammal Hunters of Chukotka. That is a grassroots organization that represents the natives of Chukotka.

We also support extending the prohibition of the use of aircraft which is in the treaty to the rest of Alaska where the treaty does not cover, such as in the Beaufort Sea, and we would also support extending the prohibition on sales or exports of parts of polar bears.

We will face challenges in developing enforceable quotas as we move from unlimited hunting in Alaska to quotas, and from no hunting to legal hunting in Chukotka. It is vital to the success of this organization that Congress adequately funds the implementation of this precedent-setting agreement.

Thank you, Mr. Chairman, and I will be happy to answer any questions.

[The prepared statement of Mr. Johnson follows:]

Statement of Charles Johnson, Executive Director, Alaska Nanuuq Commission

Mr. Chairman, Honorable Members of the Committee, I am Charles Johnson, the Executive Director of the Alaska Nanuuq Commission. The Commission was formed in June of 1994 to represent the villages and hunters of North and Northwest Alaska on matters concerning the conservation of polar bear. The Commission is now in its fourth year of a co-management agreement with the U.S. Fish and Wildlife Service. This agreement is to represent the villages in the range of the polar bear and to assist the Service in the development of a bilateral treaty with Russia.

The Commission also has a cooperative agreement with the National Parks Service Beringia Program to collect polar bear habitat use in Chukotka from the traditional knowledge of the native hunters. This program is now in its third and final year and we hope to publish our report by the end of this year.

I testified before this committee on April 6; 2000 and gave a detailed report on the comanagement needs of the Alaska Nanuuq Commission. The Commission is a member of the Indigenous Peoples Council on Marine Mammals or IPCoMM, which was formed, in the early 90's to advocate for the co-management rights of Alaska Native people in regard to marine mammals. IPCoMM represent most of the Alaska Native organizations involved in marine mammal conservation.

Since the April 6, 2000 hearing of this committee IPCoMM has worked very diligently with the U. S. Fish and Wildlife Service and the National Marine Fisheries Service to develop mutually acceptable language for the reauthorization of MMPA. The agencies are to be commended for their efforts, forthrightness and willingness to compromise.

As a result of these efforts to find common ground IPCoMM supports the language that the U.S. Fish and Wild Life Service and NMFS are proposing to amend MMPA.

Every village has a tribal council that is federally recognized. Every Alaska Native marine mammal commission gets it authority to enter into comanagement agreements for marine mammals from these tribal council. This is the reality of life in Alaska and IPCoMM strongly urges that language, which specifies that co-management agreements must be with tribal organizations, replace language that specifies Alaska Native Organizations.

IPCoMM feels that Section 101(b), which recognizes the right of Alaska Natives to harvest marine mammals for subsistence, must remain. That section is vital to maintaining our subsistence culture and way of life. We also recognize that there are times where we may want to limit the harvest for conservation purposes and for this reason we support the introduction of the new Section 119A which allows for management of marine mammals before depletion through co-management with Alaska Native tribes or tribally authorized organizations. A co-management agreement must be in place before management before depletion takes place.

IPCoMM also supports the prohibition section of 119A, which states that Alaska Natives hunting in an area with a co-management agreement must abide by that agreement. Had this been in place in Cook Inlet we may have been able to avoid the current situation with beluga whales being hunted to dangerously low numbers.

Alaska Native marine mammal Commissions have accomplished a great deal with very limited funding. It is now up to Congress to adequately fund the co-management programs with $3,000,000 to $5,000,000 each to Interior and Commerce.

The Alaska Federation of Natives recognizes the effectiveness of co-management agreements between government agencies and Alaska Natives and has proposed co-management as a solution to the State's current subsistence divisiveness. In fact AFN strongly supports pre-emption of state law to provide a subsistence priority should the state not fid the will to bring itself back into compliance with federal law. I would like to introduce into the record a briefing paper on federal pre-emption, prepared by AFN in August 2001.

The Alaska Nanuuq Commission has been an equal partner with the U.S. Fish and Wildlife Service in negotiating the polar bear treaty with Russia. The treaty was signed on October 16, 2000 in Washington D.C. As a result Alaska Natives and the Natives of Chukotka will have equal representation on the joint commission created to set harvest limits of the shared polar bear population in Alaska and Chukotka.

The treaty also allows for a Native-to–Native agreement to implement the treaty. The Alaska Nanuuq Commission is developing that agreement with the Association of Traditional Marine Mammal Hunters of Chukotka, which represents the Native Peoples of Chukotka.

We will face challenges in developing enforceable quotas as we move from unlimited hunting in Alaska to quotas and from no hunting to legal hunting in Chukotka.

It is vital to the success of this treaty that congress adequately funds the implementation of this precedent setting agreement.

Thank you Mr. Chairman

[The attachment, "Preemption of State Law to Provide a Subsistence Preference," has been retained in the Committee's official files.]

Mr. GILCHREST. Thank you very much, Mr. Johnson.

Ms. Young?

STATEMENT OF SHARON B. YOUNG, FIELD DIRECTOR FOR MARINE ISSUES, THE HUMANE SOCIETY OF THE UNITED STATES

Ms. YOUNG. Mr. Chairman, members of the Committee, unlike my colleagues here at the table who were each addressing fairly specific portions of the MMPA reauthorization in '94, I am going to be trying to address them all. And since it is a pretty difficult task, I am going to do my best, but I do encourage you to look at the much more extended written testimony that we have submitted.

I am Sharon Young, and I am the field director of marine issues for The Humane Society of the United States. I am testifying on behalf of the International Wildlife Coalition, the Earth Island Institute, and The Humane Society of the United States.

Between '92 and '94, the HSUS participated in an ad hoc stakeholder negotiation, resulting in proposals to Congress for amendments to the Marine Mammal Protection Act that were enacted in 1994. Since that time, we have served on a number of appointed Committees, working groups, take reduction teams, and any number of other groups that the National Marine Fisheries Service convened in response to the needs for implementation of the many provisions that were added to the Marine Mammal Protection Act in '94.

The '94 amendments to the Marine Mammal Protection Act established objective standards for implementing the many broad goals of the act and for measuring the progress toward achieving them. The most important standard was the concept of potential biological removal level. This, in conjunction with the zero mortality rate goal, provides a key understanding of human-related impacts on marine mammals, and both of these provisions should be maintained as they exist within the MMPA.

The success of other amendments to the MMPA has been somewhat mixed. Take reduction teams, which allow stakeholder groups to advise the National Marine Fisheries Service on measures to reduce mortality of marine mammals in commercial fisheries, have met and produced recommendations fairly expeditiously. The process can be very contentious.

Stakeholders with very different constituencies may be vehemently in disagreement with one another, but that is in fact a point of the process. To sit down together, to share information, to make sure we all operate from a common basis of understanding one another's interests and positions, and to be open and honest in

a forum that encourages resolution of differences is a very important part of the act, I think.

However, the National Marine Fisheries Service has delayed convening teams or has delayed action or refused to act on recommendations by take reduction teams until court proceedings have been brought against them in many instances. This seriously undermines the confidence in and the effectiveness of the process.

There are other issues that have created problems in the implementation of Section 118, as well. One of them is the disparity between take reduction requirements for commercial fishing gear and the exemption of identical recreational gear from these same restrictions. This inequity should be addressed.

Another problem for MMPA implementation is the National Marine Fisheries Service's use of MMPA implementation funds to make up shortfalls in base operating budgets. This is a budget issue that urgently needs to be addressed. Additionally, there is virtually no enforcement of MMPA take reduction mandates. This in turn rewards lawbreakers and undermines the efficacy of take reduction measures.

These issues also need attention by enforcement agents. The HSUS believes that the process established under Section 118 can work as intended, if the National Marine Fisheries Service upholds its responsibilities under the act.

Native co-management of marine mammals under the MMPA amendments we believe has not necessarily improved the lot of marine mammals. Reporting of kills is as many as 5 years behind, and when it does occur, the National Marine Fisheries Service in its official reports admits that it is generally under-reporting.

Another troubling aspect is that many of the species of marine mammals, particularly in Alaska, and including the endangered Steller sea lion, are being killed by natives in excess of established PBR levels. We believe this situation needs to be remedied as well.

We believe that it is important to involve conservation interests and public comment in this process, to ensure an outside review and representation of all stakeholders, and more importantly, to ensure adequate protection of marine mammals. This is particularly true if there is going to be an expansion of co-management into other marine mammal species.

The HSUS believes that the prohibition on hunting polar bears in Alaska should be maintained, because of evidence that conservation provisions in Canada to regulate polar bear sport hunting have been wholly inadequate to protect a number of polar bear stocks, the importation provision enacted as part of the 1994 amendments should be repealed.

The 1994 amendments also changed the authority under which captive marine mammals are overseen. The intervening years have shown that many of the changes have proven somewhat inadequate to ensuring protection of the animals.

We believe there should be a prohibition on traveling shows exhibiting marine mammals. There should be regular on-site inspections of all display facilities, and this should be mandatory. Permits should be required for any proposed export of marine mammals from the United States. Resources in the Department of Agriculture are inadequate to the task of managing public display fa-

cilities, and we believe that the jurisdiction over captive marine mammals should be returned to the National Marine Fisheries Service. We also support maintaining Marine Mammal Inventory reports.

The HSUS also supports—and I know this is being dealt with by another panel—a prohibition of intentional killing of marine mammals. We encourage the National Marine Fisheries Service and Congress to assist them in their work by developing innovative and nonharmful deterrents.

The American people continue to show broad support for recovering and protecting marine mammals. The MMPA stands as an assurance of the government's commitment to this will. We urge this Committee to ensure that the MMPA remains strong. Any amendments to the act should be limited to noncontroversial clarifying amendments that maintain the strong conservation principles of the act.

Thank you.

[The prepared statement of Ms. Young follows:]

Statement of Sharon B. Young, Field Director, Marine Issues, The Humane Society of the United States

Mr. Chairman, members of the Subcommittee, my name is Sharon Young and I am the Field Director for Marine Issues for The Humane Society of the United States (HSUS). On behalf of The HSUS, the International Wildlife Coalition, Earth Island Institute and their more than 7 million members and constituents, I am grateful for the opportunity to present our views on the implementation of the Marine Mammal Protection Act (MMPA) and suggestions for changes that might improve the MMPA's ability to protect marine mammals.

BACKGROUND

Between 1992 and 1994, The HSUS participated in an ad hoc stakeholder negotiation that resulted in proposals to Congress for the Amendments to the MMPA that were enacted in 1994. Since that time we have served on a number of appointed committees, working groups and take reduction teams that have arisen from the implementation of the many provisions that were added to the MMPA in 1994. We have also testified a number of times before this and other House Committees regarding the implementation of various portions of the MMPA, most recently in an April 2000 hearing on oversight of the Take Reduction Team process.

One of the questions I was asked to address in this hearing is whether the changes in 1994 have had a positive effect on human-related interactions with marine mammals. I think that the answer is mixed. The Amendments included a number of important provisions. Their primary accomplishment was that for the first time since the 1972 passage of the MMPA, measurable standards and objectives were established to help achieve the goals that were desired by the American people. In particular the Amendments provided an objective measure of understanding of the likely impacts of human-related mortality on marine mammals that is known as the Potential Biological Removal Level, or PBR. The 1994 Amendments established a process to bring stakeholders to a common table to share information and work toward development of solutions to those situations in which unsustainable levels of mortality in commercial fisheries are occurring. They provided deadlines to ensure timely enactment of management plans to reduce unsustainable levels of mortality. They established a process to address concerns about nuisance pinnipeds (seals and sea lions) that were thought to be having a demonstrably negative effect on endangered fish stocks. They also streamlined the process for obtaining scientific research permits. Additionally, the Amendments included provisions pertaining to hunting of polar bears, the care of captive marine mammals, and the co-management of marine mammals by native peoples. The success of these measures, however, has been tempered by a variety of actions and inaction by the National Marine Fisheries Service (NMFS) and failures in budgeting and enforcement. I would like to address each of issues these separately.

ESTABLISHMENT OF OBJECTIVE STANDARDS FOR REDUCING FISHERY RELATED MORTALITY

Potential Biological Removal Level (PBR)

Among the principal accomplishments of the 1994 Amendments was the development of the concept of PBR. The formula that was used to obtain PBR was developed by scientists to ensure a precautionary approach to managing our interactions with marine mammals. The PBR formula recognized the uncertainties inherent in understanding the life history and population dynamics of marine mammals. Their marine habitat makes it easy to under-count them or to assume that animals that are widely distributed along a coast are parts of the same population, when in fact they are from separate stocks that require separate management strategies. We know little about the reproductive rates of most marine mammals, and we often know less than we should about levels and sources of mortality to populations. Since 1994, the principles underlying PBR have been adopted by other nations as well as they have sought to manage their own nation's interactions with marine mammals. Congress and the National Marine Fisheries Service deserve to be commended for developing an approach that is conservative and precautionary in its approach. This sort of approach (PBR) helps guarantee that we do not repeat the sorry history demonstrated by fishery management in many areas of the country where fish stocks have crashed and economic hardship has resulted as a result of non-precautionary approaches to management. The American public cares deeply about marine mammals, and PBR is an important means of ensuring protection and promoting growth in diminished populations.

Zero Mortality Rate Goal (ZMRG)

In 1972, the MMPA included a goal stating that fishery interactions with marine mammals should be reduced to "insignificant levels that are approaching a zero mortality and serious injury rate."[16USC 1371 (a)(2)] This has become widely known as the zero mortality rate goal or ZMRG. This goal is important, as it provides a commitment to ensuring that wasteful practices do not result in unnecessary death or injury of marine mammals - a goal that has long been, and still is, supported by the American people. Goals are by definition: "an end that one tries to attain." ZMRG is a goal, not an objective. While goals and objectives may seem similar, we can look to the field of education to see how they are differentiated. In education, goals are broad principles toward which one strives, such as teaching children to approach one another with attitudes that are not prejudiced. Objectives are measurable standards, such as teaching them to use terms that are not derogatory to races or sexes when they speak. In the case of interactions with marine mammals, the MMPA strives toward the goal of reducing marine mammal mortalities to levels that are biologically insignificant; not the objective of absolute zero. This goal acknowledges that some incidental mortality may occur, but the phrasing reflects the desire of the American people to reduce mortality and serious injury to levels that are as low as is feasible. We often hear Americans speak in scathing terms of other nations that catch marine mammals in fishing nets without qualms. Striving toward the zero mortality rate goal assures us of "clean" fisheries of which the U.S. can be proud. It is a goal that should remain in the MMPA.

TAKE REDUCTION TEAMS AND REDUCTION OF MORTALITY IN MARINE MAMMAL STOCKS

The 1994 Amendments established, for the first time, a process designed to include input from all parties with a stake in the management of fishery interactions with marine mammals. The Amendments ensured that stakeholders were represented in advising management decisions. They also stipulated priorities for convening teams to address stocks or fisheries with the most serious levels of interactions. The highest priority was given to situations in which fisheries interacted with strategic stocks of marine mammals. Strategic stocks were those that were listed under the Endangered Species Act as threatened or endangered, or were listed under the MMPA as depleted or were sustaining levels of interactions with fisheries that exceeded the PBR for the stock or stocks. Take reduction teams are charged with producing a plan to reduce mortality to below PBR with six months of implementation. [Section 118(f)(5)(A)]

Under the schedule established in the MMPA Amendments when they were enacted in May 1994, fisheries should have been at or below PBR by October 1996. Because of the extremely high levels of mortality of harbor porpoise in gillnet fisheries in the Gulf of Maine, Congress made special provisions for this fishery. The MMPA provided that the Secretary may "modify the time period required for com-

pliance with section 118 (f)(5)(A), but in no case may such modification extend the date of compliance beyond April 1, 1997." [Section 120 (j)(2)]

With that in mind, the NMFS first convened a team to address mortality of harbor porpoise in the Gulf of Maine. This stock was subjected to mortality more than three times the PBR. NMFS then convened a team to address mortality of endangered large whales in the Atlantic, as levels of human-related mortality in North Atlantic right whales were unsustainable, and other endangered whales such as humpback whales and fin whales were also entangled in gillnet and lobster gear used along the U.S. east coast. Other teams that were convened included those for both the east coast and west coast driftnet and/or longline fisheries that interacted with offshore cetaceans including pilot whales and oceanic dolphins.

The HSUS testified in greater depth in April 2000 as to the fate of these teams, but I would like to summarize what has been a needlessly contentious process. The MMPA Amendments provided a procedure and specific deadlines. Despite this, all take reduction teams were convened well after the legally mandated date. Because of delays within the NMFS, no fisheries were able to comply with the MMPA deadlines for reducing their interactions with strategic stocks to below PBR by October 1996. In fact, no take reduction plans had even been published by this date. Gulf of Maine harbor porpoise were still being killed at a rate almost three times their PBR when the April 1997 deadline came and went without publication of any take reduction plan.

When the NMFS reported its 1995 activities to Congress, it stated that a "coordination process" to "initiate" Teams was begun in September 1995. The report states that they had contracted with a facilitator who was to be responsible for convening six (6) take reduction teams during 1996 to address the mortality of the strategic stocks whose PBR was exceeded. In the report, NMFS stated that these six teams would be "in order of priority: Gulf of Maine stock (population) of harbor porpoise; Atlantic offshore cetaceans; Pacific offshore cetaceans; and the Atlantic baleen whales (humpback and northern right whales)." Furthermore they reported that "[t]he development of [Teams] for three other stocks: the Atlantic coastal stock of bottlenose dolphins; and the eastern and western stocks of Steller sea lions, is also being considered." We have emphasized the last four words, as these stock are all strategic stocks with known fishery interactions. Bottlenose dolphins were being killed in numbers exceeding their PBR and were a depleted stock; therefore a take reduction team was mandatory. Steller sea lions were declining in portions of their range and portions of the stock have been designated as endangered or threatened.

Even if allowance is made for the fact that the stock assessments were late in development, thereby delaying the convening of take reduction teams, the MMPA states that take teams must be established "at the earliest possible time (not later than 30 days) after the Secretary issues a final stock assessment." Despite this clear mandate, NMFS did not convene the first take reduction team until February 1996. As of the date of this testimony, NMFS has convened only four of the six teams that they themselves had identified as having "the highest priority for the development of take reduction plans to reduce incidental bycatch of strategic stocks." Almost six years after the publication of the first stock assessment, there are still no take reduction plans for coastal stocks of bottlenose dolphins or for Steller sea lions in Alaska. The bottlenose dolphin team, which has been formed, has not yet officially met. Of the teams that have met, there have been mixed results.

The Pacific Offshore Cetacean Team

This team was convened in February 1996 to address the mortality of multiple stocks of marine mammals in the Pacific driftnet fishery. It submitted a plan as mandated in August 1996. The NMFS published the draft and final plans in a timely manner and in early 1997 the plan was implemented. Since that time, its measures have apparently been effective in reducing mortality in the Pacific driftnet fishery. While there have been some issues of compliance by the fishery with some portions of the take reduction plan, the NMFS has gone forward to address these problems with education programs and enforcement and this team's efforts appear to have been a success. The same cannot be said of the other take reduction teams.

Gulf of Maine Harbor Porpoise

Both the harbor porpoise teams reached basic consensus on plans to reduce mortality by mid–1997. Despite this, NMFS did not publish a plan until litigation forced them to act in 1999. Since that time, the mortality of harbor porpoise has dropped to approximately the PBR level, although The HSUS remains concerned that this is largely a result of Fishery Management Council related closures for the purposes of groundfish management rather than as a result of the provisions of the take reduction plan.

The Atlantic Offshore Cetacean Take Reduction Team

This team initially had three fisheries represented on the Take Reduction Team. During the negotiation process, the NMFS disallowed one of the fisheries, the Pair Trawl Fishery. No plan was published under the MMPA for the remaining two fisheries and one of them, the pelagic driftnet fishery, was disallowed in 1999 without benefit of a take reduction plan. The plan for the Atlantic longline fishery was never published, although portions of the plan were adopted under the Fishery Management Plan for the fishery. The team has never been reconvened, and within the past two months, team members have been notified that the team is being disbanded for a period of approximately three years while the NMFS gathers additional data. This is an unconscionable decision.

Data in the NMFS' own stock assessments for east coast marine mammal stocks for several years have indicated that the longline fishery continues to inflict unsupportable and illegal levels of mortality and serious injury on a number of strategic stocks. Furthermore, additional trawl fisheries such as the Squid, Mackerel and Butterfish trawl fishery are also killing or seriously injuring hundreds of oceanic dolphins. For example: the PBR for common dolphins is 227 animals, but the combined mortality due to offshore fisheries is 406 - almost double the PBR. The PBR for pilot whales is 108 although fishery-related mortality is 245 per year - more than twice the PBR. Mortality of other species, such as Atlantic white-sided dolphins, varies from year to year as to whether it is over or just under PBR. Clearly the NMFS has a legal obligation to reconvene this Take Reduction Team as required by the MMPA.

Atlantic Large Whale Take Reduction Team

This team was convened to address the mortality of a number of species of large baleen whales: north Atlantic right whales, humpback whales, fin whales and minke whales. The major focus of the team was the mortality and serious injury of right whales, the most critically endangered species of large whale. The team was convened in August 6, 1996, following a lawsuit by Greenworld. The task of this team was difficult because, although the likelihood of any particular lobster pot entangling a whale was extremely low, the likelihood of a whale getting entangled in some lobster pot or gillnet was extremely high. With 300 or fewer right whales remaining, and evidence mounting that the population is in decline, it was (and remains) urgent that measures be taken to alter current fishing practices that entangle whales.

The NMFS published a take reduction plan in the wake of both litigation and appeals by fishermen to Congress. This plan has been a resounding failure. In its most recent biological opinions on the affected fisheries, NMFS has stated that the take reduction plan (which is based on current best fishing practice) was "inadequate to avoid jeopardy to right whales." This month, they published proposed gear modifications and a proposal for emergency response to aggregations of right whales that are currently subject to a 30-day public comment period. They also published an advanced notice of proposed rulemaking to consider implementation of additional seasonal restrictions in areas where right whales are predictably found outside of critical habitat. We have serious reservations about these measures, many of which request voluntary actions by fishermen. The NMFS continues to place its hopes in disentanglement response. Although several whales have been successfully disentangled, others have died or were lost subsequent to attempts to disentangle them and have not been seen since. Within the past two years an adult female died of grotesque injuries resulting from her entanglement, and an adult male (Churchill - who was the subject of many well-publicized disentanglement attempts) has finally disappeared after being seen lying motionless at the surface, emaciated and with his head drooping.

Clearly the promise of research and the reliance on disentanglement have not been adequate. Measures contained in the plan to prevent disentanglement have failed and newly proposed measures are of questionable promise.

Given the history of failure by the NMFS to act on a timely basis and in the face of a mounting death toll in right whales, The HSUS filed suit in the year 2000 against the NMFS for violations of both the ESA and the MMPA. It is with reluctance that we move in this direction; however, the history of the take reduction team process to date indicates that without litigation or threat of litigation, little is accomplished, even when the statutory requirements are perfectly clear and the body count of animals continues to rise. In our most recent court appearance, Judge Douglas Woodlock, of the First District Court of the United States, castigated the NMFS for countless delays and deliberate vagary in its proposals. He characterized their actions as "the 'manana' approach," further stating: " the approach you have

chosen forces courts to act and you have only yourselves to blame." Indeed the Take Reduction process has not failed right whales, it is the NMFS that has failed them.

Coastal Stocks of Atlantic Bottlenose Dolphins

The most recent team to be convened will address the mortality of bottlenose dolphins in gillnet fisheries in the mid–Atlantic. This team has not yet officially met and is long overdue. In its report to Congress for 1996 (released October 1997), NMFS stated that it had not yet convened a Mid–Atlantic Team; however, "NMFS expects to convene this team in the spring of 1997 to address incidental takes of harbor porpoise and bottlenose dolphins in ocean gillnet fisheries from New York to North Carolina." Although the mid–Atlantic harbor porpoise take reduction team was originally to have addressed mortality of bottlenose dolphins, the Team was directed by the NMFS to focus its efforts solely on harbor porpoise. In 1997, the Team recommended that by January 1999, the NMFS should convene a team to address mortality of bottlenose dolphins.

In 1999, The HSUS sent a letter to NMFS notifying them of our growing concern that they had not yet convened a team for bottlenose dolphins, despite repeated promises to do so. We received a commitment from NMFS to convene a Team in the fall of 2000, following completion of expanded data gathering efforts. In the summer of this year, NMFS began meeting with stakeholders to share with them information it had gathered pertaining to the structure of the stock, with updated and dramatically larger population assessments, and higher estimates of fishery-related mortality. This team has had a number of meetings postponed and has not yet met, though it is scheduled to do so in November. The HSUS hopes that the NMFS will abide by its agreement to convene a take reduction team. We would like to avoid litigation as a means of enforcing their statutory obligation to protect bottlenose dolphins.

Alaska Steller Sea Lion Team

In its report to Congress on activities undertaken in 1996, the NMFS states that they had not yet convened this team; however they stated "NMFS expects to convene this team to address incidental takes of Steller sea lions in Alaska Commercial fisheries. The team will be facilitated by Mediation Services, Seattle, WA." As of the date of this testimony in October 2001, this team has still not been convened, despite ongoing population declines and contributing mortality from fisheries interactions.

Summary of Section 118 Implementation

It is troubling that, without litigation or threat of litigation, the NMFS has shown reluctance to abide by its legal responsibilities. Where take reduction teams have faltered, it is because the NMFS has undermined their functioning by bowing to political manipulation of the system that results in encouraging delay of action or in taking inadequate actions, which is then followed by the necessity of seeking assistance of the courts to force the agency to do its job. Indeed, The HSUS has been a plaintiff in two lawsuits pertaining to inaction on take reduction mandates.

The 1994 Amendments put in place a system that was designed to allow conservationists, fishermen and scientists to join with government managers to develop plans that reduce mortality of marine mammals consistent with the mandates of the MMPA. This system CAN work. The illustration provided by the Pacific Offshore Cetacean Take Reduction Team is, in part, an example of this. Where the system has failed, it is generally not as a result of an inability of stakeholders to comprehend the problem and work collaboratively to develop a solution.

Where the failure to convene teams or to implement plans is a result of funding and personnel insufficiency, the NMFS must seek and Congress should grant adequate funds. But funding alone does not seem to explain the failure of the NMFS to take action on take reduction plans. Some of the recommendations of take reduction teams would cost the agency nothing. For example only in October 2001 did the NMFS finally act on a 1999 recommendation by the Atlantic Large Whale team to remove 7/16" line from a list of technology options designed to reduce risk. Also litigation was necessary to force publication of the take reduction plan for harbor porpoise, although the plan had been largely complete for over a year prior to the suit.

The delays also undermine the confidence of Team members in the take reduction process. It is arduous work for diverse stakeholders to develop a plan that all can agree is likely to be effective and is acceptable to all interested parties. It is frustrating to have this hard work end with the NMFS refusing to publish a plan, often for years, with little or no explanation for the delay. Additionally, failure to enforce take reduction plan mandates further undermines the likelihood of the plan succeeding. The take reduction team process was designed to reduce the need to use

lobbying and litigation as management tools. Instead, delays have forced both the fishing industry and conservation groups to use the very tools that the process was designed to obviate, further weakening confidence in the efficacy of the process.

The failure of the NMFS to meet its statutory obligations leads to a waste of resources that must be consumed by legal fees, lobbying efforts and oversight hearings. More importantly, the failure to meet statutory obligations under the MMPA has lead to a needless waste of animals' lives.

ABUNDANT PINNIPED POPULATIONS

While we understand that this issue is to be addressed in another Panel before the Subcommittee, The HSUS would like to take this opportunity to state that we believe that existing provisions in the MMPA are adequate to address situations of perceived conflict between humans and pinnipeds and concerns that pinnipeds are eating endangered fish species. Specifically, Section 109 and Section 120 were enacted to provide a forum for addressing these concerns and are a precautionary means of addressing conflicts. The HSUS has some grave concerns with portions of Section 120 and its implementation, but at the very least, it provides some checks and balances. We believe that there is no need to amend the MMPA to allow additional authorizations for the intentional lethal removal of pinnipeds by state and federal resource agencies or by private citizens. In particular, we are concerned that if private citizens, including fishermen, are provided with any authority to intentionally kill marine mammals, we will merely see a dramatic increase in the wounding and maiming of hundreds of marine mammals.

In May 1999, Yale University completed a survey entitled "American Perceptions of Marine Mammals and their Management." In this, they found that three fifths of Americans disapproved of reducing populations of seals and sea lions and more than ninety percent opposed the use of lethal practices such as shooting or poisoning seals and sea lions as a means of reducing conflicts even though these methods were described as being the least expensive option. Clearly the American people would not support any changes to the MMPA that would broaden the use of lethal forms of managing conflicts. We agree with many of the comments made by the Ocean Conservancy in their testimony, particularly the need for innovative and targeted research to develop non-lethal deterrents that can prevent interactions while posing little risk to the pinnipeds or non-target organisms.

NATIVE CO–MANAGEMENT

The 1994 Amendments to the MMPA provided greater authority for the NMFS to enter into agreements with native tribes and Alaskan natives to co-manage stocks of marine mammals, particularly those in Alaska. The HSUS has always supported the involvement of stakeholders in the process of determining management programs. We are, however, concerned that the co-management process is NOT an inclusive process. Meetings between native groups and the US government are not open to attendance by members of the public, nor is the public allowed to comment on the agreements prior to their going into effect. The NMFS, as can be seen in our testimony about take reduction teams, clearly does not always represent the public's interests and opinions. Problems have arisen in the co-management of marine mammal stocks. We note a number of examples from the 2001 Alaska Marine Mammal Stock Assessments, published by the NMFS.

Endangered Steller Sea Lions have a PBR of 208. This stock continues to decline. There are no data on native subsistence hunting provided since 1997. In that year, natives killed 353 animals from this declining stock, and we have no way of knowing how many were killed in the past 4 years. This is simply unacceptable. Similarly, spotted seals are hunted by natives with no harvest data available since 1995. Another example, of which Congress is no doubt aware, is the crisis that arose for beluga whales in the Cook Inlet in Alaska, whose population was decimated by native hunting. While this situation has received a great deal of attention, and management actions have halted the heavy hunting; beluga whales in the Eastern Bering sea stock are also hunted in levels above their PBR. These belugas have a PBR of 129, with an estimated annual average of 121 killed by native hunters. This is perilously close to the PBR and, in fact, in four of the five years between 1993 and 1997 (the standard period used by NMFS to obtain annual averages), PBR was exceeded by native hunting. We do not know how many may have been killed since 1997. The stock assessments state that for virtually all marine mammal stocks hunted by natives, estimates of native hunting are underestimates.

Without outside input to and review of the co-management process, we cannot hope to ensure that management agreements between the hunters and the government are adequately protective of marine mammals stocks. The HSUS strongly sup-

ports the inclusion of conservation interests in meetings and discussions pertaining to co-management agreements and believes that the public should have a right to comment on these agreements before they are enacted.

PUBLIC DISPLAY

Export Permits

The MMPA should be amended to restore the requirement for a permit to export marine mammals for the purpose of public display, scientific research, and enhancing the survival or recovery of a species or stock. The 1994 Amendments removed this requirement and required only a 15-day notification to the NMFS or Fish and Wildlife Service (FWS) and a determination that a receiving facility meets standards comparable to those required under the Animal Welfare Act (AWA) and MMPA. The HSUS opposed these amendments, as we had serious concerns about the ability of the agencies under such a short-notice regime and without public input to ensure the well-being of marine mammals leaving this country for foreign facilities not under the jurisdiction of U.S. law.

In several instances since 1994, captive cetaceans, pinnipeds, and sea otters have been exported to countries such as China and Japan to literally unknown fates. One of the most well-known exports under the new provisions was that of Keiko, the killer whale of "Free Willy" fame. Ironically, the Alliance of Marine Mammal Parks and Aquariums (Alliance) vigorously protested this export, when in fact the Alliance was instrumental in fashioning the minimal export provisions under which Keiko was sent to Iceland from Oregon. While The HSUS believes this export would have qualified for a permit under the pre–1994 provisions, we point to this example in order to demonstrate that it is precisely because the law should be equally applied to all, that the law must be strong.

The current export requirements, which include the 15-day notification and a letter of comity from the receiving nation, have proven woefully inadequate in protecting captive marine mammals leaving U.S. jurisdiction. National agencies all too frequently provide letters of comity with no substance underlying them, yet as a diplomatic matter, the U.S. agencies must accept these letters. The permit process, which includes public notice and public input through comments, allows a greater - and more protective - degree of scrutiny of a receiving facility and the laws to which it is subject.

On–Site Inspections to Determine Comparability

Under the 1994 Amendments, foreign receiving facilities must demonstrate that they meet standards that are comparable to those under the AWA. However, the Animal and Plant Health Inspection Service (APHIS) has concluded that facilities may demonstrate this solely through providing the agency documentation - affidavits and photographs - rather than by the agency conducting an on-site inspection. APHIS has on a number of occasions stated that it does not have the authority or budget to conduct such on-site inspections nor the authority to require foreign receiving facilities to cover the expense of an on-site inspection. This authority or lack thereof is not clear from the language of the AWA or its regulations or from the language of the MMPA. Therefore, the MMPA should be amended to clarify in Section 104(c)(9) that the determination of comparability must be made through first-hand knowledge - that is, on-site inspections - by the relevant U.S. agency. Otherwise the determination is in essence being made by the receiving facility itself, through the documentation it chooses to provide to APHIS, which is a clear conflict of interest.

The Marine Mammal Inventory Report (MMIR)

The U.S. is one of the only countries in the world with legislation requiring the maintenance of an inventory of marine mammals held in captivity. Other nations without such a requirement sorely feel the lack. Until recently, for example, Mexican public interest groups and the Mexican government had no idea how many captive dolphins were held in their country. They had no idea what the mortality, birth, or survivorship rates were. Through the efforts of non-governmental organizations, an inventory was painstakingly put together that demonstrated that the situation for captive dolphins in Mexico is relatively grave. There are a far greater number than interest groups or the government were aware of (over 90 bottlenose dolphins) and the origins of many were controversial (*e.g.*, wild-caught from unstudied populations, traded from other countries without adequate paperwork). Mortality rates in some facilities were excessive. Without an inventory, the status of captive marine mammals can be impossible to determine.

Again, Congress specifically recognized the specialized nature and needs of marine mammals when it passed the MMPA in 1972. This nature and these needs have not changed in 30 years - marine mammals are particularly vulnerable when removed from their natural, marine habitat and placed in captivity. The example of other countries emphasizes why inventories are not only precautionary but also necessary to ensure the humane treatment of these animals in captivity. Government biologists used the data found in the MMIR in 1995 to determine the survivorship rates of various species commonly found in marine parks and aquariums - this analysis determined that while pinnipeds survived well in captivity, captive bottlenose dolphins at best matched the survivorship of their free-ranging counterparts and captive orca survivorship rates were depressed compared to those of their wild cousins. This begs the question of what causes mortality in captive dolphins and why these mortality sources prevent their survivorship from surpassing that of free-ranging dolphins - it certainly begs the question of why captive orcas do not survive as well as or better than wild orcas. These inventory data are vital to our understanding of the trade in marine mammals as well.

There is no good argument for abandoning the MMIR.

Traveling Marine Mammal Shows

The MMPA should be specifically amended to prohibit traveling shows (*e.g.*, circuses, portable performances) featuring marine mammals. Recently, Mundo Marino, a traveling dolphin show based in Colombia, and the Mexican Suarez Brothers Circus, featuring performing polar bears, have sought entry into Puerto Rico. NMFS disallowed the entry of Mundo Marino but the FWS issued an import permit to the Suarez Brothers Circus earlier this year, after APHIS approved the circus' facilities. APHIS has cited the circus multiple times since June for violations of AWA regulations and Puerto Rican authorities charged it with cruelty to the bears in August. The cruelty case hearing is now scheduled for early December.

Marine mammals are not suited to traveling shows. Their care and maintenance requirements, as evidenced by the separate and detailed regulations in 9 CFR Subpart E, are highly specialized. Providing adequately for them "on the road" is impossible. The agencies clearly believe that the current provisions of the law provide them with inadequate authority to prohibit such shows. Therefore, the law should be amended to make this authority clear. Traveling shows featuring marine mammals clearly violate the spirit of the MMPA, which is designed to conserve species and stocks and ensure humane treatment of these animals. It is time for the letter of the MMPA to match this spirit when it comes to traveling marine mammal shows.

Captive Marine Mammals and the National Marine Fisheries Service

APHIS, under the AWA, has not demonstrated that it can adequately ensure the humane treatment and welfare of marine mammals on public display. For example, APHIS, after taking more than three years to finalize the regulations for the operation of swim-with-the-dolphin (SWTD) facilities, suspended its enforcement only six months later, in April 1999. It is now October 2001 and regulations for these specialized facilities are still not in place. The special aspects of SWTD interactions, which add an additional element of stress to animals already stressed by confinement, remain unregulated in the United States, putting this country on a par with such developing nations as the Dominican Republic and Anguilla in the Caribbean and Palau in the South Pacific, which have unregulated SWTD facilities. The failure of APHIS to expedite the review and reinstatement of these regulations (let alone its failure to finalize them promptly in the first place) emphasizes its inability to address the specialized needs of captive marine mammals.

As another example, APHIS approved and licensed the Suarez Brothers Circus, even though a number of problems were evident in the documentation that the circus provided the agency. Once the circus was on U.S. territorial soil, some of these same problems led APHIS to issue citations for violations of AWA regulations, some of which were apparently never corrected and led to the filing of cruelty charges by Puerto Rican authorities. Given that some of these violations were evident in the circus' documentation prior to licensing, it is difficult to understand why APHIS licensed the circus in the first place, at least unless and until these violations were corrected.

APHIS has limited expertise among its staff in the biology and handling of marine mammals. Its veterinary inspectors receive some training regarding the specialized needs and regulations for these animals, but this training is sometimes neglected entirely and is often inadequate. Facilities are allowed numerous opportunities to correct violations and in some instances, violations are never corrected. APHIS is responsible for implementing and enforcing the AWA for a broad range of species,

both exotic and domesticated. The specialized biology and ecology (and captive maintenance requirements) of marine mammals, specifically recognized by Congress when it passed the MMPA, overburden this already overburdened agency.

In 1993, The HSUS testified before the Senate Committee on Commerce, Science and Transportation that NMFS, in contrast to APHIS, has the expertise and infrastructure to ensure the humane treatment of captive marine mammals. What NMFS lacks in veterinary staffing, it can acquire. It merely makes sense that marine mammal species, under the jurisdiction of NMFS (and the FWS for polar bears, walruses, manatees, and sea otters) when wild, should continue to be under the jurisdiction of NMFS when captive - they do not transform into livestock merely by virtue of entering a tank, pen, or cage. It seems abundantly clear that APHIS is stretched very thin already. It also seems clear that the public display industry's confidence, expressed during the 1993/1994 reauthorization, that APHIS and the AWA could adequately protect captive marine mammals was misplaced. We therefore maintain our original position that jurisdiction over captive marine mammals should be transferred to NMFS (and FWS for the four species under its authority), with an appropriate addition of marine mammal veterinarians to its staff (and the funding necessary to hire them).

Prohibit the Capture From the Wild of Marine Mammals For Public Display

The U.S. public display industry frequently points out to the public that it has not captured any cetaceans from the wild since 1993. It has not captured certain cetacean species for far longer than that. Other species' collection numbers have also been maintained for years (and in some cases, decades) through captive breeding, imports/transfers, or the retention of unreleasable stranded animals, rather than through wild captures. Given this successful maintenance of captive populations without removing animals from the wild, The HSUS believes it is time for the MMPA to be amended to prohibit this extraordinarily disruptive, traumatic practice.

SPORT HUNTING OF POLAR BEARS

The HSUS requests Congress to maintain the strict prohibition on the sport/trophy hunting of polar bears in Alaska. The entire MMPA is based on the understanding that marine mammals belong to the nation as a whole - that they are held in public trust. The prohibition against take is universal, as it should be - the exemptions are for purposes that serve the public good. To allow exemptions for personal use is counter to the spirit of this ground-breaking legislation. In addition, The HSUS believes commercial sport hunts provide a dangerous incentive to overexploit this vulnerable and naturally rare species, as was historically the case. Sport hunting and its negative impacts on polar bear populations were among the primary reasons the five polar bear nations (Denmark [for Greenland], the Russian Federation [then the USSR], Norway, Canada, and the U.S.) originally negotiated and signed the 1973 Agreement on the Conservation of Polar Bears.

At this time, Canada continues to be the only country that allows the sport hunting of polar bears under the 1973 Agreement. In 1994, Congress agreed to an amendment that allowed the import into the U.S. of trophies legally taken in Canada. The HSUS opposed this amendment, partially because we believe the hunt in several populations of Canadian polar bears was (and continues to be) unsustainable - allowing the import of trophies would provide a strong incentive for Canada to maintain or increase already unsustainable quotas because more American hunters would seek to purchase subsistence hunt tags from Canadian Inuit.

Demonstrating our concerns, the FWS approved the M'Clintock Channel polar bear population for imports under the 1994 Amendments. Earlier this year, the agency published an emergency rule disapproving M'Clintock Channel because a recent study by the Canadian authorities indicated that there were far fewer bears than originally estimated, making the quota not only unsustainable, but actually an extirpation risk for the population. Some of the population data used to calculate this new population estimate were apparently available to the Canadian authorities as early as 1978. In addition, the population estimate was always rated as "poor" and even after the results of the first two years of a three-year study (1998, 1999, and 2000) showed that there were almost certainly far fewer bears in the population than previously estimated, Canada did not change the quota until the study's final year of results was analyzed. (The 1998/1999 hunting season, therefore, removed nearly 10% of the population and the unfulfilled quota was for more than 10% of the population.) In short, managers could have and should have foreseen the actual status of the population as early as 20 years ago and certainly two years ago.

The HSUS has always been critical of the potential for mismanagement under Canada's management regime. The situation in M'Clintock Channel is a classic ex-

ample of a worst-case scenario under this regime, which, inter alia, relies on population estimates that are qualitatively rather than quantitatively characterized. The quota for this population was driving the M'Clintock Channel bear population inexorably toward extirpation for several years before the regime was able to detect this trend.

It is impossible to know whether those populations that the FWS has not approved for import but which are still subject to legal hunts under Canadian law are experiencing similar negative impacts because of hunting under Canada's management regime. If they are, this reflects on Canada's entire management program. As for those six populations currently with full FWS approval for import, their status is arguably just as questionable, as they are being managed under the same regime. Given how long M'Clintock Channel's dire situation escaped Canada's notice, and given the uncertain quality of some of the population data from the other approved populations, there is simply no assurance that any polar bear population in Canada is being managed sustainably.

The HSUS believes strongly that the amendment allowing trophies to be imported should be repealed. Polar bears are uniquely unsuited to being sport-hunted. Establishing accurate population estimates and life history parameters upon which commercially-driven hunts can be sustainably based is extremely difficult, given their remote and marginal habitat.

ADDITIONAL RECOMMENDATIONS TO IMPROVE PROVISIONS OF THE MMPA

Up to this point in our testimony, we have dealt with the implementation of provisions put in place in the 1994 Amendments. There are a number of issues, not considered in the amendments that affect their implementation.

Recreational Fisheries

Meetings of the mid–Atlantic Take Reduction Team have brought to light the issue of recreational fisheries interacting with marine mammals. Section 118, which focuses on commercial fisheries, does not provide jurisdiction over recreational fisheries. Gillnets that are used to catch bait for personal use are similar in design and method of operation to that of commercial gillnets. Both commercial fishermen and scientists working in the area have observed dolphins and porpoises caught in these nets that are not under the jurisdiction of Section 118 of the MMPA. Recreational lobster gear poses a risk to whales that is no less than that posed by commercial lobster pots, yet may not receive the same degree of oversight.

We believe that there should be a mechanism for quantifying the nature and extent to which recreational fisheries interact with marine mammals when they use gear that is similar in type to that of commercial gear known to kill or injure marine mammals. Furthermore, we believe that recreational fisheries utilizing gear types similar to those used by commercial fisheries, and known to interact with marine mammals, should be subject to the same restrictions required of commercial fisheries.

Quantifying the Impact of Fishery Interactions

The funding for the observer program is insufficient to provide anything but rudimentary observer coverage in many fisheries. Stock assessment surveys, which appear to be mandated by the MMPA, are simply not done. The HSUS believes that this is a significant problem that results in an underestimate of the number or impact of mortalities in fisheries that may interact with marine mammals. It can be addressed by designating appropriations for this purpose. For example, since the 1994 Amendments, stock assessments for marine mammals in and around the Hawaiian Islands acknowledge that there has been no effort directed to determining the population abundance of most stocks and there is no observer coverage on most fisheries in this area. We have no way of knowing how many animals there are, let alone whether commercial fisheries may be having a negative impact on their populations. Resources must be directed to assess stocks and fisheries interactions in this area. Additionally, many gillnet fisheries in Alaska have little or no observer coverage. The extensive Atlantic longline fleet, which is known to seriously injure hundreds of animals each year, has less than 5% observer coverage to monitor its operations and, in some areas or times when interactions may occur, there is virtually no observer coverage. Because of a lack of resources there are a number of fisheries with a likelihood of killing marine mammals but about which we know little. Until we can provide additional and more uniform observer coverage, we are unlikely to be able to understand the extent of fishery interactions with marine mammals. This results in an underestimate of mortality and an inability to track the efficacy of take reduction measures.

The NMFS needs to request, and Congress needs to appropriate, sufficient funding to ensure an adequate observer program that will be able to detect sources, levels and trends in marine mammal mortality.

Enforcement of Provisions of Take Reduction Plans

Although we have focused much of our testimony on the glacial speed of the NMFS response to MMPA mandates to convene take reduction teams and publish take reduction plans, there is also a problem that arises with enforcement of the plans once they are published.

Fishermen in parts of North Carolina have routinely refused to take federal observers on board, with absolutely no consequence resulting from their having violated the law. This provides disincentive to other fishermen who are law abiding and it means that the data that are gathered do not provide a random and representative look at the fishery's interactions with marine mammals. The result of this skewed picture is that we may either underestimate the number of animals killed, to the detriment of the marine mammal population; or we may overestimate the number of animals killed, to the detriment of the fishery. Additionally, in a number of fisheries, fishermen have been documented by federal observers to be fishing in closed areas, and killing marine mammals. No enforcement action has been taken against them. Again, this is a disincentive to those fishermen who are obeying the law and it undermines the effectiveness of the take reduction plan. These are but two examples of a broader problem.

It is paramount that the NMFS examine the compliance issues that have come to light in these teams and take action against violators. Where implementing regulations are unclear or other internal administrative policies prevent action, these situations must be remedied. Furthermore, it is urgent that Congress provide adequate funds to both the NMFS and Coast Guard to ensure that their resources are sufficient to enforce compliance with laws and regulations.

Additional Funding Issues

In earlier hearings, The HSUS has pointed out that MMPA implementation funds are routinely robbed for so called "base funding" shortfalls. That is, the NMFS has insufficient funds to pay for operating costs and permanent staff positions and, rather than fund recommendations by take reduction teams for additional research or personnel, uses these funds to pay for general operating budgets. This is an unacceptable practice.

We urge the NMFS to clearly and accurately depict its needs for on-going operating costs and we further urge that Congress appropriate sufficient base funding to meet these needs. Funds identified for implementing Take Reduction Team recommendations and for conducting research that helps us understand and reduce levels of mortality in marine mammals must be used for their intended purpose.

SUMMARY

In summary, the 1994 Amendments put in place a means of obtaining many of the goals outlined in the MMPA when it was passed in1972. We can now gauge the impact of human-related actions on marine mammal populations and we have a process to help mitigate adverse impacts. In particular the approaches taken in the use of PBR and the zero mortality rate goal, should stand as a measuring stick to the MMPA's commitment to reduce or eliminate threats to marine mammal populations. Stakeholders are now assured a role in management decisions. In some cases there are ongoing adverse impacts, as is the case in some stocks hunted by natives or sport hunters, marine mammals killed in recreational fisheries, and where marine mammals in captivity have lost important protections; however, clarifications to the MMPA would address many of these problems. We also believe that the federal government should maintain management authority for marine mammals, rather than abrogating to states or user groups. Lethal taking of marine mammals should remain prohibited. Additional problems in the implementation of the MMPA can be addressed by careful attention to enforcement of existing requirements; by demanding Agency compliance with existing provisions of the MMPA, including deadlines for action; by ensuring participation of multiple stakeholders in all decision making fora; and by ensuring adequate funding to carry out the intent of the provisions of the MMPA.

The HSUS would not oppose a straight reauthorization of the MMPA. The HSUS would also support extremely limited and non-controversial changes that are intended to clarify the MMPA's obvious conservation intent. Many of the concerns we have expressed can be addressed through the allocation of sufficient resources; by agencies taking overdue regulatory actions or making interpretations of the MMPA that allow stricter enforcement of its provisions; and by ensuring support by the

agencies and this Congress for action by inclusive bodies of stakeholders acting to resolve or prevent problems.

The 1999 Yale University study of "American Perceptions of Marine Mammals and their Management" by Stephen Kellert and colleagues concludes:

> "The results of this study largely revealed strong support for marine mammal protection among the great majority of Americans... Most Americans indicate a willingness to render significant sacrifices to sustain and enhance marine mammal populations and species. Despite concern for various commercially important ocean activities, including commercial fishing and oil and gas extraction, these interests did not supercede the public's inclination to protect marine mammals. Most Americans consistently indicated a desire to modify or alter these and other human activities in the marine environment to protect marine mammal populations and species, even it if necessitated sacrifices on society's part. Americans further affirmed the importance of maintaining the Marine Mammal Protection Act.

With the passage of the MMPA in 1972, Congress granted marine mammals a special protection and status that was, and still remains, the desire of the American people. The 1994 Amendments helped objectify many of its lofty goals. The HSUS urges you to keep the MMPA strong in its protection of marine mammals.

Mr. GILCHREST. Thank you very much, Ms. Young.

Mr. Mannina?

STATEMENT OF GEORGE MANNINA, AMERICAN ZOO AND AQUARIUM ASSOCIATION AND THE ALLIANCE OF MARINE MAMMAL PARKS AND AQUARIUMS

Mr. MANNINA. Mr. Chairman, Mr. Underwood, in 1993 NMFS proposed replacing five pages of marine mammal public display regulations with 234 pages of what NMFS called a simplification and what we lawyers called a retirement plan. In 1994 Congress rejected that so-called simplification. Now, 7 years later, NMFS is proposing regulations which resurrect many of the same proposals Congress rejected in 1994.

For example, in the 1993 simplification, NMFS proposed that it and APHIS have separate and equal authority to establish and enforce marine mammal care and maintenance standards. Congress, however, decided it was wasteful to have two agencies performing the same responsibilities, and gave APHIS the job.

Nevertheless, in its 2001 proposal, NMFS now claims it has joint responsibility with APHIS to enforce APHIS's care and maintenance standards. This creates the awkward circumstance in which an APHIS inspector finds a facility in compliance with APHIS's regulations, but NMFS says the APHIS inspector is wrong. After NMFS finds the facility in violation of APHIS's regulations, NMFS can then revoke the facility's right to display marine mammals.

This latest NMFS proposal again creates good government, legal, and budgetary questions as to why two different agencies should be enforcing the same statute. NMFS then compounds the problem by allowing NMFS to deputize any person to inspect a public display facility for compliance with APHIS's regulations, and to then inspect and copy any and all facility records. Allowing NMFS to designate any member of the public as an APHIS inspector, and requiring public display facilities to turn over all of their records to that person, raises very significant public policy and privacy issues.

In 1994 Congress also rejected the cumbersome process NMFS had proposed to regulate the transfer of marine mammals between

facilities. The 1994 amendments stated NMFS was to receive a simple 15-day notification of that transport. But the 2001 proposed regulations resurrect much of the 1993 proposed simplification, replacing Congress's one notification with six forms. Three of those forms cover the exact same information already contained in the NMFS Marine Mammal Inventory.

The 1993 simplification also codified NMFS's practice of prohibiting marine mammal exports unless the receiving foreign nation agreed to enforce NMFS's regulations. Not surprisingly, foreign nations were somewhat less than enthusiastic about subordinating their sovereign authority to NMFS's regulations, and Congress rejected NMFS's idea. The 2001 NMFS proposal resurrects that idea.

To understand the problem, a case example may be helpful. Assume for a moment an animal is to be exported from the United States to France. Under NMFS's proposal, the French Government must agree to give comity to NMFS's regulations and APHIS's care and maintenance standards.

If 10 years later the animal is exported to Germany, and 10 years after that to Spain, under NMFS's proposal each of those governments must agree to enforce NMFS's regulations and APHIS's care and maintenance standards, and for each transfer NMFS is to receive six inventory and transport notification forms.

And if the animal gives birth, the NMFS proposal would require that the NMFS regulations would apply to the care and transfer of that progeny. And if that progeny dies, we may now be 60 years after the transfer, NMFS is to receive an inventory notice and an explanation of the cause of death.

NMFS's plan raises some very significant international relations issues and very serious questions about whether NMFS should be using its limited resources to transform itself into an international regulatory agency.

Although I have highlighted just a few problems, the 2001 NMFS proposal essentially repeals large segments of the 1994 MMPA amendments. While we very much would like to work with NMFS to resolve these issues, NMFS appears intent upon pursuing its same old regulatory agenda, and it may well be necessary for Congress to speak with even greater clarity to these issues.

Thank you.

[The prepared statement of Mr. Mannina follows:]

Statement of George Mannina, on behalf of the American Zoo and Aquarium Association and the Alliance of Marine Mammal Parks and Aquariums

Mr. Chairman and Members of the Subcommittee, I am representing the American Zoo and Aquarium Association (AZA) and the Alliance of Marine Mammal Parks and Aquariums (Alliance). The members of these two organizations include marine life parks, aquariums, and zoos whose expertise is the public display of animals including marine mammals. These zoological institutions are dedicated to the highest standards of care for marine mammals and to their conservation in the wild through public education, scientific study, and wildlife presentations. Collectively, the members of AZA and the Alliance represent the greatest body of experience and knowledge with respect to marine mammal husbandry.

AZA represents over 200 accredited zoo and aquarium institutions that draw over 135 million visitors annually and have more than 5 million zoo and aquarium members. The Alliance has 40 members that host over 36 million visitors each year. Collectively, these institutions teach more than 12 million people each year in living classrooms, dedicate over $50 million annually to education programs, invest over

$50 million annually to scientific research and support over 1300 field conservation and research projects in 80 countries.

AZA and the Alliance are uniquely qualified to comment on the Marine Mammal Protection Act (MMPA). Both organizations are very knowledgeable about the MMPA as it pertains to the public display of marine mammals and the rescue of stranded animals. And, both were actively involved in the process of amending the MMPA in 1994.

I. The Role of Public Display Facilities

The House Resources Committee and its Subcommittee on Fisheries Conservation, Wildlife and Oceans have long understood the important role of public display. Indeed, a Congressional report on the passage of Marine Mammal Protection Act in 1972 observed *"...without observing marine mammals in oceanaria the 'magnificent interest' in marine mammals will be lost and 'none will ever see them and none will care about them and they will be extinct. If it were not for these organizations and the public exposure you have on these animals in the first place, these matters wouldn't be brought to the attention of the public.'"*

A. Education

The conservation of marine mammals requires public education, the practice of conservation behaviors by every individual, and the development of effective public policy. The public display of marine mammals plays an integral role in this conservation effort, helping to preserve these magnificent animals for present and future generations. With public display comes marine mammal education and conservation programs unique in their ability to establish a personal connection between visitors and the animals. This personal connection fosters learning about how the behaviors of each and every one of us affect marine mammals and the habitats in which they dwell.

Congress has entrusted zoological parks and aquariums with great responsibility and they strive daily to live up to that responsibility. Each and every year, members of the American Zoo and Aquarium Association and the Alliance of Marine Mammal Parks and Aquariums proudly communicate their educational messages to an ever-expanding and diverse audience, reaching more and more children and adults about the importance of conserving marine mammals and their habitats. Members provide an enthusiastic, imaginative, and intellectually stimulating environment to the approximately 140 million people who visit AZA and Alliance member marine life parks, aquariums, and zoos annually. Additionally, each year over 12 million young people participate in programs for school children. With the growth of the Internet, along with more traditional forms of communication, AZA and Alliance members reach nearly one hundred and fifty million children and adults each year.

Recognizing this responsibility, both AZA and the Alliance established standards for education programs offered by public display facilities in the United States. The standards have been acknowledged by the National Marine Fisheries Service (NMFS) as the two "professionally accepted standards" on which a public display facility must base its education and conservation programs. NMFS published these standards in the Federal Register October 6, 1994, (Vol.59, No.193, Pgs. 50900–2).

The mission of educational exhibits and programming at AZA and Alliance member facilities is to enhance the appreciation and understanding of marine mammals and their ecosystems. Members of these zoological institutions instill in those who visit an awareness of ecological and conservation issues and a respect and caring for these animals and their environments. Our members believe this respect engenders a strong, active commitment to marine mammal conservation and an understanding that each and every person can make a difference. Generally, the goals of AZA and Alliance member education programs are to:

- provide opportunities for visitors to expand their knowledge about marine mammal biology and natural history;
- promote awareness of and sensitivity toward the marine environment;
- present information on marine conservation issues;
- be marine science and environmental information resources to interested citizens, local schools, community groups, and educators, and
- inspire visitors to embrace conservation behavior.

Education programs and courses are diverse and age relevant. Programs for children ages three to five provide an excellent opportunity for preschoolers to see and begin to gain an appreciation and understanding of other living creatures. Interspersed amidst the singing, role-playing, and other activities designed to teach young children about marine mammal characteristics and behavior is a strong con-

servation message of respect for all life forms. Programs emphasize learning through sight, touch, sound, and movement.

Education courses for school-age children teach the importance of conservation, responsible human behavior, and the principles of ecology. The courses also promote basic competencies in science and other related disciplines. AZA and Alliance members typically use county and state science curriculum standards when developing programs. Many institutions have curriculum advisory committees made up of local educators who review curriculum and programs to assure that they meet the needs of teachers, the community and the state.

Elementary and secondary school teachers who are interested in incorporating new, exciting programs into their teaching plans have the opportunity to learn to teach curriculums developed by AZA and Alliance members. The focus on the environment and conservation includes activities in both field and laboratory settings. Courses reflect state frameworks and nationally recognized standards in science and mathematics. Some of the courses are designed to help teachers receive academic credits toward re-certification.

In its statement on complementary sources of science education, the National Science Teachers Association (NSTA) specifically recognizes the educational role of zoos and aquaria, museums, cultural attractions, and other community resources. According to NSTA, there is a growing body of research that documents the power of learning experiences outside the classroom to spark curiosity and engage interest in the sciences during the school years and throughout a lifetime. NSTA points out that these complementary science institutions have a long history of providing staff development for teachers and enriching experiences for students and the public. NSTA recognizes that science education and resources at zoological parks and aquariums are "often the only means for continuing science learning in the general public beyond the school years."

A 1998 Roper Starch poll provides clear evidence that programs at marine life parks, aquariums, and zoos are educational and provide the public with a heightened appreciation of the importance of conserving and preserving marine mammals. Responses to the Roper Starch poll indicate that seeing live marine mammals enhances the educational experience for the visitors to marine life parks, aquariums, and zoos.

- Almost everyone (97%) who visited Alliance member marine life parks, aquariums, and zoos said their experience with live marine mammals had an impact on their appreciation and knowledge of the animals. The impact was greater for those visiting facilities where they actually had an opportunity to interact with marine mammals.
- Ninety-six percent (96%) of the parks' visitors agreed that "seeing marine mammals engaged in their daily behavior as I did here today is the best way to understand and learn about them."
- Ninety-four percent (94%) of the visitors agreed with the statement, "I learned a great deal about marine mammals today."
- Nine in ten visitors agreed that they "have become more concerned about the importance of preservation/conservation of marine mammals as a result of my visit here today."

B. Research

Knowledge acquired through research with animals in public display facilities, in tandem with field research, is another fundamental contribution to marine mammal conservation. Communicating this knowledge is one of the most effective means of ensuring the health of wild marine mammals in the 21st century. Much of this research simply cannot be accomplished in ocean conditions.

Tens of millions of dollars are being spent on research at and by AZA and Alliance member facilities that is essential in understanding the anatomy and physiology of marine mammals, in treating sick and injured animals from the wild, and in learning to better manage and assist endangered species. Additionally, many AZA and Alliance facilities collaborate with marine mammal researchers from colleges, universities, and other scientific institutions that conduct studies important to wild species' conservation and health. Over the years, this body of work has contributed significantly to the present knowledge about marine mammal biology, physiology, reproduction, behavior and conservation. These studies have led to improvements in diagnosing and treating diseases; techniques for anesthesia and surgery; tests for toxic substances and their effects on wild marine mammals; and advancements in diet, vitamin supplementation, and neonatal feeding.

There is still a tremendous amount scientists do not yet know about the marine mammals in our oceans and rivers. And we desperately need greater knowledge and understanding if we are going to make informed, intelligent decisions regarding the

increasingly complex pressures on these wild animals. The long-term studies of inshore, wild marine mammal populations, which provide scientists opportunities to measure contaminant exposure, monitor health and immune responses of individual animals, and to study population-level trends, are extremely important. Alliance and AZA members play a strong role in these efforts as evidenced by the following examples of both *in situ* and *ex situ* research projects:

- the Sarasota Dolphin Research Program, begun in 1970 and supported by the Brookfield Zoo - Chicago Zoological Society since 1989. Efforts over these 30 years have resulted in the development of a natural laboratory for detailed, long-term studies of the behavior, population biology, health, and ecological relationships of resident communities of bottlenose dolphins along the central west coast of Florida;
- research by Six Flags Marine World on killer whales in northern Washington State, British Columbia, and southern Alaska, which has led to numerous publications since it started in 1981;
- cooperative work by Shedd Aquarium and the University of Quebec on cancer in beluga whales in the St. Lawrence River, animals that have high levels of PCBs, pesticides, mercury, and other mutagenic compounds in their systems, which will help scientists understand the influence of environmental contaminants on the health of these animals;
- a collaborative study of endangered manatees and their exposure to bacterial and viral pathogens conducted by the National Aquarium in Baltimore and supported by Florida Department of Natural Resources and SeaWorld, which will help scientists better understand the diseases these animals are exposed to in the wild;
- a wide range of studies on the natural history of marine mammals stranded in Florida by SeaWorld, focusing on food habits, parasites, growth, development, and mortality patterns;
- an assessment of the immune function of seals, sea lions, whales, and dolphins that will greatly add to the current body of knowledge also by SeaWorld; and
- the first ecology and biology study of rough-toothed dolphins by Dolphin Quest at their French Polynesian facility, with support from SeaWorld;
- dolphins' communication systems researching by The Walt Disney Company's Living Seas;
- microsatellite DNA markers to look at genetic diversity of dolphins in public display facilities by the Indianapolis Zoo, along with Texas A&M University; and
- radiation therapy techniques for treating corneal opacities in beluga whales by the New York Aquarium.

C. Stranded Marine Mammals

For centuries, experts have long been frustrated in their attempt to restore to health the millions of stranded marine mammals found sick and dying on beaches throughout the world. Today, members of AZA and the Alliance have the expertise and ability to offer much needed, practical assistance to these animals. The accumulated knowledge, collective experience, and resources of these facilities are the primary factors in these successful rehabilitation efforts. Indeed, AZA and Alliance members provide millions of dollars in direct expenditures and in-kind contributions annually to support stranding programs.

Though there are hundreds of unspoken heroes who strive to save stranded marine mammals, one recent event was highlighted in a documentary by National Public Television. It featured Mystic Aquarium's successful rehabilitation of a pair of young pilot whales. The show was titled *Whale Rescue: Stranded Friends.* The pair of whales were rescued from a Cape Cod beach and, after being nursed back to health for nearly four months, were released off the coast of Rhode Island. It was the first release of pilot whales by any U.S. aquarium in nearly 14 years. The whales were fitted with satellite-linked transmitters that operated for approximately three months and provided aquarium scientists with important information about the animals' range and diving patterns.

Also, Animal Planet's *Wild Rescues* last year featured a segment on Dually, an injured manatee rescued in the Florida Keys. The show contains dramatic footage of Dually's initial rescue by the Dolphin Research Center and her surgery at Miami Seaquarium to remove fishing line embedded in her flippers.

The U.S. Coast Guard flew a melon-headed whale calf to Sea Life Park Hawaii after it was found floundering in the ocean two years ago. These whales are not found in public display facilities and scientists from the University of Hawaii are using this unique opportunity to learn more about the species and its acoustic behavior.

Mass strandings are becoming more common. Over 100 dolphins died in bays along the Florida panhandle in late 1999 and early 2000. Another 100 dolphins stranded and 28 died last year in the Florida Keys. AZA and Alliance members located throughout Florida cooperated with government officials in efforts to save the animals involved in the mass strandings in their state waters. The U.S. government also is concerned about a die-off of gray whales along the Pacific coast.

II. The 2001 Regulations Proposed by NMFS

The 1994 Amendments (1994 Amendments) to the Marine Mammal Protection Act were a reaction to, and rejection of, regulations proposed by NMFS. In 1993, NMFS proposed replacing 5 pages of public display regulations with a 234-page "simplification." The 1994 Amendments rejected that "simplification."

On July 3, 2001, more than seven years after passage of the 1994 Amendments, NMFS published proposed regulations ("Proposed Regulations") to implement the 1994 Amendments. 66 Fed. Reg. 35209 (July 3, 2001). The Proposed Regulations are inconsistent with, and contradict, the 1994 Amendments, resurrecting many of the same sweeping and costly proposals Congress rejected in 1994. The following are the principal issues.

A. Care and Maintenance Standards for Marine Mammals

Before the 1994 Amendments, NMFS claimed it had equal authority with the Animal and Plant Health Inspection Service (APHIS) to establish and enforce care and maintenance standards for marine mammals at public display facilities. The 1993 proposed regulations made clear that NMFS intended to exercise its claimed authority in significant ways. However, in the 1994 Amendments, Congress decided it was wasteful for two agencies to have identical responsibilities and that the public display community should not be subjected to double jeopardy by having two different agencies enforcing care and maintenance standards. Therefore, Congress determined that APHIS would have sole authority over the care and maintenance of animals at public display facilities. Nevertheless, the Proposed Regulations resurrect the rejected 1993 approach by giving NMFS joint responsibility to enforce APHIS' care and maintenance standards.

Reflecting Congressional intent to have only one agency issuing and enforcing care and maintenance standards, the 1994 Amendments provided that when NMFS issues a public display permit, NMFS' responsibility is restricted to determining whether the public display facility "is registered or holds a license" issued by APHIS pursuant to the Animal Welfare Act ("AWA"). 16 U.S.C. § 1374(c)(2)(A)(ii). Indeed, the preamble to the Proposed Regulations admits that the "Captive care and maintenance of marine mammals held for public display are now under the sole jurisdiction" of APHIS. 66 Fed. Reg. at 35211. The preamble also admits that the 1994 Amendments had the specific effect of "removing the jurisdiction of NMFS over public display captive animal care . . ." Id. Thus, Congress clearly provided that the establishment and enforcement of marine mammal care and maintenance standards is APHIS' responsibility.

Nevertheless, the Proposed Regulations attempt to overturn the 1994 Amendments by stating that NMFS' authority is not limited to determining if a public display facility has an APHIS registration or license. Instead, the Proposed Regulations state NMFS must also independently determine that the facility complies with all of APHIS' care and maintenance standards. Proposed § 216.43(b)(3)(ii), 66 Fed. Reg. at 35216. As in 1993, NMFS is claiming it has joint responsibility with APHIS to enforce APHIS' care and maintenance standards.

This intent becomes very clear in § 216.43(a)(4) of the Proposed Regulations which states that public display facilities must allow any National Oceanic and Atmospheric Administration employee to examine any marine mammal, to inspect all public display facilities and operations, and to review and copy all records concerning any marine mammal. 66 Fed. Reg. at 35216. Compounding the problem of having two agencies enforcing the same regulations, the Proposed Regulations state that "any person" designated by NMFS will also have the right to examine any marine mammal held for public display, to inspect any public display facility, and to review and copy all records. [Emphasis added.] Proposed § 216.43(a)(4), 66 Fed. Reg. at 35216.

Simply put, the Proposed Regulations could create the situation in which APHIS finds a facility in compliance with APHIS' standards, but NMFS, or some private person designated by NMFS, says that APHIS is wrong about APHIS' own regulations— and NMFS can then either deny the facility the right to display animals or seize the animals.

This was the specific result Congress rejected in 1994. Not only do the Proposed Regulations create budgetary questions regarding why Congress would want two agencies enforcing the same statute, particularly when the AWA vests sole enforcement authority with APHIS, but they also raise public policy and significant privacy issues regarding why any member of the public designated by NMFS should have the right to inspect facilities for compliance with APHIS standards and to require public display facilities to turn over all of their records.

B. Export of Marine Mammals

Although Congress and the courts have rejected NMFS' effort to apply the MMPA in foreign nations, the Proposed Regulations specifically attempt to make foreign citizens subject to NMFS' regulations. Not surprisingly, foreign nations are not enthusiastic about subordinating their sovereign authority to NMFS' regulations.

Prior to the 1994 Amendments, NMFS required that marine mammals could be exported for public display only if the foreign nation agreed it would afford comity to any decision by NMFS to modify, suspend or revoke that permit. 66 Fed. Reg. at 35213. The 1994 Amendments rejected the NMFS requirement. The 1994 Amendments provided that any person properly holding marine mammals for public display in the United States could export the animals "without obtaining any additional permit or authorization." 16 U.S.C. § 1374(c)(2)(B). However, the 1994 Amendments did effectively address the export issue by stating that a marine mammal could be exported for public display only if the receiving facility met "standards that are comparable to the requirements that a person must meet to receive a permit" under the MMPA for public display. 16 U.S.C. § 1374(c)(9). There are three such standards: the facility must (1) offer a program for education or conservation based on professionally recognized standards of the public display community; (2) have an APHIS registration or license[1]; and (3) be open to the public on a regularly scheduled basis with access not limited except by an admission fee. 16 U.S.C. ◆1374(c)(2)(A). Significantly, Congress applied this comparability test only to the facility which receives the animals from the United States and not to subsequent transfers between foreign facilities.

In the 1994 Amendments, Congress clearly recognized the continuing validity of the decision in *United States v. Mitchell*, 553 F.2d 996, 1003, 1005 (5th Cir. 1977), where the Court held the MMPA does not apply within the territory of a foreign sovereign. Indeed, a December 10, 1996, opinion from the Office of General Counsel, NOAA, stated the MMPA "does not confer U.S. jurisdiction over marine mammals in the territory of other sovereign states."

The Proposed Regulations offer a different interpretation of the 1994 Amendments. The Proposed Regulations amend the statute by replacing the comparability test with the requirement that the foreign facility "must meet the public display criteria at Sec. 216.43(b)(3)(i) through (iii). . ." [Emphasis added.] Proposed § 215.43(f)(2), 66 Fed. Reg. 35219. However, the requirements of section 216.43(b)(3)(i)–(iii) include not only the three statutory requirements that a facility offer an education or conservation program based on professionally recognized standards, be registered or hold on APHIS license, and be open to the public, but section 216.43(b)(3)(ii) adds NMFS' newly minted requirement that NMFS independently determine that the facility complies with APHIS' care and maintenance standards.[2]

But the Proposed Regulations do not stop here. NMFS interprets the MMPA provision requiring NMFS to maintain an inventory of marine mammals held under MMPA permits, 16 U.S.C. § 1374(c)(10), to mean that NMFS must maintain an inventory of those animals and their progeny even if the animals are no longer in the U.S. 66 Fed. Reg. 35213. Since everyone agrees the MMPA does not apply outside the U.S., it is hard to see how NMFS reaches the conclusion that NMFS is to apply the inventory reporting requirements to foreign citizens. Nevertheless, NMFS combines that interpretation with its new version of the comparability standard to conclude that NMFS can prohibit the export of a marine mammal until the government of the country in which the receiving facility is located signs a letter of comity agreeing "to enforce requirements equivalent to the U.S. Marine Mammal Protection Act. . ." Proposed § 216.43(f)(4), 66 Fed. Reg. 35219, see 66 Fed. Reg. 35213. The regulatory preamble makes it quite clear that equivalency means all of NMFS' regulatory requirements. 66 Fed. Reg. at 35213. Thus, the preamble states that NMFS'

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[1] This standard is met through a comparability review by APHIS.

[2] After requiring absolute compliance, the Proposed Regulations state that the receiving facility must also submit to NMFS a letter from APHIS certifying that the receiving facility meets standards comparable to those of APHIS. Proposed sections 216.43(f)(2), 66 Fed. Reg. at 35219.

regulatory requirements apply "to all holders of animals exported from the United States . . ." Id.

To understand the problem, a case example may be helpful. The Proposed Regulations, including the letter of comity, have the effect of providing that if an animal is exported from the United States to a French facility in 2001, and the French facility decides in 2011 to transfer the animal to a public display facility in Spain, then the French government and the French facility must determine that the Spanish facility meets the MMPA standards as interpreted by NMFS, including the requirement that the facility meets APHIS requirements and has an acceptable education or conservation program—- and NMFS must receive a transport notification and inventory report from both the Spanish and French facilities. If the animal at the Spanish facility gives birth 5 years later, the Spanish facility must file an inventory report with NMFS reporting the birth. If that progeny is transferred to a public display facility in Germany 10 years later, the Spanish government and the Spanish facility are to ensure that the German facility meets the requirements of the U.S. MMPA as interpreted by NMFS, including the requirement that the facility meets APHIS standards and has an acceptable education or conservation program—- and NMFS is to receive a transport notification and inventory report from both the Spanish and the German facilities. If 15 years later, now 40 years after the original 2001 export from the U.S., the marine mammal originally transferred, now in a Spanish facility, dies, NMFS is to receive an inventory notice of that event together with an explanation of the cause of death. And if the progeny, now in Germany, dies in 2061, 60 years after the parent left the United States, NMFS is to receive an inventory notification including the cause of death.

These "comity" requirements are nothing more than an effort by NMFS to apply the MMPA internationally, something neither Congress nor the courts allow. The Proposed Regulations not only raise very serious international relations issues, but they also raise serious questions about whether NMFS should be using its limited resources to transform itself into an international regulatory agency.

C. The Removal of Animals from the Wild

Although no public display facility has taken marine mammals from the wild since 1992, and there are no plans to do so, it may some day be necessary to do so to maintain genetic diversity. The Proposed Regulations make that impossible.

With respect to non-depleted species, the Proposed Regulations provide that unless NMFS has established a removal quota, the applicant for a take permit must demonstrate that the taking "will not have, by itself or in combination with all other known takes and sources of mortality, a significant direct or indirect adverse effect" on the species. Proposed § 216.43(b)(3)(v)(B), 66 Fed. Reg. at 35216. However, existing regulations already require a permit applicant to demonstrate that any taking "by itself or in combination with other activities, will not likely have a significant adverse impact on the species or stock . . ." 50 C.F.R. 216.34(a)(4).

The public display community does not object to the existing regulations. But the Proposed Regulations significantly change the existing standard and create an impossible burden to meet. Unlike the existing regulations which require a showing that the taking is not "likely" to have a significant adverse effect on the species, the Proposed Regulations require that the public display community prove a negative *i.e.*, that the taking "will not have" a significant adverse effect. Moreover, the Proposed Regulations now require that you prove a negative not only with respect to "direct" effects but also with respect to what NMFS calls "indirect" effects.

Not only do the Proposed Regulations establish standards which are virtually impossible to meet, but if a person tries to meet the standard, NMFS creates still more obstacles because the Proposed Regulations allow NMFS to require public display facilities to undertake extensive, expensive and time consuming research to gather and analyze population level information and to evaluate every other direct or indirect take or source of mortality. The Proposed Regulations are quite specific that NMFS' decision on whether to allow the taking is to be based on the best available information "including information gathered by the applicant." This last clause allows NMFS to require an unending gathering of new information in order to satisfy whatever information thresholds NMFS may establish.

The public display community does not object to the existing requirement that it demonstrate that any removal from the wild is not likely to adversely affect the population at issue. The community does object to the wording in the Proposed Regulations moving the goalposts and permitting NMFS to insist on information gathering which allows NMFS to move the goalposts again by requiring new studies before NMFS can make a decision.

A clear example of NMFS' moving the goalposts is found with respect to depleted species. The MMPA prohibits the taking of any depleted species. 16 U.S.C.

§ 1372(b)(3). The Proposed Regulations, include the statutory prohibition but then go on to amend the MMPA by also prohibiting the taking of animals from a species which is "proposed by NMFS to be designated as depleted. . ." Proposed § 216.43(b)(4)(iii)(A), 66 Fed. Reg. at 35216. Even the Endangered Species Act does not have a provision like that which NMFS is trying to insert into the MMPA. Significantly, NMFS does not impose upon itself any time limit for reaching a final decision on its proposal to designate a species as depleted.

D. Transfer, Reporting and Other Requirements

The 1994 Amendments provide that a person issued a permit to take or import marine mammals for public display shall have the right "without obtaining any additional permit or authorization" to sell, transport, transfer, etc. the marine mammal to persons who meet the MMPA requirements. 16 U.S.C. § 1374(c)(2)(B). The MMPA also provides that a person exercising these permit rights must notify the Secretary of Commerce no later than 15 days before any sale, transport, etc. 16 U.S.C. § 1374(c)(2)(E). However, the Proposed Regulations ignore the simple and direct process contained in the statute and resurrect elements of the 1993 proposed "simplification" that Congress rejected.

Not only do the Proposed Regulations require that the shipping facility provide the statutorily required 15-day transport notice, but the shipping facility must also submit a complete Marine Mammal Data Sheet ("MMDS") for each mammal to be transferred. Proposed § 216.43(e)(1)(i), 66 Fed. Reg. 35217. The MMDS gives the animal's official NMFS identification number, name, sex, age, origin, etc.—- information already held in the NMFS inventory. The Proposed Regulations go on to state that in addition to receiving a transport notification and MMDS from the shipping facility, NMFS must also receive a transport notification and another MMDS for the marine mammal from the receiving facility. Id. After the transfer occurs, the receiving facility must confirm the transport and submit yet another MMDS. Proposed § 216.43(e)(2), 66 Fed. Reg. at 35218. Thus, a single 15-day notification required by the statute has been transformed into the submission of three transport notifications for the same transaction and three MMDS forms restating the information already in the inventory.[3]

Moreover, the Proposed Regulations require that before a transport can occur, both the holder and the receiver must provide NMFS with a certification that the receiver meets the requirements of § 216.43(b)(3)(i)–(iii) of the Proposed Regulations. Proposed § 216.43(e)(1)(i), 66 Fed. Reg. at 35217–18. As noted above, these provisions include requirements that a facility have a conservation or education program, have an APHIS license or registration, be open to the public and be in compliance with all APHIS requirements. However, the Proposed Regulations make persons subject to civil or criminal penalties for submitting false information. Proposed § 216.13(g), 66 Fed. Reg. at 35215.

Read together, these provisions mean that a shipping facility is now subject to penalties if NMFS finds, for example, that the receiving facility is not in full compliance with APHIS standards. It is not clear why an APHIS determination of compliance with APHIS requirements is not adequate and why the shipper and receiver must provide an independent certification, particularly when the MMPA says the transfer may occur without further permit or authorization.

Finally, after erecting the regulatory regime described above, the Proposed Regulations state that any public display permit issued by NMFS shall "contain other conditions deemed appropriate" by NMFS, a catchall provision apparently authorizing NMFS to issue any additional requirements it might think appropriate. Proposed § 216.43(b)(5), 66 Fed. Reg. 35216. Although such a provision might seem a reasonable contingency for most agencies, given NMFS' history, it is a provision about which significant questions must be raised because, in the past, NMFS has not exercised its authority judiciously.

In summary, NMFS has taken the simple process provided for in the statute and converted it into a needlessly cumbersome process.

E. Other Issues

Although the preceding are the major issues, there are a number of other issues in the Proposed Regulations which are of concern. For example, Congress intended that the marine mammal inventory be a record of animals actually held at public display facilities. As noted above, there are serious questions about whether the inventory serves any regulatory purpose. That said, if the inventory is to be a record

[3] Many observers have questioned the need for the inventory since there is no apparent use of the inventory by NMFS. Given that, the question becomes whether the inventory requirements should be deleted from the Act.

of marine mammals held at public display facilities, its only valid purpose can be with respect to living marine mammals. It is neither appropriate nor necessary that the Proposed Regulations require facilities to report stillbirths since such animals will not become part of the inventory of animals at public display facilities. See Proposed § 216.43(e)(4)(vii), 66 Fed. Reg. at 35218. The issue regarding stillbirths is with respect to genetics and public display facilities already report stillbirths to these persons who maintain these genetic records.

F. Congressional Assistance May Be Needed

A review of the Proposed Regulations shows NMFS is attempting to resurrect regulatory proposals already rejected by Congress. NMFS is also attempting to amend the MMPA by inserting provisions nowhere found in the statute. Further, NMFS is adopting new legal interpretations which are not even in the Proposed Regulations but which reverse longstanding understandings of the MMPA. An example of the latter is a July 31, 2001, Marine Mammal Commission (Commission) letter stating that NMFS and the Commission have now determined that the MMPA prohibits NMFS from allowing foreign nationals to take marine mammals in U.S. waters and to export them to a foreign facility, although NMFS could permit U.S. nationals to do so. Since 1972, NMFS and the Commission have read the MMPA to allow for the issuance of such permits to foreign nationals and the letter admits that since the 1994 Amendments six such permits have been issued. Nevertheless, NMFS and the Commission have now decided that the legal authority they found in the MMPA somehow is no longer there. To reach that conclusion, they have discovered words and concepts nowhere found in the MMPA.

We hope that we will be successful working with the agency through the normal administrative process to have this proposed rule drastically modified in a way that reflects Congressional intent. And we may need to look to Congress for support in that endeavor. Should our efforts be unsuccessful, we may have to request further legislative changes that will clearly and precisely limit NMFS' ability to continue to "interpret" the MMPA to insert provisions nowhere found in the law and to impose regulatory interpretations and reinterpretations that are duplicative, unnecessarily burdensome and contrary to Congressional intent.

III. Prescott Stranding Grant Program

AZA and the Alliance are very grateful for the help this Subcommittee has provided with the John H. Prescott Marine Mammal Rescue Assistance Grant Program. Vice Chair Saxton was the principal author of the Prescott bill when he was chair of the Subcommittee. The grant program was initially conceived as a means of providing financial support for the largely volunteer efforts of stranding network participants. This was reflected in the three priorities listed in the law for which grants should be approved treatment of stranded marine mammals, data collection for scientific research, and facility operating costs. However, when NMFS published its criteria for the program's implementation plan, these priorities were ignored.

Instead, the agency's listed priorities would impose additional work on long-time volunteer stranding network participants rather than help them with their struggle to fund current activities related to their already significant responsibilities. To meet many agency priorities, network participants would have to formulate proposals for new research in order to obtain grant funds. Additionally, it appears that the agency's priorities are geared more towards incidents of live marine mammal strandings. While these situations are very important and warrant great concern, the majority of stranding activities relate to dead marine mammal strandings. Also, the agency's priorities include a number of outstanding and much needed endeavors, such as a national stranding workshop and meeting, but these are items more appropriately undertaken by the agency.

AZA and the Alliance were also very concerned that NMFS had capped grants at $75,000 rather than the $100,000 limit Congress had intended. These issues reportedly have been resolved through discussions between the Congress and the agency. But our two organizations may have to again request help if NMFS continues to use the grant program to fund agency priorities rather than the needs of stranding participants.

IV. Conclusion

Both AZA and the Alliance very much appreciate the opportunity to testify before the Subcommittee today and hope our comments have been helpful. We look forward to working with the Subcommittee on the upcoming reauthorization of the Marine Mammal Protection Act.

[An attachment to Mr. Mannina's statement follows:]

VIA fax and mail
301/713–0376

November 1, 2001

Ann Terbush
National Marine Fisheries Service
Office of Protected Resources F/PR1
Permits Division
1315 East–West Highway, Room 13705
Silver Spring, MD 20910

RE: Protected Species Special Exemption Permits;
Docket No. 001031304–0304–01

On behalf of the 201 accredited institutional members of the American Zoo and Aquarium Association (AZA), I respectfully submit the following comments with regard to the National Marine Fisheries Service's (NMFS) proposed regulations for implementation of the Marine Mammal Protection Act (MMPA) Amendments of 1994 (1994 Amendments) affecting marine mammals in public display facilities.

AZA institutions draw over 135 million visitors annually and have more than 5 million zoo and aquarium members who provide almost $100 million in support. These institutions teach more than 12 million people each year in living classrooms, dedicate over $50 million annually to education programs, invest over $50 million annually to scientific research and support over 1300 field conservation and research projects in 80 countries.

AZA GENERAL COMMENTS

Collectively, AZA members represent the foremost authorities on marine mammal care, husbandry, and behavior. AZA member institutions also play a critical role in the conservation of marine mammals in the wild through the broad-based education, research, and stranding/recovery/rehabilitation programs briefly outlined below:

Education

The conservation of marine mammals requires public education, the practice of conservation behaviors by every individual, and the development of effective public policy. The public display of marine mammals plays an integral role in this conservation effort, helping to preserve these magnificent animals for present and future generations. With public display comes marine mammal education and conservation programs unique in their ability to establish a personal connection between visitors and the animals. This personal connection fosters learning about how the behaviors of each and every one of us affect marine mammals and the habitats in which they dwell.

The mission of educational exhibits and programming at AZA member facilities is to enhance the appreciation and understanding of marine mammals and their ecosystems. Members of these zoological institutions instill in those who visit an awareness of ecological and conservation issues and a respect and caring for these animals and their environments. Our members believe this respect engenders a strong, active commitment to marine mammal conservation and an understanding that each and every person can make a difference. Generally, the goals of AZA member education programs are to:

- provide opportunities for visitors to expand their knowledge about marine mammal biology and natural history;
- promote awareness of and sensitivity toward the marine environment;
- present information on marine conservation issues;
- be marine science and environmental information resources to interested citizens, local schools, community groups, and educators, and
- inspire visitors to embrace conservation behavior.

Research

Knowledge acquired through research with animals in public display facilities, in tandem with field research, is another fundamental contribution to marine mammal conservation. Communicating this knowledge is one of the most effective means of ensuring the health of wild marine mammals in the 21st century. Much of this research simply cannot be accomplished in ocean conditions.

Tens of millions of dollars are being spent on research at and by AZA member facilities that is essential in understanding the anatomy and physiology of marine mammals, in treating sick and injured animals from the wild, and in learning to better manage and assist endangered species. Additionally, many AZA facilities collaborate with marine mammal researchers from colleges, universities, and other scientific institutions that conduct studies important to wild species' conservation and health. Over the years, this body of work has contributed significantly to the present knowledge about marine mammal biology, physiology, reproduction, behavior and conservation. These studies have led to improvements in diagnosing and treating diseases; techniques for anesthesia and surgery; tests for toxic substances and their effects on wild marine mammals; and advancements in diet, vitamin supplementation, and neonatal feeding.

Stranded Marine Mammals

For centuries, experts have long been frustrated in their attempt to restore to health the millions of stranded marine mammals found sick and dying on beaches throughout the world. Today, members of AZA have the expertise and ability to offer much needed, practical assistance to these animals. The accumulated knowledge, collective experience, and resources of these facilities are the primary factors in these successful rehabilitation efforts. Indeed, AZA members provide millions of dollars in direct expenditures and in-kind contributions annually to support stranding programs.

2001 PROPOSED REGULATIONS

A. Care and Maintenance Standards for Marine Mammals

In the 1994 Amendments, Congress decided it was wasteful for two agencies to have identical responsibilities and that the public display community should not be subjected to double jeopardy by having two different agencies enforcing care and maintenance standards. Therefore, Congress determined that APHIS would have sole authority over the care and maintenance of animals at public display facilities. We believe the Proposed Regulations reject this Congressional mandate by giving NMFS joint responsibility to enforce APHIS' care and maintenance standards.

Reflecting Congressional intent to have only one agency issuing and enforcing care and maintenance standards, the 1994 Amendments provided that when NMFS issues a public display permit, NMFS' responsibility is restricted to determining whether the public display facility "is registered or holds a license" issued by APHIS pursuant to the Animal Welfare Act ("AWA"). 16 U.S.C. § 1374(c)(2)(A)(ii). The preamble to the Proposed Regulations admits that the "Captive care and maintenance of marine mammals held for public display are now under the sole jurisdiction" of APHIS. 66 Fed. Reg. at 35211. The preamble also states that the 1994 Amendments had the specific effect of "removing the jurisdiction of NMFS over public display captive animal care..." Id. Thus, Congress clearly provided that the establishment and enforcement of marine mammal care and maintenance standards is APHIS' responsibility.

The Proposed Regulations attempt to overturn the 1994 Amendments by stating that NMFS' authority is not limited solely to determining if a public display facility has an APHIS registration or license.

Proposed § 216.43(b)(3)(ii), at 35216: For the Office Director to issue a public display permit, the applicant must be registered or hold an exhibitor's license and comply with all applicable Animal and Plant Health Inspection Service standards at 9 CFR subpart E (emphasis added)

AZA Response: The Proposed Regulations can be interpreted to read that NMFS must also independently determine that the facility complies with all of APHIS' care and maintenance standards. Thus, NMFS is claiming it has joint responsibility with APHIS to enforce APHIS' care and maintenance standards.

The1994 Amendments provides no statutory authority, nor does the legislative history of the 1994 Amendments express the will of the Congress to provide for the National Marine Fisheries Service to carry out this responsibility.

Proposed § 216.43(a)(4)(i) at 35216: To facilitate compliance with § 216.43: (i) The holder shall allow any designated employee of NOAA or any person designated by the Office Director to: (A) Examine any marine mammal held for public display; (B) Inspect all facilities and operations which support any marine mammal held for public display; and (C) Review and copy all records concerning any marine mammal held for public display (emphasis added)

AZA Response: The1994 Amendments provides no statutory authority, nor does the legislative history of the 1994 Amendments express the will of the Congress to provide for the National Marine Fisheries Service to carry out the responsibilities outlined under § 216.43 (a)(4) or to assign a designee said responsibilities.

The Proposed Regulations under § 216.43 could create the situation whereby APHIS finds a facility in compliance with APHIS' standards, but NMFS, or some private person designated by NMFS, says that APHIS is wrong about APHIS' own regulations—- and NMFS can then either deny the facility the right to display animals or seize the animals.

This was the specific result Congress rejected through the 1994 Amendments. The Proposed Regulations under § 216.43 create budgetary questions regarding why Congress would want two agencies enforcing the same statute, particularly when the AWA vests sole enforcement authority with APHIS. They also raise public policy and significant privacy issues regarding why any member of the public designated by NMFS should have the right to inspect facilities for compliance with APHIS standards and to require public display facilities to turn over all of their records.

B. Export of Marine Mammals

Prior to the 1994 Amendments, NMFS required that marine mammals could be exported for public display only if the foreign nation agreed it would afford comity to any decision by NMFS to modify, suspend or revoke said permit. 66 Fed. Reg. at 35213. The 1994 Amendments rejected the NMFS requirement. The 1994 Amendments provided that any person properly holding marine mammals for public display in the United States could export the animals "without obtaining any additional permit or authorization." 16 U.S.C. § 1374(c)(2)(B). However, the 1994 Amendments did address the export issue by stating that a marine mammal could be exported for public display only if the receiving facility met "standards that are comparable to the requirements that a person must meet to receive a permit" under the MMPA for public display. 16 U.S.C. § 1374(c)(9). There are three such standards: the facility must (1) offer a program for education or conservation based on professionally recognized standards of the public display community; (2) have an APHIS registration or license [1]; and (3) be open to the public on a regularly scheduled basis with access not limited except by an admission fee. 16 U.S.C. § 1374(c)(2)(A). Congress applied this comparability test only to the facility which receives the animals from the United States and not to subsequent transfers between foreign facilities.

In the 1994 Amendments, Congress recognized the continuing validity of the decision in *United States v. Mitchell*, 553 F.2d 996, 1003, 1005 (5th Cir. 1977), where the Court held the MMPA does not apply within the territory of a foreign sovereign. A December 10, 1996, opinion from the Office of General Counsel, NOAA, stated the MMPA "does not confer U.S. jurisdiction over marine mammals in the territory of other sovereign states."

Proposed § 216.43(f)(2) at 35219: Persons intending to receive marine mammals for public display by export from the United States must meet the public display criteria at § 216.43(b)(3)(i) through (iii).

AZA Response: The Proposed Regulations under § 216.43(f)(2) amend the statute by replacing the comparability test with the requirement that the foreign facility "must meet the public display criteria at Sec. 216.43(b)(3)(i) through (iii): . . ." (emphasis added). However, the requirements of section 216.43(b)(3)(i)–(iii) include not only the three statutory requirements that a facility offer an education or conservation program based on professionally recognized standards, be registered or hold on APHIS license, and be open to the public, but section 216.43(b)(3)(ii) adds NMFS' newly created requirement that NMFS independently determine that the facility complies with APHIS' care and maintenance standards. [2] The1994 Amendments provides no statutory authority, nor does the legislative history of the 1994 Amendments express the will of the Congress to provide for the National Marine Fisheries Service to carry out this responsibility.

Proposed § 216.43(f)(4)(ii), 66 Fed. Reg. 35219: ...the Office Director must receive a statement from the appropriate agency of the government of the country where is foreign receiver/facility is located certifying that the laws and regulations of the foreign government involved permit that government to enforce requirements equivalent

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[1] This standard is met through a comparability review by APHIS.

[2] After requiring absolute compliance, the Proposed Regulations state that the receiving facility must also submit to NMFS a letter from APHIS certifying that the receiving facility meets standards comparable to those of APHIS. Proposed § 216.43(f)(2), 66 Fed. Reg. at 35219.

to the requirements of the US Marine Mammal Protection Act and Animal Welfare Act.

AZA Response: NMFS employs its newly-created version of the comparability standard to conclude that the agency can prohibit the export of a marine mammal until the government of the country in which the receiving facility is located signs a letter of comity agreeing "to enforce requirements equivalent to the U.S. Marine Mammal Protection Act. . ."

These "comity" requirements appear to represent an effort by NMFS to apply the MMPA internationally, something neither Congress nor the courts allow. The Proposed Regulations raise very serious questions about whether NMFS should be using its limited resources to transform itself into an international regulatory agency.

C. The Removal of Animals from the Wild

Although no AZA facility has taken marine mammals from the wild since 1992, it may be necessary to do so in the future in order to maintain genetic diversity among marine mammals within the public display community. The 1994 Amendments provide for this possibility, however the Proposed Regulations would make the removal of marine mammals from the wild extremely difficult, if not impossible.

Proposed § 216.43(b)(3)(v)(B), 66 Fed. Reg. at 35216: For the Office Director to issue a public display permit, the applicant must demonstrate that any proposed permanent removal from the wild is consistent with any applicable quota established by NMFS, or where there is no quota in effect, will not have, by itself or in combination with all other known takes and sources of mortality, a significant direct or indirect adverse effect on the protected species or stock, as determined on the basis of the best available information on cumulative take for the species or stock, including information gathered by the applicant concerning the status of the species or stock.

AZA Response: Existing regulations, at 50 C.F.R. 216.34(a)(4) already require a permit applicant to demonstrate that any taking "by itself or in combination with other activities, will not likely have a significant adverse impact on the species or stock . . ." The Proposed Regulations significantly change the existing standard and create an impossible burden to meet. Unlike the existing regulations which require a showing that the taking is not "likely" to have a significant adverse effect on the species, the Proposed Regulations require that the public display community prove a negative—*i.e.*, that the taking "will not have" a significant adverse effect. Moreover, the Proposed Regulations now require that an applicant prove a negative not only with respect to "direct" effects but also with respect to what NMFS calls "indirect" effects.

The Proposed Regulations establish standards that are virtually impossible to meet. If an applicant attempts to meet the standard, NMFS creates still more obstacles because the Proposed Regulations allow NMFS to require public display facilities to undertake extensive, expensive and time consuming research to gather and analyze population level information and to evaluate every other direct or indirect take or source of mortality. The Proposed Regulations are quite specific that NMFS' decision on whether to allow the taking is to be based on the best available information "including information gathered by the applicant." This last clause allows NMFS to require an unending gathering of new information in order to satisfy whatever information thresholds NMFS may establish.

AZA does not object to the existing requirement that its members demonstrate that any removal from the wild is not likely to adversely affect the population at issue. We do, however, object to the wording in the Proposed Regulations that permits NMFS to insist on information gathering that allows the agency to unilaterally alter permit requirements by requesting additional studies before NMFS can make a decision.

Proposed § 216.43(b)(4)(iii)(A) at 35216: Permit holders may not capture or import a marine mammal that is from a species or stock designated as depleted or proposed by NMFS to be designated as depleted (emphasis added).

The MMPA prohibits the taking of any depleted species. 16 U.S.C. § 1372(b)(3). The Proposed Regulations include this statutory prohibition but then proceed to amend the MMPA by also prohibiting the taking of animals from a species which is "proposed by NMFS to be designated as depleted. . ." In addition, NMFS does not impose upon itself any time limit for reaching a final decision on its proposal to designate a species as depleted.

The1994 Amendments provides no statutory authority, nor does the legislative history of the 1994 Amendments express the will of the Congress to allow the Na-

tional Marine Fisheries Service to regulate the take of species or stocks proposed by NMFS to be designated as depleted for public display purposes.

D. Transfer, Reporting and Other Requirements

The 1994 Amendment provide that a person issued a permit to take or import marine mammals for public display shall have the right "without obtaining any additional permit or authorization" to sell, transport, transfer, etc. the marine mammal to persons who meet the MMPA requirements. 16 U.S.C. § 1374(c)(2)(B). The MMPA also provides that a person exercising these permit rights must notify the Secretary of Commerce no later than 15 days before any sale, transport, etc. 16 U.S.C. § 1374(c)(2)(E).

Proposed § 216.43(e)(1)(i) at 35217: The holder and receiver must submit a completed Marine Mammal Transport Notification (MMTN) together with a supporting Marine Mammal Data Sheet (MMDS) for each marine mammal to be transferred. A completed MMTN includes a MMDS for each animal proposed for transfer and/or transport and a certification signed by both the holder and the receiver which provides that the receiver and/or receiving facility meets the requirements of paragraphs § 216.43(b)(3)(i) through (iii).

Proposed § 216.43(e)(2), 66 Fed. Reg. at 35218: Receivers must provide verification within 30 days of the date of transfer and/or transport. Verifications must include a revised MMDS for each marine mammal...

AZA Response: The Proposed Regulations require that the shipping facility provide the statutorily required 15-day transport notice and submit a complete Marine Mammal Data Sheet ("MMDS") for each mammal to be transferred. The MMDS gives the animal's official NMFS identification number, name, sex, age, origin, etc.—- information already held in the NMFS inventory. The Proposed Regulations go on to state that in addition to receiving a transport notification and MMDS from the shipping facility, NMFS must also receive a transport notification and another MMDS for the marine mammal from the receiving facility. After the transfer occurs, the receiving facility must confirm the transport and submit yet another MMDS.

Moreover, the Proposed Regulations require that before a transport can occur, both the holder and the receiver must provide NMFS with a certification that the receiver meets the requirements of § 216.43(b)(3)(i)–(iii) of the Proposed Regulations. As noted above, these provisions include requirements that a facility have a conservation or education program, have an APHIS license or registration, be open to the public and be in compliance with all APHIS requirements.

Read together, these provisions mean that a shipping facility is now subject to penalties if NMFS finds, for example, that the receiving facility is not in full compliance with APHIS standards. An APHIS determination of compliance with APHIS requirements should be adequate. It is also unnecessary for the shipper and receiver to provide an independent certification, particularly when the MMPA says the transfer may occur without further permit or authorization.

Proposed § 216.43(b)(5) at 35216: All public display permits issued under this subpart shall, in addition to the specific conditions set forth..., contain other conditions deemed appropriate by the Office Director.

AZA Response: The Proposed Regulations state that any public display permit issued by NMFS shall "contain other conditions deemed appropriate" by NMFS—a catchall provision apparently authorizing NMFS to issue any additional requirements it might think appropriate. AZA believes that all public display permit conditions should be fully disclosed in the regulations in order to provide for consistency and objectivity in the permit process.

E. Other Issues

Proposed § 216.43(e)(4)(vii) at 35218: ...holders of captive marine mammals must provide an updated MMDS to the Office Director whenever a change in inventory occurs. This updated MMDS must include: If a marine mammal dies, including stillbirths and animals that undergo euthanasia, the holder must notify the Office Director within 30 days of the date of death (emphasis added).

AZA Response: Congress specifically intended that the marine mammal inventory be a record of animals actually held at public display facilities. If the inventory is to be a record of marine mammals held at public display facilities, its only valid purpose should be with respect to living marine mammals. AZA believes that it is neither appropriate nor necessary that the Proposed Regulations require facilities to report stillbirths since such animals will not become part of the inventory of animals at public display facilities. The issue regarding stillbirths is with respect to genetics and public display facilities already report stillbirths to those entities which

maintain these genetic records. This section should be deleted as there is no statutory authority to collect stillbirth data.

Thank you for the opportunity to comment on these important proposals. If you require any further information, please contact me at 301/562–0777 ext. 249.

Regards,

Steven G. Olson
Director, Government Affairs
American Zoo and Aquarium Association

Mr. GILCHREST. Thank you, Mr. Mannina.
Mr. Marks?

STATEMENT OF RICK E. MARKS, MEMBER, TAKE REDUCTION TEAMS, GARDEN STATE SEAFOOD ASSOCIATION

Mr. MARKS. Mr. Chairman, Mr. Underwood, I serve on three take reduction teams, and I represent the New Jersey commercial fishermen as the Garden State Seafood Association. I also work very closely with commercial fishermen from New England, the Mid-Atlantic, North Carolina, Florida Keys, the West Coast, and Alaska. I think you will find that my comments will resonate with fishermen from those areas as well.

First, for the take reduction team process to continue to work, it must be perceived by all parties as a level playing field for consensus-based negotiations. The facilitator is critical to that process. They must be perceived as impartial by all parties if the process is to work. To NMFS's credit, all the TRTs to date involve facilitators with no overt interest in marine mammals.

We are about to convene a new take reduction team in the Mid-Atlantic, and fishermen already believe they are not entering a fair negotiation. This is not personal. The facilitating agency and its staff are unknown to us, but the fact remains that the Office of Protected Resources has allowed the selection of a facilitating agent that has served as a stakeholder on a previous take reduction team, that publishes a whale conservation newsletter, that is funded in part by the Massachusetts Environmental Trust and the Office of Protected Resources. This process has become tainted before it has even started, and that is not, Mr. Chairman, what we bargained for in 1994.

My second point is that the lack of information disadvantages fishermen. Mr. Chairman, unless you experience firsthand the problems we are all having in the take reduction team process with the lack of information, you just can't really understand it.

This is not to mean any disrespect to the agency, because the demands on them are huge, but the fact still remains that if we are going to require a high level of detail to implement the MMPA, we ought to have the requisite data to do it. The temporal and spatial limited information is forcing precautionary decisionmaking on the process, and because of that, fishermen in our economy are suffering.

I would like to make note of Dr. Hogarth's leadership in moving forward with NMFS's request in the CJS appropriations process for funds to conduct bottlenose dolphin research. We support that request, and ask that this Subcommittee would do the same.

Point number three: The act lacks national standards. The act has no effective provision currently to allow for the consideration of socioeconomic impacts of marine mammal protection measures on fishermen, on their families, and on their communities.

We currently operate under a regime where our own fishermen are afforded less consideration than a porpoise. Mr. Chairman, I see fishermen struggling to make their next month's boat payment at the very same time they are kept tied to the dock for one of the most productive fishing months in their year, just because we need to have a 95 percent certainty that a particular population of mammals has to be at its optimum level in either 20 or 100 years, and we just can no longer stand this level of inequity.

Point number four: The act is flawed because it protects but it does not manage. The MMPA is intensely protectionistic, with stiff civil and criminal penalties for offenders. The net effect of such extreme protectionism on any species would be that there would be more of them. But, you might ask, how does the act handle increasing numbers of marine mammals, some to the point of becoming a public nuisance?

The answer is simple: The act does not at all. If you are a fisherman using crab pots, gillnets, baited hooks, or if you set ocean net pens to raise fish for food, the laws of probability dictate you are going to have more problems with marine mammals because there will be more of them to have problems with. The act is dysfunctional because it does not address the very problem it creates.

Our fifth and final point is that the act is overly conservative. Mr. Chairman, two elements come to mind in the MMPA, PBR and ZMRG, and I believe both of them would do nicely as poster children for the precautionary approach. PBR is calculated as the product of three variables: stock size, stock productivity, and a safety factor.

The best scientific estimates of stock size and stock productivity are calculated, and then they are reasonably reduced to account for uncertainty in the data. And I note here that the act conveniently does not contain a definition of what "reasonable" actually is.

Clearly, then, we understand it is NMFS's intention that the values of these variables are less than what is considered the best scientific information. A safety factor is then tossed in for good measure, also reportedly to account for uncertainty.

The effect that these assumptions have on population size and PBR calculations can be astounding. In the case of harbor porpoise, the population was reduced 35 percent on paper from recent survey estimates. In numbers, that is a reduction of 74,000 animals to 48,000 animals, counted, then discounted. PBR was reduced 257 animals based on that reduction. These huge reductions from the best scientific estimates represent multiple layers of precaution.

ZMRG, the level of incidental mammal takes by commercial fishing interactions is defined as the insignificant levels approaching a zero mortality and serious injury rate. It is not based on biology, common sense. It has not been quantified and it has not been codified in regulation. Mr. Chairman, if you allow this to happen, you will expose the Departments of Commerce and Interior to intense litigious activity. Please remove that provision from the act.

I know these are difficult issues, Mr. Chairman. My fishermen know it as well. That is why we need your direction. That is why we need Congress to step in, help craft and implement a much more reasonable law.

I see that I am out of time. I will merely quickly summarize by giving you just 4 of the short recommendations of the 10 that we have in our written testimony:

Incorporate objective facilitator selection criteria; create a formal set of national standards to ensure adequate science and socioeconomic informations are considered; minimize the precautionary layering in the PBR by directing scientists to provide a range of PBR rather than an ultra-conservative point estimate; and require NMFS to take a multidisciplinary, multi-agency, multidepartmental approach to mammal management, rather than just relying on the Office of Protected Resources; and please provide the necessary authorization for research and stock assessment work.

Mr. Chairman, please accept my written testimony for the record. On behalf of the fishermen in New Jersey and like-minded fishermen from around the Nation, we appreciate your time and the time of the members to share our thoughts with you today.

[The prepared statement of Mr. Marks follows:]

Statement of Rick E. Marks, Robertson, Monagle & Eastaugh, Arlington, Virginia

Mr. Chairman and Members of the House Subcommittee on Fisheries, Conservation, Wildlife and Oceans, on behalf of the members of the Garden State Seafood Association, I thank you for the opportunity to appear before you to discuss the reauthorization of the Marine Mammal Protection Act.

The membership of the Garden State Seafood Association (GSSA) is comprised of shore-based and at-sea commercial fishing interests and fishing-dependent businesses located throughout the State of New Jersey. The various members of the GSSA have a long history of participation, investment, employment, and cooperative scientific data collection and gear mitigation efforts involving numerous mid–Atlantic commercial fisheries, including but not limited to, Atlantic mackerel, long and shortfin squid, Atlantic monkfish, Atlantic scallop, blue crab, summer flounder, scup, black sea bass, American shad, surf clam and ocean quahog, Atlantic menhaden, bluefish, and spiny dogfish.

Traditionally, commercial fishing ports in the State of New Jersey, including Cape May and Point Pleasant among others, are considered major national fishing ports accounting annually for 150 to 200 million pounds of seafood products. GSSA members utilize a vast number of available fishing gears to harvest these marine resources including various gillnet designs, mid-water and bottom trawls, scallop and clam dredges, and crab pots.

Mr. Chairman, New Jersey fishermen and their counterparts from around the country are reporting increasing problems with protected species management issues, chief among them the MMPA. Fishermen continue to forgo fishing time and income in an effort to address these growing problems. Unfortunately, the situation is out of control, and the federal government is placing the needs of mammals far above that of fishing families, and fishermen are now in an untenable position. It is for these reasons that we appear before this Subcommittee. We provide oral comments, submit written testimony for the record with your approval, and ask for your leadership in helping us resolve these difficult issues.

THE MMPA: PROTECTIONISM VERSUS RESOURCE MANAGEMENT

The main objectives of the MMPA are "to protect and encourage marine mammals to develop to the greatest extent feasible commensurate with sound policies of resource management" such that they do not "cease to be a significant functioning element of the ecosystem of which they are a part" and that they do not diminish below their optimum sustainable population (OSP)." U.S.C. 1361(2);(6). In theory, this represents a somewhat balanced approach to wildlife management, making sense both biologically and philosophically.

It is with the federal government's subsequent implementation of the Act that we begin to experience a distinct shift from "sound policies of resource management" toward outright protectionism. It is readily acknowledged that the original law was crafted in an effort to atone for the consequences of "man's impact upon marine mammals [which] has ranged from what might be termed malign neglect to virtual genocide." H.R. Rept. No. 92–707. This philosophical shift comes at the expense of working men and women involved in commercial fishing around the nation.

The 1994 MMPA reauthorization (P.L. 103–238) provided, among other things, for the accidental harm of mammals in the normal course of commercial fish harvesting. But the law also requires fishing operations to take steps to reduce interactions with populations that NMFS determines to be in decline via a take reduction team, or the "TRT" approach. Here again, in theory this appears to be a reasonable methodology for purposes of marine mammal management.

In reality however, the MMPA will continue to be perceived as controversial and flawed legislation because it: (A) applies overly extreme levels of precautionary management in the absence of sound scientific information; (B) fails to address the paradox of protecting & managing population increases that inevitably follow complete and total protection; (C) prioritizes the interests of marine mammals disproportionately above that of mankind by failing to balance marine mammal protection measures with socio-economic concerns; and (D) has the unattainable goal of maintaining stocks at OSP at least 95 percent of the time.

PBR: AN EXERCISE IN PRECAUTIONARY MANAGEMENT

The 1994 MMPA reauthorization added a new requirement that NMFS develop estimates of Potential Biological Removal ("PBR"). PBR is the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

PBR is the product of three components: (1) the minimum population estimate (Nmin); half the maximum net productivity rate (0.5 Rmax); and a recovery factor (Fr) and is expressed by the formula:

$$PBR = N_{MIN} * 1/2\ R_{MAX} * F_R$$

PBR is not based on or derived from any specific wildlife management population model. It was apparently developed by NMFS solely for implementing the 1994 MMPA amendments. NMFS scientists freely incorporated several layers of precautionary assumptions into the only formula that would serve as a nationwide standard for calculating PBR.

The Minimum Population Estimate (Nmin) is defined as the number of animals in a stock, which is supposed to be based on the best available information and provides reasonable assurance that the stock size is equal to or greater than the estimate. However, the Act contains no specific reference to what is "a reasonable assurance" that the population is equal to or greater than that estimate. This means that NMFS intends for the values to be less than the best estimate. Indeed, the best available population survey numbers are adjusted downward as the NMFS deems fit to account for "uncertainty."

"Rmax" is defined as one half of the maximum theoretical or estimated net productivity rate of the stock at a small population size. Net productivity rate is considered to be the annual per capita rate of increase in a stock due to reproduction. In most instances conservative default values are used, 0.04 (cetaceans) and 0.12 (pinnipeds). Hence, not only are conservative values employed as a starting point, but the Rmax values are reduced again by half to account for possible "uncertainty."

Finally, a recovery factor termed "Fr" is applied to the PBR calculation. The intent of the recovery factor is to compensate for uncertainty and possible unknown estimation errors. Though the 1994 amendments provided no specific guidance for values of Fr, values of 0.1 to 1.0 are arbitrarily used to reduce the value of PBR. The value of Fr used in a given PBR formula may vary, such that Fr = 0.1 for endangered stocks; Fr = 0.50 for stocks of unknown status or listed as depleted or threatened; and Fr = 1.0 for stocks thought to be at OSP.

Thus, a multi-tiered precautionary approach is incorporated into each and every PBR calculation, all reportedly for the same reason to account for "uncertainty" which remains undefined, to ensure that marine mammal populations are at OSP levels at least 95 percent of the time. The impact of such conservative assumptions on the estimate of PBR can be significant and is elucidated in the following harbor porpoise example.

HARBOR PORPOISE PBR: A PRECAUTIONARY MANAGEMENT EXAMPLE

Harbor porpoise is a small, coastal, migratory cetacean found along the east coast from Canada to North Carolina. Harbor porpoise are currently managed in the Mid–Atlantic region under a plan developed jointly by NMFS and the Mid–Atlantic Harbor Porpoise Take Reduction (HPTRT). The final plan became effective in December, 1999. There is also a separate but closely related New England harbor porpoise management plan.

Table 1 contains harbor porpoise abundance information available during 1991 to 1997. The HPTRT had only three years of survey data (1991, 1992, 1995) available to calculate PBR in 1997. NMFS chose not to utilize the most "recent" 1995 survey of 74,000 by itself, nor did they use the moving average of the most recent three surveys, nor did they drop the oldest and therefore, most dubious survey from 1991.

Instead, NMFS reduced the population estimate to 54,300, using the inverse variance-weighted average of the three surveys. This effectively reduced the stock of harbor porpoise by 26 percent. The agency then reduced the population estimate by 8.7 percent more (taking the 20th percentile of the log-normal distribution) to arrive at 48,289, the final Nmin.

This winnowing down of the population estimates represents a heavy-handed use of the precautionary approach and more importantly, a total reduction in population size equal to 34.7 percent (74,000 to 48,289) from the most recent survey count. This corresponds to a reduction in PBR from 740 to 483, significant numbers for fishermen required to meet the PBR number via the TRT process within just six months.

NMFS SURVEY MONTH/YEAR	"BEST" POPULATION ESTIMATE	POPULATION ADJUSTED FOR Nmin	PBR
July-August 1991	37,500	-	-
July- September 1992	67,500	-	-
July – September 1995	74,000	-	740
Arithmetic Mean of above 1991, 1992 and 1995 estimates	59,667	-	(Not used)
Inverse variance-weighted average of above 1991, 1992 and 1995 estimates	54,300	48,289	483

Finally, the application of Rmax and Fr to the reduced value for Nmin forces a further low-balling of harbor porpoise PBR estimates. This is not a valid or necessary approach for a species such as harbor porpoise. These small cetaceans are reported in the scientific literature to have extremely short life spans, early maturity and very high reproductive rates, comparing favorably with those of pinniped species (See Read, A. & A. Hohn, 1995. Life in the Fast Lane: Life History of Harbor Porpoise from the Gulf of Maine).

Arguably, applying one-half of a default Rmax value (*i.e.* Rmax = 0.02 ; noting that 0.04 it is the exact same value used for large, slower growing whales) and the Fr default value (0.5) for a species with such r-selected life history characteristics may be philosophically justifiable, but not necessary from a scientific standpoint. Alternatively, calculating PBR using N = 59,667; Rmax = 0.04 and Fr = 1.0, leads to an estimation of PBR for harbor porpoise equal to at least 1,629 animals.

This approach is valid when one considers that prior to implementing harbor porpoise protective measures, the NMFS 1999 population estimate for harbor porpoise totaled 89,700 animals, up from 74,000 reported in 1995 and 37,500 in 1991 (Table 1: See also Palka, D., 2000. Abundance of the Gulf of Maine/Bay of Fundy Harbor Porpoise Based on Shipboard and Aerial Surveys during 1999).

Clearly, in the process of developing the harbor porpoise plan, NMFS required an overly precautionary approach with little or no regard for the social and economic impacts of such a plan on fishermen.

In the final analysis, despite evidence of increasing population numbers prior to the implementation of a single TRT-authored management measure, protecting harbor porpoise has come totally at the expense of commercial fishermen along the east coast. Eric Anderson, a gillnet fishermen from New Hampshire recently commented on the harbor porpoise process, stating that

> It's pleasant enough to know that we avoided an ESA listing, but I'm sorry it resulted in people leaving the fishery .I wonder if society recognizes and understands what these costs are and I sometimes question if these natural resource policies are in the best interest of society. (See National Fishermen, September 2001)

ROBUST POPULATIONS

A direct result of the narrow-minded focus on protectionism is that the law does not contemplate the actual "management" of growing marine mammal species. This dysfunction is readily apparent along the coast of California where robust populations of marauding sea lions are presently consuming endangered runs of salmon, wreaking economic havoc in numerous fisheries, injuring humans, preventing access to private property, and fouling public breaches and marinas with fecal waste. In Maine, abundant seals are reportedly tearing into ocean net pens used to raise salmon, causing damage and product loss. Though presently confined to these two regions, increasing mammal populations may well force us to deal with this kind of problem in many other areas, including the mid–Atlantic.

Unfortunately, the law provides no management tools to treat marine mammals as we treat other mammal species that expand to the level of becoming pests. To its credit, the NMFS published a 1999 Report to Congress titled "Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Ecosystems".

In this document NMFS reports that uncontrolled mammal populations are negatively impacting human healthy, safety, property use, recreational and commercial fishing businesses, and preventing the recovery of depressed fish populations. NMFS outlines possible methods to address the growing social and economic problems resulting from robust mammal populations and nuisance animals in their report recommendations. To date, NMFS has not seen fit to effectively implement the recommendations contained in this report.

The difficult and sensitive nature of this issue notwithstanding, the NMFS Office of Protected Resources has clearly shown it is either unwilling or incapable of handling this aspect of the management equation. Congress must now provide the leadership and direction by forcing the agency to take a responsible, practical approach to resolving the issue.

There are really just two choices to consider regarding robust species, either the Act provides for a science-based wildlife management regime which attempts population control, or it promotes efforts to develop non-lethal deterrent technology and streamlines the lethal removal process to address disruptive nuisance animals. The Act does not necessarily have to provide for both, but it must allow for management alternatives - the federal government cannot have it both ways.

ZMRG: PHILOSOPHY VERUS SCIENCE

The zero mortality rate goal ("ZMRG") included in the 1994 amendments mandated reductions for incidental mammal takes to "insignificant levels approaching a zero mortality and serious injury rate." 1916 U.S.C. Sec. 1371(a)(2). As defined here, the Act requires that commercial fisheries attain this goal within seven years from passage of the 1994 amendments (*i.e.* April 2001).

Widely controversial, ZMRG is considered by some to be unattainable, and by others as a tool to stop commercial fishing. As such, it remains undefined in the regulations. However, the fact that it remains undefined does not mean it does not negatively impact fishermen during the TRT process.

Though there is no biological justification for ZMRG, there is a tacit understanding among interested parties, fostered by NMFS, that ZMRG is considered to be less than or equal to 10 percent of PBR. From our experience, the existence of ZMRG, even conceptually, is used to generate pressure for increasing restrictions on commercial fishermen during the TRT process.

Regardless of whether ZMRG is ultimately tied to some percentage of a stock's biological removal, or some other yet-to-be-determined numerical value, it remains an arbitrary limitation based solely on the fact that animals may still inadvertently be removed from a population during the process of harvesting food from the sea.

Nonetheless, it remains patently unfair to allow constituents to be pressured to achieve arbitrary, philosophical objectives as part of a federal management process.

Furthermore, the existence of ZMRG serves only as potential litigation bait it is "Trojan Horse" in the truest sense and must be removed from the Act. The resource management process is replete with litigation and threats of litigation which impact numerous mammal stocks and fisheries.

If ZMRG is codified by regulation, the Departments of Commerce and Interior will be defenseless against near certain legal action from extremists within the conservation industry. It will be of no consequence how much fishermen have already sacrificed to achieve highly conservative PBR levels, they will be required to sacrifice even more of their ability to operate as efficient businessmen and raise their families.

THE TRT EXPERIENCE: THE GOOD, THE BAD, AND BOTTLENOSE DOLPHIN

Commercial fishermen from New Jersey and around the country were generally supportive of including the TRT component in the 1994 reauthorization. Prior to the existence of TRT's, there was no open public process to address mammal issues. Decision-making was at the discretion of the NMFS Office of Protected Resources, which was cause for concern among many resource-use constituencies.

We have openly supported those positive elements of the TRT process including the chance for free and open exchange of information, opportunities to provide experienced on-the-water observations, the ability to jointly develop gear mitigation ideas and to engage in proactive efforts to address difficult issues. For these elements of the TRT process we are thankful to Congress and the NMFS.

However, problems continue to plague the MMPA TRT process. Several of those issues were raised during this Subcommittee's last MMPA oversight hearing on April 6, 2000. These included, but were not limited to, the protocol for NMFS staff during TRT negotiations, funding problems, unreasonable deadlines, lack of sound scientific information, litigation problems, and budget shortfalls.

From a commercial fishing industry perspective, there are additional ongoing TRT problems: (1) the overwhelming lack of good scientific information; (2) poor inter- & intra-agency/departmental communication and reconciliation of fishery and mammal management plans; (3) lack of standards to require consideration of the socioeconomic impacts of proposed management measures; and (4) exposure of the Departments of Commerce and Interior to litigation or threats of litigation, forcing them to prematurely convene TRT's.

By way of example, all of the aforementioned TRT problems are strongly implicated in the brewing east coast bottlenose dolphin management controversy. Under the current scenario, this TRT process will result in catastrophic effects on gillnet fishermen from New Jersey, Maryland, Virginia, North Carolina and potentially south to the coast of central Florida.

The bottlenose dolphin TRT process is scheduled to convene on November 6–8, 2001 with the following problems:

(1) Population estimate is severely outdated (1995) and restricted both temporally & spatially;
(2) Humane Society of the U.S. has threatened to file a "notice of intent to sue" the Secretary of Commerce for failure to convene a TRT to protect bottlenose dolphins pursuant to the MMPA;
(3) No substantive coordination exists between the NMFS Offices of Sustainable Fisheries and Protected Resources and the Atlantic States Marine Fisheries Commission to determine the impacts of State and Federal Fishery Management Plan provisions on fisheries and bottlenose dolphins;
(4) Dolphin stock was judged "depleted" due to large scale viral-related mortality event during 1987–88. Since then, no reconsideration of the "depleted" status or review of the genetic and assessment assumptions has been conducted;
(5) Before the TRT has convened the OPR staff has already suggested the TRT consider an alternative which would remove commercial gillnets within 3 km of the east coast;
(6) Efforts by commercial fishing interests to work cooperatively with the NMFS OPR to examine reflective gillnet material as a form of gear mitigation in the mid–Atlantic region remains frustrated and stalled since December 2000;
(7) Estimates of annual dolphin mortality attributed to commercial fishing are not defensible nor are they supported by the survey data;
(8) ZMRG is already influencing group discussions; and
(9) NMFS OPR has allowed the selection of a former TRT stakeholder as a facilitator who publishes a whale conservation newsletter that is funded and edited by the Massachusetts Environmental Trust and the NMFS OPR.

MMPA REAUTHORIZATION RECOMMENDATIONS

(1) Apply a set of formal standards to the decision-making process to ensure that adequate scientific information is available & utilized and that relevant social and economic factors are given due consideration
(2) Remove the Zero Mortality Rate Goal from the Act to insulate the Departments of Commerce and Interior from proactive and frivolous litigious activities
(3) Incorporate a provision into the Act which provides for effective management of robust stocks and nuisance animals through the development of non-lethal deterrent devices
(4) Provide specific guidance and increased authorization for cooperative research funding to encourage the development and testing of gear mitigation alternatives
(5) Direct the Ocean Studies Board of the National Academy of Sciences to provide Congress with an independent, objective assessment of all MMPA goals, including how the Act is currently implemented "commensurate with sound policies of wildlife management", the realities of achieving OSP at least 95% of the time for all stocks, the necessity of such a conservative approach as it relates to ensuring that mammals remain "a significant functioning element of the ecosystem", and finally, an estimate of the cost this Act is having on our nation's commerce
(6) Redefine, clarify, and provide specific guidance for each element of the PBR calculation to minimize repetitive layering of overly precautionary decision-making; direct NMFS to provide the TRT with a full range of possible PBR values, rather than a single conservative point estimate; and require NMFS to take an inter-disciplinary, coordinated approach to mammal management using all available resources in different departments, the regional management councils and state commissions, rather than relying solely on OPR
(7) Amend the Act to include a provision which allows for TRT's to convene proactively for purposes of identifying scientific data gaps, research and observer needs, and gear mitigation proposals while being held harmless under 16 U.S.C.1387(6)(f)(2) which triggers a 6-month requirement for the TRT, once convened, to achieve PBR
(8) Incorporate objective selection criteria into the Act which ensures that TRT facilitators have no previous history of stakeholder participation in marine mammal issues
(9) Provide the appropriate authorization levels for NMFS to conduct necessary research and stock assessment work
(10) Change the name of the Act to the "Marine Mammal Management and Conservation Act" to reflect the commitment of Congress to achieve a more balanced law

Mr. Chairman, I ask that you kindly accept my written testimony for the record, and on behalf of the GSSA and like-minded commercial fishermen from around the nation, I thank you for the opportunity to share our concerns and ideas with your Subcommittee.

[Attachments to Mr. Marks' statement follow:]

HARBOR PORPOISE: A CHRONOLOGY OF PRECAUTIONARY MANAGEMENT

KEY EVENTS & DATES	POPULATION ESTIMATE	Nmin	PBR	PBR using "best" population estimate, ½ Rmax and no "Safety" Factor ("Fr")
HP Survey: July – August, 1991	37,500			
HP Survey: July – September, 1992	67,500			
MMPA Amendments, 1994				
HP Survey: July – September, 1995	74,000		740 (not used)	1,480
MAHPTRT convenes in 1997 using weighted average of 1991,1992 & 1995 population estimates for Nmin	54,300	48,289	483	1,086
HP Survey: July – August 1999	89,700			
GOM HPTRT Plan effective January 1998; MAHPTRT Plan effective December, 1999 (excluding population estimate from 1999)				
New PBR estimated using 1999 population survey; November 2000	89,700	74,695	747	1,794
Despite the HP population increasing by a factor of 2.4 times the 1991 value, the TRT Plan is never adjusted.				

TO CALCULATE NMIN, NMFS DISCOUNTED THE EXISTENCE OF 27,711 ANIMALS OR 34.7% OF THE TOTAL STOCK; AND

NMFS PUBLISHED THE HPTRT PLAN IN 1999 WITH THE KNOWLEDGE THE STOCK HAD ALREADY INCREASED BY A FACTOR OF 2.4 DURING A PERIOD WITH LITTLE BENEFIT FROM TRT MEASURES; AND

TRT DISCUSSIONS ARE NOW FOCUSED ON ACHIEVING ZMRG.

BOTTLENOSE DOLPHIN: A PRELIMINARY CHRONOLOGY OF PRECAUTIONARY MANAGEMENT UNDER THREAT OF LITIGATION

KEY EVENTS & DATES	POPULATION ESTIMATE	Nmin	PBR
Viral Infection kills approx. 742 dolphins along the U.S. east coast during 1987-88, represents 53% of the entire population in an 11-month period			
Due to the viral mortality event, NMFS lists BND stock as "Depleted"; 1993			
BND survey: Sandy Hook NJ to Vero Beach, FL; 1994 (excluding bays, sounds & river habitats)	2,482		
BND survey: NJ to central FL; 1995 (excl. bays sounds & river habitats except Pamlico Sound, NC)	17,747	13,751	138
BND survey: NJ to central FL; 2000 (excluding bays, sounds & river habitat except Pamlico Sound, NC)	Not used, survey judged incomplete compared to 1995 survey. "Best" estimate = 17,747		
BND TRT convenes pre-meetings; Summer 2001; under threat of litigation by HSUS for failing to protect BND stock	Number of observed interactions with fishing gear during 1995 - 2000 = 12	From these 12 interactions, NMFS' extrapolates annual mortality = 894	
NMFS OPR staff advocates for no gillnet fishing on the east coast w/in 3 km of the shoreline prior to TRT formally convening			

NMFS HAS NOT REVISITED 1993 "DEPLETED" LISTING

AVAILABLE DATA IS OUT DATED AND MAY BE UNRELIABLE

EAST COAST INTERACTIONS MUST BE REDUCED BY 86% BY APRIL 2002

Mr. GILCHREST. Yes, sir. Thank you very much, Mr. Marks.

Mr. Johnson—actually I will ask this question to the panel in a broad sense. Do any of you feel that the Marine Mammal Protection Act should have a new definition for "harassment," in particular to look at, instead of the short-term problems with harassing marine mammals, which could be anything from somebody taking a photograph to recreational activity, to the long-term view insofar as what the interface between humans and marine mammals might do in the long term? Mr. Johnson?

Mr. JOHNSON. Yes, Mr. Chairman, I think the answer to that would be yes, because we have seen the effects of tour ships, for example, on seal pups and seals and whales in Alaska. We have seen the effects of—

Mr. GILCHREST. What have those effects been?

Mr. JOHNSON. Well, for example, when there are certain—when the cruise ships come into areas like Glacier Bay, they affect the pupping of the seals and force them to move to pup in different areas, and we think that is a very negative effect. We see the effects of these ships on whales up there. In fact, a week ago they found a whale that had been killed by a cruise ship. So I think in response to your answer there needs to be tighter regulations, particularly affecting cruise ships, where there are marine mammals.

Mr. GILCHREST. So it is your understanding right now, Mr. Johnson, that the effect of cruise ships on certain populations of marine mammals in certain areas of Alaska is acceptable by the National Marine Fisheries Service?

Mr. JOHNSON. There might be where there is no effects, but what I am saying is, there is instances where we feel very strongly that the actions of these ships has a very negative effect on the health of the marine mammals.

Mr. GILCHREST. Does the National Marine Fisheries Service share that view?

Mr. JOHNSON. I am not—I don't know that.

Mr. GILCHREST. We will ask Dr. Hogarth later. Thank you very much, sir.

Ms. Young?

Ms. YOUNG. I think that there is—the definition within the act is fairly broad and it can be interpreted in a number of different manners. I think there is some scrutiny and there may be some tightening of the language that is warranted. However, harassment is a very nebulous concept at best, and one person's harassment is somebody else's good look.

I think that there has been some discussion about defining harassment in behavioral terms, you know, if it displaces the animals from breeding habitat, if it stops their feeding, if it compromises their long-term viability. And I think we would oppose those sorts of changes because I think there are ample demonstrations, certainly in a number of other wildlife species but certainly in humans as well, where significant impacts occur without obvious changes in behavior.

For example, workers in factories for years went deaf with machine noise so loud, but they were trying to make a living and they didn't realize how detrimental it was until it was too late to do anything about it. Similarly, marine mammals we know will feed

sometimes up until the moment of death. That doesn't mean that they are not dying. It doesn't mean they are not harmed, they are not being harassed.

So I think so put a behavioral definition on it would be a very difficult thing, because you may well see marine mammals continuing to feed in an area, to breed in an area, to bring their young to an area because that is the only optimal habitat in which they can live and make a living, but that doesn't mean that their lack of behavioral response is indicative of a lack of harm to the species.

Mr. GILCHREST. Thank you. Anyone else? Mr. Mannina?

Mr. MANNINA. Mr. Chairman, representing the public display community, the question you are driving at is beyond something that we normally are involved with. That said, if you are contemplating changes to the harassment definition, we would only ask that you be cognizant of the medical work that we do with animals, that harassment not be so defined as that our work with stranded animals to help them would be inhibited.

Mr. GILCHREST. Thank you.

Mr. MARKS. Mr. Chairman, if I may just add quickly, we certainly feel—we operate under Section 118, which has a little bit of a different approach, but we certainly feel that the definition is extremely broad and extremely subjective, and it could basically disrupt typical, normal human activity.

And it also transcends down to people that are trying to make improvements, whether they might be trying to improve a boat harbor or maintain a marina to protect their vessels, that any of the work done to that could be considered harassment, even if it is just slightly temporary. So we certainly believe that needs a very hard look by Congress, and because it is so extreme, perhaps it could be somewhat limited, certainly temporally, anyway. That would probably help us.

But one aspect I would like to add here in terms of harassment, and it is somewhat related, is this issue of providing some sort of relief from growing populations in terms of nuisance animals. And it could possibly fall under some change in harassment, but certainly a separate provision which would help us at least do nonlethal deterrence, try and find a way which would acoustically harass these animals technically but perhaps chase them away from our operations, would be something that we would certainly ask Congress to consider. Thank you.

Mr. GILCHREST. Thank you very much, Mr. Marks.

My time has been used up. I will come back with some further questions, but when I think of harassment, I think of polar bears and seals, not to be insensitive to the fact that we need to avoid unnecessary human harassment to these animals. But once again I think we can probably—I understand that the essence of the broad definition of harassment in some ways is arbitrarily applied on both sides of the issue, but we will pursue a fine-tuning to that to protect the socioeconomic concerns of people but also to protect the integrity of the mammals and the ecosystem upon which we as humans also depend.

I yield now to Mr. Underwood.

Mr. UNDERWOOD. Thank you, Mr. Chairman, and certainly this panel indicates some of the complexities of the issues that we deal with and the various stakeholders that are involved.

Mr. Johnson, I know that in your testimony you also added an addendum on the issue of the preemption of State law regarding subsistence takes. Is there a real concern by the Alaska Federation of Natives that—is there an ongoing issue with the State law trying to inhibit, dare I say harass, your ability to engage in subsistence activities?

Mr. JOHNSON. Yes. In fact, subsistence priority was the State law and it was in compliance with Title VIII or Section 8 of ANILCA, which gives a rural preference for subsistence activities if there is a shortage of animals, only if there is a shortage. And the State law now prohibits that, even though the polls have shown that there is very broad, in some cases by some polls up to 85 percent of the State, including the urban population, that would support a subsistence priority, there are a few politicians that will not allow it to even be voted on by the Alaska public.

And we look on MMPA as one of the only legislations that recognizes our rights to subsistence, to harvest marine mammals for subsistence purposes. We don't say that we live on the animals, we say we live with them. In fact, as far as I know, in our language it has no word for "kill." We look at the taking of marine mammals for subsistence and for food and handicrafts as the animal is giving himself to you, or herself. So MMPA to Alaska natives is a very vital and critical legislation.

Mr. UNDERWOOD. Well, thank you for that.

In the earlier, in the previous panel there was a point raised by Marshall Jones regarding the active co-management between native organizations and Fish and Wildlife in advance of depletion of the resources. Does your organization take a position on that?

Mr. JOHNSON. Yes. In fact we are very supportive of that idea because we feel that the native organizations, the tribes, all want to be involved in co-management, and in fact there are some tribes that are drafting limitations, for example, on the take of walrus. Even though walrus are not a depleted or not even a threatened or endangered species, there is recognition from the native community that we must ourselves limit our take and our use sometimes. So most tribes that I know of, and in fact all the tribes that I work with all are supportive of the co-management idea, that we need to manage before depletion.

Mr. UNDERWOOD. Thank you for that, and I think, at least speaking for myself, I take a very strong interest in that and in the maintenance of native rights regarding subsistence takes.

Mr. Mannina, if I could just ask a question, are you familiar at all with the controversy in Puerto Rico regarding the Suarez Circus?

Mr. MANNINA. Only, Mr. Underwood, what we have read in the press.

Mr. UNDERWOOD. Okay. Do you have any—would you care to characterize that the Suarez Circus is in compliance with anything? You know, I know that there is an issue with the APHIS regulations, but what about your own organization's standards? Do you have standards?

Mr. MANNINA. They are not a member of either of our organizations, Mr. Underwood. In fact, they would not meet the standards for our organization, to be a member. In AZA we do not have any traveling circuses or traveling exhibits members.

Mr. UNDERWOOD. So how would you propose, I mean, do you think that the current approach that is utilized in order to regulate traveling circuses—are you in support of those?

Mr. MANNINA. Mr. Underwood, we have not taken a position on traveling exhibits. What I can do perhaps is turn the focus a little bit to the APHIS regulations themselves, and to note for the Committee that beginning in 19, I think it was 94, APHIS began a process of updating its regulations, improving them through a consensus procedure, and there were 18 topics that discussed.

It included representatives, these discussions included representatives of the public, the public display community, the environmental community, and government agencies. And 7 of those, I think 13 of those have now been published, and there are 5 yet to be published. Consensus was achieved.

I think the issue you are really raising is what should be the appropriate standards, and that can be addressed through another consensus procedure or through the Animal Welfare Act.

Mr. UNDERWOOD. Very good. Thank you very much.

Mr. GILCHREST. Thank you, Mr. Underwood.

Mr. Johnson, do you see any obstacles, hurdles, problems, as you may proceed with co-management?

Mr. JOHNSON. Well, as I mentioned in my testimony, we are moving from a system where we have no limits on our hunting, as long as it is done nonwastefully, to where if we are going to co-manage the species with the U.S. Fish and Wildlife, that we are moving into quotas. If we are going to share the harvest with Russia, it means numbers, if we are going to equally share. If we are going to share, it means quotas. One of the difficulties that is going to be facing us is—

Mr. GILCHREST. What does that mean, Mr. Johnson, you are going to share in the quotas?

Mr. JOHNSON. Well, if we are both taking polar bears out of the Alaska-Chukotka population, the treaty says that we have the right to take an equal part of the harvest. So if we are going to set a quota, for example, say of 40 or 80 for that entire population, that means that we will be limiting—we will take half of that in Alaska, and how we divide that up between the villages is work that the Alaska Nanuuq Commission is going to have to do and get village concurrence on. So we are moving from an unlimited hunt to a limited hunt.

Mr. GILCHREST. Do you have any opinion on polar bear hunting in Canada, the way it is managed and the agreement that the United States has with the Canadian Government?

Mr. JOHNSON. Well, I think the Canadian management has been much closer a co-management situation than we have had in Alaska. In fact, what we are doing with the natives of Chukotka is based on a voluntary agreement that is between the Inupiat of the North Slope Borough and the Inuvialuit of Canada, in where they have voluntarily placed limits on themselves, and in fact it has

been so successful that it has reduced the annual take and they have never—they haven't exceeded the take.

For example, the last 10 years, the total number was 800 bears that were on the quotas. Of that, only like 680 have been taken. And the important thing is, it has reduced the take of females. In the western part of the State, the take of females is approximately 40 percent of the hunt, and the Canadian-Alaska agreement, and that is a voluntary agreement, the take is only like 25 percent, so it has been very successful with that.

Mr. GILCHREST. So you don't feel that the apparent worldwide reduction in polar bear population is related to polar bear hunting?

Mr. JOHNSON. No. In fact, I just returned from an international polar bear meeting in Greenland that the United States, Denmark, Greenland, Russia, Canada, and Norway all took part in, and the general consensus—and these are all the polar bear experts, the biologists—their feeling that came out of that meeting was that the polar bear population worldwide is very healthy.

Mr. GILCHREST. Oh, the polar bear population is healthy?

Mr. JOHNSON. Correct.

Mr. GILCHREST. That is interesting. Did they say it is healthy compared to something?

Mr. JOHNSON. No. In fact, all the indications in all the reports, including most of Canada, indicate that based on the age/sex structure, the number of large males, those are all indicators of a healthy population.

Mr. GILCHREST. I see. So, Ms. Young, would you agree with the fact that this group said that that polar bear population is healthy?

Ms. YOUNG. I want to start by providing a caveat to my answer, and that is, much as Congress establishes Committees to assure that everybody doesn't have to know everything about everything, we in the HSUS have people who specialize, and Dr. Naomi Rose is the person who works largely on this. I will attempt a general answer, and if you want to be more specific, I will ask if I could defer to her.

But I think my belief is that you can't make a statement like "Polar bear populations worldwide are healthy." That is like saying "Large cat populations worldwide are healthy." It depends on what you are looking at. Some areas—well, wolves would be a better example. You know, in some areas wolf populations are doing very well; in other areas they are doing very badly.

So a general statement that the overall population is looking good is not necessarily informative. There are smaller populations that may be doing quite poorly and that may not be seen in the overall picture.

I think the importation provisions in the act for polar bear sport hunting, as I said to a greater extent in our written comments, there have been a number of instances in which Canadian officials allowed hunting with the imprimatur that in fact the population was healthy, only to later admit that, well perhaps it wasn't after all; and that although outsiders could see those data and say, "Well, you know, we think you are not taking a thorough look at an analysis of the situation," M'Clintock Channel being one of them, it was only after animals had been removed from the population that reconsideration was given to the granting of the author-

ity to remove them. So it is not precautionary as it is, and I think it is a bit broad to state "Polar bear populations are doing fine." Polar bears ain't always polar bears.

Mr. GILCHREST. Thank you. I guess we might want to consider what the polar bear population was 500 years ago, and what the polar bear population is today, and if there is no further degradation of the environment or loss of habitat, maybe the existing population can be maintained and sustained with proper management.

My time has expired again, but I will ask the gentleman from Guam for his indulgence, if I can, unless you have a question, Mr. Underwood.

Just very briefly, Ms. Young and Mr. Marks, you both feel that the take reduction teams have not been very effective. I would suspect that you have different reasons for that.

Ms. Young, you gave some examples that the take reduction teams might have solved some problems with the commercial gear used but have not carried that over for recreational gear. You say the enforcement is not there and reporting always seems to be behind, among some other things.

And Mr. Marks, you said that the TRTs are under-represented as far as the stakeholders are concerned, unless I misunderstood your comment.

Mr. MARKS. I think you may have misunderstood my comments, but I can expand on those when you are done, sir.

Mr. GILCHREST. And lack of information disadvantages to fishermen, and there need to be natural standards where there are none now, to take into consideration economic conditions to fishermen, and there is ample enforcement of protection but not enough for management, among some other things.

Well, when we break for lunch, maybe the two of you can get together over lunch and resolve some of those issues.

[Laughter.]

We certainly will make the attempt on our side. But if you just wanted to make a comment briefly, Ms. Young, directed toward the people that Mr. Marks represents, and then Mr. Marks, if you could make comment toward Ms. Young concerning the people that you represent, in sort of a broad response to that inquiry.

Ms. YOUNG. Certainly there is a lack of information. I think we are all equally disadvantaged by it. I don't think it is unique to the fishermen.

Mr. GILCHREST. Could I just interrupt, just for a second, and I apologize for that. But, Ms. Young, when you said the take reduction teams have not worked well because, and you gave a list of those, the commercial gear restrictions are not carried over to the recreational fishermen?

Ms. YOUNG. In some areas, for example, theMid-Atlantic, there is recreational gillnetting going on side-by-side with commercial gillnets. They both have the same general gear. They both are prone to catching marine mammals. However, only the commercial fishers are impacted by take reduction mandates, so they may have to do certain things to modify their gear or—

Mr. GILCHREST. But the recreational people don't?

Ms. YOUNG. Exactly.

Mr. GILCHREST. Mr. Marks, do you want to respond to that?

Mr. MARKS. Well, that is exactly correct. They apply to commercial gear, but not to recreational gear, and oftentimes there is recreational fishermen that use commercial gear for recreational purposes. So we have a complicated system, and what happens at times is, mortality that should be attributed to the recreational sector is being tagged onto my fishermen, and then we are responsible to reduce down to PBR from there. So it is a very, very difficult problem, hard for us to tease out right now, sir.

Mr. GILCHREST. So I guess what you are saying is, there are, between The Humane Society and the Garden State Seafood Association, there is some agreement?

[Laughter.]

Mr. MARKS. You have to define "some" for me.

[Laughter.]

Mr. MARKS. Mr. Chairman, I could make just a very brief statement, if I may.

Mr. GILCHREST. Yes, sir.

Mr. MARKS. You know, the take reduction team process, we are actually thankful to Congress for providing that, because before that, Mr. Chairman, we didn't have any interaction or any impact into that process. It was basically done by the Office of Protected Resources and the National Marine Fisheries Service, and there was no genuine public process.

So for that we are quite thankful, but I think the problem is that the TRT process is laid on the backdrop of the MMPA, which we find to be overly conservative. We can come to the table, we can provide our information, we can talk about gear, we can do those kinds of things, but when it comes down to it, it is so restrictive, we are hamstrung by a lack of information, and we have a very tight time frame to meet.

What would be helpful for us, sir, if we could change a provision in the law which would allow a TRT to convene but not be subject to the 6-month deadline to reach PBR, because there is lots of work to be done. We have to design surveys. We are trying to work with reflective net material for commercial fishermen to use, so the animals can echo locate off of it better. We don't even have time to get those kinds of research things sorted out and done before we have to reach a certain level of conservative PBR.

Those are problems that we just can't get our arms around right now. But the basic TRT process, believe it or not, I think we are probably in agreement that it has been an avenue for us that is much better than what we had before. It is just not so good yet.

Mr. GILCHREST. Thank you very much. Your testimony has been vibrant and helpful, without a doubt.

Mr. Mannina, we will certainly pursue your concerns dealing with the excess paperwork by NMFS versus the ability for APHIS to take concern and care for marine mammals on display. Unless you wanted to make a comment—

Mr. MANNINA. I was just going to say thank you.

Mr. GILCHREST. We will certainly stay in touch with all of you. We have another opportunity, Mr. Johnson, for Mr. Underwood and myself to visit Alaska to look at some of your concerns and some of your successes. But your testimony will be considered. We appreciate it, and we would also like to continue to communicate with

all of you as we move down the road, we hope in this Congress, to reauthorize the Marine Mammal Protection Act.

As we continue to communicate with you, we would also like to send written questions to you for the record, so that we can make sure this becomes a part of the process. But thank you all very much. We appreciate your attendance here this morning.

I now want to ask unanimous consent to insert a statement into the record from Congressman Cunningham.

Without objection, so ordered.

[The prepared statement of Mr. Cunningham follows:]

Statement of Randy "Duke" Cunningham, a Representative in Congress from the State of California

Mr. Chairman, I want to thank you for the brief opportunity to submit a statement for this hearing today.

I want to thank to Committee for accepting testimony from my friend and constituent, Bob Fletcher from the Sport fishing Association of California. Bob is a dear friend and an expert on dealing with marine mammal problems in San Diego and all along the Pacific Coast.

I would also like to submit for the hearing record a Dear Colleague circulated by Rep. Chris Cannon and myself. The Committee is accepting testimony today from Earth Island Institute, an organization with strong feelings on the environment and misguided views of Americans. I submit for the record an article from the September 13, 2001 Earth Island Journal. Written by the Editor, Gar Smith, this article calls "Terrorism the negotiating tactic of the powerless" and blames US foreign and environmental policies for the horrific acts of September 1 1th If the Committee is going to accept testimony from a group like this, I want the members to know the entire agenda of this organization.

Thank you for accepting my statement today.

[An attachment to Mr. Cunningham's statement follows:]

Congress of the United States

Washington, DC 20515

September 18, 2001

Dear Colleague:

Attached is a news release from *Earth Island Institute* (EII) that we thought you might be interested in. *Earth Island* is a 501(c)(3) tax-exempt organization that is on the extreme edge of an already fringe category of environmentalists.

In its news release, *Earth Island* not only defends the actions of the terrorists who attacked America on September 11th, but also blames the United States government and the American people for somehow causing these horrific events. While the release was taken down from the EII website over the weekend after the group began receiving some negative press, it is yet another example of how out of touch with America such environmental extremists can be.

We urge you to contact *Earth Island Institute* to express your disgust about this matter. On behalf of your constituents, demand an apology from the purveyors of this wholly inaccurate – and *shameful* – propaganda.

Sincerely,

Chris Cannon
MEMBER OF CONGRESS

Randy "Duke" Cunningham
MEMBER OF CONGRESS

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U.S. Responds to Terrorist Attacks with Self-Righteous Arrogance

Submitted by Earth Island Journal
September 13, 2001

by Gar Smith, Earth Island Journal Editor

In the wake of the World Trade Center and Pentagon bombings, George Bush would like us all to believe that "America was targeted for attack because we're the brightest beacon for freedom and opportunity in the world."

That doesn't make a lot of sense, does it? Maybe there's another reason.

We need to correct the rightist spin of the Bush administration and media. This was not an "act of war." This was an act of anger, desperation and indignation.

This was not an "attack on Freedom." It was a politically targeted attack on the core structures of the U.S. military and the U.S.-dominated global financial structure.

This was not an "attack on all American people." This was not the sort of flat-out terrorism that targets random innocents at a disco or a beach. The majority of the victims were, unfortunately, working for the Pentagon and various elements of multinational financial empires.

After the bombing of the U.S. Embassies in Kenya and Tanzania, the U.S. president vowed to "track down and punish the perpetrators."

After the bombing of the USS Cole, the U.S. president vowed to "track down and punish the perpetrators."

After this latest bombing, the US president vowed to "track down and punish the perpetrators." This is merely a ritualistic formality.

The only bombers the United States had captured are a U.S. soldier named Tim McVeigh (who was stopped by a state trooper) and a bunch of extremists who blew up the basement of the World Trade Center (with the assistance of an FBI infiltrator, a little-noted sidebar to history).

(If the United States once again attributes the latest attack to Osama bin Laden -- the still very-much-unpunished-by-the-West yet very-much-celebrated-by-the-militant-Islamic-East -- the irony will be compounded. And, speaking of ironies, here's another. The man who provided the funds to bankroll Arbusta, George W. Bush's first oil venture, happened to be the father of one Osama bin Laden. Oil and money make strange bed fellows.)

The U.S. media pundits are repeating in full robotic chorus, praise for Bush's "important comment" that the U.S. "will make not distinction between the terrorists who committed these acts and those who harbor them."

I find this statement cause for extreme alarm. It means that if the United States is unable to identify, track down and punish a specific individual or

group that was responsible for this crime, it can take the easy way out have stage its full-press photo-op "revenge" by dropping bombs on a convenient country. Afghanistan comes to mind.

(Another cause for concern: This "no distinction" argument is, in all probability, the same logic employed by the attackers who took down the World Trade Center towers.)

This is the typical United States government response. Self-righteous, arrogance followed by a threat of massive retaliation. If we aren't careful, George Bush could take us down the same path bloody path already explored by Ariel Sharon.

Has massive retaliation stopped terrorist attacks in Jerusalem? The record seems to indicate that massive retaliation only inflames terrorism.

The illogic of massive retaliation would be immediately apparent if anyone dared apply it to a child. ("Little Johnny broke the lamp, so we taught him a lesson by breaking his arm.") Inappropriate punishment is perceived by an abused child to be an injustice. It foments resentment, anger and rebellion.

Why should we believe that massive retaliation, when applied to adults, will produce sobriety, compliance and civility?

"We will punish the people responsible," Bush states. The people directly responsible are already dead, incinerated at the controls of those hijacked planes.

This is not war. No country has declared war on the United States.

This is not an attack not on U.S. citizens but an assault on U.S. foreign policy.

The administration is trying to tell Americans that we are all targets. This is being done to draw attention away from the real targets: World Trade and U.S. militarism.

Why is the United States the target of these attacks? The answer to that question is far more important than the quest to identify who trained and sponsored these attackers. Usually, when a crime is committed the first response it to look for a motive. Why is that not a major concern in Washington?

Here are some possible answers to the essential question: Why us?

- Because our soldiers are stationed in foreign garrisons around the world.
- Because our soldiers and foreign policy support the repressive regime in Saudi Arabia.
- Because our country has placed an embargo on Iraq that has lead to the deaths of more than a million children (by United Nations estimates).
- Because our country (and Britain) continues to drop bombs on Iraq -- long after the "end" of the Gulf War -- injuring and killing civilian men, women and children.
- Because our country supplies Israel with the trademark Blackhawk attack helicopters and "smart" missiles that are used in "targeted assassinations" (a policy that even the CIA has been forced to formally abandon).

- Because our country allows Israel, Colombia and other countries to violate U.S. laws requiring that our military weapons can only be used in a defensive manner.

You cannot wage "war" on suicide bombers. If you want to respond in kind, you've got to be ready to send in your own suicide bombers. What? We don't have any suicide bombers? Then we've lost the contest. The other side is willing to sacrifice their lives for a cause. We are only willing to risk lives.

One way to respond to terrorists is to listen to the message they are trying to send. Terrorism is the negotiating tactic of the powerless.

There is even an environmental analysis to this.

If you were to draw a flow chart tracing every terrorist attack against the United States back through every foreign alliance, military mutual aid pact, joint military exercise, bloody political coup, intrigue and tacit alliance, the lines would generally flow back to one common factor. Oil.

Our foreign policy is captive to oil. Our position as a superpower is dependent on oil. (The Pentagon runs on oil. That's why US motorists -- unlike European drivers who pay much higher prices for petrol -- enjoy a unique hidden "subsidy" on the price of gas.)

If we were able to transform our economy into one that operates on clean, renewable energy, we would not only be taking the right measures to mitigate climate change, we would also be taking an important step toward a new foreign policy that is not predicated on the need to control world oil supplies by propping up foreign dictatorships, unpopular dynasties and repressive regimes.

A chilling phrase is being repeated by the pundits: "After today, our lives in America will never be the same." Powerful forces in U.S. society have long dreamed of such opportunities. A domestic Gulf of Tonkin episode to open the door to Martial Law Lite -- a proactive suspension of "certain" civil liberties and freedoms. (As another network commentator put it: "The terrorists succeeded because they took advantage of the very freedoms we take for granted.")

If we were to redirect our economy to operate on clean renewable energy -- energy that is available everywhere on Earth and not just beneath the subsoil of despotic Third World governments -- we would not only be on the path to mitigating climate change, we would also be on the path to eliminating one of the major causes of terrorism.

The solution is available but the U.S. government (as presently constituted) will never act on it because, to do so, would require the United States to give up its position as the world's reigning Superpower.

Without oil, we have no army. If armies and economies run on oil, whoever controls the oil controls the planet.

If towns, factories and homes could be powered by solar and geothermal energy, no one country could dominate the world's energy-based economies.

It is time to move to a world beyond oil, beyond repression and beyond superpowers.

Mr. GILCHREST. Thank you all very much. I think, unless there is an objection, I don't know if I have to ask unanimous consent to break for lunch, but let's reconvene at 1:30. Thank you very much.

[Whereupon, at 12:24 p.m., the Subcommittee recessed, to reconvene at 1:30 p.m. the same day.]

[Afternoon Session - 1:41 p.m.]

Mr. GILCHREST. The hearing will come to order. Apparently some of us up here got "used to lunch." That was the phrase that was just quoted to me. The next time we have a long hearing, we will make it an hour and a half.

Anyway, we appreciate you coming this afternoon to give us your testimony on this long, arduous, but certainly interesting road to reauthorizing the Marine Mammal Protection Act, and all the various nuances, complexities and dimensions thereof. But at this point we have testifying Dr. Joe Scordino, Deputy Director, Northwest Region, National Marine Fisheries Service; Mr. Bob Fletcher, President, Sports Fishing Association of California; Mr. Steve Rebuck, Member of Sea Otter Technical Consultant Group, Southern Sea Otter Recovery Team, nice to meet you; Mr. Steve Thompson, Acting Manager, California-Nevada Operations, U.S. Fish and Wildlife Service; Ms. Kaitilin Gaffney, California Central Coast Program Manager, The Ocean Conservancy.

Welcome. Dr. Scordino, you may begin.

STATEMENTS OF JOE SCORDINO, DEPUTY REGIONAL ADMINISTRATOR, NORTHWEST REGION, NATIONAL MARINE FISHERIES SERVICE

Mr. SCORDINO. Thank you, Mr. Chairman, members of the Subcommittee. In my testimony today I will follow the format of the report to Congress that we provided in 1999. It was one of those actions requested in the 1994 amendments to the Marine Mammal Protection Act. I also will describe some of the new information we have collected since 1998 in conjunction with the States, using the funding that Congress provided specifically for us to look at the issues of sea and sea lion impacts on salmon and West Coast ecosystems.

So I will start with the current status of the California sea lions and Pacific harbor seals, which we collectively call pinnipeds, in Washington, Oregon and California. Both of these species have increased at an annual rate of about 5 to 8 percent since passage of the Marine Mammal Protection Act in 1972.

The current population estimate for California sea lions is now well over 200,000 in the U.S. waters alone. Harbor seals are currently estimated at over 72,000 seals in Washington, Oregon and California. Both those numbers are pretty much record high numbers for those species since we began counts off and on from the '40's, '50's, and then more dedicated surveys starting in the mid and late '70's.

Recent analyses now indicate that harbor seals in Washington and Oregon are at their optimum sustainable population level. This is something we have struggled with for several or many years, trying to determine OSP for these species, and with the harbor seals

then in Washington and Oregon they have clearly reached their OSP level.

Attached to my testimony there are some figures, and one of those shows the population trend with harbor seals. And you can see, looking at the figure, they have leveled off in the last 5 to 6 years, so clearly we have reached the top of the curve in Washington and Oregon. Unfortunately, in California we have not had complete surveys in recent years, so we can't make the same determination for California harbor seals.

In the case of California sea lions, they are continuing an increasing trend and are not clearly showing signs of leveling off. One thing we see with California sea lions is that whenever there is an El Nino condition, the populations fluctuate pretty dramatically.

And again, if you look at the figure attached to my testimony, Figure 4, you will see some pretty dramatic fluctuations in California sea lion pup counts, and those fluctuations are those years when we had the severe El Nino conditions. So the populations drop down, but they rebound right back up again.

So that is the current status of the two populations of concern on the West Coast. I will now turn to pinniped impacts on salmon and steelhead, which was a significant component in the report to Congress.

Over the period that pinniped populations have expanded, we have also seen salmon and steelhead populations on the West Coast declining. Although the pinniped predation was not the cause of the decline, it raises concerns now. With these large populations of seals and sea lions, small populations of salmon, there is real concern that the recovery of these already depressed populations may be affected, especially with those listed under the Endangered Species Act.

Limited studies we conducted prior to when we submitted the report to Congress clearly showed that pinniped predation on small salmon populations, especially in areas of restricted passage, clearly can have an impact on the salmon population. A case on that was the California sea lion predation on a steelhead run that migrated through the Ballard Locks in Seattle, Washington, where we saw that run pretty much crash because of constant annual high rates of predation by California sea lions.

In the report to Congress, we note there are many sites on the West Coast where pinnipeds co-occur with ESA listed salmon, and we have been using the funding provided to investigate as many of those sites as we could and get good studies through the State-Federal cooperative program I mentioned previously.

Preliminary results from these studies indicate that predation is definitely not having an impact in some systems, so we looked in the Umpqua River and looked at predation on cutthroat trout, sea run cutthroat, and clearly found no predation was occurring at all. But the flip side, we also had a study or have ongoing a study in Hood Canal in Washington, where clearly the predation by harbor seals on a listed chum salmon run, that level of predation we are seeing which exceeds 25 percent could be impairing recovery of those runs.

Most of these situations appear to involve a small number of animals. It is not the whole population. So you might see 100 to 300 animals right at the mouth of the river, but it appears when you start moving up the river and take a close look, it is usually a handful of animals or less that actually move upriver and target their foraging on the salmon species.

We don't have conclusive results yet from these studies. We are applying new technology like night vision equipment, and expect to have more conclusive results within the next year.

In regard to pinniped conflicts with commercial and recreational fisheries, we noted in the report we submitted that interactions and conflicts between pinnipeds and fisheries were increasing, and the situation has not changed. Fishermen are continuing to report economic impacts from interactions with these animals.

We have conducted some recent studies in salmon fisheries off Monterey, California, as well as in the recreational fisheries in southern California, and both those studies substantiate continued, in some cases severe, conflicts with especially California sea lions. In one time frame off Monterey we were seeing where the sea lions were taking 70 percent of the catch during the peak of a run from fishermen's lines.

Many fishermen use a number of nonlethal methods to try to keep these animals away from their gear, but most of the time there is limited or no success, and when there is success, it is short term. It might work 1 day but not the next day, or part of a day and later the animals will come back and cause problems.

I would like to now turn to the four recommendations in the report and quickly go over those and give you a status update. The first recommendation is to implement site-specific management authority that would allow State and Federal officials authorization to lethally remove pinnipeds where necessary to protect ESA-listed salmon.

This recommendation is more of a framework, and it sets up different tiers for different situations. So in the case of a system where you have ESA-listed species, the recommendation, the framework provides for immediate removal of animals if it is consistent with a recovery plan, and then steps down from there to actions in, let's say, fishery situations where nonlethal approaches would be used first, but then recommends that a lethal approach be authorized for State and Federal officials as a last resort.

In all of these cases we are looking at lethal removal of small numbers of animals. Our studies are clearly showing it is usually a few animals that cause most of the problems, and so this recommendation is specific to those small numbers of individual animals. It is not a recommendation to go out and remove animals from haul-outs, or any kind of culling operation.

The second recommendation is to develop safe and effective nonlethal deterrent technologies. At the time the report was prepared, we were seeing that there may be some promise in some acoustic devices that were being tested and were being used. For example, at the Ballard Locks we found that these high-intensity acoustic devices in the confined situation there did keep sea lions away, but only after we removed the animals that were habituated to the area.

So we moved forward from there, working with the fishing industry and working with Bob's group, to test more powerful acoustic devices in open ocean waters that could be applied on fishing boats. One of these devices, called the pulse power device, appeared to have promise.

Unfortunately, we ran into problems with field testing the device because of environmental concerns of effects on other species. Cetaceans, whales, dolphins, etcetera, were also affected by these devices, so it was more than just the target animals that would be affected.

And then further, more recently some laboratory studies have shown that these devices may not be as effective as we thought on California sea lions, where it was tested on a couple of animals and one animal showed no reaction. So we are seeing some of the unpredictability with acoustic technology.

We are moving to still try and study other approaches, looking at behavioral studies, what attracts an animal to fishing gear, and hopefully that will give us some insights on where to go in the future. But I think right now it is safe to say we are at the bottom of our bag of tricks and we are not sure where to turn in the nonlethal arena.

The third recommendation was for Congress to reconsider authorizing intentional lethal taking by fishermen. Prior to the 1994 amendments, commercial fishermen were allowed to shoot animals as a last resort, if they couldn't remove them by other methods from their gear. We recommended Congress reconsider that, given the continued interactions with animals.

This recommendation was the subject of most of the negative comments we received from the public, and we kept it in the report more to provide the background information, the science base for what could occur. That recommendation was predicated on optimism that we would be finding some acoustic way to remove animals nonlethally, and as I mentioned previously, we are not seeing that, so we no longer are supporting this third recommendation.

And the fourth recommendation was to collect additional information, and we have done that with the funding you have provided.

That concludes my testimony, and I will note that, as Bill Hogarth mentioned earlier today, the administration is currently developing a proposal to reauthorize the MMPA, and this report to Congress that I have discussed will be included in their consideration. Thank you.

[The prepared statement of Mr. Scordino follows:]

Statement of Joe Scordino, Deputy Regional Administrator, Northwest Region, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify today. My name is Joe Scordino, and I am the Deputy Regional Administrator of the Northwest Region, National Marine Fisheries Service (NMFS) in the National Oceanic and Atmospheric Administration, Department of Commerce. Among many other aspects of conserving marine resources along the U.S. west coast, I have had an active role in marine mammal issues in the Northwest for more than 20 years. I was one of two principal authors of the Report to Congress: Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Eco-

systems, which was submitted to the Committee on Resources and the Committee on Commerce, Science and Transportation in February 1999.

In my testimony today, I will generally follow the format of the Report to Congress and will emphasize new information that has become available since the Report was completed. This new information is the result of a cooperative west coast pinniped research and monitoring effort by NMFS and the Pacific States Marine Fisheries Commission (PSMFC) that commenced in Fiscal Year 1998 with Congress increasing NMFS base funding specifically for studies on pinniped impacts on salmonids and West Coast ecosystems. The state fish and wildlife agencies in California, Oregon, and Washington as well as university and tribal entities participate in this cooperative program. Recent studies funded by the states, tribes, and academia as well as other funding sources such as the fishing industry and Saltonstall–Kennedy Grants have contributed to this cooperative program.

The coordinated state/federal coastwide program to study and monitor the effects of expanding populations of Pacific harbor seals and California sea lions on the west coast focuses on the following five areas:

- Pinniped effects on depressed salmon and steelhead populations
- Pinniped conflicts with commercial and recreational fisheries
- Non-lethal methods to mitigate pinniped conflicts with people and other resources
- Pinniped population assessments
- Other coastal ecosystem pinniped impacts.

Status of California Sea Lions and Pacific Harbor Seals in Washington, Oregon and California

Populations of California sea lions and Pacific harbor seals have increased at an annual rate of five to eight percent since the early 1970s concurrent with passage of the Marine Mammal Protection Act in 1972 (see Figures 1–4). Although some pinniped populations in the Pacific Ocean have declined and have been listed under the Endangered Species Act (*e.g.*, Steller sea lions and Hawaiian Monk seals), the opposite has occurred with harbor seals and California sea lions off the west coast of Washington, Oregon and California. The expanding populations of these two species has caused concurrent increased reports of conflicts with fisheries, fishery resources (especially salmon), and human activities. Elephant seals on the west coast also have increased at about 8% per year, but their interaction issues are currently limited to human contact on coastal beaches. Thus, as requested in the 1994 Amendments to the MMPA, the Report to Congress and my testimony focus on expanding populations of California sea lions and Pacific harbor seals (collectively called "pinnipeds") in Washington, Oregon and California.

The Report summarized the status of California sea lions and Pacific harbor seals as healthy, robust populations—their status has not changed. The recent NMFS Stock Assessment Report estimates the California sea lion population at over 200,000 animals in U.S. waters, the harbor seal populations in Washington and Oregon at over 42,000 seals, and the California harbor seal population at over 30,000 seals. Individuals from both species are increasingly found in inland waters and upriver in freshwater in many West Coast river systems.

The information available at the time the Report was completed indicated that despite current high abundance levels, there was insufficient evidence that either of these pinniped populations had reached its optimum sustainable population (OSP) level. Such a determination requires evidence that the affected population has exceeded its Maximum Net Productivity Level (MNPL), which is the lower limit of a population=s OSP. However, recent analyses by NMFS and State scientists on current abundance and life history parameters of harbor seals in Washington and Oregon indicate that these populations are experiencing the reduced rates of increase that accompany population levels exceeding MNPL (see Figures 1 and 2). These OSP determination manuscripts are currently under scientific peer review, and I expect NMFS will formally announce that these stocks as having reached their OSP as soon as the scientific papers are published.

The recent data history for harbor seals in California is not as clear as in Washington and Oregon because the last completed survey was in 1995. The last two survey efforts for harbor seals by the California Department of Fish and Game were incomplete, and did not result in abundance estimates. Although there is some preliminary evidence from continuous counts in portions of California that would indicate harbor seals are experiencing a reduced rate of increase, this evidence is not conclusive without complete data for the State. Therefore, I do not anticipate that an OSP determination can be made for this stock of harbor seals until we have several completed annual surveys.

California sea lions are continuing an increasing trend; the population growth data based on pup counts has not shown a reduced rate of increase which would indicate that the MNPL has been exceeded. As shown in Figure 4, pup production is affected dramatically by El NiZo events; pup counts decreased by 35% in 1983, 27% in 1992, and 64% in 1998. El NiZo events do cause declines in the California sea lion population, but do not appear to affect overall long-term increasing trends. NMFS scientists are examining other population and life history indices that may be used in an OSP determination for this species. Therefore, I do not anticipate that an OSP determination will be made for California sea lions in the near term.

Pinniped Impacts on Salmon and Steelhead

Over the period that these pinniped populations have expanded, salmon and steelhead populations along the west coast have declined raising serious concerns about resource conflicts and impacts of pinnipeds on salmon listed under the Endangered Species Act (ESA). As noted in the Report to Congress, although seal and sea lion predation did not cause the decline of salmonids, it may be affecting the recovery of already depressed populations. Limited studies conducted prior to the Report to Congress showed that pinniped predation on small salmonid populations especially at areas of restricted fish passage, such as the California sea lion predation on a steelhead run that migrates through the Ballard Locks, can have negative impacts on the recovery of depressed or declining salmonids. The Report noted that there are many sites on the west coast where pinnipeds co-occur in estuaries and rivers with ESA listed salmon runs. As described earlier in my testimony, NMFS, PSMFC, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, and California Department of Fish and Game began a coordinated coastwide program in 1998 to investigate and evaluate potential pinniped impacts on ESA listed salmonids.

The cooperative state/federal program commenced with workshops to review and assess the sampling design and approach to 1) food habits studies that involve collecting pinniped scats at haul-out sites and determining diet from prey remains in the scat, and 2) surface observations from selected vantage points at sites where pinniped foraging and predation on salmonids could be observed. State/federal cooperators agreed to common protocols for data collection, analyses, and reporting to ensure consistency in studies at all sites coastwide.

Pinniped-salmon predation study sites include the lower Columbia River; Willamette Falls, OR; Rogue River, OR; Alsea Bay, OR; Umpqua River, OR; Ozette River, WA; Hood Canal, WA; Duamish River, WA; Ballard Locks, WA; Snohomish River, WA; Klamath River, CA; Eel River, CA; Madd River, CA; Smith River, CA; Scott Creek, CA; and San Lorenzo River, CA. In addition to field work, the cooperative program includes 1) captive pinniped studies to determine food passage rates so that data from scats can be quantified and extrapolated, and 2) laboratory studies on development of genetic identification of material in scats so salmon species/stocks can be determined. Initial reports from the first two years of studies are available from NMFS. Preliminary results from these studies indicate pinniped predation is definitely not having an impact on some salmonid runs (for example, studies have shown no pinniped predation on cutthroat trout in the Umpqua River) and may be impairing recovery in other areas (for example, pinniped predation rates exceeding 25 percent of spawning summer chum salmon in Hood Canal). Because of interannual variability, studies need to be conducted for at least three seasons in most areas before conclusive results are available. Some studies have been expanded to incorporate night vision technologies in an attempt to quantify the incidence of predation at night, so that a complete assessment of impacts can be made. Since night observations are limited and some sites have extensive reaches of river that cannot be observed, there will be some uncertainty in some of the predation estimates from some sites. Nonetheless, I expect that state/federal program will have completed salmonid predation assessments for many of the study sites within the next year.

Pinniped conflicts with commercial and recreational fisheries

Increasing California sea lion and Pacific harbor seal populations and their expanding distribution have resulted in increased reports of interactions with both commercial and recreational fisheries. Fishers are reporting economic impacts from the interactions. In the commercial fisheries, California sea lions and Pacific harbor seals remove catch and damage gear in the salmon troll and gillnet fisheries; nearshore gillnet fisheries; herring, squid, and bait purse seine and round-haul fisheries; and trap and live bait fisheries. Commercial fishers lose income because they are unable to catch, land, and sell fish. California sea lion interactions with salmon troll fisheries off California are especially severe. Recent studies showed that California sea lions took from eight percent to 28 percent of the hooked salmon in the salmon

troll fishery off Monterrey Bay from 1997 to 1999. Interaction rates were highest in 1998 during El NiZo conditions, when sea lions appeared to target fishing vessels due to lack of other prey resources.

Both California sea lions and Pacific harbor seals are involved in interactions with recreational fisheries coastwide, but most conflicts are attributable to California sea lions. Sea lions interact by consuming bait and chum, and removing hooked fish that are being reeled in. Fish also may stop feeding or may be scared away by the presence of sea lions. In addition, when sea lions are present, skippers frequently have to move their boats to other, sometimes less productive, fishing areas, incurring additional fuel costs and loss of fishing time. Despite these efforts, sea lions often follow the boats to these new locations. Interactions with the southern California partyboat fishery are reported to be especially severe. Recent studies by the California Department of Fish and Game and Moss Landing Marine Laboratory continue to substantiate the common occurrence of California sea lion interactions with Commercial Passenger Fishing Vessels in southern California and Monterrey areas. Many fishers use an array of non-lethal deterrence measures to minimize or avoid interactions, but as noted in the Report to Congress, most of these measures have limited success an usually of short term duration. High powered acoustic devices have shown success in some limited areas such as at the Ballard Locks, but their applicability to fishing vessels and open ocean conditions limit their use. NMFS has worked with the fishing industry to develop a more powerful acoustic deterrence device, called Pulsed Power, that generates a high intensity pulse that could be effective in open waters. However, this device could affect other species and its testing has been constrained due to environmental concerns about such devices. More recent laboratory studies also indicate it may not be as effective in deterring California sea lions as initially hoped.

RECOMMENDATIONS IN THE REPORT TO CONGRESS

The 1999 Report is the result of a Congressional request that NMFS conduct a scientific investigation on the expanding populations of California sea lions and Pacific harbor seals off Washington, Oregon and California, and develop recommendations for addressing problems and issues identified as a result of the investigation. NMFS developed the recommendations in the Report with the assistance and concurrence of the Pacific States Marine Fisheries Commission, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife and California Department of Fish and Game. The Report includes specific recommendations to Congress for management measures to address pinniped (seal and sea lion) conflicts with salmon and human activities. The four recommendations are: 1) Implement site-specific management authority that would allow state and federal officials to lethally remove pinnipeds where necessary to protect ESA listed salmon and other marine resources; 2) Develop safe and effective non-lethal deterrent technologies; 3) Reconsider the prior MMPA authorization that allowed commercial fishers to lethally take pinnipeds as a last resort to protect their catch and gear in specific fishery areas where economic impacts are occurring; and 4) Implement the studies necessary to obtain additional information on the expanding pinniped populations and their impacts on other resources, especially ESA listed salmonids.

1. Implement Site Specific Management for California Sea Lions and Pacific Harbor Seals

The Report to Congress recommends a framework for site specific management measures, including lethal removal of pinnipeds, if and when necessary under specified circumstances, to address conflicts involving California sea lions and Pacific harbor seals on the west coast. The three components of the framework are:

1. In situations where California sea lions or Pacific harbor seals are preying on salmonids that are listed or are proposed or are candidates for listing under the ESA, immediate use of lethal removal by state or federal resource agency officials would be authorized.
2. In situations where California sea lions or Pacific harbor seals are preying on salmonid populations of concern or are impeding passage of these populations during migration as adults or smolts, lethal takes by state or federal resource agency officials would be authorized if (a) non-lethal deterrence methods are underway and are not fully effective, or (b) non-lethal methods are not feasible in the particular situation or have proven ineffective in the past.
3. In situations where California sea lions or Pacific harbor seals conflict with human activities, such as at fishery sites and marinas, lethal removal by state or federal resource agency officials would be authorized after non-lethal deterrence has been ineffective.

The Report noted that a precautionary approach would favor the protection of ESA listed species (*e.g.*, salmon) over absolute protection of healthy, robust and expanding pinniped populations. This recommendation includes a number of safeguards to prevent unwarranted lethal takes of pinnipeds. Only in situations where pinnipeds are preying on ESA listed salmonids would lethal removal be authorized without considering non-lethal means first, and only in cases where such removal is within the context of salmon recovery actions. In all cases, lethal removal of pinnipeds is an action of last resort by state or federal resource managers. This recommendation only addresses the individual problem animals, which cause most of the conflicts; it is not intended to reduce or cull local pinniped populations. Additional details and specifics of this framework can be found in the Report. As described earlier in my testimony, recent studies have shown that the impacts of pinniped predation in some rivers are minimal (*e.g.*, cutthroat in the Umpqua River) and would not warrant action, while in others the effects of pinniped predation will need to be considered in recovery planning (*e.g.*, summer chum salmon in Hood Canal, WA).

2. Develop Safe, Effective Non-lethal Deterrents

At the time the Report was completed, only one avenue of deterrence technologies appeared to be promising for timely development of non-lethal techniques to deter marine mammals from interfering with human activities. This avenue was acoustic devices. Acoustic deterrents have been used with some degree of success in aquaculture operations and were applied with success in the confined area at the Ballard Locks in Seattle, WA to reduce predation on Lake Washington steelhead. I note, however, that non-lethal measures at Ballard Locks were not effective on California sea lions until NMFS had permanently removed three individually identifiable California sea lions that had frequented the area for many years.

Concurrent with preparation and since submission of the Report to Congress, NMFS supported research to test acoustic deterrents. For example, NMFS funded through the Saltonstall–Kennedy program the development and preliminary testing of a pulsed-power device for deterring sea lions from fishing boats. Field testing of this device has been postponed because of environmental concerns over its effect on non-target marine mammals and other species. There also is concern about routine use of these devices by the fishing fleet because large portions of ocean waters could be ensonified.

After research efforts indicated that acoustic technology would not provide a safe, effective approach to long-term deterrence of marine mammals, we were left with no alternatives for immediate development and application. Therefore, NMFS is currently supporting a new line of studies by Moss Landing Marine Laboratory to conduct basic behavioral studies on sea lions to determine what "cues" they use to find hooked fish. These studies would describe the "cues" involved in interactions with fishing operations and ways to possibly "mask" or eliminate those "cues" to avoid interactions. External sources (the Marine Mammal Center and fishing organizations) have expressed interest in supporting part of this research.

3. Consider Selectively Reinstating Authority for the Intentional Lethal Taking of California Sea Lions and Pacific Harbor Seals by Commercial Fishers to Protect Gear and Catch

This recommendation is for Congress to reconsider authorizing the use of intentional lethal taking of California sea lions and Pacific harbor seals until such time as effective non-lethal methods are developed for specific fishery conflict situations. Prior to the 1994 amendments to the MMPA, commercial fishers were allowed to kill certain pinnipeds as a last resort to protect their catch or gear. This recommendation was included in the Report following consultation with PSMFC in response to requests from some parts of the fishing industry. This recommendation was predicated on optimism that effective non-lethal deterrents would be developed in the short term thus negating the need for fishers to use lethal means to eliminate interactions. However, as noted above, it does not appear that environmentally sound and effective deterrence methodologies are likely in the near term. This recommendation was the subject of most negative comments from the public, but it remained in the Report so that Congress would have background information if it chose to reconsider the 1994 amendments that eliminated the prior authorization that allowed commercial fishers to kill marine mammals as a last resort. Following the submission of the Report, NMFS has learned that many participants in current commercial and recreational fisheries do not necessarily desire to have this authority. Rather, these parties have expressed the need to have safe, effective non-lethal deterrents. Consequently, NMFS no longer supports this recommendation.

4. Information Needs

With Congressional action to increase NMFS base funding in fiscal year 1998 for studies on pinniped impacts on salmonids and West Coast ecosystems, this recommendation is being addressed. The cooperative state/federal program is collecting the information specified in the Report and state and federal managers are using the data for management.

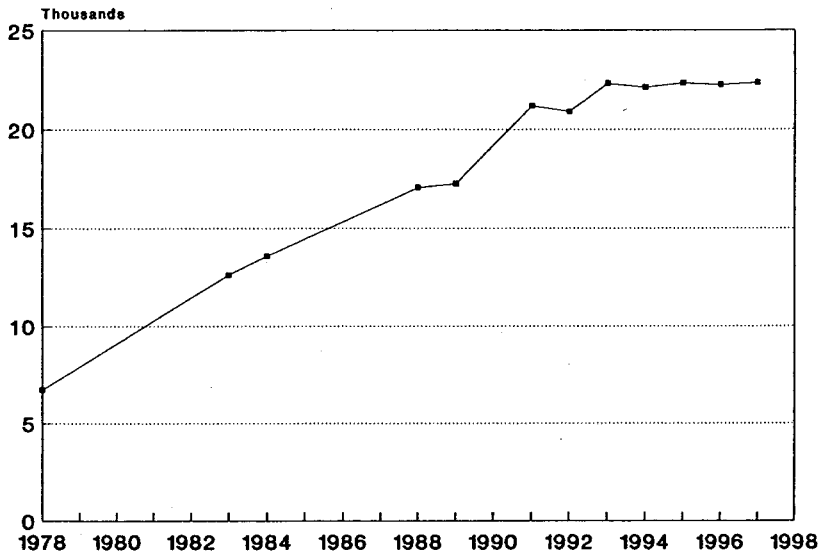
CONCLUSION

Mr. Chairman, as Bill Hogarth noted earlier today, the Administration is currently developing a proposal to reauthorize the MMPA. The Report to Congress that I have discussed will be included in its considerations. Again, I appreciate the opportunity to testify today and would be pleased to answer any questions you or other members of the Subcommittee may have.

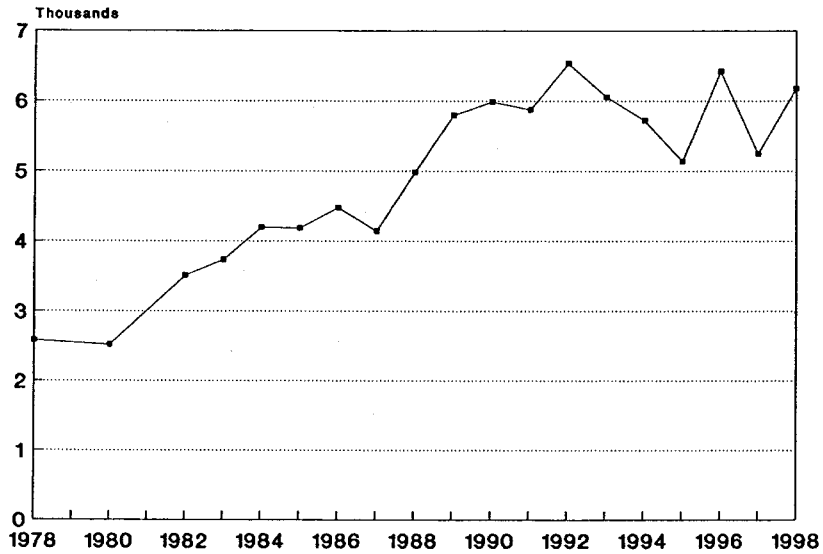
[An attachment to Mr. Scordino's statement, "Report to Congress - Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Ecosystems," has been retained in the Committee's official files.]

[Additional attachments to Mr. Scordino's statement follow:]

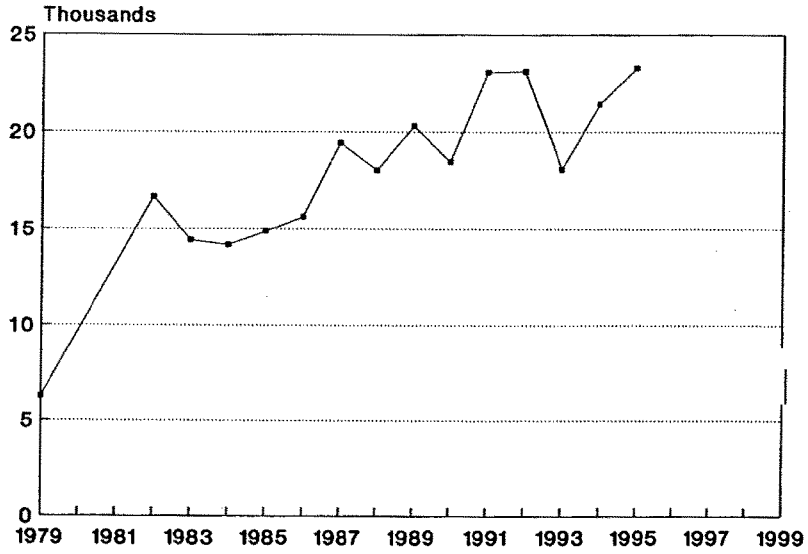
WASHINGTON HARBOR SEAL COUNTS



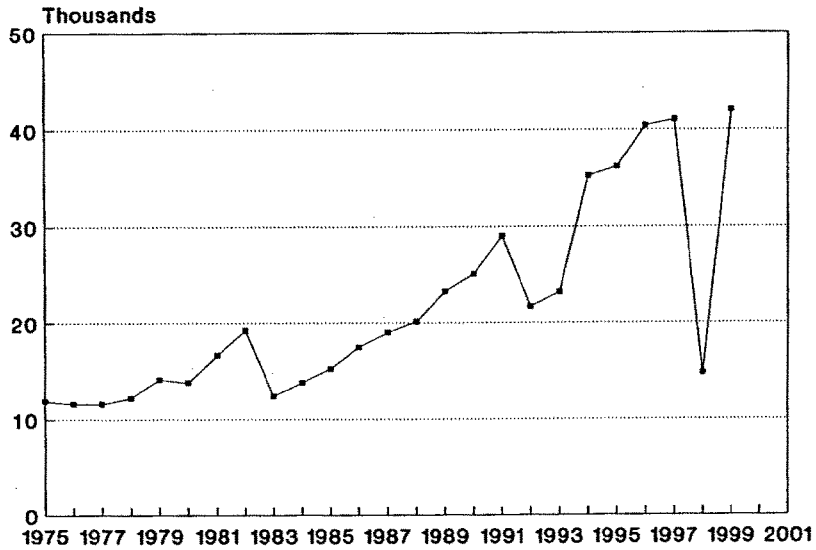
OREGON HARBOR SEAL COUNTS



CALIFORNIA HARBOR SEAL COUNTS



CALIFORNIA SEA LION PUP COUNTS



Mr. GILCHREST. Thank you very much, Dr. Scordino.

Mr. Bob Fletcher?

STATEMENT OF ROBERT FLETCHER, PRESIDENT, SPORTS FISHING ASSOCIATION OF CALIFORNIA

Mr. FLETCHER. Good afternoon, Chairman Gilchrest and members. I am Bob Fletcher, president of the Sportfishing Association of California, also known as SAC, a nonprofit association representing the majority of the passenger sportfishing fleet in California.

Twenty-nine years after the passage of the Marine Mammal Protection Act, the population of California sea lions has rebounded beyond anyone's expectations, and today probably exceeds historic levels. The result of this population explosion has been an ever-escalating battle between sport and commercial fishermen and pinnipeds, and the fishermen are losing, thanks in large part to the restrictions placed on them by the Marine Mammal Protection Act.

One of the more frustrating problems for the sportfishing fleet involves a relatively few nuisance animals which have learned to meet the sportfishing boats as they depart the harbors and follow the boats to the fishing grounds. It makes no difference how many moves the captains make, the sea lions just follow in the wake to the next spot and then ambush the passengers' fish when they hook up.

In total frustration, one skipper reported to the outdoor editor of a local newspaper that he had had a great day fishing but a poor day catching, thanks to sea lions. His report included a catch of 38 fish heads and two whole fish.

Sea lions also harass the live bait harvesting boats on the bait grounds, and at times packs of 50 to 60 sea lions will jump into the nets and feast on the trapped bait, damaging the nets and most of the bait that they don't eat. These aggressive animals have also been known to lunge at crew members who were scooping bait on the bait receivers, and they have even attacked anglers in small boats.

For the commercial fishing fleet, similar conflicts exist. Drift gillnet swordfishermen often lose much of their catch before they can even bring the nets on board. Lobstermen complain of having over 50 percent of their traps smashed by sea lions who are after the bait inside. And set gillnet fishermen have occasionally lost their entire catch of halibut and white sea bass to these marauding pinnipeds.

Salmon troll fishermen likewise have terrible problems with sea lions. One experienced salmon fisherman, known to many of us, lost 68 consecutive salmon and then quit fishing that day in disgust.

While Pacific harbor seals create less of a problem, they have recently started grabbing more fish off both recreational and commercial fishermen's lines and out of the trawl and gillnets.

Mr. Chairman, you asked that I commend on the 1999 NMFS report to Congress on impacts of seals and sea lions, which I think was an outstanding treatment of what is clearly a controversial subject. In my mind, the most important recommendation in the report was that Congress should develop safe, nonlethal deterrent de-

vices. You have heard from Dr. Scordino about our efforts. SAC itself has spent thousands of dollars in an effort to develop a non-lethal deterrent device, and even with NMFS funding and assistance, a workable device has yet to be developed.

I feel sure, however, that with congressional support, a device capable of deterring sea lions could be available in the near future. Making Federal funds available would create incentives that I am sure would encourage private sector participation. I know the technology is out there. We just need the stimulus that Federal grants would provide.

A second important recommendation would be to implement site-specific management of California sea lions and Pacific harbor seals. We have seen that relatively few problems animals are responsible for many of the interactions. If State and Federal resource agency officials were given general authority for limited removal in those areas where documented problems exist, the magnitude of the conflicts would decline dramatically.

In 1994, when the MMPA was reauthorized and fishermen lost the right of last resort lethal removal of sea lions, commitments were made that congressional support for the development of non-lethal deterrents would be a top priority. We have yet to see that support, or a deterrent device that works. The simple fact is that commercial and recreational fishermen on the West Coast are being driven out of business by these robust populations of seals and sea lions, and the time for change in the act is now.

One way you could show support would be to hold hearings on the West Coast in the near future. I heard you say you may be holding one in Alaska. California would welcome you with open arms. You need to hear from the fishermen in their own words describing the frustrations they feel. We can learn to coexist with these robust stocks of seals and sea lions, but only if we are able to control some of their more aggressive tendencies toward our fishermen and our gear.

Thank you all for your consideration of this critical problem for West Coast fishermen and the industries that rely on and support them.

[The prepared statement of Mr. Fletcher follows:]

Statement of Robert Fletcher, President, Sportfishing Association of California

Chairman GILCHREST & MEMBERS:

My name is Robert Fletcher, and I am the President of the Sportfishing Association of California, (SAC), which is a non-profit political organization representing the interests of the commercial passenger fishing vessel (CPFV) fleet in southern California. SAC represents about 175 boats operating from 23 different Sportfishing landings. Member-boats operate in all major ports between Morro Bay and San Diego, and carry close to 750,000 passengers a year on sportfishing, sport diving and natural history excursions.

29 years after passage of the MMPA, the population of California sea lions has rebounded beyond anyone's expectations, and today the population probably exceeds historic levels. The result of this expansion has been an ever-escalating battle between sport and commercial fishermen and sea lions that the fishermen are losing. These robust populations of sea lions are constantly learning new ways to interact with the boats in the SAC fleet, and over the last few years a small number of individual animals have learned to identify the boats in the fleet. They lay in wait near the harbor entrance, and then follow these boats to the fishing grounds. It makes no difference how many moves the Captain makes, the sea lions just follow in the wake and then ambush the passengers' fish once they hook them. In total frustra-

tion, one skipper reported to the outdoor editor of the local paper that he had had great day fishing but a poor day catching, thanks to the sea lions! His report included 38 fish heads and two whole fish! Sea lions 38 - anglers 2!

Another escalating problem concerns the bait receivers, which are underwater boxes in most of the harbors along the coast where the bait companies hold their live bait for later sale to the commercial sportfishing boats, as well as the large fleet of private recreational boaters. A relatively few problem animals have learned that if they blow bubbles under these bait receivers, the bait will panic and scatter out through the openings in the boxes, and thus become easy prey. On average, the bait receiver operators indicate that less than 50% of the bait placed into the boxes is later available for sale. This problem is not an isolated one, but occurs in most harbors along the California coast. As if these losses were not enough, the harvest of live bait along the coast can be seriously affected by 'packs' of sea lions that wait until the bait is encircled in a net, then pour over the cork line and feast on the trapped bait fish, damaging most of it in the process. In other cases on these bait docks, sea lions have become so aggressive as to lunge at crewmembers in an attempt to get by them and into the nets holding bait that is being readied for sale. I have also included an article from this August's Western Outdoor News to show you just how aggressive these animals can become with recreational anglers on small boats.

So far I have talked about recreational fishing problems with sea lions, but commercial fishermen face the same conflicts and predation. Drift gill net swordfish fishermen complain that in the last few years, sea lions have destroyed more than half the swordfish in their nets before they can bring the nets on board, and these nets are being fished at times more than 100 miles offshore. Lobstermen claim that a group of rogue animals have learned that they can get a free meal if they smash the trap apart so they can get at the bait inside. At times the losses by these fishermen exceed half the traps they set out.

Set gill net fishermen fishing white seabass and halibut outside three miles have told me that on occasion they have lost their entire catch to predation by sea lions.

Finally, the salmon troll fishery in Central California, Oregon and Washington continues to have severe problems with loss of catch to sea lions. Once again a relatively small group of sea lions have learned to follow in the wake of these troll fishermen, watching the activities of the crew on deck. When they see the crewmember go to the gurney to bring in a hooked salmon, they dive down, approach the hooked fish from behind and rip it off the hook. One long-time, highly respected fisherman, Dave Danbom, told of a day where he lost 68 salmon in a row before returning to the anchorage in disgust.

Mr. Chairman, I would also like to comment on the 1999 NMFS Report to Congress on Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Ecosystems, and specifically on several of its recommendations. I am an advisor and past Commissioner on the Pacific States Marine Fisheries Commission (PSMFC), and was involved in a cooperative effort with NMFS to develop the Report, which is an outstanding treatment of this controversial subject. By far and away the most important recommendation was that Congress, "Develop Safe, Non–Lethal Deterrents". SAC has worked for years and spent tens of $1,000s in an effort to find just such a device. So far we have been unsuccessful, although NMFS has supported our efforts through S–K grants, and more recently our efforts and NMFS' have stalled due to the environmental communities' concern for the possibility that such a device may accidentally cause some negative impact to the pinnipeds as we attempt to redirect their attention away from our catch and gear. These are intelligent marine mammals and don't discourage easily!

Notwithstanding these problems, I strongly encourage this Subcommittee to make development of non-lethal devices a high priority, and within your fiscal limitations make funds available to create incentives for private-sector development of an effective device. I am sure the technology is out there; we just need the stimulus that federal grants would provide. Australia has similar problems and could also bring some expertise to the table.

A second important recommendation would, "Implement Site–Specific Management for California Sea Lions and Pacific Harbor Seals." A common thread that runs through most fisheries-pinniped interactions is that a relatively few animals, rogue animals if you will, are creating the majority of the problems. Unfortunately, over time these few are teaching others to, for example, lie in wait at the mouth of spawning streams or fish ladders and "ambush" listed salmonid adults as they return to spawn; follow along behind commercial or recreational salmon boats to 'rip off' hooked fish; follow commercial passenger fishing boats as they leave the harbor and then grab and eat or damage the passengers' catch. If state or federal resource agency officials could be given general authority for limited lethal removal in those

specific areas or in those instances where a documented nuisance animal is operating, the magnitude of the interactions would decline dramatically.

Chairman Gilchrest and members, recreational and commercial fishing on the west coast provides significant economic activity for the coastal communities, but will continue to struggle as long as problem sea lions are allowed to have free rein in our coastal waters. Pacific harbor seals are a lesser problem but with populations on the increase these pinnipeds will also create difficulties, mainly in central California. I would again encourage you to become familiar with the NMFS Report on Seal and Sea Lion Impacts, as it has a wealth of timely information and well thought out recommendations that are even more on target today than when released two years ago.

I haven't touched on the Report's final recommendation, so I would like to make a few remarks on the importance of 'Information Needs' before I close. The last few years have seen a significant increase in the population of California Sea Lions and Pacific Harbor Seals, as well as reports of new levels of interactions between seals and fisheries, and some disturbing reports of cases where sea lions came close to, or did in fact, injure anglers. I had a sea lion jerk a yellowtail out of my hand as I was attempting to release it from a lure, and in the process narrowly missed being hooked myself. An angler in Monterey Bay was bitten in the forearm by a sea lion as he netted a salmon he had just brought to the boat.

This new information is critical in order to follow the changes to marine mammal populations on the west coast, as well as to better understand how these intelligent animals are learning to more effectively live off the efforts of commercial and recreational fishermen, and how they are affecting listed salmonid stocks. As a result, it is of utmost importance that Congress continues funding the collection of timely data on the status of these robust stocks, as well as collecting timely information on the kinds of pinniped-fisheries interactions that are occurring.

Chairman Gilchrest, thank you for the opportunity to provide comments to the Subcommittee on issues of such critical importance to my industry, and I will of course be glad to answer any questions that you or members may have.

[An attachment to Mr. Fletchers statement follow:]

WESTERN OUTDOOR NEWS - AUGUST 28, 2001

Beebe Shots
by Bill Beebe

Bizzare seal encounter

When Lance Rigg went halibut fishing with his longtime buddy Henry Galle in Santa Monica Bay a week ago last Thursday, the last thing Rigg expected was to be attacked and bitten by a seal. The two, as with countless thousands of other anglers up and down this state, have experienced encounters with seals.

Usually, these encounters resulted in such things as scuttling a good bite on a run of a favored game fish, or the outright theft of one of those fish by one or more of the hungry critters. Seeing a seal anywhere on a beach or bay in Southern California is as common as watching the fog roll in, and certainly no cause for alarm.

In Rigg's case, however, he was the victim in one of the most bizarre incidents anyone connected with the event could recall. After speaking with Rigg, I doubt he would have given me the details behind this story had he not "known" me for the many years he used to read my column in the *Santa Monica Outlook* and *South Bay Daily Breeze*.

He is not the type to court publicity. He seemed more concerned how people might portray him for killing such an "innocent" animal. In fact, he refused a request to be photographed to illustrate this story. Instead, he opted to let *WON* use a photo taken by a friend.

"We just started fishing in Henry's boat off the tanker buoys in the bay," the 59-year-old El Segundo angler began describing this bizarre encounter with a seal. "We'd put out a couple of baits when I turned away (from the boat's railing) to put a second bait out when the seal jumped into the boat and nailed me in the back."

At first, Rigg said that he didn't realize the seal had bitten him. But when he saw it jump back into the water, he put his hand to his back. That was when he discovered that he had indeed been bitten.

"I went around to the front of the boat to get Henry, who was in the wheelhouse," Rigg continued narrating his strange encounter. "Then the seal jumped up to the galley window like it was trying to get Henry."

A closer examination of the wound by Henry revealed what appeared to be two moderately deep punctures in Rigg's back, left by the seal's two eyeteeth, and two abrasion areas below the punctures.

Apparently not content with trying to bite both of the fishermen, the seal then attacked the boat's gunwale twice in between several "power dives," Galle said. Then when Rigg stepped to the stern of the boat upon witnessing a third assault by the seal on the gunwale, the seal went after Rigg again.

"It came right in the boat after me," Rigg stated still with a degree of alarm even though it was a week after the incident occurred. "So I grabbed the gaff and gaffed it twice, and killed it with a baseball bat."

His first reaction was to call his friend Mike Reinsch, owner/skipper of the Marina del Rey sportfisher *Betty-O*, to ask advice. Reinsch's father was a well-known Santa Monica physician for many years. My father was one of his patients.

Reinsch offered that Rigg should seek medical assistance to treat the seal bite as quickly as he could. Their biggest concern was that, because of the seal's strange behavior, it might be rabid.

Also of concern was the fact that he had killed a federally pro-

(Continued on next page)

WON - 8/24/01

Beebe column . . .

(Continued from previous page)

tected mammal, which could have resulted in his being charged with a felony. He and Galle aborted their fishing and headed back to King Harbor, where Galle keeps his boat. Galle called the harbor patrol office to alert them that they had killed the seal and was bringing it to them so that they could notify federal authorities.

"I didn't want anyone to think that we'd killed that seal for any other reason than the fact that it had attacked me," Rigg confessed. "When we encounter seals, we just pick up the bait and move somewhere else. We don't have seal bombs in the boat, or guns, or anything like that. We're not out to hurt them."

Galle confirmed Rigg's comment, adding that while he was not in fear of his life — the seal was described as a yearling — "I wasn't going to let it sit there and gnaw on my leg."

"You defend yourself. And do it if it's a 2-pound rat. You're not in fear of your life, but you don't want to get bit, either."

They left the seal's remains at the harbor patrol office, which then called the local Los Angeles County animal control people to pick up the carcass, Rigg said. On the following Monday, after observing another dead seal on the beach where he frequently scans with a metal detector for lost valuables, he called the animal control people to see if the seal had been tested for rabies.

He said he was told that it had not, but was advised that while the chance that the seal was rabid was remote, there was that possibility. He said he was told that there was a record of a seal having been bitten by a land animal that was found to be rabid.

"When I told them that I had seen a dead seal on the beach that very morning about the same size as the one that had bitten me, how do I know that it, too, wasn't rabid. I wanted to know for sure if the one that bit me wasn't rabid. I was told that 'there was that chance.' Then later they called and said that it had been tested, and that it was not rabid."

Not encouraged by the fact that there was still a remote possibility that the seal was so infected, Rigg began treatment for rabies that afternoon. He had had his second vaccination last Thursday, the day of our telephone interview. He is to undergo three more shots before the treatment is concluded in another week.

Shortly after the incident, he said he was called by a National Marine Fisheries Service mammal protection officer who interviewed him about the attack.

"She seemed more concerned about what had happened to the seal than what it had done to me," Rigg noted. Her call was followed by another from a NMFS enforcement officer, who Rigg said cautioned him that the killing of a seal was a felony.

"I told him that I was aware of that, but when you're being attacked the first thing you think of is defending yourself," Rigg said he told the NMFS investigator, who sternly followed with, "How do we know. It is your word against ours." That left Rigg somewhat humiliated at the thought that he might be prosecuted for what he had done.

In recollecting the entire attack incident, Galle said that it "was most unseal-like."

"I might have dismissed the attack on Rigg if that had been the only incident. But there was no chum or nothing else in the water (that might attract fish or seal). The real danger as I saw it was from infection" that might result from the bite.

" . . . I'll be immune to rabies for the rest of my life . . ."

In an effort to learn if Rigg would face federal prosecution for killing the seal, I called enforcement officer Brent Schneider at the NMFS headquarters in Long Beach.

"Under a section in the Marine Animal Protection Act, you can protect yourself if something like that occurs," Schneider stated. He also said that Rigg would not face prosecution under the evidence presented thus far.

Furthermore, he confirmed that a test of the seal's head revealed that it was not infected with rabies, and that the NMFS had "no previous record" of such an attack by a seal on a human.

But since that test, Rigg said, was not made until four days after the incident, and that the animal already had begun decomposing, he had no choice but to protect himself by taking the rabies treatment.

"About the only good thing that came out of this whole mess," he rightfully concluded, "is that at least I will be immune to rabies for the rest of my life."

Mr. GILCHREST. Thank you, Mr. Fletcher.
Mr. Rebuck?

STATEMENT OF STEVEN L. REBUCK, MEMBER, SEA OTTER TECHNICAL CONSULTANT GROUP, SOUTHERN SEA OTTER RECOVERY TEAM

Mr. REBUCK. Thank you, Mr. Chairman. I appreciate very much the opportunity to appear here today. The fishermen from my region of the State, which is south central California and southern California, echo that appreciation.

I have been around sea otters—you have asked me to talk about that—I have been around sea otters since the mid-'50's. I watched my father lose his business in the abalone fishery in California between the late '50's and the early 1960's. Seventeen years ago I appeared down the hall here before another hearing on the Marine Mammal Act. In 1985 I was asked to appear again on the Endangered Species Act, and essentially covering all these same details in regards to sea otters and the at that time proposed translocation of sea otters to San Nicolas Island by the U.S. Fish and Wildlife Service.

We are rapidly losing our fisheries in California, and frankly, Mr. Chairman, I don't know that the people I represent can hang on through another cycle of reauthorization. We really need your help this year, and without it I just don't know how we have commercial fisheries in California. The populations of marine mammals, in particular California sea lions, like Mr. Fletcher has said here, are extremely robust. It is difficult if not impossible many days to land a fish on a sport or commercial boat.

And I think clearly Congress needs to differentiate between these recovered stocks and the ones that may be still critical, but I have heard nothing today really about the improvement in the stocks that has been demonstrated through the Marine Mammal Protection Act. It has really done its job in many ways. I think there needs to be some recognition of that.

Sea lions consume a lot of fish, and I have provided to your staff a work that I did for our State Fish and Game Commission showing that California sea lions in 1995 consumed several times more fish by species than commercial fishermen caught. This is something that we can actually assess. But you asked me to talk about sea otters, so I will switch to that topic.

When I appeared before Congress 17 years ago, I really thought through Public Law 99-625 that we had made a deal, and that deal was that fishermen would be allowed to coexist with sea otters. In my exhibits I have included a number of State documents, and one of those, for example, from the Department of Fish and Game, says they "would like to see the Fish and Wildlife Service abide by Public Law 99-625."

Our Fish and Game Commission stated that there has been a "lack of commitment" and that "Fish and Wildlife Service has led a nonexistent recovery program." Our California Coast Commission asks that there is a need "for a new Federal consistency review." The approval by the Coastal Commission was based on a containment policy, a policy now that has not been lived up to since 1993.

In creating Public Law 99-625, Congress really amended the mandate of the Fish and Wildlife Service. The service has told me many times that their mandate is to recover the sea otter, not to protect fisheries. But you changed that mandate in 1986. You required the service to be involved in the conservation of shellfish resources and the fisheries they support.

Sea otters are rather unique. I have been diving around these animals since the late '50's. I have 45 years of diving experience. These animals eat 25 to 35 percent of their body weight a day, and they don't just eat the same sizes that humans are allowed to harvest. They eat much smaller animals as well.

Scientific research demonstrates well that sea otters and shellfish fisheries cannot coexist, and in recent years that has extended on to our set gillnet fisheries for halibut and other fish, and more recently to the live fish markets where fishermen use traps. So I think for someone say that sea otters and fisheries can coexist is rather naive. It is just contrary to the scientific literature.

The number of sea otters in California is really little changed since the passage of the act in 1972. There was approximately 2,000 sea otters in California at that time, and that number is essentially the same.

Much has been made in recent years, the last couple of years, about a supposed decline in the sea otter population. However, I think if one looks at the methodology that is used in counting and surveying sea otters, you find that there is a 10 percent variable on the plus side, meaning that when the animals are counted, about 10 percent of the animals are missed. So I think there is some question about the supposed decline.

When the Fish and Wildlife Service began the translocation experiment in 1987, there were about 1,400 sea otters in the population, and the service was required to demonstrate that there was excess in nonessential animals for them to capture and relocate, and they did that. Now the population is up around 2,100 animals, it is about a 30 percent increase since 1986, and yet supposedly this is a crisis. They can't determine why the population is declining. I think it is pretty healthy, myself.

The sea otters may be limiting themselves by their food intake. They eat a lot of shellfish. At either end of the range there are areas that are food poor, and that may be a limiting factor in their range expansion and in their population.

I have been involved with this for a long time, and I find it difficult to identify anything, anything that the U.S. Fish and Wildlife Service has ever done to help sea otters in California. There was one thing a few years ago, the prohibition on use of gillnets in shallow water, water shallower than 30 fathoms or 180 feet, but that was accomplished through State legislation. You know, I just question what the Fish and Wildlife Service has really been accomplishing.

One of the things that commercial fishermen did in the mid-'60's was to investigate alternative fishing methods to reduce the entanglement and mortality of sea otters in gillnets. There was a problem during the '80's. I was a co-founder of an alternative gear group, and our findings were actually published by the Marine

Mammal Commission in 1986. So fishermen have been working to solve problems of mortality.

Right now fishermen are being blamed for the supposed decline in otters, although one finds in the scientific literature there is more sea otters dying annually from consumption of parasites related to cat feces than are dying in fishing gear, yet we are being singled out.

Sea otters are an important living marine resource, and I think we are as fishermen concerned about their well-being, but right now they occupy about 30 percent of our State's near shore environment, and I really question why it is that we should be expected to give up the entire State of California for sea otters and eliminate all of our fisheries.

I think that concludes my comments today, Mr. Chairman, and I appreciate the opportunity.

[The prepared statement of Mr. Rebuck follows:]

Statement of Steven L. Rebuck, Member, Sea Otter Technical Consultant Group, Southern Sea Otter Recovery Team

On March 10, 1984, it was my honor to have been selected by a coalition of commercial and recreational fishermen, organized as Save Our Shellfish (SOS) to testify on the Marine Mammal Protection Act (MMPA) Reauthorization, before Congressman John Breaux, Chairman of the Subcommittee on Fisheries and Wildlife, Conservation and the Environment. The panel I sat on that day, like this day, was concerned about the sea otter in California, Enhydra lutris.

Those I represented, then, as now, were concerned about the translocation of sea otters, to San Nicolas Island, Ventura County, California, as planned and executed by the U.S. Fish and Wildlife Service (USFWS). Commercial and recreational fishermen, especially divers, were well aware of the impacts sea otters had in the region between Monterey, California and Pismo Beach, California. They were justifiably fearful of losing even more valuable fisheries, should USFWS carry out the translocation. Knowledge of the proposal had spread through the regional fishing fleet beginning in 1979, when commercial abalone divers encountered biologists, contracting to the USFWS, who were conducting baseline studies at San Nicolas Island. Local fishermen organized as SOS and initiated contact with State and Federal agencies and Congress.

In a May 11, 1981 report by the Comptroller General of the United States, "Congressional Guidance And Better Federal Coordination Would Improve Marine Mammal Management," CED–81–52, it was reported that USFWS had not informed the State of California Department of Fish and Game (DFG) nor the Marine Mammal Commission (MMC) of their intentions to translocate sea otters to San Nicolas Island. The Comptroller reported:

> "After receiving the Interior's comments, we again contacted MMC officials who repeated what we had been told during the review—USFWS had not consulted with them before initiating such studies. We also contacted the Director, California Department of Fish and Game, because the State had reported in a September 20, 1979 letter that F'S had unilaterally chosen a transplant site in spite of the State's request to be involved in the decision. The Director told us that the State had not been consulted by USFWS before it had decided to proceed with studies on San Nicolas Island."

The denial by USFWS that San Nicolas was the target would continue throughout many years, before Congress, the California Coastal Commission (CCC), DFG and including several drafts of an Environmental Impact Study. Ultimately, it was San Nicolas Island which was selected.

The selection of San Nicolas Island appeared contrived. A mapping study prepared by James Dobbins Associates for the USFWS and MMC in 1984, "Compilation and Mapping of Available Biological, Ecological and Socio–Economic Information Bearing on the Protection, Management and Restoration of the Southern Sea Otter", MMC Contract No. 14–16–0009–81–050, identified San Nicolas Island as having very high risks of oil spills due to U.S. Navy activities, high fishery conflicts, and regional pollution problems. Although Dobbins concluded that fishing conflicts at San Nicolas Island appears the least of any site under consideration, Dobbins did report:

"Should dispersal take place to other islands shelves such as the northern archipelago, (San Miguel, Santa Rosa, Santa Cruz, Anacapa) and Santa Barbara Island, conflicts arising from the selection of San Nicolas would be greater (in economic terms) than conflicts arising from dispersal from other zones."

To quell concerns, USFWS biologists proposed they would contain sea otters to a "Translocation–Zone" around San Nicolas Island. Fishermen argued containment would be extremely difficult. The logistics of the island and common bad weather were only the beginning. Once animals left, it was a big ocean where finding a small animal would be very difficult. Ultimately, the fishermen's predictions were far more accurate than USFWS experts.

To address fishermen's concerns, yet allow USFWS to get on with what was being called, "the recovery effort of the century" Congress passed Public Law 99–625 in 1986, creating a legal framework whereby the sea otter in California, listed as Threatened under the Endangered Species Act (ESA) in 1977, could be captured under experimental provisions of ESA Section 10(j) and transported to San Nicolas Island. This law mandated USFWS to protect sea otters and fisheries.

Fishermen had embraced "Zonal–Management" of sea otters as had been recommended to USFWS by MMC in a letter dated December 2, 1980.

In a July 23, 1987 letter to the California Fish and Game Commission (FGC) from USFWS Regional Director, Rolf Wallenstrom, several commitments were made to the State including: ESA Section 6 funds and enhancement of shellfish resources.

Containment of the experimental population became a hot debate during 1987, when USFWS biologist appeared before meetings of the CCC, DFG, FGC, Ventura County Board of Supervisors All of these State and agencies approved the program, but only by slim margins. What swayed the State of California and others was the containment program, which became the cornerstone of the project and project approval.

Once the translocation experiment began in fall 1987, fishermen sued to stop the program, out of fear there was no long-term funding for containment. Unfortunately, the fishermen's suit was dismissed by September 1987. USFWS had already begun to translocate the first few dozen otters even before the legal dust had settled.

Things began to go badly almost from the start. In the USFWS Rule Making, there were commitments for things like an 800 telephone numbers for fishermen to report wayward otters and a promised weekly survey by aircraft. Neither happened. Fishermen who called USFWS often reached an answering machine, which meant overnight, or in the case of weekend calls, a three or four day delay in USFWS action. USFWS also required "verification" of a sighting, delaying recapture even further. Sea otters could move many miles before USFWS took action.

By 1991, it was clear to fishermen that USFWS was not committed to the job they had taken on and promised to the State of California. DFG biologists who conducted most of the recaptures in the "No Otter/ Management–Zone" were frustrated by USFWS failures to have a re-capture team available. In addition, F'S reported, "...we expect a reduction in funding for sea otter research." "Some sea otter research money is being reprogrammed into other non-otter projects."

When USFWS realized fishermen were receiving copies of their weekly reports from DFG, the USFWS stopped producing weekly reports. It should be pointed out that even though the recovery of sea otters in California was a publically funded project, USFWS had long made it very difficult for one segment of the public to participate—fishermen.

Other agencies of the Interior Department also go into the act. In a June 28, 1991 letter to USFWS, Stanley Albright, Regional Director for the National Park Service (NPS) recommended to USFWS they not remove sea otters from the Management–Zone as required by law. Director Albright wrote:

"On May 13, 1991, during the spring survey of the Southern Sea Otter population, 10 otters (including one pup) were observed at San Miguel Island. San Miguel Island is a part of the Channel Islands National Park. We are concerned that current consideration to remove Southern Sea Otters from San Miguel Island in the Channel Islands National Park are counterproductive to recovery and eventual delisting of the subspecies.

We share with your agency the goal of seeing the recovery of sustainable populations of Southern Sea Otters. Natural expansion of the San Miguel population would go a long way towards meeting the Recovery Plan goals of 1) expanding otter numbers and range, and 2) reducing jeopardy to the subspecies from a large-scale oil spill.

We suggest that the U.S. Fish and Wildlife Service review and revise the special regulations promulgated regarding the southern sea otter."

By 1993, USFWS had determined that capturing sea otters and removing them from the "No–Otter/ Management Zone" was causing mortality and USFWS ended the containment program, even though Congress had made it clear that this was an experimental program with no jeopardy.

Soon, the State of California demonstrated alarm. In a January 25, 1994 letter DFG biologist, Fred Wendell estimated the multiplied values of commercial fishing at risk was $73,800,000 recreational fishing at risk was $150,400,000 and oil and gas was $4,666,000,000.

NPS Regional Director Albright also lobbied the Director of DFG to close the abalone resource to fishing in order to rebuild stocks. Mr. Albright's recommendation was curious since sea otters forage on abalone at a much smaller size than is allowed by fishing regulations. Yielding to NPS pressure, DFG closed the commercial and recreational abalone fisheries, south-of San Francisco, beginning 1993, and concluding May 1997.

The following year, in April 1998 more than 100 sea otters occupied an area in Northern Santa Barbara County, near Pt. Conception, the Cojo Anchorage in the northern most tip of the "No–Otter/Management–Zone". This area of low-relief reef structure had been a productive abalone, sea urchin, crab and lobster ground for decades. Within a few months, the area was virtually devoid of living invertebrate marine life. The otters later dispersed from the area. In 1999, nearly 200 otters swam south of Pt. Conception, back to Cojo, and even further south. Pt. Conception is the northern most range of white abalone, Haliotis sorenseni, an endangered species.

Federal biologist Karl Kenyon (1969) published "The Sea Otter in the Eastern Pacific Ocean," North American Fauna 68, Bureau of Sport Fisheries and Wildlife, Dept. of the Interior. Kenyon wrote:

> " The requirement for large amounts of food by sea otters has been discussed. feeding grounds are limited by depth to relatively shallow waters and tag returns indicate that individual sea otters do not range widely along the coast (see Home Range). because of these circumstances which concentrate feeding activities in rather limited areas, it appears probable that a large population of sea otters could seriously deplete food resources within their home range. Evidence is available that this does in fact occur."

SEA URCHIN DEPLETION

"McLean (1962) presents convincing evidence that sea urchin Strongylocentrotus franciscanus has been nearly exterminated in a particular area on the California coast which is occupied by a considerable number of sea otters. Of the area he studied he says (p.101) "the large sea urchin was totally absent, although spines and test fragments were present in gravel samples."

DFG biologists Paul Wild and Jack Ames (1974) in "A Report on the sea otter, Enhydra lutris 1., in California," DFG, Marine Resources Technical Report 20 reported finding whereby 100 sea otters could consume 0.5 to 1.0 million pounds of abalone (whole weight) in one year.

The value of this abalone, in 1997 when the fishery was closed would be approximately $5 million to $10 million ex-vessel or multiplied by 2.7 $13.5 million to $27. million. One could estimate the abalone lost at Cojo Anchorage and northern Management–Zone at $4.5 million to $9 million during a four month period for each of the two years.

In early 1999, USFWS released a Draft Evaluation of the Southern Sea Otter Translocation Program and Draft Biological Opinion (1–8–99–FW–38R).

On April 30, 1999, California Coastal Commission Deputy Director, Susan Hansch wrote the USFWS:

> "Thus, the decision by the USFWS to no longer maintain the "no otter" zone triggers the need for a new federal consistency review to determine if the project continues to be undertaken in a manner consistent with the CCMP."

On May 3, 1999, California Fish and Game Commission Executive Director, Robert Treanor wrote the USFWS:

> "...the Commission is disappointed with the USFWS's decision to recommend that the translocation program is a failure. This action, in effect, will terminate the 1987 Memorandum of Understand (MOU) between the USFWS and State. The MOU, among other things, provides for zonal management of sea otters, which is needed to protect our state's valuable shellfish resource. With reassurance from the USFWS, the State agreed in good faith to the translocation project and MOU, but the total lack of commitment (removal of staff and funding) on the part of the USFWS has led to a nonexistent recovery program."

The Fish and Game Commission also forwarded to USFWS a policy document titled: Fish and Game Commission Policy "Shellfish and Sea Otter Conflicts."

The Fish and Game Commission declares the following:

1. The management and conservation of marine resources are important to the State of California and fish and wildlife resources are held in trust for the people of the State by and through the Department of Fish and Game. [FGC Sec. 711.7 (a) and sec 1600]
2. It is the policy of the State to encourage the conservation, maintenance, and utilization of marine resources for the benefit of all citizens and to promote the development of local fisheries, to encourage the growth of commercial fisheries, and to achieve the sustainable use of the state's fisheries. [FGC Sec. 1700 and Sec. 7055]
3. Significant legislation enacted in 1998 established the State policy that marine living resources are to be conserved, used and restored for the benefit of all citizens; that the health and diversity of entire marine ecosystems and all marine resources are to be conserved; and the State actions are to recognize the importance of sustainable fisheries to the economy and culture of California [AB 1241]
4. The Commission has previously adopted policies to encourage the development and expansion of commercial fishing and to cooperate with local, state and federal agencies and private persons and organizations to further the conservation of fish and wildlife.
5. In 1986 a federal law was enacted amending the Endangered Species Act. The amendment specifically provides authority for the U.S. Fish and Wildlife Service to cooperatively undertake, with the Department of fish and Game, a zonal management plan for the threatened southern sea otter that has its primary objective to conserve both sea otters and local commercial fisheries. This federal law paved the way for a Memorandum of Understanding between two agencies and initiated an extraordinary effort to balance apparently competing needs and give assurances to both wildlife conservation and commercial fishing interests.

Therefore, it is the policy of the Fish and Game Commission to:

1. Actively encourage on its own initiative and with the Department of Fish and Game, consistent with state law and legislatively established policy, a balanced solution to minimize shellfish fishery and sea otter conflicts that provides assurances for sea otter recovery, sustainable local commercial and sport fishing, healthy marine ecosystems, and strong local economies.
2. Support and encourage the Department in completing and maintaining a current comprehensive sea urchin management plan that considers among other issues the long-term impacts of various levels of fishing effort, predation, and habitat quality.
3. Confer with appropriate state and federal agencies, local governments, scientific experts, fishery participants, sea otter support groups, and other interests in exploring options for and identifying a balanced zonal management plan that protects the marine resources of the State and supports sustainable local commercial fishing industries.
4. Promote a healthy marine ecosystem as the single best way to recover sea otters and promote local fisheries and encourage appropriate federal and State agencies to undertake research efforts necessary to identify the cause or causes for the continued decline in the sea otter population.
5. Pursue financial resources to match federal funds in undertaking research and management efforts designed to promote recovery of California's sea otter population while minimizing conflicts with shellfish fisheries and other marine resource uses. These funds could include general State revenues and the State's share of federal funds from Section 6 of the Endangered Species Act, or Pittman–Robertson federal aid. (Adopted April 2, 1999)

On May 11, 1999, Department of Fish and Game Director, Robert Right wrote USFWS:

> "It is the Department's opinion that the compromise reached in developing P.L. 99–625 reasonably balances the needs to protect sea otters with our other public trust responsibilities of maintaining sufficient resources to support human uses of the States renewable resource."

This letter was a companion to an earlier letter dated September 3, 1998 from former DFG Director, Jacqueline Schafer, who wrote USFWS:

> "In the short term, we expect the Service to abide by Public Law 99–625 and the terms of its MOU with the Department of Fish and Game."

The City of Santa Barbara, in an August 26, 1999 letter to Congresswoman Lois Capps, wrote:

"Both the City of Santa Barbara and California Department of Fish and Game are very concerned about the inaction of the United States Fish and Wildlife Service (USFWS) in upholding Public Law 99–625."

"To date, they have failed to honor this law and otters are now extending their range into the restricted zone, causing damage to invertebrate resources. Included in these resources are rare species of abalone that are currently protected from harvest."

"In an effort to bring attention to this issue and make USFWS accountable, the City of Santa Barbara is forwarding to you a recently adopted resolution in support of fisheries management and resource conservation which requires the zonal management of the Southern Sea Otter by the USFWS per their 1987 Memorandum of Understanding between the State of California and the USFWS."

Lastly, is a March 28, 1998 letter from my former Congressman, the Honorable Robert Lagomarsino, who writes (used with his permission):

"I believe it is a contempt of Congress for the U.S. Fish and Wildlife Service to not carry out the law by recapture of sea otters. At the very least they should have notified Congress of what was going on."

"I agree that it would be preferable to have Fish and Game manage the otters."

CONCLUSION

It should be very apparent by now that the USFWS has done an extremely poor job when it comes to how they have managed their obligations, as identified in PL 99–625, the Final Rule Making, the Memorandum of Understanding with the California Department of Fish and Game, the California Coastal Commission, coastal communities, and recreational and commercial fishing.

As a citizen who was directly involved with the creation of PL 99–625 and implementing the "Zonal–Management" approach for the protection of sea otters and conservation of shellfish, there is only one word to describe what has taken place: "BETRAYAL."

Mr. Lagmarsino called it "CONTEMPT."

Director Schafer asked the USFWS to "ABIDE BY PL 99–625."

Executive Director Treanor called it a " LACK OF COMMITMENT" and concluded "USFWS HAS LEAD A NONEXISTANT RECOVERY PROGRAM."

The City of Santa Barbara states clearly, the USFWS has " FAILED TO HONOR THIS LAW."

How is it possible for an agency to cause such disruption in so many coastal communities?

The USFWS has spent millions of public dollars mismanaging the sea otter program in California. At a meet of the Southern Sea Otter Recovery Team at the Monterey Aquarium in April 1999, USFWS Sea Otter Coordinator, Carl Benz was asked how much money was budgeted for sea otter recovery in California. His answer was," $300,000 per year". Next, Mr. Benz was asked what amount was actually spent on sea otters. "None," was his answer. The next question was what then is the money spent on? "Salaries," was his answer. One must ask, where is the evidence that the USFWS has done anything which actually benefits sea otters in California?

In the year 2000, the Commercial Fishermen of Santa Barbara, Inc. felt compelled to file a lawsuit against the U.S. Fish and Wildlife Service for their failure to contain sea otters to San Nicolas Island, to re-capture sea otters in the "No–Otter/Management Zone" and the loss of shellfish resources at Cojo Anchorage, related jobs, income and related economic impacts to the regional economies. It is absolutely shameful that working people have to sue a federal agency to do their job, especially with all the years of negotiation, Public Law 99–625, Memorandum of Understanding, supposed consistency with the Coastal Zone Managment Act, etc...

We respectfully request Congress mitigate the losses caused by USFWS's willful neglect.

REQUESTS AND RECOMMENDATIONS

1) We request Congressional no jeopardy protections afforded commercial fishermen, recreational fishermen, aquaculturists and oil companies in PL 99–625 should be continued as they were in previous MMPA Reauthorizations.

2) We request USFWS live up to their obligation, as mandated in PL 99–625 to protect sea otters, while promoting conservation of renewable shellfish resources for human use fisheries through zonal management of sea otters. USFWS should be

held accountable and deliver on commitments made in the Memorandum of Understanding with the State of California in 1987.

3) We request Congress provide continuous oversight into Department of the Interior activities, including the activities of the USFWS and NPS as it relates to sea otters and fisheries in California, requiring annual reports to the Congress and State of California.

4) We request Congress consider financial mitigation to the State of California and local economies for the losses of valuable shellfish resources pursuant to willful neglect by USFWS.

5) We request Congress provide guidance for reconfiguring the "No–Otter/Management Zone." Marine Protected Areas (MPAs) are being designed by state and federal agencies, commercial and recreational fishermen, academics, environmentalists, and other interested parties for the enhancement and recovery of fish and shellfish stocks, in support of fisheries.

6) We request Congress consider amendments to the MMPA which could allow for return of management to the State of California. This would require funding to the State. A legal opinion, and/or amendment to the MMPA providing for a waiver may be a useful consideration.

7) We suggest Congress may want to consider whether recent range expansion by sea otters is sufficient to allow for delisting from the Endangered Species List.

8) We recommend a hearing on taxonomic clarification. A petition, prepared by SOS in 1982, pursuant to the ESA listing of sea otters in California was shelved by USFWS.

9) Although sea otters are listed as Threatened under the ESA, due primarily to oil spill risks, it has been fishing which has been sacrificed to protect sea otters from oil spills. This is an injustice.

10) Recognize that the risks to sea otters has been significantly reduced since the listing in 1977.

11) We request Congress be aware that at the time the sea otter translocation began, in the fall of 1987, the estimate population was 1,367 (MMC report to Congress) and yet USFWS had "non-essential/excess" animals for capture and translocation. Now, with the year 2001 population estimated at 2,161 the USFWS claims the population is in crisis and they cannot recapture otters. This appears contradictory. Another General Accounting Office investigation may be warranted.

INCREASED PROTECTIONS AND REDUCTIONS OF RISKS TO SEA OTTERS IN CALIFORNIA SINCE 1977

Compiled by Steve Rebuck for the Southern Sea Otter Recovery Team October 1999. There has been a significant reduction in risks to sea otters in California since sea otters were proposed for listing in 1977. In addition, by range expansion and translocation, separate colonies now exist over many hundreds of mile of coast and islands, further reducing risks.

1) $ L billion oil industry clean-up and prevention fund.
2) DFG Oil Spill Prevention and Response Office (OSPRO).
3) OSPRO Wildlife Rehabilitation Facility, Santa Cruz, California.
4) Closure of tanker terminals at: Moss Landing, Estero Bay, Morro Bay, Avila Beach.
5) Chevron and other carriers using Doublehull Tankers.
6) 50 nautical mile voluntary program offshore the sea otter range.
7) Stationing of ocean-going tugs.
8) Monterey Bay National Marine Sanctuary protections and research.
9) Fishermen's Oil Response Team (FORT) 50 boats and 250 trained fishermen.
10) No offshore oil drilling north of Pt. Arguello.
11) Increased use of pipelines instead of tankers.
12) Interior Secretary Bruce Babbit cancels four offshore leases (3 in Santa Maria Basin & 1 near El Capitan) August 13, 1999. 36 more under consideration.
13) Cancellation of planned LPG terminal at Gaviota.
14) Suspension of 19 seismic survey permits in State Waters (inside 3 mi.) beginning 1986. 15) State laws have regulated the use of set-gillnets inside 20 and 30 fathoms near sea otters.

[Attachments to Mr. Rebuck's statement have been retained in the Committee's official files.]

Mr. GILCHREST. Yes, sir. Thank you, Mr. Rebuck.
Mr. Thompson?

STATEMENT OF STEVE THOMPSON, ACTING DIRECTOR, CALIFORNIA-NEVADA OPERATIONS, U.S. FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

Mr. THOMPSON. Thank you, Mr. Chairman. Thank you for the opportunity to provide testimony on the administration's effort to recover the southern sea otter. The administration is committed to recovering the sea otter, and we look forward to working with all of you and all of the interested parties to identify the most effective measures to accomplish this recovery.

The Department of Interior listed the southern sea otter as a threatened species in 1977, and that listing was based on the species' small population size, the greatly reduced range, and the potential risk to catastrophes, both natural and man-caused. Since it was listed, the sea otter population has increased at a rate of about 5 percent per year. However, we did experience a significant decline in the years between 1995 and 1998.

Our recent surveys indicate that the population is stable at about 2,200 otters. To give you some context of that, back in the '30's we had perhaps 50 sea otters on the California coast. We are now up to about 2,200, and perhaps historically, although we don't know exactly, there was anywhere in the neighborhood from 16,000 to 20,000 sea otters.

Our original recovery plan was finalized in 1982 and identified the need to translocate small numbers of sea otters from the existing range to unoccupied habitat. Although translocation was allowed under the Endangered Species Act, we did not have similar authorizations or provisions under the Marine Mammal Protection Act. As Steve just mentioned, that dilemma was attempted to be resolved through Public Law 99-625, which authorized the Secretary of Interior to develop a translocation plan for southern sea otters, administered in cooperation with the affected State, the State of California.

Public Law 99-625 also requires specific conditions, including a specification of a management zone, which is from Point Concepcion south to the Mexican border, where sea otters would be removed using nonlethal means. The primary purpose of this management zone was to prevent, to the maximum extent feasible, the conflicts between the southern sea otter and fisheries resources.

Between August 1987 and March 1990 we translocated 140 sea otters to the central coast at San Nicholas Island in southern California. That population now stands at about 20 individuals. In the management zone we captured and moved 24 sea otters between 1987 and 1993. In 1993 we became concerned that the capture and transport of sea otters found in the management zone could result in the death of some animals, and we suspended moving otters from the management zone. The number of sea otters in the management zone remained small until about 1998, when about 100 sea otters rafted south into the management zone.

In 1999 we prepare a draft evaluation of the translocation program and distributed it to all interested parties. We also reinitiated consultation on the management aspects of the program under the

Endangered Species Act. As a result, we determined that moving sea otters from the management zone will likely jeopardize the continued existence of the species, and further evaluation of the translocation process was warranted.

The department currently faces a conflict between the obligations to isolate and contain southern sea otters pursuant to Public Law 99-625, and our mandate to avoid jeopardizing the continued existence of the species. We have suspended efforts to capture and move southern sea otters from the management zone pending a complete reevaluation of the translocation program, including the preparation of a supplemental to the original Environmental Impact Statement for the program. In other words, we will be putting together a supplemental EIS on the translocation program, and we will also be finishing our recovery plan.

Mr. Chairman, from the outset our efforts to recover the southern sea otter have been carried out under a unique set of circumstances. The southern sea otters are listed under the Endangered Species Act, considered a depleted species under the Marine Mammal Protection Act, and required passage of a special law, 99-625, to authorization the translocation program.

Clearly the department's expectations for the southern sea otter translocation have yet to be achieved, and we intend to examine these circumstances in significant detail through an ongoing National Environmental Policy Act process and a wide open public process. We believe that this decisionmaking process, which will fully involve all affected stakeholders, will help frame the legal and scientific debate so that this conflict can be resolved to advance the concentration of sea otters in a manner that is both fair and equitable to all affected interests.

Mr. Chairman, that concludes my prepared testimony, and I will be happy to answer any questions.

[The prepared statement of Mr. Thompson follows:]

Statement of Steve Thompson, Acting Manager, California/Nevada Operations Office, U.S. Fish and Wildlife Service, U.S. Department of the Interior

Mr. Chairman, thank you for the opportunity to provide testimony on the Administration's efforts to recover the southern sea otter. Recovery of the sea otter will require a sustained effort by the Federal government and our State, local and private partners. The Administration is committed to recovering the otter, and we look forward working with all affected parties to identify the most effective measures to accomplish recovery.

My testimony will describe the history of sea otter management actions, notably the Sea Otter Translocation Program. I will also discuss the challenges we face and how we plan to meet those challenges.

Origins of Southern Sea Otter Translocation Program

On January 14, 1977 (42 FR 2968), the Department of the Interior (Department), through the U.S. Fish and Wildlife Service (Service), listed the southern sea otter (Enhydra lutris nereis) as a threatened species under the Endangered Species Act (ESA). This determination was made on the basis of the species' small population size and greatly reduced range, and the potential risk to the species from oil spills. A southern sea otter recovery team was established in 1980 and a recovery plan for the species was approved on February 3, 1982. Recovery goals included: minimizing risk from potential oil spills; establishing at least one additional breeding colony outside the then-current southern sea otter range; and compiling and evaluating information on historical distribution and abundance, available but unoccupied habitat, and potential fishery conflicts. The approved recovery plan identified the establishment of a second colony of otters by means of translocation of southern sea ot-

ters to a remote location, as what was expected to be an effective and reasonable recovery action. The recovery plan acknowledged that a translocated southern sea otter population could impact shellfish fisheries that had developed in areas formerly occupied by southern sea otters.

The purpose of a translocation program was to establish southern sea otters in one or more areas outside the otters' then-current range. It was believed that this action would minimize the possibility of a single natural or human-caused catastrophe from adversely affecting a significant portion of the population. Ultimately, it was anticipated that translocation would result in a larger population size and a more continuous distribution of animals throughout the southern sea otter's former historical range. The Department viewed translocation as important to achieving recovery of the southern sea otter.

Translocation of a listed species to establish experimental populations is specifically authorized under section 10(j) of the ESA. However, the southern sea otter is protected under both the ESA and the Marine Mammal Protection Act (MMPA), and the MMPA contains no similar translocation provisions. For southern sea otters, this dilemma was resolved by the passage of Public Law (P.L.) 99–625 (Fish and Wildlife Programs: Improvement; Section 1. Translocation of California Sea Otters) on November 7, 1986. This law specifically authorized development of a translocation plan for southern sea otters administered in cooperation with the affected State.

A translocation plan developed by the Secretary of the Interior under P.L. 99–625 was required to include: the number, age, and sex of sea otters proposed to be relocated; the manner in which sea otters were to be captured, translocated, released, monitored, and protected; specification of a zone into which the experimental population would be introduced (translocation zone); specification of a zone surrounding the translocation zone that did not include range of the parent population or adjacent range necessary for the recovery of the species (management zone); measures, including an adequate funding mechanism, to isolate and contain the experimental population; and a description of the relationship of the implementation of the plan to the status of the species under the ESA and determinations under section 7 of the ESA. The purposes of the management zone were: to facilitate the management of southern sea otters; to facilitate the containment of the experimental population within the translocation zone; and, to the maximum extent feasible, prevent conflicts between the experimental population and other fishery resources within the management zone. Under a translocation plan, any sea otter found within the management zone was to be treated as a member of the experimental population. The Department must use all feasible non-lethal means to capture sea otters in the management zone and return them to the translocation zone or to the range of the parent population.

Development of Translocation Plan

On March 6, 1987, the Department completed an intra–Service biological opinion that evaluated a proposed translocation of southern sea otters to San Nicolas Island, our preferred translocation site. The biological opinion analyzed effects on the parent population caused by removal of southern sea otters from the population for translocation. The opinion also analyzed the effects on the species of containment of otters through their removal from the management zone. The proposed translocation plan was found to be a well-designed recovery action that maximized the opportunity for success while minimizing negative impacts on the parent population. The Department concluded that the southern sea otter translocation plan would not likely jeopardize the continued existence of the species.

In May 1987, the Department finalized an Environmental Impact Statement (EIS) that analyzed the impacts of establishing a program to translocate southern sea otters from their then-current range along the central coast of California to areas of northern California, southern Oregon, or San Nicolas Island off the coast of southern California. San Nicolas Island was identified as the preferred alternative. A detailed translocation plan meeting the requirements of P.L. 99–625 was included as an appendix to the final EIS.

Regulations to implement P.L. 99–625 were finalized August 11, 1987, and are found at 50 CFR 17.84(d). They provide details of the translocation plan, including criteria for determining whether the translocation program would be considered a failure. Waters surrounding San Nicolas Island were designated as the translocation zone, and all waters south of Point Conception, California, with the exception of waters surrounding San Nicolas Island, were designated as the management zone.

On August 19, 1987, as part of our cooperative actions with the State of California, the Department signed a Memorandum of Understanding with the California Department of Fish and Game (CDFG) providing for cooperative research and man-

agement efforts to promote recovery of the southern sea otter population in California. The agreement also included provisions to minimize conflicts between southern sea otters, existing shellfish fisheries, and other users of marine resources through containment of sea otters that might enter the management zone.

Implementation of the Translocation Plan

On August 24, 1987, the Department began implementation of the translocation plan by starting to move groups of southern sea otters from the parent population at the coast of central California to San Nicolas Island. In December 1987, in coordination with the CDFG, the Department began capturing and moving sea otters that entered the designated management zone in an effort to minimize conflicts between sea otters and fisheries within the management zone and to facilitate the management of sea otters at San Nicolas Island.

The Department released 140 southern sea otters at San Nicolas Island between August 1987 and March 1990. As of March 1991, approximately 14 sea otters (10 percent) were thought to remain at the island. Some sea otters died as a result of translocation; many swam back to the parent population, some moved into the management zone; and the fate of more than half the sea otters taken to San Nicolas is unknown. In 1991, due to low retention and survival, the translocation of sea otters to San Nicolas Island stopped. However, the Department continued monitoring the sea otters remaining in the translocation zone. Sea otter surveys at San Nicolas Island are now conducted by the Biological Resources Division of the U.S. Geological Survey on a bimonthly basis.

Sea otters were captured and removed from the management zone until February 1993. At that time, two sea otters that had been recently captured in the management zone were found dead shortly after their release in the range of the parent population. A total of four sea otters were known or suspected to have died within 2 weeks of being moved from the management zone. The Department suspended all sea otter capture activities in the management zone to evaluate sea otter capture and transport methods. Results of the evaluation were inconclusive, but the Department remained concerned that capture and transport of sea otters found in the management zone could result in the death of some animals. Between December 1987 and February 1993, 24 sea otters were captured and removed from the management zone and returned to the parent range. Of these, two sea otters were captured twice in the management zone after being moved to the northern end of the parent range, suggesting that capture and relocation were ineffective. Containment efforts were discontinued after 1993 in response, in part, to our concerns about the unexpected mortalities of otters experienced during or shortly following their removal from the management zone. The Department also recognized that techniques at the time, which proved to be less effective than originally predicted and were labor intensive, were not a feasible means of containing otters. In 1997, CDFG announced that they also would no longer be able to assist with sea otter captures in the management zone.

Assessment of the Translocation Plan

A group of approximately 100 southern sea otters moved from the parent range into the northern end of the management zone in 1998. At the same time, range-wide counts of the southern sea otter population indicated a decline of approximately 10 percent since 1995. Given the decline in the southern sea otter population, the Department asked the Southern Sea Otter Recovery Team, a team of biologists with special expertise in sea otter ecology, for a recommendation regarding the capture and removal of sea otters in the management zone. The recovery team recommended that sea otters not be moved from the management zone to the parent population because moving large groups of sea otters and releasing them within the parent range would be disruptive to the social structure of the parent population.

In August 1998, two public meetings were held to provide information on the status of the translocation program, describe actions we intended to initiate, and solicit general comments and recommendations. At these meetings, the Department announced that it would reinitiate consultation under Section 7 of the ESA for the containment program, and begin the process of evaluating the program under the failure criteria established for the translocation plan. The technical consultant group for the Southern Sea Otter Recovery Team, composed of representatives from the fishery and environmental communities as well as State and Federal agencies, was also expanded to assist with evaluating the translocation program. The Department provided updates on the translocation program and status of the southern sea otter population to the California Coastal Commission, Marine Mammal Commission, and California Fish and Game Commission in 1998 and 1999.

In March 1999, the Department distributed its draft evaluation of the translocation program to interested parties. The draft document included the recommendation that the translocation program be declared a failure because fewer than 25 sea otters remained in the translocation zone and reasons for the translocated otters' emigration or mortality could not be identified and/or remedied. The Department received substantive comments from agencies and the public following release of the draft for review.

In accordance with our re-initiation of consultation under Section 7 of the ESA, the Department prepared a draft biological opinion evaluating southern sea otter containment. The draft opinion was distributed to interested parties for comment on March 19, 1999, and a final opinion was completed on July 19, 2000. The re-initiation of consultation was prompted by the receipt of substantial new information on the population status, behavior, and ecology of the southern sea otter that revealed effects of containment that were not previously considered. Specifically, the biological opinion noted that in 1998 and 1999 southern sea otters moved into the management zone in much greater numbers than had occurred in prior years; analysis of carcasses indicated that southern sea otters were being exposed to environmental contaminants and diseases which could be affecting the health of the population; range-wide counts of southern sea otters found numbers were declining; recent information, in particular the implications of the effects of the Exxon Valdez oil spill, indicated that sea otters at San Nicolas Island would not be isolated from the potential effects of a single large oil spill; and the capture and release of large groups of sea otters was likely to result in substantial adverse effects on the parent population. The Service concluded that reversal of the southern sea otter population decline, and expansion of the southern sea otter's population distribution are essential to its survival and recovery. The Service further concluded that continuation of the containment program, while restricting the southern sea otter to the area north of Point Conception, will likely exacerbate recent sea otter population declines and increase vulnerability to catastrophic man-made or natural events, and therefore, likely jeopardize the continued existence of the species.

On February 8, 2000, a draft revised recovery plan for the southern sea otter was released for public review and comment (65 FR 6221). Based on the observed decline in abundance and shift in distribution of the southern sea otter population, the recovery team recommended in the draft revised recovery plan that it would be in the best interest of the southern sea otter to declare the experimental translocation of southern sea otters to San Nicolas Island a failure and discontinue maintenance of the management zone. The recovery team's recommendation will be fully evaluated through the Department's ongoing process on the translocation action under the National Environmental Policy Act (NEPA).

Current Status of Southern Sea Otter

Based on three year running averages of Spring survey data, the sea otter population in California declined from 1995 to 1998. Recent counts indicate that the population is stable but still below the number believed necessary for recovery of the species. In spite of more than 140 sea otters having been translocated and evidence of reproduction, the population of sea otters at San Nicolas Island currently comprises only approximately 20 adults.

Current Status of the Translocation Program

To date, the southern sea otter translocation program has not met the primary goal of establishing a viable population of southern sea otters at San Nicolas Island. In the translocation plan, the Department determined that a self-sustaining colony size of 150 southern sea otters would be necessary to consider the population at San Nicolas Island viable. Based on trends since the translocation program began and current circumstances, a population of this size may not be attainable.

On July 27, 2000, the Department published in the Federal Register a notice of intent to prepare a supplemental EIS on the southern sea otter translocation program (65 FR 46172). The need for a supplemental EIS is based on changed circumstances and new information since the original EIS on translocation of southern sea otters was prepared in 1987. Public scoping meetings were held on August 15 and 17, 2000, with the purpose of soliciting information to be used in defining the overall scope of the supplemental EIS, identifying significant issues to be addressed, and identifying alternatives to be considered. The technical consultants to the Southern Sea Otter Recovery Team met to discuss the supplemental EIS on September 26, 2000. A scoping report for the supplemental EIS was distributed to the public and interested parties in April 2001. The Department plans to complete a draft supplemental EIS to be released for public comment. A final document will subsequently be published. The draft evaluation of the translocation program re-

leased in March 1999 will be finalized following further opportunity for public participation in the decision-making process and completion of the EIS.

On January 22, 2001, the Department published a notice of policy regarding capture and removal of southern sea otters from a designated management zone (66 FR 6649). The notice advises the public that the Department has determined that it will not capture and remove southern sea otters from the southern California sea otter management zone pending completion the ongoing reevaluation of the southern sea otter translocation program, including the preparation of a supplemental EIS and release of a final evaluation of the translocation program.

As explained in the notice, the Department currently faces a conflict between the obligation to isolate and contain California sea otters pursuant to Public Law 99–625 and the statutory mandate to avoid carrying out activities that are likely to jeopardize the continued existence of those otters. We believe that the ongoing decision-making process, which will fully involve all affected stakeholders, will help to frame the legal and scientific debate so that this legal and scientific conflict can be resolved to advance the conservation of sea otters in a manner that is both fair and equitable for all affected interests.

Working with the State and Stakeholders

The Department has become increasingly active in our efforts to identify actions which will promote the recovery of the southern sea otter, address sea otter/fishery conflicts, and build partnerships. For example, in 1999 the Department created a forum to identify, prioritize, coordinate, and implement research needs for California sea otters. The Monterey Bay Aquarium now hosts this research symposium annually, bringing together scientists, resource agencies, and others working in the field of southern sea otter research and conservation to discuss goals and objectives in a creative and productive setting.

Through our endangered species landowner incentives program, we secured funding to help fishermen convert fishing gear that may trap and drown sea otters. Metal rings that will prevent otters from entering traps have been purchased and are now in the process of being distributed to fishermen. The California Fish and Game Commission has responded to concerns for sea otters by requiring these rings to be placed in live fish traps along the central California coast where most sea otters reside.

A separate, community-based dialog on sea otter issues was initiated by environmental and fishery groups in 1999. In 2000, the dialog ceased. However, renewed efforts to reconvene the group have begun, and a meeting is likely to occur in the near future. The Administration supports this involvement by the community and hope to be invited to participate in a way that will promote a better understanding and resolution of sea otter issues.

As interest in sea otter/fishery interactions has increased, the Department has increased its efforts to keep key partners informed and up to date. It has provided frequent updates to the California Department of Fish and Game, the California Fish and Game Commission, the California Coastal Commission, and the Marine Mammal Commission, and it will continue to keep these agencies informed and involved in decisions it makes with respect to sea otters.

Conclusion

Mr. Chairman, from the outset, our efforts to recover the southern sea otter have been carried out under a unique set of circumstances. The fact that this species is listed under the ESA, and designated as a depleted species under the MMPA, required passage of a special law to authorize the translocation program. This allowed the Department to employ the experimental population recovery tool that has proved highly successful for many other imperiled species. Clearly the Department's expectations for the southern sea otter translocation have yet to be achieved, and we intend to examine these circumstances in significant detail through the ongoing NEPA process.

The NEPA process that is now underway will engage all stakeholders in helping the Department examine all available alternatives to address the current biological status of California sea otters, the problems posed to sea otters that remain within the translocation zone, the legal and scientific conflicts posed by the containment obligation, and the possible need for greater management flexibility. No decisions have been made by the Department at this time, nor will any decisions be made until the current collaborative process of working with all stakeholders through the NEPA process is completed.

Mr. Chairman, this concludes my prepared testimony. I would be happy to answer any questions.

Mr. GILCHREST. Thank you very much, Mr. Thompson.
Ms. Gaffney?

STATEMENT OF KAITILIN GAFFNEY, CALIFORNIA CENTRAL COAST PROGRAM MANAGER, THE OCEAN CONSERVANCY

Ms. GAFFNEY. Good afternoon, Mr. Chairman and members of the Subcommittee. Thank you for the opportunity to present our views on marine mammals in California under the Marine Mammal Protection Act. My name is Kaitilin Gaffney, and I am the California Central Coast Program Manager for The Ocean Conservancy, and I work out of our field office in Santa Cruz, California.

The Ocean Conservancy, formerly the Center for Marine Conservation, played a leadership role in the development of the 1994 amendments to the MMPA, and we continue to actively participate in the amendments' implementation. We believe that Congress's refinements to the act in '94 brought it closer toward achieving its goals, and that the MMPA is now an international model for the effective conservation of marine mammals. In short, any problems with the MMPA stem not from the act itself, but from the agencies' failure to implement the act fully and effectively, compounded by a chronic lack of resources for effective implementation.

Today I am going to address both of the issues that the other panelists have discussed, interaction of pinnipeds, specifically California sea lions and harbor seals, with salmon stocks, as well as the translocation program for the southern sea otter.

Regarding the first issue, I think it is important to reiterate that pinnipeds have never been the primary cause of salmonid declines. In fact, studies show that salmon make up only a very small percentage of pinniped diet, and that habitat loss is the primary reason behind salmonid declines.

Nonetheless, in 1994 the environmental community, the fishing industry, and Congress provided the National Marine Fisheries Service with the tools in Section 120 of the MMPA to effectively and strategically address the issue of pinniped predation on threatened and endangered salmonid stocks. Consequently, there is no need to amend the MMPA to allow a blanket authorization for the intentional lethal removal of pinnipeds by State and Federal resource agencies.

The Ocean Conservancy believes that nonlethal deterrents hold the most promise to resolve pinniped-salmonid conflicts. NMFS has failed, however, to publish final guidelines for what constitute acceptable nonlethal deterrents, and NMFS and Congress have not yet placed a sufficient priority on dedicated and aggressive research into the development of safe, effective nonlethal deterrents.

The Ocean Conservancy strongly opposes any attempt to remove the statutory prohibition on shooting pinnipeds. Any change to the prohibition will only result in the wounding, maiming and death of hundreds of marine mammals, an outcome that would be both inhumane and unacceptable to the public.

Furthermore, allowing fishermen to target marine mammals will create an unreasonable risk to species such as Steller sea lions, southern sea otters, and harbor porpoise which could easily be shot by mistake. Because NMFS cannot adequately enforce the existing

statutory prohibition, amending it will only create an open season on marine mammals throughout the United States.

Regarding the issue of southern sea otters, the U.S. Fish and Wildlife Service's efforts to recover the southern sea otter, listed as threatened under the Federal Endangered Species Act, have not been successful. As was mentioned by Mr. Thompson, the population has declined in recent years, and the current population of just under 2,200 animals is down significantly from historic population estimates of 16,000 to 20,000 individuals.

I am not going to repeat the history of the translocation law, as Mr. Thompson covered that very well, but will go again to 1999 and the biological opinion finding issued by the Fish and Wildlife Service. The finding stated that removal of sea otters from the southern California otter-free management zone would jeopardize their continued existence, and that allowing the southern sea otter to expand its range is essential to the species' survival and recovery.

Fish and Wildlife service now proposes to designate the translocation a failure, and has initiated formal reevaluation of the translocation program. Given the decline in the southern sea otter population, The Ocean Conservancy concurs with the biological opinion, and we believe that moving any animals out of the management zone at this time would likely result in mortality and would further impede recovery, in violation of the Endangered Species Act. We believe that efforts to remove otters from San Nicolas Island will have similar results in mortality, and that the existing population at San Nicolas Island should be allowed to remain.

In the past, The Ocean Conservancy has engaged in discussions with the fishing industry about how to recover the southern sea otter while working to ensure sustainability of commercial fisheries. We would be very interested in resuming this dialogue to further explore potential areas of common ground.

In the meantime, we urge Congress to refrain from amendment the MMPA, and to instead direct Fish and Wildlife Service to expeditiously complete its reevaluation of the translocation program. We also request that Congress provide funds to undertake activities that the environmental community and the fishing industry have identified as beneficial to both sea otter recovery and fisheries.

In conclusion, we believe that the existing MMPA provisions provide the appropriate methods for addressing pinniped-salmonid conflicts, and we concur with Fish and Wildlife Service's biological opinion on the southern sea otter, and support the agency's efforts to reevaluate the translocation plan.

Mr. Chairman, that concludes my remarks. I would be happy to answer any questions.

[The prepared statement of Ms. Gaffney follows:]

Statement of Kaitilin Gaffney, California Central Coast Program Manager, The Ocean Conservancy

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to present our views on the Marine Mammal Protection Act (MMPA), specifically marine mammal species in California. My name is Kaitilin Gaffney. I am the California Central Coast Program Manager for The Ocean Conservancy, and I work out of our field office in Santa Cruz, California.

I. SUMMARY STATEMENT

The Ocean Conservancy (formerly the Center for Marine Conservation) played a leadership role in the development of the 1994 amendments to the MMPA, especially those governing the incidental take of marine mammals in commercial fisheries. Since that time we have been one of the few organizations that has actively participated in the amendments' implementation. The Ocean Conservancy believes that, in the sweeping changes made in 1994, Congress refined the Act and brought it closer toward achieving its goals of recovering marine mammal populations. The MMPA is an international model for effective conservation and protection of marine mammals. In short, the problems with the MMPA stem not from the Act itself, but often the agencies' failure to implement the Act fully and effectively, compounded by a chronic lack of resources for effective implementation.

A. Pinnipeds and Salmonids

Pinnipeds have never been the primary cause of a salmonid decline, nor has it been scientifically demonstrated that they have been a primary factor in the delayed recovery of a depressed salmonid species. Studies show that salmonids make up only a small percentage of pinniped diets, and that habitat loss is a primary factor in salmonid decline. Nonetheless, in 1994, the environmental community, the fishing industry, and Congress provided the National Marine Fisheries Service (NMFS) with the tools in Section 120 of the MMPA to effectively address the issue of pinniped predation on threatened and endangered salmonid stocks. Section 120 serves its purpose. NMFS successfully used these provisions to authorize the removal of California sea lions preying on steelhead trout at the Ballard Locks. In future conflicts NMFS must choose to use these tools wisely.

The Ocean Conservancy asserts that, as currently codified in law, Sections 109 and 120 of the MMPA [16 U.S.C. §§ 1379,1389] offer effective and precautionary approaches to protecting pinnipeds, salmonid fishery stocks, biodiversity, and human health and welfare. Consequently, there is no need to amend the MMPA to allow a blanket authorization for the intentional lethal removal of pinnipeds by state and federal resource agencies. Nor do we believe that such a blanket authorization would be acceptable to the public.

Non-lethal deterrents hold the most promise to resolve the problems of "nuisance" animals and as such should be the first line of defense as opposed to lethal removal. NMFS has failed, however, to publish final guidelines for what constitute acceptable non-lethal deterrents. NMFS and Congress have also not placed a sufficient priority on dedicated and aggressive research into the development of safe, effective non-lethal deterrents. Development of such deterrents will aid in reducing not only predation on threatened and endangered salmonid stocks, but also other conflicts between pinnipeds and humans.

The Ocean Conservancy strongly opposes any attempt to remove the statutory prohibition on shooting marine mammals or even to modify this provision to allow limited, controlled shooting of pinnipeds by fishermen. Any change to the prohibition will only result in the wounding, maiming, and death of hundreds of marine mammals. Furthermore, allowing fishermen to target marine mammals will create an unreasonable risk to special status species such as Steller sea lions, southern sea otters, and harbor porpoise, which could easily be shot "by mistake." Because NMFS cannot adequately enforce the existing statutory prohibition, amending it will only create an "open season" on marine mammals throughout the United States.

B. Southern Sea Otters

The U.S. Fish and Wildlife Service's (FWS) efforts to recover the southern sea otter (Enhydra lutris nereis), found mainly off the central California coast and listed as threatened under the federal Endangered Species Act (ESA), have not been successful. The southern sea otter population steadily increased between the mid–1980s and 1995, but since 1995, the population has declined by 9%. The current population is over 2,100 individuals, a drastic decline from an estimated historical population of 16,000–20,000 animals. The greatest extant threats to the subspecies include oil spills, infectious disease, water pollution, and fishing gear and nets.

In accordance with the Translocation Law (Public Law 99–625 (1986)), in 1986, FWS began an experiment to move (translocate) a number of southern sea otters to San Nicolas Island off of Santa Barbara—south of their current range—in an attempt to create a viable second colony. The goal was to minimize the chance that the entire subspecies could be wiped out by an oil spill along the central California coast. FWS estimates that the translocated colony on San Nicolas Island currently numbers less than 25 sea otters. The Translocation Law also created an otter-free zone to protect shellfish fisheries from sea otter competition, as these areas were devoid of otters at the time of the law's passage. Despite their declining population,

a group of predominantly, male sea otters have seasonally expanded their geographical range into this otter-free zone. Moreover, new information on sea otters discovered since the Translocation Law's enactment demonstrate that its statutory provisions are no longer in the southern sea otter's best interests.

Last year, FWS found in a biological opinion that the removal of sea otters from the Southern California "otter free management zone" would jeopardize their "continued existence" and that allowing the southern sea otter to expand its range is "essential to the species' survival and recovery." Furthermore, FWS has completed a Draft Evaluation of the Southern Sea Otter Translocation Program, in which the agency proposes to designate the translocation a failure, and has initiated development of a Supplemental Environmental Impact Statement (SEIS) to reevaluate the translocation program. Given the decline in the southern sea otter population, The Ocean Conservancy concurs with the biological opinion and believes that moving any animals out of the management zone would likely result in mortality that would further impede recovery, in violation of the ESA.

Preventing further range expansion will limit the natural growth rate of the mainland population. Access to historical habitat may halt the population decline, prevent nonspecific resource competition, and decrease the potential for disease by providing more space. Therefore, The Ocean Conservancy supports declaring the translocation a failure, eliminating the management zone, allowing the existing population at San Nicolas Island to remain, and allowing sea otters to naturally expand their range.

In the past, our organization has engaged in discussions with the fishing industry about how to recover the southern sea otter while working to ensure the sustainability of commercial shellfish fisheries. We would be interested in resuming this dialogue with the fishing industry to continue to explore potential areas of common ground that we have identified that, utilizing the existing statutory and regulatory framework would promote both the recovery of the southern sea otter and healthy fisheries. In the meantime, we urge Congress not to amend the MMPA, but to direct FWS to expeditiously complete its reevaluation of the translocation. We also request that Congress provide funds to undertake activities that the environmental community and the fishing industry have identified as beneficial to the sea otter recovery and fisheries.

II. BACKGROUND

In 1994, Congress reauthorized the Marine Mammal Protection Act. As part of the reauthorization, a coalition of environmental organizations, animal welfare groups, commercial fishing industry representatives, and Alaska Natives, assisted by a professional facilitator, developed a negotiated proposal to govern the incidental take of marine mammals during commercial fishing operations. A subgroup of the negotiating parties also met to address the issue of pinniped predation on declining salmon stocks. This subgroup proposed to Congress a multi-phased process to evaluate whether all feasible methods of non-lethal deterrence had been tried and whether the target marine mammals were responsible for the fish declines. This proposal also called for a task force to consult with the Secretary of Commerce about seals and sea lions considered "nuisance" animals because of their predation of steelhead and salmon, species prized by commercial and recreational fishermen, at the Ballard Locks in Seattle and in the Columbia River. Based on the outcome of the consultation and an evaluation by the task force, the subgroup's proposal suggested creating a process whereby the Secretary of Commerce could authorize a State to lethally remove pinnipeds that prey on endangered salmonid stocks, provided that the nuisance pinniped(s) is identified as habitually exhibiting dangerous or damaging behavior that could not be deterred by other means. Congress enacted this proposal, as part of its 1994 amendments. It was ultimately codified at Section 120 of the MMPA.

As amended, the MMPA requires the Secretary of Commerce to engage in a scientific investigation to determine whether California sea lions and Pacific harbor seals are having a significant negative impact on the recovery of salmonid fishery stocks that have been listed under the ESA or are approaching endangered or threatened status, or are having broader impacts on the coastal ecosystem of Washington, Oregon, and California [16 U.S.C. § 1389(f)(1)]. In 1997, NMFS published a Technical Memorandum with the results of those investigations. The MMPA also required NMFS to enter into a discussion with the Pacific States Marine Fisheries Commission to develop recommendations to address problems NMFS identified in its scientific investigations [16 U.S.C. § 1389(f)(2)]. In February 1999, NMFS issued a Report to Congress on the agency's investigations and consultations with the states of Washington, Oregon, and California concerning the impact of California

sea lions and Pacific harbor seal impacts on salmonid stocks and coastal marine ecosystems.

III. THE OCEAN CONSERVANCY'S GENERAL RESPONSE TO NMFS': REPORT TO CONGRESS: IMPACTS OF CALIFORNIA SEA LIONS AND PACIFIC HARBOR SEALS ON SALMONIDS AND WEST COAST ECOSYSTEMS

The Report to Congress contains four recommendations: (1) implement site-specific management for California sea lions and Pacific harbor seals; (2) develop safe, effective non-lethal deterrents; (3) selectively reinstate authority for the intentional lethal taking of California sea lions and Pacific harbor seals by commercial fishermen to protect gear and catch; and (4) conduct research to fulfill information needs. The Ocean Conservancy strongly opposes the first and third recommendations: Congress should neither amend the MMPA to implement site-specific management for pinnipeds, nor selectively reinstate authority to allow intentional lethal taking of pinnipeds by commercial fishermen to protect gear and catch. The Ocean Conservancy strongly supports the second and fourth recommendations: Congress should direct NMFS to develop safe, effective non-lethal deterrents and conduct the research necessary to fulfill significant information gaps.

NMFS' recommendations in the Report to Congress are based on a scientifically unsubstantiated leap from the conclusions of the Working Group Report. At no time did the Working Group Report recommend the lethal removal of pinnipeds. Rather it identified data gaps and provided recommendations for additional research. Although The Ocean Conservancy fully supports the Working Group Report's recommendations, it is our position that, based on the information presented in both the Report to Congress and the Working Group Report, NMFS fails to make its case that these species of pinnipeds are "having a significant negative impact on the recovery of salmonid fishery stocks" or "are having broader impacts on the coastal ecosystem of Washington, Oregon, and California."

California sea lions and Pacific harbor seals are a natural part of the Pacific ecosystem, opportunistically utilizing a prey source concentrated by man-made structures (*e.g.*, dams) and habitat changes. The reasons for salmonid declines are complex, and are largely unrelated to pinniped predation. Indeed, studies demonstrate that salmonids make up a very small percentage of pinniped diets. If NMFS expects to recover salmonid stocks, it must begin by fully addressing human-induced causes of these declines. Until NMFS has effectively addressed the human causes of salmonid declines, or until one of the salmonid stocks is demonstrably threatened with extinction by continued pinniped predation, there is no justification for NMFS' recommendation to amend the MMPA to exponentially expand lethal removal authorizations.

The Ocean Conservancy strongly recommends that Congress instruct NMFS to continue to evaluate and assess the level of pinniped predation on salmonids and aggressively pursue the research recommendations outlined in both the Report to Congress and the Working Group Report. Furthermore, we strongly recommend that, once data become available, NMFS compare levels of pinniped predation to the impacts of other activities (including commercial and sport fishing, dam operations, silvicultural and agricultural practices), and investigate and propose actions to mitigate the decline of salmonid stocks by all sources. Blaming pinnipeds for the salmonid stocks' failure to recover merely distracts from efforts to find real solutions to the problems facing the salmonids. Because NMFS was unable to demonstrate that California sea lions and Pacific harbor seals are "having a significant negative impact on the recovery of salmonid fishery stocks" or "are having broader impacts on the coastal ecosystem of Washington, Oregon, and California," no amendments to the existing statutory scheme are warranted. The Ocean Conservancy strongly urges NMFS to use the existing tools in the MMPA such as Section 120 and to enforce fully the prohibition on intentional shooting of marine mammals.

Although The Ocean Conservancy recognizes that NMFS continues to encounter problems with public interactions with marine mammals, recovering marine mammal populations also provide tremendous benefits to coastal communities and to the public. Increasing populations of both humans and marine mammals along the nation's coasts have brought about not only competition for space on boats, docks, and beaches, but also increased opportunities for wildlife viewing, education, and benefits to coastal tourism.

Increased interactions between humans and pinnipeds potentially produce "nuisance" pinnipeds. The public's desire to feed, swim with, and otherwise interact with these animals can modify an animal's behavior and create conflicts when marine mammals do not distinguish between taking fish out of commercial gear and food from well-meaning citizens. The Ocean Conservancy will continue our efforts to edu-

cate the public about how enjoy viewing marine mammals from a distance without modifying their behavior.

The Ocean Conservancy agrees with NMFS that there is insufficient data to evaluate the impacts of pinnipeds on the marine ecosystem and the economic losses to the fishery from pinniped depredation of catch and damage to gear. But we contend that pinniped competition with humans for fisheries resources is not a sound scientific reason to call for the lethal removal of pinnipeds. Rather, NMFS and the fishing industry should reevaluate the fishery management allocation system in order to provide an adequate allocation to predators (*e.g.*, pinnipeds) whose very survival is inextricably linked to fishery resources. Moreover, NMFS and the fishing industry must recognize, as other industries do, that there are cost associated with doing business and that these costs include a certain level of acceptable loss due to interactions with resident wildlife.

Below, we provide more detailed comments on NMFS' recommendations contained in its Report to Congress.

A. "Implement Site-specific Management for California Sea Lions and Pacific Harbor Seals"

The Ocean Conservancy strongly opposes NMFS' "framework" proposed under its first recommendation: "(1) In situations where California sea lions or Pacific harbor seals are preying on salmonids that are listed or proposed for listing under the ESA salmonids or salmon populations the states identified as being of special concern ("depressed," "critical," or "sensitive"), immediate use of lethal removal by state or federal resource agency officials would be authorized; (2) In situations where California sea lions or Pacific harbor seals are preying on salmonid populations of concern or are impeding passage of these populations during migration as adults or smolts, lethal takes by state or federal resource agency officials would be authorized if (a) non-lethal deterrence methods are underway and are not fully effective, or (b) non-lethal methods are not feasible in the particular situation or have proven ineffective in the past; (3) In situations where California sea lions or Pacific harbor seals conflict with human activities, such as at fishery sites and marinas, lethal removal by state or federal resource agency officials would be authorized as a last resort when an individual pinniped fails to respond to repeated deterrence attempts, or when repeated deterrence attempts do not affect the behavior of an individual pinniped over the long-term." Although all lethal removals would have to be within the Potential Biological Removal level for the pinniped stock established by NMFS in accordance with the MMPA, The Ocean Conservancy asserts that NMFS' proposal is unnecessary and unjustified. Section 120 of the MMPA already establishes the appropriate procedures for lethal removal of California sea lions or Pacific harbor seals where these species are preying upon ESA-listed.

Section 120 requires that, for a lethal take to be authorized, the applicant (a state) must demonstrate that individually identifiable pinnipeds are having a significant negative impact on the decline or recovery of salmonid fishery stocks that are listed or are approaching the status of threatened or endangered species under the ESA. The Ocean Conservancy strongly disagrees with the characterization of these provisions by NMFS and the states of California, Oregon, and Washington as cost prohibitive, cumbersome, restrictive, and unworkable. We also dispute the assertion that the amount of evidence needed to establish that specific pinnipeds are having a significant negative impact on a salmonid population is "time-intensive, difficult, and expensive to obtain." The Ocean Conservancy firmly believes that Section 120 provides the flexibility to conserve salmonid stocks and establishes the appropriate burden of proof to demonstrate both that pinnipeds are having a significant negative impact on the decline or recovery of salmonid fishery stocks and that all reasonable and prudent non-lethal measures have failed.

During the 1994 MMPA reauthorization process, environmental and fishing interests as well as Congress recognized the need to address the role of pinnipeds in the conservation of endangered salmonid populations. The provisions of Section 120 are the result of a compromise that allows NMFS to take action where necessary to protect salmonid populations, yet preserves the protective nature of the MMPA. The Ocean Conservancy believes that a blanket authorization to states for the immediate use of lethal removal is contrary to the precautionary protection goals and objectives of the MMPA, will not guarantee that these pinnipeds receive the protections afforded by the MMPA, and fails to recognize that lethal removal is a flawed management tool. A general authorization would grant too much authority and discretion to state agencies, while removing two key components of Section 120—scientific review and assessment of existing data, and public oversight and participation in the process. If pinniped populations have in fact expanded to the point where

they need to be managed, the MMPA provides a process for transfer of management authority to the states subject to specified conservation standards.

In this context, it is worth noting that an authorization under Section 120 has been used only once, at the Ballard Locks in Seattle, Washington. On June 30, 1994, the Washington Department of Fish and Wildlife (WDFW) requested authority under Section 120 to kill problem California sea lions at the Ballard Locks. Evidence indicated that the non-lethal methods tried underwater firecrackers, chaser boats, acoustic deterrence and harassment devices, taste aversion conditioning, experimental barrier nets, trapping and relocation had not succeeded in eliminating sea lion predation. On January 6, 1995 (less than six months later), NMFS provided WDFW with a three-year conditioned authority to lethally remove fifteen California sea lions to protect steelhead salmon from predation at the Ballard Locks.

The Ocean Conservancy believes not only that this single experience is an insufficient basis for recommending significant statutory amendments to Section 120, but that it actually demonstrates that the process worked as intended. Specifically, it took less than six months from the request letter to the Secretary to the removal of animals at the Locks. Although NMFS and WDFW accused the process of being "cumbersome and time-consuming," Section 120 enabled wildlife management officials to conduct removals at the locks expeditiously and efficiently.

Restoring anadromous fisheries and managing human and pinniped competition are not easy goals to achieve. The Ocean Conservancy strongly believes, however, that a lasting solution to these challenges must be collaborative, must be based on adequate scientific research, and must address the values and interests of fishers, conservation organizations, and the general public. There are, no doubt, refinements that could be made in the process that do not require amendments to the MMPA. Consequently, we recommend that NMFS and the states of Oregon, Washington, and California work with the conservation community to reevaluate the process and devise mechanisms to make implementation of Section 120 more responsive and effective, but that Congress decline to amend Section 120 as proposed by NMFS.

B. "Develop Safe, Effective Non-lethal Deterrents"

The Ocean Conservancy strongly supports NMFS' recommendation that safe, effective non-lethal deterrents be developed and that these deterrents should not have detrimental incidental effects. We agree that research and development of pinniped deterrence methods and devices should be a priority and should receive adequate funding. However, The Ocean Conservancy disagrees with the statement in the Report to Congress that "lethal removal remains the only effective alternative until satisfactory deterrence measures are developed." Rather, we agree with the Working Group Report's statement indicating that lethal removal or pinniped population control may not always result in the expected outcome and may, in fact, be detrimental to fish populations and the ecosystem as a whole.

Many fishing industries and environmental groups have long supported the use of non-lethal deterrents. In 1998, representatives from conservation and animal welfare organizations, commercial and recreational fishing associations, universities, and federal and state agencies gathered at the Monterey Bay Aquarium to discuss the interactions of California sea lions and Pacific harbor seals with wild salmon stocks and commercial and recreational fisheries that operate off the West Coast. During these discussion it became clear that representatives from both the fishing industry and the conservation/animal welfare community are frustrated with NMFS' failure to issue final guidance on non-lethal methods to deter pinnipeds from dangerous or damaging interactions with fishing gear and catch. The group sent a joint letter to NMFS requesting the immediate release of the non-lethal deterrents guidelines. Although NMFS originally published draft guidelines for public comment in the spring of 1995 (60 Fed. Reg. 22345 (May 5, 1995)), nearly six years later, NMFS has ignored this and other requests and still has not released final guidelines. We believe it is now time for Congress to direct NMFS to promptly release final guidelines for the use of non-lethal deterrents by commercial and recreational fisheries in interactions with marine mammals. In addition, we believe Congress should amend the MMPA to require NMFS to promulgate binding and enforceable regulations for the use of non-lethal deterrents, as set forth in Attachment A.

The Ocean Conservancy continues to believe that the best hope to address pinniped interactions with salmonid stock and fishermen is to develop safe, non-lethal deterrents. To further this goal, we also recommend that MMPA Section 120 be amended to provide for an aggressive and dedicated research program to develop and test safe, non-lethal deterrents, as follows:

AMENDMENT—At Section 120 strike existing section (f) and insert new section (f) as follows:

1) (A) Within six months of enactment, the Secretary shall undertake a review of all non-lethal methods that have been used to deter marine mammals and, in consultation with the Marine Mammal Commission, representatives of academic and scientific organizations, environmental groups, commercial and recreational fisheries groups, gear technologists, and others as the Secretary deems appropriate, shall develop a research plan for the development and testing of safe, non-lethal deterrents. In developing the research plan the following criteria should be considered—— (i) Such deterrents may be used to deter marine mammal interactions with (a) fishing gear and catch; (b) aquaculture resources; or (c) salmonid fishery stocks that have been listed as endangered or threatened under the Endangered Species Act of 1973 (16 U.S.C. § 1531), or that the Secretary finds are approaching endangered or threatened status; and (ii) The research and development of such deterrents shall provide for the humane take of marine mammals by harassment, as defined at Section 3(18)(A)(ii) of this Act.
2) The Secretary shall undertake and complete the research plan, and any related studies, developed pursuant to paragraph (1) not later than 2 years after the date of enactment.
3) The Secretary shall submit a report of the findings and recommendations for additional research or action to the Committee on Resources of the House of Representatives and the Committee on Commerce, Science and Transportation of the Senate 3 year after the date of enactment.
4) The Secretary shall make the report and the recommendations submitted under paragraph (3) available to the public for review and comment for a period of 90 days.
5) For the purposes of carrying out this section, the Secretary may accept, solicit, receive, hold, administer, and use gifts, devices, in-kind contributions, and bequests.
6) There are authorized to be appropriated to the Secretary $1,500,000 annually to carry out the provisions of this subsection.

C. "Selectively Reinstate Authority for the Intentional Lethal Taking of California Sea Lions and Pacific Harbor Seals by Commercial Fishermen to Protect Gear and Catch"

The Ocean Conservancy strongly opposes NMFS' recommendation to amend the MMPA to allow NMFS to authorize lethal removal of marine mammals on a case-by-case basis to protect gear and catch in certain fisheries, even if, as NMFS proposes, the authorization is subject to the following conditions: 1) there is a demonstrated need; 2) the lethal authorization would be limited to specific areas and fisheries; 3) fishermen who receive such authorizations should be trained or demonstrate the ability to distinguish among pinniped species; 4) the taking would have little effect on the pinniped stock's continued growth and recovery; and 5) the taking would be within the PBR for the stock.

In 1994, the environmental community and the fishing industry negotiated a proposal to prohibit the intentional lethal taking of marine mammals to protect gear and catch, which became a critical provision in the 1994 Amendments to the MMPA. Congress' intent in enacting this provision is clear not only from the plain language of the statute but also from testimony and statements in the Congressional Record. The Ocean Conservancy, as one of the negotiating parties, felt strongly that the fishing industry should not intentionally shoot marine mammals to deter them from gear and catch. In addition, The Marine Mammal Center (TMMC) presented compelling evidence that shooting as a deterrence method is inhumane and often results in wound rather than dead. The industry conceded that, given the availability of various non-lethal deterrents, shooting marine mammals to deter them from fishing gear and catch was not necessary. Furthermore, intentional shooting of marine mammals is unacceptable to the general public.

Despite the enactment of this hard-won landmark provision, fishermen continue to shoot marine mammals. In fact, from 1992 to 2000, TMMC documented 305 gunshot pinnipeds and sea otters along the Central California coast alone. TMMC further estimates, based on extrapolated data from estimates of gunshot wounds in live stranded marine mammals, that between two to three hundred pinnipeds die each year along the entire California coast from gunshot wounds. Consequently, there is no reason to believe that NMFS would be able to adequately monitor and enforce any authorization for lethal removal and compliance with conditions thereto. Permitting lethal removal to protect gear and catch, when fishermen continue to disobey the existing law and shoot marine mammals, would be tantamount to providing the fishing industry with a blanket authorization to dramatically increase

killing and wounding pinnipeds and sea otters. We strongly oppose any efforts to lift the existing prohibition on intentional shooting of marine mammals.

D. "Information Needs"

The Ocean Conservancy supports NMFS' recommendations for additional research and the research programs outlined in the Report. However, The Ocean Conservancy does not support the direct lethal collection of pinnipeds for analysis of stomach contents given that non-lethal methods exist to achieve the same objective.

IV.THE OCEAN CONSERVANCY'S VIEWS ON MANAGEMENT AND RECOVERY EFFORTS FOR THE SOUTHERN SEA OTTER

A. Background

1. THE TRANSLOCATION LAW

Scientists and managers have been concerned for some time that this already threatened population could be wiped out as a result of a single large oil spill that would likely drift across the entire extent of the sea otter's range. In December 1980, the Marine Mammal Commission recommended to FWS that the agency implement a zonal management strategy to establish one or more sea otter colonies outside the existing southern sea otter range, which would ultimately result in a larger population size and a more continuous distribution of animals throughout the range.

In 1986, Congress passed the Translocation Law to authorize the development and implementation of a program to establish at least one sea otter colony outside the existing sea otter range in California. The Translocation Law authorized FWS to move a group of southern sea otters from central California to San Nicolas Island in the Santa Barbara Channel the translocation zone. FWS believed that this area would be far enough away from the parent population to prevent animals moving back to that population, while also providing sufficient space to allow recovery of the species and protect it from an oil spill off the central coast of California.

At the same time, the southern California shellfish fishery expanded to include sea urchins as well as abalone. To protect commercial and recreational shellfish fisheries that had developed in the absence of otters, otter-free zones or management zones were developed to prevent sea otters from recolonizing areas where substantial shellfish fisheries existed.

In the management (otter-free) zone surrounding the translocation zone, sea otters would be excluded and only accorded the status of species that have been proposed for listing ("candidate species") under the ESA. Under the Translocation Law, sea otters found in the management zone must be removed and relocated into either the translocation zone or to the parent population by non-lethal means. In addition, the law provides that incidental takes of sea otters by non-lethal means in the management zone do not violate either the ESA or the MMPA. The capture and relocation of the sea otters found in the management zone was designed to contain the experimental translocated population, minimize conflicts between sea otters and commercial and recreational fisheries, and protect the otters because protection measures within the management zone are less stringent. Finally, the law specifically acknowledges that members of the parent population may be found in the management zone and requires their removal to maintain that zone free of otters.

2. IMPLEMENTATION OF THE TRANSLOCATION LAW

The overall goal was to ensure that 70 sea otters would remain on San Nicolas Island and form the core nucleus of breeding sea otters. Within the 1997 to 2002 time frame, the San Nicolas population was expected to reach its carrying capacity of about 500 animals.

Between 1987 and 1990, 252 sea otters were captured from the central California coast for translocation to San Nicolas Island, but only 140 were actually released. These otters did not fare well. Some returned to the coast, primarily back to their original range of southern sea otters, but the fate of most is unknown, despite the fact that all were tagged. Some of these otters may have lost their marking tags while returning to the mainland, while others probably died. At least seven of the 140 took up residency at the island, and the population was estimated to be 14 to 17 in 1998. Since 1990, the population at San Nicolas Island has not change significantly, numbering between 6 to 23 animals.

3. FAILURE OF THE TRANSLOCATION

It is FWS' responsibility to keep the management zone free of sea otters. Between 1987 and 1994, twenty independent sea otters (10 male and 10 female) and four dependent pups have been captured in the management zone and released in the northern portion of the mainland population.

The containment effort, which includes monitoring, capture, and relocation of the sea otters, proved expensive and largely unsuccessful. Support for the program has waned in recent years. In 1990, the California Fish and Game Commission voted to cease supporting the project, and subsequently, the California Coastal Commission asked FWS to stop the project. In 1993, four sea otters died within a two-week period, shortly after release into the parent population. As a result, relocation/containment efforts were put on hold.

FWS had anticipated that approximately 5 percent of the animals captured and relocated could die from associated stress, but the mortality rate in 1993 alone was approximately 16 percent. These deaths called into question whether the relocation/containment methods were being conducted by non-lethal means. Since 1993, the FWS has not removed any otters from the management zone. FWS data indicated that the numbers of sea otters at San Nicolas Island were continuing to decline, and the translocation program should be evaluated.

During the past few years, a number of southern sea otters have entered the management zone. In March 1998, 65 sea otters were found in and near Cojo Anchorage. By April, the number of otters grew to 101, mostly male sea otters. From January through February 1999, the number of sea otters around Gaviota Pier to Cojo Cove (areas within the management zone) increased from 50 to 152 animals. The possibility that this many sea otters may inhabit the management zone prompted FWS to reevaluate the management plan.

The increase in the number of otters in the management zone raised concerns within the fishing industry that the animals may have devastating effects on shellfish fisheries in the management zone. On the other hand, some scientists noted that, given the recent data indicating that the population has declined by 9% since 1995, the range expansion was likely not due to an increasing population, but may be a population in search of new or additional prey, or a population that may be moving due to limited prey resources in some areas of its range. The Recovery Team noted that the capture and relocation of a large number of sea otters could result in the deaths of animals, and disrupt the existing social structure of resident groups, increase competition for resources, and very possibly exacerbate the observed population decline.

B. FWS Actions

Between 1999 and 2000, FWS completed a Biological Opinion (BO) under the ESA and a Draft Evaluation of the Southern Sea Otter Translocation Program, in which FWS proposed to designate the translocation a failure. In addition, during the summer of 2000, the FWS published a notice of intent and held scoping meetings to prepare a supplemental Environmental Impact Statement (EIS) that will reevaluate the current translocation program for southern sea otters and analyze a number of sea otter management alternatives.

1. FWS' CURRENT POSITION ON CONTAINMENT/TRANSLOCATION

In completing the BO, the FWS determined that moving the animals out of the management zone would jeopardize the species, in violation of Section 7 of the ESA. This conclusion was reached because:

- "Reversal of the southern sea otter's population decline is essential to its survival and recovery. Continuation of the containment program will result in the capture, transport, and release of large numbers of southern sea otters from the management zone into the parent population. These actions may result in direct deaths of individuals and disrupt social behavior in the parent population to the degree that those affected individuals will have reduced potential for survival and reproduction. These effects will exacerbate the recent decline of the southern sea otter population."
- "Expansion of the southern sea otter's distribution is essential to its survival and recovery. Continuation of the containment program will result in the exclusion of southern sea otters from the area south of Point Conception. This effect will perpetuate the species' artificially restricted range and its vulnerability to the adverse effects of oil spills, disease, and stochastic events."

The Ocean Conservancy concurs with the FWS' findings, and fully supports the jeopardy analysis in the BO.

2. THE OCEAN CONSERVANCY'S POSITION ON CONTAINMENT AND TRANSLOCATION

The Ocean Conservancy recognizes that the decision by FWS to declare the translocation a failure will have ecological effects for southern sea otters and their habitat, and economic effects on commercial shellfish fisheries and their future management requirements. However, we believe that moving any animals out of the management zone would likely result in mortality that would further impede the recovery of this species, in contravention of the ESA. Moreover, we assert that the sea otter population must be allowed to expand its range, to promote recovery, avoid nonspecific resource competition, and decrease the potential for disease. Therefore, The Ocean Conservancy supports declaring the translocation a failure, eliminating the management zone, allowing the population at San Nicolas Island to remain, and allowing sea otters to naturally expand their range to allow for the recovery of the species under the ESA and to achieve its Optimum Sustainable Population under the MMPA. We urge Congress not to amend the MMPA to address this issue and, instead, ask Congress to direct FWS to move forward expeditiously to complete its EIS on the translocation.

C. Litigation

In April 2000, a segment of the southern California commercial shellfish fishery filed a lawsuit seeking to force FWS to capture and remove sea otters from the management zone. The plaintiffs took this action, even though they were engaged in discussions with the environmental community in an effort to find consensus on issues of concern. The Ocean Conservancy, Defenders of Wildlife and Friends of the Sea Otter successfully intervened in this case on the side of FWS, despite opposition by the plaintiff fishing groups. The Humane Society of the United States and the Animal Protection Institute received amicus curiae status.

The fishing groups who brought this case did not represent the views of many components of the California fishing community, which favored instead an approach of trying to achieve consensus through negotiations. The existence of the lawsuit brought the discussions between the fishing industry and environmental community to a halt.

Without ever pressing their case, the plaintiff fishing organizations dropped this case in July, 2001. They dismissed the case without obtaining any relief or even submitting pleadings. Now that the lawsuit has been dropped, efforts are underway to explore the possibility of resuming the discussions.

D. The Next Chapter Looking for Common Ground

The Ocean Conservancy supports public policies that foster healthy marine ecosystems and the recovery of threatened species, but values doing so with sensitivity to the needs of fishing communities. We believe that existing law, including the ESA and the MMPA, provides appropriate mechanisms for conserving sea otters while addressing the concerns of fishing communities.

In October 1999, members of the fishing industry and conservation community met to explore areas of common interest and identify actions to recover southern sea otters while at the same time ensuring the sustainability of commercial shellfish fisheries. At their first meeting group established as an objective: Maintain well-managed and abundant fisheries, healthy marine ecosystems, and recover the southern sea otter population.

To achieve this objective, the group framed an action plan that included three broad-based goals: 1) pollution prevention; 2) southern sea otter and ecosystem health assessment and maintenance; and 3) habitat enhancement.

In March 2000, the group devised tasks within the action plan to achieve these goals and objectives. They are:

1) Support State Funding for Ecosystem Health Monitoring: More than five years of data indicate that nearly 40% of the dead sea otters examined had an infection at the time of death. We must determine sea otter infection rates, how and to what degree infections are communicable, and the incidence and impact of environmental contaminants, toxins and parasites on sea otters and their critical habitat. The marine ecosystem health monitoring program should be a jointly funded cooperative research effort to collect and coordinate ecological, biomedical, chemical and physical oceanographic and atmospheric information to identify trends and events affecting otter and shellfish populations.
2) Fishing Gear Modifications: The commercial fishing industry can play a leadership role in efforts to avoid sea otter entrapment in fishing gear by establishing

gear advisory groups. The gear advisory groups could work to mitigate potential entrapment in live fish traps, including crab and lobster traps, which may be used within sea otter habitat.

3) Sea Otter Health Assessment: A multi-agency, public/private effort is needed to assess the health of wild California sea otters. We propose using the model that NMFS has successfully implemented to obtain valuable information on the health status of the Hawaiian Monk Seal population.
4) Jump Start the Sea Otter Recovery Plan: As FWS nears completion of an updated Southern Sea Otter Recovery Plan, we should work jointly to secure federal, state, and private funding for its implementation.
5) Enhance Shellfish Recruitment and Harvest within and beyond the Sea Otter Range: If adequate research and development funds were available, fishermen could develop and test devices to enhance protected habitat for commercial shellfish harvesting. We should work to engage scientists, engineers, and funders in developing pilot projects for creation of artificial shellfish refugia and cryptic habitat.
6) Map Fisheries and Key Facilities Within Current and Potential Otter Range: Managers may be able to effectively and cooperatively develop adaptive conservation and management strategies allowing for the co-existence of fisheries and sea otters, if information systems exist to easily identify fisheries, activities, and facilities that may affect or be affected by current or future overlap of the sea otter range expansion and fishing grounds.
7) Adaptive Management Strategies to Address Otter Range Expansion: To improve conservation and management, scientists must better understand and develop predictive models to assess the impact of sea otter movements on fisheries and the ecosystem. This will require additional research into the dynamics of sea otter range expansion and correlations to overall indicators of ecosystem health, pollution or disease conditions and prey availability.
8) Identify Mitigation Measures for Fisheries That Could Be Affected by Sea Otter Range Expansion: Although no one can predict to what degree sea otters may continue expanding their range, scientists, fishermen, environmentalists, and managers should work toward identifying possible measures to reduce potential adverse impacts on certain fisheries and mariculture projects. The mitigation measures should help reduce fishery impacts due to area or species closures, disease or pollution and should take into consideration the social and economic consequences of changes to the fisheries, marine habitat, and sea otter recovery brought about by the movement of sea otters.

Both the fishing industry and the conservation community have expressed an interest in resuming these discussions that were stalled due to the litigation. The Ocean Conservancy believes that these action items provide a possible basis to continue these discussions. We will work to promote both the recovery of the southern sea otter and its co-existence with healthy fisheries. We request that Congress refrain from amending the MMPA, but instead support this effort to find common ground and instruct FWS to actively participate in these discussions. We anticipate that, where we reach consensus on actions that will benefit both sea otters and fisheries, we will request that Congress provide the necessary funding.

V. OTHER MARINE MAMMAL PROTECTION ACT ISSUES

The Ocean Conservancy continues to play a key role in the implementation of the MMPA. We currently serve on all of the take reduction teams established by NMFS under the Act and provided our views on their implementation to the Committee at its hearing on the MMPA on April 6, 2000. We have witnessed significant progress toward the MMPA's goal of recovering marine mammal populations. The MMPA has been and remains an international example for effective conservation and protection of marine mammals. In our opinion, the problems with the Act stem not from the MMPA itself, but from ineffective implementation and a chronic lack of resources.

Consequently, The Ocean Conservancy believes that, at most, only minor, non-controversial amendments to fine-tune the Act are needed when the Act is reauthorized. Our attached recommendations provide such changes. Specifically, The Ocean Conservancy's goals for a reauthorization are to: (1) preserve gains that were made in 1994 (*e.g.*, Sections 109 and 120); (2) prevent weakening of the definition of harassment; (3) further define the zero mortality rate goal; (4) strengthen the MMPA penalty and enforcement provisions to effectively deter violations of the MMPA; (5) improve the implementation of the take reduction team process; (6) protect and strengthen the Act's co-management provisions to allow co-management of non-de-

pleted species/stocks; (7) increase authorized funding levels for the Act overall, and specifically the authorized funding levels for the health and stranding response provisions, (8) expand authority under Section 118 to allow the Secretary to authorize a take reduction team for fishery interactions involving prey related issues and other human-related threats (*e.g.* ship strikes); and (9) devise and implement a research plan to develop non-lethal deterrents to prevent marine mammals from interacting with fishers gear and catch.

In conclusion, the MMPA has many of the tools it needs to protect marine mammals. Its implementation could be greatly improved if appropriators would fund the statute at currently authorized levels. Additionally, NMFS and FWS should work with the environmental community and the fishing industry to undertake needed research and improve the MMPA's implementation. At this juncture, these actions may actually do more to conserve marine mammals than additional amendments to the Act.

ATTACHMENT A

THE OCEAN CONSERVANCY

DRAFT MMPA REAUTHORIZATION LANGUAGE

TITLE I CONSERVATION AND PROTECTION OF MARINE MAMMALS

SECTIONS 117 & 118

GENERAL COMMENTS: The Ocean Conservancy, formerly the Center for Marine Conservation, believes that, for the most part, Sections 117 and118 are functioning well and require very little modification. The methods for determining the potential biological removal level (PBR) are risk adverse and scientifically sound. Likewise, the process for gathering information, preparing, and obtaining scientific review of the stock assessments is working well and has resulted in greatly improved stock assessments for most marine mammal stocks. There are several actions that still require regulatory action: (1) definition of Zero Mortality Rate Goal; (2) guidelines for acceptable methods of deterrence; and (3) guidelines for the elements that constitute serious injury. The Ocean Conservancy recommends that NMFS issue these appropriate notices immediately.

SECTION 118(d)—MONITORING INCIDENTAL TAKES

ISSUE: Assistant Administrator Penny Dalton noted in her June 29, 1999, testimony before the House Resources Committee that: "Funds for monitoring programs have been limited; therefore, only fisheries experiencing frequent interactions with marine mammals have generally received priority for observer program coverage. In 1997, approximately 1/5 of the U.S. fisheries having frequent or occasional interactions with marine mammals were observed for these interactions. These large gaps in our knowledge of fisheries' impacts to marine mammal stocks makes it difficult to develop appropriate management measures." In the course of the take reduction team process, the fishing industry and environmental community routinely recommend increased observer coverage. Unfortunately, limited resources have precluded such increases. Consequently, The Ocean Conservancy strongly believes that the Secretary should have the discretion to assess fees, as needed, to initiate and implement an observer program, particularly for those fisheries that request such programs.

AMENDMENT—At Section 118(d) insert a new paragraph (11) as follows:

(11) The Secretary may establish a system of fees to pay for the costs of implementing an observer program established under this section.

ISSUE: The National Marine Fisheries Service has raised concerns regarding whether the agency has the authority to place observers on vessels in Category I and II fisheries that have not registered and obtained marine mammal incidental take authorizations. The Ocean Conservancy believes that NMFS clearly has the authority to place observers on any vessel within a Category I or II fishery, regardless of whether the owner or master of the vessel has registered. To make this point absolutely clear, we believe that the MMPA should be amended to explicitly provide this authority.

AMENDMENT—At Section 118(d) insert a new paragraph (8) as follows:

(8) The Secretary may require that an observer be stationed on a vessel engaged in a fishery listed under subsection (c)(1)(A)(i) or (ii) that is not registered under

subsection (c). In such case the Secretary shall notify the owner and master of the vessel that they are in violation of section (c)(3)(C) of this title.

SECTION 118(c)—REGISTRATION AND AUTHORIZATION

ISSUE: With Section 118 in force, the interim exemption provisions embodied in Section 114 are obsolete and no longer in effect, and, therefore, Section 114 should be removed from the Act entirely and the necessary technical and conforming amendments made to other provisions in the Act. In this situation, the following technical amendment applies:

TECHNICAL AMENDMENT At Section 118(c)(3)(A)(i) delete the phrase "except that owners of vessels holding valid certificates of exemption under section 114 are deemed to have registered for purposes of this subsection for the period during which such exemption is valid."

ISSUE: During several take reduction team negotiations, the NMFS has remarked on instances where vessel owners have refused to allow observers on their vessels and have done so without prosecution. Moreover, enforcement personnel have indicated that their efforts to enforce the Act are constrained because NOAA General Counsel has narrowly interpreted "engaged in a fishery" to mean engaged in the fishery on the day that the refusal occurs. The Ocean Conservancy views this failure to take observers as a flagrant violation of the Act and regards NOAA General Counsel's interpretation as inconsistent with the intent of the Act. Therefore, the following amendments are offered to ensure that vessel owners are motivated to comply with this provision of the Act and to clearly state that NMFS has prosecutorial authority for any violations of this requirement.

AMENDMENT—At Section 118(c)(3)(B) insert new subparagraph (i) as follows:

(i) Any owner or master of a vessel required by the Secretary to take on board an observer and who fails to do so shall be deemed to have violated this title and shall be subject to penalties under this title.

In addition, The Ocean Conservancy recommends the following addition to the list of definitions:

AMENDMENT At Section 3 of the Act, insert a new definition (28) as follows:

(28) The term "engaged in a fishery" means to have a valid permit issued by the Secretary in accordance with the Magnuson–Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.) or the State for any of the fisheries listed under Sections 118(c)(1)(A)(i),(ii), or (iii).

ISSUE: The Ocean Conservancy believes that the Congress should strengthen the incentive for fishermen to register by allowing NMFS to seek the forfeiture of the catch from any fishing operations conducted without the required authorization and to assess a substantial fine against the vessel. In addition, the fine currently stipulated in the Act for failure to display or carry evidence of an authorization is not a sufficient deterrent. This fine must be increased to ensure that owners obtain, and display or carry, evidence of a current and valid authorization.

AMENDMENT—At Section 118(c)(3)(C) amend to read: "shall be subject to the penalties, fines and forfeiture under Sections 105 and 106 of this title, and for violations of clause (iii) shall be subject to a fine of not more than $5,000.00 for each offense."

SECTION 118(f) TAKE REDUCTION TEAMS

ISSUE: Apparently NMFS has yet to realize that consensus is hard-won, and from the perspective of the individuals engaged in this process, take reduction teams are critically important to their livelihood and the conservation of the species. Therefore, NMFS must view the take reduction team process as a priority partnership for the agency and all of the various stakeholders. The ground rules require that all participants have the authority to commit their organizations to the consensus; NMFS must meet this requirement as well. NMFS representatives must be active participants, able to legally evaluate the conservation strategies and commit the agency to the consensus. They must advise the team as to whether the conservation strategies will meet the Act's targets, are easily implemented and enforced, and whether the research recommendations are achievable. It undermines the process when team members conclude the negotiations with false expectations that their recommendations will be implemented. To facilitate decision-making at team meetings, The Ocean Conservancy recommends that the Regional Administrator, a representative from NOAA General Counsel, and a NMFS enforcement officer be present during negotiations when the consensus is being formed.

AMENDMENT Section 118(f)(6)(C) amend the last sentence of this paragraph to read: "Take reduction teams shall, to the maximum extent practicable, consist of an equitable balance among representatives of resource user interest and nonuser interests, "and include, as full-fledged members, representatives from the federal agency offices of legal counsel, enforcement, and the regional administrator."

SECTION 118(j) CONTRIBUTIONS

ISSUE: NMFS has been reluctant to fully utilize this provision of the Act, especially as it pertains to accepting funds from either the fishing industry or the conservation community to observe a particular fishery. NMFS claims that it is uncertain whether it could use such funds to administer an observer or research program. The Ocean Conservancy believes that this should be clarified, as it was the intent of the drafters to provide NMFS with the ability to work cooperatively with various user groups to undertake the necessary measures to effectively implement this section in the event there were insufficient federal funds to conduct research or observer programs.

AMENDMENT At Section 118(j) insert the following: For purposes of carrying out this section, "including observer, research, and education and outreach programs," the Secretary may accept, solicit, receive, hold, administer, and use gifts, devises, and bequests.

SECTION 119—MARINE MAMMAL COOPERATIVE AGREEMENTS IN ALASKA

ISSUE: The Ocean Conservancy supports the notion of co-management by Alaska Natives and the Federal Government. However, to date, the agreements that NMFS has entered into with the Alaska Native Community lack any means of enforcement. To avoid causing the decline of a stock through subsistence harvest, and to ensure compliance with co-management agreements, The Ocean Conservancy recommends that a breach of the terms of the agreement be deemed a violation of the Act.

AMENDMENT—At Section 119, insert a new paragraph (c) and re-letter the following paragraphs as appropriate:

(c) VIOLATION. The breach of any provisions of a cooperative agreement, by any Alaskan Native, shall be deemed a violation of this title and shall be subject to penalties under this Act. Any vessel used in such violation shall be subject to forfeiture to the United States.

SECTION 120 PACIFIC COAST TASK FORCE; GULF OF MAINE

AMENDMENT—At Section 120 strike existing section (f) and insert new section (f) as follows:

1) (A) Within six months of enactment, the Secretary shall undertake a review of all non-lethal methods that have been used to deter marine mammals and, in consultation with the Marine Mammal Commission, representatives of academic and scientific organizations, environmental groups, commercial and recreational fisheries groups, gear technologists, and others as the Secretary deems appropriate, shall develop a research plan for the development and testing of safe, non-lethal deterrents. In developing the research plan the following criteria should be considered——

(i) Such deterrents may be used to deter marine mammal interactions with (a) fishing gear and catch; (b) aquaculture resources; or (c) salmonid fishery stocks that have been listed as endangered or threatened under the Endangered Species Act of 1973 (16 U.S.C. § 1531), or that the Secretary finds are approaching endangered or threatened status; and

(ii) The research and development of such deterrents shall provide for the humane take of marine mammals by harassment, as defined at Section 3(18)(A)(ii) of this Act.

2) The Secretary shall undertake and complete the research plan, and any related studies, developed pursuant to paragraph (1) not later than 2 years after the date of enactment.

3) The Secretary shall submit a report of the findings and recommendations for additional research or action to the Committee on Resources of the House of Representatives and the Committee on Commerce, Science and Transportation of the Senate 3 year after the date of enactment.

4) The Secretary shall make the report and the recommendations submitted under paragraph (3) available to the public for review and comment for a period of 90 days.

5) For the purposes of carrying out this section, the Secretary may accept, solicit, receive, hold, administer, and use gifts, devices, in-kind contributions, and bequests.
6) There are authorized to be appropriated to the Secretary $1,500,000 annually to carry out the provisions of this subsection.

SECTION 101(A)—AMENDMENTS PERTAINING TO THE DETERRENCE OF MARINE MAMMALS.

ISSUE—Both The Ocean Conservancy and the fishing industry continue to be extremely frustrated by NMFS' failure to comply with the MMPA's requirement to publish, in a final rule, guidelines for non-lethal deterrents. Because we recognize that NMFS cannot enforce guidelines, The Ocean Conservancy recommends that NMFS promulgate regulations that delineate acceptable methods to safely deter marine mammals, including threatened and endangered marine mammals. In addition, the burden of proof should fall on the proponent of a particular method to demonstrate that any newly proposed deterrent is safe and effective for deterring marine mammals.

AMENDMENT—Modify Section 101(a)(4)(B) as follows:

(B) Within six months of enactment,[T]the Secretary shall, through consultation with appropriate experts, and after notice and opportunity for public comment, publish in the Federal Register [a list of guidelines] regulations regarding the methods permissible for [or] use in safely deterring marine mammals. In the case of marine mammals listed as endangered species or threatened species under the Endangered Species Act of 1973, the Secretary shall recommend specific non-lethal measures that may be used to deter these marine mammals and adopt regulations under the Endangered Species Act that permit the use of these methods. Actions to deter marine mammals consistent with such [guidelines] regulations or specific measures shall not be a violation of this Act.

Insert a new paragraph (C) and re-letter remaining paragraphs as appropriate:

(C) Effective 60 days after publication of such regulations in the Federal Register, persons may only employ deterrents authorized by the regulations unless proponents of alternative deterrents can demonstrate that such deterrents are safe, non-lethal methods. Upon such demonstration, the Secretary may authorize the use of an alternative deterrent after notice and opportunity for public comment, through regulation under this Act.

SECTION 101(A)(5)(D)(I)—AMENDMENTS FOR SMALL–TAKE PROVISIONS

ISSUE: The Ocean Conservancy is concerned that applicants are using the streamlined mechanism for authorizing incidental takes by harassment for a period of up to one year to avoid assessment of the cumulative impacts of activities. Applicants may segment long-term activities into one-year intervals, seeking a separate authorization for each, or may seek separate authorizations for each of several similar or related activities, which by themselves have only negligible impacts, but may have significant cumulative detrimental affects. Therefore, we recommend that this Section be amended as follows:

AMENDMENT Insert a new 101(a)(5)(D)(i)(I) as follows:

(i) Will have a negligible impact on such species or stock, with consideration given to all related activities that may cumulatively result in more than a negligible impact.

ISSUE: The Ocean Conservancy agrees with the concerns expressed by NMFS that Section 118 does not cover the incidental take of marine mammals in the course of recreational fishing. Therefore, this user group's take is virtually unregulated under the Act. The Ocean Conservancy recommends that Congress investigate with the agency mechanisms to amend either the small-take provisions or Section 118 to include recreational fishers who take marine mammals in recreational fisheries, using the same gear as that regulated in commercial fisheries.

SECTION 101(B)—EXEMPTION FOR ALASKAN NATIVES

ISSUE: The management history of the subsistence harvest of beluga whales in Cook Inlet illustrates the need for more aggressive and proactive federal intervention and management to avoid a species becoming eligible for listing as depleted under the MMPA. The purpose of the "strategic" definition for some marine stocks is to identify unsustainable levels of take, so that appropriate action can be taken to avoid listing that stock. While The Ocean Conservancy supports subsistence, we believe that, in those cases where marine mammal stocks are designated as stra-

tegic, the federal government should intervene and work with the native community to monitor and regulate harvests to ensure the long-term health of the stock and the ability to continue subsistence harvests.

AMENDMENT—At Section 101(b)(3) insert the following:

Notwithstanding the preceding provisions of this subsection, when, under this Act, the Secretary determines any species or stock of marine mammals subject to taking by Indians, Aleuts, or Eskimos to be a strategic stock as defined in Section 3(19) or depleted as defined in Section 3(1), he may prescribe regulations for the taking of such marine mammals by Indian, Aleut, or Eskimo described in this subsection. Such regulations may be established with reference to species or stocks, geographical description of the area included, the season of taking, or any other factors related to the reason for establishing such regulations and consistent with the purposes of this Act.

SECTION 101(B) DOCUMENTATION REQUIRED

ISSUE: To clarify that a nation is responsible for reporting on the aggregate dolphin mortality limit assigned to it under the Agreement for the International Dolphin Conservation Program, the language in the Act should be amended to reflect that the nation must provide information on its dolphin mortality as compared to the aggregate limit assigned to it vessels.

TECHNICAL AMENDMENT—MMPA Section 101(a)(2)(B)(iii): after the first word "limit" add the phrase "assigned to that nation's vessels."

SECTION 101(A) MORATORIUM AND EXCEPTION

ISSUE: To streamline the Act's provision pertaining to high-seas drift net fishing and to incorporate by reference the definition of "large-scale driftnet" from the Magnuson Act, The Ocean Conservancy recommends the following technical amendment:

TECHNICAL AMENDMENT—Section 101(a)(2)(F): amend as follows: "in the case of fish or products containing fish harvested by a nation whose fishing vessels engage in high seas large-scale driftnet fishing, shall require the government of the exporting nation to provide documentary evidence that the fish or fish product was not harvested with a large-scale driftnet. For the purposes of subparagraph (F), the term 'large-scale driftnet fishing' has the meaning given such term in section 3 of the Magnuson–Stevens Fishery Conservation and Management Act."

SECTION 105 AND 106—PENALTIES

ISSUE: The Ocean Conservancy believes the penalty provisions of the Act should be updated to reflect economic changes that have occurred since they were enacted in 1972. Current penalties are low enough to be viewed by some violators as an acceptable cost of doing business.

AMENDMENTS

Modify Section 105(a)(1) to allow a civil penalty: "of not more than [$10,000] $25,000 for each such violation . . ."

Modify Section 105 (b) to allow a criminal fine: "not more than [$20,000] $50,000 for each such violation . . ."

Modify Section 106(b) to allow a civil penalty: "of not more than [$25,000] $50,000."

TITLE IV—MARINE MAMMAL HEALTH AND STRANDING RESPONSE

ISSUE: In 1994, an amendment was added to Title IV, Marine Mammal Health and Stranding Response, which allows funds from the Unusual Mortality Event Fund to be used for the care and maintenance of marine mammals seized under section 104(c)(2)(D). The Marine Mammal Unusual Mortality Event Working Group opposes the use of these funds for this purpose, as does The Ocean Conservancy. Not only could this situation rapidly deplete funds that are needed to respond to an unusual mortality event, it was not the intent of either Congress or the proponents of the original legislation to provide funds for the care and maintenance of seized animals. This situation should be addressed in either the Animal Welfare Act or another provisions of the MMPA. Furthermore, potential contributors to the fund might be deterred by this provision due to the controversy surrounding marine mammals in captivity. The Ocean Conservancy recommends that this provision be deleted.

AMENDMENT At Section 405, delete (b)(1)(A)(iii).

ISSUE: Title IV has been historically under-funded. The Marine Mammal Health Stranding and Response Act has never received dedicated funding and, to date, no funds have been appropriated to the Emergency Response Fund. To support the Act's provisions, the NMFS has had to cobble together funds from its base funds. In short, funding for implementation of the Marine Mammal Protection Act, specifically the Title IV provisions, has created a situation where the agency has had to "rob Peter to pay Paul."

Despite being under-funded, most of the mandated activities have been initiated, and the Marine Mammal Health and Stranding Response Program has greatly improved the response to both routine strandings of marine mammals and unusual mortality events. Nevertheless, unexplained die-offs of marine mammals have continued on almost an annual basis along the United States coastline, and NMFS' response to these die-offs has been hampered by a lack of funding. Without adequate funding, NMFS cannot be proactive; it cannot develop a strong marine mammal health assessment program, support volunteer stranding networks, or develop accurate baseline information on stranding rates, contaminants, disease, and other factors related to detecting and determining causes of unusual mortality events. Furthermore, the lack of funds hinders NMFS' ability to fully develop and implement contingency programs to respond to die-offs or oil spills. Consequently, NMFS may be unable in the future to determine the cause of these die-offs of marine mammals—animals that are potential indicators of the health of the marine environment.

AMENDMENT—Delete the current language of Section 408 and replace it with the following language:

Sec. 408. There is authorized to be appropriated to

(1) the Secretary for carrying out this title (other than sections 402 and 405) $1,500,000 for each of five fiscal years beginning in 2003;
(2) the Secretary for carrying out sections 402 and 404, $1,500,000 for each of five fiscal years beginning in 2003;
(3) the Secretary for carrying out Section 405, $2,000,000 for each of five fiscal years beginning in 2003;
(4) the Fund, $500,000 for each of five fiscal years beginning in 2003; and
(5) the Secretary of Interior for carrying out this title, $500,000 for each of five fiscal years beginning in 2003."

TITLE III INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

SECTION 303—REGULATORY AUTHORITY OF THE SECRETARY

ISSUE: When Congress created the International Dolphin Conservation Program Act (IDCPA), the intent was to follow the 30 minutes "after sundown" rule that has been used under the previous provisions of MMPA Section 104(h)(2)(B)(iv) and under the International Dolphin Conservation Program. To clarify that Congress did not intend to change the requirement that the sacking up of purse seine nets must begin no later than 30 minutes after sundown, we recommend that the Act be amended as follow:

TECHNICAL AMENDMENT: In section 303(a)(2)(B)(v), replace the word "before" with "after."

SECTION 307(A)—PROHIBITIONS

ISSUE: To clarify that the cross-reference in Section 307(a)(2) deals specifically with purse seine fishing for tuna in the ETP, which is managed under the IDCP, The Ocean Conservancy recommends the following change:

TECHNICAL AMENDMENT: At Section 307(a)(2), the cross reference should be to section 101(e), not 101(d).

SECTION 303 REGULATORY AUTHORITY OF THE SECRETARY

ISSUE: To correct a typographical error, the following change should be made:

TECHNICAL AMENDMENT: In section 303(a)(2)(B)(x), insert "or" after "serious injury."

Mr. GILCHREST. Thank you very much, Ms. Gaffney. There seems to be a difference of opinion presented here this afternoon concerning the issues of salmon and steelhead and sea lions, seals and

otters. And I guess what we are going to attempt to do in the coming months, after we glean and digest your testimony, is to determine the best way to proceed.

The issue seems to be, at least part of the issue, can for example a healthy sea otter population coexist with an economically profitable commercial fishing operation? And I am not sure if we will resolve that here this afternoon, but what I would like to ask the National Marine Fisheries Service, I guess, and Mr. Thompson and Mr. Rebuck, is sea otter, for example—because that is what Mr. Rebuck focused in on, so we will look at that before we take a look at the sea lions—Mr. Thompson and then Dr. Scordino, if you want to answer this as well, if you have any information, what is a healthy, sustainable sea otter population? When could we say it is recovered? And adding to the complexity of this, if the stock of a number of fish species is below sustainable rates, how do we manage to bring the fish stocks up and recover the sea otter population? Is that possible? How long would it take? Mr. Thompson?

Mr. THOMPSON. I was afraid you were going to start with me. The healthy sea otter population I think I can start to answer, and that is, the determination is based on a lot of factors, like we said in the listing before. The small range, which is expanding. We would look at, there is new information now on contaminants and the impact of those contaminants on the population, what kind of condition they would be in.

Mr. GILCHREST. Is cat feces a problem with sea otters?

Mr. THOMPSON. Apparently disease problems are, there are some relationships to those that are a problem, yes. There is also starvation, shark bites. There is lots of things that go into a healthy population of sea otters. This population is increasing at about 5 percent per year, which is a slow, stable or steady growth, but the impacts of other things like fisheries, we have been able to seem to work through those. So from the standpoint of the sea otter, I think it can work with the fishing community.

Mr. GILCHREST. Is there a number you can give us?

Mr. THOMPSON. The number in the current recovery plan is about 2,600. The draft that is out for review, there is a lot of discussion about the number may be slightly higher, need to be higher.

Mr. GILCHREST. And how many are out there, approximately, now?

Mr. THOMPSON. Roughly 2,200 are there right now, so we are close to the recovery number. Now, that is just the number. Like I said before, there is lots of other factors that would have to go into a healthy population.

Mr. GILCHREST. Mr. Rebuck?

Mr. REBUCK. Thank you, Mr. Chairman. I think that what you propose is doable, but only through zonal management.

Mr. GILCHREST. Pardon me. What?

Mr. REBUCK. Excuse me?

Mr. GILCHREST. Only if what?

Mr. REBUCK. Only through zonal management.

Mr. GILCHREST. Zonal management?

Mr. REBUCK. Zonal management, yes, sir. In 1980—

Mr. GILCHREST. Is this going back, then, to the translocation and the management areas?

Mr. REBUCK. Actually before that. In 1980 the Marine Mammal Commission drafted a letter saying that zonal management was a solution to protection of sea otters and protection of shellfish resources, and so a lot of us have seized upon that particular letter. It is in my packet as an exhibit. Since in my opinion I think it is—

Mr. GILCHREST. What do you mean by zone management?

Mr. REBUCK. Creating zones. Essentially that is what was accomplished through the public law. The Fish and Wildlife Service created an otter zone around San Nicolas Island for the exclusive use of sea otters, but then committed to containment of those animals at San Nicolas. South of Point Concepcion, which is Santa Barbara County, California, to the Mexican border, was a no otter management zone, meaning that the—

Mr. GILCHREST. What would happen if there were otters there?

Mr. REBUCK. Well, it was the job of the U.S. Fish and Wildlife Service and the California Department of Fish and Game to go out and capture any stray animals and then remove them from that management zone, and the Department of Fish and Game actually did the bulk of that particular work. They tried very hard.

Mr. GILCHREST. So it was actually managed for a while that way?

Mr. REBUCK. It was, yes, for the first couple of years of the project. By 1993 the Fish and Wildlife Service, based on mortality in captured animals, determined that they were at jeopardy and that they would no longer capture these animals. Now, it is my understanding the public law exempted them from that jeopardy, so there is a legal issue there.

But I think, adding to this now, since the listing of sea otters in California in 1977 there has been a significant reduction in the risk to those animals, and I have identified 15 of them in my testimony for you. And then also the recent range expansion, I think at some point we should take into consideration that the expanded range would reduce the risk to this population of oil spills, and that needs to be factored in as well.

Mr. GILCHREST. The risk of the, you said oil spills?

Mr. REBUCK. Well, yes. Yes, sir. The primary reason for listing sea otters in California was the risk of a massive oil spill along the coast. We now have a $1 billion oil clean-up program. We have a State Office of Oil Spill Preparation. We have a clean-up facility at Santa Cruz. We have had tanker facilities closed at four or five major ports along the coast. We have tankers using double hulls now. Many of the threats to the sea otter in 1977 no longer exist or have been significantly reduced.

Mr. GILCHREST. Dr. Scordino, do you want to make a comment?

Mr. SCORDINO. No, I—

Mr. GILCHREST. I guess the reason I asked you to be a part of the question was the fisheries, the various stocks that are either recreationally or commercially harvested, are many of them at an unsustainable level? Can you bring up the optimum yield of those fisheries and at the same time sustain the present or a slightly increased population of sea otter?

Mr. SCORDINO. I can't really comment on the sea otter, but on the status of our West Coast fisheries, our groundfish fishery, we have a number of populations, fish species, that are currently on rebuilding plans, where they are below levels that would provide sustainable yields. So we are in a stage right now of trying to come up with better fishery management measures just to control the amounts of removals by fishermen on the West Coast.

Mr. GILCHREST. So is there any communication? Because you have a problem with sea otters, you have a problem with sustaining fish stocks, not to mention sea lions and seals. So I guess, Dr. Scordino, is there any transfer or exchange of information between yourself, Fish and Wildlife, on how to create that management regime?

Mr. SCORDINO. I will defer to Fish and Wildlife Service, but the prey species for sea otters, my understanding, is shellfish, so it is not the finfish resources that we manage under the fishery management plans.

Mr. THOMPSON. We have considerable communication going on with all parties, and one of the things that has been started recently is that the Monterey Bay Aquarium is hosting a symposium, in fact once a year, to pull together scientists and affected parties to look at the impacts of sea otters on those resources, and we are working closely with the State. As they brought up earlier, crabs, abalone, lobster, urchins, are the things that would be most impacted by the sea otter.

Mr. GILCHREST. Ms. Gaffney?

Ms. GAFFNEY. Thank you. I just wanted to follow up on this question, because there is actually a very different relationship between finfish and sea otters than perhaps you believe. As was mentioned, the primary prey species for sea otters are the shellfish, and the expected relationship between sea otters and finfish, particularly some of these groundfish species off the West Coast that are doing so poorly, is that the sea otter may actually provide a benefit to those finfish species.

And the way that occurs is that the sea otter acts as essentially a keystone species. It is the top. It is the indicator. And because the sea otter preys on the shellfish, urchins, abalone, that are grazers, so those are the animals that eat the kelp, when you reduce the number of grazers in the ecosystem because the sea otter is preying on those species, you can have healthier kelp forests.

And many of the groundfish species that we are talking about, rockfish out in California that are really at drastically low levels, spend at least part of their life cycle living in the kelp. Frequently the juvenile phase of their life cycle is spent in kelp forests. So when kelp forests are impacted by grazing species, we see declines in finfish, and there is an expectation that having sea otters as part of that system can actually provide a benefit to the finfish species, although certainly may cause declines in the shellfish fisheries.

Mr. GILCHREST. Sea otters are grazers?

Ms. GAFFNEY. No, sea otters prey on grazers.

Mr. GILCHREST. Sea otters prey on the grazers, so the kelp is healthier.

Ms. GAFFNEY. Healthier.

Mr. GILCHREST. So you have more habitat for finfish.

Ms. GAFFNEY. Exactly.

Mr. GILCHREST. And the finfish population is likely to increase with a healthy otter population.

Ms. GAFFNEY. Right.

Mr. GILCHREST. Mr. Rebuck says no.

[Laughter.]

Mr. REBUCK. I would only ask Ms. Gaffney to cite some literature that supports that, because I have been hearing this for 20 years. There is a lack of data that demonstrates that this is the case.

Mr. GILCHREST. Ms. Gaffney?

Ms. GAFFNEY. There is a researcher at the University of California at Santa Cruz, Jim Estes, who does a lot of work on both sea otter populations in California and also up in Alaska, and also does work on ecosystem level issues related to marine biology, and I would be happy to provide some of his publications for the record if that would be helpful.

Mr. GILCHREST. I would very much like to read it.

Mr. REBUCK. Alaska is not California, sir, ma'am.

Ms. GAFFNEY. He works in both places.

Mr. GILCHREST. We will take a look at that, and invite him for the next hearing.

My time is up, and I would like to yield now to the gentleman from American Samoa, Mr. Faleomavaega.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman.

Mr. Chairman, I would like to ask unanimous consent that the statement sponsored by the Humane Society of the United States be made part of the record, dated October 11, 2001.

Mr. GILCHREST. Without objection, so ordered.

[The information referred to follows:]

Statement of the Humane Society of the United States

On behalf of our more than 7 million members and constituents, The Humane Society of the United States (HSUS) wishes to thank you, Mr. Chairman and members of the Subcommittee, for allowing us to submit this written statement for the record regarding the issues surrounding abundant pinniped and sea otter populations.

The HSUS plays an active role in working toward protection of marine mammals in the United States. We continue to work diligently to maintain protection for pinnipeds. Between 1992 and 1994, The HSUS participated in an ad hoc stakeholder negotiation that resulted in proposals to Congress for the Amendments to the Marine Mammal Protection Act (MMPA or the Act) that were passed in 1994. Since that time we have served on a number of appointed committees, working groups and take reduction teams that have arisen from the implementation of the many provisions that were added to the MMPA in 1994. We have also testified a number of times before this and other House Committees regarding the implementation of various portions of the MMPA, most recently in an April 2000 hearing on oversight of the Take Reduction Team process. We would like to apprise this Committee of our interests and concerns relative to portions of the MMPA that pertain to pinnipeds (seals and sea lions) and sea otters.

Background

During the meetings of the ad hoc multi-stakeholder group that were held between 1992 and 1994, issues surrounding growing populations of pinnipeds were discussed in depth. Representatives of animal welfare and conservation interests, fisheries groups, native groups, the National Marine Fisheries Service (NMFS), and staff from a number of Congressional Committees attended the meetings of this ad hoc group. A sub-group of this larger ad-hoc group devoted a number of meetings specifically to discussing pinnipeds. In the group, we addressed the assertion that pinnipeds were causing declines in salmonid populations and seriously impacting

the viability of commercial aquaculture operations. It was the finding of this negotiating group that there was insufficient evidence to document these claims.

As a result, the group proposed a process that required an evaluation of the data surrounding specific incidences in which pinnipeds were suspected of adversely affecting fish populations. It called for a task force to evaluate the data and make recommendations to the Secretary of Commerce regarding possible mitigation measures, including intentionally killing animals. Data were required to demonstrate to the task force that specific nuisance animals were involved and that the removal of these animals would positively resolve most of the concerns. This process also required a demonstration that non-lethal measures had been tried and failed prior to seeking authority to kill animals.

The proposals put forth by the group formed the basis for the process that Congress ultimately put in place with the 1994 Amendments. The section of the Act that dealt with pinniped conflicts was codified as Section 120. During meetings of the ad hoc group, commercial fisheries representatives supported removal of the authority for fishermen to kill marine mammals interacting with gear and catch, and to confine lethal taking to situations in which human life was jeopardized. Congress adopted this recommendation as well.

The ad hoc negotiating group also discussed predation by seals at finfish aquaculture sites in Maine. Again, no information was available to substantiate claims of financial hardship. In the wake of the ad hoc group's meetings, Congress amended the MMPA to include a provision under Section 120 that called for the NMFS to convene a task force to evaluate these interactions with aquaculture and recommend whether or not mitigation measures should be required.

Since that time a number of task forces have met and stakeholder negotiations have continued.

Gulf of Maine Pinniped Aquaculture Task Force

This group was tasked by the MMPA with evaluating predation by seals on finfish in marine aquaculture facilities, primarily in the State of Maine. The group met a number of times and produced a report that was conveyed to the NMFS in February 1996. The results of this report were, in turn, provided in a Report to Congress. The group agreed by consensus to recommend that before lethal removal of seals should be considered, three criteria must be met: the consequences of the depredation most be severe and demonstrable; lethal measures under consideration must be verified as an effective means of solving the predation problem; and no non-lethal alternatives are available. The Task Force could not agree that these criteria had been met in Maine. No lethal taking authority was recommended. The HSUS believes that there is no necessity for re-instituting authority for lethal removal of pinniped by aquaculturists in Maine or elsewhere.

Ballard Locks Task Force

The first plea for the use of authority for lethal removal of pinnipeds came in June 1994, when the Washington Department of Fish and Wildlife (WDFW) requested authority under Section 120 to lethally remove problem California sea lions from the Ballard Locks in Seattle, Washington. In their request, they stated that non-lethal deterrents were ineffective and that they could provide evidence that the predation by California sea lions was a proximal cause of ongoing declines in migrating steelhead salmon. A task force was convened, and The HSUS was appointed as a member of the task force. The process was contentious and many of the independent scientists and environmental groups felt that the WDFW had not met its burden of proof. Despite a lack of consensus among the group, in January 1995, the NMFS granted a three-year authority to remove up to 15 California sea lions. This does not appear to have been necessary or effective.

In 1996, there were 981 California sea lions in Puget Sound (maximum peak count). Sea lions were removed in spring 1997. In spring 1997, there were 528 sea lions counted; since that time their overall numbers have dropped to as low as 220 animals. Concurrently, and independently of the numbers of sea lions, the steelhead run has continued to decline. In 1997, there were 620 steelhead salmon counted; there were 584 in 1998, 220 in 1999, 48 in 2000 and 42 so far this year. This would seem to support overall evidence that sea lion predation is neither responsible for the initial declines nor is it the proximal cause of ongoing declines in endangered fish runs. These declines continue apace as a result of unmitigated effects of dams and other human-related habitat destruction and degradation.

Report to Congress - Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Ecosystems

The 1994 Amendments to the MMPA also required that the NMFS submit to Congress a report on the impacts of sea lions and seals on ecosystems on the west coast.

Although fishery groups were consulted in the preparation of this report, conservation interests were not similarly included. It is hardly surprising, then, that the report casts a dim light on pinnipeds and their role in the various west coast ecosystems. The report to Congress made four recommendations: implement site-specific management for California sea lions and Pacific harbor seals; develop safe, effective non-lethal deterrents; selectively reinstate authority for the intentional lethal taking of California sea lions and Pacific harbor seals by commercial fishermen to protect gear and catch; and fulfill additional informational needs.

The HSUS strongly opposes the recommendations made in the Report for site-specific lethal management of California sea lions and Pacific harbor seals and for reinstating authority for the intentional lethal taking of these species by commercial fishermen to protect gear and catch. Based on our review of available data, we do not believe that removal of pinnipeds will achieve the stated goals of fisheries protection and enhancement. We strongly believe that sea lion predation is not responsible for the decline of fisheries along Washington, Oregon, and California and that it is crucial that managing agencies mitigate the true sources of the declines.

Recommendations for lethal removal will likely undermine the report's other recommendations for developing safe and effective non-lethal deterrents and filling other information needs. We are concerned that this Report focuses only on the symptoms of the problem of declining fisheries while completely ignoring the causes and the most promising solutions to mitigate them.

The HSUS made a number of comments on the report and we continue to recommend that the NMFS and the Pacific States Marine Fisheries Council investigate the real and primary cause(s) of the fish run declines (*e.g.*, hatchery fish competition, fish passage problems due to construction and operation of fishways and dam, water and general habitat degradation) and implement solutions to mitigate them. We also recommend that they conduct studies and implement pinniped deterrence methods that are found to be humane and realistically promising (*e.g.*, alternative barrier designs, expanded acoustic deterrence devices). The HSUS opposes sea lion removal (lethal or non-lethal), or the use of any method likely to seriously injure these animals or adversely affect the ecosystem of which they are a part.

General Issues Relating to Pinniped Predation

Since the Amendments to the MMPA in 1994, commercial and for-hire fishing boats on the west coast have expressed on-going concerns about interactions with pinnipeds. This has resulted in a number of management actions, some of which show promise and others of which are shortsighted. Many of these highlight the need for non-lethal deterrents.

The NMFS and the Pacific States Marine Fisheries Commission proposed testing of an acoustic deterrent device known as a pulsed power device. The possible use of this device raised concerns by both marine mammal biologists and acousticians and fishery biologists. The concerns centered on inadequate research protocols and, more importantly, the acoustic and concussive characteristics of the device that indicated that there was a significant likelihood that its use would result in injuring the sea lions and harming other non-target marine mammals, fish, turtles and birds. A hearing before the California Coastal Commission in October 1999 resulted in the Commission finding that a test of the device in or near the coast of California was not consistent with coastal protective legislation. Further, they concluded that no field testing of the device should be conducted until it could be determined that its use was not likely to adversely affect marine organisms. While the HSUS has long supported testing and use of non-lethal measures, we are adamantly opposed to the use of non-lethal devices whose use may cause more problems than they solve.

To that end, we also wish to point out that the NMFS has never issued guidelines for the testing or use of non-lethal deterrents. A draft of guidelines for the use of non-lethal deterrents was published by the NMFS in spring 1995; however, no final guidelines were forthcoming. This is a concern shared by both the fishing industry and conservation and animal protection organizations.

There have been a number of stakeholder meetings in which pinniped predation has - been the subject. These include a workshop at the New England Aquarium that focused on east coast pinnipeds; an evening session of the August 1997 meeting of the American Fisheries Society in Monterey California, which brought together scientists and stakeholders; and meetings at the Monterey Bay Aquarium between fishing groups, conservation and animal welfare groups, and state managers. At an April 1998 meeting at Monterey Bay Aquarium, a number of recommendations were made. Both the fishing groups and conservation/animal welfare community expressed frustration with the failure of the NMFS to issue guidelines for appropriate use of non-lethal deterrents with harbor seals and California sea lions who were

interacting with fishing gear and catch. There was consensus among these disparate groups that the NMFS should immediately release guidelines or regulations pertaining to the use of non-lethal deterrents. To this date, no such guidelines or regulations have been issued. The most hopeful outcome of this meeting was the obvious degree of support given by both commercial interests and animal protection groups to the need for non-lethal deterrents. The NMFS must dedicate additional resources to this task on a priority basis.

Southern Sea Otters

With regard to management of southern sea otters, the 1994 Amendments deferred to existing provisions in the Act, and did not recommend changes. The HSUS does not believe it is necessary to amend the MMPA to address interactions between sea otters and commercial fisheries, nor to direct recovery or containment measures that can be enacted in a regulatory context. In particular, the population of sea otters at San Nicolas Island should remain and sea otters elsewhere should be allowed to range freely in the wake of the failure of the translocation efforts and subsequent mainland population declines. Southern-sea otters are a threatened species and should be allowed to expand their historic range as efforts to recover their numbers continue.

Conclusion

The HSUS does not believe that there is a need to amend the MMPA to further address issues of conflicts with pinniped populations. The NMFS must devote considerably more time and resources to finding and testing innovative approaches to non-lethal deterrence that are not likely to have an adverse impact on animals in the marine ecosystem.

In May 1999, Yale University—completed a survey entitled "American Perceptions of Marine Mammals and their Management." In this, they found that three fifths of Americans disapproved of reducing populations of seals and sea lions and more than 90% opposed the use of lethal practices such as shooting or poisoning seals and sea lions as a means of reducing conflicts even though these methods were described as being the least expensive option. Clearly the American people would not support any changes to the MMPA that would broaden the use of intrusive or lethal methods for managing conflicts and if necessary are willing to endure financial sacrifice to ensure protection of marine mammals of all species.

We would like to thank the Subcommittee for the opportunity to present our concerns regarding proposals to further amend the Marine Mammal Protection Act.

Mr. FALEOMAVAEGA. Mr. Chairman, I take an obvious interest in the fact that there are some very strong disagreements, and I presume not only on data but the figures themselves, in terms of the problems that we have had with sea otters, sea lions, and I just wanted to ask if there is anybody, hopefully a neutral party that could give us the facts and the figures. I assume this will be the National Marine Fisheries Service? Is that Dr. Scordino?

We happen to have a very strong disagreement, obviously, between Mr. Rebuck and Ms. Gaffney. Can you give us the true answer to the controversy here?

Mr. SCORDINO. Well, one thing, I don't know that there is any controversy on seal and sea lion population numbers, their status and increasing population numbers, but I might comment on the current authorities in the act versus the recommendations in the report to Congress.

Congress did provide us with new authority in the 1994 amendments under Section 120 that provided a process for a State to come forward and request authority to remove specific nuisance animals, problem pinnipeds, and we did use that authority under Section 120 to issue to the State of Washington a letter of authorization to remove California sea lions at the Ballard Locks.

But as we went through that process, one of the things we found was, the provisions are so stringent that were laid out—for example, the animals that might be dealt with had to be individually

identifiable animals. When you have 200,000 sea lions up and down the coast, and 76,000 harbor seals, having individually identifiable animals requires a long time frame of work in a specific area, which we had at the Ballard Locks.

We had 10 years of studies. We had branded every single sea lion that was in the area of the Ballard Locks. We are now up to something like 890 sea lions have brand numbers on them, so we know which animals are the ones that come into the locks and cause the problems, in contrast to those that aren't the problems, and we leave them alone and they do what they want.

The problem as we move into other systems is we don't have that long series of studies and that long train of information with marked animals, etcetera. And the concern is where you have an ESA listed species and you have animals foraging, the need to have immediate response isn't there as the Section 120 authority is currently constructed.

Mr. FALEOMAVAEGA. Of course, the problem here is not just in California. This is also true on the East Coast, and I am sure the Chairman is very much aware of the problem. And I would like to ask Mr. Fletcher, it is always the question of commercial fishermen and recreational fishermen that always seem to be at the short end of the stick here. Am I wrong on this? What is the dollar value loss that the recreational fishing industry in California has taken because of the problems with sea lions?

Mr. FLETCHER. Well, a conservative estimate is in the millions of dollars, but it is difficult to give you a firm figure, sir, because we have not only fish being removed from nets and off lines. We have a resultant attitude on the part of the public that "Why should I go fishing when all that happens is I hook a fish and a sea lion eats it?" And so people who might otherwise pay money and go fishing, don't, but we can't quantify that number.

But clearly millions of dollars a year are lost in commercial fish that are ripped out of nets, off lines, and millions of dollars in sport fishing revenue are lost because fishermen choose not to fish anymore because of the very negative experiences they have at certain times. And Dr. Scordino made one comment about a study in Monterey Bay that indicates up to 70 percent of fish that were hooked by recreational anglers in that area during that study were lost to sea lions.

We can't tell you how many dollars that might be unless you measure by a per fish average. And some information I have indicates that in 1980, 12,459 legal size salmon with an estimated value of $20 each were lost, for a total loss of $274,000. By 1995, that number had jumped to 86,700 legal size salmon at a cost of $1,734,000. Now, that is as of 1995, and that is for salmon only, which is a small part of the overall impact of sea lions on recreational and commercial fisheries.

Mr. FALEOMAVAEGA. Suppose we go back to the basic issue, Mr. Chairman. I notice my time is up, and not wanting to pass the buck, I would like to ask Dr. Scordino, in his best judgment as the regulator, we gave him this responsibility, should we pay more heed to the concerns of our recreational and commercial fishing industry? Somebody has got to eat. You have got to pay the bills. Or

should we continue allowing the sea lions to do everything and anything they want to do, eat the fish?

Mr. SCORDINO. Well, the dilemma we face, I think all of us collectively, I don't think anyone would disagree with needing to find a nonlethal way to keep these animals away from fishing gear. I mean, that is the solution. But you have the problem that is confounded with animals, as I said, that learn to work boats, and I am not sure we are going to find nonlethal ways to keep those animals away from gear without affecting other species.

So we tried this pulse power device, and we all thought we had the solution. This was a device that puts out this underwater noise that would deter the sea lions. But the problem was, it also raised concerns about what effects did it have on other species. And we are kind of stuck. We are not sure where to go with trying to keep these animals away from fishing boats.

Mr. FALEOMAVAEGA. So is it your best opinion, Mr. Scordino, that we should not make any changes in the current law?

Mr. SCORDINO. Well, our recommendations, recommendation number one in that 1999 report suggested you look at providing authority for State and Federal officials to take care of individual animals in certain situations, where necessary.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman. My time is up.

Mr. GILCHREST. Thank you, Mr. Faleomavaega.

I just have two follow-up questions. One of the nonlethal means was, for lack of a better term, a pulse deflector or some type of acoustic, to make a noise to keep the sea lions away. Ms. Gaffney, is that an issue with your organization?

Ms. GAFFNEY. We were not one of the environmental organizations that specifically raised concerns about that technology, but I think it is fair to say that we are concerned about it. There was essentially scientific information that, as was mentioned earlier, that demonstrated both that the impact of that specific technology may be unacceptable to the animals that it is targeting, and may also have impacts on other nontarget species.

But I think it brings us back to the point, which is that we really need to take a more dedicated and aggressive approach to developing nonlethal deterrents. That was one option that came forward and what we learned was that it was probably not as good as it initially appeared.

What we are recommending is that the agency essentially convene all of the stakeholders, the environmental organizations, the fishing community, as well as the scientific community, and come up with a specific, systematic approach to a research plan and to the range of nonlethal deterrents, so that we can actually move forward and hopefully come up with some effective alternatives in a reasonable time frame. We just don't believe that it has gotten the level of attention that it needs to prove successful.

Mr. GILCHREST. Dr. Scordino, would you? Is that a good recommendation?

Mr. SCORDINO. I think we have tried and we would like to continue to try and find a solution. Maybe getting all the wise heads together, maybe we can find something. I know Mr. Fletcher mentioned the industry is interested in pursuing further experimentation.

Mr. GILCHREST. That wasn't done with the report, the 1999 report?

Mr. SCORDINO. Well, as of the time of the 1999 report, all of the technologies that were available to us and we were aware of weren't showing continued success, and that is where we were. We kind of put all our eggs in one basket with the pulse power device and put our efforts into seeing development of that device, hoping it would provide the kind of solution we are looking for. But, as I said, it had too much of a solution. It affected other things, too.

Mr. GILCHREST. So there is an ongoing evaluation of that report now? I am just not sure I know what the status of—

Mr. SCORDINO. We should be receiving a final report from the lab studies on the pulse power device, which as I mentioned, the preliminary information is showing that it had, even with its high intensity noise, had limited effectiveness on sea lions tested in a captive situation.

Mr. GILCHREST. I see. I know not far down the road from where I live, they used some type of sounding device to keep turkey buzzards away from a dock. What happened was, though, it also kept the osprey and the bald eagles and the owls and the other hawks away from that whole area, so fortunately they stopped using that. And then, this is a much simpler problem than what you are facing, people just chased them away, when they landed on their windshield and ate the windshield wiper, and then the problem was solved.

Mr. SCORDINO. I might comment that some of our past experiments also had the opposite effect, where we tested devices to keep animals away from gillnets. And what instead turned out to happen is they served as dinner bells, so when fishermen turned on the devices under gillnets, it instead attracted animals, told them that there was a net in the water and it had fish in it, and we had the opposite effect. So it is a really tough area to address.

Mr. GILCHREST. Just one other follow-up question. The first recommendation in your report implements site-specific management for California sea lions and harbor seals, and you said that you have identified many of these sea lions. Can that be used to resolve some of the issues with the commercial and recreational fishermen? Or is it just, I mean, you have too many sea lions chasing recreational charter boats, or can you identify specific sea lions or seals and remove them from the population and things would improve?

Mr. SCORDINO. The areas where we have the greatest problems with California sea lions are open water areas, so, for example, Monterey Bay. My guess, from what I have seen in Monterey Bay, is there is probably a group of animals that have learned to follow the fishing boats, but then they are mixed in with another 500 to 1,000 animals in the area, which makes management measures very complicated and difficult. We had the luxury at the Ballard Locks, it was a closed area, we could actually trap the animals and brand them so we could track them over time. But once you get into the ocean, that kind of approach is real difficult.

Mr. GILCHREST. Mr. Fletcher?

Mr. FLETCHER. Thank you, sir. Just one comment. I mentioned that we have had big problems with sea lions at the bait docks

along the harbors. These are identifiable animals. There is a very small group of them, and if there is any way to become a little bit more aggressive in deterring this very small group of problem animals, at least that one problem area could be addressed in a very dramatic fashion, because we could identify these animals. They live there. They could be maybe hazed away from those facilities with fire hoses or other means that would be more aggressive.

That might help deal with that particular problem, because that is a major problem in many of the California ports. The bait receivers are attacked by these animals, and much of the bait is chased out, and the animals sometimes haul out on the receivers and break down the receivers. This is a very small, identifiable group.

Mr. GILCHREST. Mr. Faleomavaega?

Mr. FALEOMAVAEGA. Mr. Chairman, I just have one quick question to Dr. Scordino.

Has the National Marine Fisheries Service made a determination of what is considered a reasonable population of sea lions, or there is no control? I mean, suppose we have a million sea lions. Are we going to continue repopulating until we get to 5 million sea lions?

I mean, how far does it go? Is there an estimate, an amount that the National Marine Fisheries Service says this is a reasonable amount? In other words, being excessive, and I am not suggesting that we ought not be mindful of helping God's creatures, but there is also being excessive in the sense of 200,000 sea lions or sea otters. I mean, where is the limit, or should there be a limit?

Mr. SCORDINO. We are currently operating under—the goal of the Marine Mammal Protection Act is to bring the populations to their optimum sustainable population level, and what that is, is the population, it levels out. It stops increasing. With harbor seals in Washington and Oregon, we can now say they are at that level. They have kind of leveled out. The populations aren't increasing.

Mr. FALEOMAVAEGA. Have we done the same thing for California?

Mr. SCORDINO. California sea lions, it is not as clear. A number of our scientists, though, believe that the population is leveling off, but the problem is, when you have these El Ninos, it knocks—our population index is pup counts, and when you have an El Nino condition, it reduces pup production dramatically, so kind of our curve starts over again, so being able to see that deflection in the curve doesn't happen.

Mr. FALEOMAVAEGA. Yes, but—

Mr. SCORDINO. I think we are, as I said, I think some of our scientists feel pretty strongly that we are probably close to OSP for California sea lions, so we may be talking about 200,000 to 250,000 animals on the West Coast as being the OSP range.

Mr. FALEOMAVAEGA. For the sea lions in California—

Mr. SCORDINO. For California sea lions.

Mr. FALEOMAVAEGA. —is it safe to have 200,000 sea lions?

Mr. SCORDINO. They are currently at over 200,000 right now.

Mr. FALEOMAVAEGA. But I am still—is that—maybe I am not framing my question properly here. My concern is that we want conservation. My gosh, you know, God made these creatures. We ought to live and abide by their ability. But when the overpopulate,

when they become excessively more than what a human being is able to consume, then where do we go from there?

And I am not clear exactly where the National Marine Fisheries Service is coming into this picture. You are saying that it is okay to have 250,000 sea lions in California, that is considered an optimum figure?

Mr. SCORDINO. Well, what I am saying is that our mandate is to have these populations at their optimum sustainable population level, in accordance with the law. So that is probably what we are looking at, then, is the optimum number for California sea lions is probably in the 200,000 to 250,000 range. When they go above that, they are starting to exceed their carrying capacity.

Mr. FALEOMAVAEGA. And carrying the food chain, what is the predator of the sea lion? Sharks?

Mr. SCORDINO. Sharks, killer whales, and man, you know, and other environmental—like I said, El Nino conditions, El Ninos do have an effect on these populations. They move their prey species into areas that the animals don't normally forage.

Mr. FALEOMAVAEGA. It becomes really a policy issue, and I am trying to figure out which is more important, maintaining the lives and the needs of our recreational and commercial fishermen and their families, or continue allowing the excessive populations of sea lions.

Mr. SCORDINO. All I can say is, the mandate is in the law, and we are bound by that.

Mr. FALEOMAVAEGA. I'm sorry, Mr.—

Mr. GILCHREST. Mr. Rebuck.

Mr. REBUCK. Maybe I can help you. A number of years ago in one of the gillnet fisheries there was a take of sea lions in the range of 5,000-6,000 animals a year, did not put a dent in the population.

We also have in southern California as of May of this year a listed invertebrate, the white abalone, Haliotis Sorensini, which according to the National Park Service, the National Marine Fisheries Service, there are fewer white abalone than there are sea otters, and yet the Fish and Wildlife Service wants to allow sea otters to overlap the range of the white abalone. So sometimes the decisionmaking is very curious.

Mr. FALEOMAVAEGA. Well, one thing is very clear, and I had a personal experience in not only pressing for resolutions in the Congress, but the gillnets, drift nets, this is manmade, where you are talking about 30 miles long of these drift nets that drop about 30 feet in depth, and it is the number one killer. I mean, you know, this is man's device, and it is the most dangerous thing that I have ever seen in my life, where it kills anything that moves in the ocean.

Mr. REBUCK. In California, sir, drift gillnet fishermen are limited to one mile of gear, not 30 miles. So that is the international, you know, high seas fishery.

Mr. FALEOMAVAEGA. Well, that is what I am suggesting here, is that we had to contend with the Taiwanese, the Japanese, that were doing this.

Mr. REBUCK. I think our people have really led the way in conservation and methodology.

Mr. FALEOMAVAEGA. But I am still puzzled, Mr. Chairman. I don't know if I have gotten a clear picture from our friends here. On the one hand we need to press on for continued conservation of these precious animals, and on the other hand the needs of our commercial and recreational fishing industry are at risk. And my question is, where do we draw the line and how can we best provide, in a regulated forum, for the needs of both sides? And this is where I am a little puzzled, Mr. Chairman. Thank you.

Mr. GILCHREST. Thank you, Mr. Faleomavaega.

I sense probably more frustration up here than perhaps out there, because at least all of you are engaged in this with your minds and your hands and your activities, so you are on the front line of seeing what reality is along the West Coast.

But what we will attempt to do, to just give you some direction as we move along in this—because we are certainly not going to draw up a reauthorization bill next week, we hope next spring or early summer—but as we move along on this, some of the just virtually infinite complexity of these issues, in my judgment at any rate, is to manage this thing from an ecosystem perspective, including man as part of the ecosystem.

But I would hope that in this new century we would have the knowledge, the resources, the ability to cooperate, and the tolerance for different opinions, to establish a management regime that is both economically viable and environmentally sustainable. And as we move through the process, I would certainly invite all of you to continue to contact us via all of the manifestations of communication that there are, in person being probably the best. As we continue the process, we would like to have your continued input. Thank you all very much.

I would like to ask unanimous consent that the gentlelady from Hawaii, Mrs. Mink, be allowed to sit at the dias.

Hearing no objection, so ordered.

Mrs. MINK. Thank you, Mr. Chairman.

Mr. GILCHREST. You are welcome.

Panel number five: Dr. Hal Whitehead, Killam Professor of Biology, Dalhousie University; Dr. Naomi Rose, Marine Mammal Scientist, The Humane Society of the United States; Dr. Kurt Fristrup, Bioacoustic Research Program, Cornell Laboratory of Ornithology; Dr. Darlene Ketten, Associate Scientist in Biology, Woods Hole Oceanographic Institution, Assistant Professor, Harvard Medical School; Admiral Dennis McGinn, United States Navy, Deputy Chief of Naval Operations, former Navy pilot in Vietnam, Warfare Requirements and Programs.

I want to welcome all of you here this afternoon, and I guess this is our last panel. The fifth panel will discuss some of the issues regarding the importance of national defense and technology with the ability to be harmonious with the marine environment in the process. Our first witness will be Dr. Whitehead. Welcome.

STATEMENT OF HAL WHITEHEAD, KILLAM PROFESSOR OF BIOLOGY, DALHOUSIE UNIVERSITY, HALIFAX, CANADA

Mr. WHITEHEAD. Mr. Chairman, thank you very much for giving me this opportunity to talk to you on the naval sonars. I am going

to make my comments on the potential effects of military sonars from the perspective of a population biologist.

We as a society and you as lawmakers are concerned about how human activities in the ocean affect the health and viability of populations, species and ecosystems. These questions are in the realm of population biology.

Sound is, in many ways, the best channel for communication and sensing in the ocean. It travels over long distances and can convey a great deal of information. Marine mammals and other ocean animals, but especially the toothed whales and dolphins, have evolved to use sound efficiently for sensing their environment and communicating with each other.

For some of the same reasons that sound is important to marine mammals, it is used by navies. The noise produced can have a range of consequences for ocean life which range from rupture of organs through permanent hearing loss, temporary hearing loss, disturbance, masking of sounds, and psychological effects. All of these six channels may have population level consequences.

So how can we, the research community, assess these potential consequences in order to guide you as lawmakers? The key issue you must understand is that studies of some potential effects of some sounds on some species, such as research on ear structure after sound exposure, inform us very little about the population effects of sounds.

There are about 80 species of whale and dolphin. Noises vary greatly in a range of characteristics, and can produce population level effects through at least the six different channels I have just mentioned. For instance, the Navy-sponsored studies of four species of baleen whale to reduced-power LFA sources showed clear behavioral responses, but this tells us almost nothing about the population effects of the full source on sperm and beaked whales, which are, for many of us, the real concern.

However, there are data. In March 2000 a stranding of beaked and other whales took place in the Bahamas as a result of naval exercises. For a population biologist, the key statement in Balcomb and Claridge's report is this: "None of the Cuvier's beaked whales that we had documented in our 9-year study have returned since the March 15 naval exercise. We consider it entirely plausible that most, if not all, of the local population of this species was killed on that day."

We know little of beaked whale population biology, but our own studies and those of Balcomb and Claridge suggest that these animals probably generally occur in small local populations which would be very vulnerable to these kinds of events.

Some maintain that the Bahamas stranding was a one-off event caused by special oceanographic circumstances, but this is not the case. The International Whaling Commission reports that historically, 8 of 49 beaked whale strandings and all 6 out of 6 multiple species beaked whale strandings occurred together with military activities. For a population biologist, these are scary numbers.

But what about LFA? LFA is of a lower frequency than most other sonars and has enormous range, with one transmission potentially affecting whales over an area of about the size of Texas. This, again is scary for a population biologist.

Because LFA is of a lower frequency than the sonars that operated during the Bahamas stranding, it is sometimes concluded that it will not be dangerous. This is wrong. We know so little of how sound affects populations of marine life, that we cannot conclude that LFA will be better or worse than other sound sources, but the huge range over which it operates is of grave concern.

So, unfortunately, as so often in the marine world, you must regulate and manage based on imperfect knowledge. But from this population biologist's perspective, it is clear that LFA is an important threat to marine life.

Thank you very much.

[The prepared statement of Mr. Whitehead follows:]

Statement of Hal Whitehead, PhD, Killam Professor of Biology, Dalhousie University, Halifax, Canada

I have been asked to comment on the US Navy's use of SURTASS LFA sonar, as well as other sonar technologies, and their possible effects on marine mammals. I am very grateful to you for offering me this opportunity.

I have been studying the population biology of whales, especially sperm and beaked whales, since 1975, and have published over 100 papers in refereed journals. I am Killam Professor of Biology at Dalhousie University and a member of the Cetacean Specialist Group of IUCN, which allocates conservation priorities for whales and dolphins globally. I am also a member of the Committee on the Status of Endangered Wildlife in Canada, which assesses the status of species of animals and plants, and Co-chair of its Marine Mammal Subcommittee

I will make these comments on the potential effects of military sonars from the perspective of a population biologist. We as a society, and you as lawmakers, are concerned about how human activities in the ocean affect the health and viability of populations, species and ecosystems. These questions are in the realm of population biology.

Sound is, in many ways, the best channel for communication and sensing in the ocean. It travels over long distances and can convey a great deal of information. Marine mammals and other ocean animals have evolved to use sound efficiently for sensing their environment, detecting prey and predators, finding and attracting mates, and keeping in touch with their social partners and young. This is especially the case for the odontocete or toothed whales which have sophisticated sonars and social systems. They are critically dependent on sound. As my wife and colleague, Dr Linda Weilgart, has put it AA deaf whale is a dead whale.@

For some of the same reasons that sound is important to marine mammals (communication, sensing the environment, predators and prey) it is used by navies. Even before the development of LFA systems, the amount of noise in the oceans increased dramatically from human activity. Of the various types of noise that we are introducing into the ocean, military sonars have some features of special concern, such as high intensities and frequencies within the range that are commonly used by marine mammals. It can have a range of consequences for ocean life from rupture of organs, through permanent hearing loss, temporary hearing loss, disturbance, masking of sounds, and psychological effects. All of these channels, and especially when they act in combination, may have population level consequences.

How can the research community assess these potential consequences in order to guide you as lawmakers? The key issue you must understand is that studies of some potential effects of some sounds on some species, such as research on ear structure after sound exposure, and the US Navy's LFA whale research program, inform us very little about the population effects of sounds. There are about 70 species of whale and dolphin, noises vary greatly in frequency, intensity and other characteristics, and can produce population level effects through at least the six different routes just noted. It is also important to realize that animals can be injured by sounds which they cannot hear.

The Navy-sponsored studies of four species of baleen whale to reduced-power LFA sources showed clear behavioral responses (*e.g.* Miller et al. 2000). But this tells us almost nothing about the population effects of the full source on sperm and beaked whales, which are, for many of us, the most obvious area of concern.

Studying the population biology of any oceanic species is very difficult, but there are data on how ocean noise can produce population-level effects. In March 2000, a multiple-species stranding of beaked and other whales took place in the Bahamas

following, and, as is now clear, as a result of, naval exercises. There has been a lot of attention paid to the anatomical studies of the stranded animals, and these are important. But, for a population biologist, the key statement in the report is none of the Cuvier's beaked whales that we had documented in our nine-year study have returned since the March 15 naval exercise... We consider it entirely plausible that most, if not all, of the local population of this species was killed on that day... (Balcomb and Claridge, 2001). We know little of beaked whale population biology, but evidence from the Bahamas project and the only other long-term study of a beaked whale population which my group carries out off Nova Scotia (Gowans et al., 2000) indicates that these animals may generally occur in small local populations near the edges of the continental shelves. Such populations would be very vulnerable to these kinds of events.

Some maintain that the Bahamas stranding was a one-time event, caused by special oceanographic circumstances, but another recent publication shows that this is not the case. The International Whaling Commission (2001) reports that 8 out of 49 beaked whale strandings (1838–1999), and 6 out of 6 multiple species beaked whale strandings (1974–1999), occurred with military activities. For a population biologist these are scary numbers, and strongly suggest that naval activities, and the sounds that accompany them, are frequently lethal to beaked and other whales and have population-level consequences.

What about LFA? LFA is of lower frequency than most other sonars, and has increased range. The US Navy has not, to my knowledge, provided useful ranges. However, 120db is the level at which marine mammals often display clear reactions to noise. Competent bioacousticans have calculated that LFA reaches 120db at 500km from the source. Thus any LFA transmission could potentially affect an area of about the size of Texas. This again is scary for a population biologist.

Because LFA is of a lower frequency than the sonars that operated during the Bahamas stranding, it is sometimes concluded that it will not be dangerous. This is wrong. We know so little of how sound affects populations of marine life that we cannot conclude that LFA will be better or worse than other sound sources, but the huge range at which it may be a threat is of grave concern.

To sum up, we know that more noise is generally bad, and there is quite good evidence that military sonars can have population level effects on whales. Because of the difficulties of studying population level effects directly, the scientific community is unlikely to be able go very much beyond these summary statements in the medium term. In this case, as so often in the marine environment, you must regulate and manage based upon imperfect knowledge. I cannot make a professional assessment of the military merits of LFA sonar, but there is good reason to believe that it could have a severe population-level impact on marine life.

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Mr. GILCHREST. Thank you, Dr. Whitehead.

Dr. Rose?

STATEMENT OF NAOMI A. ROSE, MARINE MAMMAL SCIENTIST, THE HUMANE SOCIETY OF THE UNITED STATES

Ms. ROSE. Good day. My name is Naomi Rose. I am the marine mammal scientist for The HSUS. On behalf of our more than 7 million members and constituents, I wish to thank you, Mr. Chairman, and members of the Subcommittee for inviting me to testify on the Navy's SURTASS LFA sonar.

The HSUS has been involved in the issues surrounding LFA since the existence of this technology first became public knowledge

in 1995. Today I would like to address five main points concerning LFA and our concerns.

One, regarding the scientific research program or SRP that the Navy conducted, The HSUS has consistently pointed out the limitations of this research. While the SRP was a reasonable beginning, it was never designed to adequately inform the NEPA process. Its results were clearly incapable of providing enough information to conclude that LFA would have negligible impacts on marine life.

Nevertheless, the Navy, NMFS, and some witnesses on this panel have in fact concluded that LFA, operated under proposed mitigations, is essentially risk-free. It is germane to point out that the Navy and most scientists thought the same thing about mid-frequency sonars prior to the mass stranding of the beaked whales in the Bahamas in March 2000.

It is not accurate to say that active sonars have been operating for decades without harm to marine life. Rather, these sonars have been operating without any observed harm to marine life, and yet some harm in fact has been correlated with these activities. It is quite possible, in fact, that standard active sonars have been harming beaked whales for decades, and nobody noticed because nobody was particularly looking until now.

It is important to note that the SRP results could not disprove the hypothesis that feeding, migrating and breeding are so important to whales that exposure to LFA transmissions of up to 155 dB was not enough to cause them to abandon these behaviors.

Scientists make progress when studying complex subjects not by proving, but by disproving hypotheses. The Navy's impatience with scientific process has been apparent from the inception of the SRP, making its claim that it has based its conclusions that LFA is benign on sound science especially troubling.

My second point is regarding the 180 decibel safe exposure level. None of the whales in the SRP were exposed to transmissions above 155 dB, yet the Navy has determined, and NMFS concurs, that the safe exposure level for LFA transmissions for all marine life is 180 decibels.

Sounds at 180 dB are almost 1,000 times more intense than sounds at 155 dB. From the SRP, we know that baleen whales exposed to low frequency sounds of up to 155 dB in the short term changed their vocalization rates, deviated from migratory paths, displaced themselves from breeding grounds, and lengthened mating songs.

There is no way, from these results, that anyone can conclude that exposure to sounds almost 1,000 times more intense will have no greater effect, especially over the long term. To conclude that the effect of such exposure will be negligible is arbitrary.

My third point addresses the comparison between mid-frequency sonars and LFA. The Navy and NMFS have dismissed as speculation the possibility that the mass stranding of beaked and baleen whales in the Bahamas was not an isolated event, yet as noted in Dr. Whitehead's testimony, of the six known mixed species mass strandings involving beaked whales before the Bahamas, all six occurred in proximity to naval maneuvers.

These are remarkable statistics. These correlations are not proof that active sonars kill beaked whales, but I would like to point out

that the results of the SRP are not proof that LFA is benign, either.

The Navy, NMFS, and some witnesses here today believe that comparing mid-frequency sonars to LFA sonar is like comparing apples to oranges. I believe it is more a matter of comparing apples to apples, a difference in degree, not kind.

My fourth point is regarding resonance effects. The HSUS notes that there is virtually no discussion in the SURTASS LFA documentation of the potential for resonance impacts on marine mammals exposed to low frequency sound. These are physical effects that cause reverberations in air-filled cavities, tissues and organs of marine animals. The common analogy is a wine glass shattered by an opera singer, so we are talking about tissue rupture.

As I am not a bioacoustician, I merely wish to point to this issue as one of serious and legitimate concern. I urge the Subcommittee to explore this issue further with members of this panel, but also that members approach additional experts in bioacoustics, oceanography and the physics of sound, in order to receive a full picture of the potential negative impacts on marine life from resonance impacts of LFA.

Finally, the MMPA requires that NMFS set forth regulations for monitoring and reporting of authorized incidental takes. The purpose of this provision is to verify that the activity in question is in fact having only negligible impacts on marine mammal species and stocks.

As there are no empirical data on the impact of LFA transmissions on marine mammals at exposures greater than 155 decibels, the impact of exposures between 155 and 180 dB is inarguably uncertain. Therefore, monitoring marine mammals between 155 and 180 dB is not only legally required but scientifically imperative. Despite this, there is no proposal to require monitoring or reporting of takes at exposures below 180 dB, thus violating the letter and the intent of the MMPA.

In conclusion, The HSUS believes that the results of the SRP and other research have been overinterpreted and inappropriately applied to all marine species. We believe that there is compelling evidence that operational deployment of LFA will in fact have significant negative impacts on the marine environment, especially in conjunction with LFA-like sonars that are being developed in other nations. We also believe that NMFS's proposed rule violates the MMPA.

Thank you for allowing me to testify today, and I would be happy to answer any questions.

[The prepared statement of Ms. Rose follows:]

Statement of Naomi A. Rose, Ph.D., Marine Mammal Scientist, the Humane Society of the United States

Good day. My name is Naomi Rose and I am the marine mammal scientist for The Humane Society of the United States (HSUS). On behalf of our more than 7 million members and constituents, I wish to thank you, Mr. Chairman and members of the Subcommittee, for inviting me to testify on this panel addressing the US Navy's use of Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) sonar. I very much appreciate the opportunity this hearing provides to have all views on this controversial technology presented to this Subcommittee.

BACKGROUND

The HSUS has been involved in the issues surrounding the Navy's use of SURTASS LFA sonar since the existence of this technology first became public knowledge in 1995. Along with the Natural Resources Defense Council and Cetacean Society International, The HSUS has from the beginning followed the Navy's National Environmental Policy Act (NEPA) process, which resulted in the publication of a final Environmental Impact Statement (EIS) in January 2001. I have attended numerous meetings and presentations by the Navy and have participated in numerous discussions and debates on this controversial technology. I also spent three days in 1997 on the Cory Chouest, the Navy research vessel currently carrying the one operational SURTASS LFA sonar system, when it hosted a civilian contingent of interested parties during Phase I of the Navy's Low Frequency Sound Scientific Research Program (LFS SRP). The HSUS submitted extensive comments on the Navy's draft EIS and on the National Marine Fisheries Service's (NMFS) proposed rule for a small take exemption during use of SURTASS LFA sonar during peacetime.

Throughout the NEPA process, The HSUS has consistently pointed out the limitations of any research carried out under the LFS SRP. While this research was a reasonable beginning, it was never designed to adequately inform the NEPA process—the results from the LFS SRP were clearly incapable of providing adequate information to make careful management decisions or to conclude that the use of LFA sonar would have negligible impacts on marine life. A study of far greater scope, both in terms of species examined and years pursued, would be necessary before any solid conclusions regarding significant impacts could possibly be made. Nevertheless, the Navy, NMFS, and some witnesses on this panel have in fact concluded that LFA sonar, operated under the mitigations proposed in the final EIS and proposed rule, is to all intents and purposes risk-free.

It is germane to point out that the Navy (and most scientists) thought the same thing, based on about the same amount of information, about the use of mid-frequency sonars prior to the mass stranding of beaked and baleen whales in the Bahamas in March 2000 as a result of exposure to standard mid-frequency tactical sonars during a routine Naval exercise. The Navy and others have stated that active sonars have been operating for decades in the ocean without harming marine mammals, but this is not accurate. These sonars have been operating without any observed or causally-linked harm to marine mammals. It is quite possible, in fact, that standard active sonars have been harming and killing marine mammals for decades and nobody noticed because nobody was looking—until now.

The bottom-line is simple—we do not know enough about marine mammal hearing (let alone that of fish and invertebrates) and the impacts of loud, low frequency sound on their ears and other organs to conclude that the operational use of LFA sonar would be harmless. Yet this is precisely what the Navy and NMFS have concluded. In fact, we do know enough to suspect strongly that it will be harmful—precautionary management compels us to at least delay deployment of this technology until we have a better understanding of its potential impacts. In fact, all active sonars should be re-examined in light of the growing evidence that their use is hazardous to beaked and baleen whales.

Today I would like to address the following points: 1) concerns with the LFS SRP; 2) the 180 dB criterion for "safe" exposure to LFA transmissions; 3) the comparison of observed impacts on beaked and baleen whales from exposure to operational levels of mid-frequency sonars to potential impacts on marine mammals from exposure to operational levels of LFA sonar; 4) the potential for harmful resonance effects from exposure to LFA transmissions; and 5) concerns with the requirements for monitoring and reporting "takes" in the NMFS proposed rule.

1. LOW FREQUENCY SOUND SCIENTIFIC RESEARCH PROGRAM RESULTS

The LFS SRP examined certain short-term behavioral responses of four species of baleen whales to playbacks of LFA transmissions transmitted at sound pressure levels (SPLs or volumes) greatly reduced from operational levels. In all three Phases of the program, focusing on feeding, migrating, and breeding baleen whales, behavioral responses were observed, ranging from short-distance displacement to reduced vocalization rates. While most whales resumed previously observed behaviors soon after transmissions were discontinued, no long-term observations were made of individuals exposed to the playbacks. No whales were exposed to SPLs greater than approximately 155 dB re 1 mu Pa.

The SRP scientists concluded that exposure to low frequency sound below 155 dB did not appear to have any short-term biologically significant impacts on whales. Appropriately for this limited work, this is a limited conclusion. The team cautioned that these results were preliminary and of limited application. In subsequent publi-

cations, certain team members indicated some concern about LFA sonar, concluding that behavioral changes observed during playbacks of LFA transmissions "might affect demographic parameters or [they] could represent a strategy to compensate for interference from the sonar." [1] In none of their publications did SRP team members conclude that exposure to operational levels of LFA sonar would have no significant biological impact on cetaceans (let alone all other marine animals). This sweeping conclusion was found solely in the Navy's final EIS (and then copied in NMFS' proposed rule), although the EIS points to the SRP results for support.

None of the LFS SRP playback experiments could disprove an alternative hypothesis—that feeding, migrating, and breeding are so important to blue, fin, gray, and humpback whales that exposure to reduced levels of LFA sonar noise is an insufficient stimulus to cause them to abandon these behaviors. In short, perhaps all the whales in these experiments were negatively impacted—perhaps they were partially deafened—but they nevertheless chose to continue their vital life processes. No one can say if this conclusion is any more or less the truth than the Navy's conclusion that there was no negative impact. If adequate prey are few and far between, predator-free migratory corridors narrow, or safe breeding sites limited, then the introduction of a source of noise pollution, however damaging, may be a minor consideration for these animals. This sort of decision-making, weighing pros and cons, occurs constantly in many species, including human beings. [2]

Ultimately, the Phases of the LFS SRP were designed to test a single and simple hypothesis: "It is doubtful that many marine mammals would remain for long in areas where received levels of continuous underwater noise are 140+ dB at frequencies to which the animals are most sensitive." [3] The results of the LFS SRP disproved this hypothesis up to 155 dB. Very little else was accomplished and certainly the hypothesis that LFA transmissions will have a negligible impact at 180 dB was not proved (nor was any evidence provided to support it). Science does not in fact prove hypotheses. It disproves hypotheses. Scientists make progress when studying complex subjects by eliminating hypotheses that are narrow in scope, approaching the "truth" incrementally. The Navy's impatience with the scientific process has been apparent throughout the NEPA process, making its claim that its EIS conclusions are based on sound science especially troubling.

Finally, as a representative for The HSUS, I attended the May 1997 meeting in Boston at which the LFS SRP was first substantially discussed. I state for the record that my recollection of how species were selected differs from what is described in the Navy's final EIS and in NMFS' proposed rule. While the group generally agreed that the four baleen species selected were likely to be among the most vulnerable to LFA transmissions, the group also agreed that sperm whales and beaked whale species were of equal concern. The sperm whale, in fact, was included in Phase III of the SRP, but in the end no data were collected on sperm whales because none were observed during the study period. Beaked whales were not included solely due to logistical constraints. In addition, the Boston discussion clarified that the four baleen species were selected as much for their accessibility and the likelihood of collecting sufficient data as because they were considered representative models for other baleen whales. Given the subsequent mass stranding of beaked and minke whales in the Bahamas in March 2000, after exposure to active sonars used in routine Naval maneuvers, clearly beaked whales continue to belong on the list of species potentially most vulnerable to LFA transmissions. The evidence from the Mediterranean [4] and the Bahamas suggests strongly that SPLs lower than 180 dB for mid-frequency and low frequency sounds could have lethal effects on several species of beaked (and possibly baleen) whales, over a relatively large geographic area. The essential failure of the final EIS or the proposed rule to take these incidents (as well as other beaked whale strandings coincident with naval exercises in the Canary Islands and elsewhere [5]) and as-yet-unavailable results from on-going investigations into account when determining if SURTASS LFA sonar will have only neg-

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[1] Miller, P.J.O., N. Biassoni, A. Samuels, an P.L. Tyack. 2000. Whale songs lengthen in response to sonar. Nature 405:903.

[2] For example, humans often knowingly remain (with little behavioral modification) in injurious situations, when livelihood or housing demands require (*e.g.*, coal miners risking black lung because the mines are a region's only viable employer; poor families living in marginal neighborhoods with environmental hazards because it is the only affordable housing).

[3] This hypothesis can be found on p. 369 of Richardson, W.J., C.R. Greene, jr., C.I. Malme, and D.H. Thomson. 1995. Marine Mammals and Noise. Academic Press, San Diego. 576 pp.

[4] Frantzis, A. 1998. Does acoustic testing strand whales? Nature 392:29. This article concluded that a 1996 mass stranding of beaked whales along the Greek coastline after a NATO naval exercise testing a low to mid-frequency sonar was highly unlikely to be unrelated to this testing.

[5] International Whaling Commission. 2001. Report of the Standing Committee on Environmental Concerns, Appendix J. J. Cetacean Res. Manage. 3(suppl):255.

ligible impacts on marine mammals violates the "best scientific information available" standard of the MMPA.

2. THE 180 dB CRITERION FOR "SAFE" EXPOSURE TO LFA TRANSMISSIONS

None of the whales in the LFS SRP were exposed to sounds greater than 155 dB. Yet the Navy has determined, and NMFS concurs, that the "safe" exposure level for LFA transmissions for all marine life is 180 dB. This SPL corresponds to a distance approximately 1 km from the LFA sonar sound source; that is, animals approximately 1 km from the transmitting SURTASS LFA sonar vessel would hear the sound at an SPL of approximately 180 dB. I believe not coincidentally, this distance also corresponds to a distance that trained marine mammal observers can reliably spot and identify surfacing marine mammals from a ship whose deck is relatively high off the water.

It is difficult for humans not accustomed to dealing with acoustics to grasp the leap in intensity (not necessarily in perceived volume, but in acoustic energy) from 155 dB to 180 dB. Sounds at 180 dB are almost 1000 times more intense than sounds at 155 dB. From the LFS SRP, we know that baleen whales exposed to low frequency sounds up to 155 dB changed their vocalization rates, deviated from their migratory paths, displaced themselves from one coastal area to another while engaged in breeding behavior, and lengthened their mating songs. These were all observable, short-term behavioral changes. There is no way from these results that anyone can conclude that exposure to sounds almost 1000 times more intense will have no greater effect, particularly if these effects are difficult or even impossible to detect without closer observation (for example, hearing damage) or only become apparent in the longer term. In fact, there is no way to conclude from these results what effect such exposure would have on these whale species—to conclude that the effect will be negligible is simply arbitrary.

There are very few empirical data on the impact of low frequency sound on marine mammals above 155 dB. The studies done to date examined species held easily in captivity—dolphin and small whale species and seals and sea lions. The applicability of these results to beaked or baleen whales is completely speculative. The establishment of 180 dB as the exposure level beyond which serious injury or even death is likely to occur in beaked and baleen whales, based on anatomy and other aspects of biology and physics, is indeed only educated guesswork. If the Navy and NMFS are going to rely on speculation to guide their management decisions, then they must do so without prejudice.

3. MID–FREQUENCY ACTIVE SONAR VS. LOW FREQUENCY ACTIVE SONAR

The Navy and NMFS have dismissed as mere speculation the possibility that marine mammals suffering temporary hearing loss may be more susceptible to predation or ship strike because they may not hear predators or ships until it is too late to initiate avoidance. Yet such a speculation is merely common sense. They have also dismissed as speculation the possibility that the mass stranding of beaked and baleen whales in the Bahamas in March 2000 was not in fact an isolated event. Indeed this is true—an educated speculation based on some compelling evidence. As noted in other testimony, of the seven now-known mixed species mass strandings involving at least one species of beaked whale, all seven occurred in proximity to naval maneuvers. This is a remarkable statistic. Eight out of 49 mass strandings of Cuvier's beaked whale have also occurred in proximity to naval maneuvers, including the stranding along Greece's coastline after a NATO naval exercise testing a low frequency sonar. These correlations are not proof that active sonars kill beaked whales—but the results of the LFS SRP are not proof that LFA sonar is safe either. The seven-out-of-seven statistic is certainly strongly suggestive—suggestive that in the presence of naval acoustic activities and perhaps under specific (but not necessarily uncommon) oceanographic conditions, beaked and baleen whales are impacted in a way that causes them, if land is nearby, to strand and die.

The Navy, NMFS, and some witnesses here today believe that comparing what happened with mid-frequency sonars in the Bahamas to what may happen with LFA sonar is premature and even baseless. I have often heard the phrase "comparing apples and oranges." I believe it is more a matter of comparing two different varieties of apples—in other words, the two situations are different in degree, not kind. In my opinion, what is a matter of apples and oranges is establishing a "safe" exposure level for marine mammals (based on mere speculation) of 180 dB while establishing a "safe" exposure level for humans (based on empirical studies of the effect of LFA transmissions on Navy divers) of 145 dB. Interestingly, the 145 dB criterion is based on a 2% "very severe aversion reaction" standard. Thus human divers are protected at a 2% level based on psychological impact (*i.e.*, it is assumed that 2% of divers will be affected psychologically when exposed to 145 dB), while marine

mammals are protected at a 95% level based on physiological impact (*i.e.*, it is assumed that 95% of marine mammals will be affected physiologically—will suffer temporary hearing loss—when exposed to 180 dB). Claiming that an exposure level (to anything, whether it is oceanic noise or arsenic in drinking water) that will physiologically affect 95% of individuals is "safe" is counter to virtually all human safety standards, where a 5% "will affect" level is more commonly accepted and used. The Navy and NMFS have selected this far less protective standard for marine mammals despite the fact that marine mammals are more dependent on sound and more likely to be exposed to LFA transmissions than human divers.

4. RESONANCE EFFECTS

The HSUS notes that, despite the recommendations of a number of scientists, there is minimal discussion and no substantive consideration in any of the SURTASS LFA NEPA or MMPA documentation of the potential for resonance impacts on marine mammals exposed to low frequency sound. These are physical effects that do not necessarily damage hearing but instead cause reverberations in air-filled cavities, tissues, and organs of marine animals—the common analogy is to a wine glass shattered by an opera singer's high C. In fact, in several instances in the various NEPA and MMPA documents, the primary and even sole impact of concern is identified as auditory effects, despite increasing evidence that perhaps the primary impact of concern should be non-auditory effects. As I am not a physicist or a bioacoustician, I merely wish to point to this issue as one of serious and legitimate concern. The Subcommittee can explore this issue further with members of this panel, but The HSUS recommends that members approach additional experts on bioacoustics, oceanography, and the physics of sound in order to receive a full picture of the potential negative impacts on marine life from the resonance effects of LFA and other active sonar transmissions.

5. MONITORING AND REPORTING "TAKES"

The MMPA requires that NMFS set forth regulations on the "requirements pertaining to the monitoring and reporting of [the authorized incidental takes of small numbers of marine mammals]." The Marine Mammal Commission has noted that the purpose of this provision is to verify that the activity in question is in fact having only negligible effects on marine mammal species and stocks. As there are no empirical data on the impact of LFA transmissions on marine mammals at SPLs greater than 155 dB, the impact of exposures between 155 dB and 180 dB is inarguably uncertain, regardless of "reasonable" assumptions, educated speculation, or empirical data using other sound sources, frequencies, and species. Therefore, monitoring marine mammals exposed to SPLs between 155 dB[6] and 180 dB is not only legally required but scientifically imperative.

Despite this requirement, the Navy does not intend and NMFS is not proposing to require monitoring or reporting of takes at exposures below180 dB, thus violating the letter and intent of the MMPA. The proposed mitigations are based entirely on the assumption that no takes other than harassment and non-serious injury will occur at exposures below 180 dB. Thus the Navy has requested authorization to take small numbers of marine mammals by harassment and non-serious injury only. By the Navy's (and NMFS') own definition, these takes will occur between 120 dB and 180 dB (0% risk to 95% risk, respectively). Yet there is no proposed real-time monitoring or reporting of impacts of LFA transmissions below 180 dB exposures.

A long-term monitoring program plans to provide annual estimates of the number of animals injured and harassed (for example, through coordinating with stranding networks), but given the lack of monitoring below 180 dB, it is difficult to see how these estimates will be other than pure guesswork. Stranding records are unlikely to provide direct evidence of cause, unless qualified marine scientists are on-site during a stranding event to conduct necropsies on fresh specimens (as in the Bahamas incident; however, this co-occurrence of a qualified scientist and stranded whales was a highly unusual event). Therefore the Navy will have few or no data with which to comply with its obligation (and plan) to 1) provide actual annual harassment and non-serious injury estimates; 2) verify the estimates predicted from modeling; or 3) verify its assumption (with all the attendant uncertainties) that no serious injuries or deaths will occur between 120 dB and 180 dB.

The Navy's risk analysis assumes that 2.5% of exposed animals will be harassed or non-seriously injured at 150 dB, 50% at 165 dB, and 95% at 180 dB. If these

[6] Monitoring impacts at exposures of 155 dB as a lower limit is a minimum requirement—even better would be to set the lower limit for monitoring below 155 dB, down to the current "safe" level of 120 dB, in order to collect data seeking to verify the assumption that only harassment and non-serious injury occur between 120 dB (0% risk) and 180 dB (95% risk).

assumptions are valid, there could be extremely large numbers of marine mammals harassed or non-seriously injured by LFA transmissions. However, given that there will be virtually no monitoring of marine mammals exposed to SPLs lower than 180 dB, it will be impossible for the Navy to ground-truth these assumptions. Should these assumptions be invalid and should even greater percentages of exposed animals be harassed and non-seriously injured or any percentages be seriously injured or killed at exposures below 180 dB, the monitoring requirements as proposed will be unlikely or unable to determine this.

In fact, the monitoring program in the proposed rule (specifically the pre-transmission monitoring for the presence of marine mammals and sea turtles) is designed to exclude marine mammals from the predicted "serious injury and death" impact zone within the 180 dB sound field surrounding the LFA sonar sound source. The monitoring is not designed (in violation of law) to record what actually happens to marine mammals within the predicted "harassment and non-serious injury" impact zone between 120 dB and 180 dB. The monitoring program as presented is, in fact, a mitigation measure, whereas the MMPA sets mitigation and monitoring apart as two separate requirements. Therefore, the Navy's (and NMFS') monitoring program will violate the MMPA if implemented as proposed.

CONCLUSION

The Navy and NMFS not only consider LFA sonar safe to deploy operationally, they consider an exposure level of 180 dB for low frequency sound to be safe for all marine life. I cannot emphasize enough that there is NO empirical evidence supporting this conclusion for beaked or baleen whales (or for sea turtles, fish, and invertebrates) and the evidence from studies on other whale and dolphin species, as well as for seals and sea lions, is at best preliminary and of limited applicability, due in part to small sample sizes, the use of sounds that differ in several characteristics from LFA transmissions, and the non-ideal acoustic environment of the experiments. If it is appropriate to apply this limited research evidence in support of a 180 dB "safe" exposure level to species with different hearing capabilities and a sound source with different acoustic properties, then it should be equally appropriate to apply the evidence for negative impacts of sonar use from incidents involving mid-frequency sonars to the operational use of LFA sonar. It is inconsistent and biased to allow apples to be compared to oranges only when it promotes LFA sonar deployment.

The HSUS believes it is premature to conclude that LFA sonar is benign. We believe that the results, preliminary and limited in nature, of the LFS SRP and other research have been over-interpreted and inappropriately applied to all marine species. We believe that there is compelling evidence that operational deployment of LFA sonar, especially in conjunction with LFA-like sonars being developed in other nations, will in fact have significant negative impacts on the marine environment, most of which may not become apparent for years and even decades. We also believe that NMFS' proposed rule is in violation of the MMPA.

I once again thank the Subcommittee for allowing the differing views surrounding this controversial technology to be voiced in this hearing.

Mr. GILCHREST. Thank you, Dr. Rose.

Dr. Fristrup. Have I pronounced that right, sir?

STATEMENT OF KURT FRISTRUP, BIOACOUSTICS RESEARCH PROGRAM, CORNELL LABORATORY OF ORNITHOLOGY

Mr. FRISTRUP. Better than many of my colleagues. Fristrup. My name is Kurt Fristrup. I work at the Cornell Bioacoustics Research Program, the Laboratory of Ornithology, and I would like to begin by affirming my unequivocal support for the MMPA. I think it is absolutely imperative. It has been one of the most important vehicles for marine conservation for the last two decades, last several decades.

And I think that in the absence of definitive information, the MMPA's requirement that environmental impact assessments be based on conservative assumptions is also a critical feature of the document, even though it sometimes results in what seems like an

onerous regulatory burden. I think that the requirement for a conservative assumption is good for two reasons.

The first is that many biological changes are irreversible. The loss of a species through extinction is one obvious example, but there is increasing evidence that marine environments can undergo irreversible ecological shifts if perturbed sufficiently, and there is no question that human activities, fishing among them, are introducing fairly significant impacts on marine environments.

But the second excellent reason why we should maintain this regulatory requirement for conservative assumptions is that it encourages the stakeholders, the applicants for permits, to conduct or promote research that will remove significant sources of ignorance and therefore ease their own regulatory burden. That is to say, it encourages the very people who need to apply for permits to promote the process that we would use to understand better what the problems are in the ocean, and help us devise more intelligent regulatory procedures. It helps bring them into this process of learning more about how the ocean works.

Now, you have asked me as a scientist to try and tell you what we know about the potential impact of LFA, and as scientists we are going to be most comfortable when we talk about the results of repeatable, controlled experiments. We will be moving onto less sure ground when we talk about numerical models, where we don't have real data but we can specify what our assumptions are, and given those assumptions, what the results turn out to be.

And in the absence of those kinds of information, we have to resort to things like pointing out anecdotal information that is suggestive, or we guess, and we sometimes dress up our guesses as theories. I think it should be obvious to all of you that when you are making decisions that have wide-ranging impacts, the first two kinds of evidence should always be preferred.

Now, regarding the LFA SRP, it was patently obvious 5 years ago that no team of scientists could possibly study every species everywhere. There was no chance that all possible impacts could possibly be determined. What happened was a relatively public process of trying to identify which species were the most likely to be at risk, and then to put in place the best program that could be done to study the reactions of those animals to controlled exposures of these sonars.

That process resulted in the SRP which did focus on four species of baleen whales, but also monitored through surveys the responses of another dozen or more species of marine mammals that happened to be in the same areas. And I can emphasize that there were more than 30 biologists involved in the SRP, even though three or four of us wound up taking the prominent speaking roles.

And it was conspicuous that during all three phases, none of those independent researchers reported a behavioral response that would have triggered us to stop the experiment. We had all kinds of protocols in place that would call for suspension of the experiments upon any acute behavioral response. The striking thing for those of us who expected to see a result was that there were no repeatable responses observed on the water.

Now, a lot, many, many man-months of patient statistical effort has allowed us to pull out some consistent responses, or I should

say some statistically average responses to exposure to this sound. For example, humpback whales off Hawaii, which sang songs in 1997 or 1998 that were about 13.5 minutes long, showed a change in average song length of about 40 seconds in response to LFA exposure, and there were many other interesting aspects of that response, but it is much smaller than the song-to-song variance of the same whale, of any individual whale song.

That is to say, any one singer would change the length of its song by 2.5 minutes, on average, song-to-song, and yet the response to the Navy sonar was on the order of 40 seconds. This is precisely why it is so difficult to document responses to these sonars. They wound up being smaller than we expected, and especially small in range of stimulation to the natural range of behavior for these animals.

With these results in hand, we then tried to model the potential responses for operational impacts, and that involved the most extensive acoustic modeling effort I am aware of for this kind of environmental impact measurement. Those models, combined with risk function analysis which explicitly recognizes the potential impact in between 155 and 180 dB, are what went into the final report, the final environmental impact statement that tries to provide a prudent, conservative estimate of the potential impact of Navy LFA operations.

Thank you.

[The prepared statement of Mr. Fristrup follows:]

Statement of Kurt Fristrup, Bioacoustics Research Program, Cornell Laboratory of Ornithology

My educational and career choices were motivated by an abiding interest in science, conservation and education. The issues before us at this hearing, and the divergent opinions we will hear, will be most effectively resolved if our actions incorporate contributions from all three disciplines. The rational formulation of environmental policy must be based on scientific conservation, but it is imperative that we contemplate public education in this process. In addition to the need for an informed electorate, enduring efforts to monitor and conserve natural resources achieve the greatest success when the majority of the affected population adopts these commitments as their own.

GENERAL REMARKS CONCERNING THE MMPA AND SOUND

Marine mammals are the subject of intense popular interest and concern, so the MMPA reflects a societal priority. However, effective environmental conservation requires that we focus on the ecological justification for special regulations pertaining to Marine mammals, without being distracted by popular sentiments or misconceptions. As large-bodied predators at the top of the marine food chain, marine mammals can be used to gauge the status of broad assemblages of marine resources.

Marine mammals are important indicator species for the"heath of the world's oceans. There are about 100 species of marine mammals, and they have a substantial effect on global ocean ecosystems. For example, a rough estimate of the annual consumption of fishes and squids by sperm whales alone (1.5 million whales at 200 kg/day translates to approximately 100 million metric tons per year) is equivalent to the global annual production of human fishing efforts. Marine mammals must regularly surface to breath, and many of their sounds can be detected at ranges from tens to hundreds of miles. Among all marine organisms, they offer us unique opportunities to detect and observe them.

For marine environments, the sounds of human activities are especially pervasive. At all frequencies, the absorption of sound energy by seawater is more than 100-fold less than the absorption of sound by air. The changing physical properties of seawater with depth, and the reflective properties of the surface and ocean bottom, often create channels for very efficient sound transmission. A sound, especially a low frequency sound, can be audible at very long ranges from its source.

Hearing is critical for all vertebrates. It is an omnidirectional sense. No vertebrate species are known to be deaf; in contrast, many blind species of fish, amphibians, reptiles, and mammals have been documented. Animals are able to determine the direction to a sound source, and often the distance as well. For marine mammals, the spatial scale of their acoustical awareness may span tens or hundreds of miles.

These general considerations would lead us to predict that marine mammals would react to the sounds of human activities. This expectation has been confirmed many times by studies of a range of species in differing environments. In addition to these universally acknowledged facts, the need to protect marine mammal stocks from substantial losses due to Navy sonar operations is recognized by all interested parties (NMFS, Navy, academic scientists, environmental advocates). The disagreements arise from attempts to translate behavioral reactions to risk.

Scientifically documenting the link between observed behavioral reactions and risks to survival or reproduction is challenging. A seamless chain of empirical evidence will never be available. Therefore, every environmental analysis should clearly specify the entire deductive process used to translate behavioral reaction into risk.

The most likely means of deducing risk will involve explicit consideration of time or energy budgets. For time budgets, we might determine the duration of a disturbed behavior pattern upon exposure to a set of sounds, and express this as a fraction of the total opportunity perform the normal behavior. For energy budgets, we might determine the reduction in foraging success or the increase in energy expenditure due to the changed behavior, as a fraction of the animal's daily or annual energy budget. The remaining component of this deductive process would be an estimate of the reductions in survival probability or mating success due to this fractional loss of energy or opportunity.

The choice between time or energy budgets for estimating risk must focus on, the more likely limiting factor. For example, some opportunities for reproduction may be quite fleeting, and the energy expended in these efforts may be modest. In these cases, a time budget must be preferred. Environmental risk assessment must reflect our best knowledge about the critical environmental factors affecting the health of populations.

This approach to environmental regulation has the advantage that effort can- be effectively invested in critical areas by dismissing cases of negligible impact. Animals may exhibit brief changes in behavior to any perceivable stimulus. If it can be persuasively demonstrated that these momentary shifts in attention and activity are insignificant in relation to both the time and energy budgets of these animals, then these reactions do not constitute an environmental risk that merits regulation.

My remarks have focused upon behavioral reactions, because for almost all sound sources the risk of injury will be confined to a very small number of individuals (if any). The best evidence, culled from a wide variety of sources, suggests that permanent shifts in hearing thresholds will occur at sound levels that are limited to a range of several hundred meters from our loudest sound sources. Permanent damage to hearing almost certainly occurs at lower sound levels than damage to any other tissues. In order for the risk of injury to apply to a significant fraction of a population, the distribution and-movements of the animals would have to be very concentrated relative to the position and movement of the sound source. Given the spatial extent of most marine mammal populations, very few cases raise this concern.

Here I must also emphasize that in terms of risk of death there is no distinction between behavioral reactions and injury. A severe flight or panic reaction to a sound can cause animals to fatally strand on shore.

I close this section with a conundrum for environmental conservation. The irreversible nature of many environmental impacts motivates a cautious approach to assessing risk. Environmental impact assessments are required to incorporate plausible, worst-case assumptions. Thus, with complete' knowledge we should obtain less severe assessments of environmental impact than we are obligated to make when there are data gaps. This realization may encourage some environmental advocates to believe that it is in their best interests to inhibit environmental research or dismiss its findings. This strategy will be especially attractive to environmental activists who mistrust the scientific and federal policy processes.

None of us should question the requirement for conservative bias in environmental risk assessments. However, the potential for strategic abuse of these statutory requirements would be greatly reduced by more effective public education regarding environmental policy. This means, for example, that public hearings regarding policy should invest serious effort in providing a forum for education and discussion in parallel with their mission to solicit public comment.

A simple, effective mechanism for public education would to arrange for poster sessions. to run concurrently with hearings, in an adjacent room. Individuals, interest groups, regulators, and concerned commercial or federal organizations would be invited to display their views and informally discuss them with visitors. Citizens who come to comment would not have to sit passively listening to other people's comments, but could circulate in the poster area and participate in informal discussions.

I suggest this based on my personal experience at NMFS public hearings regarding their LFA permit decision. Many intelligent and concerned citizens showed up, but their comments were all too easy to dismiss because they were misinformed about undisputed facts. The formal public comment sessions often degenerated into showy displays of antagonism and emotion. However, at these same hearings I enjoyed many thoughtful and constructive conversations in the hallways. People were hungry for facts, and open to new ways of thinking. When these informal discussions ended with differences of opinion, it was always much clearer what the basis for disagreement was.

In my experience, better understanding of natural systems has allowed us to focus on critical environmental questions, and implement less onerous protective regulations. Environmental research may also reveal a new class of problems that had not been recognized previously, and it will always be less expensive to remedy such problems when they are detected early. Better information is essential for efficient environmental management and developing a lasting consensus regarding the conservation of biodiversity. History conclusively demonstrates that ignorance has never favored the preservation of natural habitats.

REACTIONS OF MARINE MAMMALS TO LFA SONAR

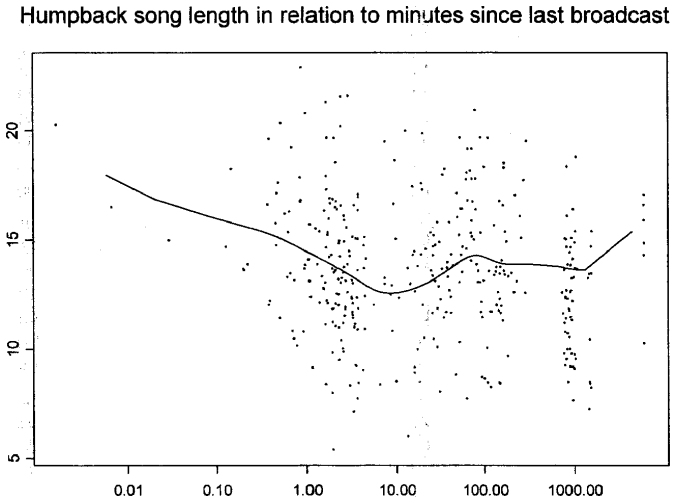
The LFA SRP was preceded by several studies showing that that baleen whales avoided industrial noise sources. Studies of several species demonstrated changes in movements related to sounds at received levels between 115 and 125 dB relative to an underwater sound pressure level of 1 Pa (this common received level reference will be omitted hereafter). Speaking in relation to the potential for hearing loss, Richardson of al. 1995 (Marine Mammals and Noise, p. 369) stated: "It is doubtful that many marine mammals would remain for long in areas where received levels of continuous underwater noise are 140+ dB at frequencies to which the animals are most sensitive." Based on these results, simple calculations indicated that LFA could affect huge areas of marine habitat. The U. S. Navy funded a Scientific 'Research Program (LFA SRP) to address critical gaps in our ability to predict the responses of marine animals to this sound source. In early 1997, the Navy sponsored meetings at which a collection of independent scientists and environmentalists identified the most promising opportunities for filling these data gaps. Three field projects emerged from these deliberations, and approximately 60 researchers participated in the resulting data collection.

Given the expectation that LFA signals could evoke acute behavioral reactions, a wide range of research protocols were adopted by the LFA SRP to ensure that none of the free-ranging animals understudy could be permanently affected by the experiments. Foremost among these precautions were commitments to ensure that no experimental animal would receive LFA signals at levels exceeding 160 dB, and that no animals within 3 nautical miles of shore were exposed to received levels exceeding 140 dB. Observational protocols called for suspension of LFA broadcasts when any member of the research team witnessed an acute reaction.

The three field programs of the LFA SRP generated enormous volumes of data, which are still being analyzed. Focal studies of individual animal behavior were conducted with received levels ranging from 125 dB to 155 dB. The most immediate and striking observations were the failure to observe any obvious response during the experiments., In terms of behaviors, movements, and the distributions of animals in the study area, no salient reactions to the LFA broadcasts were noted by large teams of observers. The reactions we can document emerged after months of detailed analyses of these data.

For example, after months of detailed analysis we were able to document that on average, humpback whales changed their song length by about 50 seconds in response to LFA broadcasts at close range. Humpback songs are inherently variable in length. Successive songs sung by individuals differed by 2.5 minutes in length on average, with the mean song length being 13.5 minutes. We found no association between the start of transmissions and the end of songs, so humpbacks did not artificially terminate their songs upon hearing the LFA broadcasts. However, the response we did measure was contingent on the portion of the song being sung at the time of the transmission. Humpbacks sometimes shortened, and sometimes length-

ened their songs upon hearing an LFA broadcast. None of the responses we measured persisted for more than a few hours after the last transmission.



Plot of humpback song length against minutes since last LFA broadcast. The line indicates the best fit, after accounting for seasonal, diurnal, and source level factors. The points in the neighborhood of 1000 minutes and beyond serve as the control measures here; the apparent anomaly for the rightmost five points is an artifact of small sample size.

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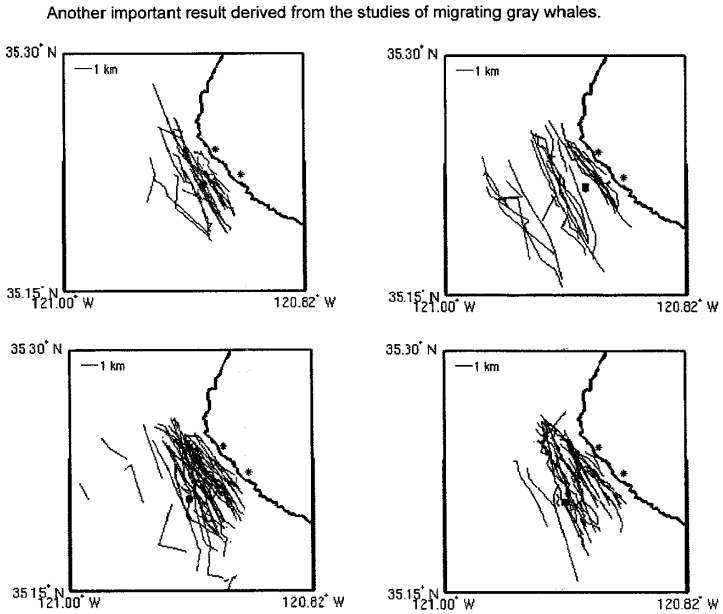

Tracks of migratory gray whales observed from shore stations (two dots above and left of the center of the plots). A 185 dB re 1 mu PA at 1 m sound source (single dot amidst the track lines) was moored in or near the migration corridor. Panels on the left represent tracks when the source was off, panels on the right represent tracks

when the source was on. Note that the reaction to the source disappeared when it was moored farther offshore.

This gray whale experiment was modeled on an early study that helped establish the original 120 dB received level guideline that NMFS used to identify behavioral harassment from sound exposure. The original results were confirmed by the results obtained with the source in the middle of the migration path. The surprising new result was that this reaction disappeared when the source was moved offshore. This latter result was strengthened by additional offshore broadcasts at source levels of 200 dB. Again, no changes in tracks were observed. This means that the response is not conditioned on received level alone; it depends on the position of the source relative to the desired movement pattern of the animal. The failure of offshore animals to react at all either reflects the importance of other factors like water depth and distance from shore, or the reduced sensitivity of the offshore migrating animals relative to those in the migration corridor.

Four baleen Whale species were closely studied in these experiments, and the distributions of more than ten other species were documented by visual surveys during two of the field studies. There was no evidence of a decrease in sighting rates for any species. So, close behavioral studies of tens of animals, combined with more distant observations of hundreds of animals, failed to reveal any reaction that would plausibly cause a significant change in survival or reproduction. This research decisively demonstrated that the response to these LFA broadcasts was much less salient than the scientific community had expected.

These experiments could not resolve all questions, and it will never be possible to study every species. Although the species we studied were chosen because scientists judged them most likely to be at risk, there are other species that merit similar studies to expand our results. However, there is n 'o new evidence that suggests another species will exhibit stronger reactions to low frequency sounds than the species that we studied. These research results have focused attention on much higher exposure levels, above the levels that were initially judged safe for our experiments. However, such studies are not of primary importance for evaluating the environmental impact of LFA. Extensive modeling has demonstrated that the vast majority of animals will be exposed to levels below those tested in our experiments during normal LFA operations.

I want to close with some general observations that have helped me understand why it is so easy to overestimate the impact of low frequency sounds on marine mammals. We forget that marine mammals experience a world of sound entirely different from our own, and with very different ears. Marine mammal ears must accommodate vastly greater changes in pressure than we do. Marine mammals also encounter much louder sounds in their lives than we do. Undersea seismic events produce enormously powerful sounds, for which the only terrestrial analog might be an explosive volcanic eruption. It would be rare for a human to be close to such an eruption, or survive it, but pelagic marine mammals probably pass by seismically active areas many times in their lives. Lightning strikes produce extremely loud sounds in air and water, but these sounds carry much farther underwater. Finally, marine mammals produce the loudest sounds in the animal kingdom. Their ears must have evolved to deal with their own sounds, and with the sounds of their close neighbors.

Another critical difference between our experience and that of marine mammals results from the relative sizes of our acoustic neighborhoods. In general, sound carries much farther in the water than in air. When we hear a sound, we can be sure its source is close enough to have a potential impact on us. In contrast, all marine mammals can hear sounds from very distant sources that they will never encounter. This suggests that marine mammal attention mechanisms must incorporate the ability to gauge the distance to a sound source, to diminish their responses to sounds from distant sources that are irrelevant to them. The LFA SRP probably evoked stronger reactions than will take place during normal operations in the open ocean. We achieved the same received levels that animals would experience during normal operations, but we brought the ship quite close to the animals (with lower transmit power levels) to do so. Some of the reactions we documented were probably amplified by the proximity of the source.

The LFA SRP established a high scientific standard for studying and estimating noise impacts, and significantly advanced our understanding of marine mammal responses to noise. New questions 'about Navy operational impacts on marine mammals have arisen, and the LFA SRP offers a good initial model for the process that should be used to address the most significant data gaps. I also advocate broadening the circle of scientists who participate in this research.

THE LFA ENVIRONMENTAL IMPACT ANALYSIS

Although the LFA SRP generated an enormous amount of data, and answered' several critical questions, many areas of uncertainty remain. This will always be the case, no matter how much time: and effort are devoted to filling data gaps. This is why I am unsympathetic to general claims that more time and research -are needed before a decision can be reached regarding deployment of LFA. As a scientist, I am always enthusiastic about more research, but I am skeptical then research alone can ever resolve these disputes. To make a valid claim that more research is needed, there must be -a-clear specification of how the data would significantly change our mutual assessment that the system can be safely operated. As an aside, I cannot imagine how the results of the LFA SRP could have been any more conclusive in, reducing our concerns about the system's, environmental impact.

An unprecedented acoustic modeling effort was developed to translate the LFA SRP results into a cautious estimate of risk to marine mammals. The LFA SRP data were used to develop a lower bound for risk of biologically significant disruption of behavior, and realistic Navy operational scenarios were simulated to estimate the potential impact on all marine mammals known to occur in those areas.

This LFA environmental impact analysis incorporated several conservative assumptions.

1. Baleen whales were used to model responses of all species. Most other species have much less acute low frequency hearing, and do not produce low frequency sounds.
2. Modeled operational scenarios were placed at sites where significant potential for impact on marine mammal populations was possible. Stock estimates were biased to exaggerate effects.
3. The effects of a series of LFA broadcasts were treated as cumulative, despite the intervals of silence between broadcasts and the fact that animals would not hear the signals when they were at the surface.
4. A 180 dB criterion for the possible onset of injury was adopted, based on evidence regarding temporary shifts in hearing thresholds and other precautionary warnings of physiological effects.
5. The function describing risk as a function of received level was steeper than analogous functions derived from empirical studies of marine mammal behavior.

The aggregate effect of these assumptions is a substantial overestimate of impact, which, is the prudent approach to uncertainty and. data gaps. Some of these individual assumptions may fail to be conservative, but it is very unlikely that the aggregate results would underestimate risk.

It is crucial to ensure that the cascade of conservative assumptions does not yield a completely implausible estimate of risk. The consequence of grossly inflated risk estimates would be wasteful expenditure of .public capital and mindfulness -on one problem, when many critical environmental issues go begging. It would also undermine the legitimacy of the regulatory process, and encourage potential subjects to avoid regulation at all costs.

I believe that marine noise pollution is a serious problem that merits comprehensive review. To effectively reduce marine noise levels, we will need to identify all activities that introduce significant sound energy in the oceans. We will need to devise equitable measures for reducing noise production, and ensure that all responsible parties consistently comply. Anything less will fail to achieve our shared goal of protecting marine mammals and conserving ocean habitats.

Mr. GILCHREST. Thank you very much. I just wanted to keep interrupting you and ask you a series of questions while you were talking, but I will wait until everybody is done with the testimony. Thank you very much.

Dr. Ketten?

STATEMENT OF DARLENE R. KETTEN, ASSOCIATE SCIENTIST, DEPARTMENT OF BIOLOGY, WOODS HOLE OCEANOGRAPHIC INSTITUTE, AND ASSISTANT PROFESSOR, DEPARTMENT OF OTOLOGY AND LARYNGOLOGY, HARVARD MEDICAL SCHOOL

Ms. KETTEN. Chairman Gilchrest, ladies and gentlemen, thank you very much for allowing me to testify and for asking me to ad-

dress what I hope will be useful information from my area of expertise, which is hearing and hearing loss. I am honored to be here, mostly because I think this is a very important issue, and I appreciate the fact that the Committee is willing to go forward with these testimonies.

Hearing is a significant sense, not just because I work on it. It is indeed perhaps the most universal of senses. There are many environments in which some sensory cues are lacking; lightless environments which have inhabitants that are blind. Sound is universal. There is no environment except deep space that is without sound, and to the best of our knowledge there is no vertebrate that does not hear, no naturally deaf animal.

In water, hearing is actually even more important. In water, sound is the one physical cue that carries over long distances with coherent information, with little degeneration or degradation of that signal. Therefore, many aquatic animals depend primarily for their sensory inputs on hearing.

Consequently, concerns about impacts from particularly anthropogenic sound—I am from Harvard, I have to use five syllables—that is, sounds which humans are putting into the water, are appropriate. They are timely. But they must not be unbound. I am concerned that we should instead have our concerns about impacts focused by factual information and by reason, as Dr. Fristrup has already touched upon.

The Committee hearing is appropriate and it is an important step forward to that end. There is a great deal of speculation around LFA in particular, and I would hope that we could start instead applying the information we do have.

In terms of assessing risk, allow me to give a few basic bits of information about hearing and about how hearing is lost. All mammals have the same basic ear. It is designed to capture, filter and analyze sound.

But, fortunately for people like me that are interested in other animals, not all ears are synonymous. They are not all alike. Structures differ in those ears. That makes for different hearing capacities, different frequencies and sensitivities, abilities to hear.

Each species differs in what it hears. Each species has an ear tuned to its habitat, to its needs. It is the "breed and feed" theory of hearing. You have to hear your predators, find your mates, communicate with other members of your species.

What harms one, for that reason, will not necessarily harm another. Hearing may overlap, but they are not synonymous. Sound is universal, as I have said, but hazards from sound are therefore not universal.

We fortunately know a good deal about how hearing is lost, in part because it is so important to us. However, we know about hearing losses primarily from a human perspective. What we know about animal hearing loss is largely based on experimental animals that are used as analogs for human hearing.

We know hearing is lost by disease, that it is lost by trauma, and it is lost by noise. Some mention has been made about sound being used to damage other tissues. I would like to set that aside. That is an extraordinary sound signal. It is not what we are talking

about in terms of received signals from sonars or other anthropogenic sound.

Whether any one sound, as I have said, is harmful for one animal or another is actually a combination of three major factors. The acronym is IFS: intensity; frequency; and sensitivity, the ability of the animal to hear that signal. It has been said that even if you can't hear a sound, it can harm you. That is not entirely true.

There is no single sound bite that I can give you that is safe or harmful to all marine animals. What do we know about marine mammals? Unfortunately, we know relatively little. In terms of research, as I said, we don't look at natural animal hearing. We look at them as analogs. Therefore, marine mammal hearing has been a poor stepchild in the auditory research domain.

We have so far tested approximately 20 percent of the 110 species of whales, dolphins, other marine mammals, total. They are all small captive animals, that is to say, smaller dolphins that usually are high frequency. Behaviorally, we know that they have a greater frequency range, better acuity. They are sensitive ears.

From modeling, from anatomy, we know that the larger whales are the ones that are likely to hear at low frequencies. That is less than 10 percent of all marine mammals, 10 percent of species, are likely to be impacted because of their sensitivity to lower frequency signals. But again, it requires a coincidence of that species at an intensity that is harmful in a vicinity where it can cause a disruption, as Dr. Whitehead has so properly noticed about population level effects.

There is also one other aspect to these ears that is very important. There is an interesting paradox. The seas are not silent. They evolve to tolerate noise. There is very good evidence now that particularly dolphins are somewhat resistant to acoustic trauma, and that is an area that we really need to pursue desperately.

The last thing that I wanted to say is that, again, it has been said a deaf whale is a dead whale. That is not entirely true. We also know that they do lose hearing, as we do, from disease, from trauma, and from noise. Again, the possible impacts of manmade noise are important, but we must also not assume that every stranded animal has necessarily been impacted by sound.

The Bahamian beached whale case has been brought up over and over again. I am a key component of that investigation. It is not related to LFA. I would be pleased to answer questions about that.

My last point—and I apologize for going over, I will sum up—that is, there are multiple sounds and multiple effects that we are putting out there. Sonars are certainly one of them. I would much prefer that we direct ourselves to what I consider an occupational hazard, the long-term noise at lower levels that is constant and pervasive throughout our oceans.

We are putting sounds into the oceans that are potential for harm, but I urge caution, not full stop, for any given program, particularly since if we begin that trend, we may deter development of useful or innovative sound tools that will assist us to preserve the animals. Rather, we should weigh each potential harm carefully, and rationally assess its probability of impact in the long and short term at population levels.

Thank you very much for your attention.

[The prepared statement of Ms. Ketten follows:]

Statement of Darlene R. Ketten, Ph. D., Associate Scientist, Department of Biology, Woods Hole Oceanographic Institution and Assistant Professor, Dept. of Otology and Laryngology, Harvard Medical School

MARINE MAMMAL AUDITORY SYSTEMS: A SUMMARY OF AUDIOMETRIC AND ANATOMICAL DATA AND ITS IMPLICATIONS FOR UNDERWATER ACOUSTIC IMPACTS

Terminology

Audiogram: A graph of hearing ability charting frequency (abcissa) vs. sensitivity measured as sound pressure or intensity (ordinate).

Cetaceans: Whales and dolphins

decibel (dB): a scale based on the log ratio of two quantities. It is commonly used to represent sound pressure level or sound intensity. The value of the decibel depends upon the denominator used, or reference pressure. Therefore the decibel level of sound is properly stated in the form of n dB re n microPa . The microPascal is a unit of pressure; *e.g.*, 100 dB re 20 microPa in air equals 160 dB re 1 mu microPa in water.

infrasonic: below 20 Hz, the lower limit of human hearing

kHz: kilo Hertz. A Hertz (Hz) is a measure of sound frequency equal to 1 cycle/sec, therefore a kHz is one thousand cycles per second.

Mysticetes: Baleen or moustached whales, which include rorquals. The largest whales, all of which are opportunistic gulp or seine feeders. They are not known to echolocate.

Octave: An octave is broadly defined as a doubling of frequency. Thus, a one octave shift from 500 Hz is 1,000 Hz, and from 3,000 Hz, it is 6,000 Hz. Adult humans have on average an 8–9 octave functional hearing range from 32 Hz to 16 kHz.

Odontocetes: toothed whales. All are believed to echolocate; *i.e.*, to use a biosonar for imaging the environment via sound and sound analyses.

Pinnipeds: Seals, sea lions, walruses.

ultrasonic: above 20 kHz, the upper limit of human hearing.

Introduction

Concomitant with man's increasing use of the oceans is an increase in the ocean's acoustic budget. In the mid 1970's, it was estimated that noise from human related activity was increasing in coastal areas and shipping lanes at 10 dB per decade. Given our ever increasing activity in all seas and at all depths, this figure is not surprising. It may even be too conservative., Anthropogenic noise is an important component of virtually every human endeavor in the oceans, whether it be shipping, transport, exploration, research, military activities, construction, or recreation. For some activities, such as military and construction, impulsive and explosive devices are fundamental tools that are intermittent but intense; for others, such as shipping, the instantaneous noise may be less, but sound is inherent in daily operations and is therefore a constant, pervasive by-product. Because these activities span the globe and produce sounds over the entire audible range of most animals, it is reasonable to assume that man-made noise in the oceans can have a significant adverse impact on marine species. Because marine mammals are especially dependent upon hearing and in many cases are endangered, the concern over noise impacts on these animals is particularly acute. Our concern is both logical and appropriate, but it is also, at this time, unproved and the range of concerns is unbounded. For responsible stewardship of our oceans it is imperative that we begin to measure and understand our impacts, and, more important, that we proceed with a balanced and informed view. To that end, this hearing is a significant, positive step.

Hearing for any animal is an important sense. Many sensory cues are limited in their distribution and utility. Sound however is literally universal While many animals inhabit lightless environments and are blind, there are no known vertebrates

that are naturally, profoundly deaf. There is no habitat, except space, that is soundless, and sound is such a significant cue, carrying such a wealth of information that hearing is well developed in virtually every animal group. We employ sound and hearing both passively and actively, listening not only in the dark but even while asleep. The cues are constant and diverse, providing information on the direction and nature of the sources and how they change through time. Sound is a key element for survival and hearing is a key component of communication, mate selection, feeding, and predator avoidance.

For marine mammals, hearing is arguably their premier sensory system. It is obvious from their level of ear and neural auditory center development alone. Dolphins and whales devote three fold more neurons to hearing than any other animal. The temporal lobes, which control higher auditory processing, dominate their brain, and they appear to have faster auditory and signal processing capabilities than any other mammal. Since the late 1950's we have been aware that dolphins, at least, use very high ultrasonic signals as a form of biosonar. Using sound they can distinguish amongst different metals and detect differences as small as a few mm in two objects. To date, despite 50 years of research on dolphin biosonar, we are still incapable of duplicating some of their feats. However, despite the multifaceted evidence we have for exceptional and diverse hearing in marine mammals, we still know very little about how and what they hear.

This statement summarizes and critiques existing auditory data for marine mammals. It was compiled primarily as a background document for assessing potential impacts of anthropogenic sounds, including long-range detection or sonar devices. To that end, it has the following emphases: a description of currently available data on marine mammal hearing and ear anatomy, a discussion and critique of the methods used to obtain these data, a summary and critique of data based on hearing models for untested marine species, and a discussion of data available on acoustic parameters that induce auditory trauma in both marine and land mammals. In order to place these data in an appropriate context, summaries are incorporated also of basic concepts involved in underwater vs. air-borne sound propagation, fundamental hearing mechanisms, and mechanisms of auditory trauma in land mammals. Lastly, to maximize the utility of this document, a brief discussion has been included on the potential for impact on hearing from several recently proposed devices and an outline of research areas that need to be addressed if we are to fill the relatively large gaps in the existing data base.

Mammalian Hearing Fundamentals

The term "auditory system" refers generally to the suite of components an animal uses to detect and analyze sound. There are two fundamental issues to bear in mind for the auditory as well as any sensory system. One is that sensory systems and therefore perception are species specific. The ear and what it can hear is different for each species. The second is that they are habitat dependent. In terms of hearing, both of these are important issues.

Concerning the first issue, species sensitivities, all sensory systems are designed to allow animals to receive and process information from their surroundings which means they act as highly selective filters. If every environmental cue available received equal attention, the brain would be barraged by sensory inputs. Instead, sensory organs are essentially multi-level filters, selecting and attending to signals that, evolutionarily, proved to be important.

Most animals have vocalizations that are tightly linked to their peak hearing sensitivities in order to maximize intra-specific communication, but they also have hearing beyond that peak range that is related to the detection of acoustic cues from predators, prey, or other significant environmental cues. Consider, in general, how predator and prey are driven to be both similar and different sensorially. Because their activities intersect in place and time, they need, for example, to have similar visual and auditory sensitivities, but, ideally, different fields of view and hearing ranges. Similarly, two species living within similar habitats or having common predators and prey have some hearing bands in common but will differ in total range because of anatomical and functional differences that are species dependent and reflect other "species-specific" needs. Thus, each animal's perceived world is a different subset of the real physical world; *i.e.*, it is a species-specific model, constructed from the blocks of data its particular sensory system can capture and process. Two species may have overlapping hearing ranges, but no two have identical sensitivities. This is of course the case with piscivorous marine mammals, their fish targets, and with their prey competitors. It is also the case with whales and ships. They both have navigational and predator detection needs.

In animal behavior, this concept is called the Umwelt (von Uexkull 1934). As a technical term, Umwelt means an animal's perceptually limited construct of the

world. In common usage, it means simply the environment. This dual meaning reflects the complex interaction of sensory adaptations and habitat, which leads us to the second issue; *i.e.*, the relation or influence of habitat on sensory abilities. While senses are tuned to relevant stimuli by evolution they are nevertheless limited by the physical parameters of the habitat.

Mechanistically, hearing is a relatively simple chain of events: sound energy is converted by bio-mechanical transducers (middle and inner ear) into electrical signals (neural impulses) that provide a central processor (brain) with acoustic data. Mammalian ears are elegant structures, packing over 75,000 mechanical and electrochemical components into an average volume of 1 cm3. Variations in the structure and number of ear components account for most of the hearing capacity differences among mammals.

Hearing ranges and the sensitivity at each audible frequency (threshold, or minimum intensity required to hear a given frequency) vary widely by species). "Functional" hearing refers to the range of frequencies a species hears without entraining non-acoustic mechanisms. In land mammals, the functional range is generally considered to be those frequencies that can be heard at thresholds of 60 dB SPL, a decibel measure of sound pressure level. The basis for this measure and how it differs in air and water is explained in the next section.

By example, a healthy human ear has a potential maximum frequency range of 0.02 to 20 kHz but the normal functional hearing range in an adult is closer to 0.040 to 16 kHz (Fig. 1). In humans, best sensitivity (lowest thresholds) occurs between 500 Hz and 4 kHz, which is also where most acoustic energy of speech occurs (Schuknecht 1993, Yost 1994). Sounds that are within the functional range but at high intensities (beyond 120 dB SPL) will generally produce discomfort and eventually pain. To hear frequencies at the extreme ends of any animal's total range generally requires intensities that are uncomfortable, and frequencies outside or beyond our hearing range are simply undetectable because of limitations in the ear's middle and inner ear transduction and resonance characteristics. Through bone conduction or direct motion of the inner ear, exceptionally loud sounds that are outside the functional range of the normal ear can sometimes be perceived, but this is not truly an auditory sensation.

"Sonic" is an arbitrary term derived from the maximal human hearing range. Frequencies outside this range are deemed infrasonic (below 20 Hz) or ultrasonic (above 20 kHz) sonic. We know that many animals hear sounds inaudible to humans; consider the training whistles in common use that are silent to humans but clearly audible by dogs . Most mammals have some ultrasonic hearing (*i.e.*, can hear well at frequencies >20 kHz) and a few, like the Asian elephant, Elephas maximus, hear and communicate with infrasonic signals (<20 Hz).

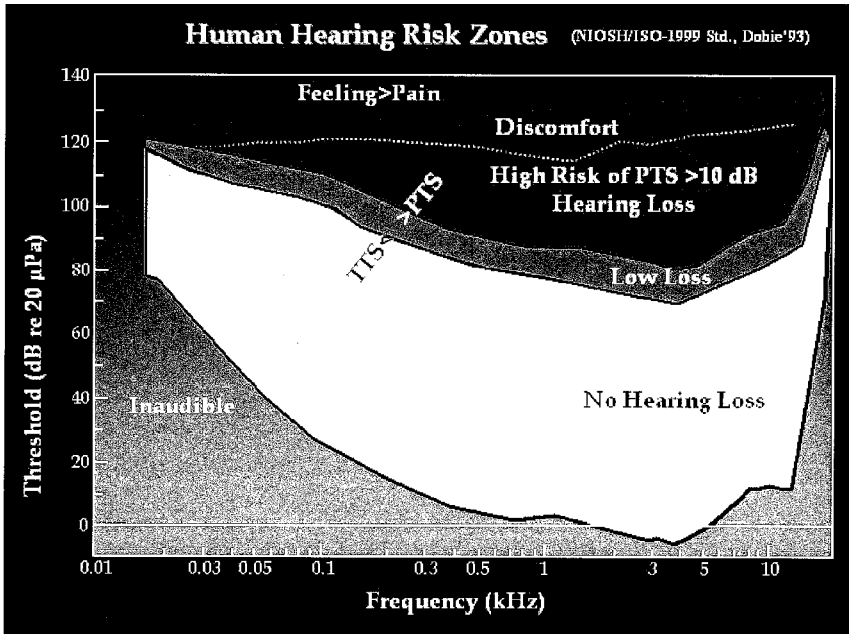

Figure 1. Zones of hearing vs. potential impact areas are shown for human hearing. The bottom curve shows the average human threshold in air vs. frequency (Yost, 1994). The white zone represents the generally safe zone. The gray zone represents the region in which temporary hearing loss is likely, but depends upon a combination of intensity vs. length of exposure. Note that the border for probable onset of temporary threshold shift is generally 80 dB over minimum threshold and essentially parallels the normal human hearing curve. Discomfort and pain are by contrast essentially flat functions independent of hearing threshold, with onsets near 120 dB re 20 microPascal (approximately 182 dB re 1 microPascal equivalent).

That brings us to three major auditory questions: 1) what are the differences marine and land mammal ears, 2) how do these differences relate to underwater hearing, and 3) how do these differences affect the acoustic impacts?

To address these questions requires assimilating a wide variety of data. Behavioral and electrophysiological measures are available for some odontocetes and pinnipeds, but there are no published hearing curves for any mysticete. We have anatomical data on the auditory system for approximately one-third of all marine mammal species, including nearly half of the larger, non-captive species. These data allow us to estimate hearing based on physical models of the middle and inner ear. To some extent it also allows us to address potentials for impact. For marine mammals it is necessary to bring both forms of data, direct from behavioural tests and indirect from models, to bear. Before beginning those discussions, however, it is necessary to explain a few of the "rules" for sound in water vs. air.

Sound in air vs. water

Hearing is simply the detection of sound. "Sound" is the propagation of a mechanical disturbance through a medium. In elastic media like air and water, that disturbance takes the form of acoustic waves. Basic measures of sound are frequency, speed, wavelength, and intensity. Frequency, measured in cycles/sec or Hertz (Hz), is defined as:

$$f = c/\text{lambda}$$

where c = the speed of sound (m/sec) and lambda is the wavelength (m/cycle).

The speed of sound is not invariable; it depends upon the density of the medium. Because water is denser than air, sound in water travels faster and with less attenuation than sound in air. Sound speed in air is approximately 340 m/sec. Sound speed in sea water averages 1530 m/sec but will vary with any factor affecting density and any ocean region can have a highly variable sound profile that may change

both seasonally and regionally. For practical purposes, in water sound speed is 4.5 times faster and, at each frequency, the wavelength is 4.5 times greater, than in air.

How do these physical differences affect hearing? Mammalian ears are primarily sound intensity detectors. Intensity, like frequency, depends on sound speed and, in turn, on density. Sound intensity (I) is the acoustic power (P) impinging on a surface perpendicular to the direction of sound propagation, or power/unit area (I=P/a). Intensity for an instantaneous sound pressure for an outward traveling plane wave in terms of pressure, sound speed, and density is defined mathematically as:

$$I = pv = p\,(p/\text{rho c}) = p^2/\text{rho c}$$

The combined factor (rho c) is the characteristic impedance of the medium. If we take into account the differences in sound speed in air c=340 m/sec vs. sea water c=1530 m/sec; and in density which in air=0.0013 g/cc vs. sea water=1.03 g/cc:

$$I_{air} = p^2/(340\text{m/sec})(0.0013\text{ g/cc}) = p^2/(0.442\text{ g-m/sec-cc})$$

$$I_{water} = p^2/(1530\text{m/sec})(1.03\text{ g/cc}) = p^2/(1575\text{ g-m/sec-cc})$$

To examine the sensory implications of these numbers, consider a hypothetical mammal, that hears equally well in water and in air. For this to be true, an animal would require the same acoustic power/unit area in water as in air to have an equal sound percept, or ($I_{air} = I_{water}$):

$$I_{air} = p_{air}^2/(0.442\text{ g-m/sec-cc}) = p_{water}^2/(1575.\text{g-m/sec-cc}) = I_{water}$$

$$p_{air}^2(3565.4) = p_{water}^2 \qquad (5)$$

$$p_{air}(59.7) = p_{water}$$

This means the aquatic ear needs and must tolerate sound pressures in water that are ~60 times greater than are required in air to produce the same intensity and therefore the same sensation in the ear.

For technological reasons, we commonly use effective sound pressure level (SPL) rather than intensity to describe hearing thresholds (see Au 1993 for discussion). Sound pressure levels are conventionally expressed in decibels (dB), defined as:

$$\text{dB SPL} = 10 \log (p_m^2/p_r^2) \qquad (6)$$

$$= 20 \log (p_m/p_r)$$

where Pm is the pressure measured and Pr is an arbitrary reference pressure. Currently, two

standardized reference pressures are used. For air-borne sound measures, the reference is dB re 20 gPa rms, derived from human hearing. For underwater sound measures, the reference pressure is dB re 1 mu Pa.

Decibels are a logarithmic scale that depends on reference pressure. In the earlier hypothetical example, with identical reference pressures, the animal needed a sound level 35.5 dB greater in water than in air. However, if conventional references for measuring levels in air vs. water are used, the differences in reference pressure must be considered as well. This means he underwater sound pressure level in water if measured with conventional reference pressures would need to be 61.5 dB re 1 mu Pa greater in water to be equivalent to the decibel in air or dB re 20 Pa in air. Thus, the rule of thumb is that to compare air vs underwater sound intensities, the numerical value of the water sound pressure level must be thought of as being reduced by 61.5 dB to be comparable numerically to an intensity level reported in air.

It is important to remember that these equations describe idealized comparison of air and water borne sound. In comparing data from different species, particularly in comparing air based land mammal and marine mammal hearing, experimental condition differences are extremely important. We have no underwater equivalent of anechoic chambers, often results are obtained from one individual that may not have normal hearing, and test conditions are highly variable.

Mechanisms of Acoustic Trauma

Temporary vs, Permanent Threshold Shifts

Because of our considerable interest in human hearing and how hearing is lost or may be ameliorated, noise trauma is a well-investigated phenomenon. For the sake of completeness in the following discussion, noise trauma has been divided into lethal and sublethal impacts, although only sublethal impacts are likely to be relevant in the case of long-range sonar devices. Lethal impacts are those that result in the immediate death or serious debilitation of the majority of animals in or near

an intense source; *i.e.*, profound injuries related to shock wave or blast effects which are not, technically, pure acoustic trauma. Lethal impacts are discussed briefly at the end of this section. Sublethal impacts are those in which a hearing loss is caused by exposures to sounds that exceed the ear's tolerance to some acoustic parameter; *i.e.*, auditory damage occurs from exhaustion or over-extension of one or more ear components. Of course, sublethal impacts may ultimately be as devastating as lethal impacts, causing death through impaired foraging, predator detection, communication, stress, or mating disruption, but the potential for this type of extended or delayed impact from any sound source is not well understood for any mammal.

Essentially whether there is any hearing loss and, if so, what portion of hearing is lost, comes down to three interactive factors:

Intensity, frequency, and sensitivity.

To determine whether any one animal or species is subject to a sublethal noise impact from a particular sound requires understanding how its hearing abilities interact with that sound. Basically, any noise at some level has the ability to damage hearing by causing decreased sensitivity. The loss of sensitivity is called a threshold shift. Not all noises will produce equivalent damage at some constant exposure level. The extent and duration of a threshold shift depends upon the synergistic effect of several acoustic features, including how sensitive the subject is to the sound. Most recent research efforts have been directed at understanding the basics of how frequency, intensity, and duration of exposures interact to produce damage rather than interspecific differences: that is, what sounds, at what levels, for how long, or how often will commonly produce recoverable (TTS - Temporary Threshold Shift) vs permanent (PTS) hearing loss.

Three fundamental effects are known at this time:

1) the severity of the loss from any one signal may differ among species.

2) for pure tones, the loss centers around the incident frequency.

3) for all tones, at some balance of noise level and time, the loss is irreversible.

Hearing losses are recoverable (TTS - temporary threshold Shift) or permanent (PTS) primarily based on extent of inner ear damage the received sound and received sound level causes. Temporary threshold shifts (TTS) will be broad or punctate, according to source characteristics. The majority of studies have been conducted with cats and rodents, using relatively long duration stimuli (> 1 hr.) and mid to low frequencies (1–4 kHz) (see Lehnhardt, 1986, for summary). Inner ear damage location and severity are correlated with the power spectrum of the signal in relation to the sensitivity of the animal. Virtually all studies show that losses are centered around the peak spectra of the source and are highly dependent upon the frequency sensitivity of the subject. For narrow band, high frequency signals, losses typically occur only in or near the signal band, but intensity and duration can act synergistically to broaden the loss.

The point cannot be made too strongly that this is a synergistic and species-specific phenomenon. Put simply, for a sound to impact an ear, that ear must be able to hear the sound, and, equally important, the overall effect will depend on just how sensitive that ear is to the particualr sound. For this reason there is no single, simple number; *i.e.*, no one sound byte, for all species that accurately represents the amount of damage that can occur.

In effect, the duration of a threshold shift, is correlated with both the length of time and the intensity of exposure. In general, if the duration to intense noise is short and the noise is narrow, the loss is limited and recoverable. In most cases a signal intensity of 80 dB over the individual threshold at each frequency is required for significant threshold shifts (see Fig. 1). This finding led to the current OSHA allowable limit of 90 dB re 20 tPa for human workplace exposures for broad spectrum signals (Lehnhardt, 1986).

Unlike TTS which is highly species dependent, PTS onsets are more general. One important aspect of PTS is that signal rise-time and duration of peak pressure are significant factors. Commonly, if the exposure is short, hearing is recoverable; if long, or has a sudden, intense onset and is broadband, hearing, particularly in the higher frequencies, can be permanently lost (PTS). In humans, PTS results most often from protracted, repeat intense exposures (*e.g.*, occupational auditory hazards from background industrial noise) or sudden onset of intense sounds (*e.g.*, rapid, repeat gun fire). Sharp rise-time signals have been shown also to produce broad spectrum PTS at lower intensities than slow onset signals both in air and in water (Lipscomb, 1978; Lehnhardt, 1986; Liberman, 1987). Hearing loss with aging (presbycusis) is the accumulation of PTS and TTS insults to the ear. Typically, high frequencies are lost first with the loss gradually spreading to lower frequencies over time.

In experiments with land mammals, multi-hour exposures to narrow band noise are used to induce both TTS and PTS and initial shifts are often in the 10's of decibels. Work to date on marine mammals has been much more conservative with relatively short exposures that induce less than 10 dB of shift which is considered invariably temporary. Consequently there are serious concerns that the numbers from current experiments cannot be used to extrapolate PTS from TTS data as the current curves are not yet at the conventional or comparative TTS frontier as defined for land mammals and humans. As noted above, most mammals with air-adapted ears commonly incur temporary losses when the signal is 80 dB over threshold. The only other available data for underwater shifts are from experiments that produced TTS in humans for frequencies between 0.7 and 5.6 kHz (our most sensitive range) from underwater sound sources when received levels were 150–180 dB re 1 mu Pa (Smith and Wojtowicz 1985, Smith et al. 1988). Taking into account differences in measurements of sound pressure in air vs. water (equations 4 and 5), these underwater levels are consistent with the 80–90 dB exposure levels that induce TTS in humans at similar frequencies in air.

Blast Injury

Simple intensity related loss is not synonymous with blast injury. Acoustic trauma induced by sudden onset, loud noise (a "blast" of sound) is not synonymous with blast trauma, nor are noise and blast effects of the same magnitude. Blast injuries generally result from a single exposure to an explosive shock wave which has a compressive phase with a few microseconds initial rise time to a massive pressure increase over ambient followed by a rarefactive wave in which pressure drops well below ambient.

Blast injuries may be reparable or permanent according to the severity of the exposure and are conventionally divided into three groups based on severity of symptoms, which parallel those of barotrauma:

MILD - Recovery	MODERATE - Partial loss	SEVERE - Permanent loss - death
Pain	Otitis media	Ossicular Fracture/Dislocation
Vertigo	Tympanic membrane rupture	Round/Oval window rupture
Tinnitus	Tympanic membrane hematoma	CSF leakage into middle ear
Hearing Loss	Serum-blood in middle ear	Cochlear and saccular damage
Tympanic tear	Dissection of mucosa	

Moderate to severe stages result most often from blasts, extreme intensity shifts, and trauma; *i.e.*, explosions or blunt cranial impacts that cause sudden, massive systemic pressure increases and surges of circulatory or spinal fluid pressures (Schuknecht, 1993). Hearing loss in these cases results from an eruptive injury to the inner ear; *i.e.*, with the rarefactive wave of a nearby explosion, cerebrospinal fluid pressures increase and the inner ear window membranes blow out due to pressure increases in the inner ear fluids. Inner ear damage frequently coincides with fractures to the bony capsule of the ear or middle ear bones and with rupture of the eardrum. Although technically a pressure induced injury, hearing loss and the accompanying gross structural damage to the ear from blasts are more appropriately thought of as the result of the inability of the ear to accommodate the sudden, extreme pressure differentials and over-pressures from the shock wave.

At increasing distance from the blast, the effects of the shock wave lessen and even though there is no overt tissue damage, mild damage with some permanent hearing loss occurs (Burdick, 1981, in Lehnhardt, 1986). This type of loss is generally called an asymptotic threshold shift (ATS) because it is the result of saturation or in simpler terms extension past the breaking point of body and certainly auditory tissues.

There is no well defined single criterion for sublethal ATS from blasts, but eardrum rupture, which is common to all stages of blast injury, has been moderately well investigated. Although rupture per se is not synonymous with permanent loss (eardrum ruptures can repair spontaneously if less than 25% of the membrane is involved or can be repaired surgically with no hearing loss if greater areas are compromised), the incidence of tympanic membrane rupture is strongly correlated with distance from the blast (Kerr, & Byrne, 1975). As frequency of rupture increases so does the incidence of permanent hearing loss. In zones where >50% tympanic membrane rupture occurred, 30% of the victims had long term or permanent loss. Trauma to other areas of the auditory system such as the outer canal and middle ear bones are not nearly as well investigated. In light of concerns from the Bahamian beaked whale incident, this is an area warranting more research.

Concerning survivable blast trauma, in general, complex and fast-rise time sounds cause ruptures at lower overpressures than slow-rise time waveforms, and smaller

mammals will be injured by lower pressures larger animals. Of the animals tested to date, sheep and pig have ears anatomically closest to those of whales and seals. The air-based data for pigs and sheep imply that overpressures >70 kPa are needed to induce 100% tympanic membrane rupture. However, cross-study/cross-species comparisons and extrapolations are risky because of radically different experimental conditions as well as differences in acoustic energy transmission in the air and water. The data available for submerged and aquatic animals imply that lower pressures in water than in air induce serious trauma (Myrick et al., 1989; see also summary in Richardson, et al. 1991). For submerged terrestrial mammals, lethal injuries have occurred at overpressures—>55 kPa (Yelverton, 1973, in Myrick, et al., 1989; Richmond, et al., 1989). In a study of Hydromex blasts in Lake Erie the overpressure limit for 100% mortality for fish was 30 kPa (Chamberlain, 1976). The aquatic studies imply therefore that overpressures between 30 and 50 kPa are sufficient for a high incidence of severe blast injury. Minimal injury limits in both land and fish studies coincided with overpressures of 0.5 to 1 kPa.

Marine Mammal Hearing

Hearing research has traditionally focused on mechanisms of hearing loss in humans. Animal research has therefore emphasized experimental work on ears in other species as human analogues. Consequently we generally have investigated either very basic mechanisms of hearing or induced and explored human auditory system diseases and hearing failures through these test species. Ironically, because of this emphasis, remarkably little is known about natural, habitat-and-species-specific aspects of hearing in most mammals. With marine mammals we are at an extreme edge of not only habitat adaptations but also of ear structure and hearing capabilities.

The same reasons that make marine mammals acoustically and auditorally interesting; *i.e.*, that they are a functionally exceptional and an aquatic ear - also make them difficult research subjects. Marine mammal hearing has for many decades been the poor stepchild of our country's auditory research program. Consequently, we now find ourselves for multiple reasons in need of precisely the basic research information that we lack. Nevertheless, we can address some issues about marine mammal hearing, both directly and inferentially from the data in hand. While there are large gaps remaining in our knowledge, progress has been made on some fronts related to sound and potential impacts from noise.

Marine mammals, and whales in particular, present an interesting hearing paradox. On one hand, marine mammal ears physically resemble land mammal ears. Therefore, since many forms of hearing loss are based in physical structure, it is likely hearing damage occurs by similar mechanisms in both land and marine mammal ears. On the other hand, the sea is not, nor was it ever, even primordially, silent. The ocean is a naturally relatively high noise environment. Principal natural sound sources include seismic, volcanic, wind, and even biotic sources. Whales and dolphins in particular evolved ears that function well within this context of high natural ambient noise. This may mean they developed "tougher" inner ears that are less subject to hearing loss. Recent anatomical and behavioral studies do indeed suggest that whales and dolphins may be more resistant than many land mammals to temporary threshold shifts, but the data show also that they are subject to disease and aging processes. This means they are not immune to hearing loss, and certainly, increasing ambient noise via human activities is a reasonable candidate for exacerbating or accelerating such losses

Unfortunately, existing data are insufficient to accurately predict any but the grossest acoustic impacts on marine mammals. At present, we have relatively little controlled data on how the noise spectrum is changing in oceanic habitats as a result of human activities. We also have little information on how marine mammals respond physically and behaviorally to intense sounds and to long-term increases in ambient noise levels. Our current inability to predict the impact of man-made sounds in the oceans has spawned serious and occasionally vituperous debates in the scientific community as well as costly legal battles for environmental and governmental organizations. Ironically, our data gaps may also be hampering the development and deployment of even simple devices such as effective acoustic deterrents that could decrease marine mammal by-catch. This testimony will not fill the gaps in our knowledge but rather will discuss our current data base on both acoustic trauma and on the sound profiles of ocean habitats in the context of what we know about species variations in marine mammal hearing. It will focus on how species vary in their potential for impact and on how we may go about determining whether auditorially fragile species coincide with "acoustic hotspots" where man's sonic activities, particularly sonars as an issue for this committee, may damage hearing and disrupt key behaviours.

The data available show that all marine mammals have a fundamentally mammalian ear which through adaptation to the marine environment has developed broader hearing ranges than are common to land mammals. Audiograms are available for only 10 species of odontocetes and 11 species of pinnipeds. All are smaller species which were tested as captive animals. However, there are 119 marine mammal species, and the majority are large wide-ranging animals that are not approachable or testable by normal audiometric methods. Therefore we do not have direct behavioral or physiologic hearing data for nearly 80% of the genera and species of concern for coastal and open ocean sound impacts. For those species for which no direct measure or audiograms are available, hearing ranges are estimated with mathematical models based on ear anatomy obtained from stranded animals or inferred from emitted sounds and play back experiments in the wild.

The combined data from audiograms and models show there is considerable variation among marine mammals in both absolute hearing range and sensitivity. Their composite range is from ultra to infrasonic. Odontocetes, like bats, are excellent echolocators, capable of producing, perceiving, and analyzing ultrasonics frequencies well above any human hearing. Odontocetes commonly have good functional hearing between 200 Hz and 100,000 Hz (100 kHz), although some species may have functional ultrasonic hearing to nearly 200 kHz. The majority of odontocetes have peak sensitivities (best hearing) in the ultrasonic ranges although most have moderate sensitivity to sounds from 1 to 20 kHz. No odontocete has been shown audiometrically to have acute; *i.e.*, best sensitivity or exceptionally responsive hearing (<80 dB re 1 mu Pa) below 500 Hz.

Good lower frequency hearing appears to be confined to larger species in both the cetaceans and pinnipeds. No mysticete has been directly tested for any hearing ability, but functional models indicate their functional hearing commonly extends to 20 Hz, with several species, including blue, fin, and bowhead whales, that are predicted to hear at infrasonic frequencies as low as 10–15 Hz. The upper functional range for most mysticetes has been predicted to extend to 20–30 kHz.

Most pinniped species have peak sensitivities between 1–20 kHz. Some species, like the harbour seal, have best sensitivities over 10 kHz. Only the elephant seal has been shown to have good to moderate hearing below 1 kHz. Some pinniped species are considered to be effectively double-eared in that they hear moderately well in two domains, air and water, but are not particularly acute in either. Others however are clearly best adapted for underwater hearing alone.

To summarize, marine mammals as a group have functional hearing ranges of 10 Hz to 200 kHz with best thresholds near 40–50 dB re 1 mu Pa. They can be divided into infrasonic balaenids (probable functional ranges of 15 Hz to 20 kHz; good sensitivity from 20 Hz to 2 kHz; threshold minima unknown, speculated to be 60–80 dB re 1 mu Pa); sonic to high frequency species (100 Hz to 100 kHz; widely variable peak spectra; minimal threshold commonly 50 dB re 1 mu Pa), and ultrasonic dominant species (200 Hz to 200 kHz general sensitivity; peak spectra 16 kHz to 120 kHz; minimal threshold commonly 40 dB re 1 mu Pa).

Odontocete Underwater Audiograms

Anderson '70; Au '93; Awbrey et al. '88; Ding Wang et al. '92; Fay '88; Hall and Johnson '71, '72; Jacobs and Hall '72; Johnson '67; Johnson et al '79; Nachtigall et al. '95; Popper '80; Richardson '95 Thomas et al. '88; White et al. '78

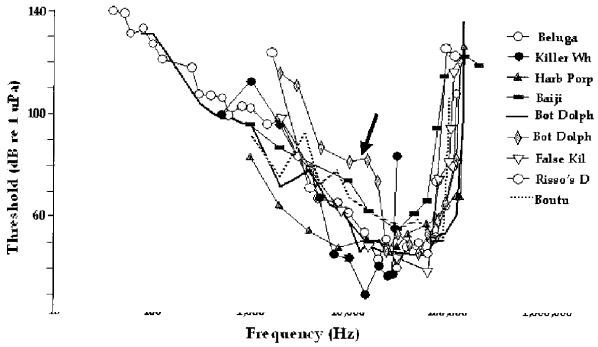

Fig. 2A

Figure 2. Underwater audiograms for odontocetes and pinnipeds. For some species, more than one curve is shown because data reported in different studies were not consistent. Note that for both the bottlenose dolphin and the sea lion, thresholds are distinctly higher for one of the two animals tested. These differences may reflect different test conditions or a hearing deficit in one of the animals. (Summary data compiled from Popper 1980; Fay 1988; Au 1993; Richardson et al. 1995. Beluga: White et al. 1978; Awbrey et al. 1988 and Johnson et al. 1989. Killer Whale: Hall & Johnson 1971 and Hall & Johnson 1972. Harbor Porpoise: Anderson 1970 and Anderson 1970a. Bottlenose Dolphin: Johnson 1967 and Ljungblad et al. 1982b. False Killer Whale: Thomas et al. 1988a. California Sea Lion: Schusterman et al. 1972; Kastak & Schusterman 1995 and Schusterman, Balliet & Nixon 1972. Northern Fur Seal: Moore & Schusterman 1987; Babushina et al. 1991 and Schusterman & Moore 1978a. Harbor Seal: Mohl 1968; Mohl 1968a; Kastak & Schusterman 1995 and Terhune & Tumbull 1995. Ringed Seal: Terhune & Ronald 1975a. Harp Seal: Terhune & Ronald 1972. Monk Seal: Thomas et al. 1990b.).

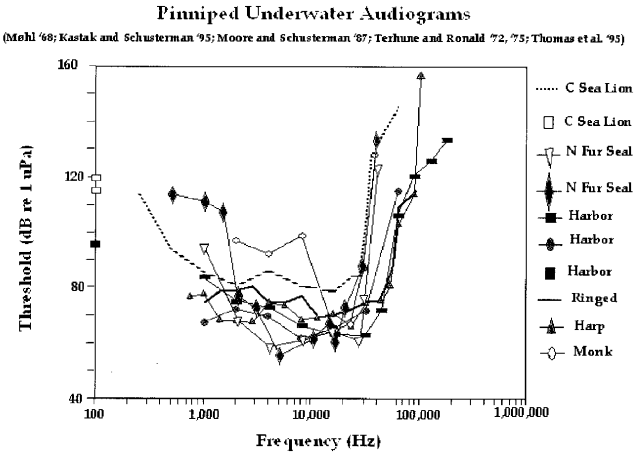

Fig. 2B

Impacts and Sonar

Since the development and use of SONAR in World War II, acoustic imaging devices have been increasingly employed by the military, research, and commercial sectors to obtain reliable, detailed information about the oceans. On one hand, these devices have enormous potential for imaging and monitoring the marine environment. On the other hand, because echo-ranging techniques involve the use of intense sound and because hearing is an important sensory channel for virtually all marine vertebrates, existing devices also represent a potential source of injury to marine stocks, both predator (marine mammals) and their prey. Therefore, a reasonable concern for any effort involving active sound use in the oceans is whether the projection and repetition of the signals employed will adversely impact species within the "acoustic reach" of the source. Realistically, because of the diversity of hearing characteristics among marine animals, it is virtually impossible to eliminate all acoustic impacts from any endeavor, therefore the key issues that must be assessed are: 1) what combination of frequencies and sound pressure levels fit the task, 2) what species are present in an area the device will ensonify at levels exceeding ambient, and 3) what are the potential impacts to those species from acoustic exposures to the anticipated frequency-intensity combinations.

In order to assess potential impacts, it is necessary to obtain the best possible estimate of the coincidence of acoustic device parameters and auditory sensitivities for animals that may be exposed. Because marine mammals are both an important group in terms of conservation and are generally considered to be acoustically sensitive, the primary goal of this document is to provide a detailed summary of currently available data on marine mammal hearing and auditory systems, and where possible to put that data into a functional or comparative context. The key issues addressed are: 1) how do marine mammal ears differ from terrestrial ears, 2) how do these differences correlate with underwater sound perception, 3) what is known from direct measures about marine mammal hearing sensitivities, 4) what can be

reliably extrapolated about the frequency sensitivity of untested species from currently available auditory models, and 5) how sensitive to acoustic impacts are these ears.

Conclusions

The consensus of the data is that virtually all marine mammal species are potentially impacted by sound sources with a frequency of 300 HZ or higher. Any species can be impacted by exceptionally intense sound, and particularly by intense impulsive sounds. However, at increasing distance from a source, which is the realistic scenario as opposed to at source, the effects are a composite of three aspects: Intensity, Frequency, and Individual Sensitivity. Briefly, if you cannot hear the sound or hear it poorly, it is unlikely to have a significant effect. If however, you have acute hearing in the range of a signal, be it prop noise or a sonar, there is a potential for impact at a greater range than for a source you hear poorly. Because each species has a unique hearing curve that differs from others in range, sensitivity, and peak hearing, it is not possible to provide a single number or decibel level that is safe for all species for all signals.

Relatively few species are likely to receive significant impact for lower frequency sources. Those species that currently are believed to be likely candidates for LF acoustic impact are most mysticetes and the elephant seal as the only documented lower frequency sensitive pinniped. Most pinnipeds have relatively good sensitivity in the 1–15 kHz range while odontocetes have peak sensitivities above 20 kHz. It must be remembered that received levels that induce acoustic trauma, at any one frequency, are highly species dependent and are a complex interaction of exposure time, signal onset and spectral characteristics, as well as received vs. threshold intensity for that species at that frequency.

Pilot studies show that marine mammals are susceptible to hearing damage but are not necessarily as fragile as land mammals. The available data suggest that a received level of approximately 140 dB re 1 microPascal which is in the 80–90 dB range over species-specific threshold for a narrow band source will induce temporary for hearing in and near that band in pinnipeds and delphinids (Ridgway, pers. comm.; Schusterman, pers. comm.). Estimates of levels that induce permanent threshold shifts in marine mammals can be made, at this time, only by extrapolation from PTS and trauma studies in land mammals.

Blasts are cardinal sources, capable of inducing broad hearing losses in virtually all species but some resistance or tolerance may occur based on body mass of marine mammals compared to most land mammals tested.

For all devices, the question of impact devolves largely to the coincidence of device signal characteristics with the species audiogram. Because the majority of devices proposed use frequencies below ultra or high sonic ranges, odontocetes, with relatively poor sensitivity below 1 kHz as a group, may be the least likely animals to be impacted. Mysticetes and pinnipeds have substantially greater potential than odontocetes for direct acoustic impact because of better low to mid-sonic range hearing.

Behavioral perturbations are not assessed here but a concern is noted that they are an equal or potentially more serious element of acoustic impacts. While auditory trauma, particularly from short or single exposures may impair an individual, that is unlikely to impact most populations. Long term constant noise that disrupts a habitat or key behaviour is more likely to involve population level effects. In that sense, the question of individual hearing loss or animal loss form a single intense exposure is far less relevant to conservation than more subtle, literally quieter but pervasive source that induces broad species loss or behavioural disruption.

Mitigation of any source or estimation of impact requires a case by case assessment, and therefore suffers from the same chronic lack of specific hearing data. To provide adequate assesments, substantially better audiometric data are required from more species. To obtain these data requires an initial three-pronged effort of behavioural audiograms, evoked potentials recordings, and post-mortem examination of ears across a broad spectrum of species. Cross-comparisons of the results of these efforts will provide a substantially enhanced audiometric data base and should provide sufficient data to predict all levels of impact for most marine mammals. To achieve this goal without bias involves advocacy and funding from a broader spectrum of federal and private sources. That in turn is likely to require a significant effort in public education about the real underlying issues that will supplant current misdirections or precipitous reactions on the part of many groups concerned with marine conservation.

Summary

Major impacts from noise can be divided into direct physiologic effects, such as permanent vs. temporary hearing loss, and those that are largely behavioral, such as masking, aversion, or attraction. Although there is no substantial research accomplished in any of these areas in marine mammals, behavioral effects have been at least preliminarily investigated through playback and audiometric experiments, while marine mammal susceptibility to physiologic hearing loss is virtually unexplored. Despite increasing concern over the effects on marine mammals of man-made sound in the oceans, we still have little direct information about what sound frequency-intensity combinations damage marine mammal ears, and at present there are insufficient data to accurately determine acoustic exposure guidelines for any marine mammal.

Is acoustic trauma even moderately debatable in marine mammals? Recalling the paradox mentioned earlier, there are a variety of reasons to hypothesize that marine mammals may have evolved useful adaptations related to noise trauma. Vocalizations levels in marine mammals are frequently cited as indicating high tolerance for intense sounds. Some whales and dolphins have been documented to produce sounds with source levels as high as 180 to 220 dB re 1 mu Pa (Richardson et al., 1991; Au, 1993). Vocalizations are accepted indicators for perceptible frequencies because peak spectra of vocalizations are near best frequency of hearing in most species, but it is important to recall that the two are not normally precisely coincident.

It must be borne in mind also that animals, including humans, commonly produce sounds which would produce discomfort if they were received at the ear at levels equal to levels at the production site.

Arguments that marine mammals, simply by nature of their size and tissue densities, can tolerate higher intensities are not persuasive. First, mammal ears are protected from self-generated sounds not only by intervening tissues (head shadow and impedance mismatches) but also by active mechanisms (eardrum and ossicular tensors). These mechanisms do not necessarily provide equal protection from externally generated sounds largely because the impact is not anticipated as it is in self-generated sounds.

Our active mechanisms are initiated in coordination and in anticipation of our own sound production. Just as the level of a shout is not indicative of normal or tolerable human hearing thresholds, source level calculations for vocalizations recorded in the wild should not be viewed as reliable sensitivity measures. Further, the large head size of a whale is not acoustically exceptional when the differences in pressure and sound speed in water vs. air are taken into account. As noted earlier, ear separation in a bottle-nosed dolphin is acoustically equivalent to that of a rat when the distances are corrected for the speed of sound in water. Exactly how head size in water affects attenuation and even reception of incoming sounds has not been investigated and remains an important open question.

Data from several pilot studies may, however, provide some useful insights into both facets of the paradox. In one investigation (detailed below, Ketten et al, 1993; Lien et al. 1993), ears from humpbacks that died following underwater explosions had extensive mechanical trauma while animals that were several kilometers distant from the blasts and at the surface showed no significant behavioral effects. These findings indicate adaptations that prevent barotrauma do not provide special protection from severe auditory blast trauma, but it remains unclear whether lower intensity purely acoustic stimuli induce temporary and/or acute threshold shifts in marine mammals.

A second study compared inner ears from one long-term captive dolphin with a documented hearing loss with the ears of one juvenile and two young adult dolphins (Ketten et al., 1995). Studies of the oldest dolphin ears showed cell loss and laminar demineralization like that found in humans with presbycusis, the progressive sensorineural hearing loss that accompanies old age. The location and degree of neural degeneration implied a substantial, progressive, hearing loss beginning in the high frequency regions, precisely the pattern commonly observed in humans. A review of the animal's behavioral audiogram subsequently showed that over a 12 year period this dolphin's hearing curve shifted from normal threshold responses for all frequencies up to 165 kHz to no functional hearing over 60 kHz prior to his death at age 28. For this animal at least, the conclusion was that significant hearing loss had occurred attributable only to age-related changes in the ear. Similar significant differences in the hearing thresholds consistent with age-related loss in two sea lionshave also been reported by Kastak and Schusterman (1995).

The problem of hearing loss has not been realistically considered prior to this point in any systematic way in any marine mammal. In fact, the most studied group, odontocetes, have generally been thought of as ideal underwater receivers. A captive animal's age or history is not normally considered in analyzing its audi-

tory responses, and, in the absence of overt data (*e.g.*, antibiotic therapy), we assume a test animal has a normal ear with representative responses for that species.

It is not clear that this is both reasonable and realistic. Particularly when data are obtained from one animal, it is important to question whether that hearing curve is representative of the normal ear for that species. The pilot studies noted above clearly suggest age and/or exposure to noise can significantly alter hearing in marine mammals, and in some cases (compare the two curves shown in figure 2A for bottlenosed dolphins), it is clear that some individual differences have been observed in "normal" captives that may be the result of permanent hearing loss. The fact that some studies show losses in marine mammals consistent with age-related hearing changes. Disease also complicates the assumptions that any animal has normal hearing or that the only source of a loss found is from anthropogenic sources based on small samplings of populations.

Natural loss should be considered in any animal for which there is little or no history, therefore the finding of a single animal with some hearing decrement in the vicinity of a loud source cannot be taken as a clear indicator of a population level hazard from that source. On the other hand, because of the importance of hearing to these animals, it is also unlikely that a high incidence of loss will be normally found in any wild population, and a finding of substantial hearing loss from, for instance, a mass-stranding or fishery coincident with a long-term exposure to an intense source would be appropriate cause for significant concern.

Of course, acoustic trauma is a very real and appropriate physiologic concern. It is also one for which we can ultimately, given proper research, obtain a data that will allow us to provide a usable metric. That is, given that we know sound level X induces TTs while Y induces PTS, for frequency Z in a specific species, we can apply these data to the estimated exposure curve for that species and determine its risk of hearing loss. Because of the importance of hearing to marine mammals, understanding how man-made sources may impact that sense is an important and reasonable step towards minimizing adverse impacts from man-made sound sources in the oceans.

However, it is equally important to consider that sub-trauma levels of sound can have profound effects on individual fitness. These effects can take the form of masking of important signals, including echolocation signals, intra-species communication, and predator-prey cues; of disrupting important behaviors through startle and repellence, or of acting as attractive nuisances, all of which may alter migration patterns or result in abandonment of important habitats. Unfortunately, these issues are beyond the scope of this document as well as the expertise of the author and therefore cannot be usefully discussed here. Nevertheless, it is important to at least note the concern, and above all to suggest that there is a substantial need for field monitoring of behaviors in wild populations in tandem with controlled studies directed at expanding our audiometric data and understanding of acoustic trauma mechanisms.

As indicated earlier, there are no discrete data at this time that provide a direct measure of acoustic impact from a calibrated, underwater sound source for any marine mammal. Preliminary data from work underway on captive cetaceans and pinnipeds (Ridgway, pers. comm.; Schusterman, pers. comm.) suggest that odontocetes may have higher than typical tolerances for noise while pinnipeds are more similar to land mammals in their dynamic range for threshold shift effects. This response difference as well as the difference in hearing ranges - if these data are shown to be robust - suggest that pinnipeds are the more acoustically fragile group from most anthropogenic sound sources and that odontocetes are relatively immune or require substantially higher sound levels to incur TTS.

In terms of the sonars or in effect any human acoustic device, the principal concerns are to determine a balance of frequencies vs. level vs. duty cycle that will effectively detect targets at long ranges but will not repel nor harm marine mammals within that sound field. To accomplish these goals it is necessary to determine and balance the following components:

1. What are the effective frequencies for operation.
2. What are the hearing curves for species within the sound field?

The fundamental concern is to avoid impact or harassment in the short term, as well as preventing long-term, multiple exposure effects that can compound the probability of hearing loss.

For all species, the first issue in the proposed devices is signal shape, or rise time and peak spectra. As discussed earlier, impulsive sound has substantial potential for inducing broad spectrum, compounded acoustic trauma; *i.e.*, an impulsive source can produce greater threshold changes than a non-impulsive source with equivalent spectral characteristics. Consequently, impulse is a complicating feature that may exacerbate the impact. Conventional suggestions for minimizing such effects are to

ramp the signal, narrow the spectra, lower the pressure, and/or alter the duty cycle to allow recovery and decrease impact. Once again, however, it must be recalled that which if any of these measures is important to the marine mammal ear has not been determined. Further, it is also important to consider the trade-offs each implies in operational effectiveness of the sonars in question. If decreasing one aspect increases the parameters of another, the composite effects must always be kept in mind.

High intensity, ultrasonic devices of course have enormous potential for serious impact on virtually every odontocete and their deployment in pelagic fisheries raises the greatest concern after impulse or explosive sources. Such devices are relatively unlikely, however, because they are unsuitable for longer range detection. With high frequency sonic range devices, the possibility of profound impact from disruption or masking of odontocete communication signals must certainly be considered, as well as the possibility of coincident impacts to pinnipeds. Because the majority of devices proposed use frequencies below ultra or high sonic ranges, odontocetes may be the least likely to be impacted species.

Most odontocetes have relatively sharp decreases in sensitivity below 2 kHz (see fig. 3). If frequencies below 2 kHz are employed with a non-impulsive wave-form, the potential for impacting odontocetes is likely to be drastically reduced, but it must also be borne in mind that it is non-zero. In every case, the difference between some to little or no significant physiologic impact will depend upon received levels at the individual ear. For the purposes of general discussion, a theoretical comparison is shown in Figure 3 for marine mammals audiograms compared with a human audiogram.

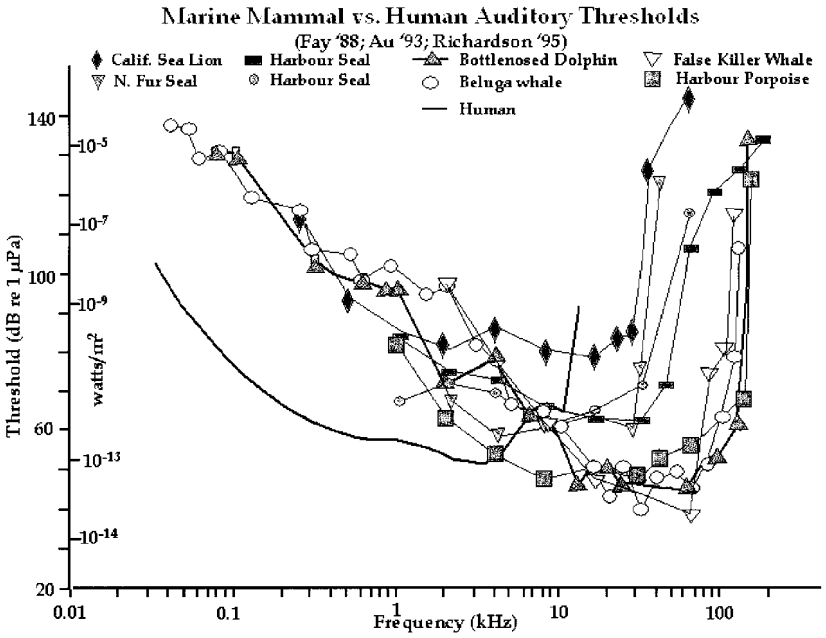

Figure 3. The human in-air audiogram and marine mammal underwater audiograms were recalculated as watts/m^2 to allow direct comparison with marine mammals before replotting on common SPL axes.

Because mechanisms and onset levels of TTS and PTS are still unresolved for marine mammals, this curve is presented largely for the purposes of gross comparisons of spectra of different sources with animal hearing ranges and is not intended to suggest mitigation guidelines. What the figure suggests is that the Mysticetes (which are speculated to have a hearing curves similar to but at lower frequencies than odontocetes)and the majority of pinnipeds have substantially greater potential than odontocetes for direct acoustic impact from low to mid-sonic range devices. However, depending upon the diving and foraging patterns of these animals in com-

parison to the sound field propagated by LF sonars or other devices, the risks to mysticetes and the majority of pinnipeds may be substantially less than a simple sound analysis would imply. That is, given that substantial numbers of these marine mammal groups are either not present or are infrequently found in the areas and depths ensonified there is little probability of any one animal encountering a signal with an intensity and a period of time that will induce acoustic trauma, despite their better absolute sensitivity to the signal.

Mitigation, like estimation of impact, requires a case by case assessment. At this time we have insufficient data to accurately predetermine the underwater acoustic impact from any anthropogenic source. Consequently, it is not possible to definitively state what measures will ameliorate any one impact.

For the immediate future and in the absence of needed data, a best faith effort at mitigation must be founded on reasoned predictions from land mammal and the minimal marine mammal and fish data available. It is reasonable to expect, based on the similarities in ear architecture and in the shape of behavioral audiograms between marine and land mammals, that marine mammals will have similar threshold shift mechanisms and will sustain acute trauma through similar mechanical loads. Therefore, fast-rise impulse and explosive sources are likely to have greater or more profound impacts than narrow band, ramped sources. Similarly, we can expect that a signal that is shorter than the integration time constant of the odontocete, mysticete or pinniped ear or which has a long interpulse interval has less potential for impact than a protracted signal; however, simply pulsing the signal is not a sufficient strategy without considering adequate interpulse recovery time. Strategies, such as compression, that allow the signal to be near or below the noise floor are certainly worth exploring. Certainly, no single figure can be supplied for these values for all species. Because of the exceptional variety in marine mammals ears and the implications of this variety for diversity of hearing ranges, there is no single frequency or combination of pulse sequences that will prevent any impact. It is however, reasonable, because of species-specificities, to consider minimizing effects by avoiding overlap with the hearing characteristics of species that have the highest probability of encountering the signal for each device deployed.

To that end, substantially better audiometric data are required. This means more species must be tested, with an emphasis on obtaining audiograms on younger, clearly unimpaired animals and repeat measures from multiple animals. Too often our data base has be undermined by a single measure from an animal that may have some impairment. It is equally important to obtain some metric of the hearing impairments present in normal wild populations in order to avoid future over-estimates of impact from man-made sources. To obtain these data requires a three-pronged effort of behavioural audiograms, evoked potentials on live strandings, and post-mortem examination of ears to determination of the level of "natural" disease and to hone predictive models of hearing capacities.

The most pressing research need in terms of marine mammals is data from live animals on sound parameters that induce temporary threshold shift and aversive responses. Indirect benefits of behavioral experiments with live captive animals that address TTS will also test the hypotheses that cellular structure in the inner ear of odontocetes may be related to increased resistance to auditory trauma. Combined data from these two areas could assist in determining whether or to what extent back-projections from land mammal data are valid.

Biomedical techniques, such as ABR and functional MRI, offer considerable potential for rapidly obtaining mysticete and pinniped hearing curves. Evoked potential studies of stranded mysticetes are of considerable value but must also carry the caveat of determining how reliable is a result from a single animal that may be physiologically compromised. Post-mortem studies should be considered on any animal that is euthanized after an ABR with the goal of both providing data about the normality of the ear and supplying feedback to modeling studies of hearing ranges. Otoacoustic emission experiments are not considered to be a viable approach for cetaceans; they may provide basic hearing data in pinnipeds but are technically difficult.

Playback studies are a well-established technique but because of the uncertainties about individually received levels they may not considerably advance our knowledge of acoustic impact per se unless tied to dataloggers or very accurate assessments of the animal's sound field. Tagging and telemetry are valuable approaches particularly if linked to field or video documentation of behavior that is coordinated with recordings of incident sound levels at the animal. Telemetric measurement of physiological responses to sound; *e.g.*, heart rate, may be valuable, but little is currently known of how to interpret the data in terms of long term impact.

Permanent threshold shift data may be obtainable by carefully designed experiments that expose post-mortem marine mammal specimens to either intense sound

and explosive sources since these effects are largely detectable through physical changes in the inner ear. These studies would also substantially increase the species diversity of the available data base because most marine mammal species will not be testable with conventional live animal audiometric techniques. Lastly, because many impact models depend upon assumptions about received levels at the ear, these projections would clearly be enhanced by basic measures on specimens of the underwater acoustic transmission characteristics of marine mammal heads and ears.

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Mr. GILCHREST. Thank you very much, Dr. Ketten.

Admiral McGinn?

STATEMENT OF VICE ADMIRAL DENNIS V. McGINN, DEPUTY CHIEF OF NAVAL OPERATIONS FOR WARFARE REQUIREMENTS AND PROGRAMS, UNITED STATES NAVY

Admiral MCGINN. Thank you, Mr. Chairman, members of the Subcommittee. I am Admiral Dennis McGinn, the Deputy Chief of Naval Operations for Naval Warfare Requirements and Programs. Prior to coming to Washington 1 year ago, I was the commander of the United States Third Fleet, with an area of responsibility in the eastern Pacific from the Date Line to the high tide mark of the North American coast, and before that I have commanded carrier battle groups and an aircraft carrier. All of that by way of saying that my presence here in Washington is significant as a Deputy Chief of Naval Operations, but my heart belongs at sea and I have spent some time there.

I welcome this opportunity to appear before you today to testify on sonar, the SURTASS Low Frequency Active program, the Marine Mammal Protection Act, and Navy research. I also want to thank you for your interest in the readiness of our armed forces, in particular our United States Navy.

Let me start by saying that we in the Navy take our legal obligations to protect the world's oceans, marine mammals and endangered species, very, very seriously. We are proud of the cutting edge scientific research we have conducted and funded on the potential effects of acoustic sources on marine mammals.

Important as it is, our environmental stewardship has come at a price, such as increased monetary expenditures, extended time away from home for our sailors, restrictions on training, as well as lengthy delays in deploying weapons systems such as LFA that are considered essential to national security. I must emphasize that at this critical time in our Nation's history, trends toward increasing encroachment on military training and operations, excessive regulation and unnecessary litigation clearly hamper our ability to achieve and maintain critically needed readiness that our citizens expect and deserve from our armed forces.

The United States Navy has used sonar for more than six decades. Sonar is generally broken into two methods of use: active and passive. Active sonar is a signal or a ping transmitted, and then

the reflection of that sound is received. Passive is simply listening for sounds emitted by ships or submarines, such as engine vibrations.

Active sonar can be divided into three categories based on sound frequency: low, less than 1 kHz; medium, 1 kHz to 10 kHz; and high frequency, above 10 kHz. The lower the frequency, the less the sound signal and the return are attenuated as they pass through the water column and the further they will travel, as has been noted.

We currently operate several variants of our standard hull-mounted and mid-ranged sonar on both surface ships and submarines. These sonars have been used since the 1960's. We also use sonar to detect mines and to guide torpedoes and other weapons systems. We use it on fathometers to measure ocean depth. We use side scan sonar to perform oceanographic mapping. It is used to navigate. It is used to find shipwrecks. We use systems similar to sonar for underwater communications, to measure global warming, and in many other types of research. We have a great deal of experience with sonar and have rarely observed any significant, long-term environmental impact that has been adverse.

Sonar is an extremely vital source of information for a lot of purposes, and most importantly, sonar-based mine and antisubmarine warfare systems allow us to keep Americans, our sons and daughters, out of harm's way on Navy ships.

The SURTASS LFA system is a key national security asset required to protect our forces at sea. The United States and its military forces must have the ability to ensure access to key strategic areas and to project power decisively throughout the world, at sea, in the air, and on land, in space and cyberspace, in order to prevail in peace and in time of conflict such as that in which we are currently engaged.

A key to our Navy's ability to project power is our ability to protect our forward-deployed naval forces against threat of opposing force submarines. With the sound quieting capability of potential threat submarines nearing parity with our own, the Navy embarked on an extensive research program to develop new technology to detect submarines.

A very effective technology to emerge from this effort is Low Frequency Active sonar. When combined with the SURTASS passive sonar capability, we have an effective long-range detection platform to meet the rising threat from modern quiet diesel submarines.

A fleet commander or a joint force commander needs an effective active and passive sonar total sensor system that we can bring to bear against opposing forces. And even with our current and projected capabilities, including SURTASS LFA, we face a tremendous challenge to counter the threat posed by modern quiet diesel and nuclear-powered submarines, especially in the challenging littoral areas of the world where our Nation's interests lie.

As a long-range sensor, LFA provides naval commanders with a valuable tool that allows us to conduct surveillance of the undersea battle space and to alert our ships to the presence and location of threat submarines at ranges that provide sufficient reaction time to neutralize that threat.

I know that the undersea picture is sometimes difficult to envision, so I will use an air threat analogy to illustrate the importance of SURTASS LFA. When we send aircraft into hostile areas, they are accompanied by our Hawkeye E2C aircraft or Air Force AWACS surveillance platforms which use high power, long-range air search radar systems to provide long-range detection of potential enemy threats and then to direct friendly forces to neutralize those threats. As a battle group commander, I would not send my aircraft into harm's way without the use of surveillance aircraft wherever and whenever possible.

The same holds true for our ships sent into harm's way against diesel submarines. LFA is required to ensure threat submarines are detected, tracked and destroyed prior to reaching a weapon release point against our ships.

Another key point is that the Navy has conducted a comprehensive environmental review on the effects of LFA on marine mammals. Leading scientists in the field of underwater acoustics and marine mammal biology have conducted independent studies that carefully examine how LFA sonar would affect marine mammals, those marine mammals most likely to be affected, and the potential effect on human divers. These studies have concluded, and we concur, that we can use LFA safely and effectively to carry out critical missions without any significant or long-term adverse effects on the marine environment or on marine mammals.

Some concerned parties claim we have not done enough to study this issue, and cite the lack of long-term effect studies, the number of marine mammals studied, and other real world limitations of the testing performed to date. The cost of that additional testing that these parties demand to conduct studies on every possible potential impact to marine mammals and humans, tens of years, tens of millions of dollars, is exorbitant and unreasonable and constitutes yet one more form of encroachment on our ability to deliver the kind of readiness this Nation needs.

I would note on a philosophical note that few significant endeavors in life, from embarking on a campaign to eradicate the scourge of terrorism or passing significant new legislation or even choosing a place to live or work, can be embarked upon with the absolute certainty that these parties demand of the United States Navy in deploying LFA. We believe that the right and balanced course of action is to conduct thorough studies to understand the most significant likely potential effects and then, informed by that knowledge, to decide whether to move forward in a responsible way, using reasonable and effective mitigation efforts and carefully monitoring the results to detect any unforeseen effects over the long term.

While LFA is a new Navy warfighting application, we have concluded through this independent scientific research that the use of LFA with appropriate mitigation measures is highly unlikely to affect the health of marine mammal populations and human divers. We are fully committed to a long-term monitoring plan to verify the results of that research and to evaluate the impacts of LFA. We have set aside funds to continue this effort.

I ask you to carefully consider the Navy's high priority requirement for LFA, the extensive research and analysis carried out to

date, and the independent scientists' opinions, as you deliberate upon the use of this valuable national asset.

Additionally, and on a final note, the Navy supports efforts of the Department of Commerce, NOAA, and the National Marine Fisheries Service to reauthorize the Marine Mammal Protection Act, and we have worked closely with NOAA to prepare an amendment to the definition of "harassment" in that act. The current definition is overly broad and ambiguous, allowing for any potential disturbance of marine mammals by naval activities, including sonar operations, to be considered harassment.

The proposal, which follows recommendations from a recent report for Congress conducted by the National Research Council, will tie harassment to abandonment or significant alteration of behavior patterns related to important biological functions such as migration, feeding, or nursing. With this amendment, the Navy will have increased clarity regarding application of the Marine Mammal Protection Act, and therefore greater operational and training flexibility.

Finally, with regards to research, the Navy funds the majority of all marine mammal research in the world. Your Navy, through our Environmental Consequences, Underwater Sound, and Effects of Sound on a Marine Environment programs, provided approximately $7 million in fiscal year '01 for research directly related to assessing and mitigating the effect of noise from Navy activities in the marine environment. The funding planned for '02 calls for an increase of that amount of over $2 million, a total of over $9 million. To date, Navy's research efforts in support of global environmental concerns have provided tremendous insight on acoustic phenomena in the oceans.

Once again, Mr. Chairman and members of the Committee, I welcome the opportunity to appear before you today, and I look forward to answering your questions. Thank you, sir.

[The prepared statement of Admiral McGinn follows:]

Statement of Vice-admiral Dennis V. McGinn, Deputy Chief of Naval Operations for Warfare Requirements and Programs, U.S. Navy

Good afternoon Chairman Gilchrest, Delegate Underwood, members of the Fisheries Conservation, Wildlife and Oceans Subcommittee, and ladies and gentlemen. I am here today to provide testimony on Navy Sonar, the Surveillance Towed Array Sensor System Low Frequency Active, or SURTASS LFA sonar, the Marine Mammal Protection Act and future Navy research into the effects of underwater sound on the marine environment. As the Director of Warfare Requirements and Programs, I am responsible for equipping our sailors with the most capable weapon system so that they can carry out their missions in most effective manner. This is my duty under the President, the Commander in Chief, and I mean to fulfill that obligation to the best of my ability. The topic I am here to address today is very important to fulfilling that charge. That duty took on new relevance one month ago today (September 11, 2001). While the Navy takes its environmental responsibility seriously, working to protect and enhance natural resources and endangered species in our fleet operating areas and training ranges, there must be a balance between environmental concerns and our national security. We are ready today to help defend this nation, but current regulatory trends and litigation are worrisome. Our ability to work around environmental challenges is not infinite and our future readiness could be placed at risk.

The United States Navy has used SOund NAvigation Ranging or "SONAR" for more than five decades. Sonar is generally broken into two methods of use, active and passive. Active sonar is a signal or "ping" transmitted and then a reflection of that sound is received. Passive is simply listening for sounds emitted by ships or submarines, such as engine vibrations. Active sonar can be divided into 3 categories;

low (< 1kHz), medium (1kHz–10kHz) and high frequency (>10kHz). The lower the frequency, the less the signal and the return are attenuated as they pass through the water column and the further a they will travel. We currently operate several variants of our standard hull mounted mid-ranged sonar on both surface ships and submarines. These have been in use since the later 1960s. We also use sonar to detect mines, to guide torpedoes and other weapon systems. We use it on fathometers to measure ocean depth, to perform oceanographic mapping, for navigation, and to find shipwrecks. We use systems similar to sonar for underwater communications, to measure global warming, and many other types of research. We have a great deal of experience with sonar and have rarely observed any significant adverse effect on the environment. Sonar is an extremely vital source of information, and most importantly, it allows us to keep our sons and daughters out of harms way.

My staff and I have studied the relevant data and information on SURTASS LFA—we have read the Environmental Impact Statement (EIS), listened to briefings from the sponsor and program office and, of course, have read counter-arguments from environmental organizations on why the Navy should abandon SURTASS LFA. My testimony today is divided into four sections:

- There is an immediate and critical national security need for the SURTASS LFA technology in the Fleet's arsenal. The Chief of Naval Operations and the Fleet Commander in Chiefs have reviewed and validated the urgent military need for this sensor system.
- The SURTASS LFA EIS is the most comprehensive and exhaustive scientifically-based EIS ever undertaken by the Navy for a major seagoing combat system. This will be clear when I take you through each step of the EIS process that we have been conducting since 1996.
- Next, I will address the extensive scientific research, studies and analyses that went into the EIS process and, most importantly, the conclusions reached by the independent scientists that conducted the research.
- Finally, the Navy is planning to implement a long term monitoring plan, which will continue independent research on possible effects from underwater low frequency sound.

The bottom line: SURTASS LFA can be operated safely and effectively.

1. *The Navy has an immediate, critical need for SURTASS LFA.* By law, the Navy's primary mission is to maintain, train and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas. Antisubmarine warfare, or ASW, is a critical part of that mission. The Chief of Naval Operations (CNO) has stated that ASW is essential to sea control and maritime dominance. Many nations throughout the world can employ submarines to deny access to forward regions or to significantly delay the execution of crucial Navy operations. Because of its inherent stealth, lethality, and affordability, the submarine is a powerful threat. In 1998 the Chief of Naval Operations emphasized the importance of ASW in protecting our national security and set the direction for achieving operational primacy in ASW. He stated that the Navy's goal is to have the best-trained ASW force in the world, with the right set of tools to prevail in any type of conflict, including the kind we are now facing in the Middle East. My goal here today is to show you why I believe one of the primary ASW tools must be SURTASS LFA.

Many of the opponents of SURTASS LFA say that the Cold War is over and question the need for the SURTASS LFA system. Despite the end of the Cold War, the submarine threat remains real and in some ways has become more challenging. Of the approximately 500 non–U.S. submarines in the world, 224 are operated by non-allied nations. Many of these are the more advanced, quieter diesel-electric submarines that present a real threat to U.S. forces. The Russian Federation and the People's Republic of China have publicly declared that the submarine is the capital ship of their navies. Many potential adversarial countries have essentially done the same, including Iran and North Korea. A former Indian Navy submarine admiral has commented that developing nations desire submarine forces because they are the most cost-effective platform for the delivery of several types of weapons; they counter surface forces effectively; they are flexible, multi-mission ships; they are covert and can operate with minimal political ramifications; and they can operate without supporting escorts. Submarines are ideal weapons for states that lack, or cannot afford, the capability to assert sea control in their own (or others') waterspace. They can operate in an opponent's backyard. Even in the face of determined sea control efforts, they can conduct stealthy and intrusive operations in sensitive areas, and can be inserted early for a wide range of tasks with a high degree

of assured survivability. When equipped with mines, advanced torpedoes, anti-ship or land-attack missiles, a submarine is a potent tactical and political weapon. Ladies and gentlemen, in today's unpredictable world, we must recognize that the advanced, quiet submarine is potentially a terrorist threat. A single diesel-electric submarine that is able to penetrate U.S. or multinational task force's defenses could easily undermine military efforts to thwart hostile enemy forces and change the balance of political support for U.S. involvement in armed conflict.

A recent U.S.–Australian ASW exercises with the new Australian Collins-class diesel-electric submarine demonstrated that new technology is needed to detect a modern diesel-electric submarine operating on battery power. We have to reduce the limits of detection for the submarines of today and tomorrow, and SURTASS LFA does that. Nations of concern continue to build and sell new classes of highly capable submarines, and to operate its newest vessels outside of home waters.

These nations are also investing heavily in submarine technology, including designs for nuclear attack submarines, strategic ballistic missile submarines, and advanced diesel-electric boats. The President's National Research Council has projected that by 2035, U.S. military forces may be seriously and competently challenged by submarines from major powers like Russia and China, or from a number of potentially unfriendly nations. By 2030, it is projected that 75 percent of the non–U.S. submarines will have advanced capabilities, including air-independent propulsion that allows 30–50 days of submerged operations without surfacing or snorkeling. When these units are in a defensive mode, that is, not having to travel great distances or at high speed, they have a capability nearly equal to that of a modern U.S. nuclear submarine. At minimal cost, this capability can be readily obtained, including highly capable weapons, in some cases consisting of nuclear devices.

Quieting technology continues to proliferate, which will render these advanced diesel submarines difficult, if not nearly impossible to detect, even with the latest passive sonar equipment. This is where SURTASS LFA comes in—its state-of-the-art towed array provides the Navy with the world's best deep and shallow-water (littoral zone) low frequency passive acoustic sensor, called SURTASS. When SURTASS by itself proves inadequate in detecting and tracking submarines, its active component, LFA, is used—which is a set of acoustic transmitting source elements suspended by cable beneath the ship. These elements, called projectors, produce the active sound pulse, or "ping," which allows for such long-range detections of otherwise concealed submarines. Its extended detection ranges are achieved using low-frequency signals in the 100–500 Hertz frequency band, and high-gain receivers in the SURTASS towed array to pick up the returning echoes from the ping reflecting off the target submarine. Thus, SURTASS LFA meets the U.S. need for improved capability to detect quieter and hard-to-find foreign submarines at long range, and provides adequate time to react to and defend against potential submarine threats.

As an example of the importance of ASW, we need only return to the 1982 Falklands conflict. The Royal Navy established regional maritime dominance in the Falklands with a single submarine attack, the sinking of the Argentine cruiser General Belgrano by the nuclear-powered attack submarine Conquerer. Had the single Argentine Type 209 diesel-electric submarine that got underway been successful in just one of several attacks and sank or seriously damaged one of the British small-deck aircraft carriers or logistics ships, the outcome of that conflict might have been very different.

The Navy chose to develop LFA sonar because it is superior to alternative technologies. Examination of the potential threat led Navy to identify a need for long-range detection, before a hostile submarine could maneuver into its weapon-release range. The use of conventional technologies to accomplish this is infeasible from tactical and economic perspectives. The Navy also recognized that passive sonar would be insufficient for long-range detection against advanced submarines.

The Navy also studied several non-acoustic ASW technologies in the 1980's as potential candidates for use in detecting submarines, including radar, laser, magnetic, infrared, electronic, electric, hydrodynamic, and biologic detection systems. While some of these have demonstrated limited utility in detecting submarines, none has provided U.S. forces with long-range detection and the necessary longer reaction times.

The Navy concentrated on LFA because it is well established that low frequency sounds (below 1,000 Hertz) propagate in seawater more effectively and at greater distances than mid-frequencies (1,000 to 10,000 Hertz) and high frequencies (10,000 to 100,000 Hertz). The Navy's evaluation of how LFA sonar could be configured and employed to provide for long-range submarine detection.

The SURTASS LFA EIS is the most comprehensive and exhaustive scientifically-based EIS ever undertaken by the Navy for a major seagoing combat system. More-

over, the Navy has gone to virtually unprecedented lengths to inform and involve the public. Since the release of the Notice of Intent in the Federal Register five years ago, the Navy has held three public scoping meetings in 1996, eight public outreach meetings in 1997–98, and three public hearings on the Draft EIS in 1999. Written and oral comments on the Draft EIS were received from over 1,000 commentors, including federal, state, regional and local agencies, environmental groups and associations, as well as private individuals. In addition, the Navy established the SURTASS LFA Scientific Working Group in 1997. This distinguished panel was made up of independent scientists from a wide variety of marine laboratory and academic organizations, as well as a representative from the non-governmental environmental groups opposed to LFA. The panel met periodically to determine the critical data gaps that needed to be addressed to evaluate the effects of low frequency sound on the marine environment, and to review the results from the SRP field experiments.

The Navy is the lead agency for the proposed action, with NOAA Fisheries acting as cooperating agency due to their expertise on marine mammal issues. At the outset of the process, the Navy delineated five *Principles* for development of the EIS:

1. Conduct scientific studies on the potential effects of low frequency sound on marine life and human divers.
2. Maintain scientific rigor throughout development of the EIS.
3. Use an independent scientific team to review and edit the EIS.
4. Preserve an open process with maximum public engagement.
5. Provide adequate funding for scientific research to address critical data gaps and furnish a meaningful and understandable EIS to the public.

The *Analytical Process* for development of the EIS included the following:

1. Scientific literature review and determination of data gaps.
2. Scientific screening of marine animal species for potential sensitivity to low frequency sound.
3. Scientific research on the effects of low frequency sound on humans in water and marine mammals.
4. Development of a scientific method for quantifying risk to marine mammals.
5. Analytical acoustic modeling of representative cases for the deployment of SURTASS LFA.
6. Estimation of marine mammal stocks potentially affected and the effects on fish and sea turtles.
7. Establishment of mitigation and monitoring to minimize effects to a negligible level.

In developing the framework for the EIS, the Navy recognized that it needed to address some outstanding issues. First, there were concerns over the adequacy of scientific information on the impacts of LFA sounds upon human divers. Because data on the effects of low frequency sound on humans is limited, the Navy sponsored independent scientific research to study the effects of low frequency sound on human divers. This research was conducted by the Office of Naval Research and the Naval Submarine Medical Research Laboratory, in conjunction with scientists from the University of Rochester, Georgia Institute of Technology, Boston University, the University of Pennsylvania, Duke University, the Applied Research Laboratory, the University of Texas, and Divers Alert Network. Based upon the results of this research, the Naval Submarine Medical Research Laboratory—the same organization responsible for the dive tables used by all recreational and commercial divers—established a 145-dB received level criterion for recreational and commercial divers.

There was also the issue over the adequacy of scientific information on the impacts of sound upon marine animals. Because data on the effects of low frequency sound on marine animals in general, and particularly on certain sensitive marine mammals species, is limited, the Navy conducted a series of original scientific field research projects to address the data gaps on the effects of low frequency sound on the marine environment.

Recognized world experts in the fields of marine biology and bioacoustics were allowed to independently plan and organize a series of Navy-sponsored scientific field research projects to address the most critical of the data gaps on the effects of low frequency sound on the behavioral responses of free-ranging marine mammals. This research effort was the 1997–98 Low Frequency Sound Scientific Research Program, or SRP. The goal of the SRP was to evaluate avoidance reactions to SURTASS LFA sounds by sensitive species during critical biological behaviors. At the time of the

SRP field tests, the prevailing theory was that a 140 dB received level would drive marine mammals away. Testing was conducted in three phases:

a) Phase I was conducted with blue and fin whales feeding off the southern California coast, using three research vessels, including the Cory Chouest with the LFA system on it, small aircraft for aerial surveys, autonomous seafloor acoustic recording units, and the Navy's sound surveillance system, or SOSUS. This was the most extensive real-world field experiment using large baleen whales that has ever been undertaken. Initial analysis of SRP Phase I data indicated a slight decrease in whale vocal activity during LFA transmissions. However, subsequent, more detailed analysis using data from all three types of passive receivers on ships and the seafloor showed no significant differences in vocal activity between the LFA transmission periods and the non-transmission periods.

b) Phase II was conducted with gray whales migrating southward along the central California coast, using a boat with a single LFA source element deployed over-the-side, an observation boat with hydrophones deployed over-the-side to verify received levels at the whales, and shore observers using state-of-the-art theodolite telescopes to track the whales. Phase II was conducted by some of the same scientists who conducted similar testing in 1983 and 1984, which showed the gray whales reacting to 120 dB received levels. During Phase II, when the sound source was placed directly in the path of the migrating gray whales, they showed a modest avoidance reaction by deflecting a few hundred yards around the source at received levels of 138 to 144 dB. However, when the source was moved one nautical mile farther out to sea and the source level adjusted so that the exposure level at the animals in the migration corridor remained the same, the whales did not exhibit avoidance of the signal.

c) Phase III was conducted with breeding humpback whales off the Kona coast of the Big Island of Hawaii, using Cory Chouest with the LFA system, a Navy SURTASS ship with its passive towed array, an observation boat to verify received levels at the whales, and shore observers with theodolite telescopes. During Phase III, about half of the singing humpback whales showed what at first appeared to be avoidance level responses and cessation of singing when exposed to LFA signals at received levels of 120–155 dB. However, an equal number of singing whales exposed to the same levels of LFA signals showed no avoidance or cessation of song. Of the whales that did stop singing, there was little response to subsequent LFA transmissions, as most joined with other whales or resumed singing within less than an hour of exposure to the LFA sounds. Those that did not stop singing, sang longer songs during LFA transmissions, and returned to their baseline levels after LFA transmissions stopped. The independent scientists who designed and conducted this experiment determined that this brief interruption, followed by resumption of normal interactions, is similar to that seen when whales interrupt one another or when small vessels, like whale-watching boats, approach an animal. If whales are in a breeding habitat and such vessel interactions are frequent, the aggregate impact of all disruptive stimuli could effect significant biological functions. However, LFA will be operated well offshore of humpback breeding areas. It is highly likely that the cumulative impact of numerous inshore vessel interactions will cause significantly greater impact on these animals than that caused by infrequent offshore LFA transmissions.

In summary, this $10 million SRP, conducted independently by world-renowned marine biologists and bio-acousticians, collected much-needed data on the reaction of marine mammals considered to be most susceptible to low frequency sounds—baleen whales. The results of these field studies led to the determination that the LFA sonar system could be operated safely with the restrictions and mitigation proposed in the EIS.

SURTASS LFA can be operated safely and effectively.

Marine mammals are constantly exposed to natural and man-made underwater sounds. We must look at the range of effects and the factors that are likely to cause responses in marine mammals. A sound must be perceived by the animal to evoke any behavioral response. However, it must be recognized that many sounds that are heard by marine mammals may evoke no response. Some sounds may evoke aversive responses at low received levels, but all sounds will evoke aversive responses when the received levels are sufficiently high to be uncomfortable. At even higher levels, such sounds can cause physical injury.

Marine mammals have evolved over millions of years with exposure to a wide range of acoustic signals at various levels of sound. Much of this exposure is from biological sources. However, natural sounds produced by volcanism, lightning strikes and weather (wind and rain) also contribute to the natural noise floor of the ocean. Since many marine mammals rely on underwater sound for communication and

echo-location, this would imply that they have very good hearing recognition and localization ability. It is also safe to assume that marine mammals cannot hear below the lowest background (ambient) noise level in the ocean and will not incur physical injury from sound levels that their ancestors likely experienced on an annual basis.

For marine mammals, a signal must be 10 to 15 dB above the ambient noise level (per Hertz) for it to be recognized. Unless a signal is perceived to be very close or threatening, another 10 to 20 dB increase in sound level would most likely be required to evoke behavioral reactions. For a 200–Hertz signal, average ocean ambient noise values range from 60 to 95 dB. Depending on background noise, for a marine mammal to hear and recognize a signal, it would have to be at a received level of 70 to 110 dB at the animal. At received levels of 80 to 130 dB, behavioral reactions are possible, depending on the characteristics of the signal. Sounds that portend lethal dangers, such as predators, ice breaks and marine mammal alarm calls, are likely to evoke strong behavioral reactions. In these examples, flight and interruption of significant biological behavior is almost a certainty. The 1997–98 SRP field experiment results show that blue, fin, humpback and gray whales did not perceive LFA signals as threatening.

When a sound is perceived as potentially dangerous, its loudness is probably not the overriding factor. The proximity of the signal to the marine mammal and the rate of approach are most significant in determining the immediacy of the threat. An example of the importance of source location was shown in the SRP Phase II experiments off the central California coast where a sound source was placed directly in the path of migrating gray whales, which follow a relatively predictable corridor close to shore. The animals showed a modest avoidance reaction by deflecting a few hundred yards around the sound source. When the sound source was moved one mile farther out to sea (even when the source level was adjusted so that the received level to the animals in the migration corridor remained the same) the whales did not exhibit avoidance of the signal.

In the absence of a threatening signal, marine mammals are not expected to alter their behavior unless and until sound levels become uncomfortable or significantly impair the perceptions of sounds that are critical for their behavior. Impairment of a marine mammal's perception of critical sounds is called masking. Masking effects in marine mammals caused by LFA would be temporary and negligible because LFA's bandwidth is limited to approximately 30 Hz, signals do not remain at a single frequency for more than 10 seconds, and the system is off at least 80 percent of the time. For humans, discomfort is highly dependent on the type of signal. Soft, mellow sounds are regarded as comfortable and sharp, pitched sounds (*e.g.*, fingernails on a chalkboard) are uncomfortable. The SRP field study measured the response or, lack of response, of marine mammals to discomforting LFA sounds at exposure levels up to 155 dB. The onset of mild discomfort, for a 200 Hz signal lasting up to 100 seconds and transmitted approximately every 15 minutes, is estimated, using a human model in air, to be 50 to 60 dB above hearing threshold. This equates to approximately 130 to 140 dB received levels for baleen whales—the species believed to possess the best hearing capability in the LFA frequency band. For a 200 Hz signal lasting up to 100 seconds and transmitted every 15 minutes at 130 dB to 140 dB received levels, some marine mammals may temporarily avoid the sound, but more than likely will tolerate it. When the received level at the animal increases to approximately 165 dB, scientists estimate that up to 50% of baleen whales are likely to experience sufficient discomfort that they will take measures to avoid the sound. However, the reaction is dependent upon the behavior involved. If engaged in a critical behavior, such as feeding, they may choose to tolerate the discomfort for the nutritional benefit. If the sound received level reaches 180 dB, it is doubtful that animals will tolerate the signal for any reason. Above 180 dB, a 200 Hz signal lasting up to 100 seconds and transmitted every 15 minutes creates an increasing likelihood of injury as exposure levels rise. Included in this injury zone above 180 dB is the possibility of hearing loss and tissue damage from direct and resonance effects.

Extensive mitigation and monitoring requirements will be levied on all LFA operations. Geographic restrictions dictate that received levels will always be below 180 dB within 12 nautical miles of any coastline, and any NOAA and Navy-designated offshore biologically important area. Received levels will not exceed 145 dB in the vicinity of any known commercial or recreational dive sites. Monitoring mitigation procedures include daylight visual monitoring for marine mammals and sea turtles, passive listening with the SURTASS towed array to detect sounds generated by marine mammals as an indicator of their presence, and high frequency sonar to detect, locate and track marine mammals, and possibly sea turtles, near the LFA vessel to ensure they do not enter the 180-dB LFA Mitigation Zone.

The SRP field study results demonstrate that, while not impossible, the planned operations of LFA are highly unlikely to cause injury, especially given the operational restrictions and mitigation measures that will be employed in conjunction with all LFA operations. Extensive analysis has shown that a small number of animals will be exposed to levels above 165 dB, up to a maximum range from the source of approximately 30 nautical miles under optimal acoustic propagation conditions that may occur no more than 10 percent of the time. In general, exposure levels are more dependent on the depth of the animal than its range from the source. Therefore, the 30-nautical mile maximum needs to be tempered with the depth dependence of the sound field. Received levels up to 140 dB can range out to 300 nautical miles but, again, only under optimal conditions and assuming the animal is located in the narrow depth zone of highest sound level. At these ranges, the animal will move out of the small volume of high sound energy by simply changing depth. In ocean areas with water depths less than 4,000 feet, the ranges are significantly shorter (down to 10 percent of the above maximum ranges).

It is possible to hear LFA at long ranges. However, merely hearing the LFA signal does not constitute an impact—an important point that LFA opponents fail to acknowledge time and again. Given that the LFA signal does not seem to be intrinsically threatening or annoying to marine mammals, in the case of simply being able to hear the signal, the animal will necessarily be far from the source. Thus, it will not find itself within the area where a significant change to a biologically important behavior could occur; more than likely animals will have no reaction at these low exposure levels.

In summary, the potential impact on any stock of marine mammals from injury is considered negligible. The potential impact on any one marine mammal from significant change in a biologically important behavior—such as migrating, breeding, feeding, or sheltering—is considered minimal. Because there is some potential for incidental takes by harassment, the Navy is requesting a Letter of Authorization under the Marine Mammal Protection Act from NOAA Fisheries for the taking of marine mammals incidental to the employment of SURTASS LFA sonar. Additionally, the Navy is consulting with NOAA Fisheries under Section 7 of the Endangered Species Act.

The Navy's Long Term Monitoring Plan. As discussion of these three important points shows, the Navy has done the research and analysis that demonstrates that it can deploy this vitally needed ASW system safely and effectively. Findings from the SRP field-testing did not reveal any significant change in a biologically important behavior in marine mammals. Additionally, risk analysis conducted in the EIS estimated very low risk to marine mammal species. The Navy's planned long-term monitoring efforts go even further, with its commitment to future monitoring, and research on possible effects from underwater low frequency sound. Upon issuance of a Letter of Authorization by NOAA Fisheries, the Navy will provide a detailed Long Term Monitoring Plan, which will include:

1. Navy and independent scientific analyses of the effectiveness of the proposed mitigation measures, including verification of the high-frequency monitoring sonar performance.
2. Careful measurement and modeling of the LFA sound field at various depths and ranges prior to and during operations to ensure compliance with the 180-dB geographic restriction and the 145-dB diver criterion.
3. Additional research conducted in collaboration with other Navy oceanographic research laboratories and U.S. academia, such as Woods Hole Oceanographic Institution and Scripps Institution of Oceanography. The Navy will solicit the best-qualified independent marine biologists to help address the outstanding critical issues on the direct and indirect effects of man-made low frequency sound on marine mammal stocks. When security classification and SURTASS LFA ship operations scheduling allow, the Navy will encourage cooperative research efforts using SURTASS LFA sonar at sea.
4. Incident monitoring will comprise two parts. First, recreational and commercial diver incident monitoring, and secondly, marine mammal stranding incident monitoring. The Navy will maintain close coordination with the principal clearinghouses for information on diver-related incidents, namely the National Association of Underwater Instructors (NAUI), the Professional Association of Diving Instructors (PADI) and the Divers Alert Network (DAN). The Navy will also coordinate with NOAA Fisheries and the principal marine mammal stranding networks to correlate analysis of any whale strandings with LFA operations.

Some members of the general public have taken an intense interest in the problem of underwater noise, particularly focusing on SURTASS LFA. Unfortunately,

the concern and controversy over the SURTASS LFA sonar system is largely based on misinformation that has appeared in the press, direct mail, the Internet, and during public hearings. Professional marine biologists and bio-acousticians believe there is reason for concern about higher noise levels in the ocean, but not for the kind of unreasoned fear that SURTASS LFA now generates in the general public. Therefore, I would like to address some of the misrepresentations of SURTASS LFA. For the record, I owe this part of my testimony to NOAA Fisheries.

1. *LFA is the loudest human noise in the oceans, amounting to an acoustic holocaust.* The maximum exposure an animal could possibly receive from LFA is 215 dB. This is not close to the loudest sound marine animals may be exposed to in their everyday environment. Each year about one trillion lightning strikes hit the ocean surface with sound levels around 260 dB. About 1,000 underwater earthquakes, landslides and volcanic eruptions exceeding 230 dB occur annually in the Pacific Ocean alone, and over 10,000 occur that exceed 205 dB. The loudest non-explosive anthropogenic noise in the ocean is from airgun arrays used in seismic exploration. There are about 150 seismic vessels operating worldwide this year, with source levels up to 255 dB, and capable of shooting every 10 seconds—any one of these can put more acoustic energy into the ocean annually than LFA. The most energetic noise in the oceans is from commercial shipping. If LFA and all other human-generated impulsive noises could be eliminated, noise levels would continue to rise because of shipping alone.

2. *LFA is a billion times louder than a 747 jet engine.* Within 200 yards, LFA is approximately the same as a 747 engine, if one could operate under water. Beyond 200 yards, LFA forms an omni-directional beam that is narrow in the vertical. Outside this beam, at any given distance, the LFA sound is comparable to a jet engine at the same range. Inside the beam, LFA is about 30 dB louder, which would be perceived by a human as about six times louder, not a billion times.

3. *The safety zone used for LFA, 180 dB received level, was invented for LFA, and is not based on science.* The 180 dB safety zone was recommended by an expert panel in 1997 for seismic operations off California. Although it is true that no one study has proven the safety of this level for marine mammals, several lines of credible research suggest that 180 dB is a safe and conservative level for preventing injury from low frequency sound. Furthermore, the 180 dB level makes common sense, given the animals' environment. For example, 180 dB is about half the sound pressure level that an animal would receive from a nearby blue whale call, which is about 186 dB at the source.

4. *Sonar has caused beaked whale deaths, which proves that LFA will also.* It is not possible that all sonars will affect all species of marine mammals equally. Sonars differ in operating characteristics, and marine mammal species differ in the sounds to which they are susceptible. Opponents of LFA intentionally obscure these facts in an attempt to prove by analogy that LFA poses specific dangers. The scientific truth about sonar and beaked whales is that tactical sonar may be implicated in the strandings of six beaked whales on nearby beaches in the Bahamas in March 2000. They then apparently died from exposure. Tissues from two of the animals are being intensely studied by the Woods Hole Oceanographic Institution and NOAA Fisheries for the mechanism that could have caused their deaths. Six other episodes are known when sonar is believed to have operated near where beaked whales died. However, no tissues were collected from any of these events, and nothing is known about the types of sonar, or the time or distance separating them from the dead whales. Without this information, science cannot prove whether sonar did or did not cause whale deaths. These events are important because they point out the scientific truth about LFA—that there is no evidence that LFA has ever caused a stranding, much less a mortality. Furthermore, its operation will come with extensive mitigation measures that will make strandings highly unlikely. It should be noted that no mitigation was used with any of the other seven events.

5. *Resonance explains all previous stranding events caused by military sonar and makes deaths from LFA inevitable.* Resonance is an untested hypothesis about the cause of the deaths of six beaked whales in the March, 2000 Bahamas stranding incident. Resonance is only one of three different hypotheses about the Bahamas strandings that NOAA Fisheries and the Navy are addressing. It should be noted that there are currently no resonance data available from any marine mammal tissue of any marine mammal species. Mathematical calculations leading to a hypothesis that resonance might have caused the beaked whale deaths in the Bahamas are not acceptable evidence that resonance was in fact the cause. Only physical experiments, now under way, can show whether resonance may be implicated in the whales' mortality. Until then, we should not assume that all active sonar can cause whale deaths by resonance.

In summary, the Navy recognizes that the potential impact of man-made sound in the ocean is an issue of public and scientific concern. The Navy cares about the ocean habitat, and its efforts are directed toward marine conservation. The environmentally responsible deployment of SURTASS LFA is an important Navy priority. The Final EIS demonstrates that LFA can be used safely relative to both human and marine life by restricting where and when it operates and by using validated mitigation measures. The Navy has relied on a group of independent scientists from respected scientific research establishments, such as Woods Hole Oceanographic Institution, Cornell University, the University of California and the University of Maryland. These are internationally recognized experts in bioacoustics and marine animal behavior. Their reputations are based on many years of impeccable research and personal scientific integrity. They deal in scientific fact, not emotional rhetoric and the facts show that the deployment of SURTASS LFA sonar can be safely employed in our oceans.

Finally, the Navy would like to add its support to the efforts of the Department of Commerce, NOAA, and NMFS to reauthorize the MMPA. The Navy will work with these and other federal agencies to ensure that any MMPA amendments proposed by the Administration will balance properly the goals of environmental protection and military readiness. The current definition of "harassment" is broken into two parts. The first part, known as "Level A" harassment, deals with physical injury to marine mammals. The second part, known as "Level B" harassment, deals with behavioral modifications to marine mammals. Under both parts, the potential to injure or disturb a marine mammal amounts to harassment of the marine mammal. Additionally, with regard to Level B harassment, the mere causing of a disruption to an animal's behavior patterns amounts to harassment. These overly broad and ambiguous terms allow for many naval activities, including operation of sonar, to be considered harassment. A recent National Research Council report to Congress recommended changes in the statutory definition of harassment. Changes along the lines of those recommended by the NRC could bring greater clarity to the MMPA, narrow the focus of harassment, and offer the Navy increased flexibility in its operations while still protecting marine mammals.

With regards to research, the Navy funds the majority of all Marine Mammal research in the world. The Navy provided approximately $7M in fiscal year 01 for research directly related to assessing and mitigating the effect of noise from Navy activities on the marine environment. The funding plan for fiscal year 02 calls for an increase of approximately $2M to $7M, contingent on final budget approval and recent events.

The Office of Naval Research (ONR) research program is divided into two major components: 1) Environmental Consequences of Underwater Sound (ECOUS) and 2) Effects of Sound on the Marine Environment (ESME). The goal of ECOUS is to develop data on marine animal hearing and behavioral response to sound with an emphasis on marine mammals as the group most likely to be sensitive to manmade noise, to encourage new technologies that will make this job easier (such as new listening technologies to detect marine mammal sounds) and to develop databases and educational resources to enable Navy personnel and the public to better understand and respond to this issue. ESME is a recent program that grew out of ECOUS, and has been funded at an annual level of about $2M since fiscal year 00. ESME is intended to take the information garnered from ECOUS, and other sources, and incorporate this information into a predictive modeling and planning toolkit for Navy and other users. The intent of ESME is to allow users to anticipate the likely outcome of a planned action, and design that action for minimal environmental impact.

Over half of the ONR program funds go outside the Navy to independent research institutions and universities. All participants in the program are encouraged to publish their results in peer-reviewed open professional literature, and to report their findings at open professional meetings in relevant subject areas (*e.g.* acoustics, animal behavior, hearing, ecology). The ONR program is externally reviewed by an independent board of visitors approximately once a year, and receives input from the National Academy of

Sciences, the Marine Mammal Commission and other independent oversight bodies. A complete list of research activities sponsored in fiscal year 00–01, containing a 2–5 page summary of each project, can be found at the ONR website (www.onr.navy.mil).

In addition to the ONR S&T projects mentioned above, Navy invested $3M in FY01 and is planning a similar amount in fiscal year 02 to take advantage of our years of experience in sonar operations and our knowledge of underwater sound in an attempt to monitor marine mammals. Equipment and techniques originally developed to detect the sounds emitted from submerged submarines may have practical application in detecting and tracking marine mammals. This has significant po-

tential since many marine mammals use calls, sounds of a various nature when under the surface, as a form of social communication, or to determine the location of prey, etc.

Our attempts to detect these calls and determine what species of animal is calling, and under what circumstance may provide valuable information and understanding. First, we will be able to significantly improve our estimate of how many animals of a certain species are within a Navy ocean region of interest. This type data is critical to the analysis used to determine the potential effect of Navy operations on marine mammals. Second, we will be able to mitigate any potential effect by detecting the presence of a marine mammal within an area, and therefore cease or modify the scheduled operations.

Third, by acoustically monitoring marine mammals we may be able to measure any changes in their behavior providing information on the potential long-term effects from various Naval activities.

If it were possible to predict realistically how many marine mammals of a given species were expected in any given ocean region, Navy planners could, when there is an option, schedule training exercises at locations to limit any potential effect. A more realistic estimate of the number of animals expected must include knowledge of the factors which govern where marine mammal go in the ocean, and for what reasons. The Navy is investigating these habitats and attempting to correlate them with the known physical environment. When we have that information we will be able to predict or forecast marine mammal movement and abundance that will improve our ability to mitigate. The research to date has provided much insight on acoustic concerns in the ocean including the alarming overall rise of ambient noise and the potential masking of marine mammal communication by unregulated commercial shipping and seismic surveying.

The Navy is a good steward of the ocean and we have maintained a reasonable balance between national security and environmental concerns. We hope to continue that relationship as we forge ahead in this new century.

Mr. GILCHREST. Thank you very much, Admiral.

I guess what we are going to try to figure out here is, between this afternoon and the next several months, how does noise, human-caused noise in the ocean, affect the marine ecosystem as a whole? That includes fish, from my perspective, but this afternoon we are focused on marine mammals and whales in particular.

And what we are looking for as Members of Congress is to gather the best available data on—I'm going to make an attempt at this, Dr. Ketten—anthropogenic noise, and ways that we can modify it so it doesn't have a negative impact. And we will not only work with the Marine Mammal Protection Act and all of you, but certainly we would like to work with the International Maritime Organization to see if we can get the international community, in the design of their ships, to find ways to modify the sound.

I would guess, Admiral McGinn, that the Navy has already figured out how to run a ship with no noise. Maybe we can adapt those particulars and engineer that for the commercial sector of the marine transportation system.

But, Dr. Ketten, you made a statement about LFA that I found interesting. You said it did not cause the beaching of those whales in the Bahamas, and I would like to know how you can say that categorically. Might it have been some other type of sonar, some other range of noise in the ocean? Do you have some idea of what caused those whales to be beached in the Bahamas?

Ms. KETTEN. Yes, sir. The reason I said LFA had nothing to do with it was, to the best of my knowledge there was no low frequency, LFA or another acronym for similar devices, exercise underway at the time. What we have is a case of 14 animals that beached. Of those, six died, eight were returned to the water suc-

cessfully. The six that died were examined by me and other pathologists.

I am getting to the answer. That is, we know what killed the animals, and it was the complications of beaching. That is, they died of hyperthermia, overheating under their own fat and body loads, as well as, in a few animals' cases, severe trauma from going across reefs or being bitten by sharks in beaching. That is the cause of death.

What we did find in those animals, what I found in those animals, were a suite of traumas that were unusual, and in fact which we have not seen in other animals to date. Those were auditory traumas or acoustic induced traumas, we believe. The specific traumas are consistent with a pressure induced injury, and at the time what I asked for were records of the area, to determine if there had been explosions, which could also provide these same damages, or other sounds.

I believe it has been generally acknowledged by the Navy as well as by NOAA Fisheries, who sponsored me to do the work, that the coincidence of the sonars in what was called an unusual sound duct, that is, an unusual sound profile that developed in the water, so that there was very little degradation of the sound as you would normally find, very little attenuation of it, the animals found themselves in essentially a spherical area where they were not getting away from an intense signal.

It was a combination also, please note, these were beaked whales that stranded, that died, and they are the only ones with these traumas. None of the other species, there were two other species that stranded, had any of those traumas. So there is a specificity to the trauma, and it is to just beaked whales. It was a mid-range sonar, again.

Mr. GILCHREST. What were the other whales that were beached?

Ms. KETTEN. There were two Minke whales and one spotted dolphin. Minke whales and spotted dolphins are not uncommon stranders in those areas, and the two Minke whales survived. They just came on shore briefly and went right back off. The spotted dolphin did die. The pathology on that was that it was an emaciated, very weak animal with a lot of infections. It stranded on the opposite side of the island, and we decided—

Mr. GILCHREST. That might have been a coincidence, you are saying?

Ms. KETTEN. Exactly. Right. Precisely, a coincidental stranding.

Mr. GILCHREST. The beaked whales that did have the trauma, was the trauma in the ear? Was there a rupture in the ear, a damage to their tissue? And then can you determine what was—well, it seems that you are saying that the damage to the tissue in those whales that were beached happened perhaps as a result of some type of sonar being emitted, but that they were caught in, I don't know, an underground chasm in which, if they could have gone to the right or left, they may have escaped the trauma?

Ms. KETTEN. I apologize for the complexity of this. The situation is that they had hemorrhages in the brain area, outside the brain, in the fluid surrounding it. It is called the subarachnoid space. It is the fluid cushion that surrounds our brains. The brains them-

selves were not compromised. So there were some hemorrhages in that space. There were hemorrhages in—

Mr. GILCHREST. And what would cause a hemorrhage like that?

Ms. KETTEN. Allow me to just say there were two other areas, and that is the key to this, is there were some hemorrhages around the ears and some hemorrhages in fats in their jaws that are associated with channeling sound to their ears.

You do see the same type of bleeding, except not in the fat since we don't have them, in humans, and in experimental animals that have been exposed to some forms of sound. In humans we see the same suite of traumas also, however, in individuals that are prone to bleeding, hemophiliacs, end stage leukemics.

You can see it—there were a possible seven causes that are consistent with this suite of traumas. We eliminated some, like birth trauma from forceps. I don't think there is an obstetrics ward out there. That one I was pretty sure was not the case.

As I mentioned, explosions are a possibility. There were no explosions that anyone could detect. Intense impulse noise, sonic booms, intense impulsive sonars which are not attenuating, at exceptional high levels. Anything that was a high impulse noise. A gun going off alongside your head can induce this.

However, and here is the key element, why I am not saying absolutely sonar per se did it, is an animal that is simply stressed, which is prone to bleeding, may also have had those same hemorrhages. And it is very complex for us right now to say which thing it was or if it is a combination.

I have two other pathologists who are experts in the appropriate area looking into the question of whether or not beaked whales in fact have some tendency to bleeding. It is called diathetic disease. It may be that it is a combination of beaked whales being sensitive to the sonars, being in a sound field that stressed them, and then going on shore.

One thing that I need to mention is that we don't know about the entire population. We know only about the six animals that died on shore. As I mentioned, eight were returned to the water successfully.

Mr. GILCHREST. Eight beaked whales?

Ms. KETTEN. Yes, and also we did patrol the area by air and boat for over a week, and no other whales were found stranded or dead in the vicinity. You would expect if they had died that they would have come to the surface.

Mr. GILCHREST. Thank you very much. I have some other questions, but I will yield now to Mr. Faleomavaega.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman. I am most impressed with the distinguished members of the panel this afternoon. And there have been some interesting differences of opinion, too, about the issues, and I would like to ask Admiral McGinn, there is a very obvious disagreement with the purpose of the Navy's experimentation. You have indicated that for some 60 years the Navy has had extensive experience in understanding sonar. I am not very familiar with SURTASS LFA that you had indicated earlier in your statement. Is the Navy still continuing research using dolphins for purposes of carrying mines and things of that sort?

Admiral MCGINN. Yes, sir. We have a variety of marine mammal programs, some of them unclassified, some of them classified. I would welcome any member of the Committee, if you wanted to visit us, to visit our facilities to talk to the marine biologists that work with these wonderful animals, and we can also provide you a briefing on any of our programs along those lines.

Mr. FALEOMAVAEGA. Where is your facility?

Admiral MCGINN. Principally in the San Diego area.

Mr. FALEOMAVAEGA. Mr. Chairman, I want to be the first volunteer of the Committee to go to San Diego.

[Laughter.]

Admiral MCGINN. Sir, if I could make a recommendation, I recommend January as the best time to go out there.

Mr. FALEOMAVAEGA. I absolutely agree with you on that.

Mr. GILCHREST. Mr. Faleomavaega, Mr. Underwood and I have already planned a trip, and you can accompany us, but our trip is to the northern part of Alaska to study the polar bears. So you are welcome on that one.

Mr. FALEOMAVAEGA. Mr. Chairman, you are welcome to go see the polar bears, but I am going to San Diego.

[Laughter.]

Mr. FALEOMAVAEGA. But as you had indicated, Admiral McGinn, on questions of national security, I don't think there is any question in anybody's mind the importance of that, the security of our Nation. The thought that came to my mind, is it any different using dolphins for the purposes in the same way that we use dogs? I don't know if that is a proper way to describe it. In heat of battle and the situation, they are just as much subject to dangerous situations as you would have dolphins carrying mines of the sort. Do you see any distinctions? Are they about the same, or do you think it is inhumane to use dolphins for the same purposes?

Admiral MCGINN. I do not, sir, and I think the analogy to using canines for the variety of purposes that we see them used right now in this national crisis, whether it is for finding survivors or remains, whether it is for detecting explosive devices, whether it is for security, protecting key areas and citizens, we use animals in a very humane way, and we use them because they have abilities and senses that we simply do not have. That is certainly the case in our use of marine mammals. They are absolutely wonderful animals, well cared for and humanely treated, and they are invaluable in the areas that we use them in.

Mr. FALEOMAVAEGA. Was the Navy involved in any research, as it was suggested earlier by Dr. Ketten, about the beaching of these whales in the Bahamas? Can you—

Admiral MCGINN. Yes, sir, we con—

Mr. FALEOMAVAEGA. —share with us what your findings is in terms of—

Admiral MCGINN. —we conducted what I would describe as a more operational investigation related to that grounding in the Providence Channel in the Bahamas, and as a result of that, we changed our operational pattern and procedures in there. That was an area that was unique to our operations. We were moved to that area because of restrictions on the ability to train in the Vieques, Puerto Rican area, in the Virgin Island Channel, which is a much

wider channel and has much better characteristics for sound attenuation than in the Providence Channel. So as a result of our operationally oriented investigation, which was supported in part by the scientific investigation, we have placed restrictions on operations of ships and the types of operations that you can do in the vicinity of the Providence Channel.

Mr. FALEOMAVAEGA. Now, it is Dr. Whitehead's best opinion that it was because of naval operations that caused the deaths of these whales, and of course there is disagreement with Dr. Ketten, as well, but what is the Navy's position in that allegation?

Admiral MCGINN. In that particular case, in that particular well-documented and scientifically researched case, where we can make fact-based opinions, we believe that the possibility was strong enough to cause us to alter our operational patterns. We would not want to apply that rule broadly, if we did not have the facts to do so.

Mr. FALEOMAVAEGA. But did you scientifically also do a study like Dr. Ketten did, actually cutting up the whale to find out exactly the auditory system, what caused it or possibilities that—

Admiral MCGINN. No, sir, we did not, but I will defer to Dr. Ketten to give you the relationship with the Navy investigation and the scientific research. But we made available funds to do that, to follow on this investigation to its full conclusion.

Mr. FALEOMAVAEGA. Does the Navy also provide funds to Dr. Whitehead and Dr. Rose on a conservation basis about their studies of mammals and—

Admiral MCGINN. I would like to defer to them. Perhaps they could give you a better answer, sir. I am not aware of any that we do.

Mr. FALEOMAVAEGA. But probably more than any Federal agency in the whole government that I am aware of, the Navy is probably the repository of just about everything and anything dealing with sound systems, sonar, both machine operated as well as using animals for—

Admiral MCGINN. Yes, sir, that is true. And as a result, as you probably know, of the end of the Cold War, we have been able to increase the sharing of marine data, information, scientific data with a much broader community in an unclassified way, and that has helped us all to learn more about this planet and the 70 percent of it that is covered by water.

Mr. FALEOMAVAEGA. I am sorry my time is up, Mr. Chairman, but I will be your first volunteer to go to San Diego.

Mr. GILCHREST. We will accept that, Mr. Faleomavaega. We will probably have another round, so you will be able to ask more questions if you have them.

Mrs. Mink?

Mrs. MINK. Thank you very much for the courtesy of inviting me here to the podium. I have been with this issue a long time, through various name changes of the various experiments that have been conducted in the ocean for acoustic impacts.

I would like to get back to the beaching of the 16 whales in the Bahamas. From the Navy point of view, Admiral McGinn, can you conclude for us what the Navy found as the reasons for those 14 whales being beached in the Bahamas?

Admiral MCGINN. To the extent of my present knowledge on that, the results are inconclusive to this date. There is still a report that we are awaiting from, I believe, Dr. Ketten and perhaps others, that has more scientific data. But to my knowledge, we have not come to a conclusion, a definitive conclusion, that it was the use of mid-frequency range sonars that directly caused that beaching of the whales.

Mrs. MINK. Yet the information that you did receive caused you to alter your plans, you testified, so there must have been data there that was of sufficient merit to conclude that the operations that you had conducted could have contributed to this event, and therefore you changed. All I am trying to find out is—

Admiral MCGINN. Yes, ma'am.

Mrs. MINK. —what was that data that caused you to make that shift in policy?

Admiral MCGINN. I would characterize it as we took the prudent and conservative course of action, based on the circumstantial evidence surrounding that beaching. And it was for that reason, erring on the side of the conservative, that we imposed that. It wasn't any specific, fact-based conclusion that caused us to do that.

Mrs. MINK. So what level of sonar soundings were in place at that time, that could have been responsible for the beaching?

Admiral MCGINN. I am sorry, madam, could you—

Mrs. MINK. What was the level of the sounds that were produced by your particular testing or whatever, that could have led to the beaching?

Admiral MCGINN. I would like to—

Mrs. MINK. I am trying to get a distinction between LFA and medium level. What, in your data sheets, what was the level of soundings that—

Admiral MCGINN. I would like to take that question for the record, but I would like to comment on the distinction between the kinds of operations that were being conducted in the Bahamas, in the Providence Channel, and this whole issue of LFA. We are talking about two different frequency bands with quite different propagation characteristics in the water column.

The LFA issue is not related to what happened in the Providence Channel in the Bahamas. There was no LFA operation. It is not relevant in terms of the sound amplitude of LFA regarding that incident. But I will get back to you on precisely, to the extent of our knowledge, the level of sound, of the sonars that were being used in those naval operations.

I have been handed a note that there is a joint Navy-NOAA investigation. NOAA has the lead on it. We are supporting them. And the results are pending, and I think they will be released in a matter of weeks, and certainly not more than a couple of months.

The reason that I emphasized our cessation of operations in that particular area was based on an operationally oriented as opposed to a scientific investigation as to the cause of the beaching.

Mrs. MINK. To the extent that you have concluded that the beachings of the 14 whales had nothing to do with low frequency matters, what was the frequency that was recorded in the Bahamas that led to the beaching in the first place?

Admiral MCGINN. I would request that I take that question for the record, and we will provide you with a response with all of the parameters that we know about that sound signal.

Mrs. MINK. Now, is any part of the LFA testing considered classified information, to which you cannot provide a public hearing such as this the information that we might need?

Admiral MCGINN. Well, some of it is, because we don't want to advertise, especially in a public forum, the effectiveness against various types of underwater targets like diesel submarines. But a great deal of it, as it relates to protecting the marine environment and protecting marine mammals, is a matter of public record, and we are more than happy to share whatever data we can.

Mrs. MINK. Well, I know my time is up but I have one more question of Dr. Whitehead, because it is your testimony that really concurs with mine, in which you categorically state that it is clear that the naval exercises and LFA were responsible for the whales being beached in the Bahamas. So can we have your comment to the series of questions that relate to that particular incident, so it might have some clarity on the matter?

Mr. WHITEHEAD. Yes. As all of us I think have pointed out, the ocean is a hard place to figure out what is going on, but the sequence of events in the Bahamas was as clear a proof of the cause, the ultimate cause of what happened, as you are ever likely to get in the ocean.

Dr. Ketten says it wasn't the sonar that caused them to die, but as Dr. Balcomb, who did the studies, has pointed out, to say that the whales died from beaching is rather like saying that if you chase buffalo over a cliff, it is falling on their noses that killed them rather than being chased.

So to me the Bahamas evidence is very clear, and when that is backed up with evidence from previous naval exercises, for instance an exercise which took place in Greece a few years ago, that there was another multiple stranding of beaked whales soon after the use of sonars, in this case low-frequency sonars, and the statistical evidence, looking back over the historical record, of the congruence between these strandings of several species of beaked whale together with military activities, I think we have got something we have really got to worry about.

And I appreciate that you here in the United States and all of us have to be concerned about protecting your Nation at the moment, but we must also be concerned with what we do as we do that, and I hope you will. Thank you.

Mrs. MINK. In the case of the Mediterranean incident, how many whales were beached and how many died? Do you have those figures, for the record?

Mr. WHITEHEAD. I don't have them with me at the moment, I am afraid.

Mrs. MINK. If he might provide that, just to complete the record, I think you very much, Mr. Chairman.

Mr. GILCHREST. Yes, ma'am.

Mrs. MINK. Oh, I have the statement from my colleague from Hawaii, Congressman Abercrombie, who asked me to insert it at this point in the record.

Mr. GILCHREST. Mr. Abercrombie. It will be, without objection.

Mrs. MINK. Thank you.

[The prepared statement of Mr. Abercrombie follows:]

Statement of Hon. Neil Abercrombie, a Representative in Congress from the State of Hawaii

Mahatma Gandhi once said that the greatness of a nation can be judged by the way a society treats its animals.

The United States, and Hawaii in particular, have been blessed with a tremendously rich and diverse array of whales, dolphins, and other marine mammals that inhabit our oceans. These animals have lived here for millions of years and many of them, especially the whales and dolphins, are extremely intelligent.

I am concerned about recent allegations that there is inconclusive scientific evidence that supports the U.S. Navy's contention that the Surveillance Towed Array Sensor System Low Frequency Active Sonar (SURTASS LFA) is not harmful to these species. Some groups have proffered evidence indicating that low frequency active sonar may be linked to internal bleeding, disorientation, hearing loss, and other negative consequences for whales and other marine life. And recent beaked whale strandings in the Bahamas demonstrated that active sonar may even have lethal effects on these animals.

For many years our marine mammals have suffered from hunting, pollution, overfishing, and other human disturbances. This has placed many species on the Endangered Species Act's endangered list. Now it appears that we may be making matters worse for our marine mammal populations with the introduction of harmful sonar technology. The Marine Mammal Protection and Endangered Species Acts ensure that future threats to these species are minimized. There is reason to believe that low frequency active sonar presents just such a threat.

As a result of the National Marine Fisheries Service's (NMFS) proposed rule, which would allow the Navy to proceed with deployment of this sonar system, I have heard an outcry from constituents who are concerned about the rule's impact. The NMFS recently received public comments from eighty organizations and individuals from the scientific and environmental communities in response to its proposed rule for the taking of marine mammals incidental to Navy operations of the SURTASS LFA sonar. All of these responses were opposed to the deployment of the LFA sonar system. Needless to say, there is widespread concern in these communities that the use of the SURTASS LFA sonar in our oceans presents an unacceptable risk to marine species and their habitat. Such strong and credible comments from organizations like the Marine Mammal Commission, the Natural Resources Defense Council and the Humane Society of the United States cause me to be skeptical about the deployment of this sonar at this time. I urge NMFS to delay the decision on this matter until there is conclusive scientific evidence that this technology will not negatively impact marine mammals.

Over the years I have worked very hard to protect, conserve and restore our marine species. For some species, such as humpback whales, these efforts have been extremely successful. The tremendous popularity of whale-watching cruises are an indication of just how much public support and interest there is in the well-being of these magnificent creatures. I also believe in a strong national defense and have previously supported funding for the Navy to explore new sonar technology. However, I am concerned that we may be too hasty in deploying a sonar that may prove injurious to marine mammals. I believe that there are serious questions that need to be answered before such deployment. It would be wrong to deploy the low frequency active sonar system until we know that it will not harm our marine mammal community. Perhaps more research into marine mammal hearing could provide answers to these questions.

It is my understanding that there may be opportunities to develop advanced passive sonar systems that would not have the same sort of consequences for marine mammals. I believe the Navy has testified before Congress that some of these new passive systems are able to detect targets to a degree previously thought unobtainable. I encourage the Navy to exhaust these options before pushing forward with a technology that appears to be harmful.

Finally, I am concerned about the totality of human induced noise that is currently polluting our oceans. Over the years ocean noise has greatly increased as fishing, shipping and mineral exploration has expanded globally. When this noise is combined with the noise caused by existing military hardware such as the mid-frequency sonar I find myself asking just how much noise can we introduce into our oceans before it seriously affects our marine environment. I believe that all noise pollution that currently exists in our oceans should be examined in conjunction with the SURTASS LFA sonar.

Mr. GILCHREST. Just a couple of follow-up questions to get it clear in our mind a little bit more, and I understand that some of these questions that we ask, we are not asking you to multiply 10 by 10, where there is no question what the answer is. I guess what I am trying to figure out is—well, first of all, LFA, SURTASS LFA, was not used, it is my understanding, during that operation.

Admiral MCGINN. No.

Mr. GILCHREST. LFA wasn't used, but there was a more traditional mid-range sonar used?

Admiral MCGINN. Yes, sir.

Mr. GILCHREST. And during this operation there was a type of—which isn't normally used by the Navy in this particular vicinity for naval operations, but because of something that happened, I guess in Vieques, the operation was moved to a different location—but there was a type of a channel that the ships were going through, that if there were in fact marine mammals or whales in that channel, they didn't have an easy escape route.

Now, Dr. Fristrup, you made a comment earlier about a series of research activities that you were involved in to see which type of range of frequency had a reaction to whales in various places. Based on that research and your understanding of the type of range that different size marine mammals will find damaging, what would you say—and we in Congress very often go on guesses, so I would just ask you your best assessment—under this circumstance in the Bahamas, where there were numerous beached whales, most of which were beaked whales, based on the range of acceptable frequency in a beaked whale before it causes some type of damage or trauma, could mid-level sonar, under the conditions of that naval operation in that channel, if the beaked whales were in that channel and couldn't escape, could that sonar have caused them trauma so they became disoriented and beached themselves?

Mr. FRISTRUP. I have to resist a considerable temptation to pass this to Darlene because it is really more her area of expertise, but I would like to say one thing, and that is, I don't think anyone should overstress the unique physical conditions that take place in the ocean, because there may be other times and places in the ocean where similar conditions occur.

What needs to happen is for us to learn, rather than speculate about whether those unique conditions caused the problem or whether this particular species has a problem, we just need to go about this in a fairly systematic, rational way and find out what the critical factors are. The fact that there are Navy operations all over the world that don't correspond with strandings suggest that it is not a universal feature of Navy operations.

And every Navy operation probably has a unique combination of factors involved—different instruments, different sonars, different operational procedures, different numbers of ships—and so the process of teasing apart what the critical issues are, it is fundamentally sort of a research problem. It is not the kind of research problem I intend to, I would like to pursue, but how you pursue that problem is known.

And I think the report, the joint Navy-NOAA report, probably is going to go a long way to answering part of these questions, and that areas, it should also clearly identify the data gaps where we

can't resolve the issues, and that identifies a really obvious point of new research. And I think the best way to resolve these issues is to continue to bring in larger, you know, expand the group of scientists who are brought to bear to work on this, so that the results that we develop are not resting too heavily on any one set of shoulders, and also to benefit from the broader range of perspectives and expertise that could be brought to the problem.

Mr. GILCHREST. Thank you very much. I guess you would at least, you would probably conclude that the Navy's action was prudent.

Mr. FRISTRUP. Yes, absolutely, and I would also conclude that if we are talking today about a direction of future research, where we should worry about the impacts, human impacts, noise in the ocean, we have clearly identified one area that merits attention.

Mr. GILCHREST. And that is?

Mr. FRISTRUP. And that would be these higher frequency sonar issues.

Mr. GILCHREST. Higher frequency as opposed to lower frequencies?

Mr. FRISTRUP. Right. My guess would be that the—well, I will back up 1 second and say that clearly what we have to be concerned about when it comes to ocean noise is the number of sound sources that are involved in any one particular activity and what their movement patterns are, where they occur relative to the animals we are concerned with.

I think you can fairly quickly do some sort of back-of-the-envelope calculations and figure out which programs or which human activities, commercial shipping among them, really merit some careful attention. So I think it is pretty clear we can look at the ocean noise budget, we can sort of break out what the top five potential issues are, and let's just begin working on them the same way we have worked on other ocean noise problems.

Mr. GILCHREST. Are you aware if that is being considered by—

Mr. FRISTRUP. I believe actually that one of the constructive changes I have seen at NOAA over the last 5 years is that they are very much taking this approach to identifying, in a general way, what the ocean noise problems were. I think NOAA used to confront a problem where they had a very severe regulatory requirement in the original Marine Mammal Protection Act, one that was probably impractical to apply uniformly or equitably, and so they restricted their attention to the few cases that were easily managed. And I think they and the Marine Mammal Protection Act have been moving in the direction of more reasonable regulations, more reasonable basis for assessing risk, and therefore have been able to expand the scope of their consideration to address the entire problem.

Mr. GILCHREST. I see. Is there a difference? What is worse on marine mammals—and I know it will vary from the size of the mammal, physiology, and I guess I suppose even fish—is the noise from an oil tanker or a bulk carrier of sugar or coal to an ocean liner to a Navy sonar, or drilling from an oil drill, which one of those would be considered worse, or are they just different depending on the species, or is the fact that the noise budget has increased in the ocean at an accelerating rate in this century?

And, Dr. Ketten, you made a comment earlier about dolphins can evolve quickly. Can they evolve quickly enough to accept the noise of the 20th and the 21st century?

Ms. KETTEN. Thank you. I was hoping I would get that one. Some of this I know.

In terms of increases in noise in the environment, there is in fact a National Academy of Sciences panel that is addressing the question of ambient noise. It just began, and it is trying to determine exactly what are the manmade sources going into the ocean and how they have changed over time.

There is one publication from the 1970's that suggests, and it is very likely to be a conservative number now, that noise in the ocean is increasing at the rate of 10 dB per decade, which is a substantial increase, all from shipping. To put some of this noise into perspective, and some of the side effects to put into perspective, if we can go back to the beached whales for just a moment, I neglected to say that those traumas that I described in the experimental animals and in humans are not fatal, and any hearing loss is temporary.

That is why I am not saying that the sonar activity, even if it directly caused the hemorrhages, was not the cause of death. I don't know that it wouldn't do it, but at least in all other animals, including humans, it would not.

Mr. GILCHREST. I will ask you later about Rush Limbaugh.

[Laughter.]

Ms. KETTEN. I know that one, too.

In terms of what is worse—and thank you, Mr. Chairman, you have mentioned fish, also turtles, there are a great many animals out there that can be impacted. I think it is not just marine mammals, and indeed if we begin to affect their prey species, it could be a far more important impact than just on the marine mammals themselves. It depends on each species.

A very high frequency sound is most likely to impact dolphins, the animals that use ultrasonics, which frankly hear really poorly at the end of something like a low frequency sonar. Dolphins do not hear well in the 500 Hz, which is one of the areas of the range of LFA.

As opposed to that, though, some baleen whales, elephant seals, do hear well in those lower frequencies, but the majority of marine mammals are high frequency to very high, ultrasonic sensitive animals. Therefore, for them we are more concerned about very high frequency sources, or for all animals, impulse noise.

You mentioned airguns and drilling. That is a universally, close to universally potentially damaging signal, if you are close enough to it. And in fact, again to put the beaked whales into perspective, Dr. Whitehead mentioned six incidences which are over the last 45 years, and the total number of animals impacted in that case has been approximately 85.

In the last 5 years, in the North Sea we are seeing animals with clearly serious stress, probably from the drilling and seismic oil exploration activity combined with shipping. Those animals are coming on shore. We have had over 200 animals in the last 5 years, with various pathologies in their ear areas. So that is why it is on

the verge of OSHA. It is a question of trade-off of the exposure to the signal that you are sensitive to versus time.

And again, we have all brought in questions of shipping. Tankers, because it is 24/7, 24 hours a day, 7 days a week, throughout the North Atlantic and Northern Pacific waters. There is only one area of the oceans that we think are probably not so severely impacted, and that is the far South Pacific, and I recommend going there to check that out.

Mr. GILCHREST. The Antarctic? Well, maybe we can—

Ms. KETTEN. No, Tahiti.

Mr. GILCHREST. Oh, Tahiti. Oh, I guess the Antarctic is the real South Pacific. We could go to the Ross Sea—

Ms. KETTEN. Yes.

Mr. GILCHREST. —and watch the killer whales.

Admiral?

Admiral MCGINN. Mr. Chairman, I think this line of thinking about perspective and scale is really, really an important one. I have a few factoids about noise in the ocean, and I think just about all of us witnesses have said in one way or another that it is a noisy world we live in, and that applies to our oceans as well.

But commercial shipping is responsible for over 90 percent of the low-frequency ambient noise, manmade ambient noise, in the ocean, and it is currently effectively unregulated. I am referring back to a comment that you made earlier, that perhaps we could apply research dollars to that problem and affect the marine environment in a much, much more effective way than we are doing in focusing on one weapon system for one service.

I think this point of us being responsible stewards, we answer the telephone, we answer the mail. We are there 24/7, and as a responsible service and a responsible armed service, we take seriously our obligation to address these issues. But because of that sense of responsibility that we have, I think we tend to become more of a target for these types of inquiries, injunctions, lawsuits, legislation, policy regulation, than others, just because we can be held to a higher standard.

That is not to say that I disagree with the standard. We want to be good stewards. We are. We have a good record of stewardship. But we need to put these things in perspective. We can spend a tremendous amount of time and money on Low Frequency Active, and the world effectively is crashing down upon us in terms of noise in the ocean.

In a given year, over a trillion lightning strikes hit somewhere in the ocean, producing sound levels of up to 260 decibels. Underwater earthquakes and other phenomena on the ocean bottom occur annually in the Pacific, 1,000 in a typical year in the Pacific, exceeding 236 decibels. That is naturally produced noise.

The Navy operates less than 4 percent of the total ship traffic in U.S. waters, and far less than that on a percentage basis in international waters. We are down to 310 ships from a high of nearly 600 in the times of the Cold War, and we operate them more responsibly each year as a result of us learning from our research dollars and the research of others.

So I think this idea of perspective, and not just focusing on one area to protect marine mammals, is a very, very good line of inquiry. Thank you, sir.

Mr. GILCHREST. Thank you, Vice Admiral McGinn.

My time has expired, and I don't know, Mrs. Mink, did you have any follow-up questions? No, I will let Dr. Rose say something, but first I will yield to you, Mrs. Minke.

Mrs. MINK. I wanted to follow up on the Admiral's comments. I have here a GAO report that was issued in 1992, which undertook an analysis of the SURTASS program, and in it it says that it was designed for acoustic signals in the very deep open oceans. But with the end of the Cold War and the collapse of the Soviet Union, it points out, the SURTASS turned to the current coastal shallow waters for their acoustic experiments.

And I am impressed by all the noise clutter that you just testified to. It was almost deafening to imagine what it sounds like, with all the ships and everybody going by. Of what value is the LFA studies for the Navy if you are colliding with all these other noises in the coastal areas?

Admiral MCGINN. There are two significant things that have happened since 1992 when that GAO report was made. One is that we have learned a great deal more about the characteristics and the functionality, the capabilities and limitations of Low Frequency Active sonar used in conjunction with the SURTASS system, and we find that it has applicability not just in the deep blue water environment but indeed in littoral areas, not necessarily right up close to shore or where most marine habitats are, but in the approaches to choke points in deeper water, where it is very, very effective.

The other thing that has happened significantly since that 1992 report is the production and proliferation, to nations unfriendly to the United States, of ever more quiet diesel submarines, and the increase of the threat level of the weapons, the torpedoes, the missiles that they carry and the mines that they can disperse, to deny not just military shipping but commercial shipping from these essential commercial waterways and on the high seas. So those are the two things that happened.

Were LFA SURTASS not an effective ASW sensor, we would not be spending a dollar on it. We can't afford to waste dollars on things that we know don't work or aren't relevant to not just the present conditions we find ourselves in, but to the future. So we believe, based on good experimentation, on threat analysis, that LFA has a great deal of relevance to future threats.

Mrs. MINK. The report also says that between '92 and '98 the Navy spent $1.2 billion on the SURTASS program, and you had 19 ships at that time and you were planning to build more. Could you tell me how many are now in operation, and what the annual cost of the program is? You noted that $9 million only was going for research, so what is the total cost of the program of which $9 million is for research?

Admiral MCGINN. I would like to take that question for the record. I don't have specific facts on that, and I want to make sure we are accurate on that.

Mrs. MINK. Thank you, Mr. Chairman.

Mr. GILCHREST. Thank you, Mrs. Mink.

Dr. Rose? We will give you the last word.

Ms. ROSE. I appreciate that very much. I always like getting the last word. I just wanted to make two points.

One is on the probability that we would even be here discussing what happened in the Bahamas, were it not for the rather extraordinary coincidence of having a marine mammal researcher who happened to have one of those beaked whales beach right on his, basically his front yard.

In other words, going back to my testimony where I pointed out that it is quite possible, I don't know what the probability is at all, but it is possible that these sorts of things have been happening for some time and nobody has been aware of it because nobody has been looking.

It has been pointed out, you know, the extraordinary, you know, physical circumstances of this stranding, that is, the sound duct and the Providence Channel and all of that, but the additional extraordinary element of this stranding was that Ken Balcomb was there in the Bahamas, you know, and he saw a beaked whale come up on his beach, and then subsequently throughout the day kept finding more and more, and was running around and, if I may be a little gruesome here, cutting their heads off and sending them, very fresh, to Dr. Ketten and others.

The fact is that there have been, you know, a number of strandings of beaked whales, some of which have been in fact with nearby naval activities, where by the time anybody got to the bodies, they were highly decomposed. That is the norm. That is the way it usually is.

And I guess what I am trying to point out is that the level of certainty that perhaps Admiral McGinn is asking for proof that LFA isn't safe, is also an unreasonable request. I mean, you really can't get more of a smoking gun than I think you got in the Bahamas, and if you are asking for more proof than that or more certainty than that, I am very concerned about how we are going to move forward with management of sound in the oceans.

The second point I would like to make is that we may very well be holding the Navy to a fairly high standard, and I appreciate the point that the Admiral was making, but the fact is, is that what they are pursuing in some of the National Environmental Policy Act procedures and processes they are going through and that NMFS is going through, is they are establishing a noise standard that will have very broad application, not just for the Navy's sound activities but perhaps for shipping and for seismic exploration and for a number of other acoustic activities in the ocean, and that sound standard at the moment is hovering at about 180 decibels for continuous intermittent noise in low frequencies.

And I just again would turn back to my testimony to emphasize that there are no empirical data between about 155, which is as high as the SRP went, and 180, and that is a large leap in terms of acoustic energy. So to say that that 180 dB is a safe exposure level, it concerns me, because it may very well have broad application, not just to the Navy. It is not just the Navy we are talking about here. We are talking about standards for noise, anthropo-

genic noise in the environment, that may have very broad applications under the MMPA.

Mr. GILCHREST. Well, thank you very much.

Dr. Ketten, you want to respond to that?

Ms. KETTEN. I would like to correct some misstatements, possibly because the information has not yet come out from NOAA Fisheries report. There have been a couple of things that have been said which I believe were maybe misunderstood publicly.

In the first case, as far as the probabilities being an important issue, the unfortunate—fortuitous, though—finding by Mr. Balcomb of the beaked whales, that is not how the incident came about. And indeed there are a great many people who follow strandings in the Bahamas. We do know from the stranding records that this is an unusual stranding. There has only been one other beaked whale that stranded in 50 years in the Bahamas.

It was not he that first reported it. The strandings were first reported through Dr. Bater, who is a veterinarian in charge of strandings in Grand Bahama. It did not have anything to do with Mr. Balcomb in that case. The first reports came to me 24 hours before Ken Balcomb contacted me. He did not cut off the heads and send them to me. As most strandings occur, people like me are notified and if we can t all, often pro bono, we go to the strandings, and that was the case here. Some heads were brought to my laboratory by me for examination later, with his assistance.

So in terms of it could have just been coincidence that they were found, that is clearly not an element in this case. There were over five different reports of the strandings on the very first day, within a few hours, and indeed I would find it very surprising if beaked whales would not be noticed, particularly in a tourist area like Grand Bahama. They were noticed.

That was the one thing that in particular I wanted to make sure was made aware to the Committee. That is, we have not had an exceptional finding based on we lucked into seeing them, but rather the exception in this case was that, in part because of the Greek strandings, there is a worldwide awareness particularly about beaked whales and sonars.

The other thing I would like to correct is, the LFA exercise that was coincident with the beaked whale strandings in Greece—there were 12 animals, incidentally, that stranded at that time—there was also a concerted use of mid-range sonars simultaneously with the LFA case on that exercise, and there is a panel that reviewed it. Unfortunately, none of the animals were examined, so we didn't have any concrete data. All we had was just the coincidence, and the panel at that time was concerned.

It is not LFA, however, was our finding after the Bahamian incident. It is necessary to look at these things in the perspective of time.

Thank you very much for allowing me to make those comments.

Mr. GILCHREST. You are very welcome.

Dr. Rose has her hand up.

Ms. ROSE. Just a quick response to Dr. Ketten. I wasn't trying to toot Ken Balcomb's horn. That is fine. I totally understand that, that there was an awareness, because this was a very public, if you will, stranding in a tourist area, and there was a stranding net-

work there that responded to that. I still think that is relatively unusual, because most strandings apparently of beaked whales occur in areas where by the time they reach the animals, they are in fact rather decomposed. So the fact that she was able to collect, herself and through the assistance of others, you know, these fresh heads—I keep saying that, and it sounds so gruesome—but these fresh heads, was in fact relatively unusual, and I do stand by that.

The other thing is that I am not saying that we are not concerned about mid-frequency sonars. We certainly are, you know. We are here to talk about LFA, however, so we are concentrating on that.

Mr. GILCHREST. What is the range of a beaked whale? Where does it go?

Mr. WHITEHEAD. We know very little about beaked whales, but my group has carried out the longest and most detailed study of any beaked whale population. And one of the features of the population we study is that it has a very limited range. Whereas animals like sperm whales or humpback whales will range over thousands of kilometers, these beaked whales stay in relatively small ocean areas a few tens of kilometers across.

Mr. GILCHREST. So it could be a beaked whale population in the South Atlantic or Mid-Atlantic, it could be another beaked whale population in the Mediterranean?

Mr. WHITEHEAD. Very much so, and even on smaller scales. We find that the beaked whales we study, which have a population size of 130 and are genetically different from the nearest other population, inhabit three nearby canyons along the edge of the Continental Shelf, which is one of the reasons I am concerned that the Navy stresses that these sonars will be particularly useful in those kinds of environments.

Mr. GILCHREST. I see. Well, we will continue to proceed with all this. Maybe the next time we can talk about jet skis and noise.

[Laughter.]

Mr. GILCHREST. Maybe we can eliminate those little critters. But thank you all very much for your testimony, and we probably, in the next couple of days—we don't want to overburden all of your activities, certainly—but we would like to send you a series of follow-up questions over the next couple of weeks. Thank you all very much.

The hearing is adjourned.

[Whereupon, at 4:26 p.m., the Subcommittee was adjourned.]

[The prepared statement of the Animal & Plant Health Inspection Service follows:]

Statement of Dr. Chester Gipson, Acting Deputy Administrator for Animal Care, Animal & Plant Health Inspection Service, United States Department of Agriculture

Mr. Chairman and Members of the Subcommittee, I thank you for the opportunity to testify on behalf of the U.S. Department of Agriculture on the Marine Mammal Protection Act (MMPA) and the 1994 Amendments to the Act. USDA has had no significant problems implementing the reauthorized MMPA (1994). We continue to work with our counterparts at the Department of Commerce and the Department of the Interior to improve and enhance compliance with the MMPA.

The Department's Animal and Plant Health Inspection Service (APHIS) is responsible for the administration and enforcement of the Animal Welfare Act (AWA). The

Department of Commerce's National Marine Fisheries Service (NMFS) and the Department of the Interior's Fish and Wildlife Service (FWS) share responsibility for the administration and the enforcement of the MMPA.

The AWA requires, among other things, the humane care, handling, treatment, and transportation of regulated animals within the United States and its territories. APHIS maintains sole jurisdiction under the AWA for establishing and enforcing standards for the humane handling, care, treatment, and transportation of marine mammals in captivity by dealers, research facilities, exhibitors, intermediate handlers, or carriers.

The MMPA requires that marine mammals that are taken or imported must be under permits issued by NMFS and/or FWS and that the permits must specify the methods of capture, supervision, care, and transportation that must be observed pursuant to taking or importation. The MMPA specifies that a permit may be issued to take or import a marine mammal for the purposes of public display only to a person who is registered or holds a license under the AWA. The MMPA also requires that persons maintaining marine mammals in the United States for purposes of public display be registered or hold a license under the AWA. APHIS notifies NMFS and FWS of all new AWA license applications which involve marine mammal species and provides their representatives the opportunity to accompany the APHIS inspector to the facility to ascertain if all MMPA requirements are understood and met by the licensee. Foreign facilities receiving marine mammals that are or have been subject to U.S. jurisdiction must, among other things, meet standards comparable to the captive care and maintenance standards of the AWA. The FWS and NMFS must be notified at least 15 days in advance of the sale, purchase, export, or transport of captive marine mammals.

To further the purposes of the MMPA and the AWA as they relate to the humane care, handling, treatment, and transportation of marine mammals and to the export of marine mammals from the United States to foreign facilities, the NMFS, FWS, and APHIS have signed a memorandum of understanding (MOU), dated August 1998, outlining their respective independent and collaborative roles in these areas. This MOU provides clear implementation strategies for the MMPA that ensure that the proper care of these mammals is a top priority. The MOU also formalizes information sharing among the agencies. This formalized information sharing has led to better and more strategic enforcement actions and opportunities for all the agencies and has resulted in greater compliance with both the AWA and MMPA.

APHIS has also been working with NMFS to address how to handle the definition of an exhibitor when applied to several seal and sea lion stranding and rehabilitation facilities. These facilities frequently carry out activities, like allowing the public to view rehabilitating animals, that potentially fall under the jurisdiction of both APHIS and NMFS. At this time, NMFS is developing internal guidelines for stranding facilities. Once these guidelines are completed, APHIS will review and coordinate with NMFS to ensure relevant provisions are consistent with the spirit of the AWA and NMFS requirements under the MMPA.

Recently, NMFS issued a proposed rule that addressed public display rules for marine mammals. The comment period for the proposed rule closes on November 2. APHIS will be commenting on the rule; our goal is to prevent any unnecessary overlap between agencies.

APHIS has also embraced the negotiated rulemaking process as we continue to amend the AWA regulations for marine mammals, a process begun in 1994. The Federal Advisory Committee Act was used to put together a group of stakeholders and regulators that were able to come to consensus on 13 of the 18 sections of the AWA regulations that needed to be updated. The Advisory Committee worked together to develop the revised regulations, which were based on advances made in care and handling of marine mammals over the last 14 years. The regulations reflect new standards in marine mammal care based on current general, industry, and scientific knowledge. The changes touch on many aspects of captive marine mammal care including handling, veterinary care, and facility operations. The final regulations were published in January, 2001, and have been implemented by APHIS.

The remaining five of the 18 provisions of APHIS' marine mammal regulations will be amended using standard rulemaking procedures. We anticipate issuing an advance notice of proposed rulemaking (ANPR) shortly.

Changes under the 1994 MMPA amendments affirmed that APHIS has sole jurisdiction over "swim with the dolphin" (SWTD) programs than involve captive marine mammals. Traditionally SWTD programs are ones where people interact in the water with marine mammals, most commonly bottlenose dolphins. In the absence of the NMFS permitting process, which changed in the 1994 MMPA, APHIS issued a proposed rule in January of 1995 to close any regulatory gaps pertaining to how AWA standards applied to these programs. A final rule was published in 1998. How-

ever, in the time that had elapsed, significant changes had occurred in the kind of SWTD programs being offered. There are now more of them, and a new type of shallow water interactive program has emerged.

These shallow water or "wading" programs needed to be appropriately and fairly integrated into the regulations to be consistent with the MMPA's and AWA's goal of ensuring the safety and proper care of marine mammals in captivity. Accordingly, after much deliberation and consultation with various interested parties, APHIS suspended enforcement of the regulations in 1999. A comment period followed and APHIS has reviewed all information collected to date. This issue will be included on the ANPR for the remaining five provisions of APHIS' marine mammal regulations.

We will continue to work to enhance implementation of the MMPA and the AWA. That concludes my prepared remarks. I would be happy to respond to any questions you may have.

[Responses to questions submitted for the record follow:]

Responses from Dr. William Hogarth, Assistant Administrator for Fisheries, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. The MMPA defines harassment very broadly, including minor behavioral modifications. Should the definition be changed to include only those activities that may present long-term impacts to individuals or to populations?

The current definition of "harassment" in the MMPA must be clarified in order to (1) provide greater notice and predictability to the regulated community, and (2) improve the enforceability of the prohibition. However, it is important that any clarifications not compromise conservation measures. Additionally, the definition should be clarified and focused to address activities directed at marine mammals to prevent cumulative adverse effects of behavioral modifications. Cumulative short-term disturbance may lead to long-term impacts to individuals or populations, such as disturbances caused by the recent expansion of irresponsible and dangerous wildlife viewing practices. However, it is not practical to regulate all marine activities that have the potential to cause occasional incidental disturbance, but not injury of the animals (*e.g.*, routine vessel traffic).

In negotiations with other affected federal agencies, NMS has formulated a revised definition of "harassment" that accounts for short-term impacts directed at specific individuals, species, or stocks of species and for long-term impacts associated with behavorial modification. This revised definition is part of the MMPA reauthorization proposal that is currently undergoing interagency review and that will be presented soon to the Congress.

It is important that the definition of harassment not be restricted to activities that present long-term impacts, because such impacts may not be observed or measured until they have already occurred. By then, it is too late to take steps to protect the animals.

2. The feeding of wild dolphins is considered a 'take' under the MMPA. The NMFS had been conducting outreach and educational programs in the Gulf of Mexico and in the South Atlantic where these feedings tours have occurred. What is the status of these activities? Does Congress need to make additional changes to the Act to regulate or prevent such activities?

Despite NMFS' considerable efforts over the past decade to educate the public that feeding activities are harmful to the animals, dangerous to people, and illegal under the MMPA and its implementing regulations, feeding of wild dolphins by the public persists in some areas. Specifically, feeding activities have been known to occur in Florida (Panama City, Nokomis/Venice, Key West, Indian River), South Carolina (Hilton Head), and Texas (Corpus Christi).

- In 2001, NMFS contracted with dolphin researchers from the Mote Marine Laboratory to conduct an education and outreach docent program in the Nokomis/Venice, FL area to address chronic dolphin feeding activities in the local waterways. The researchers observed boaters routinely feeding and harassing a particular adult male dolphin who bit several people trying to feed him. The researchers approached boaters who were violating the MMPA, advised them that their activities were illegal and offered copies of NMFS' "Protect Dolphins" out-

reach materials. However, 61% of the people who were approached indicated that they already knew their activities were illegal. The researchers documented that violations of the MMPA were infrequent when marked enforcement vessels were present. NMFS enforcement efforts in the Nokomis/Venice area to date have resulted in more than 472 vessel operator contacts, including two citations issued for "harassment," four Notices of Violation and Assessment issued for feeding with fines of $100 each, and three written warnings.

- In 2001, NOAA issued a Notice of Violation and Assessment against a commercial operator in Panama City, FL for feeding dolphins. The operator did not contest the charges and paid a $600 civil fine.
- In 2000, NMFS sent a letter of concern to a corporation that owns a nationwide chain of hotels regarding that corporation's advertisements in Panama City, FL and Hilton Head, SC that depicted guests feeding and harassing wild dolphins. In response to NMFS' concerns, the corporation agreed to remove the advertisements and delete the photographs depicting dolphin feeding from their image library.
- In 1999, an Administrative Law Judge upheld a $4,500 civil fine against a Panama City, FL boat rental company and its boat operator for illegally feeding wild dolphins. The incident occurred during a June 1998 excursion off Panama City's Shell Island and nearby jetty, a destination popular with residents and tourists for feeding the local dolphin population. Ruling from the bench, the judge called the charges "serious," upheld the fine assessed by NOAA, and ordered the boat company to post a federal "no dolphin feeding" sign and a poster on the grounds and counter of its facility. In addition, charges were brought against the vessel operator for these violations in a separate proceeding, since he was operating under and had violated the provisions of his U.S. Coast Guard licence.

NMFS' regulations implementing the MMPA are clear that feeding wild marine mammals is illegal. However, problems remain with commercial entities publishing advertisements in magazines and on the Internet that depict feeding and harassment activities. Due to other important priorities that also require enforcement, NMFS has been unable to devote significant enforcement and litigation resources on a sustained basis in areas where dolphins have become habituated to people and beg for handouts.

3. How has the NMFS dealt with criticisms regarding concerns that while NMFS worked with the Take Reduction Teams, in some cases, the measures the Teams recommended were ignored. Does the Agency believe this was an isolated incident occurring with only one Team? Has the Agency developed measures to prevent this from happening again?

NMFS works very hard to implement Take Reduction Team (TRT) recommendations and has not ignored any of the TRTs' recommendations. However, due to a variety of factors, such as funding, staff, or logistical considerations, it is not always possible to implement each of the recommendations made by a TRT immediately or exactly in the way recommended by the TRT. Due to the wide scope and number of recommendations made to NMFS by TRTs, it is generally necessary to prioritize the recommendations upon which to focus both effort and resources.

For example, TRTs have recommended increased observer coverage. NMFS agrees that observer coverage is important for estimating marine mammal bycatch for some fisheries. However, observer programs are expensive and NMFS may not have the resources available to observe a fishery at the level recommended by a Take Reduction Team. NMFS does work to ensure that observer coverage is statistically appropriate. In other situations, placing observers on a vessel may not be feasible. For example, some fisheries operate with small vessels that are not capable of carrying an observer in addition to the necessary crew. In such instances, NMFS has worked to develop alternative methods of collecting the necessary data.

In another instance, NMFS determined it was necessary to modify a recommendation made by the Mid–Atlantic Harbor Porpoise TRT in order to implement the recommendation as a regulation. The TRT recommended gear restrictions for the fish species targeted. However, bycatch occurred according to the type of gear used, which is associated with but not specific to target fish species. Regulations addressing gear used in a specific time and area are enforceable, but it is much more difficult to both comply with and enforce regulations based on target species. As a result of these two factors, NMFS modified the recommendation submitted by the TRT, and explained the reasons for modifying the recommendation during the process of developing the regulations as required by the MMPA. NMFS believes that the ultimate outcome addressed the recommendation in a more effective manner.

In the case of the Atlantic Offshore Cetacean TRT, the TRT and NMFS staff devoted much time and energy to developing a take reduction plan. However, in the course of developing the regulations to implement the plan, two of the three fisheries addressed by the plan were closed through fishery management actions. Some of the recommendations developed by the TRT to address the third fishery (Atlantic pelagic longline) were included as part of the Highly Migratory Species Fishery Management Plan, instead of through a separate Take Reduction Plan. Although NMFS did not implement an Atlantic Offshore Cetacean Take Reduction Plan by regulation, some of the measures were implemented and others were no longer appropriate because of changes in the fishery. Since the TRT met, the Atlantic pelagic longline fishery has undergone a number of changes due to both fishery management and protected species management for turtles. NMFS continues to monitor the fishery through the observer program and, if needed, will convene a TRT to address its effects in relation to marine mammals.

4a. How often does the Agency conduct stock surveys for marine mammal populations?

NMFS conducts an extensive stock assessment effort every year, but this does not mean that new data are collected every year for each of the nearly 150 stocks of marine mammals for which NMFS is responsible.

The annual effort for each stock varies according to conservation necessity. For some stocks that are small and are declining, or have declined in the recent past, such as western north Atlantic right whales, Cook Inlet beluga whales, and Hawaiian monk seals, NMFS conducts a full survey annually. At the other extreme, there are stocks of marine mammals, such as Hawaiian cetaceans or cetaceans in waters surrounding U.S. territories in the Caribbean and Pacific that have never been assessed reliably due to a lack of resources. Other stocks, such as Alaska harbor seals, are surveyed every several years. For harbor seals, NMFS surveys part of Alaska each year and completes a rotation at the end of five years.

NMFS apportions its limited resources to conduct stock surveys based on its determination of the level of risk to the stock from human activity. For those stocks that are not perceived to be at a high level of risk from human activity, the abundance surveys are completed on a very long time frame (*e.g.*, not more often than every 10 or 15 years). For those stocks that suffer mortality at or near their Potential Biological Removal level (or those that can be surveyed at the same time as such a stock), NMFS is able to maintain a four-year schedule for abundance estimates. As long as the stock is not declining or increasing dramatically, such a rotation is sufficient for tracking population trends.

4b. There has been some concern that the Atlantic coastal bottlenose dolphin population has increased and may not need to be designated as a strategic stock and hence, not need a take reduction plan. What type of data is being used as the basis for NMFS' determination?

As defined by the MMPA, there are several means by which a marine mammal stock may be designated as strategic. The term "strategic stock" is defined in section 3(19) of the MMPA to mean a marine mammal stock "(A) for which the level of direct human-caused mortality exceeds the potential biological removal level; (B) which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act [ESA] of 1973 within the foreseeable future; or (C) which is listed as a threatened species or endangered species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), or is designated as depleted under this Act [MMPA]."

Atlantic coastal bottlenose dolphins qualify as strategic for two reasons: (1) the stock is designated as depleted, and (2) direct human-caused mortality, in this case from commercial fishing activities, exceeds the potential biological removal level. NMFS has begun to re-evaluate the depleted status of Atlantic coastal bottlenose dolphins on a stock-by-stock basis. New scientific data indicates that the stock structure may be much more complex than once believed, and once such information is fully developed and peer reviewed it would be appropriate to re-evaluate the depleted determination. However, even if the stock was determined not to be depleted, the level of fishery-related mortality in relation to the potential biological removal level is such that the stock would still be considered strategic, and therefore NMFS would be required under the MMPA to develop and implement a Take Reduction Plan.

NMFS designated the stock as depleted based on an analysis of historical stranding patterns relative to strandings during a large-scale mortality event that occurred in 1987–1988. This analysis also took into account natural mortality rates and birth rates. NMFS determined that the annual natural mortality increased by

over 65% during the mortality event, and that even if the natural birth rate remained constant (*i.e.*, assuming the mortality event did not reduce birth rates), the increase in mortality was over 50% of the population.

NMFS' determination that human-caused mortality exceeds the potential biological removal level is based on stock structure, abundance, and mortality data. Stock structure for bottlenose dolphins has been developed using genetic, telemetry, isotope ratio, and photo-identification methodologies. Currently, seven seasonal "management units" have been identified, although additional stock structure may be found with more research. Except for the long time series of photographs of dolphins used in photo-identification, all of the data used to determine stock structure have been collected since 1997, and much of it during 1999–2000. Abundance estimates for each management unit were based on six survey programs that were conducted between 1995 and 2000. Additional coast-wide abundance surveys are planned for the winter and summer of 2002, if funding is available. If logistically feasible, genetic biopsies will also be collected. The resulting potential biological removal level is calculated using the best abundance estimate for each management unit. Bycatch for each management unit is determined from observer coverage in the fisheries which interact with this stock; the Mid–Atlantic coastal gillnet fishery and Southeastern U.S. shark gillnet fishery.

5. NMFS has released its report Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Ecosystems. Does the Agency recommend implementing the recommendations of the report? Will these recommendations be included in an Administration bill? Has the agency made any further progress in developing new, non-lethal means of chasing off California sea lions and Pacific Harbor Seals?

NMFS continues to support three of the recommendations. The first recommendation is to "Implement site-specific management authority that would allow state and federal officials to lethally remove pinnipeds where necessary to protect ESA listed salmon and other marine resources." Although NMFS continues to support the concepts related to site specific management measures, we do not expect to include these measures in the upcoming Administration bill. Existing provisions of the MMPA allow NMFS to address the known applications where lethal take authority has been needed, such as to protect Lake Washington steelhead as they migrate through Ballard Locks. Other instances of predation, where the scientific record is not as full as the one at Ballard Locks, have not been identified at this time. The provisions in section 101(c) that allow people to take marine mammals if "imminently necessary" would apply to human safety concerns. It may also be possible to apply the authorities within section 109(h) to protect human health and welfare; however, application outside the stranding response program has not been attempted or tested.

The second recommendation to "Develop safe and effective non-lethal deterrent technologies" has been pursued by NMFS. But, we have found through studies that acoustic technology, which initially appeared promising, may not provide a safe, effective approach to long-term deterrence of sea lions in open water applications due to affects on other marine species. However, in limited, restricted areas, such as at the Ballard Locks in Seattle, WA, non-lethal acoustic deterrence measures appear effective in addressing California sea lion predation on steelhead. NMFS is currently supporting a new line of studies by Moss Landing Marine Laboratory to conduct basic behavioral studies on sea lions to determine what "cues" they use to find hooked fish. These studies would describe the "cues" involved in interactions with fishing operations and ways to possibly "mask" or eliminate those cues to avoid interactions.

The third recommendation to "Reconsider the prior MMPA authorization that allowed commercial fishers to lethally take pinnipeds as a last resort to protect their catch and gear in specific fishery areas where economic impacts are occurring" is no longer supported by NMFS and will not be included in the Administration bill. As described in my testimony, this recommendation was the subject of most negative comments from the public, but it remained in the Report so that Congress would have background information if it chose to reconsider the 1994 amendments that eliminated the prior authorization that allowed commercial fishers to kill marine mammals as a last resort. Following the submission of the Report, NMFS learned that many participants in current commercial and recreational fisheries do not necessarily desire to have this authority. Rather, these parties have expressed the need to have safe, effective non-lethal deterrents available to them, and authority for state and federal managers to remove problem animals where necessary when non-lethal measures are not effective.

The fourth recommendation to "Implement the studies necessary to obtain additional information on the expanding pinniped populations and their impacts on other resources, especially ESA listed salmonids" has been underway by NMFS and the States since fiscal year 1998 with Congressional action to increase NMFS' base funding for studies on pinniped impacts on salmonids and West Coast ecosystems. These studies have resulted in new information, since the 1999 Report to Congress, on 1) pinniped predation on salmonids in several river systems on the West Coast; 2) updated population status of harbor seals and sea lions which are noted for showing that harbor seals in Washington and Oregon are at their optimum sustainable population level (OSP); 3) updated information on sea lion interactions with the salmon troll fishery and the southern California partyboat fishery; and, 4) information on the effectiveness and utility of acoustic devices as non-lethal deterrents.

6. The Navy's use of SURTASS LFA sonar has been linked by some to marine mammal stranding events. What information does the Agency have on these events and can the Agency make a determination that this sonar technology was responsible for the stranding?

SURTASS LFA sonar has never been linked to any marine mammal stranding event. Only one vessel is presently equipped with SURTASS LFA, and it was in the Pacific and not operating at the time of a stranding event in the Bahamas in March 2000. The Navy and NMFS noted that the stranding of 17 beaked whales in the Bahamas in March 2000 coincided with the Navy's use of tactical mid-frequency sonars in a unique undersea topography during an anti-submarine warfare exercise. These mid-frequency sonars operate in a different frequency band than SURTASS LFA (3,500 to 5,000 Hz compared to less than 500 Hz for LFA), produce shorter pings at shorter intervals than SURTASS LFA, and have a faster rise time (speed of the onset of the sound). These technical differences suggest that species which could potentially be affected by tactical sonars would not be affected by LFA. Some environmental groups have glossed over the differences in operating characteristics of sonars in arguments for stopping the deployment of SURTASS LFA. They assert, without evidence, that LFA will have the same effects as mid-frequency tactical sonar because of a process called acoustical resonance. This assertion lacks merit. No data have ever been published on resonant frequencies for any species of marine mammal. Warnings of tissue damage from resonance are all based on mathematical calculations. Experts in the field believe that these calculations use incorrect assumptions and constants, and are therefore not valid forecasts of tissue effects. The mitigation measures proposed for LFA are currently adequate to protect marine mammals from resonance effects that are based on more reasonable assumptions and constants.

7. Sharon Young of the Humane Society testified that the Atlantic Large Whale Take Reduction Team "has been a resounding failure." Do you agree?

NMFS does not feel that the Atlantic Large Whale Take Reduction Team has been "a resounding failure." The TRT process is extremely complex, involving multiple stakeholders and serving as a forum to have all views aired. The goal of the Atlantic Large Whale Take Reduction Team (ALWTRT) is to reach a consensus on modifications to the Atlantic Large Whale Take Reduction Plan (ALWTRP) that will reduce right whale mortality and serious injury. It is a challenging process and NMFS has, to the best of the agency's ability, implemented the recommendations of the team.

Up through 2000, the death rate of the North Atlantic right whale has exceeded the birth rate. The 2000/2001 season has been the most promising to date, with 31 calves born (4 deaths). Because no population can sustain a high death rate and low birth rate indefinitely, the current combination places the North Atlantic right whale population at high risk of extinction. Entanglements of right whales in gillnet and lobster gear continue to occur despite measures developed in the initial ALWTRP.

On May 4, 2000, NMFS reinitiated consultation on several fishery management plans, following new entanglements that resulted in serious injuries and at least one right whale mortality. NMFS completed consultation on June 14, 2001, and concluded that the current ALWTRP needed to be revised. NMFS Protected Resources Division has developed one Reasonable and Prudent Alternative (RPA) with multiple management measures that collectively are designed to avoid the likelihood of jeopardy for right whales from the continued implementation of the multispecies, spiny dogfish, monkfish, and lobster fisheries. The RPA will minimize the interaction with right whales and multispecies, spiny dogfish, monkfish, and lobster gear and expand gear modifications to the Mid–Atlantic and Southeast waters. The RPA

includes gear modifications, seasonal area management, and dynamic area management. Final rules on these management measures were sent to the Federal Register on December 31, 2001.

8. Sharon Young of HSUS testified that "NMFS has undermined their functioning by bowing to political manipulation." What is your reaction?

Many groups, including resource users and conservationists, regularly criticize NMFS' actions as either not going far enough to safeguard a protected species or going too far in regulating the resource-using community. These groups are all, to some extent, part of the politics inherent in the policy making process. NMFS will always be exposed to and pressured by partisan interests, but political considerations are not used in making decisions. Rather, NMFS continues to listen to the views of all interested and affected parties and to make policy and stewardship decisions based upon careful consideration and the best available information.

9. Can you give us some information on the geography of beaked whales and inform the Subcommittee on whether there is a local population that resides near the Bahamas? At the hearing, Dr. Hal Whitehead made a statement that he thought this population was destroyed by the military activities undertaken by the Navy. Do you have any information on the status of this population?

NMFS has no specific information on the status of beaked whales in Bahamian waters. Worldwide, the numbers and behavior of beaked whales are not well known because the animals tend to be shy and avoid survey vessels. NMFS recognizes a Western North Atlantic stock of beaked whales, which includes animals in the Bahamas. However, the agency does not recognize beaked whales in Bahamian waters as a separate or local population.

10. Is the NMFS researching the overall noise budget of the Ocean? If so, can you give the Subcommittee information on how loud ship traffic, oil drilling, small boat traffic and other anthropogenic noises are in the ocean? Can you also give the frequency of these activities and the hearing frequencies of marine mammals so the Subcommittee can get a better understanding of what activities occur in the hearing frequencies of marine mammals and other marine animals like fish and turtles.

Noise budget

NOAA is not presently researching the noise budget of the oceans, but it has plans to do so if funds become available. The agency has the technical tools needed, but such research is costly. NOAA maintains three acoustic arrays that monitor earthquakes and other geological activity, whale calls, and some human sounds, such as seismic exploration (airgun) sounds. NOAA also receives a data stream from several of the Navy's Sound Surveillance System (SOSUS) sites. These combined capabilities are the start of a proposed global acoustic monitoring network that will produce a proper noise budget for the oceans, as well as long-term measurements of the ambient noise level.

Loudness of human sources

NOAA has no information on the loudness (in scientific terms, the sound pressure level, or level) of human sources that is any different from that published in Richardson et al.1995 [Marine Mammals and Noise, 1995. Academic Press, NY]. The loudest human sounds, other than explosions, come from seismic airgun arrays that may operate at 255 dB. Military sonars produce levels of 235–240+ dB, and various kinds of sidescan sonars, bottom profilers, and fish finders may operate at 225 to 235 dB. The loudness of a sound, while easy to understand, is not necessarily the most important measure of the danger a sound could potentially pose to marine mammals. The length of time the sound lasts, the rate at which it is repeated, the frequency, and the rise time are also important considerations. For example, an airgun shot may have a sound pressure level of 255 dB but it only lasts for milliseconds. Supertankers or icebreakers may produce a sound of 215 dB, but this sound may last for days. Since total sound energy is a combination of peak pressure and the time the sound is on, the supertanker produces much more energy than an airgun and creates problems that shorter, louder signals do not, such as masking (one sound covering another). Frequently repeated loud sounds are probably more dangerous than single loud sounds, and sounds that begin suddenly (like an explosion) are usually more harmful than sounds that begin slowly. As a result, in order

to judge the dangers of human noise, much more information than level (loudness) is needed.

The loudness of human sources must be compared to other sounds in the oceans. Blue, fin, and humpback whales all produce calls at around 185 dB. Beluga, false killer whales, bottlenose dolphins, and sperm whales all make echolocation clicks at about 225 dB, and they often produce these sounds in the near vicinity of others. In addition, there are about a trillion lightning strikes per year in the oceans (about 260 dB), thousands of earthquakes of various loudness, and storm-driven waves. The oceans have always had more background noise than humans experience in air. Finally, marine mammals have various adaptations for great changes of pressure when they dive (sometimes over 1,000 m). Evolution in a noisy environment and adaptation to extreme pressure change are two reasons why human hearing is a poor model for marine mammal hearing.

Frequencies of human sources

Human sounds vary from 10 Hz to several hundred kHz (1 kHz = 1,000 Hz), depending on the application. No animal can hear this entire range of frequencies. Low frequency sounds (below 1,000 Hz) are produced by shipping, seismic exploration, drilling, and explosions. Higher frequencies (3.5 kHz to 300 kHz) are used in various kinds of sonar, fish finders, sidescan sonar, and the like. The lower the frequency the farther the sound propagates before being absorbed by sea water. The higher the frequency the more resolution it gives as a sonar source.

Marine mammals fall into about four groups in terms of ear function. Low frequency specialists have the greatest sensitivity (meaning they require less sound to detect that a sound is present) at frequencies between 10 and 250 Hz. The large whales make up this group. High frequency specialists have their greatest sensitivity from 50 kHz to 100 kHz. Some, like harbor porpoise and river dolphins, echolocate in the 200 to 250 kHz range. Mid frequency specialists comprise two groups, seals and toothed whales, separated mainly by anatomy. Their "best" frequencies are between 1.2 kHz and 30 kHz.

Turtles and most fish hear exclusively in the low frequency range (less than 1,000 Hz). A few fish, like herring and shad, hear quite well at 20 kHz.

As in the question of loudness, one needs much information other than frequency to judge the danger of a human sound. Animals generally do not respond to frequencies above or below their hearing range. The reader should consult Richardson et al., 1995, for a more thorough background on the marine mammals and noise issue.

11. How many veterinarians, marine biologists, marine mammal specialists are on staff at NMFS that could be used to inspect public display facilities?

The 1994 amendments substantially limited the responsibilities of NMFS with regard to public display and as a result the agency has devoted very limited staff resources to this aspect of the MMPA. NMFS staff do not conduct inspections of public display facilities and we depend fully on APHIS to conduct inspections to monitor animal care and maintenance. When we receive complaints about animal care matters, we notify APHIS, and they arrange for inspections. On rare occasions, we have sent enforcement agents or marine mammal specialists to a facility to investigate or take action on matters of MMPA compliance, in consultation with APHIS, or when that agency has not had authority to take action (*e.g.*, when a facility closes its doors and no longer has an active exhibitor's license). We devote approximately one FTE position to maintaining the inventory of captive marine mammals, responding to FOIA requests, conducting liaison with FWS, APHIS and the Marine Mammal Commission with regard to public display, and drafting regulations for this program. With such limited staff, it would be unrealistic for us to take a more active role in facility inspections. However, our proposed public display regulations specify that holders of marine mammals must make animals and animal records available to NMFS for inspection, so that on the rare occasions when we need to take such action, we have clear authority to do so. Such inspections would focus on MMPA compliance alone (such as inventory reporting), and not on areas that would overlap with the Animal Welfare Act (AWA), such as animal care and handling concerns. These are some examples of occasions when NMFS has made site visits since 1994:

- When a small facility in Maine went out of business, APHIS contacted NMFS to assist, using MMPA authority, in the transfer of several harbor seals to a zoo that could care for them permanently. Services of both a NMFS enforcement agent and a biologist were needed on site to assure that this transfer went smoothly.

- Both agencies were involved in issues surrounding a facility in the Florida Keys that violated both the AWA and the MMPA. Dolphins were not appropriately cared for, and were released from their enclosure to the open water on a number of occasions. MMPA authority was needed to carry out rescue of released dolphins, and seizure of the remaining dolphins.
- A NMFS biologist accompanied an APHIS inspector to visit a facility holding California sea lions. The NMFS biologist was able to verify the marine mammal inventory reporting and also provided information on the species that was helpful to the APHIS veterinarian.

12. When might the Administration bring forth a bill on the reauthorization of the Marine Mammal Protection Act?

NMFS anticipates that an Administration proposal may be transmitted to Congress soon.

QUESTIONS FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. Dr. Hogarth, you mentioned briefly the issue of definitions within the MMPA, specifically the definition of "harassment" as it relates to a taking. Does NMFS feel this definition needs to be changed, or just clarified? Should harassment be legal?

The current definition of "harassment" in the MMPA must be clarified in order to (1) provide greater notice and predictability to the regulated community, and (2) improve the enforceability of the prohibition. Additionally, the definition should be clarified and focused to address activities directed at marine mammals to prevent cumulative adverse effects of behavioral modifications. However, it is important that any clarifications not compromise conservation measures. Cumulative short-term disturbance may lead to long-term impacts to individuals or populations, such as disturbances caused by the recent expansion of irresponsible and dangerous wildlife viewing practices. However, it is not practical to regulate all marine activities that have the potential to cause occasional incidental disturbance, but not injury of the animals (*e.g.*, routine vessel traffic).

"Harassment" is an important element of the definition of "take" and should remain part of this definition for the conservation of marine mammals and their populations.

2. Why was the Take Reduction Team for Bottlenose Dolphin initial meeting cancelled and when will it now meet?

The first Bottlenose Dolphin Take Reduction Team meeting was originally scheduled for September 12–14, 2001. However, due to the terrorist events that occurred on September 11, NMFS canceled that meeting, both because of the effect of the attacks on people and the resulting travel difficulties. The rescheduled meeting was held on November 6–8, 2001.

3. As stated in Dr. Reynolds testimony, the AOCTRT was disbanded after two of the fisheries ceased to operate. There is still a TRP in effect. What are the monitoring plans for this Plan and what will be done to ensure that it is still followed and effective?

A Take Reduction Plan was submitted to NMFS but was not implemented into regulation as the "Atlantic Offshore Cetacean Take Reduction Plan." However, aspects of the plan submitted by the Atlantic Offshore Cetacean Take Reduction Team (Team) to address the Atlantic pelagic longline fishery were incorporated into the Highly Migratory Species Fishery Management Plan. NMFS recently disbanded the Team because many changes have occurred to the fisheries intended to be addressed by the Team. Two of the three fisheries to be addressed by the Team were disbanded due to fishery management actions. The third fishery, the Atlantic pelagic longline fishery, has undergone a number of changes due to fishery management and protected species management for turtles.

NMFS has continued to place observers in the Atlantic pelagic longline fishery, and Congressional appropriations for Atlantic and East coast observers in fiscal year 01 and fiscal year 02 have allowed the agency to further increase observer effort in the fishery. As a result, monitoring of the interactions between the fishery and marine mammals continues. If that monitoring indicates that effects on marine mammals are occurring at levels of concern, NMFS will take action to convene a Take Reduction Team to address those issues.

4. I noted with interest that you say in your written testimony that NMFS has finally published regulations to implement the 1994 amendments as

they pertain to the management responsibilities for captive marine mammals held for public display purposes. Could you please explain why it has taken NMFS nearly 7 years to prepare these regulations? What issues have contributed to this delay?

Summary

Most of the provisions of the 1994 amendments, now reflected in the proposed regulations, have long since been implemented through interim procedures. NMFS' emphasis since 1994 has been on developing a database system for the marine mammal inventory; meeting with the other cooperating agencies (USDA's Animal and Plant Health Inspection Service [APHIS], the U.S. Fish and Wildlife Service [USFWS] and the Marine Mammal Commission) to reach a common understanding of most aspects of the 1994 amendments; and working with holders of marine mammals to develop procedures for notifications of transfers and other requirements of the amendments. Delay in publication of the proposed regulations occurred due to limited staffing for public display and the Presidential election and transition, which placed lower priority on routine procedural regulations.

Background

A proposed rule was published in October 1993 to consolidate into a single set of regulations all permitting requirements under the MMPA, the Endangered Species Act, and the Fur Seal Act to take, import, or export protected species under NMFS jurisdiction for purposes of scientific research, enhancement, or public display. However, the amendments to the MMPA that were enacted in April 1994 significantly changed the scope and extent of permitting authority for public display purposes, thus eliminating the basis for many of the provisions concerned with public display in the proposed rule, as well as the regulations then in effect. A final rule was prepared and published in May 1996 to implement certain parts of the 1993 proposed rule that were not as significantly affected by the 1994 amendments. That final rule, effective on June 10, 1996, established basic reporting, record-keeping and other permit requirements under the Act to take, import and export marine mammals for purposes of scientific research, enhancement, photography and, where captures and initial imports are involved, for public display. Because of the magnitude of the changes that were made in the Act's public display provisions, it was decided that most requirements specifically concerned with capturing, importing, exporting, or transporting marine mammals for public display under the MMPA as amended could only be addressed in the form of a new proposed rule.

To implement the 1994 amendments as effectively and consistently as possible, our initial emphasis was on developing procedures for the inventory/notification system, and on negotiating a revised Memorandum of Agreement (MOA) with USFWS and APHIS for consistent implementation of public display requirements. The MOA was signed by all three agencies on July 21, 1998, clearing the way for drafting proposed regulations.

Responses from Marshall Jones, Acting Director, U.S. Fish and Wildlife Service, U.S. Department of the Interior

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

Question 1: Has the Service reviewed the Suarez Brothers Circus case and made any determinations on whether illegal documents were used to get the animals into United States territory? Will the Service withhold a CITES export permit until such determinations are made? What actions will the Service take if illegal documents were used?

Answer: On May 5, 2001, the Service issued a permit to Circo Hermanos Suarez S.A. (Suarez Brothers Circus) for the import of seven polar bears for public display purposes. At the time of issuance, the Service did not have any reason to believe the animals were possibly being moved under false documents. As required by the Marine Mammal Protection Act (MMPA), when the Service reviewed the application, it required the Circus to provide documentation demonstrating that the bears were not taken while pregnant; nursing, or less than eight months old, whichever occurs later; obtained from a depleted stock; or taken in an inhumane manner. The Circus provided certification statements from the foreign zoological institutions for the foreign captive-born bears, and a certification statement from the Government of Manitoba, Canada, that allowed the Service to determine that the animals were not obtained in a prohibited manner. These certification statements satisfied the Service regarding the source and origin of the bears for purposes under the MMPA.

Under CITES, no import authorization is required for Appendix II species as long as a valid re-export certificate has been issued by the country of export. When the Service reviewed the MMPA application, it noted that the CITES documents for the bears' travel between the Dominican Republic and Jamaica appeared to have minor discrepancies not uncommon for multiple re-exports. Within this context, the Service determined that the discrepancies were not substantive in nature, and were not suggestive of questions concerning the true identity of any of the bears. The Service concluded that the discrepancies were not germane to the decision to issue an MMPA import permit, and notified the permittee that these discrepancies should be rectified prior to importing the animals.

Approximately one month after the Service issued the permit and the bears were imported to Puerto Rico, it received a letter from Dr. Terry L. Maple, President and CEO of Zoo Atlanta, Atlanta, Georgia, regarding the origin of one of the bears, "Alaska." Dr. Maple's June 7, 2001, letter noted that "Alaska" appeared to be traveling on questionable documentation, and he expressed concern that the bear may actually have died in a German zoo. The information provided by Zoo Atlanta was further investigated by the Service. The German CITES Management Authority was contacted regarding the CITES document they had issued to re-export this bear from Germany. The Management Authority noted that they had issued the CITES re-export certificate for "Alaska" and could not confirm that the bear had died in Germany. The Service's Division of Law Enforcement also forwarded a request for investigative assistance to INTERPOL and the U.S. Customs Service Attache Office in Berlin, Germany. The Service also undertook DNA analysis of the bear and has determined, through that analysis, that the bear imported by the Circus was not the animal described on the CITES re-export certificate from Jamaica. On March 6, 2002, the Service executed a court-ordered seizure of that bear. An investigation continues.

The Service also recently received an application from the Suarez Brothers Circus for the re-export of these animals. The Service will evaluate it under all relevant provisions of the laws governing these animals.

Once the Service's investigation has been completed, it will review the information on the degree and specifics of any violations. If the Service investigation reveals that the Suarez Brothers Circus deliberately submitted false paperwork, the Service will consult with the U.S. Department of Justice regarding appropriate legal action. The Service appreciates your concerns and will keep the Committee updated as this matter progresses.

Question 2: When might the Administration bring forth a bill on the reauthorization of the Marine Mammal Protection Act?

Answer: The Service and the National Marine Fisheries Service have been working diligently, along with other Federal agencies, to develop a proposal to submit to Congress. This proposal is under final review within the Administration so that it will be ready to transmit to the Congress.

Question 3: Is a reassessment of the M'Clintock Channel population due to lower population estimates and its subsequent removal from the Service's approved population list, that allows for the import of polar bear trophies, an indication that Canada is not managing its polar bear populations appropriately?

Answer: The Service does not believe that the population decline in the M'Clintock Channel population implies Canada is not managing its polar bear populations on a sustainable basis. Canada has a robust management program that is periodically reviewed by polar bear scientists and managers through meetings of the Federal–Provincial Polar Bear Technical Committee (PBTC), Polar Bear Administrative Committee, and the IUCN (World Conservation Union) Polar Bear Specialist Group. There has been considerable discussion of Canada's population management, and Canada continues to look at new models and research data to better manage their polar bear populations. Canada is examining options that include scaling back harvest rates in small populations while performing more frequent inventories of larger populations. It also anticipates that new models will help it identify where it needs to modify harvest levels, prior to the next population inventory, due to changing environmental conditions or optimistic population estimates. The Service participates in the annual PBTC meeting and continues to work with Canada to receive the most recent information on Canada's management program to ensure that the import of polar bear trophies is allowed only from populations that are being maintained at sustainable levels.

Question 4: Many would argue that if managed correctly sport hunts of polar bears can be a useful management tool. The focus of these hunts being the large bull males, instead of the females or cubs. In addition, Canadian sport hunts, for example, bring needed funds into native villages in Canada where the meat of the animal is left for subsistence use by the natives. Does the Service agree that if managed correctly sport hunts of polar bears can be a useful management tool?

Answer: The Service recognizes that sport hunting has been demonstrated to be compatible with sound conservation practices, and can be a useful management tool under certain conditions. Canada has incorporated sport hunting as one aspect of its management program for polar bears. The selective harvest of 2 males to 1 female is utilized to conserve the population by reducing the impact of the harvest of females. Sports hunters prefer to harvest large males in lieu of females, and hunts that focus on males allow for a greater harvest than a harvest that takes an equal number of males and females. The Service uses scientific criteria to evaluate Canadian sport-hunting programs for polar bear populations, and issues permits to import trophies based on sustainable harvest.

The Service also recognizes that sport hunting plays an important economic and cultural role to local Canadian people. This system has been responsible for providing an economic infusion to many economically depressed communities. Communities widely support sport hunting, and village Hunter and Trapper Associations are responsible for determining the portion of the annual harvest to be allocated for sports hunters.

From a management perspective, the foundation for any sport hunt or subsistence harvest is accurate population information on which to base a sustainable harvest level. Accurate information regarding the harvest is also essential to evaluating the effect of the harvest; as harvests approach the maximum sustainable level, the need for accurate information becomes more critical. Resource managers, when provided with accurate population and harvest information, are able to determine harvest limits which are sustainable under either a subsistence harvest, sports harvest, or combination of these hunt types. The Service uses a statistical analysis to determine the level of uncertainty for population data. Where uncertainty is high, greater caution must be used in making management decisions.

In the United States, the MMPA establishes a moratorium on take of polar bears; however, Section 101(b) of the MMPA provides an exception to the moratorium on taking for coastal Alaska Natives for subsistence purposes.

QUESTIONS FROM CONGRESSMAN WALTER B. JONES

Question 1: There are a number of compelling questions, related to the case of the polar bears owned by the Suarez Brothers Circus, that I believe need to be answered. Regardless of the fact that polar bears probably do not belong in a traveling, tropical menagerie, I am alarmed by the threat to human safety revealed in the US Animal and Plant Health Inspection Service (APHIS) report dated June 7. The report describes that the polar bears were confined in a facility that had a wall flimsy enough for the inspector to push over with one hand. Upon APHIS's return for a second inspection on June 21, the flimsy wall had not been fixed. There was apparently no follow-up inspection by APHIS in July, until the Puerto Rican Department of Natural Resources filed cruelty charges against the circus. I would like to hear APHIS's explanation on all of this. I have a letter from Dr. Terry Maple of Zoo Atlanta written to APHIS, in which Dr. Maple describes his surprise that APHIS would grant the Suarez operation a permit for exhibition. Dr. Maple points out that the Suarez Brothers Circus uses doctored records to identify their animals and the Suarez Brothers claimed that one of their bears came from Zoo Atlanta, when in fact, that bear had died in a German Zoo in 1994. The use of falsified records is grounds for denying the owners a permit for exhibition. So why was one granted? APHIS, while invited to testify, declined the Committee on Resources request, so I pose this question to my friends with the United States Fish & Wildlife Service. I understand that accurate records describing the history of the bears is required for import and export permits (as well as permits for exhibition). Why was this deceptive organization-complete with falsified records—given an import permit for these animals? And what is the status of the export permit?

Answer: The Service appreciates the concerns raised regarding the adequacy of facilities used by Suarez Brothers Circus to house polar bears. The Service is work-

ing closely with APHIS to ensure that the bears are held in compliance with requirements of the Animal Welfare Act.

As discussed above in our response to Chairman Gilchrest's Question 1, the Service received information regarding the questionable origin of a polar bear "Alaska" approximately one month after we had issued an import permit. When the Service reviewed the application, the documentation regarding the source of the polar bears provided by Suarez Brothers Circus appeared to be authentic. In light of Dr. Maple's correspondence, the Service's Division of Law Enforcement investigated the assertion that "Alaska" was imported under false documentation. Based on subsequent DNA analysis, the Service executed a court-ordered seizure of the bear on March 6, 2002. The investigation continues.

If the Service's investigation provides evidence that a permit for import was secured based on the submission of deliberately false and/or misleading information, the U.S. Department of Justice will be consulted regarding appropriate legal action.

The Suarez Brothers Circus recently applied for a permit to re-export these animals. The Service will evaluate the application under the appropriate criteria for permit issuance under CITES. Further, any violations found against the Suarez Brothers Circus will also be considered in the review of the application for re-export of these animals. The Service will keep the Committee informed as the investigation progresses.

QUESTIONS FROM RANKING MEMBER ROBERT A. UNDERWOOD

Question 1: Do we have accurate stock information for those that will be affected by the U.S. - Russia Agreement on Polar Bear conservation? How will enforcement against poaching and stock information be maintained on these remote populations?

Answer: Issues of population size, harvest limits, and enforcement programs would be addressed by the U.S.–Russia Polar Bear Commission to be created under terms of the bilateral conservation agreement. The Commission is also charged with forming a scientific advisory group to provide technical advice and guidance to the Commission as it designs management and enforcement programs to implement the bilateral agreement.

A variety of information will be available for the Commission and its scientific advisory group, including historic harvest rates and data on population growth in adjacent polar bear populations that are believed to be similar to the Chukchi/Bering Seas population. Much of this information will be compared to the situation in the Beaufort Sea, where long term population data are available from mark and recapture programs conducted since 1968. Other information includes the results of aerial polar bear surveys conducted in the Eastern Chukchi Sea during August 2000.

Historically, during the 1960s and early 1970s, statewide harvest rates of 260 bears per year are now known to have been unsustainable. Both the Beaufort Sea and Chukchi/Bering Seas populations were depressed due to excessive harvest rates. The Beaufort Sea population rebounded in the 20-year period following cessation of sport hunting in 1973 and a greater than 50 percent reduction in total take. The population is thought to have reached the carrying capacity of the environment and leveled off during the 1990s. The Chukchi/Bering Seas population is thought to have experienced the same growth pattern.

In August 2000, the Service successfully conducted aerial surveys to estimate the abundance of polar bears in the Eastern Chukchi Sea and portions of the Beaufort Sea. The survey indicates that approximately 1,500 polar bears were present in the area. These data are believed to corroborate population recovery in the Chukchi Sea region. Statistically defensible quantitative information on the size of the Chukchi/Bering Seas polar bear population is currently unavailable. The most recent estimate of the population size is 2,000 to 5,000 bears, based on an extrapolation of the annual number of dens that occur on Wrangel Island, Russia, where the vast majority of polar bear cubs in this population are born.

To assist in enforcement, a marking, tagging, and reporting system, similar to one successfully used by the Service in Alaska since 1988, is anticipated to be instituted in Chukotka, Russia. The Service's program requires hunters to tag the skulls and hides of harvested bears with unique serialized tags, which allows for enforcement against individuals in possession of untagged hides. If the treaty is ratified and implemented, the number of tags issued during any given year would be based on the sustainable harvest limits and allocations as determined by the Commission. The Commission would also review and approve programs to enforce provisions against illegal take or trade in violation of the U.S.–Russia polar bear conservation agreement and to verify that harvest monitoring programs are operating effectively.

Question 2: What is the status of the supplemental environmental impact statement (SEIS) for southern sea otters that the Fish and Wildlife Service is currently developing? Are you on track to complete this SEIS by September, 2002?

Answer: The Service expects to complete the draft supplemental environmental impact statement in 2002. Following public hearings, a written comment period, and revision as necessary, a final document is expected sometime next year. The supplement will update information, reevaluate the existing translocation program, and analyze our options for the program.

Question 3: You generally state in your written testimony that co-management with Native Alaskans has been a successful venture and note the cooperative agreements in place, including the agreement with the Alaska Sea Otter and Steller Sea Lion Commission. Considering the fact that Steller sea lions have been listed on the ESA for some time due to a steep decline in the stock, and also that Alaska sea otters are now under review by the Service for potential listing under the ESA because this population too, has dramatically declined, I am somewhat surprised to hear your bullish optimism about co-management. Would you please comment on this?

Answer: The Service believes that co-management with Alaska Native continues to be a useful partnership. While the basis for co-management is to address issues related to subsistence harvest, the cooperative projects provide a wide range of information important for understanding marine mammal species and the environment in which they live. For example, Alaska Native hunters collect tissue samples used for contaminant analysis, genetic studies, and evaluation of other health and population parameters. A compilation of traditional knowledge about polar bear habitat use provides useful insight into this far-ranging species that is difficult to study. Given the remote areas and broad geographic ranges inhabited by Arctic marine mammals, the information gathered by Native hunters who live, hunt, and travel through the same remote environment significantly contributes to our understanding of these environments and animals.

It is true that Steller sea lion populations and the Aleutian Island population of Alaska sea otters are declining. However, in neither case is the level of subsistence harvest a factor in the decline of the species. The subsistence take of Aleutian sea otters is less than a dozen animals a year, whereas the documented sea otter decline throughout the Aleutians, due to as yet undefined causes, is a loss of tens of thousands of animals in the past decade.

QUESTIONS FROM CONGRESSMAN FRANK PALLONE

Question 1: Under the MMPA, parties must apply for import permits before bringing marine mammals or their parts into the country. Recently, a Mexican circus with 7 polar bears wishing to enter Puerto Rico requested an MMPA import permit from the Fish and Wildlife Service, providing CITES documentation and other required materials. Based on this documentation, there appears to be a serious question as to the provenance of at least one if not all of these bears. Subsequently a letter from Terry Maple of Zoo Atlanta confirmed that the identity of at least one bear—the one called "Alaska" in the CITES documentation—was falsified. What does the agency do to verify the provenance of animals (or parts) to be imported? If there are serious questions about provenance, how is it possible for an import permit to be issued? Given that these questions regarding provenance remain to this day, how will the agency address these questions when the circus applies for an export permit under CITES? Is it in fact possible for an export permit to be issued while such questions remain?

Answer: The Service's review of the Suarez Brothers Circus application for the import of the polar bears included an evaluation of the documents on the actual source of the bears. This information included supporting documents from the relevant foreign sources, *e.g.*, the Government of Manitoba, Canada. At the time the Service reviewed the application, there was no reason to believe that the animal known as "Alaska" was any other than the one indicated. One month after the permit was issued, the Service received new information that brought into question the provenance of that animal. The Service undertook further investigation of the identity of the bear in question. That investigation resulted in the court-ordered seizure of the bear on March 6, 2002. If it is determined that Suarez Brothers Circus submitted deliberately false and/or misleading information, we will consult the U.S. Department of Justice regarding appropriate legal action against the Circus. The Suarez

Brothers Circus recently applied for a CITES certificate to re-export the remaining bears. The Service is currently evaluating this application and will not make a final decision on the re-export certificate until it is satisfied regarding the origin and provenance of these animals.

Question 2: The MMPA requires that facilities keeping marine mammals in captivity offer an education or conservation program based upon professionally recognized standards of the public display community. On May 5, 2001, the U.S. Fish & Wildlife Service authorized the Suarez Bros. Circus to import seven polar bears into Puerto Rico. The bears are used in circus routines where they are forced to balance on an oversize ball, walk upright on their hind legs, climb steps, and go head first down a slide while a trainer repeatedly hits them with a stick and whips them on the face, back, sides, and hindquarters. Baltimore Zoo Executive Director Roger Birkel reviewed videotape taken of these performances and stated in a letter that "[The use of physical force coupled with the obvious lack of message...leaves the observer with a negative impact and a complete lack of respect and understanding for the animals." Knoxville Zoo staff veterinarian Dr. Ed Ramsey reviewed videotape and stated in a letter, "I think the only thing the public learned from watching this act is that it is okay to force bears to do things by hitting them." Additionally, the circus is not distributing educational material about polar bears, allowing the public to view the polar bears between shows with informational signs, or conveying an educational message during the show as specified in the permit. Why has the U.S. Fish & Wildlife Service not revoked the circus' import permit for failing to offer an education or conservation program in violation of the MMPA?

Answer: The Suarez Brothers Circus provided a detailed program and information packet with their application regarding their intended outreach and conservation message to be used in association with the public display of the polar bears. This included information regarding polar bear biology as well as relevant laws and international treaties associated with this species. The Service provided comments to the Suarez Brothers Circus regarding deficiencies in their message. The Suarez Brothers Circus acknowledged our comments and provided supplemental information in support of their application, and it was determined that the information met the criteria for the public display of these animals. On October 23, 2001, the Suarez Brothers Circus provided us with a copy of their informational handout (please see Attachment 1) produced in Spanish, as well as a video of a performance of the bears which included a discussion on polar bear conservation. The Service believes that the information that the Suarez Brothers Circus provided demonstrates that they are providing a conservation message that is consistent with the MMPA requirements for the public display of the bears. Should the Service determine that the Suarez Brothers Circus is no longer providing a conservation message, and is not reasonably likely to do so in the near future, as required by Section 104(c)(2)(D)(ii) of the MMPA, then appropriate action would be initiated, including a possible revocation of the permit.

Responses from John E. Reynolds III, Chairman, Marine Mammal Commission

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. The MMPA defines harassment very broadly, including minor behavioral modifications. Should the definition be changed to include only those activities that may present long-term impacts to individuals or to populations?

First, it should be recognized that there are differing interpretations of the existing definition of harassment under the Marine Mammal Protection Act. This is discussed more completely in our response to Mr. Underwood's first question, which is provided below. For purposes of this question, we note that the definition of Level B harassment refers to the disruption of "behavioral patterns." Thus, it is unclear that all minor behavioral modifications (*e.g.*, those that elicit a one-time response) fit within the definition. It is also unclear precisely when disturbance is severe enough or frequent enough that it rises to the level that it constitutes a disruption of a behavioral pattern (as opposed to a behavior).

As we explained at the October 11 hearing, it would be inappropriate for the Commission to recommend or endorse specific legislative proposals until an Administra-

tion position has been formalized. Inasmuch as a proposed Administration bill is still undergoing interagency review, we remain unable to offer specific changes or to make specific recommendations with respect to revisions we would like to see made to the harassment definition. We nevertheless will try to respond, at least generally, to your question within these constraints.

The Commission is aware that the National Research Council convened a panel on marine mammals and low frequency sound that, among other things, looked at the MMPA's definition of harassment (National Research Council 2000). One of the recommendations of the panel was to change the coverage of the definition away from short-term responses to focus on "longer-term, significant physiological and behavioral effects..." (Id. at 67.) In the abstract, this is a worthwhile proposal. Were we able to distinguish readily between those impacts that are transitory and that, by themselves, or in combination with other disruptions, will have no long-term adverse effects on the survival of an individual marine mammal or its reproductive success, and those that will have more significant ramifications, such a proposal would be rather attractive.

However, when assessing activities that cause behavioral modification, we often cannot distinguish between those activities that will have significant, long-term effects and those that will not. For example, a disturbance that causes what might appear to be a relatively minor change in a marine mammal's migratory route could have unforeseen, and possibly significant, consequences by causing increased energy expenditures or by exposing the animal to an increased risk of predation. Until we have the capability to distinguish reliably between what is and is not significant, or what will or will not have long-term consequences, the Commission believes that it would be ill-advised to adopt a definition that excludes consideration of short-term impacts entirely.

It is also worth noting that humans are inclined to judge the severity of a disturbance to a marine mammal based on our perception and understanding of the nature and intent of the disturbing action. Marine mammals are not able to make those same judgments and may perceive a potentially disturbing stimulus very differently. Further, the sensitivity of marine mammals to disturbance may vary in ways that we do not fully appreciate, as a function of their age and sex, the season, their reproductive condition, their physiological condition, their previous experience with the disturbance, the nature of the disturbance, its persistence, the number of times disturbed, and other factors that, when taken cumulatively, may alter the sensitivity of an individual animal to disturbance.

2. Is a reassessment of the M'Clintock Channel population due to lower population estimates and its subsequent removal from the Service's approved population list, that allows for the import of polar bear trophies, an indication that Canada is not managing its polar bear populations appropriately?

The situation with respect to the M'Clintock Channel population of polar bears illustrates both the strengths and weaknesses of Canada's polar bear management program. on the one hand, managers relied on an outdated population estimate to establish quotas, thereby setting unsustainable harvest limits that probably helped to drive down the abundance of polar bears within the M'Clintock Channel management unit. on the other hand, once the problem was identified, Canadian officials responded fairly quickly by taking steps to institute revised harvest limits.

In its 1995 comments on the Fish and Wildlife Service's proposed findings concerning the importation of polar bear trophies from Canada, the Commission raised several concerns. The Commission indicated that the greatest uncertainty regarding the formula being used to set harvest limits was the reliability of the population estimates being used. If a population estimate has low precision or is too high, the Commission noted that use of the formula could lead to overharvesting. This appears to be precisely what has happened in the case of the M'Clintock Channel population.

The Commission recommended that the Service consider at least two ways to address the problem of positively biased population estimates. First, we indicated that, rather than relying solely on qualitative assessments of the reliability of these estimates (*i.e.*, good, fair, poor), quantitative estimates of standard errors and, where possible, identification of likely biases should be provided. In this way, informed decisions could be made about the risks associated with reliance on particular population estimates. Second, the Commission believed that, in the face of such uncertainty, it would be more appropriate to use minimum population estimates in setting taking limits (as the United States has done in calculating potential biological removal levels), rather than mid-point estimates.

The Commission also noted that the program established by Canada for assessing the size and trends of its polar bear populations is based on a 20-year cycle. Thus, it may be several years before possible problems related to overharvest are detected and may be several decades before reliable data on population trends for all management units are developed. The population estimate used to establish quotas for the M'Clintock Channel population was derived from a 1978 survey. The new abundance estimate that brought the depletion of the population to light is based upon a study conducted during 1998–2000. Had Canada been relying on a more recent, but equally flawed, population estimate to establish the harvest limit for the M'Clintock Channel population, it might have been a decade or more before the overharvesting problem was identified.

One of the safeguards against overharvesting identified by the Service in its final rule authorizing polar bear imports that made it more willing to accept the 20-year assessment cycle was the familiarity of local hunters with the relative abundance of bears in the areas where hunting occurs. It was believed that the hunters would likely detect any significant increase or decrease in polar bear numbers. If the recent population estimate is correct, then our experience with M'Clintock Channel seems to undermine the basis for such reliance. Either the number of bears had been significantly overestimated in 1978 (underscoring the need to use minimum population estimates when there is considerable uncertainty), and the population remained relatively stable over the ensuing 20 years, or local hunters were unable to detect a decline of nearly 60 percent within that time span.

Another point made by the Commission in its 1995 comment letter was that the model being used by Canada to set harvest limits would result in conservative management for populations near carrying capacity, but would allow populations below their maximum net productivity level to remain depleted indefinitely. Thus, now that the M'Clintock Channel population is considered to be depleted, it should be permitted to recover before the full harvest established using Canada's model is allowed to be taken.

Information from the more recent population surveys also indicates that the sex ratio of the M'Clintock Channel population is skewed, with 65 percent of the adult bears being female. While the natural sex ratio may be skewed toward females in species with polygynous breeding strategies, the observed ratio may also reflect the effects of the increasing number of sport hunts in the area, which tend to target the larger male bears. Data provided by the Canadian Wildlife Service indicate that sport hunts in the M'Clintock Channel management unit were almost nonexistent prior to 1995, and increased markedly (to 17) in 1997, after the regulations authorizing the importation of trophies to the United States were published. In 1997 and 1998, sport hunting accounted for 60 percent and 50 percent, respectively, of the polar bears harvested in M'Clintock Channel during those years. As discussed further in our response to the next question, targeting large males or skewing sex ratios could have both beneficial and adverse consequences, indicating the need for careful monitoring of the population under such circumstances.

We note that the Fish and Wildlife Service's original proposal would have limited the taking of polar bears in sport hunts to 15 percent of the total number of bears taken in the Northwest Territories. Such a provision was dropped by the Service in the final regulations. If, however, sport hunting accounts for a substantial percentage of the removals, hunters are preferentially targeting large male bears, and the sex ratio becomes skewed to the point that it results in conservation problems, then the Service may need to revisit its proposal by considering, at least for the smaller populations, setting a cap on the proportion of takes that be allocated to sport hunters.

3. Does the Commission agree that if managed correctly sport hunts of polar bears can be a useful management tool? The focus of these hunts being the large bull males, instead of the females or cubs. In addition, Canadian sport hunts bring needed funds into native villages in Canada, where the meat of the animal is left for subsistence use by the natives.

Hunting can be an effective tool for managing wild populations. Hunting is a form of predation and predation has been recognized as one of the factors controlling wild populations. However, it does not necessarily follow that hunting is always useful or appropriate.

The size of wild animal populations is a function of the addition of new animals through immigration and reproduction, and the removal of animals through mortality and emigration. Assuming that emigration and immigration are about equal, factors that increase mortality or decrease reproduction may impede population growth or recovery, whereas factors that decrease mortality or increase reproduction may contribute to population growth or recovery. Males contribute to population

growth by breeding, but also may impede growth by killing juveniles. In polygynous species like polar bears, some males may not be required for breeding, as other more dominant males may assume all breeding privileges. In such cases, the loss of some males may not necessarily be an impediment to population growth and may actually facilitate growth if it leads to a reduction in male-related juvenile mortality. On the other hand, removal of the large, most reproductively successful males from a small population may be problematic if (1) selective removal of large males affects the dominance hierarchy, allowing smaller, less biologically fit males to reproduce, or (2) removal occurs to such an extent that insufficient numbers of males are available for breeding and the reproductive rate declines. Conceivably, then, both beneficial and adverse consequences could result from the selective hunting of large adult males. Although hunting may be used to achieve conservation objectives and to provide a source of revenue for Native communities, it must be monitored and managed carefully to ensure that adverse effects do not exceed beneficial effects, both to polar bear populations and to the Native communities that depend upon them.

4. How does the cumulative effect of all of the noise in the ocean affect the environment? How loud is the ocean without human-caused noise?

It is difficult to say how loud the ocean would be without human noise. Due to the sound-transmission properties of water, human-caused noise may be heard over great distances. In addition, levels of both naturally occurring and human-caused noise vary over time and area, making it difficult to generalize about sound levels in the absence of human noise. An assessment of naturally occurring levels may be easiest in areas like the Antarctic, where relatively little human-caused noise is generated. But again, sound travels great distances in the ocean and both proximate and distant human sounds may be detected even in the remote Southern Ocean.

We do not know what cumulative effect human sources have had on the marine environment. Although noise is an integral part of the ocean environment, our understanding of its role in the environment and the effects of added human-caused noise is still relatively rudimentary. Naturally occurring sources of noise include, among other things, seismic activity, lightening strikes, ice movements and cracking, storms, wind, precipitation, waves, and marine organisms. Taken together, sounds from naturally occurring and human sources comprise the ambient or background levels of noise in the environment. Ambient levels vary by frequency, season, and region as a function of the occurrence of these sources of noise, their distance, and sound transmission properties of the affected ocean environment. Ambient levels may vary from 20 to 40 decibels (dB)[1] (based on the Wenz curves with units of 1 mu Pa 2/Hz) at mid to higher frequencies, but increase to as much as 80 to 90 dB at low frequencies and, under unusual conditions (*e.g.*, earthquakes), increase to 140 dB or more. An increase in wind speed from 5 to 10 knots causes a 5 dB increase in ambient ocean noise across most frequencies of biological relevance.

The introduction and increase of anthropogenic sound in the marine environment can have many effects, depending on the nature of the sound, its source location, and the marine organisms exposed to it. These effects, as they relate to marine organisms, can be divided into four categories. First, the sound may be of such high energy that it causes physical injury or death to marine organisms within certain distances from the source. Possible sources of such sounds include explosive blasting (*e.g.*, channel widening), seismic testing (*e.g.*, for oil and gas exploration), and sonar systems. Second, sound may be of intermediate levels where it does not cause physical injury but results in disturbance or stress, which could in turn have serious secondary consequences (*e.g.*, disruption of breeding, feeding, or other important biological functions, changes in distribution and movement patterns, decreases in immune system function, and decreases in reproduction and survival).

Third, the addition of human sounds to naturally occurring sound levels may diminish the effective use of sound by marine organisms. Some marine organisms, most notably cetaceans, have developed the ability to use sound for a variety of purposes such as communication, location and capture of prey, detection of predators, investigation of their surroundings, and orientation. They are able to do so only to the extent that they can distinguish particular sounds from background noise. "Masking" of sounds by introduced anthropogenic noise may diminish or interfere with these functions, with potentially serious consequences. Fourth, human sounds may affect marine mammals indirectly through their effects on other marine organisms, such as fish. The extent of such indirect effects is unknown.

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[1] "Decibels" are used to indicate the ratio of sound pressure levels at the source relative to 1 microPascal (mu Pa) at one meter from the source. In our responses below, the notation "dB re 1 mu Pa @ lm" has been shortened to "dB".

Although assessments of noise effects often focus on a single type of introduced noise, marine organisms must cope with the cumulative effects of all these sounds, plus the effects of other anthropogenic influences on the marine environment (*e.g.*, pollution, competition with fisheries, vessel traffic). In addition, while the ability of marine organisms to use sound has evolved over millions of years, the changes resulting from anthropogenic input may be occurring at a rate that is greater than the ability of marine life to adapt.

As noted earlier, we presently are unable to describe with confidence the full nature and extent of effects from anthropogenic noise in the marine environment. Our inability to describe these effects does not mean that such effects do not occur. Rather, it reflects our relatively rudimentary understanding of sounds in the marine environment and our limited ability to assess the impacts of introduced anthropogenic noise, even when considering single sources over relatively short periods. Much work needs to be done before we can begin to develop a reliable understanding of the long-term effects of the multiple sound sources to which marine organisms are exposed throughout their ranges.

5. Has there been a pattern of increasing noise in the world's ocean over the past few decades? What are the sources. with the greatest contribution to this increase? How does this increase affect marine mammal populations, and how widespread are these effects?

There is general agreement that ocean noise has been increasing over the past few decades. Ross (1976) estimated that ambient noise levels rose 10 dB between 1950 and 1975 due to increased shipping noise. The National Research Council (1997) estimated that ocean noise at 100 Hz has increased by about 1.5 dB per decade since the advent of propeller-driven ships. The increasing number and size of commercial ships is consistent with these estimates of increasing ambient noise in the ocean. Although noises can travel great distances in the ocean, the nature, volume, and effects of noise can vary over space and time, and much remains to be learned about spatial and temporal trends in noise.

Commercial shipping appears to be the greatest source of anthropogenic noise in the ocean environment. Other important sources of ocean noise include seismic exploration for oil, gas, and other minerals; oil and gas drilling; marine construction; sonar systems used by fishing and military vessels; blasting for demolition, construction, and widening of ship channels; dredging; aircraft; icebreakers; and recreational vessels.

As noted in our response to the previous question, marine mammals may be affected in at least four ways by the increase in anthropogenic noise: they may be physically injured or even killed, they may be stressed and have biologically important behaviors disrupted, they may be impaired in their use of sound-based sensing mechanisms by the masking of, and the diminished ability to detect, important sounds as a result of increased background noise, and they may be affected indirectly through noise-effects on other marine organisms. Populations of marine mammals may be adversely affected if the noise leads to a decrease in reproductive or survival rates. Such effects may occur not only as a result of direct injury, but in more subtle ways, such as changes in movement patterns, foraging, or other behaviors. These changes, for example, may affect the feeding success of individuals or increase the energy expenditures of animals along their migratory path in ways that ultimately manifest themselves at the population level.

The available evidence suggests that marine mammals may change migratory paths as a result of noise, may abandon prime feeding areas, may abandon rookeries and haulouts, or display other responses that could compromise their reproduction and survival. However, it is not currently possible to state how widespread these effects are, as research on the effects of ocean noise on marine mammals is a relatively new endeavor and we are only beginning to understand the role of noise in marine mammal behavior and population dynamics. Nevertheless, there is growing concern that anthropogenic noise may pose serious risks to marine mammals and other marine organisms.

In view of this concern, the National Academy of Sciences is preparing a report on "Assessing Ambient Noise in the Ocean with Regard to Potential Impacts on Marine Mammals" with the following charge:

> This study will evaluate the human and natural contributions to marine ambient noise and describe the long-term trends in ambient noise levels, especially from human activities. The report will outline the research required to develop a model of ocean noise that incorporates temporal, spatial, and frequency-dependent variables. Recommendations will be made on the research needed to evaluate the impacts of noise from various sources

(natural, commercial activities, and acoustic-based ocean research) on marine mammal species.

This study was requested by the National Oceanographic Partnership Program with funds provided by the office of Naval Research, the National Oceanic and Atmospheric Administration, the National Science Foundation, and the U.S. Geological Survey. The report is due in January 2003 and should provide a comprehensive overview of the uncertainties and what will be required to resolve them.

6. How do we evaluate long-term effects versus short-term effects of noise in the ocean on marine animals? Can ship noise be worse for an animal than an interaction with a sonar test?

Generally both short- and long-term exposure to noise may result in injury, behavioral changes that may affect reproduction and survival, masking of noise that may disrupt important behaviors that depend on production or detection of sounds (*e.g.*, predation, detection of predators, communication), or effects on other marine organisms ecologically important to marine mammals. Studies of short-term noise effects should include research related to all of these effects, such as the study by Schlundt et al. (2000) to investigate the onset of temporary hearing loss, and the behavioral studies conducted under the Navy's Low Frequency Sound Scientific Research Program. Behavioral studies focus on observations of individual animals or groups of animals to assess possible changes in foraging behavior, movement patterns, reproductive behavior, habitat-use patterns, or physiology (*e.g.* exhibited signs of increased stress). For example, short-term observations of the western Pacific population of gray whales in 2001 suggested that those animals abandoned primary feeding habitat during nearby seismic testing for oil and gas, and then re-occupied that habitat when the testing stopped (National Marine Fisheries Service, pers. comm.).

Studies of the long-term exposure to noise focus on population-level effects that may or may not be obvious on a short-term basis. Such changes might include persistent or even permanent changes in foraging patterns or distribution (such as may occur with the western Pacific gray whale population just mentioned), long-term abandonment of otherwise preferred habitat (*e.g.*, rookeries or haulouts), declines in reproductive rates or success, increased mortality, changes in animal condition, and, ultimately, population decline.

Long-term studies are particularly important because they provide an opportunity to increase the rigor or power of research to detect significant effects if they occur. Short-term noise-induced changes in marine mammal behavior may be difficult to detect or may appear to be relatively subtle or insignificant to human observers, but their significance may be more apparent over time if seemingly small effects combine to result in significant changes in reproduction or survival. For example, the changes observed in migration of eastern Pacific gray whales during the Low Frequency Sound Scientific Research Program may seem insignificant in the context of a single season's migration, but long-term changes in movement patterns or habitat use could have significant consequences for this population. Similarly, the Navy's study of the sensitivity of humpback whales to sounds in their breeding habitat focused on short-term singing behavior of adult males. However, the long-term responses of adult female humpback whales is probably a better measure of noise effects, as the reproductive success of adult females is likely a more important determinant of population status and recovery. In addition, long-term studies are required to determine if repeated exposure to sound levels causing temporary threshold shift (hearing loss) is leading to permanent loss.

Importantly, an effective program of long-term studies on the effects of noise will require careful planning to ensure the program is rigorous, comprehensive, effective, and reliable. The thoughtful development of a long-term plan would seem to be the first and perhaps most important step in addressing concerns about the long-term effects of anthropogenic noise in the ocean environment.

With respect to the question about whether ship noise can be worse for an animal than an interaction with a sonar test, the answer depends largely on the conditions under which the animal is exposed. Ships generate loud noises and are a growing concern, although these sounds are generally audible from considerable distances and therefore animals may have an opportunity to respond before sound levels become intolerable (*i.e.*, there is some degree of warning). Also, because ship travel may be more routine than sonar testing, animals may have adjusted to or otherwise learned to accommodate ship noise. Ship sounds, which have their primary energy at frequencies below 1 kHz, are believed to have little impact on small cetaceans and many pinnipeds, but may be much more critical for baleen whales and elephant seals. In general, important considerations for comparing the impacts of ship noise to those associated with sonar operations include the location of the sources, the

loudness of the noises, their duration and frequency, the extent to which they may startle an animal, the animal's previous experiences with each noise, its activity, its age and sex class, its reproductive and physiological condition, the effects on ecologically related species, and other sources of noise in the animal's environment. Exposure to a single sonar test or the passage of a single ship may not have significant lasting effects. Repeated exposures, however, may cause significant permanent effects, such as abandonment of important habitat.

QUESTIONS FROM RANKING MEMBER ROBERT UNDERWOOD

1 . You only mention briefly that the definition of "harassment" may come up in the reauthorization bill. Could you please identify the Commission's stance on the definition?

At the October 11 hearing, we explained that it would be inappropriate for the Commission to recommend or endorse specific legislative proposals until an Administration position had been formalized. Although considerable work has been done toward completing a proposed bill, concurrence on all issues under consideration has not yet been reached within the Administration. Thus, we are still unable to offer specific amendatory language with respect to the harassment definition. We can, however, identify, problems with the existing definition and possible alternatives being proposed by others that Congress might want to consider as it moves forward with reauthorization of the marine Mammal Protection Act.

First, the introductory clause to the existing definition requires that harassment be caused by an "act of pursuit, torment, or annoyance..." Some have suggested that, under this provision, any action that annoys (*i.e.*, disturbs) or could annoy (or disturb) a marine mammal fits within the definition. This limitation has led others to a much narrower interpretation. Some have suggested that harassment occurs only if the disturbance or injury to which a marine mammal is subjected is caused intentionally. That is, pursuing, tormenting, or annoying an animal is an action that requires intent. Clearly, this is not what Congress had in mind when it enacted the harassment definition in 1994. Otherwise, it would have made no sense to provide for the incidental taking of marine mammals by harassment (which generally occurs unintentionally), which Congress specifically did under section 101(a)(5)(D). From the marine mammal's perspective, it makes no difference whether any disturbance or injury that results from a person's actions was intentionally inflicted or not; it would have the same effect on the animal's behavior or health and, ultimately, on its survival and reproductive success. In light of the apparent ambiguity of. the existing provision, it seems that Congress may want to consider clarifying the types of actions that would constitute harassment.

Second, to constitute Level A harassment, an action need not result in an injury to a marine mammal, or even create the likelihood that an injury might result, but only present the potential for such an injury. Similarly, the definition of Level B harassment does not require that disturbance occur or be likely, only that there be a potential for such disturbance. Some have argued that, by relying on a determination of potential injury or disturbance, the Act has created a highly subjective standard that could be interpreted as including even the remotest possibility that injury or disturbance might occur. Therefore, Congress might want to consider some clarification that would add an element of likelihood to the definition.

Others, such as the National Research Council panel that reported on marine mammals and low-frequency sound (National Research Council 2000), have taken issue with the breadth of the type of injuries or behavioral modifications that are included within the existing harassment definition. They believe that the definition should be modified to "differentiate between immediate injury and longer-term, significant physiological and behavioral effects that may affect the growth, reproduction, or mortality of animals." (Id. at 67.) With respect to Level B harassment, the panel suggested the following redefinition:

> Level B - has the potential to disturb a marine mammal or marine mammal stock in the wild by causing meaningful disruption of biologically significant activities, including but not limited to, migration, breeding, care of young, predator avoidance or defense, and feeding.

(Id. at 69.)

While the Commission is sympathetic to the concerns raised by the panel, we believe that its proposal suffers from some of the same problems as the existing definition. It introduces two subjective and ambiguous terms - "meaningful" and "biologically significant." Even were there a common understanding of these terms, their inclusion appears to be premised on an unrealistically high assessment of our ability to differentiate between biologically significant and insignificant responses. By doing so, the proposed definition effectively reverses the precautionary burden

of proof that has been the hallmark of the Marine Mammal Protection Act since its inception in 1972. For example, under existing law, a person seeking to undertake an activity that likely will incidentally take marine mammals is required to obtain an authorization and to demonstrate that the taking will have a negligible impact on the affected marine mammal stocks. Under the panel's proposed definition, this burden would be switched, such that it would be incumbent upon the regulatory agencies to demonstrate not only that marine mammals are likely to be disturbed, but that the effects of the disturbance are somehow likely to undermine the growth, survivorship, or reproductive success of those animals. Recognizing the limited resources available to the agencies responsible for implementing the Act, and science's limited ability to project the long-term impacts of short-term disruptions, there is a substantial risk that adverse, and possibly irreversible, impacts (*e.g.*, abandonment of certain areas) might occur before the agencies are able to demonstrate that meaningful disruption of biologically significant activities is being caused by disturbance. The problem is further complicated when from repeated exposures to a single source of sources over a broader range, are factored into the existing level of uncertainty, it would be burden of proof to the regulatory agencies as the cumulative impacts, either disturbance or to multiple equation. In light of the inappropriate to shift the panel has recommended.

The panel's proposed redefinition of Level B harassment also creates possibly insurmountable enforcement difficulties for the regulatory agencies. Under the most common scenario, an enforcement case brought for harassment would be based upon someone intentionally chasing, swimming with, or otherwise disturbing a marine mammal. Let us say, for example, that a person riding a jet-ski chases a dolphin 100 yards downshore along a beach. When the dolphin stops, the jet-skier again pursues the dolphin, which moves farther down the shore. This scene is repeated two or three more times. In such an instance there should be no question that harassment has occurred. However, under the panel's proposal, the National Marine Fisheries Service could successfully bring an enforcement action only if it showed that the offender not only caused the disturbance, but that some biologically significant activity of the dolphin had been meaningfully disrupted. Arguably, causing a dolphin to swim an additional 400 or 500 yards during the course of a day does not rise to this level. Similarly, disrupting the animal's feeding, resting, or other such activities for 10 or 15 minutes might not have any long-term effects that would rise to the level of meaningful disruption. Unless such a link were made, no taking would have occurred.

2. Though you never mention it in your statement, the issue of Navy sonar systems is one that is extremely contentious and also before the Subcommittee today. I know that the Commission submitted detailed comments to NMFS and the Navy. Could you please outline the Commission's views of the Navy sonar systems, and the research that has been done to formulate both the draft and final environmental impact statements?

We recognize that the issue of Navy sonar systems is extremely contentious and welcome the opportunity to comment on it. We have attached a copy of our 5 June 2001 letter to the National Marine Fisheries Service regarding the proposed implementation of the Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) sonar system. The letter provides comments on an application from the Navy requesting an incidental take authorization under section 101(a)(5) of the Marine Mammal Protection Act. Under that provision, the applicant and the National Marine Fisheries Service, as the proponent of the proposed regulations, carry the burden of demonstrating that deployment and operation of the SURTASS LFA sonar system will have no more than a negligible impact on the potentially affected marine mammal species and stocks. We confine our comments to the SURTASS LFA sonar system because we do not know the specifics of other Navy sonar systems. Nonetheless, we may have similar concerns about those other systems depending upon the sound characteristics of what is being deployed, where it is being used, what marine mammals might be affected and in what ways, and so on.

The Navy, in cooperation with other research agencies and scientists, has done a commendable job of initiating useful investigations into the potential effects of SURTASS LFA sonar operations. This effort combined the resources and expertise of several participants and provides a model for cooperative efforts needed to address remaining questions about the potential effects of SURTASS LFA. Nevertheless, because important questions remain unresolved, the Marine Mammal Commission believes that considerable monitoring and additional research are warranted to provide a better understanding of possible effects. We present our concerns under

four headings: 1) research related to injury and behavioral harassment, 2) mitigation of effects, 3) monitoring and reporting of effects, and 4) general comments.

Research related to injury and behavioral harassment - With respect to marine mammals, the Navy's program focused on the potential for SURTASS LFA sonar operations to injure marine mammals or cause behavioral harassment that could lead to population-level effects. The draft environmental impact statement suggested that 180 dB was a reasonable and conservative expected lower limit for temporary threshold shift (temporary hearing loss) based on evidence of hearing loss in humans, audiometric and anatomical data from some marine mammals, and a study by Ridgway et al. (1997; later expanded and reported by Schlundt et al. 2000). The study by Ridgway et al. (1997) provided the only evidence based on actual tests of hearing in live marine mammals (bottlenose dolphins), and was cited heavily in the proposed rule for the small take authorization. The results of the study were consistent with the hypothesis that 180 dB is a reasonable expected lower limit for temporary threshold shifts in marine mammals. However, as the investigators themselves pointed out, the study could not,.and did not, address all the pertinent questions related to the potential for injury. In this regard:

- The study used bottlenose dolphins, which may or may not be good indicators of hearing sensitivity and propensity for threshold shifts in other marine mammals.
- The sensitivity of the animals was tested to sounds of one-second duration, whereas SURTASS LFA sonar transmits sounds for periods of between 6 and 100 seconds, and it is known that the sound levels needed to cause temporary threshold shifts decrease as the sound duration increases.
- Frequencies tested in the study were 3, 20, and 75 KHz, whereas SURTASS LFA sonar transmits sounds less than 1 KHz.

The study was then expanded to include two beluga whales, and to include tests at 0.4 kHz and 10 kHz (Schlundt et al. 2000). Sounds projected at the lower frequency of 0.4 kHz comprise a better model for tests of the potential effects of SURTASS LFA, and increase our level of confidence that threshold shifts are less likely to occur as a result of SURTASS LFA sound transmissions at received levels less than 180 dB. Nonetheless, as bottlenose dolphins and beluga whales may not be good indicators of the vulnerability of other species, and as the sounds used in these tests were only of one-second duration, the Commission believes that additional testing of this type is warranted.

To address the question of behavioral harassment, the Navy established a Low Frequency Sound Scientific Research Program to investigate the effects of LFA transmissions on four species of large whales (blue, fin, gray, and humpback) during feeding, migration, and breeding. The following points illustrate the limitations of these studies and the need for additional monitoring and research on possible behavioral effects.

- The four whale species used in the study were thought to have the greatest hearing sensitivity at the frequencies used by SURTASS LFA. However, the sensitivity of some other species is poorly known. Although SURTASS LFA sonar uses lower frequency sounds than the mid-range sonars involved in the recent Bahamas incident, the occurrence of those strandings clearly indicates that much remains to be learned about the potential effects of sonar sounds in the variable marine environment.
- Changes in behavior were observed in migrating gray whales and humpback whales, but the significance of those changes is unknown. While some were inclined to dismiss the changes as insignificant and temporary,. in our view, such a dismissal is premature based on the information currently available.
- The studies were short-term in nature and were not designed to determine the long-term significance of exposure to SURTASS LFA sounds.
- The whales in the studies were subjected to sounds of less than 155 dB, well below the levels to which they might be exposed (up to 180 dB) by SURTASS LFA operations. Although some whales may themselves generate sounds of 180 dB or more, it is not clear that they will respond in a similar fashion or be otherwise unaffected by the sounds of a comparable loudness produced by SURTASS LFA sonar.

Here, too, the Commission believes that these studies provide useful information about potential behavioral responses of marine mammals to SURTASS LFA. The Commission does not believe, however, that without additional safeguards, these results are sufficient to ensure that significant adverse effects will not occur.

Mitigation of effects - To limit the potential for injury or behavioral effects on marine mammals, the Navy proposed three mitigation measures: 1) halting transmissions whenever a marine mammal is known to be sufficiently close to the sound projectors to be exposed to sounds greater than 180 dB, 2) modifying nearshore op-

erations so that sound levels do not exceed 180 dB within 12 nautical miles of mainland or island coastlines, 3) excluding operations within offshore areas of biological importance, including Arctic and Antarctic regions. Although these mitigation measures are likely to reduce the potential effects of SURTASS LFA sound transmissions, they do not provide the requisite assurances that the transmissions will have negligible effects on marine mammal populations. In a 5 June 2001 letter (attached) to the National Marine Fisheries Service on the small take authorization for SURTASS LFA, the Marine Mammal Commission identified the limitations of available information in assessing the possible effects of SURTASS LFA sonar and suggested further research to address these needs.

- The detection of marine mammals near the sound projectors depends on (1) visual observations, which are limited by daylight and sea surface conditions, (2) passive acoustic devices, which require that animals make detectable sounds as they pass near the projectors, and (3) high frequency marine mammal monitoring (HFM3) sonar, which is considered to be the most effective detection system, but which has not been fully tested and may itself have significant detrimental effects that warrant investigation.
- Limiting the exposure of marine mammals to sound levels less than 180 dB may reduce the potential for injury to a negligible level, but does not necessarily reduce the potential for significant behavioral effects. Inasmuch as adverse effects may occur at received sound levels below 180 dB, additional studies are needed to provide insights into behavioral responses (both short- and long-term) to sound levels greater than 155 dB.
- The Navy and the National Ocean Service have offshore areas of biological importance, but areas merit such protection. Extensive data patterns and distribution apparently have not been designation of such areas and further review seems identified a total of four it is likely that many more on marine mammal movement considered in the warranted.

Monitoring and reporting - The Navy's proposed monitoring program, as described in its environmental impact statement, consists of the three detection methods described above (visual observation, passive acoustic monitoring, and HFM3 monitoring), plus an effort to correlate stranding data with SURTASS LFA operations. In its 5 June 2001 letter to the National Marine Fisheries Service, the Commission expressed its concern that the proposed rule authorizing small takes of marine mammals was not adequate to provide the information necessary to (1) document how and how many marine mammals are taken incidental to the transmissions, or (2) validate the assumptions used to conclude that SURTASS LFA operations will have only negligible impacts on marine mammals. The limitations of monitoring near the sound projectors are described above. It is our understanding that the National Marine Fisheries Service and the Navy are working closely to assess the efficacy of the proposed mitigation measures. Nevertheless, at this time the efficacy has not been demonstrated and, even under the best of conditions, the monitoring program is designed only to detect short-term impacts to animals that might be injured by sound transmissions. If the proposed monitoring methods are inadequate for detecting behavioral effects on a long-term basis, serious effects could occur but go unnoticed. Efforts to correlate stranding data with SURTASS LFA operations also will have limited utility as animals affected in offshore areas will be less likely to strand on beaches where they could be detected. In addition, the stranding data collected may not be adequate to detect all or even a portion of the animals that could be affected, and results of correlations are likely to be confounded by other factors that cause stranding.

General comments - In a general sense, the concerns raised above are similar to those raised with respect to the potential ecological consequences of many human activities in the marine environment. An activity has been proposed that may have clear social, economic, or security benefits, but that also could result in potentially serious detrimental effects on marine ecosystems. Useful research has been conducted through commendable cooperative efforts by the Navy and other researchers. Nevertheless, the Commission believes that much remains to be learned before it is possible to conclude that detrimental, and possibly irreversible, effects are unlikely to occur. In resolving the questions of whether and how to proceed with such activities, the small take provisions of the Marine Mammal Protection Act reflect a precautionary approach, requiring the responsible agencies to proceed cautiously in the face of uncertainty. This might be accomplished by issuing a limited authorization coupled with a rigorous long-term research and monitoring effort that would allow for the development of SURTASS LFA operations while maximizing the probability that potential detrimental effects will be both identified and maintained at negligible levels. The model of cooperative research already developed could vastly

improve our understanding of the potential effects of SURTASS LFA sonar operations if given sufficient support and continued under a well-directed research plan.

Finally, the potential effects of SURTASS LFA sonar operations must be evaluated in the context of other human sources of noise in the oceans. Marine mammals and other marine life are confronted with a combination of natural and human-related sounds, and the effect of any one source must be evaluated in the context of all the others. As the amount of noise introduced into the marine environment is growing, a robust plan is needed to assess and prevent its potential detrimental effects.

3. The recent marine mammal issue with the Suarez Circus in Puerto Rico has brought to light some problems within traveling facilities that display captive marine mammals, as well as with the administrative performance of both the Animal and Plant Health Inspection Service (APHIS) and the U.S. Fish and Wildlife Service (FWS). Could you please state the Commission position on the Suarez Circus polar bears? Does APHIS or FWS have sufficient regulatory ability under the MMPA or Animal Welfare Act to seize the polar bears? What should APHIS and the FWS be doing now to ensure the humane care and treatment of these animals, including if necessary, the seizure of these animals on behalf of the U.S. government?

What regulatory errors occurred in the licensing or permitting of this facility that allowed these bears to be imported into the U.S. in the first place?

Commission position - As reflected by the Commission's letters to the Animal and Plant Health Inspection Service and Fish and Wildlife Service, our general position with respect to the Suarez Circus polar bears is one of concern. Although no Commission representative has visited the facility, if the reports and video tapes that we have received from some of those who have visited the facility accurately portray the conditions under which the animals are being maintained, we are led to one of two alternative conclusions - either the facility has failed to meet the applicable care and maintenance standards or the "minimum standards" promulgated by APHIS are too minimal to accomplish the stated goal of the Animal Welfare Act, which is to "to ensure that the animals are provided humane care and treatment."

Among the Commission's key concerns are the temperatures at which the bears have been maintained, and the fact that the bears have apparently not always been kept in quarters that are sufficiently cooled or provided access to sufficiently chilled pools of water. In this regard, we note that the applicable regulations specify that marine mammals "shall not be housed in outdoor facilities unless the air and water temperature ranges which they may encounter ... do not adversely affect their health and comfort." At several times during their stay in Puerto Rico, the bears at the Suarez Circus have been exposed, sometimes for prolonged periods, to temperatures in excess of 80 F. This is well outside the normal temperature ranges to which polar bears are exposed and, unless there is some way for them to avoid such exposure, can be expected to adversely affect their comfort, and possibly their health.

The controversy surrounding the Suarez Circus bears also underscores the problems associated with relying largely on subjective standards regarding areas of compliance under the Animal Welfare Act, as APHIS does with temperatures. There is no clear-cut demarcation of what constitutes an acceptable temperature range for maintenance of the animals. Thus, it is difficult for the Service, the facility, the Commission, and others to assess whether or not the facility is in compliance. The standard applied by APHIS may even vary if different inspectors are sent to the facility on different days. While the development of such universal objective standards may be a good idea as APHIS reviews and updates its marine mammal regulations, establishment of objective review criteria is essential to address specific problem situations such as that involving these bears. The bears have now been in Puerto Rico for more than half a year, and we still do not have a good understanding of what temperature range APHIS thinks is acceptable for maintenance of the bears or of the agency's rationale for such a determination.

We also do not know how well the facility is complying with the requirement to keep temperatures within an acceptable range during those times when an APHIS inspector is not present. Based on the number of times that APHIS inspectors have noted high temperatures within the facility and the reports by others that cooling equipment has not been used continuously, the Commission questioned the appropriateness of relying exclusively on facility personnel to compile such records and recommended that the Service install or require the facility to install a tamper-proof thermometer to monitor temperatures within the facility on an ongoing basis. The Service responded that there is no regulatory requirement for a facility to record

pool temperatures, and thus, apparently, no heightened requirement for a facility to demonstrate compliance even when repeated problems have been documented. The Service further replied that, because regulations regarding temperatures are "performance-based," it would be inappropriate to require the facility to meet an "engineering standard" that would require it to implement around-the-clock temperature monitoring.[2]

A related issue is whether and when polar bears need to be provided with access to pools of chilled water. The Animal and Plant Health Inspection Service has determined that denying the bears access to such pools (and air conditioning) for the 65 percent of the time they are in the transport vehicle is acceptable, provided (with one notable exception[3]) that access is given during the periods between 8 a.m. and 5 p.m. Aside from the question of maintaining polar bears at appropriate temperatures, there is a separate requirement under the space requirements applicable to facilities maintaining polar bears that each primary facility include a pool of water of specified dimensions. Presumably this requirement means not only that such a pool be present, but that the bears be provided reasonable access to it. Further in this regard, the applicable regulations specify that an enclosure that does not meet the minimum space requirements (which in this case includes the requirement pertaining to a pool of water) cannot be used for permanent housing purposes.

The Commission also has raised concerns about the adequacy of the facility's veterinary program and the appropriateness of the training methods being employed. These are detailed in letters already provided to your office and will not be repeated here. APHIS has yet to respond to our questions concerning the legality of the reported training methods, which allegedly include striking and prodding the bears to induce them to perform. As for the issues concerning medical care, APHIS has determined that the facility was not at fault in the 1998 death of one of its bears from dirofilariasis, a condition that, if treated promptly, should not have been life-threatening. The Service has yet to respond to the Commission's questions regarding the diagnosis and treatment of other possible medical conditions the bears may be experiencing.

The Service did, however, decline to provide the Commission with copies of any medical records concerning the Suarez Circus bears. The Service noted that such records, although available for review by its inspectors, are not submitted to the Service and that it could not compel the facility to provide them to "outside parties." This dismissal of our request fails to recognize the oversight function and unique role of the Commission concerning activities of Federal agencies pertaining to marine mammals. We believe that the Service could compel the facility to provide it with these records and, if obtained, that the Service would have to provide them to the Commission if requested, subject, of course, to the privacy and information protection provisions applicable to all Federal agencies. Without access to such information, the Commission's ability to carry out its responsibilities under the Marine Mammal Protection Act is compromised. Thus, to the extent that there is any ambiguity, the Commission believes that action should be taken to clarify that the Commission shall have access to such materials in situations where legitimate questions concerning the care and maintenance programs at a facility have been raised.

Another of the principal recommendations made by the Commission regarding the Suarez Circus bears was for APHIS, in cooperation with the Fish and Wildlife Service, the Commission, and outside experts, to undertake a thorough, unannounced inspection of the facility so that the continuing allegations of non-compliance can be laid to rest. The Service has responded that, because of its ongoing investigation of the facility, it would be inappropriate to convene such a review panel at this time.

Seizure authority - Both the Animal and Plant Health Inspection Service and the Fish and Wildlife Service can, under their respective authorities, seize animals under certain circumstances. The Animal Welfare Act, at 7 U.S.C. § 2146, directs the Secretary of Agriculture to promulgate regulations as deemed necessary "to permit inspectors to confiscate or destroy in a humane manner any animal found to be suffering as a result of a failure to comply with any provision of [the Act) or any regulation or standard issued thereunder..." The Service has characterized its authority in this regard as follows

> Our authority to confiscate animals is limited to a narrow set of circumstances in which a licensee refuses or otherwise fails to provide proper

[2] Despite the Service's characterization of these standards, it would seem that establishing a set temperature range for maintaining the bears would be performance-based, while specifying how those temperatures are to be achieved would be engineering-based.

[3] For unexplained reasons, the Service has determined that the facility may keep the bears without access to air conditioning or pools of water on Sunday afternoons, during the hottest part of the day.

> care for animals that are found to be suffering. The licensee must be notified of any intent to confiscate the animals for noncompliance with the AWA regulations and be allowed an appropriate period of time, as determined by our Animal Care program, to correct the noncompliance. If the facility corrects any cited problem and provides the requested care, the animals are not confiscated.

This description, however, varies somewhat from the applicable regulatory provision (9 C.F.R. § 2.129), which could be interpreted as permitting confiscation prior to conducting a hearing, if a finding is made that an animal is suffering or distressed or the animal's health is in danger.

In any case, however, the Service has notified the Commission that, while "several problems" have been recorded concerning the maintenance of the polar bears at the Suarez Circus, "our inspector has not observed signs of animal suffering that would prompt confiscation of the animals."

Section 104(c)(2)(D) of the Marine Mammal Protection Act, 16 U.S.C. § 1374(c)(2)(D), authorizes the Secretary of the Interior to revoke a public display permit and to seize the marine mammals maintained thereunder if (1) the Secretary finds that the facility no longer meets the requirements pertaining to education or conservation programs and public accessability, or (2) the Secretary, with the concurrence of the Secretary of Agriculture, finds that the facility no longer meets the requirements pertaining to licensing under the Animal Welfare Act and is not reasonably likely to meet those requirements in the near future. With respect to this last criterion, the Animal and Plant Health Inspection Service has taken the position, albeit in a different context, that license suspension (as opposed to license revocation) is all that is required to make such a finding, provided that there is a reasonable basis for believing that the facility will not come into compliance with all Animal Welfare Act requirements in the near future.

In revoking a permit under the Marine Mammal Protection Act, the Fish and Wildlife Service is required to follow the procedures set forth in section 104(e) of the Act, which affords the permittee a right to a hearing prior to any such revocation. Although Constitutional due process requirements would also apply to a seizure of animals for noncompliance, the Act does not specifically require that such an action is subject to the procedural requirements of section 104(e). Thus, the statute arguably provides sufficient latitude for the Service to seize animals if their health or welfare is jeopardized by the noncompliance, and to conduct a hearing after the animals are in the Service's custody.

Needed actions - The most crucial thing that we believe the Services should be doing is reviewing the adequacy of the facility's care and maintenance program. As noted above, because of the questions that have been raised with respect to the adequacy of APHIS' monitoring of the facility, we believe that the best way to accomplish this would be to conduct an interagency inspection involving the Services, the Commission, and appropriate outside experts. While we do not know the precise details of the inspections that have been conducted, from the records available to the Commission, it appears that they have been carried out by a single inspector. Because of the subjectivity involved in determining compliance with several components of the care and maintenance standards (such as what constitutes an acceptable temperature range), it would make sense to have a broader review. Further in this regard, we note that APHIS inspectors have a wide range of responsibilities concerning the care and maintenance of a variety of species. While we have no information concerning this particular inspector's areas of expertise, it may be that he is not a polar bear, or even a marine mammal, specialist. Thus, it would seem prudent to include veterinarians and others with such expertise in an inspection of the facility to obtain their advice in making the required findings. Among other things, they would be able to assess the health of the bears and review the adequacy of the medical, as well as the husbandry, program.

Also, as noted above, APHIS should take steps to enhance its ability to monitor compliance by the facility during those times when its inspectors are not present. While this is not something that is routinely done, it seems to be the only way in this instance to address the numerous complaints concerning the conditions under which these bears are being maintained. At a minimum, the Commission believes that the temperatures of the enclosures in which the bears are housed and the temperatures of the pools of water they are provided should be monitored by an independent source on an ongoing basis. The Commission has recommended that this may best be accomplished by installing tamper-proof recording thermometers.

The Commission also has recommended that APHIS review the appropriateness of maintaining polar marine mammals in outdoor facilities in tropical environments. If, based on such a review, the Service determines that such displays are appropriate in some instances, it should provide additional guidance to delineate specifi-

cally the conditions under which these exhibits are allowed. Further, the Service should undertake a review of its standards in light of the problems that have arisen in the Suarez Circus in an effort to make them more objective, and thus more enforceable and more easily understandable by the regulated community and the public. At the very least, the Service should take action to set specific performance criteria with respect to allowable temperatures for the maintenance of the Suarez Circus polar bears. The Service should also review with the facility when the bears are expected to be housed in the primary facility and when, and under what conditions, they may be maintained elsewhere.

APHIS also needs to respond to the questions raised in the Commission's 4 October letter concerning the legality and appropriateness of using training methods that involve the striking or prodding of the animals. Depending upon the Service's response, it should either take action to enforce this prohibition at the Suarez Circus or take action to reinstate the specific prohibition against such practices that had, until recently, been included in section 3.108 of its marine mammal regulations.

With respect to actions needed to be taken by the Fish and Wildlife Service, the Commission recommends that the Service move promptly to conclude its investigations of the identities and origins of the Suarez Circus bears and take any remedial action that might be warranted based upon those results. The Service also needs to conclude its efforts to resolve the issues concerning the facility's compliance with the education or conservation program requirements of the Marine Mammal Protection Act. Further, and perhaps more important, the Service should encourage the Animal and Plant Health Inspection Service to undertake the interagency inspection of the facility recommended by the Commission and should assist in facilitating such a review.

Permitting and licensing issues - There are at least two things that the Commission believes the reviewing agencies should have done prior to authorizing the importation of the Suarez Circus polar bears that they apparently did not do. With respect to the Fish and Wildlife Service, we believe that it should have done more to resolve questions concerning the accuracy of the CITES documentation and the identities and origins of the bears prior to issuing a permit. In this regard, the Commission and others who commented on the permit application identified several discrepancies and inaccuracies that we believe should have been resolved before permit issuance. Nevertheless, it appears to the Commission that the Service issued the permit before fully resolving these matters. In its 8 May 2001 response to the Commission's comments, the Service noted -

> We share the Commission's concern regarding these apparent inconsistencies, and have communicated our concern to the applicant. Further, in our letter to the applicant ... we have noted these apparent inconsistencies and informed the applicant that it is his responsibility to ensure that the CITES re-export documents, needed to export these animals from Jamaica, should correspond to the correct CITES original documents...

Subsequently, in a 4 October 2001 letter to the Service, the Commission raised concerns about the identity of one of the bears, based on a statement from the director of Zoo Atlanta that one of the bears allegedly born at the zoo had in fact died years earlier. This issue is currently being investigated by the Service. While this is appropriate, the Commission believes that, had the Service thoroughly investigated the irregularities in the documentation at the outset, this problem, and perhaps others, would have been detected prior to permit issuance. That was the appropriate time to resolve such issues. Knowing the true identities of the bears is key to making informed determinations regarding the required findings under the Marine Mammal Protection Act, *e.g.*, whether the bears were or might have been pregnant or nursing, or less than eight months old, at the time of taking, or possibly were taken in violation of the laws of their countries of origin. While it is possible that the Service conducted enough of an inquiry to have addressed these questions prior to issuing the permit, the Service, after much prompting, has yet to provide any information to the Commission to indicate that this was the case.

The second area of concern involves the pre-licensing inspection of the facility conducted by the Animal and Plant Health Inspection Service. The Commission believes that the Service should have made a more concerted effort to ascertain compliance with all aspects of the applicable care and maintenance requirements at the outset. For example, during the first inspection of the facility after the polar bears arrived in Puerto Rico, no mechanical ventilation or cooling was being provided in the primary enclosure; the pools of water, although present, were not being cooled; and, although the transport vehicle where the bears are being housed much of the time has an air conditioner, it was not being used. Presumably, these problems could have been foreseen and prevented if, during the pre-licensing inspection, the

Service pursued with the facility the temperatures at which the bears would be maintained while in Puerto Rico and its plans for achieving them. The answers to such questions also should have prompted inquiries about the facility's plans concerning the extent of time the bears would be housed in the transport vehicle, rather than the primary enclosure. Also, the death of a polar bear from heart worm while the facility was touring in Mexico should have alerted the Service to possible problems with the medical care program, sufficient to prompt additional inquiry. Yet, based on the initial on-site inspection report, the inspector noted that one of the bears was suffering from some sort of infection on its face (possibly mange), but had not been examined by the attending veterinarian. Apparently, it was only at the inspector's prompting that an examination was conducted. Moreover, the inspector found that medical records were lacking or incomplete for that animal.

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Response from Margaret F. Hayes, Director of Office of Ocean Affairs, Bureau of Oceans and International and Scientific Affairs, U.S. Department of State

QUESTION FROM RANKING MEMBER ROBERT A. UNDERWOOD

l. In regards to the U.S./Russia polar bear treaty, is it your opinion that the Russian Federal Government will provide the necessary resources for research, enforcement and management? Is it implied in this agreement that the U.S. will shoulder the financial burden to support this new polar bear commission?

ANSWER: Article 8, Paragraph 4 of the Agreement stipulates: "The Contracting Parties shall be responsible for organizing and supporting the activities of their respective national sections as well as the joint activities of the Commission." By signing the Agreement the Russian Federation made a commitment to "take such steps as are necessary to ensure implementation of this Agreement." (Article 10, Paragraph l.)

The draft legislation necessary for the U.S. to implement the Agreement includes a section (Section 9) on "Authorization of Appropriations" to meet the new obligations the Agreement creates. We anticipate that a portion of these funds could support joint research and management activities identified by the Commission, including certain collaborative programs between the two countries. The funding situation in Russia is less clear; however, we understand that some level of financial support has already been given to the Chukotka Branch of the Pacific Ocean Institute for Fisheries and Oceanography (TINRO) to plan and design a harvest monitoring and enforcement program.

Responses from Charles Johnson, Executive Director, Alaska Nanuuq Commission

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1) What is the status of the polar bear populations in Alaska and Russia? Do you have any knowledge on the status of polar bear populations world wide?

There are two populations of polar bear in Alaska, the Southern Beaufort Sea population and the Chukchi/Bering Sea population.

The Southern Bering Sea population is shared by the North Slope of Alaska and Western Northwest Territories and the Yukon in Western Canada. This population has been heavily studied and closely monitored. Using new methods Steve Anstrup of USGS, who has conducted much of the studies, has revised the minimum population estimate upward from 1800 to 2250 animals. It is thought that the population grew during the 70's and 80's and leveled of during the 90's as the numbers neared carrying capacity.

This view is also reflected in the observations and encounters of villagers and hunters in their reports of more bears coming near the villages.

The hunting of this population is managed by an agreement between the Inupiat of the North Slope Borough and the Inuvialuit of the Northwest Territories. This is a voluntary agreement that sets equal harvest quotas for Alaska and Canada. The agreement also seeks to protect females and females with cubs. During the last ten years out of a total quota of 800 animals, 680 have been taken. The percentage of females taken has declined to a third of the take. The success of this agreement has insured that the population of polar bears in the Southern Beaufort Sea remains healthy and vibrant.

The Chukchi/Bering Seas population has not been as heavily studied as the Southern Beaufort Sea population. The range of this stock has been established by radio collar satellite tracking and extends from west of Wrangel Island in Chukotka to Point Barrow in Alaska and south to St. Lawrence in Alaska. Based on harvest data, observations of density and other observations it is thought this population has grown similarly to the Southern Beaufort population. It is estimated at between 2000 and 5000 animals and appears to be healthy.

Not as much is known of the other populations in Russia. The Barents Sea population is shared with Norway and is estimated at between 2000–5000 animals. The Kara Sea population is largely unknown and is in a relatively unproductive area. The Laptev Sea is estimated at between 800–1200 animals, but with a high degree of uncertainty.

As for the status of polar bear populations world wide, the IUCN Polar Bear Specialist Group met in Greenland in June 2001 to review polar bear status. Based on historical harvest levels and current management practices the world population is estimated at between 21,500–25,000. Most of the population levels are stable with the exception of the Northern and Southern Beaufort Seas, which are thought to be increasing, and the Baffin Bay and Davis Straits population, which are thought to be decreasing due to climate change. As the report of the meeting is finalized we can send you a copy.

2) Do think the sport hunting of polar bears, as Ms. Young stated in her testimony, has been the cause of the decline in polar bear populations throughout their range worldwide? Isn't it true that sport hunts bring in much needed money to native villages in Canada and focus primarily on males, not females or cubs, and can help in the survival of these populations?

Sport hunts are only conducted in Canada. Each village is allocated a quota, which is part of a sustainable harvest limit for each population. Each village can use its quota for subsistence or it can set aside part of the quota for sport hunting. These quotas are strictly enforced. Sport hunting can only be done with a village guide and dog teams. The use of snow machines is not allowed. The level of the harvest is the meaningful statistic, not who harvests the animal. As long as harvest levels, including sport hunting, are within the sustainable harvest limit, the polar bear populations should remain stable and healthy.

Sport hunters want trophies and the trophies are big males. By targeting big males pressure is taken off the females and females with cubs. Since big males are the primary predator of cubs, reducing their numbers may have a positive effect on the survival of cubs.

Sport hunts are an economic boost for the villages. The villages of northern Canada get up to $17,000 USD for a hunt. To bring an observer, such as a cameraman costs another $10,000 USD. From the reports of the hunter associations, the sports hunts are sold out as much as five years in advance.

3) What assurances have the Russians given to ensure that subsistence hunts will remain within the quotas determined by the International Commission established by the Treaty? If there are overage, how will they be handled? Should there be any concern for unauthorized hunts occurring in Russia?

Russia has signed the treaty and thus has obligated itself to abide by the terms of the treaty. The Ministry of Natural Resources and the government of Chukotka

have been working with the Association of Traditional Marine Mammal Hunters of Chukotka (ATMMHC) to develop regulations to manage the hunt of polar bears. These regulations will include marking and tagging of legally taken hides, enforcement measures, seasons and licensing.

One of the methods of managing quota overages may be to set block quotas for a five year period such as is done by the Alaska Eskimo Whaling Commission. If a quota is exceeded in one year it can be adjusted for a following year.

The U.S. Fish and Wildlife Service and the Alaska Nanuuq Commission will conduct a marking and tagging workshop for our Russian colleges this winter in Nome.

Illegal hunting in Russia is of great concern. Many Russians are under the miss conception that hunting is now legal since the treaty has been signed. They don't understand that it must be put in force by legislation in the U.S. or by decree in Russia. Another concern is that reports indicate military personnel who may be difficult to prosecute are doing some of the hunting.

The Alaska Nanuuq Commission and the Association of Traditional Marine Mammal Hunters of Chukotka are undertaking a public education campaign in Chukotka to promote polar bear conservation and to educate the hunters about the treaty and its provisions. Calendars, which are popular in Russia, are being developed for this purpose.

QUESTION FROM RANKING MEMBER ROBERT A. UNDERWOOD

1) Mr. Johnson, with the provisions of the draft Polar Bear Treaty between the United States and the Russian Federation, how capable do you feel is the ability for the native managers to prevent poaching and enforce the provisions of the Treaty?

When Ambassador Ushikov signed the Treaty in October 2000 he noted that this is the most democratic treaty Russia has ever agreed to. For the first time native peoples participated in the negotiations and the implementation of a treaty.

The native peoples of Chukotka were severely repressed by the Stalinist government of Governor Nazarov. He ordered the Yupik Society of Chukotka dissolved for failing to comply with reporting requirement he secretly ordered. He would close airports where we had planned workshops with the ATMMHC. He would impose licensing requirements that could not be met by our USFWS biologists working with the Association and Nanuuq Commission.

The U.S. Fish and Wildlife Service has published a report on polar bear habitat use in Alaska taken. from the observations of native hunters. This report contains denning areas, hunting and feeding areas and migration and movement routes by seasons. This report covers half of the Chukchi/Bering Sea population.

In 1997 the Alaska Nanuuq Commission received a three year grant to conduct the same study in Chukotka by interviewing knowledgeable native hunters. We decided that with proper training the study could be conducted by the ATMMHC. This would give them the experience and credibility to be involved in management. We are now in the last year of that study.

In January of this year a new Governor took office in Chukotka. Governor Abramovich has publicly and privately given his strongest support to native groups and their involvement in project such as ours. While there is still many of the old regime beaurocrats still in place the ATMMHC and we have been given hope for the future.

The ATMMHC will be meeting with representatives of the government of Chukotka and the Ministry of Natural Resources in Anadyr in January 2002 to develop regulations and enforcement procedures for the polar bear hunt. This is a new process and has the full public support of the very popular governor of Chukotka, who has gone out of his way to promote involvement of native peoples of Chukotka in his government. With his support the Director of our habitat study program in Chukotka, a Chukchi native, Dr. Vladimir Etylin, has been elected to the National Duma (Parliament). He is essentially Chukotka's answer to Alaska's Don Young. We are counting on his support and influence to help the ATMMC successfully enforce the provisions of our Agreement.

For these reasons the Alaska Nanuuq Commission feels that the Association of Traditional Marine Mammal Hunters of Chukotka will be able to transition from banned hunting with poaching to a successfully managed legal hunt.

We thank you for the opportunity to provide more information and will gladly answer any other questions.

[Attachments to Mr. Johnson's responses follow:]

Fig. 1. Distribution of polar bear populations throughout the circumpolar basin

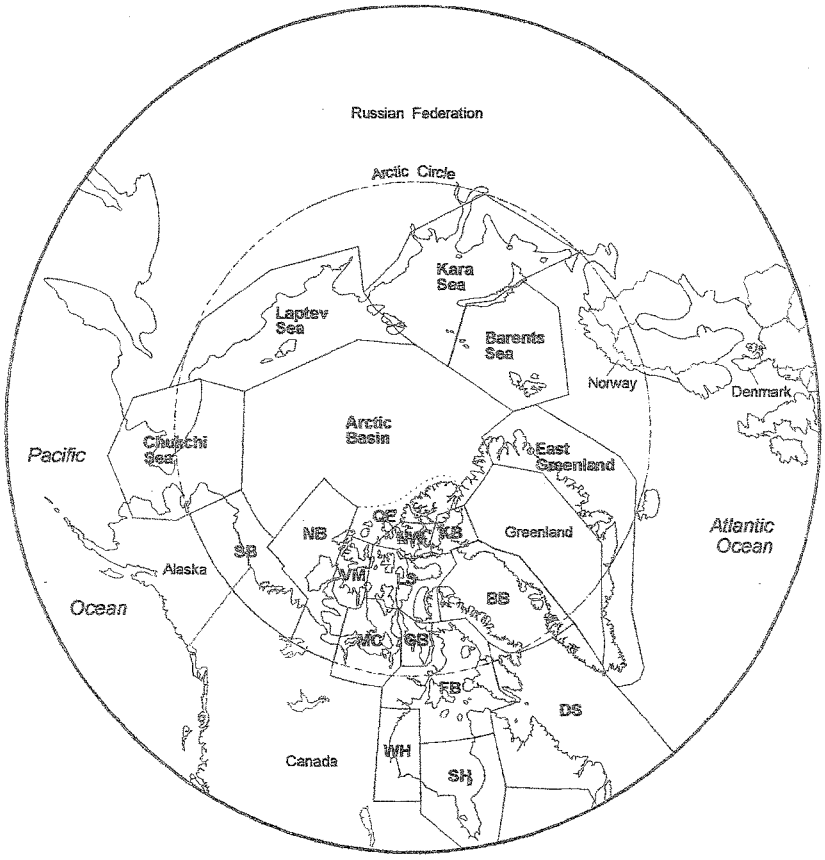


Table 1. Summary of polar bear population status as determined by both historical harvest (1995-96 to 1999-00) levels and current management practices. The percent females statistic excludes bears of unknown sex, and natural deaths are not included.

Population	Number	Certainty of Estimate	Monitoring of Harvest and Other Removals	% Females in Kill	Sustainable Kill[1]	Mean Annual Kill	Environmental Concerns[2]	Status[3]
East Greenland	2000	unknown	fair	38	unknown	80	P, W	?
Barents Sea	2000-5000	poor (1982)	poor		na	Norway – 2 Russia - ?	P, W	?
Kara Sea	unknown	unknown			na	unknown	P, I	?
Laptev Sea	800-1200	unknown	poor		na	unknown	P	?
Chukchi Sea	2000+	poor (1997)	US – good Russia – poor	US – 35 Russia - ?	86+	US – 76 Russia - ?	W, I	S?
Southern Beaufort Sea	1800	good (2001)	good	33	81	50	W, I	I
Northern Beaufort Sea	1200	good (1987)	good	33	54	32	W	I
Queen Elizabeth	200	unknown			9?	0	P	S?
Viscount Melville Sound	230	fair (1992)	good	25	4	4		S
Norwegian Bay	100	fair (1979)	good	32	4	4	W	S^a
Lancaster Sound	1700	fair (1996)	good	25	77	76	W	S^a
M'Clintock Channel	350	fair (2001)	good	26	11	24	W	S?
Gulf of Boothia	900	poor (1986)	good	40	34	37		S^a
Foxe Basin	2300	good (1996)	good	36	97	90	W	S^a
Western Hudson Bay	1200	good (1997)	good	35	52	49	W	S^a
Southern Hudson Bay	1000	fair (1986)	good	36	41	45		S
Kane Basin	200	fair (1996)	fair	32	9	10		S
Baffin Bay	2200	fair (1996)	fair	36	93	139		D
Davis Strait	1400	fair (1996)	fair	38	56	63	W	D?
Arctic Basin	unknown	unknown	none		na			?
Total estimate for world population size:		**21,500 – 25,000**						

[1] Except for Viscount Melville Sound, sustainable harvest is based on population estimate (N), estimated rates of birth and death, and harvest sex ratio (Taylor *et al.* 1987):

$$\text{Sustainable harvest} = \frac{N * 0.015}{\text{Proportion of harvest that was female}}$$

Proportion of harvest that was female is the greater of the actual value or 0.33. Unpublished modeling indicates a sex ratio of 2 males:1 female is sustainable, although mean age and abundance of males will be reduced at maximum sustainable yield. Harvest data (Lee and Taylor, 1994) indicate that selection of males can be achieved

[2] I – industrial development current or proposed; P – evidence of pollutants in bear tissues; W – evidence global warming effects on sea ice or populations

[3] D – decreasing; I – increasing; S – stationary; S^a – stationary, population managed with a flexible quota system in which any over-harvest in a one year results in a fully compensatory reduction to the following year's quota; ? – indicated trend uncertain

Responses from Sharon Young, Field Director for Marine Issues, The Humane Society of the United States

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. Your testimony discusses the Canadian polar bear hunt and its adverse effects on populations. Is your organization opposed to hunting in general?

The Humane Society of the United States (HSUS) is opposed to hunting for sport, trophy and recreation but understands the need for subsistence hunting. We believe the characterization of wild animals as "game" denies their intrinsic value and belittles their ecological importance. It is the goal of the HSUS to ensure the ethical stewardship of wildlife and its environment.

The HSUS recognizes that the welfare and responsible management of animals may, on occasion, necessitate the killing of wildlife. When such killing is permitted, it must be used as a last resort, be demonstrably necessary, be conducted by responsible officials and the methods utilized must result in an instantaneous and humane death.

The HSUS also recognizes that the legitimate needs for human subsistence may necessitate the killing of wildlife. In such cases, killing must be accomplished in a humane and non-wasteful manner and must not involve endangered or threatened animals. Nor should such hunting result in the de-stabilization of populations.

2. You testified that Alaskan Native harvest, in some cases, has exceeded PBR for that population. Other than the situation with Cook Inlet beluga whale harvests that have been addressed, can you give the Subcommittee any examples?

Endangered Steller sea lions have a Potential Biological Removal (PBR) level of 208. This stock continues to decline. The level of native hunting of Steller sea lions exceeds PBR. The most recent kill estimate in the official National Marine Fisheries Service (NMFS) stock assessments is for the year 1997. No data on native hunting has been provided since that time; however, as of 1997, natives killed an annual average 353 animals from this declining stock. We have no way of knowing how many were killed in the past 4 years.

Similarly, several hundred spotted seals are killed each year by natives, with no harvest data available for Alaska as a whole since 1993. Spotted seals have no known PBR, so hunting may be occurring at a level that is detrimental to the population.

Although the egregious situation of hunting of Cook Inlet beluga whales has been addressed for the time being, beluga whales are hunted elsewhere as well. Beluga whales in the Eastern Bering sea stock are hunted in levels above their PBR. These belugas have a PBR of 129 and native hunting of this stock exceed PBR in four of the five years between 1993 and 1997 which is the most recently available data. We do not know how many may have been killed since 1997.

The NMFS Alaska regional stock assessments state that for virtually all marine mammal stocks hunted by natives, estimates of native hunting should be considered underestimates, so hunting of other species may also be occurring at levels of concern. We believe it is critical that hunt data be more current (stock assessments generally have data no more recent than 1997) and that Native villages provide a full accounting for kills as well as struck and loss levels to assist in understanding the true status of marine mammal stocks in Alaska.

3. Mr. Marks testified that the six-month requirement for action once a TRT has been convened prevents often necessary research initiatives on things like gear modifications to be tested for their efficiency. Do you agree that there should be more flexibility in that requirement?

There have been cases in which the six-month time period for the TRT meetings has been limiting, but not with regard to hindering gear research. In the case of the Atlantic Large Whale TRT, the team was close to reaching consensus on important measures to protect endangered whales, but NMFS refused to allow an additional meeting. As a result, there was no agreement possible. This in turn resulted in divisive lobbying and heated public hearings that may well have been unnecessary.

I do not agree with Mr. Marks that flexibility in the six-month requirement will allow development of take reduction strategies that would not otherwise be available within the six-month time period. Innovative gear research requires systematic testing that generally takes more than a year to provide reliable results. A delay of this amount of time would be unconscionable, since most take reduction teams are already convened well after they were mandated. For example, the take reduc-

tion team for coastal bottlenose dolphins in the mid–Atlantic was mandated in 1995, but not convened until 2001. Because of these delays in convening teams, both the government and the fishing industry are aware that strategies need to be developed long before the team is convened to discuss them. This time could be (or could have been) used to devise and test strategies, rather than waiting until after a team is convened.

The HSUS opposes changing the language of the MMPA to delay the deadlines in the Act. This would simply compound the existing propensity of the NMFS to ignore legal deadlines.

The take reduction teams generally recommend a suite of options, often including additional gear research and testing. Some of this gear research can be conducted subsequent to the meetings under experimental fishing permits, even in areas closed to fishing. An example of this is the harbor porpoise take reduction team and the testing of acoustic deterrent devices known as pingers which are now in broad use. In this manner, gear modifications can be iterative. Some, based on current knowledge and available technology, can be immediately implemented; while others are tested and implemented as they prove effective. This obviates the need for extending the initial take reduction team process.

4. You discuss actions and inaction taken by the National Marine Fisheries Service and failures of budgeting and enforcement. Has it occurred to the environmental community that some of its own lawsuits against the Agency may be causing some of the inaction due to its budget being used for court costs instead of management and conservation measures?

The HSUS does not believe that this sort of criticism is valid. Inaction is not the result of lawsuits. Lawsuits are the result of inaction. The HSUS and other environmental organizations do not bring suit against an agency until all other options have been exhausted and the Agency's lack of response has created a crisis situation. If the agency were to do its job, there would be no lawsuits; and in the case of our MMPA-related suits, the courts have been quick to order the NMFS to comply with the law.

It is a sad commentary that increased attention and funding generally are not directed toward species in crisis until lawsuits area filed or threatened. Cases in point are Steller sea lions, northern right whales, manatees and bottlenose dolphins in the mid–Atlantic. The federal government should be proactive, not reactive.

The situation of the harbor porpoise TRT exemplifies this. So dire was the level of mortality to the stock, that Congress recognized it specifically in Section 120 of the 1994 amendments to the MMPA, which provided specific dates for reducing mortality of harbor porpoise. Recognizing the difficulty of reducing such a high level of mortality, the mandated deadlines would have given the New England gillnet fleet six additional months to reduce the mortality levels. Despite this, the harbor porpoise take reduction team was not convened when mandated. When it was convened, the Team reached consensus on its recommendations. The NMFS did not publish these recommendations according to the schedule in the MMPA, instead, over a year later, it issued proposed regulations that were never finalized nor implemented. Despite repeated promises to publish a take reduction plan, the NMFS did not do so. It was not until court intervention that resulted from a lawsuit filed by the HSUS and the Center for Marine Conservation, that the NMFS published the plan it had written well over a year before.

Since that time, the NMFS has reported to the harbor porpoise team that mortality levels have declined, and they are now at or below PBR. They have also reported that federal fishery observers have documented harbor porpoises killed in areas that are supposed to be closed to fishing and in nets that do not have "pingers", even though they are required. Despite a unanimous recommendation by the Take Reduction Team that enforcement action should follow violations of the Act, the NMFS has done nothing to prosecute these violations, nor to ensure that others do not occur. Funds for enforcement are from a different line item in the budget from funds used for MMPA implementation.

The crisis of budgeting results, in part, from the fact that the NMFS has taken money from the MMPA implementation funds to use for base operating costs (administrative support salaries, building costs, etc.) thereby reducing the funds available for implementation of the goals and mandates of the MMPA and recommendations of Take Reduction Teams.

5. If the take of harbor porpoise was reduced, why should it matter if this was the result of the take reduction plan or actions by the fishery management council?

Take Reduction Plans should be implemented under the authority of the MMPA. Fishery Management Council (FMC) actions are taken for the purpose of groundfish conservation. The New England FMC has seen fit to coincide some of its mandates for fishing effort reduction and closures to protect spawning groundfish, with times and places that result in reduced harbor porpoise mortality. It need not have done so, and may at any time change these closures if it feels that groundfish conservation would be better served by changing the timing and placement of the closures.

For example, harbor porpoise bycatch was extremely high in the mid-coast area in the vicinity of an offshore feature called Jeffreys Ledge. This is a year-round closed area for groundfish conservation which the council is considering re-opening for some or all of the year. If it does so, the NMFS itself acknowledges that it is quite likely that harbor porpoise mortality will increase once again. Actions implemented under the MMPA are intended to protect the marine mammals and are not necessarily changed as a result of changing FMC mandates for fish conservation. Many of the current measures that have been implemented under the auspices of the FMC should be implemented under the MMPA.

6. You discuss the merits of having a marine mammal inventory in your testimony and state that if Mexico had a similar inventory for its animals those animals would be better protected. How exactly would an inventory protect captive marine mammals? Isn't it the guidelines and requirements of the MMPA and Animal Welfare Act that protect marine mammals in captivity? Shouldn't Mexico adopt these types of Laws, not just implement an inventory?

I do not believe that the HSUS suggested that it would be sufficient merely to have a marine mammal inventory in Mexico. In our testimony, we pointed out that the lack of an inventory caused a serious problem for Mexico's regulators as they attempted to track mammals in captivity. Clearly they also need to pass protective laws and regulations.

The principal way an inventory helps protect captive animals is that it allows independent evaluation of mortality and survivorship. If the information on the number of animals in a facility and information on births and deaths of their animals is considered proprietary, then a large (and statistically valid) database will be lost - a database that can be used to evaluate the efficacy of regulations to protect captive animals in keeping with the desire of the American public to assure humane treatment.

Since 1985, there have been at least three separate independent evaluations of survivorship of typically held captive marine mammals. Two were conducted by US government biologists and one by a non-governmental animal welfare organization. All would have been impossible without the marine mammal inventory reports mandated by the MMPA. These evaluations showed persistent, higher mortality rates in captive cetacean species vs. their wild counterparts, although bottlenose dolphin differences were no longer statistically significant by the mid–1990s. As a result, we know that there was much room for improvement in the husbandry practiced by certain facilities and we know that current levels of regulation had thus far not led to improvement of survivorship in those facilities.

In addition to facilitating tracking of trade in marine mammals, a marine mammal inventory allows regulators to note trends (for instance, in causes of death) that may assist in refining regulations. Again, if this type of information is considered proprietary, it would be impossible to put together a complete picture of health trends in captive marine mammals. In fact, all zoo species should have to submit this type of information to a central database (whether governmental or non-governmental), but unfortunately most non-endangered and non-threatened animal species are not specially protected by law. Marine mammals ARE, for obvious reasons (their unique aquatic habitat, ecological niches, and physiological adaptations). It is both appropriate and vital that the marine mammal inventory be maintained - the data it provides are essential if regulators are truly to protect these vulnerable animals.

The HSUS is concerned that the captive display industry wishes to abolish this inventory. As a matter of good husbandry, such data would normally be kept by any facility. The HSUS wonders why the captive display industry wishes it to be considered proprietary and unavailable to researchers or the public for scrutiny.

QUESTIONS FROM RANKING MEMBER ROBERT UNDERWOOD

1. You expressed concern in your statement in regards to the delay by NMFS in publishing a take reduction plan for the Gulf of Maine harbor porpoise. However, you also acknowledge that despite this delay, actions taken by the New England Regional Fisheries Management Council had re-

duced incidental mortality of harbor porpoise to approximately the PBR level. My question is, if the results are what matters most, and if as you say, mortality declined due to actions taken by the same management body that would be responsible for implementation of the take reduction plan anyway, why are you so concerned with delays in the process if the outcome was successful?

As was explained in question 5 above, the New England Fishery Management Council (FMC) has coincided some of its closures for groundfish conservation with times and areas of historically high harbor porpoise mortality. If the council changes the configuration of these closures to better conserve the fish, they may inadvertently increase the mortality of the harbor porpoise, whereas a plan implemented by NMFS under the MMPA would assure adequate protection of the mammals.

The delay may seem irrelevant since, by the end of 1999, mortality of harbor porpoise was successfully reduced to a level that is approximately the PBR level; but it is not irrelevant at all. The MMPA mandated that a take reduction team be created in 1995, when the annual fishery-related mortality of harbor porpoise was close to 2,000 porpoise a year and PBR was 483 animals per year. Instead, the Team was not convened for the Gulf of Maine until February 1996 and not until February of 1997 for the mid–Atlantic. Both teams reached a general consensus on take reduction measures that the NMFS neither published nor enacted until 1999; a delay of three and two years respectively.

In 1996, approximately 1,500 harbor porpoises died. In 1997, almost 1,400 harbor porpoises died. In August of 1998, the HSUS and the Center for Marine Conservation filed suit against the NMFS. In 1998, the mortality was 788 porpoises. Currently, the mortality level is approximately at the PBR level. If the NMFS had implemented its plan under the MMPA, and on schedule, it would have been in place in 1996. As a result of the delay, instead of approximately 500 harbor porpoises dying each year—for a total of 1,500 animals during 1996–1998; more than 3,600 porpoises died in that same time period. Over two thousand animals needlessly lost their lives because the NMFS delayed implementing a take reduction plan. We find this a matter of great concern.

2. I think your clarification of the intent of the zero mortality rate goal is helpful. However, if it is clear that the intent of the language is not to actually achieve zero mortality, but rather, to reduce marine mammal mortalities to levels that are biologically insignificant, should not the language of the Act be changed to acknowledge this reality?

I believe that the Act is clear. It states that fishery-related mortality should be reduced to "insignificant levels that are approaching a zero mortality and serious injury rate." It does not say zero. The current language states that it should be insignificant, and the stipulation that it should be "approaching zero mortality and serious injury" is simply an acknowledgment of the desire of the American public to see that marine mammals are not killed in fisheries up to their maximum biologically sustainable level (PBR), but at a level that is as low as is feasible. We do not believe that the language of the Act needs to be changed.

3. You are highly critical of the Atlantic Large Whale Take Reduction Team, noting that in your opinion the TRP has been "a resounding failure," especially for North Atlantic right whales. Considering, as you say in your testimony, that efforts at disentanglement and the promise of research have been inadequate, and that other newly proposed measures are of questionable promise, what alternative measures can the Humane Society propose to reduce incidental mortality of right whales?

First I wish to state that the HSUS is NOT critical of Atlantic Large Whale Take Reduction Team; we are critical of the *plan* that the NMFS has developed. The Team has worked in good faith to produce recommendations and suggested modifications to the plan. It has also provided suggestions for research and recommendations for enforcement. The NMFS has ignored many of the team's recommendations. For example, in 1999 the TRT recommended deleting the use of 7/16" diameter line as a risk reduction measure. Not until fall of 2001 did NMFS act on this recommendation, and even then it does not propose that this be done until 2003. It is this sort of action or inaction, of which we are particularly critical.

In our testimony, the HSUS pointed out that disentanglement is an important tool, but scientists involved in disentanglement repeatedly caution the NMFS and the TRT, that it is sometimes unsuccessful when attempted (as was true with "Churchill" this summer), and most animals die unseen and without benefit of disentanglement effort (as was the case with a right whale that was found dead this fall near Magdalene Island). The HSUS has also been critical of the fact that the

NMFS has taken money from MMPA implementation funds to pay for base operating expenses and, for some time, took the salary of its fishery liaison person from the gear research money. As a result of this, money available for gear research has been depleted. Only with intervention from Congress, has there been an increase in gear research budgets in the past two years.

Representative Underwood also asked what we believe can be done. There is much that can be done. Many fishermen have innovative ideas that they have used experimentally themselves and that require broader field testing but have not received attention from granting bodies (such as the NMFS or Northeast Consortium) because scientific format and jargon were not used in the proposals. Instead, most of the funding was given to academic institutions. The Eubalaena Award (judged by scientists) provided private funding for an innovative buoy release system that has been overlooked by the NMFS and other conventional bodies. Encouraging this sort of research should be the job of the NMFS. Another promising measure is the use of neutrally buoyant line (first suggested by fishermen). It has been tested and shows great promise in reducing the profile of the line floating in the water and thereby reducing risk of a whale encountering the line. Many fishermen are already using it voluntarily. The recent NMFS proposed rule states only that it may be an option in 2003.

We believe that the NMFS must be much more aggressive in seeking and funding innovative measures and in implementing promising developments in a timely manner.

4. Is the lethal removal of a nuisance pinniped ever an acceptable management alternative? Has the Humane Society sponsored or funded research to develop new non-lethal deterrent technologies or methods?

The HSUS participated in the Gulf of Maine Pinniped Interaction Task Force, which was mandated by Congress in the 1994 amendments. The NMFS submitted a report to Congress of the Task Force's deliberation. The Task Force, which included environmental groups, aquaculture industry representatives, state and federal managers and scientists found that three criteria needed to be met to consider lethal taking. They are:

1) The consequences of the depredation must be severe and demonstrable;
2) lethal measures under consideration must be verified as an effective means of solving the predation problem; and
3) no non-lethal alternatives are available.

These conditions are very similar to those stipulated by Congress in the MMPA in Section 120. The HSUS has participated in task forces convened under this section.

As stated above, in the answer to Chairman Gilchrest's first question, The HSUS recognizes that the welfare and responsible management of animals may, on occasion, necessitate the killing of wildlife. When such killing is permitted, it must be used as a last resort, be demonstrably necessary, be conducted by responsible officials and the methods utilized must result in an instantaneous and humane death.

However, in many cases, systematic research has found that the level of predation by pinnipeds is often not as dire as first feared. For example in the recent (November 2001) meeting of the Society for Marine Mammalogy, a number of scientists on the West Coast reported predation on wild salmon runs by seals and sea lions was occurring at levels of less than 10%, and generally less than 5% of the run. These levels are less than originally presumed. No intervention seems necessary. In cases where predation levels appear to have a greater impact, structural or other non-lethal mitigation often have not even been attempted.

The HSUS has been a tireless advocate of non-lethal solutions. We have provided documents and access to expert opinions for groups discussing means of alleviating situations of perceived conflict with non-lethal alternatives (*e.g.* re-situating lights, re-configuring fish passage areas, using anti-predator netting and strategies in aquaculture sites). While it has not been explored to any extent in the US, research on immuno-contraception with pinnipeds has been conducted in Canada. The HSUS is the largest non-governmental funder of immuno-contraceptive work with wildlife.

We remain committed to finding humane resolution of situations of perceived marine mammal-human conflict.

Responses from George Mannina, American Zoo and Aquarium Association and the Alliance of Marine Mammal Parks and Aquariums

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST -

Question 1: In your opinion, do you think APHIS has the ability to focus on captive marine mammals and oversee their care in public display facilities?

Response: The American Zoo and Aquarium Association (AZA) and the Alliance of Marine Mammal Parks and Aquariums (Alliance) have a solid working relationship with the staff at APHIS/Animal Care regarding their enforcement of the Animal Welfare Act (AWA) and Marine Mammal Protection Act (MMPA). Our two organizations strongly support the agency's continued, sole oversight of marine mammals in public display facilities.

The philosophy of APHIS with regard to its mission is to correct animal welfare inadequacies while trying to effectively maximize severely limited resources. This philosophy has served the agency well as there has been no formal complaint under the AWA for the past five years as well as no formal AWA hearings, a sign of cooperation, trust and a strong commitment to enforcement.

The agency holds regular public meetings with exhibitors and animal rights/welfare organizations to update them on agency activities and regulatory initiatives.

For many years, APHIS/Animal Care has been woefully under-funded by Congress given the magnitude and scope of its mission. Between fiscal year 1992 and fiscal year 1999, the appropriation for the Animal Welfare program under Animal Care remained stagnant, which meant a decrease in spending power.

In FYs 2000 and 2001, the budget for Animal Care (AC) rose by a cumulative $3 million. This increase has allowed a strengthening in the number of inspectors and an expansion in the number of annual inspections. Animal Care initiated innovative programs during those years of low funding. The agency focused a more vigorous enforcement effort on facilities that are in chronic violation of the law, as well as against those that are not licensed at all. The agency also instituted a risk-based inspection program that emphasizes inspections (in many cases, multiple inspections) of problem facilities.

A $2.4 million increase in fiscal year 2002 will enable AC to maintain all current activities; strengthen its field staff by hiring, training, and equipping an additional 14 inspectors; increase inspections to approximately 11,600 and improve follow-up inspections to verify correction of violations; increase searches for unlicensed and unregistered operations and other illegal activities; handle animal care complaints more quickly; expand outreach to regulated industries and the public; develop industry-specific training courses and implement internal audits and inspector quality reviews to ensure consistent quality in inspections.

AZA's support for the integrity of the Animal Care program is evident in that the Association is the only regulated entity on the APHIS/Animal Care Coalition for increased appropriations. The Coalition is primarily made up of animal protection groups (including ASPCA, HSUS and the Animal Welfare Institute) who share this similar belief.

As for APHIS' ability to focus on marine mammals in public display facilities, AZA and AMMPA believe that APHIS/Animal Care has done an effective job of meeting its mandates under the 1994 MMPA amendments in light of historic budget shortfalls. APHIS has provided marine mammal training courses for its inspectors in 1988, 1993 and has another course planned for 2002. These courses are held at marine mammal facilities, which allows for hands-on tours and instruction, and utilize a broad range of marine mammal veterinarians and other experts.

The agency has also done an effective job in working with the diverse marine mammal community to build consensus for regulating marine mammals in zoological parks and aquariums. On July 23, 1993, APHIS published in the Federal Register (58 FR 39458, Docket No. 93–076–1) an advance notice of proposed rulemaking that solicited comments on appropriate revisions or additions to the standards for the humane handling, care, treatment, and transportation of marine mammals used for research or exhibition. The comments they received supported their intent to revise the regulations and suggested it would be highly desirable to involve all interested parties in developing appropriate regulations. APHIS determined that some consensus among interested parties was attainable and that they should proceed with a formal Negotiated Rulemaking. On May 22, 1995, APHIS published in the Federal Register (60 FR 27049–7051, Docket No. 93–076–3) a notice of intent to establish an advisory committee to advise the agency on how to revise the regulations.

The negotiated rulemaking process provided a forum for animal rights/welfare organizations to meet with the zoo and aquarium community to create the Marine

Mammal Negotiated Rulemaking Advisory Committee and devise appropriate regulations based on current general, industry, and scientific knowledge and experience. The Committee consisted of the following organizations:

American Zoo and Aquarium Association
Alliance of Marine Mammal Parks and Aquariums
International Association of Amusement Parks and Attractions
Marine Mammal Coalition
United States Navy
Center for Marine Conservation
Humane Society of the United States
Animal Welfare Institute, representing a broad coalition of animal concern groups
American Association of Zoo Veterinarians
International Association for Aquatic Animal Medicine
International Marine Animal Trainers Association
Animal and Plant Health Inspection Service

Consensus language was reached on 13 of the 18 sections that comprise the regulations and on one paragraph in a 14th section. Sections 3.101, 3.104(a), 3.105, 3.107 through 3.110, and 3.112 through 3.118. Sections 3.101 and 3.104(a) contain facility and operating standards. Section 3.101 contains general requirements for facilities housing marine mammals, including construction, water and power supply, drainage, storage, waste disposal, and washroom facilities. Section 3.104(a) contains general space requirements for primary enclosures. Sections 3.105 and 3.107 through 3.110 concern animal health and husbandry. Section 3.105 contains feeding requirements; Sec. 3.107 concerns sanitation and pest control; Sec. 3.108 sets standards for employees and attendants; Sec. 3.109 concerns separation of marine mammals; and Sec. 3.110 concerns veterinary care. Sections 3.112 through 3.118 concern transportation of marine mammals. Section 3.112 concerns consignment of marine mammals to carriers and intermediate handlers; Sec. 3.113 contains standards for primary enclosures used to transport marine mammals; Sec. 3.114 contains standards for primary conveyances used to transport marine mammals; Sec. 3.115 contains requirements for provision of food and water during transport; Sec. 3.116 concerns the care of marine mammals by employees or attendants during transport; Sec. 3.117 concerns terminal facilities; and Sec. 3.118 contains requirements for handling marine mammals during transport.

On February 23, 1999, APHIS published a proposed rule in the Federal Register (64 FR 8735–8755, Docket No. 93–076–11) that contained the consensus language developed by the Committee for these sections of the regulations. On January 3, 2001, the final rule containing the consensus language was published in the Federal Register and the rule went into effect in April 2001. APHIS is currently working on a proposed rule for the non-consensus items that were not agreed upon by the Committee. That rule should be available for comment in 2002.

In sum, APHIS/Animal Care has earned the trust of AZA and the Alliance through its fair and objective enforcement of the regulations and its successful outreach efforts.

AZA and the Alliance do not support NMFS' attempt to share authority for marine mammal care and treatment responsibilities, as outlined in the agency's recent proposed rule. With passage of the 1994 MMPA Amendments, Congress decided it was wasteful, cumbersome and redundant for two agencies to have identical responsibilities and that the public display community should not be subjected to double jeopardy by having two different agencies enforcing care and maintenance standards.

Question #2. The NMFS has instituted the use of Comity agreements whenever a marine mammal is exported to another country. Where in the Act do they get this authority? How has it worked so far in your opinion?

Response: There is no authority in the Marine Mammal Protection Act requiring letters of comity. Nor, for that matter, do any other laws or regulations for any other species of wildlife require letters of comity even if the animals are endangered or threatened. Moreover, in 1994 Congress rejected a similar NMFS proposal requiring such letters and limited the agency's authority over exports as well as the oversight of facilities holding U.S. marine mammals in foreign nations.

In fact, the Act provides NMFS with no authority to apply the MMPA in foreign nations. The agency and the courts understand this. NMFS stated in the preamble to the 2001 proposed rule that "NMFS has no jurisdiction in foreign countries ." Additionally, a December 10, 1996, opinion from the Office of General Counsel, NOAA, stated the MMPA "does not confer U.S. jurisdiction over marine mammals in the territory of other sovereign states." In *United States v. Mitchell*, 553 F.2d 996, 1003,

1005 (5th Cir. 1977), the Court held the MMPA does not apply within the territory of a foreign sovereign.

Secondly, letters of comity do not work. The agency highlighted this in its 2nd/3rd Quarter 2000 MMPA Bulletin. Foreign nations have expressed their outrage over this requirement and the agency has often abandoned its own policy in accepting "letters of comity." The agency has accepted a "comity" letter from a U.S. institution when a foreign government has maintained that it "does not have the authority to subrogate its regulatory duties to any other Government." A letter of comity has been accepted from a mayor. The Fish and Wildlife Service recently sent a stranded, rehabilitated sea otter pup to an Alliance member in Canada on an "emergency interim basis," circumventing comity requirements because Canada steadfastly claims that it will not submit to U.S. comity requirements.

Comity requirements are an effort by NMFS to apply the MMPA internationally, something neither Congress nor the courts allow. The proposed regulations not only raise very serious international relations issues, but they also raise serious questions about whether NMFS should be using its limited resources to regulate non–U.S. facilities. In addition to thwarting breeding exchanges, the hardest hit by these requirements are low-profile pinnipeds stranded seals and sea lions that have been nursed back to health. While U.S. facilities have no space in their collections to continually include these animals, foreign facilities have been able to find them homes. If homes cannot be found for these animals, they will, most likely, be euthanized.

Export to foreign nations is not without oversight. The 1994 amendments provided that any person properly holding marine mammals for public display in the United States could export the animals "without obtaining any additional permit or authorization." However, the 1994 amendments did effectively address the export issue by stating that a marine mammal could be exported for public display only if the receiving facility met "standards that are comparable to the requirements that a person must meet to receive a permit" under the MMPA for public display. There are three such standards: the facility must (1) offer a program for education or conservation based on professionally recognized standards of the public display community; (2) have an APHIS registration or license; and (3) be open to the public on a regularly scheduled basis with access not limited except by an admission fee.

It is important to understand that a foreign facility must go through an extensive review by the Animal and Plant Health Inspection Service before receiving the animals. APHIS ascertains that the facility has the proper enclosure sizes, a program of veterinary care, and appropriate staff for all animals in the facility's collection, among other regulatory concerns. The agency even checks mortality rates at the importing institution and requires that the foreign government certify that the information provided to the agency is accurate. APHIS standards are the most comprehensive and stringent in the world. Significantly, Congress applied this comparability test only to the facility that receives the animals from the United States and not to subsequent transfers between foreign facilities.

Alarmingly, NMFS' 2001 proposed regulations replace the APHIS comparability test with the requirement that the foreign facility must meet not only the three statutory requirements but newly proposed rules saying that NMFS must independently determine that the foreign facility complies with APHIS' care and maintenance standards.

But the Proposed Regulations do not stop here. NMFS interprets the MMPA provision requiring NMFS to maintain an inventory of marine mammals held under MMPA permits to mean that NMFS must maintain an inventory of those animals and their progeny in foreign facilities. Since the MMPA does not apply outside the U.S., it is hard to see how NMFS reaches the conclusion that NMFS is to apply the inventory reporting requirements to foreign citizens. Nevertheless, NMFS combines that interpretation with its new version of the comparability standard to conclude that NMFS can prohibit the export of a marine mammal until the government of the country in which the receiving facility is located signs a letter of comity agreeing "to enforce requirements equivalent to the U.S. Marine Mammal Protection Act. . ." The regulatory preamble makes it quite clear that equivalency means all of NMFS' regulatory requirements. Thus, the preamble states that NMFS' regulatory requirements apply "to all holders of animals exported from the United States . . ."

To understand the problem, a case example may be helpful. The proposed regulations, including the letter of comity, have the effect of providing that if an animal is exported from the United States to a French facility in 2001, and the French facility decides in 2011 to transfer the animal to a public display facility in Spain, then the French government and the French facility must determine that the Spanish facility meets the MMPA standards as interpreted by NMFS, including the requirement that the facility meets APHIS requirements and has an acceptable education

or conservation program—- and NMFS must receive a transport notification and inventory report from both the Spanish and French facilities. If the animal at the Spanish facility gives birth 5 years later, the Spanish facility must file an inventory report with NMFS reporting the birth. If that progeny is transferred to a public display facility in Germany 10 years later, the Spanish government and the Spanish facility are to ensure that the German facility meets the requirements of the U.S. MMPA as interpreted by NMFS, including the requirement that the facility meets APHIS standards and has an acceptable education or conservation program—- and NMFS is to receive a transport notification and inventory report from both the Spanish and the German facilities. If 15 years later, now 40 years after the original 2001 export from the U.S., the marine mammal originally transferred, now in a Spanish facility, dies, NMFS is to receive an inventory notice of that event together with an explanation of the cause of death. And if the progeny, now in Germany, dies in 2061, 60 years after the parent left the United States, NMFS is to receive an inventory notification including the cause of death.

Question #3. The public display community must breed its animals wisely to ensure that its genetic pool remains viable. How have the agencies worked with the community to facilitate the most optimum breeding of the animals?

Response: The zoological community has worked diligently through the commitment of substantial research dollars to develop successful breeding programs. These programs include many that are facilitated by AZA's taxonomic advisory groups (TAGs) that have oversight for cetacean and pinniped breeding. In addition, the Alliance of Marine Mammal Parks and Aquariums has established a Population Management Committee to broaden the success to date of cetacean reproduction at public display facilities by sharing information and providing technical assistance important to reproduction management and, when requested to do so, by facilitating the establishment of partnering agreements between individual Alliance members to enhance breeding and genetic diversity.

Zoological institutions have seen tremendous advances in our breeding programs. In recent years, animals born in zoological parks and aquariums have represented between 43 and 70 percent of marine mammals in these facilities, depending on the species. This compares to 3 to 6 percent in 1976. We are seeing second and third generation births. These breeding programs have also provided the opportunity to gather information on many aspects of marine mammal reproductive biology difficult to obtain from wild populations.

And just this past year, we have seen an exciting development through the hard work of two Alliance and AZA members (SeaWorld and Ocean Park). Researchers have artificially inseminated a killer whale and two dolphins. These three successful births have tremendous implications for conservation efforts with these and other species.

These breeding programs are voluntary initiatives undertaken by the zoological community. The government does not and should not play a role in these animal management programs. Indirectly, the government does play a role when the animals must be transported for breeding purposes. There have been instances where transfers within the country and abroad have been disrupted by governmental red tape. The zoological community on several occasions has experienced unnecessary delays as a result of the comity requirements established by NMFS. The community has experienced similar delays when transporting animals between U.S. facilities. (The comity issue is addressed in our written testimony and in our response to Chairman Gilchrest's Question 2 above.)

Question #4. Can you inform the Committee on how the public display community had to conduct its business prior to the 1994 amendments and then after the passage of the amendments? Can you discuss a bit further how the proposed rule developed by NMFS (July 2001) disregards the 1994 amendments and goes back to management prior to 1994?

Response: Prior to 1994, all transports and exports of marine mammals had to go through a tedious, time-consuming and expensive NMFS permitting process. Additionally, NMFS claimed dual authority with APHIS for the care and maintenance of marine mammals, which caused much confusion between the agencies and for the exhibitors.

Although NMFS' responsibilities under the MMPA are limited to maintaining the marine mammal inventory and activities relating to the collection of animals from the wild, the agency's pre–1994 regulation of marine mammal transports and exports hampered the community's efforts to transport animals for breeding in a timely manner. Lengthy Federal Register comment periods and requests for information

caused facilities to miss windows of animal fertility, which resulted in missing breeding opportunities for that year. In essence, this gave the agency unneeded and unwanted control over regulated entities and restricted facilities' ability to manage their collections wisely. At the extreme, an organization could not even transport an animal to one of its own facilities without government approval.

While permits are no longer required for export and transfer of marine mammals under the 1994 amendments, the 2001 proposed rules continue to require letters of comity from foreign nations before NMFS provides its concurrence to the Fish and Wildlife Service to grant the exporting facility a CITES permit. The problems with letters of comity are addressed somewhat in the response to Mr. Gilchrest's second question and addressed fully in the Alliance comments to the agency, which are attached.

Additionally, the 2001 proposed regulations add another unnecessary and purposeless hurdle for exporting marine mammals. Under present regulations, APHIS requires that foreign facilities submit all relevant data for review to assure that the foreign facility is meeting standards comparable to those of the U.S. Under the new, proposed rule, NMFS has added a section that requires that NMFS independently determine that the facility complies with APHIS' care and maintenance standards.

Similarly, while NMFS is not asking for a permitting process to transport marine mammals in the 2001 proposed rules as it has in the past, the agency is advocating a process that creates a huge paperwork burden and unnecessarily duplicates information already available to the agency. When the MMPA was amended in 1994, the public display community agreed to send a 15-day notice of transport to NMFS so the agency could meet its inventory requirements under the Act. This was envisioned as a simple, one-page letter that identified the animal(s) to be transported and gave the name of the receiving facility. The 2001 proposed regulations replace this one notification with six forms. Three cover the exact same information already contained in the NMFS marine mammal inventory. Additionally, the agency is demanding that the sending facility certify, under force of criminal penalties, that the receiving facility meets the three criteria in the MMPA for holding marine mammals.

Prior to 1994, NMFS would annually send its marine mammal inventory to each facility holding marine mammals for updating. The community believed that this simple, once-a-year mailing would continue and that, coupled with the 15-day notices, the year-end inventory update would provide facilities with the opportunity to notify the agency whether the animals had indeed been moved and of other required information such as births and deaths. That has not been the case. Since 1994, NMFS has required facilities to send a form for not only transports but for all other inventory changes. This is not the simplified process the community had sought nor the one Congress envisioned with the passage of the 1994 amendments.

In addition, in 1994 Congress decided it was wasteful for two agencies to have duplicative oversight responsibilities for the public display of marine mammals. Congress rejected NMFS' attempt to claim dual authority to establish and enforce marine mammal care and maintenance standards and clarified that APHIS has sole responsibility.

Nevertheless, in its 2001 proposal, NMFS attempts to reassert joint authority with APHIS to enforce APHIS' care and maintenance standards. NMFS' proposal could create an awkward double-jeopardy scenario whereby an APHIS inspector could find a facility in compliance with APHIS' regulations but a NMFS inspector finds the APHIS inspector is wrong. If NMFS finds the facility in violation of APHIS' regulations, NMFS can revoke the facility's right to display marine mammals. This latest NMFS proposal raises serious legal, budgetary, ethical, and good government questions as to why two different agencies should be enforcing care and maintenance standards for marine mammals.

NMFS then compounds the problem by proposing to deputize "any person" to inspect a public display facility for compliance with APHIS regulations and to then inspect and copy any and all facility records. Allowing NMFS to designate any member of the public as an APHIS inspector and requiring public display facilities to turn over all of their records to that person raises very significant privacy issues.

QUESTIONS FROM RANKING MEMBER ROBERT UNDERWOOD -

Question 1: Could you please describe your working relationships with both APHIS and NMFS?

Response: The American Zoo and Aquarium Association (AZA) and the Alliance of Marine Mammal Parks and Aquariums (Alliance) have had a wide range of experiences dealing with both APHIS and NMFS and their enforcement of the Animal Welfare Act (AWA) and Marine Mammal Protection Act (MMPA). We have generally

found staff from APHIS and NMFS to be fair, objective and professional in their dealings with our accredited members.

Efforts to further expand regulatory oversight of marine mammals often puts the community at odds with both agencies. AZA and the Alliance have strongly objected to many regulatory efforts proposed by NMFS and APHIS/Animal Care.

However, APHIS/Animal Care has done an effective job in working with the diverse interests of the marine mammal community and the animal rights organizations to build consensus for revising the care and maintenance standards for marine mammals by supporting a negotiated regulating panel to address the issues. Additionally, the agency holds regular, public meetings for the community and activists on its regulatory agenda, keeping a positive dialogue between the regulators and the regulated exhibitors.

AZA's support for the integrity of the Animal Care program is evident in that the Association is the only regulated entity on the APHIS/Animal Care Coalition for increased appropriations. The Coalition is primarily made up of animal protection groups (including ASPCA, HSUS and the Animal Welfare Institute) who share this similar belief.

On the other hand, for seven years (since the reauthorization of the MMPA in 1994), AZA and the Alliance have communicated to NMFS that the agency's MMPA interim rules did not reflect the intent of Congress. The recent proposed rule by the agency made it clear that the agency does not agree.

Question 2: Has AZA or the Alliance commented on NMFS recently published regulations that would implement the 1994 amendments to section 104 of the Act? If so, are these changes viewed favorably by the display community?

Response: AZA, the Alliance, and numbers of members of both organizations have submitted lengthy comments to NMFS stating our concerns about the proposed rule. Both organizations find NMFS' new, proposed rule unacceptable as it overturns or repudiates the 1994 amendments to the MMPA agreed to by Congress. For a complete understanding of our concerns, please see AZA and the Alliance comments on the NMFS' proposal, which are attached.

Question 3: In regards to the recent controversy concerning captive polar bears currently being displayed in Puerto Rico by the traveling Suarez Circus, in your opinion does this operation or its facilities comply with the industry standards voluntarily adopted by AZA and Alliance members?

Response: The American Zoo and Aquarium Association (AZA) is an accrediting body with accreditation standards and codes of ethics that govern membership in the Association. The Alliance of Marine Mammal Parks and Aquariums (Alliance) has initiated an accreditation process based on its Alliance Standards and Guidelines.

Only institutions that meet the following definition of zoological parks and aquariums can receive AZA accreditation: "a permanent cultural institution which owns and maintains wildlife that represent more than a token collection and, under the direction of a professional staff, provides its collection with appropriate care and exhibits them in an aesthetic manner to the public on a regularly schedules, predictable basis. They shall further be defined as having as their primary business the exhibition, conservation and preservation of the earth's fauna in an educational and scientific manner." Accreditation involves a review and inspection process by which zoos and aquariums are evaluated in order to become AZA members. Accreditation for both organizations takes place every five years and examines all aspects of an institution's operation, including the animal collection, veterinary care, physical facilities, safety, security, finance, staff, governing authority, support organization, education programs, conservation and research and adherence to the organizations' policies and standards. AZA's accreditation guidelines can be accessed at http://www.aza.org/Accreditation/Documents/AccredGuide.pdf. The traveling polar bear exhibit (as part of the Suarez Circus) does not meet the definition of an AZA accredited member since the facility does not comply with AZA standards. Similarly, the Alliance does not believe, based on available information, that the traveling polar bear exhibit would meet Alliance standards for accreditation.

Collectively, members of the AZA and the Alliance represent the greatest body of professional expertise and knowledge about the care and handling of marine mammals. Because of the concern about the care provided to these animals, we recommend that APHIS name a blue-ribbon panel of experts to conduct a thorough veterinary examination of these polar bears. Such a panel might include a representative with veterinary credentials from the AZA, the Alliance, the circus industry, an animal rights organization and APHIS.

Responses from Rick Marks, Member of Take Reduction Teams, Garden State Seafood Association

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

In your testimony you discuss the precautionary measures the NMFS has incorporated into their use of PBR. Can you go over this again for Members so we can get a better understanding of just how precautionary the agency is being and whether you think these measures are based on sound scientific measures?

The problem with MMPA's risk-averse approach starts with the major goals of the Act. They are not clearly defined:

> Marine mammals " should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part, and, consistent with this major objective, they should not be permitted to diminish below their optimum sustainable population." (Sec 2.2)

The Act offers no definition of what is a "significant functioning element in the ecosystem." The Act does define OSP as the "maximum net productivity of the species" which is generally considered to be 50%–70% of a known historical abundance but OSP for most mammal stocks is unknown as historic abundance and carrying capacity are rarely well-understood.

The 1994 MMPA reauthorization added a new requirement that NMFS develop estimates of Potential Biological Removal ("PBR"). PBR is the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

PBR is the product of three components: (1) the minimum population estimate (Nmin); half the maximum net productivity rate (0.5 x Rmax); and a recovery factor (Fr) and is expressed by the formula:

$$PBR = N_{MIN} * 1/2\ R_{MAX} * F_R$$

The Minimum Population Estimate (Nmin) is defined as the number of animals in a stock, which is supposed to be based on the best available information and provides reasonable assurance that the stock size is equal to or greater than the estimate. However, the Act contains no specific reference to what is "a reasonable assurance" that the population is equal to or greater than that estimate. This means that NMFS scientists were free to develop rationale for Nmin values to be less than the best estimate. Indeed, the best available population survey numbers are adjusted downward as the NMFS deems fit to account for undefined "uncertainty."

"Rmax" is defined as one half of the maximum theoretical or estimated net productivity rate of the stock at a small population size. Net productivity rate is considered to be the annual per capita rate of increase in a stock due to reproduction. In most instances conservative default values are used, 0.04 (cetaceans) and 0.12 (pinnipeds), even if different but known scientific estimates are actually published in the scientific literature. Hence, not only are conservative values employed as a starting point, but the Rmax values are reduced again by half to account for additional undefined "uncertainty."

Finally, a recovery factor termed "Fr" is applied to the PBR calculation. The intent of the recovery factor is to compensate for uncertainty and possible unknown estimation errors. Though the 1994 amendments provided no specific guidance for values of Fr, values of 0.1 to 1.0 are arbitrarily used to reduce the value of PBR. The value of Fr used in a given PBR formula may vary, such that Fr = 0.1 for endangered stocks; Fr = 0.50 for stocks of unknown status or listed as depleted or threatened; and Fr = 1.0 for stocks thought to be at OSP.

Thus, a multi-tiered precautionary approach is incorporated into each and every PBR calculation, all reportedly for the same reason to account for "uncertainty" which remains undefined, to ensure that marine mammal populations are at OSP levels at least 95 percent of the time.

The impact of such conservative assumptions on the estimate of PBR can be significant and is elucidated in the following harbor porpoise example. The HPTRT had only three years of survey data (1991, 1992, 1995) available to calculate PBR in 1997. NMFS chose not to utilize the most "recent" 1995 survey of 74,000 exclusively, nor did they use the moving arithmetic average of the most recent three surveys which still would have underestimated the true stock size. In fact, NMFS chose not to drop the oldest and most dubious survey from 1991 which is inconsistent with scientific advice that five-year old surveys (and older) start to represent unreliable population estimates.

Instead, NMFS reduced the population estimate to 54,300, using the inverse variance-weighted average of the three surveys. This effectively reduced the stock of harbor porpoise by 26 percent from current levels. The agency reduced the population estimate an additional 8.7 percent (taking the 20th percentile of the log-normal distribution) to arrive at 48,289, the final Nmin. Thus, the total reduction in population size was equal to 34.7 percent (74,000 to 48,289) from the most recent survey count. This corresponds to a reduction in the PBR estimate from 740 to 483.

Finally, the application of Rmax and Fr to the reduced value for Nmin forces a further low-balling of harbor porpoise PBR estimates. This is not a valid or necessary approach for a species such as harbor porpoise. These small cetaceans are reported in the scientific literature to have extremely short life spans, early maturity and very high reproductive rates, comparing favorably with those of pinniped species (See Read, A. & A. Hohn, 1995. Life in the Fast Lane: Life History of Harbor Porpoise from the Gulf of Maine).

Arguably, applying one-half of a default Rmax value (*i.e.* Rmax = 0.02 ; noting that 0.04 it is the exact same value used for large, slower growing whales) and the Fr default value (0.5) for a species with such r-selected life history characteristics may be philosophically justifiable, but not necessary from a scientific standpoint.

Alternatively, calculating PBR using N = 59,667; Rmax = 0.04 and Fr = 1.0, leads to an estimation of PBR for harbor porpoise equal to at least 1,629 animals. This approach is valid when one considers that prior to implementing harbor porpoise protective measures, the NMFS 1999 population estimate for harbor porpoise totaled 89,700 animals, up from 74,000 reported in 1995 and 37,500 in 1991 (Table 1: See also Palka, D., 2000. Abundance of the Gulf of Maine/Bay of Fundy Harbor Porpoise Based on Shipboard and Aerial Surveys during 1999).

To your knowledge, how did NMFS come up with this method of determining PBR?

The 1994 MMPA reauthorization added a new requirement that NMFS develop estimates of Potential Biological Removal ("PBR"). PBR is not based on or derived from any specific wildlife management population model. It was apparently developed by NMFS solely for implementing the 1994 MMPA amendments. NMFS scientists (not managers) have incorporated several layers of precautionary assumptions into the only formula that serves as the nationwide standard for calculating PBR.

The MMC has suggested a two-tiered approach that equates ZMRG with reducing mortalities and serious injuries to biologically insignificant levels, for example 10% for most stocks, but then establish a numerical cap for abundant stocks to ensure that large numbers of animals are not taken from the stock. Does this seem arbitrary to you? Do you think this is better than the current process? How would you pick such a cap? Is it really necessary to pick a numerical cap for abundant stocks?

Reducing the entanglement of marine mammals in fishing gear is a rational and socially laudable objective. This should be a natural and continuing objective under the MMPA using gear mitigation research, changes in fishing behavior, education, and cooperative disentanglement programs. However, ZMRG as a legal requirement that is both time-certain and point estimated is not necessary and will result in litigation.

Stocks that are neither endangered nor threatened or stocks that are increasing should not be subject to a ZMRG. The ZMRG rule will result in artificially low thresholds, especially if based on negatively-biased survey estimates and PBR values. In addition, a one-size-fits-all definition of "10% of X" is completely arbitrary and will result in needless socieo-economic costs.

A more useful approach would be to apply ZMRG as a concept and an objective not a date-certain legal requirement, and only on a case by case basis for stocks in poor condition. In those instances, a soft target ZMRG could be defined as a valid percentage of current population size (based on high quality survey methodology) or quantifiable Rmax value, rather than on a precautionary PBR estimate. The practical implications of ZMRG would then have to be evaluated concurrently with social and economic concerns.

In the case of robust stocks, setting a cap on the number of animals that can safely be removed is a reasonable approach to wildlife management. All stocks, be they minke whales, whitetail deer or fox squirrels, can safely sustain some specified level of removal. These caps could be dynamic, reflecting changes in carrying capacity and impact on the region ecology, and the population's ability to maintain some threshold population size, rather than requiring a 95% probability of maintaining OSP.

That being said, the NMFS is not able to satisfactorily handle the current data demands for all species. NMFS is developing management plans with a paucity of information and constituents are suffering with the precautionary results. A more reasonable approach would be to prioritize stocks based on concern for long term health of the population and focus the management efforts accordingly. In this regard, a "cap" or threshold population level could be used as a "trigger" for reprioritizing management and data collection efforts to address potential problem situations.

QUESTION FROM RANKING MEMBER ROBERT UNDERWOOD

You say that the Harbor Porpoise PBR is set under too much of an influence of the precautionary principle, and that the TRT demonstrates how NMFS has little regard for the social and economic impacts of the plan on fishermen. Could you please give us some examples of the effects of the TRT has on the fishermen. How specifically do they have to change their fishing behavior and what effects does this have on their livelihood?

Unlike the Magnuson–Stevens Fishery Conservation and Management Act (MSA), the MMPA Section 118(f) has no formal requirements for the Secretary to balance conservation benefits with socieo-economic impacts. Therefore, severe management restrictions can, and are, instituted absent analyses of the impacts on a given community or group of constituents. Increasingly, we are seeing the agency and the conservation industry use MMPA-generated TRP's as a means to reduce fishing effort outside of the MSA process. MMPA TRP's contain elements designed to reduce fishing effort/catch (and revenues) through time/area closures and gear limitations. These costs are never estimated in TRP's nor are they formally mitigated.

In some cases, the mammal measures are additive to fishery restrictions resulting in a "double dipping" of restrictions. Often, fishermen are not provided "PBR credit" for fishing restrictions. For example, monkfish gillnetters were subject to a seasonal closure under the MSA FMP and were also subjected to additional closures pursuant to the HPTRP without receiving credit for the fishery closure.

In the case of the spiny dogfish, the NMFS closed the entire east coast directed dogfish fishery but was not willing to estimate the savings in the form of reduced marine mammal interactions resulting from the fishing closure. This will result in needless and excessive restrictions on other fisheries.

In addition to a layering of both MSA and MMPA regulations, productive fishing grounds are often closed via the TRT process. Thus, fishermen must find new areas to fish which may be further away and yield lower catch rates. If fishermen are under effort/gear limitations in the fishery already, they may not be able to recoup the lost income from being forced off the primary fishing grounds by the additional marine mammal conservation measures.

Fishermen may also be required, or even agree, to alter their gear which could lead to increased cost. Acoustic devices such as "pingers" are sometimes used as a means of marine mammal deterrence. Popular and effective as these alternatives may sometimes be, they always come at increased costs borne solely by the fishermen.

Responses from Joe Scordino, Deputy Regional Administrator, Northwest Region, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. The NMFS has released its report Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and West Coast Ecosystems. Does the Agency recommend implementing the recommendations of the report? Will these recommendations be included in an Administration bill? Has the Agency made any further progress in developing new, non-lethal means of chasing off California sea lions and Pacific Harbor Seals during testing? Your testimony mentions that "new information" has become available since the 1999 report to Congress. Other than new populations assessments, what new information were you referring to?

NMFS continues to support three of the recommendations.

The first recommendation is to "Implement site-specific management authority that would allow state and federal officials to lethally remove pinnipeds where necessary to protect ESA-listed salmon and other marine resources." Although NMFS continues to support the concepts related to site specific management measures, we do not expect to include these measures in the upcoming Administration bill. Exist-

ing provisions of the MMPA allow NMFS to address the known applications where lethal take authority has been needed, such as to protect Lake Washington steelhead as they migrate through Ballard Locks. Other instances of predation, where the scientific record is not as full as the one at Ballard Locks, have not been identified at this time. The provisions in section 101(c) that allow people to take marine mammals if "imminently necessary" would apply to human safety concerns. It may also be possible to apply the authorities within section 109(h) to protect human health and welfare; however, application outside the stranding response program has not been attempted or tested.

The second recommendation to " Develop safe and effective non-lethal deterrent technologies" has been pursued by NMFS. But, we have found through studies that acoustic technology, which initially appeared promising, may not provide a safe, effective approach to long-term deterrence of sea lions in open water applications due to affects on other marine species. However, in limited, restricted areas, such as at the Ballard Locks in Seattle, WA, non-lethal acoustic deterrence measures appear effective in addressing California sea lion predation on steelhead. NMFS is currently supporting a new line of studies by Moss Landing Marine Laboratory to conduct basic behavioral studies on sea lions to determine what "cues" they use to find hooked fish. These studies would describe the "cues" involved in interactions with fishing operations and ways to possibly "mask" or eliminate those cues to avoid interactions.

The third recommendation to "Reconsider the prior MMPA authorization that allowed commercial fishers to lethally take pinnipeds as a last resort to protect their catch and gear in specific fishery areas where economic impacts are occurring" is no longer supported by NMFS and will not be included in the Administration bill. As described in my testimony, this recommendation was the subject of most negative comments from the public, but it remained in the Report so that Congress would have background information if it chose to reconsider the 1994 amendments that eliminated the prior authorization that allowed commercial fishers to kill marine mammals as a last resort. Following the submission of the Report, NMFS learned that many participants in current commercial and recreational fisheries do not necessarily desire to have this authority. Rather, these parties have expressed the need to have safe, effective non-lethal deterrents available to them, and authority for state and federal managers to remove problem animals where necessary when non-lethal measures are not effective.

The fourth recommendation to "Implement the studies necessary to obtain additional information on the expanding pinniped populations and their impacts on other resources, especially ESA listed salmonids" has been underway by NMFS and the States since fiscal year 1998 with Congressional action to increase NMFS' funding for studies on pinniped impacts on salmonids and West Coast ecosystems. These studies have resulted in new information, since the 1999 Report to Congress, on 1) pinniped predation on salmonids in several river systems on the West Coast; 2) updated population status of harbor seals and sea lions which are noted for showing that harbor seals in Washington and Oregon are at their optimum sustainable population level (OSP); 3) updated information on sea lion interactions with the salmon troll fishery and the southern California partyboat fishery; and, 4) information on the effectiveness and utility of acoustic devices as non-lethal deterrents.

2. Your testimony indicates that seal and/or seal lion predation can have a negative impact on the recovery of depressed or declining salmonids. Can you quantify what percent of the mortality of the listed salmon is due to pinniped predation? How do these figures compare to direct human causes of mortality?

Predation on ESA listed salmonids varies from site to site. In some river systems, such as the Umpqua River in Oregon, studies indicate that seal predation is unlikely to impact recovery of ESA listed salmonids. In other systems, such as Hood Canal, WA, where studies are still underway, preliminary information indicates harbor seal predation may be impairing recovery of summer chum salmon. Final analyses, which will quantify the percent of the listed chum salmon population taken by harbor seals through the three-year study period, should be available in the next year. Human causes of mortality on Hood Canal chum salmon are described below under Question 3. Through over 10 years of study at the Ballard Locks, NMFS determined in the mid–1990s that California sea lion predation on Lake Washington steelhead, which exceeded 60% of the returning adults in some years, did have a negative impact on the population. Direct human causes of mortality in the Lake Washington system included tribal fishing, which ceased in the 1980s, and improvements were made to fish passage at the Ballard Locks facility, thus sea lion predation was a principal factor in the decline of the steelhead population.

3. Your testimony states that "pinniped predation rates exceeding 25 percent of spawning summer chum salmon in Hood Canal." What are the other impediments to this populations recovery and what percent of the mortality of these salmon is due to other factors?

Hood Canal summer chum salmon mortality is attributable to fisheries, shifting environmental conditions, and the cumulative effects of habitat degradation. Total fishery exploitation rates on summer chum, which were listed as threatened under the ESA in 1999, averaged 44.5% from 1974–1994 (range = 12.2%–81.2%). Since that time exploitation rates decreased substantially as a result of fishery actions taken to protect summer chum and other salmonid species. Hood Canal fisheries are now managed to minimize incidental take of summer chum, which is now on average kept below 11%. Although in any one year fisheries may be managed for exploitation rates lower than this, the upper end of the exploitation rate may not be exceeded. Supplementation programs were instituted in 1992 for the Big/Little Quilcene, the Hamma Hamma and Lilliwaup stocks due to the assessment of high risk of extinction for these stocks without intervention. The Quilcene program has been quite successful at increasing the number of returning adults. The Hamma Hamma and Lilliwaup programs have been hampered by an inability to collect sufficient broodstock. Although there are recognized risks associated with hatchery programs, in this case these risks are offset by the potential benefits in facilitating recovery. A habitat assessment, conducted as part of the Summer Chum Salmon Conservation Initiative for Hood Canal and Strait of Juan de Fuca summer chum stocks, concluded that channel, riparian forest and sub-estuarine conditions were moderately to severely degraded in all the watersheds due to a history of logging, road building, rural development, agriculture, water withdrawal, and channel manipulations. The data is not available to determine what proportion of total mortality on summer chum populations is directly attributable to habitat degradation and environmental factors.

4. The NMFS has been looking for new technology to deter marine mammals such as California sea lions from fishing activities, yet they rejected permit applications to test pulse technology because of the threat of a lawsuit by certain environmental organizations. In fact, your testimony states that, "only one avenue of deterrence technologies appeared to be promising...this avenue was acoustic devices." Why did the agency deny the permit based solely on a threat of litigation when the agency has cited a need for new technology and pledged to work with industry to find and test new technologies? Will this be the case for the future permit applications?

High powered acoustic devices, such as the pulsed power device, may be effective non-lethal deterrents, but they also may affect other species or cause injury to the target animals (*i.e.*, sea lions). NMFS was aware of these concerns in the development of the pulsed power device and they were also raised by environmental organizations that threatened lawsuits. The California Coastal Commission (CCC) rejected our coastal zone consistency determination for ocean testing of the pulsed power device because they viewed it as inconsistent with protective criteria that are used for other sources of sound, such as marine geophysical exploration, and because of concerns about impacts on other marine species. NMFS postponed the field testing of the pulsed power device to address CCC concerns, and required captive studies to determine what power levels would deter sea lions without causing injury or deafness to the sea lions. NMFS' interest was and is for development of deterrence technologies that can be applied on a broad basis (multiple fishing boats) in open waters with little or no adverse impacts on the environment, and without serious injury to the sea lions—these criteria will apply to any future permits for testing deterrence devices. The recent laboratory studies indicate that the pulsed power device may not be as effective in deterring California sea lions as initially hoped and may cause temporary effects on hearing; thus we need to seek new technologies and methods, beyond acoustic deterrence, to address fishery interactions with California sea lions.

5. What does the MMPA direct marine mammal management agencies to do once a population reaches OSP? Will a population that has reached OSP continue to grow, although possibly at a slower rate of growth? Is OSP the same thing as the carrying capacity? How do we deal with a situation where a population has reached carrying capacity or OSP yet is significantly below the estimated historical population level?

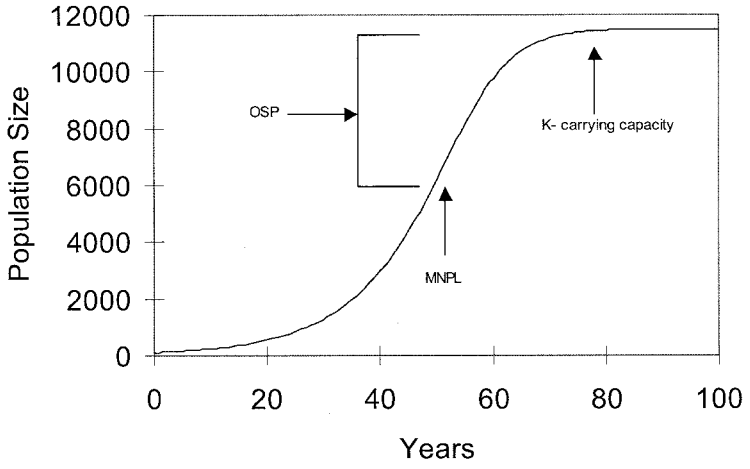
The MMPA states that marine mammal populations "should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part, and, consistent with this major objective, they should not be permitted to diminish below their optimum sustainable

population" (MMPA Section 2(2), 16 U.S.C. 1361(2)). Thus, we must monitor the status of marine mammal populations relative to their optimum sustainable population (OSP) level and assure that are not reduced below OSP. Once a population reaches OSP, there are no actions required of NMFS or the States, but management alternatives, such as waiving the moratorium or transferring management authority to the States, can be considered. OSP and carrying capacity are not the same but they are related. The MMPA does not provide a complete definition of OSP, so it was necessary for NMFS to clarify in regulations an operational definition for OSP. OSP is defined within the context of a hypothetical construct that represents the growth of a population that is constrained by density-dependent phenomenon (*e.g.*, food or space limitation). The generalized logistic growth curve (see Figure 1 below) is used to describe population growth of marine mammal populations and OSP has been defined relative to generalized logistic growth. NMFS adopted the definition for OSP as a range of population sizes between carrying capacity and a smaller population size that provides maximum net productivity (MNPL) (41 FR 55536, December 21, 1976; codified at 50 CFR 216.3). A population that has reached OSP may continue to grow; however, OSP is a range of population sizes, and as the population approaches carrying capacity, the growth will slow to zero. It is important to recognize that these definitions are based on a reasonable but theoretical model. The realized growth in a marine mammal population is governed by much more complex mechanisms than are considered in the generalized logistic growth curve. Carrying capacity is a hypothetical construct that is assumed to be constant in this model. We know this is unrealistic, and fully expect that carrying capacity can and will vary. Some of the variation will be short-term (*e.g.*, El Nino) and other changes may be more long-term. It is reasonable to expect that populations at OSP will fluctuate and will not grow at some diminishing rate. Pacific harbor seals in Washington and Oregon have been determined to have reached OSP. However, we do not have reliable historical population estimates for west coast pinniped populations, so we cannot compare them to OSP or current carrying capacity.

QUESTIONS FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. Going back to the recommendations made by the 1999 Report, the first recommendation would allow the lethal take of California Sea Lions and Pacific Harbor Seals, if preying on salmonids that are listed or are candidates for listing under ESA. Who would make the final decision that the lethal take would be allowed? How long could the lethal taking go on before it would affect the stocks of the Sea Lions and Harbor Seals? You say this would not be used as a culling method, but would there be a review of all lethal takes to ensure that this allowance is not co-opted?

The recommendation is for a framework that uses a precautionary approach that would favor the protection of ESA-listed species (*e.g.*, salmon) over absolute protection of healthy, robust and expanding pinniped populations. The recommendation includes a number of safeguards to prevent unwarranted lethal takes of pinnipeds. Takes that occur under this framework would be added to takes from all other sources of human caused mortality (including fishing), and thus would be limited to the "potential biological removal" (PBR) level established for the pinniped population. Annual reporting would be required to monitor that this and all other takes are kept below the PBR level, in order to ensure healthy populations of pinnipeds, while allowing removals in acute situations. Only in situations where pinnipeds are preying on ESA-listed salmonids would lethal removal be authorized without considering non-lethal means first, and only in cases where such removal is within the context of salmon recovery actions. In all cases, lethal removal of pinnipeds would be an action of last resort, and only by state or federal resource managers. This framework does not apply to fishers or the public.



Responses from Steve Thompson, Acting Manager, California–Nevada Operations, U.S. Fish and Wildlife Service

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

Question 1: In 1987, the USFWS began to translocate an experimental population of southern sea otters as a recovery action in response to population declines and to avoid potential risks associated with possible oil spills. A provision within the authorizing legislation required USFWS to limit potential impacts to existing commercial fisheries. Animals from the experimental population are now leaving the translocation zone and are possibly affecting commercial fisheries. How has FWS managed this experimental population and what future plans does USFWS have for the experimental population and the affected commercial fisheries?

Answer: The transplanted population at San Nicolas Island has remained small since 1990 and currently numbers about 28 individuals total in the translocation and management zones. While there is no evidence that sea otters are now leaving the translocation zone at San Nicolas Island, beginning in 1998 the Service observed up to 150 sea otters entering the designated sea otter management zone from the parent population. These animals appear to be males that move into the management zone in winter and return to the range of the parent population in late summer or early fall, a pattern consistent with natural range expansion.

Nonetheless, Public Law 99–625 states that any sea otter found in the management zone, regardless of its origin, is to be considered a member of the experimental population. The Service was required to use all feasible non-lethal means to capture sea otters in the management zone and return them to the translocation zone or to the range of the parent population. However, the Service has determined that, at present, this is not consistent with the requirement under the ESA to avoid jeopardy to the species. This decision was based in part on evidence that there would probably be substantial adverse impacts to the parent population from translocating large numbers of otters from the management zone to within the range of the parent population. The Service has suspended further containment efforts while it re-evaluates the program, and expects to complete a supplemental EIS and finalize our evaluation of the program sometime next year.

Question 2: USFWS has not attempted to remove otters from the management zone since approximately 1993. One of the reasons for this was an acknowledged lack of funds. Did USFWS ever request funding for this program after 1993? Some have argued that USFWS ignored their obligations under the law to continue these removal efforts. Is this accurate?

Answer: The Service did not request funding for the translocation program after 1993. When the Service stopped removing otters from the management zone in 1993, there were few otters remaining in the translocation zone and few otters in the management zone. In the management zone, conflict between commercial fish-

ing operations and sea otters was minimal or non-existent. If it is found that continuing to maintain a management zone is feasible and consistent with recovery goals for sea otters and Public Law 99–625, the Service will likely request funding from Congress to implement the program.

Question 3: Testimony was heard at the hearing that one of the impediments to sea otter recovery is parasites, including those transmitted by cat feces. Can you explain this problem and also comment on how parasites transported by cat feces are affecting marine mammals in the marine environment?

Answer: Our National Wildlife Health Center determined that approximately 8 percent of stranded sea otters examined between 1992 and 1995 died as the result of protozoal encephalitis, a condition caused by microscopic parasites in the brain. A parasite commonly found in domestic cats was identified in these otters. This parasite, Toxmoplasma gondi, can cause health problems in many species, including humans. How the parasites are transmitted to sea otters is unclear, but it is suspected that cat feces carrying the eggs of the parasites may be washed into the marine environment through street sewers or sewage treatment systems. The eggs may then be concentrated in filter feeders like mussels and clams that the sea otters consume. Research is currently being conducted to develop a better understanding of this potential source of contamination in the marine environment.

Question 4: Is it true that the parasite problem is responsible for more Southern sea otter mortality than direct human causes such as commercial fishing? Can you rank the causes of mortality and give an estimate of the number of animals killed by each category per year?

Answer: Our National Wildlife Health Center determined causes of death for a sample of fresh dead sea otters stranded between 1992 and 1995. They found that approximately 38 percent of the otters died from infectious diseases including parasite infestations. Approximately 20 percent died as the result of trauma that included shark bite, boat strikes, and gunshot wounds. Emaciation accounted for 10 percent of the mortalities, while 31 percent were placed in undetermined or miscellaneous categories. In many cases, mortalities that result from commercial fishing activities are difficult to detect because they often involve drowning of animals. For example, animals drowned in fishing gear may sink and often are not recovered.

Question 5: One of the original factors for the listing of the southern sea otter was the concern that the entire population could be killed by an oil spill. Is this still a reasonable concern? Has the FWS taken a look at the original factors for the listing and reevaluated the potential risk for those factors?

Answer: The possibility of an oil spill continues to be a significant threat to sea otters. The 1989 *Exxon Valdez* spill in Alaska demonstrated that large numbers of sea otters could be killed in one event, and that rehabilitation of oiled sea otters is of questionable benefit to the population. The Service recognizes that significant progress has been made to reduce the risk of oil spills. However, oil production and transportation continue off the California coast. The southern sea otter was listed because of its small population size and vulnerability to oil spills. A report on the potential impacts of oil spills on the southern sea otter population (Ford and Bonnell, 1995) is included in the draft recovery plan (January 2000).

Question 6: P.L. 99–625 requires the FWS to remove all sea otters from the management zone. The FWS has now determined that removal of any otters from the zone constitutes jeopardy to the continued existence of the southern sea otter. Does that imply that the loss of any of the otters currently in the management zone constitutes a threat to the entire population's recovery? How many otters are currently estimated to be in the management zone? How does the FWS justify this position when P.L. 99–625 specifically states that the experimental population will not constitute jeopardy?

Answer: The Service s recent biological opinion was based on effects on the parent population of returning sea otters from the management zone back to the range of the parent population. Our analysis focused on the effects these returned otters would have on other otters found in the parent population. Specifically, there is a concern that returning large numbers of male otters to areas occupied by females and pups will lead to widespread disruption of the population. Our original biological opinion for the program did not consider these effects.

As of May 2002, the Service believes there are fewer than 5 sea otters in the management zone. However, since 1998 we have observed seasonal movement of otters into the management zone. We expect larger numbers of sea otters to continue to enter the north end of the management zone in winter, and depart the following spring. Given the uncertain stability of parent population counts, the Service believes it would not be prudent to move otters at this time.

Question 7: In 1993, FWS made the unilateral decision that they could no longer reasonably remove otters from the management zone. This constitutes a violation of the spirit and the letter of the law. At no time has FWS returned to Congress to ask that the law be amended because it was unenforceable. In fact, on a number of occasions, this Committee has asked for more information on this issue with little if any response. Does the FWS make it a habit to knowingly violate their responsibilities under the law without notifying Congress that it believes the provisions of the law are unenforceable?

Answer: No. The Service is first attempting to ensure that it identifies and addresses conflicts between the Endangered Species Act and Public Law 99–625. The sea otter translocation program was intended to be a primary recovery action for southern sea otters. By 1993, fewer than 15 otters remained in the translocation zone, a few otters were known to be in the management zone, and there was concern that several otters died as a result of being moved. At that time, the Service met with the California Department of Fish and Game to discuss management options as indicated by Public Law 99–625. The Service subsequently stopped moving otters to the translocation zone and removing sea otters from the management zone. When large numbers of sea otters began to seasonally move into the management zone in 1998, the Service conferred with the State and the Marine Mammal Commission, held public workshops, and initiated formal reviews of the translocation program. On January 22, 2001, a notice of policy regarding capture and removal of southern sea otters in the designated management zone was published in the Federal Register (66 FR 6649). This notice identified conflicts between our mandates under the Endangered Species Act and Public Law 99–625, and our intent to fully reevaluate the translocation program through the National Environmental Policy Act process. If, after reevaluating the program, it becomes evident that Public Law 99–625 needs to be amended, the Service will certainly return to Congress with recommendations for such amendments.

Question 8: This experimental population experience may be viewed by some as a precedent that should concern the FWS. The commercial fishing industry entered into negotiations which led to P.L. 99–625 with the understanding that steps would be taken by FWS to minimize the impact of the experimental population on the commercial industry. It appears to some that FWS has "walked away" from those commitments and the law. If that is so, why will other industry groups, such as farmers, enter into agreements for experimental populations or reintroduction efforts by FWS if there is a potential that FWS will at some point "walk away" from commitments to protect those industries? How does FWS intend to deal with the cumulative impacts on the commercial fishing industry of the decision to stop enforcing provisions of the law requiring removal of sea otters from the management zone?

Answer: The Service does not believe that it walked away from its commitments to the southern sea otter translocation plan. Instead, it is the Service's view that the plan must be reviewed in light of new information gained since the translocation began. As noted above, the plan was intended to be a primary recovery action for the southern sea otter and a strategy to minimize, to the maximum extent feasible, conflicts between the experimental population and fisheries in the management zone. The Service is committed to reevaluating the program under the NEPA process with ample opportunity for public input and participation. This ongoing decision-making process will fully involve all affected stakeholders, and will help frame the debate so that this matter can be resolved in a manner that is based on sound science.

Question 9: What is the carrying capacity of the current range of the southern sea otter (since the regulations define the carrying capacity for the translocation zone, FWS should be able to calculate it for the current range)? Has FWS calculated the carrying capacity for the current range? If not, why not? Has the parent population exhibited the characteristics of a stable population?

Answer: An estimate of carrying capacity for the California coast was recently calculated to be 15,941 sea otters (Laidre et. al. 2001). This estimate was based on the assumption that several sections of the current range of the sea otter are at carrying capacity.

The parent population counts declined between 1995 and 1999, but appear to have stabilized somewhat in 2000 and 2001.

Question 10: At what point will the population trends flatten out or begin to decline because of lack of food?

Answer: Without restraints, it is expected that the population would continue to grow and expand its range until it reached the carrying capacity for the environment. As noted above, for California this is estimated to be approximately 16,000 animals. Laidre et. al. (2001) determined carrying capacity by reviewing recent counts of southern sea otters in their current range, identifying portions of the range that were believed to be at carrying capacity, and characterizing the available sea otter habitat throughout California. Their estimate is consistent with estimates based on scant historic records that indicate the historic population was between 16,000 and 20,000 animals.

Question 11: Do sea otters feed on any endangered, threatened or candidate species of shellfish? Is there any evidence that this species is adversely affecting commercial fisheries?

Answer: Sea otters are known to prey on abalone. The white abalone is currently listed as endangered and the black abalone is now considered a candidate species. The white abalone is found in deeper waters of southern California and was listed as the result of commercial over-harvesting. Black abalone numbers in southern California are severely depressed as the result of a disease called withering foot syndrome. The white abalone's deep water habitat may effectively protect it from significant predation by sea otters. Sea otters do prey on black abalone when available, but it is important to note that sea otters and abalone evolved together over thousands of years.

Sea otters can have a profound effect on commercial shellfisheries. In areas where sea otters become established, commercial shellfisheries that target shallow water species are not likely to be successful. It appears that many of today's successful shellfisheries are the direct result of extirpation of sea otters from large portions of their range.

Question 12: If the experimental population is declared a failure, the USFWS is then required to remove all sea otters from the management zone and the translocation zone. What plans does USFWS have to implement this relocation effort?

Answer: The Service is currently re-evaluating this program through a supplemental EIS. When this process is complete, a determination will be made as to whether or not the experimental population has been a failure, and appropriate decisions will be made regarding the fate of the colony.

Question 13: Mr. Rebuck testified that FWS is allowing the threatened southern sea otter's range to overlap with the habitat for the now endangered white abalone. If this is so, are the animals moving into the abalone habitat from the parent population or are they animals from the translocated population? How does the agency plan to deal with this situation? Will the agency begin removing sea otters from the habitat range of the abalone? If so, won't this be as difficult as the removal of the sea otters from the management zone which FWS determined it was unable to do? Won't this effort to remove animals from the habitat of the abalone jeopardize the continued existence of the southern sea otter? How does MMPA and/or the ESA deal with such a situation?

Answer: The Service does not believe that there will be a conflict between recovery of the white abalone and the recovery of the southern sea otter. The white abalone is found in deeper waters of southern California and was listed as the result of commercial over-harvesting. The white abalone's deep water habitat may effectively protect it from significant predation by sea otters. Sea otters and abalone evolved together over thousands of years, thus it is unlikely that sea otter predation alone could lead to the extinction of abalone species.

The National Marine Fisheries Service cited human harvest as the primary cause of decline of white abalone populations when they listed the species. White abalone generally inhabit deep rocky habitat from 60 to 200 feet deep (California Department of Fish and Game, 2001) whereas southern sea otters usually forage at depths

less than 75 feet (Wild and Ames 1974; California Department of Fish and Game, 1976; Estes, 1980). Although there is some overlap between the foraging range of the sea otter and the habitat of the white abalone there is no evidence to suggest that sea otter predation would drive the white abalone to extinction. In a study of abalone species commonly found at sea otter foraging depths, Hines and Pearse (1982) presented evidence showing that the abundance, size, and species composition remained stable in an area occupied by sea otters for nearly 20 years, although density and average size of abalones were substantially reduced when compared to areas not occupied by otters. This indicates that sea otters may preclude commercial harvest of abalone without adversely affecting the viability of the abalone population.

Question 14: Is there an estimate for the population at which the sea otters will be considered recovered?

Answer: The current draft revised recovery plan estimates that a minimum population of 2,650 southern sea otters would be required to consider delisting under the Endangered Species Act. (Of course, evidence of attaining a minimum population size by itself is not ordinarily sufficient to justify a delisting action. All threats posed to the subspecies that cause it to be likely to become endangered in the foreseeable future throughout all or a significant portion of its range must be resolved before delisting occurs.) The Service continues, however, to consider public comments received on the draft plan.

Question 15: How long will the evaluation take for the Service to make a determination on what to do with the translocated sea otter population?

Answer: The Service expects to complete a draft supplemental environmental impact statement this year. Following public hearings, a written comment period, and revision as necessary, a final document is expected sometime next year. A decision on the future of the translocation program will be made upon completion of a final supplemental environmental impact statement.

QUESTIONS FROM RANKING MEMBER ROBERT A. UNDERWOOD

Question 1: You say that there is an on-going decision-making process on the issue of Public Law 99–625 to attempt to rectify the problems translocation has created. Could you please explain what this process is and if there is an associated timeline?

Answer: The Service is currently preparing a supplement to its original environmental impact statement on translocation of southern sea otters, published in 1987. The supplement will update information, reevaluate the existing translocation program, and analyze our options for the program. We expect to complete that draft supplement this year. Following public hearings, a written comment period, and revision as necessary, a final document is expected sometime next year. A decision on the future of the translocation program will be made upon completion of that final document.

Question 2: Environmental organizations have expressed the necessity for finalized plan for Southern Sea Otters to help facilitate cooperation been these groups and fishermen. Is there any current schedule for a finalized plan to be reviewed and released?

Answer: The existing recovery plan for southern sea otters was published in 1982. The Service has already circulated several draft revised recovery plans for review and expects to publish a final revised plan sometime next year.

Responses from Kaitilin Gaffney, California Central Coast Program Manager, The Ocean Conservancy

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. P.L. 99–625 was created to deal with the conflict between fishermen and the translocated population. You now advocate canceling this agreement. How do you propose commercial fishermen be compensated for the cancellation of the agreement? Since you advocate allowing the sea otters to reclaim this territory that P.L. 99–625 designated as an "otter-free zone" what would your organization be willing to bring to the table to accomplish this?

Answer: P.L. 99.625 was enacted, first and foremost, as a means to promote the recovery of the southern sea otter, Within that context, it sought to address the in-

terests and concerns of numerous interest groups, including environmental groups and fishing interests, among others. P.L. 99–625 envisioned a fundamental balancing act - successful establishment of a large and thriving population of sea otters at San Nicolas Island in exchange for a management zone. The San Nicolas Island population has not succeeded; indeed, it has unfortunately been a dismal failure. In addition, it is now recognized that enforcing the management zone will not only impede recovery, the very purpose of P.L. 99–625, but also jeopardize the species with extinction. Under these circumstances, this does not amount to "cancellation of the agreement." Bringing an end to zonal management under P.L. 99–625 is not, as the question implies, a decision by the environmental community to "cancel" a viable and continuing program established by agreement with the fishing industry. It is the result compelled by law due to the failure of the program itself and the devastating effects enforcement of the management zone would have on sea otters. To leave the program in place would give the fishing interests the benefit of P.L. 99–625 and the artificial limitation on range expansion it established without any commensurate benefits bestowed on the species and environmental interests. We support enforcement of the law and termination of zonal management, as requited by the ESA and P.L. 99–625 and its implementing regulations.

The Ocean Conservancy believes that it is premature to discuss compensation for fishermen for the revocation of P.L. 99–625. As noted above, P.L. 99–625 is not being "cancelled." The program it establishes must be terminated as a matter of law. Certainly, the fishing groups are not entitled to any compensation, as they have no property rights at interest or that are affected. Should the Congress be interested in considering a compensation package, we would address such a possibility at that time, recognizing again there is no entitlement to such payment.

With regard to negotiations with the fishing industry, The Ocean Conservancy's goal is to devise strategies that will meet the objective mutually agreed upon during talks with the fishing community: "maintain well-managed and abundant fisheries, healthy marine ecosystems, and recover the southern sea otter population." We are currently in discussions with representatives from the environmental and fishing community and Sea Grant about potentially resuming our earlier talks in the hope that we may refine and further develop the strategies outlined in our testimony. These talks had been proceeding productively until a segment of the fishing industry filed a lawsuit to enforce the management zone, despite the fact that such action would violate P.L. 99–625 and the ESA. Those groups have now withdrawn the case, and we are willing to engage in discussions again. Of particular importance is research to develop and test devices to enhance protected habitat for commercial shellfish-specifically pilot projects to create artificial shellfish refugia and cryptic habitat that is accessible to divers but inaccessible to sea otters. Projects such as this will allow fishermen and otters to coexist and avoid the need for compensation.

2. Your organization advocates non-lethal technology for deterring California sea lions and harbor seals, yet you are opposed to the use of any technology that could "harm" other marine life, Has your organization suggested any potential technology to accomplish these two goals? Would your organization be willing to contribute to the development and testing of any new promising technologies?

Answer: There has been an overall lack of dedicated research into non-lethal deterrents; as a result there is no single deterrent that will safely and consistently deter marine mammals from gear, catch, and predation on threatened and endangered salmon runs. While this is a shortcoming of both the MMPA and its implementation, The Ocean Conservancy continues to believe that the best hope to address pinniped interactions with salmonid stock and fishermen is to develop safe, non-lethal deterrents. To further this goal, we recommended in our written testimony an amendment to the MMPA to provide for an aggressive and dedicated research program to develop and test safe, non-lethal deterrents. The amendment calls for the development of a research plan through the collaborative efforts of federal agencies, environmentalists, fishermen, pinniped biologists, and scientists with specialized technical backgrounds. The amendment would also require that National Marine Fisheries Service implement the research plan and provide a report to Congress. Finally, in addition to congressional appropriations, the amendment provides for private contributions. The Ocean Conservancy would be willing to contribute financially toward the testing of potential deterrents identified through this process.

3. How do you develop a "range" of deterrents, as suggested at the hearing, when environmental groups threaten to sue the agency if it even issues permits to test certain technologies that have been shown to be effective in other countries?

Answer: Since 1994 both marine mammal researchers and environmental groups have expressed concerns about the research protocols, plans, and testing of certain technologies to deter marine mammals pulse power and some acoustic deterrents). Therefore it is vital to devise a research plan that has been developed collaboratively among a broad array of user groups and that has their support. Formulating plans in this way will reduce the odds that there will be litigation to prevent the undertaking of agreed-upon research and may even result in broad support for the research plan's goals and objectives.

QUESTIONS FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. The Ocean Conservancy has worked extensively with fishermen on, the issue of sea otters and their recovery and continued survival. What sorts of issues have the two groups agreed on and what actions do both agree need to be taken by FWS?

Answer: The Ocean Conservancy and Friends of the Sea Otter participated in two meetings with the fishing industry. At the first meeting the group established as an objective: Maintain well-managed and abundant fisheries, healthy marine ecosystems, and recover the southern: sea otter population. At its second meeting the group began to outline tasks within an overall action plan to achieve the objective. The group has yet to determine the details associated with each task, but the general outline is as follows:

- Support State funding for ecosystem health monitoring to identify trends and events affecting otter and shellfish populations;
- Modify fishing gear to avoid sea otter entrapment;
- Develop and implement a sea otter health assessment to obtain valuable information on the health status of wild southern sea otters;
- Secure Federal, State, and private funding to implement the Southern Sea Otter Recovery Plan;
- Enhance shellfish recruitment and harvest within and beyond the sea otter range through the development of pilot projects for creation of artificial shellfish refugia and cryptic habitat;
- Map fisheries and key facilities within current and potential otter range to effectively and cooperatively develop adaptive conservation and management strategies allowing for the co-existence of fisheries and sea otters;
- Undertake research to develop predictive models to assess the impact of sea otter movements on fisheries and the ecosystem to devise adaptive management strategies to address otter range expansion; and
- Identify mitigation measures targeted at fisheries that could be adversely affected by sea otter range expansion to reduce potential adverse impacts on certain fisheries and mariculture projects.

Both the fishing industry and the conservation community have expressed an interest in resuming these discussions that were stalled due to the litigation. The Ocean Conservancy believes that these action items provide a possible basis to continue these discussions. Should these talks resume, participants will likely involve the U.S. Fish and Wildlife Service as well as State management agencies in our efforts to reach consensus on an action plan that will benefit both sea otters and fisheries.

2. The Ocean Conservancy is strongly opposed to site-specific management of pinnipeds. However, you support Section 120 and how it was used at Ballard Locks. Does this mean that The Ocean Conservancy does support lethal removal where necessary and proven?

Answer: The Ocean Conservancy asserts that NMFS' proposal for site-specific management is unnecessary and unjustified. NMFS's proposal would short-circuit the MMPA's existing provisions and significantly lower the burden of proof to justify lethal removal of pinnipeds. The Ocean Conservancy believes that a blanket authorization to States for the immediate use of lethal removal is contrary to the precautionary protection goals and objectives of the MMPA, will not guarantee that these pinnipeds receive the protections afforded by the MMPA, and fails to recognize that lethal removal is a flawed management tool. Section 120 of the MMPA already establishes the appropriate procedures for lethal removal of California sea lions or Pacific harbor seals where specific animals are preying upon ESA-listed species The Ocean Conservancy firmly believes that Section 120 provides the flexibility to conserve salmonid stocks and establishes the appropriate burden of proof to demonstrate both that pinnipeds are having a significant negative impact on the decline or recovery of salmonid fishery stocks and that all reasonable and prudent non-lethal measures have failed. The Ocean Conservancy would only support the lethal

removal of pinnipeds provided it is a consensus decision arrived at through the implementation of the provisions of Section 120.

3. Has The Ocean Conservancy been involved in developing non-lethal deterrence measures for marine mammals, and if so, what sort of technologies have been studied?

Answer: The Ocean Conservancy has not been directly involved in the development of non-lethal deterrence measures for marine mammals. However, we have participated in meetings with the fishing industry where we have reviewed the efficacy of existing measures. We believe that to invent a effective non-lethal deterrent, interest groups must develop and undertake a dedicated and aggressive research plan. In doing so, interest groups must engage scientists from other fields of study, such as acoustical and electrical engineering, to explore new technologies to achieve this goal.

Responses from Dr. Hal Whitehead, Killam Professor of Biology, Dalhousie University, Halifax, Nova Scotia, Canada

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHRIST

1. How does the cumulative effect of all the noise in the ocean affect the environment? How loud is the ocean without human-caused noise?

This depends on the frequency of the noise. At frequencies between about 20–300Hz human-caused noise dominates ocean noise. At lower, and higher, frequencies, human-caused noise sometimes dominates. As far as the loudness of the ocean without human-caused noise, I refer you to the work of Wenz (1962; "Acoustic ambient noise in the ocean: spectra and sources" *JASA* 34:1936–1956).

2. Has there been a pattern of increasing noise in the world's oceans over the past few decades? What are the sources with the greatest contribution to this increase?

Yes there has been an increase. Shipping and seismic activity are important sources.

How does this increase affect marine mammal populations, and how widespread are these effects?

We have almost no idea how this increase affects marine mammal populations, nor how widespread such affects, should they be occurring, might be. We have too little ability to monitor most marine mammal populations. There are a few populations which we know have been increasing over the last few decades (*e.g.*, northern elephant seal, North Atlantic humpback whale). For these populations we can say that increased noise has not been a debilitating threat. Other populations are less healthy. For instance the northern right whale, living in a noisy environment, is in severe difficulty, whereas the southern right whale, living in quieter oceans, is recovering well. This difference might be due to noise or it might not, or noise may be just one of several contributory factors.

3. The MMPA defines harassment very broadly, including minor behavioral modifications. Should the definition be changed to include only those activities that may present long-term impacts to individuals or populations?

The problem is that apparently "minor behavioral modifications" may have long-term impacts, and, conversely, what appear to be major short-term reactions may have no long-term effect. An example of the former is the mild-startle reaction of caribou to low-altitude jets which was found to cause important long-term effects (F.H. Harrington and A.M. Veitch. 1991, 1992. *Arctic* 44: 318–327, 45: 213–218). My feeling is that the MMPA currently does a reasonable job of minimizing impacts on marine mammals, but clearly it needs to be used sensibly so that important human activities are not senselessly restricted because of what are obviously trivial impacts on marine mammals.

4. How do we evaluate long-term effects versus short-time effects?

Long-term effects are much harder to determine as they need long-term data sets, which are rare.

5. Can ship noise be worse for the animal than an interaction with a sonar test?

We do not know. I suspect that it depends on the species, the location, and what the animal is doing. For instance ship noise might interfere with the breeding signals of a blue whale, whereas we know that sonars are particularly dangerous for beaked whales. The evidence is more conclusive for sonars, but that does not mean that ship noise is not dangerous.

6. How are [the beaked whale stranding data] statistically relevant if they are over such long time periods?

The length of the time period has no impact on the statistical relevance of the data. It might have an impact on the biological relevance. One could argue that, even if, as seems clear, military activities harm beaked whales, such numbers (49 beaked whale strandings and 6 mixed-species beaked whale strandings) over such a long time period would not have much affect on the populations of the species. However, if only a small proportion of the animals affected by military activity are reported as stranding, as seems highly likely, then these data represent the statistically significant tip of a lethal iceberg.

QUESTIONS FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. As a scientist, how long would you need to collect data on a species before long-term effects of SURTASS LFA on a population would be able to be quantified?

This depends on how strong the effect is and how well we are able to measure it. For instance, if we do annual surveys with a precision of CV=0.2 (this means we are roughly 95% certain that the estimate is within 40% of the true value; this is pretty good for a survey of whales or dolphins), then to detect population changes of a few percent per year (which are what we would normally expect for such a population) then we would need about ten years of surveys (T. Gerodette. 1987. Ecology 68:1364–1372).

2. Working under a precautionary theory, how much could be done to various species of whales before an impact such as naval sonar would be too much for them to recover from, in terms of population size?

This depends on how the sonar affects the whales. If it causes sudden mass mortality of localized populations, as suggested by the incident in the Bahamas, and other data on beaked whales, then one application of the sonar could be enough to destroy a population. With more dispersed populations (such as those of sperm whales), and/or less dramatic impacts (for instance if use of sonar increased miscarriage rates), then it might take many, and/or widespread, applications of the sonar to produce a non-reversible effect on the population.

3. If you have followed the scientific evidence presented on navy sonar systems and SURTASS LFA, how much more research do you feel should be done before any conclusive decisions on future use are made?

I think there is enough evidence available to strongly suggest that future use of SURTASS LFA is unwise. Because we cannot get at the main areas of concern with current scientific methodology, more research is unlikely to clarify things much.

Responses from Dr. Naomi Rose, Marine Mammal Scientist, The Humane Society of the United States

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. How does the cumulative effect of all of the noise in the ocean affect the environment? How loud is the ocean without human-caused noise?

In 1996, the Marine Mammal Commission (MMC) summarized the potential range of impacts that the Navy's SURTASS LFA sonar could have on marine mammals. The MMC's summary is also useful in describing the general impacts that ocean noise might have on the marine environment:

> [A]ll species and populations of marine mammals could possibly be affected. The possible effects could include: death from lung hemorrhage and other tissue trauma; temporary or permanent hearing loss or impairment; disruption of feeding, breeding, nursing, acoustic communication and sensing, or other vital behavior ; annoyance and subsequent abandonment or avoidance of traditional feeding, breeding, or other biologically important habitats ; psychological and physiological stress, making animals more vulnerable to disease, parasites, and predation; and changes in the distribution, abundance, or productivity of marine mammal prey species and subsequent de-

creases in both individual marine mammal survival and productivity and in population size and productivity.

There are relatively few places left in the ocean where environments are acoustically pristine. Researchers, in their search for such places, usually travel to the southern hemisphere, where commercial, military, and industrial noise is less prominent and widespread. The ambient noise spectrum that Wenz (1962) constructed, based on years' worth of data from the mid–20th century, suggests that low frequency noise drops below 40 dB re 1 mu Pa2, at least in calm seas. By comparison, in well-trafficked areas in the ocean, the average level of ambient noise in these low frequencies can easily exceed 90 dB. At a recent conference on marine mammal biology, Dr. Peter Tyack suggested that on average world wide, human-caused noise has added 20–30 dB to the ambient noise level of the ocean in the last century or so.

2. Has there been a pattern of increasing noise in the world's ocean over the past few decades? What are the sources with the greatest contribution to this increase? How does this increase affect marine mammal populations, and how widespread are these effects?

See above (1). There has definitely been a pattern of increasing noise in the world's oceans over the last century, with a substantial part of that increase occurring since World War II. Ross (1993) compiled data from a number of deep-ocean receivers in the US Navy's SOSUS system (a passive listening network that the Navy relied on to detect foreign submarines throughout the Cold War) and found that, on average, ambient noise in the low frequencies increased by 10 dB, or one full order of magnitude, between the years 1950 and 1975 alone. The data examined by Andrew et al. (2001), all taken from a single receiver located off Point Sur, California, indicate that an 8-dB rise occurred over the same frequencies between the years 1965 and 2000. It has been suggested that the average rise in ambient noise attributable to shipping alone may be as high as 16 dB, which represents a 40-times increase in magnitude (Clark et al. 1998).

Shipping is believed to be the major contributor to this overall increase in ambient noise. It might be noted for context that the number of ships in the world's merchant fleet nearly tripled in the years since 1952; during the same period, the gross tonnage carried by these ships increased by a factor of five, indicating a trend toward the use of larger vessels (Cuyvers 1984), which would tend to have greater noise output.

There are other sources of noise pollution that, while not as ubiquitous as shipping, tend to dominate the regions in which they are found. Oil, gas, and mineral exploration and production are concentrated in areas such as the Gulf of Mexico and the North Sea. Noise pollution created by this industry may increase in the next few years as new technology in seismic exploration, which allows industry to explore deeper fields on the outer continental shelf, comes on-line. There is also concern regarding the expanding use of high-intensity active sonar by the military, of course. This trend is characterized by the introduction of new active sonar systems (SURTASS LFA is only one of these), the proliferation of low frequency systems in NATO countries, and the expansion of active sonar into littoral (near-shore) waters, which are also principal habitat for many marine mammals.

Dr. Peter Tyack, as noted above, gave a plenary address at the recent marine mammal biology conference (sponsored biennially by the Society for Marine Mammalogy) on ocean noise and its impact on marine mammal habitat. I would recommend contacting him for his notes on that address, as they gave an excellent overview of the current status of the marine environment vis-a-vis human-caused noise.

Most of the research conducted thus far on the environmental impacts of human-caused noise has focused on short-term effects (usually measured as observable behavioral responses or temporary threshold shifts in hearing) in individual animals. Of course, short-term effects are more easily observed than long-term effects and individual responses more measurable than those at the population level. Some data on population impacts have begun to emerge, however. A 15-year study undertaken by Morton and Symonds (2001) found that, with the advent of acoustic harassment devices (AHDs) loud sound sources designed specifically to drive predators, in this case seals and sea lions, away from fish farm pens and other such sites a vulnerable population of orcas (killer whales) completely abandoned a primary feeding segment of its habitat. In addition, harbor porpoise also left the area. Neither of these species were the targets of the harassment they do not prey on farmed fish. Once the devices were turned off (after five years of use), some orcas began to return, but others have not.

Habitat abandonment has also been observed in gray whales, attributable both to industrial noises simulated by researchers in Baja California (Jones et al. 1994) and, in a separate study, to the use of airguns for oil exploration in the Sea of Okhotsk (Brownell et al. 2001). As Dr. Darlene Ketten noted in her testimony before the Subcommittee, preliminary data obtained from stranded animals in the North Sea suggests that man-made noise, including the industrial noise from oil and gas exploration and production, may be causing injuries and strandings across a number of species there.

It is not necessary for noise pollution to endure for long periods in order for it to have adverse population-level impacts. Some marine mammal populations may be very seriously affected by intense transient sources. The best-known case of this is the March 2000 mass stranding of beaked and baleen whales I mentioned in my testimony. This mass stranding, as I noted, has been strongly linked to the use of mid-frequency active sonar use by transiting Navy vessels (the final report on this incident is due on December 14). An entire resident population of Cuvier's beaked whale that had been photo-identified and followed for some years by researchers has since disappeared from the area (Balcomb and Claridge 2001).

In summary, human-caused ocean noise appears already to have affected populations of marine mammals, whether through habitat abandonment, auditory injury, behavioral disruption, stress, or other causes.

3. The MMPA defines harassment very broadly, including minor behavioral modifications. Should the definition be changed to include only those activities that may present long-term impacts to individuals or to populations?

Amending the definition of harassment to include only long-term impacts would fundamentally alter the conservative and protective bias of the MMPA. When the MMPA was passed in 1972, Congressional intent was reflected in the statement in the Congressional Record that "no steps should be taken regarding these animals that might prove to be adverse or even irreversible in their effects until more is known." Changing the harassment definition to require long-term observation before impacts (adverse or otherwise) could even be noted clearly conflicts with this intent, as well as with the Precautionary Principle. While the harassment definition is indeed broad, it also addresses the dilemma facing regulators when information is lacking. Rather than require scientific certainty before regulatory action can be taken, the current definition allows the agencies to act when there is the potential to injure or disturb; furthermore, it defines injury and disturbance in terms that are empirical, objective, and relatively ascertainable through existing methods of research. In other words, the current definition allows the agencies to regulate based on the type of activity that is proposed rather than on an activity's specific effects.

Proposed amendments to the harassment definition (from the US Navy, NMFS and the National Research Council) all require some consensus understanding or definition of biologically "significant" or "meaningful" disruption, disturbance, or change in behavior. Given how little is known about marine mammal biology and ecology, what constitutes "significant" or "meaningful" is a matter of lively debate and disagreement; there is no consensus on these issues within the scientific community, as the number of expert comments submitted to NMFS and the Navy on SURTASS LFA indicate. ,The result of these changes would be to introduce ambiguity into the statute, a situation that would undoubtedly makemaking the standard more difficult to enforce than it currently isregulatory agencies' job far and making it vague and uncertain more difficult than it currently isfor users and the public. The result is likely to be a reduction in regulatory oversight for protected species. The current definition is precautionary and requires only that the potential to injure or disturb exists. While this regulatory trigger may seem burdensome to members of the regulated community, it is also maximally protective of species about which little is known and whose responses to human activities in their environment is also largely unknown.

4. How do we evaluate long-term effects versus short-term effects? Can ship noise be worse for the animal than an interaction with a sonar test?

Long-term effects require long periods of time to evaluate this is a truism that is impossible to avoid. This is precisely why the Precautionary Principle was devised and embedded in many environmental laws, including the MMPA. Whatever process of evaluation researchers and regulators undertake, it must be granted sufficient time to provide answers that are adequate for regulatory purposes. At the least, long-term effects will require longitudinal studies of specific populations and individuals, where researchers return to a group of animals (hopefully with many individually identified) season after season. Even then, it will undoubtedly be difficult

to identify causes of any observed changes, at the level of the individual or population. A good example of this is the current situation with the Aleutian population of sea otters, whose numbers are crashing. The downward trend has been fairly clearly identified and verified, through long-term observation; however, the cause of the trend is still a matter of debate. Even if a proximate cause can be isolated, there may be ultimate causes that are far more difficult to identify. Unfortunately, science cannot always provide answers that will assist regulators, but this is not justification for regulators to fail to act.

Regarding ship noise and sonar, any exposure to human-caused noise has the potential to harm marine mammals. Under certain circumstances, shipping noise may prove more harmful than sonar sounds, but the reverse could be true under differing circumstances, depending on the species present, the character of the habitat, the acoustic properties of the locale, and the acoustic characteristics of the sound source. I do not offer this response to be obstructive it is simply a fact. Clearly regulation is uneven at present the solution is not to ease regulation of one noise user because another is under-regulated but to pursue adequate and effective regulation of all noise users.

5. Have the marine mammal stranding events that maybe have been the result of Navy sonar operations hand any long-term impacts to marine mammal populations?

At this point, it is impossible to say if strandings associated with naval maneuvers have had long-term impacts on marine mammal populations. Far too little is known about the populations potentially impacted. Beaked whales are the least studied and most poorly understood of all cetaceans. Baseline population data are largely (and in some situations, wholly) lacking. However, in the Bahamas incident, a "long term" has not passed yet, and even so there is strong evidence that the impact was massive (see 2 above). The regional population of Cuvier's beaked whales had been relatively well studied and after the stranding, all known individuals disappeared from the area (and, a full 21 months later, have yet to be re-sighted). Killing or displacing an entire population segment can be considered a long-term and very negative impact.

6. You cite in your testimony that 8 out of 49 beaked whale strandings over a 161-year period (1838–1999) and 7 out of 7 strandings over a 25-year period (1974–1999) have been related to sonar activities and show that it has an adverse affect [sic] on marine mammals and beaked whales specifically. How are these events statistically relevant if they are over such long time periods?

I refer you to Dr. Hal Whitehead's response to this question. I would mention that time (that is, the time period examined) in this case is not relevant to the data's statistical significance it is not a variable when calculating the statistical likelihood of these co-occurrences. I would also clarify that my testimony did not state that these co-occurrences "show" that active sonar has an adverse effect on marine mammals or beaked whales. I indicated that they provide compelling evidence of an adverse impact. As noted above and below (see 4 and 7), science (and statistics) cannot always provide answers science does not, nor can it prove hypotheses. However, the remarkable co-occurrence of beaked whale strandings with naval maneuvers only the number of observed occurrences is relevant, not the time frame over which they occurred , while not proof of cause-and-effect, is extremely compelling evidence for it.

QUESTION FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. Dr. Rose, do you feel enough research could ever be done to successfully prove or disprove that LFA sonar has an adverse short and long-term impact on marine mammals?

As noted in my testimony and above (6), science does not prove hypotheses. It provides support for or disproves them, but it cannot prove them. In order to collect sufficient data to qualify as adequate evidence for regulatory purposes, I believe 3–10 years of longitudinal observations, following the effects of LFA transmissions on specific populations, would be a minimum requirement for any study hoping to provide defensible support for the premise that LFA sonar has no adverse impact on marine mammals. I have consistently maintained this position throughout the regulatory process surrounding LFA sonar. However, no study, however long it took, could ever prove LFA sonar had no adverse impacts (proving a negative is especially problematic). Long-term studies could, however, provide (or fail to provide) compelling evidence of such impacts.

Again, science and technology cannot always (and should not always be asked to) provide answers for policy questions. It is becoming increasingly clear, from work already done, that human-caused noise in general, individually and cumulatively is having adverse impacts on the marine environment. Indeed, continuing to research the issue may be counter-productive. It may delay precautionary management decisions and, in some cases, the research itself may have adverse impacts. At some point, policy-makers may simply have to say that one more loud, pervasive sound source is too much. There are already too many loud, pervasive sound sources in the ocean. Not every impact can be adequately mitigated: some activities should simply not be authorized. LFA sonar may be one such activity it is not the only one, but it is the one currently in question.

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Responses from Kurt Fristrup, Ph. D., Bioacoustics Research Program, Cornell Laboratory of Ornithology

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. The military activities that occurred in Providence Channel near the Bahamas created a sound pressure level that didn't dissipate over time and may have trapped various marine mammals causing some to strand. Could this type of sound pressure vortex happen in the open ocean or was this specific to this type of channel?

1. The Providence Channel, Bahamas stranding event of 15–16 March, 2000 occurred under oceanographic conditions that promoted long-range sound propagation near the surface (a "surface duct"). The ocean's surface is always a good reflector of sound (though the reflected signal is exactly out of phase with the incoming signal). In a surface duct, the reflective properties of the surface are combined with an upward refracting characteristic at shallow depths (when the speed of sound increases with depth near the surface). Thus, sound energy is "trapped" in this surface layer, and the energy does not spread equally across all depths. These conditions are relatively common in open ocean waters during winter or spring, when strong winds and storms thoroughly mix the near-surface waters and solar warming is less intense (a thick layer of constant temperature).

The phrasing of your questions urges a brief digression, for clarity. The key feature is that loud sounds do not dissipate with distance as they would when no duct is present. In the Providence Channel, and in virtually all marine environments of

interest, loud sounds dissipate very rapidly—with time—when the source is turned off.

In this important respect, sound pollution differs from chemical pollution, waste disposal, and global warming. There is no physical residue; turn off the source, and the potential for direct impacts disappears almost immediately. Extended biological effects can only arise from the internal dynamics of behavioral or physiological response. No one should dismiss the potential for a delayed response, and we have measured one in our humpback research. However, one advantageous aspect of regulating ocean noise pollution is that changes in policy can translate very quickly into changed environmental conditions. There is no physical residue to clean up.

2. Dr. Ketten mentioned the difference between short-term harm and long-term harm to marine mammals caused by sonar. Can you elaborate on how the behavior of animals may be affected on the short-term versus the long-term? How do we evaluate long-term effects versus short-term effects? Can ship noise be worse for the animal than an interaction with a sonar test?

2. Harmful behavioral responses are those that reduce survivorship or reproduction. Short-term examples might include flight reactions that cause animals to strand, that make animals especially vulnerable to predators, or that disrupt mating and nursery areas. Long-term examples might include abandonment of special foraging or breeding areas, shifts of diving patterns that reduce foraging success or migratory efficiency, or chronic stress reactions.

Some of these examples are hypothetical; and the evidence for others is incomplete. However, abandonment has been documented. Stranding has occurred, though the mechanism is unclear. Stranding may be the behavioral consequence of injury or sensory dysfunction, or it could be a direct behavioral response to the acoustic stimulus. We have measured many short-term responses to sound broadcasts (brief changes in song structure, small changes in migratory paths), but none of these would plausibly cause a measurable decline in survivorship or reproduction.

There should be no regulatory distinction between short- and long-term behavioral impacts, if both are measured in terms of projected reductions in survivorship or reproduction.

In the proposed use of LFA, the potential for long-term responses is diminished by the infrequent exposure regime. Chronic noise sources, like seismic profiling and shipping noise, raise my concerns regarding long-term effects. Long-term effects have been more difficult to measure, but new biological and engineering technologies are expanding opportunities for extended observations.

I am more concerned about shipping noise than sonar tests because it is extremely difficult to find places and times where shipping noise is not a dominant feature of the underwater acoustic environment. Sonar tests are restricted in time and space; significant environmental degradation due to masking and chronic exposure is much less likely, and the number of animals that can be exposed is more limited.

3. Dr. Ketten testified that marine mammals cannot be harmed by sounds that they cannot hear. Other witnesses did not seem to agree with that statement. Can you elaborate? Admiral McGinn testified that things like lightening and underwater earthquakes could harm the hearing of marine mammals. Does this imply that they can "hear" that sound so it can harm them or is there something other than the "sound" of these natural events which causes the harm?

3. Organs of hearing are designed to resonate at the frequencies the animals perceive, and these tissues are among the most delicate in the body. Anatomically, it is logical that these organs would be most susceptible to damage. This logic is supported by an evolutionary argument. How could an animal evolve an ear that could withstand sounds that cause fatal damage to other tissues? If all animals exposed to these levels died, how could those with more robust ears be favored by natural selection?

However, it is likely that very intense sounds outside an animal's range of hearing can injure or kill. In my opinion, this possibility does not rank high as a priority for scientific conservation of marine mammals, because it will happen at sound levels above those that concern us because of hearing loss effects. In addition, we can anticipate that evolutionary and physical factors place limits on the potential for unanticipated harm. For frequencies below a species' range of hearing, marine animals have constantly been exposed to loud transient sounds from natural sources, and must have evolved some tolerance for them. For frequencies above the range of

hearing, loud sounds cannot propagate very far because seawater absorbs their energy.

4. How does the cumulative effect of all of the noise in the ocean affect the environment? How loud is the ocean without human-caused noise?

4. In the Northern Hemisphere, the ocean can often be 10 to 100 times noisier today than it would have been before power-driven ships were in use. The Northern Hemisphere oceans are 10 to 100 times noisier than their counterparts in the Southern Hemisphere (where shipping traffic is much less dense). It is difficult to ascertain the cumulative effects of noise from human activities, because most of our behavioral observations have been made in the presence of these sounds. Baseline data from "quiet" oceans are lacking. Studies contrasting marine mammal behavior between the Northern and Southern Hemispheres offer a promising opportunities to quantify this problem.

5. Has there been a pattern of increasing noise in the world's ocean over the past few decades? What are the sources with the greatest contribution to this increase? How does this increase affect marine mammal populations, and how widespread are these affects?

5. Most of the increase in ocean noise levels has occurred in the latter half of this century. Shipping is the dominant contributor, and the impulsive sounds from geophysical exploration are audible in a wide range of ocean areas. Any effects on marine mammals will be very widespread, but the nature and magnitude of these effects have not been clearly documented. Abandonment of coastal habitats has been documented, but effects in open ocean areas have not been measured. Scientific observations in open ocean areas are limited, and there are virtually no opportunities for citizen observations to contribute to this scientific enterprise.

6. The MMPA defines harassment very broadly, including minor behavioral modifications. Should the definition be changed to include only those activities that may present long-term impacts to individuals or to populations?

6. The prior definition of "any change in behavior" was a biologically unreasonable measure for Level B harassment. Such changes can be prompted by any stimulus that occurs above the threshold of perception, and many can have no plausible impact on the animals' welfare. The most biologically defensible standard for measuring impact would be reductions in survivorship or reproduction (as they relate to a demographic measure of fitness). However, this will be very challenging to measure or estimate. A biologically reasonable proxy would be based on energetics: estimating time or energy lost because of exposure, in relation to overall time and energy budgets. Risks must be evaluated in a comprehensive analysis, considering all human factors that degrade these energetic budgets.

7. Is every avoidance action taken by the animal a bad thing? Animals move up and down the water column and do any number of things, how do we know that their actions are based on the ill-effects of sonar or other naval activities?

7. Avoidance behaviors may mitigate the impact of human activities, by reducing the animal's exposure to the stimuli. However, avoidance behavior may also displace animals from critical resources or activities, and this "opportunity cost" may represent a serious threat to the viability of the species.

It is challenging to determine all of the factors responsible for changes in an animal's behavior. However, there are many good examples of studies that have examined animal responses to sound broadcasts in the broadest possible context. These have clearly demonstrated that predictable changes in behavioral patterns can be measured, even for animals whose behavioral repertoire is quite diverse.

8. Have the marine mammal stranding events that may have been the result of Navy sonar operations had any long-term impacts to marine mammal populations? Dr. Whitehead stated at the hearing that the local population of beaked whales was destroyed as a result of the Naval activities in Providence Channel. Do you have any knowledge of this population?

8. The Bahamian stranding of beaked whales was unquestionably a major blow to the resident population, though reports of its total destruction exaggerate what we can confidently infer from the evidence. It is not difficult to believe that sighting rates in the area have reduced significantly. However, I have no direct experience with this habitat or its resident marine mammals.

It is important to distinguish between the informal reference to a local group of animals (a "population"), and important use of "population" in the contexts of conservation and evolution. The latter usage refers to a sustainable group of interbreeding individuals. No one can argue that 20 or 30 individuals in a local habitat are a closed breeding population. Except for extremely endangered species (like the Northern Right Whale), no one can argue that infrequent loss of this many animals would have major consequences for the genetic diversity and survival of a species.

As an isolated incident, the Bahamas stranding represents environmental damage that should be avoided. It does not represent an irreversible loss of evolutionarily significant biodiversity. However, if this kind of event were regularly repeated, then the cause would raise serious concerns for the scientific conservation of marine mammals.

QUESTION FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. According to your testimony, you are unsympathetic to claims that more time and research is needed before deployment of LFA, but no long term data has been gathered. If more research was just going to be done following the same procedures you used, studying the same time frame LFA was used, I might not be sympathetic either, but there still seems to be a huge data gap in what happens to marine mammals after exposure to LFA over the long-term. This could be coupled with your statement on how often a marine mammal might actually be in

the vicinity of LFA sonar use. But in terms of usage and practice, the Navy frequently uses the same areas over again because they chose those areas initially for specific regions. Who is to say that some groups of whales will not be affected by LFA usage and practice over and over again? Why do you feel long-term data on the affects of LFA on marine mammals should be done only with the official usage of LFA, and not done beforehand?

Thank you for the opportunity to comment further on the potential effects of anthropogenic sounds on marine mammals. As a scientist whose research introduces new questions even as it answers old ones, I am always enthusiastic about more research. It is my avocation as well as my job. My lack of sympathy towards the demands by some environmental advocates for more research arises from skepticism that any new results would be sufficient to cause these speakers to change their views. The essential attribute of science is that ideas and theories can be falsified, and are abandoned in favor of new theories that more consistently apply to the broadest possible range of observations. I can specify results that would cause me to recommend restrictions on LFA usage. I have never heard these environmental advocates specify results that would cause them to drop their objections. I strongly recommend a skeptical attitude towards any call for research (from scientists or environmental advocates) that is not accompanied by clear statements of how the outcomes could change our understanding of the world.

I agree that we do not know what happens to a marine mammal months after exposure to LFA. However, all of the objective evidence suggests that there will be no measurable effect. The immediate responses we have observed were subtle. None of them were immediately salient to any member of our large teams of experienced field observers. Although we now have clear evidence of responses from detailed analyses of our data, many of these responses are near the fringe of what we can identify as statistically significant. None of the observed responses lasted more than a couple of hours (after a one hour schedule of transmissions). No cumulative effects have emerged from detailed studies of the numbers, distributions, and behaviors of animals during the several weeks we spent at each field site. Our findings are consistent with the extensive peer-reviewed research conducted on the effects of the ATOC sound sources.

I am more concerned about the potential for long-term effects for chronic acoustical stimuli, like shipping and seismic profiling, than I am about LFA. In the first place, the LFA stimulus is intermittent even when the system is in use. Many minutes elapse between transmissions, and the sounds are intense in a very limited depth range. Except in a few cases, animals would be diving in and out of this range of depths, and thus would "miss" many of the transmissions. In the second place, the LFA system will not be in constant use. Historically, that program has been fortunate to mount two or three missions each year, with about 20 days of broadcasts per mission. In view of the projected usage and our scientific findings, I believe that delayed or long-term effects are not the most important outstanding questions regarding the environmental impacts of SURTASS LFA training missions. (I believe the long-term research effort proposed by the Navy should focus on exposures at re-

ceived levels from 150–180 dB, where we must presently assume there is risk of significant behavioral disruption, and on deep-diving animals).

I should digress briefly to communicate why it is more challenging to document a long-term than a short-term response. Many more factors must be measured in a long-term study. For example, the idiosyncrasies of each year's climatic patterns, fluctuations in food resources, and changes in patterns of ocean circulations will pose serious obstacles to making general inferences. "Cultural evolution" may be a significant confounding factor. For example, the songs of a breeding population of humpback whales incorporate new features and phase out old ones in the course of a season. Changes accumulate across years. Similar trends may be observed in other aspects of baleen whale social behavior. In addition to a longer temporal scale, such research would have to cover vastly greater spatial scales than the LFA Scientific Research Program. I do not argue that this research should be dismissed because it is so difficult; difficulty can actually increase the appeal of a project. However, I think the expenditure of limited scientific resources should be allocated based on a comprehensive review of the outstanding questions, and it should take advantage of the broadest possible base of scientific expertise.

I do not know if the Navy has a compelling need to repeat training exercises at particular locations in the open ocean. I believe it would be appropriate for the National Marine Fisheries Service's Office of Protected Resources should stipulate certain restrictions on repeated use of an area within short spans of time, as a condition of the operating permit they issue.

I do not see any reason why the research into long-term effects should not be coordinated with an operationally useful schedule of training operations. The same sound broadcasts are necessary for both activities. Our experience has shown that the Navy can adapt their procedures to meet the needs of research. I am sure that the NMFS operating permit will stipulate that operational usage must be suspended if credible evidence of biologically significant impact, including stranding events, emerges.

I will close by restating a point I made at the top. It is crucial that you distinguish between those who advocate research as an expedient delaying tactic, and those who believe we can answer some questions and move on to others.

Responses from Darlene R. Ketten, Ph.D., Associate Scientist, Woods Hole Oceanographic Institution

QUESTIONS FROM CHAIRMAN WAYNE T. GILCHREST

1. At the hearing you discussed how the beaked whales that beached themselves in the Bahamas had trauma to their ears that included bleeding from associated tissues (fats in their jaw and tissue surrounding the ears). To get a better understanding of what physically occurs when a whale experiences sonar at its hearing frequency, is it correct to say that a whale's ear can be ruptured by the sonar?

It would be inaccurate to say at this point that a whale's ear can be ruptured by sonar for several reasons. First, without dicing it too finely, "ear" is a non-specific term. If we break it into relevant parts, the question becomes simpler to address. The bony parts of the ear are not capable of direct disruption by conventional operating parameter sonar, even at the maximum receivable levels that have been published. That leaves the softer tissues of the ear, and particularly the eardrum and the inner ear elements. The eardrum of whales is structured differently from that of land mammals and is highly resistant to rupture. In the case of the animals examined, the eardrums were poorly preserved and we cannot say if any were damaged, but it is unlikely. Intense impulsive sounds can rupture eardrums, but generally it requires a sound pressure level that is significantly greater than has been estimated for the Bahamian exposures. As for the inner ears, no ruptures were found of the soft tissues in any of the ears examined from the Bahamian animals. Rather, the membranous divisions of the inner ear remained intact. What was found were hemorrhages within the inner ear and some associated tissues. These hemorrhages are indeed the result of blood vessel ruptures, but at this time it is still unclear what is the direct cause of these bleeds. Intense impulses can cause hemorrhages but there are also alternative causes possible for hemorrhages of this type in strandings. Unfortunately, the jury is still out on the precise causes in this case.

2. You testified that marine mammals cannot be harmed by sounds or frequencies outside of its hearing range. Other witnesses did not seem to agree with that statement. Can you elaborate? Admiral McGinn testified

that things like lightening and underwater earthquakes could harm the hearing of marine mammals. Does this imply that they can "hear" those sounds so it can harm them or is there something other than the "sound" of these natural events which causes the harm? Can a frequency outside of its hearing range cause adverse effects to other parts of a whale's body?

Taking each question separately:

re: harmed by sound outside hearing ranges.

My statement referred to sounds at intensities in the realm of sonar emissions. The ear in each species responds to sounds it can encode. The ear cannot hear sounds outside that range because the tissues are not structured to respond at those frequencies no matter what the intensity unless the sound is so intense that it is beyond acoustic and in the realm of shock level. To the best of my knowledge, there is no evidence of any sound outside the hearing range of animal that is damaging to the hearing of that animal, given that the sound is not so intense as to be beyond categorization as "sound. It is possible to harm body tissues using sounds at extraordinary frequencies and intensities; e.g, in lithotripsy in which an electromagntic impulse of exceptional intensity produces a shock wave capable of disrupting kidney stones. While there is an acoustic component to this, the shock wave is the damaging element and the intensities are far beyond anything conceivable from a sonar or conventional acoustic source.

re: can they "hear" those sounds so it can harm them or is there something other than the "sound" of these natural events which causes the harm?

Certainly the frequencies of lightning cracks is well within the range of hearing of virtually all marine mammals. It is not clear how much of that sound in air would propogate underwater. As for earthquakes underwater, some of the sounds of quakes are likely to be perceptible to all species and others that are seismic would be audible to very few species. If the animal were in close proximity to such an event, there is the possibility of its hearing being damaged because it can hear the sound, but as with any sound, the overriding issue is what are the received sound characteristics at the animal's head, not what is the intensity of the source.

re: Can a frequency outside of its hearing range cause adverse effects to other parts of a whale's body?

Yes, as noted above, exceptionally intense impulses can traumatize other tissues, particularly those areas associated with air cavities.

3. The military activities that occurred in Providence Channel near the Bahamas created a sound pressure level that didn't dissipate over time and may have trapped various marine mammals causing some to strand. Could this type of sound pressure vortex happen in the open ocean or was this specific to this type of channel?

I am not qualified to answer this question and urge you to redirect the question to an acoustical or physical oceanographic expert. From what I have read of the hydrographic profiling done in the Bahamian case, it is possible for this lamination to occur elsewhere, but I have no means of estimating where nor how common or rare such an event may be.

4. Dr. Whitehead testified that none of the beaked whales from the population potentially affected by the Bahamas exercise have returned to the area. Do you have any knowledge on the status of this population?

To the best of my knowledge, there has been no official published report on the rate of resightings or lack of resighting of individuals in this population by any of the Bahamian research groups that monitor this area. There are several issues to consider in assessing Dr. Whitehead's comment. First , we would need to know how many animals were regularly sighted in this area, how many were long vs. short-term residents that year, and how that compared with previous years. Next, we would need to know the typical or at least average resighting rate over several previous years. In essence, we need to understand how common or how unusual it is to have a lack of resighting of some percentage of the population in order to determine the significance in this case, given that the animals indeed have not reappeared.

5. You mentioned the difference between short-term harm and long-term harm to marine mammals caused by sonar. Can you elaborate on this?

I believe this is a reference to my comment that we should view any impact in terms of its biological significance. While it is regrettable for any animal to be harmed, for conservation, our primary concern must be the health and well-being

of the population. An incident such as the Bahamas case clearly had serious consequences in that 7 animals died, but in terms of populations and time, this was a limited event. At this point, I cannot say whether it represents a significant population level impact. Certainly, in terms of mortalities, it is far fewer impacts than we see from fisheries by-catch. An example of a longer-term and more biologically significant impact would be a sound source, such as a repeated ship routing through a breeding ground, which would induce more subtle but broader ranging and ultimately more harmful impacts to more animals through crucial habitat disruption.

6. How do we evaluate long-term effects versus short-term effects? Can ship noise be worse for the animal than an interaction with a sonar test?

Evaluating long and short term effects is a complex question that can only be addressed on multiple fronts. Careful observation and censusing of wild populations is of course fundamental to understanding any changes or disruptions. In tandem with these studies, it is important that stranded animals be examined thoroughly and that the results be compared longitudinally to detect trends for correlates of stress, hearing loss, or other degenerative conditions that may be induced by human related sources.

In my opinion, shipping is certainly an area of concern for acoustic impacts on marine environments. It is continuous and pervasive in some ocean areas and may be reasonably considered to be analogous to industrial noise in the workplace.

7. Have the marine mammal stranding events that may have been the result of Navy sonar operations had any long-term impacts to marine mammal populations?

I am unaware of any evidence to that effect.

8. Can one look at the ear of a marine mammal and see the damage to the cochlear and relate it back to specific events, like sonar activity, or does the ear tell a much broader story on the life of the animal?

The answer is a firm perhaps for both cases. The quality of preservation of the inner ear tissues is the crucial unknown. If well-preserved, the inner ear or cochlea does indeed carry an imprint of the animal's acoustic history. It is theoretically possible to "read" the inner ear and observe the number of infectious bouts, distribution of cellular losses and sites of traumas, neural loss patterns, etc. to piece together some understanding of the broader story both of impacts to the ear and disease states of the animal. If an acoustic impact is very recent and very intense that also should leave tell-tales in the inner ear. However, it is never guaranteed that the evidence will remain in any ear by the time it is obtained for study.

9. Does a deaf whale equal a dead whale? How would a marine mammal survive without the ability to hear?

I can clearly say that a deaf whale is not necessarily a dead whale. It is fairly common to find some hearing impairment in marine mammals, particularly in older toothed whales. There are multiple documented cases of animals with profound bilateral hearing loss that survived many years in the wild. It is not clear precisely how these animals survived but it is reasonable to speculate that they were in part successful by relying more heavily on social interactions and utilizing vision more than unimpaired individuals.

10. Is every avoidance action taken by the animal a bad thing? Animals move up and down the water column and do any number of things, how do we know that their actions are based on the ill-effects of sonar or other naval activities?

I would urge you to submit this question to a behaviourist for an authoritative reply. My reply must be limited to my area of expertise which is sensory physiology. From that perspective, an avoidance action is a natural, protective activity and in that sense a good preservation strategy. Concerning the second issue, whether we can target the cause of movements, to do that would require rather extensive and explicit monitoring of animals. There are playback and tagging studies underway that are beginning to address animal reactions underwater in response to sound but the results are preliminary. To the best of my knowledge, the presumption of a link to sonar in the Bahamian case is based on the temporal coincidence of the strandings and sonar use coupled with the rarity of beaked whale strandings in the area and the lack of any other likely cause.

QUESTION FROM RANKING MEMBER ROBERT A. UNDERWOOD

1. You agree that there is insufficient data to "predict any but the grossest acoustic impacts on marine mammals." As your testimony relates, there are any number of ways marine mammals can be impacted by sound. Will there ever be, in your mind, any way to truly understand how much marine mammals hear and how they are affected by all sorts of sounds over the short and long term?

Quite firmly, my answer is yes. Once we have a better understanding of both the range of hearing for the majority of marine mammals and the mechanisms they use for transducing underwater sound, we can certainly begin to predict reliably the physiologic effects at the ear. We have made exceptional strides both through captive and modeling studies in the last five years. Recently, new technologies have appeared for non-invasive measurement of hearing in human babies and incapacitated adults that are ripe for application to marine animals. It will not be trivial to modify these methods to work successfully on leviathans but it is clearly and unquestionably possible. There are also developments in the area of virtual reality visualizations and computerized modeling of tissue responses that are applicable to these issues. Interestingly, success in both these areas carries the potential for not only enlarging our understanding of whale hearing but also of opening a whole new approach to underwater sensing technology and environmental monitoring.

Responses from Chester Gipson, Acting Deputy Administrator for Animal Care, Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture

QUESTIONS FROM CHAIRMAN WAYNE GILCHREST

1. How many inspectors does the Agency have to monitor captive display facilities? Out of the total number of inspectors, how many are marine mammal specialists?

APHIS' Animal Care field inspection force of veterinary medical officers and animal health technicians is comprised of 81 inspectors, reflecting an increase of 17 inspectors in the past 2 years. Approximately 60 inspectors have received marine mammal training. The training includes information on basic husbandry, anatomy, and physiology of all marine mammals, as well as food and food handling, water quality, veterinary care, and training issues. Animal Care is providing a marine mammal training course for new inspectors in February 2002. In addition, Animal Care holds a national work conference every 2 years for all inspectors and supervisors. During these work conferences, marine mammal issues are presented and discussed.

2. The Suarez Brothers Circus, which is currently in Puerto Rico, came up during the hearing and Members were concerned primarily about the welfare of the polar bears, but also on the authority of APHIS to inspect and enforce the Animal Welfare Act (AWA) and the Marine Mammal Protection Act (MMPA). Are changes needed to either Act to give your Agency better tools to do its job in protecting captive marine mammals?

As we indicated in our report, based on direct observation by our trained inspectors, there is no veterinary or behavioral indication that the animals are currently in a state of unrelieved suffering or danger to their health. At this time, based on the information provided by our inspectors, these animals are not being mistreated or abused.

We would like to clarify that APHIS' authority to inspect comes from the Animal Welfare Act (AWA), not the Marine Mammal Protection Act (MMPA). Administration and enforcement of the MMPA is the responsibility of the Department of the Commerce's National Marine Fisheries Service (NMFS) and the Department of the Interior's U.S. Fish and Wildlife Service (FWS). FWS has responsibility for the polar bears under the MMPA.

We believe the AWA has sufficient provisions to protect marine mammals. APHIS has promulgated marine mammal regulations to provide minimum standards (as specified in the AWA) for their humane care and treatment. The current regulations were developed by a committee that included representatives from animal protection groups, industry groups, professional groups, and Federal agencies and oversight groups. These regulations were promulgated under the Federal rulemaking process and reflect the current state of knowledge and experience relating to these animals.

3. APHIS is now being asked to confiscate the polar bears from the Suarez Brothers Circus. Does APHIS have this authority? When and under what circumstances would APHIS make a determination that these animals need to be confiscated?

The authority to confiscate animals under the AWA is focused on a limited set of circumstances.

> Section 16. (a) The Secretary shall make such investigations or inspections as he deems necessary to determine whether any dealer, exhibitor, intermediate handler, carrier, research facility, or operator of an auction sale subject to section 12 of this Act, has violated or is violating any provision of this Act or any regulation or standard issued thereunder, and for such purposes, the Secretary shall, at all reasonable times, have access to the places of business and the facilities, animals, and those records required to be kept pursuant to section 10 of any such dealer, exhibitor, intermediate handler, carrier, research facility, or operator of an auction sale. The Secretary shall promulgate such rules and regulations as he deems necessary to permit inspectors to confiscate or destroy in a humane manner any animal found to be suffering as a result of a failure to comply with any provision of this Act or any regulation or standard issued thereunder if (1) such animal is held by a dealer, (2) such animal is held by an exhibitor, (3) such animal is held by a research facility and is no longer required by such research facility to carry out the research, test, or experiment for which such animal has been utilized, (4) such animal is held by an operator of an auction sale, or (5) such animal is held by an intermediate handler or a carrier.

The regulations promulgated to enact this provision are in 9 CFR 2.129:

> § 2.129 Confiscation and destruction of animals.
>
> (a) If an animal being held by a dealer, exhibitor, intermediate handler, or by a carrier is found by an APHIS official to be suffering as a result of the failure of the dealer, exhibitor, intermediate handler, or carrier to comply with any provision of the regulations or the standards set forth in this subchapter, the APHIS official shall make a reasonable effort to notify the dealer, exhibitor, intermediate handler, or carrier of the condition of the animal(s) and request that the condition be corrected and that adequate care be given to alleviate the animal's suffering or distress, or that the animal(s) be destroyed by euthanasia. In the event that the dealer, exhibitor, intermediate handler, or carrier refuses to comply with this request, the APHIS official may confiscate the animal(s) for care, treatment, or disposal as indicated in paragraph (b) of this section, if, in the opinion of the Administrator, the circumstances indicate the animal's health is in danger.
>
> (b) In the event that the APHIS official is unable to locate or notify the dealer, exhibitor, intermediate handler, or carrier as required in this section, the APHIS official shall contact a local police or other law officer to accompany him to the premises and shall provide for adequate care when necessary to alleviate the animal's suffering. If in the opinion of the Administrator, the condition of the animal(s) cannot be corrected by this temporary care, the APHIS official shall confiscate the animals.
>
> (c) Confiscated animals may be placed, by sale or donation, with other licensees or registrants which comply with the standards and regulations and can provide proper care, or they may be euthanized. The dealer, exhibitor, intermediate handler, or carrier from whom the animals were confiscated shall bear all costs incurred in performing the placement or euthanasia activities authorized by this section.

APHIS is responsible for making the determination of suffering or immediate threat to the health of the animal. In the case of the polar bears in question, there has been no indication of unrelieved suffering or threat to the immediate health of the animals.

The narrow focus of the circumstances allowing confiscation of the animals appears to be designed to prevent indiscriminate use of the provisions to remove animals based on other than an immediate risk to the animals' health.

It is our understanding that, under the MMPA, the animals could be confiscated by FWS if APHIS found that the licensee was not licensed, was going to lose his license, or was willingly and willfully going to continue to violate the AWA. APHIS, however, has not made such a finding in this case. The licensee has continued to work with the APHIS inspector to comply with the AWA regulations and standards.

QUESTION FROM CONGRESSMAN WALTER B. JONES

There are a number of compelling questions, related to the case of the polar bears owned by Suarez Brothers Circus, that I believe need to be answered. Regardless of the fact that polar bears probably do not belong in a traveling, tropical menagerie, I am alarmed by the threat to human safety revealed in APHIS' report dated June 7. The report describes that the polar bears were confined in a facility that had a wall flimsy enough for the inspector to push over with one hand. Upon APHIS' return for a second inspection on June 21, the flimsy wall had not been fixed. There was apparently no follow-up inspection by APHIS in July, until the Puerto Rican Department of Natural Resources filed cruelty charges against the Circus. I would like to hear APHIS' explanation on all of this.

The opportunity for correction of cited noncompliant items is afforded to all Animal Welfare Act (AWA) licensees and registrants. When issues of structural strength are cited, such as the Suarez Brothers Circus' "flimsy wall," APHIS generally works with the facility to make sure the corrections are made within the shortest possible timeframe. After the first citation on June 7, the licensee ordered the materials and equipment needed to comply with the recommendations of the APHIS inspector. As noted on the June 21 inspection report, the materials to strengthen the fencing were on site and due to be installed on June 22. The inspection reports for June 22, 23, 25, and 28, all indicate that the enclosures for the polar bears were structurally sound. The facility was in compliance with the AWA as of the June 28 report.

APHIS returned to inspect the facility in July when we were notified that the licensee was planning to move the animals to a different location. At that time, the facility was compliant with all AWA requirements for polar bears. As you indicate, the Puerto Rican authorities were at the facility the day before. Local animal cruelty laws can be more rigid and restrictive than the AWA. We cannot comment on the validity of the cruelty charges as the case has not yet been adjudicated.

I have a letter from Dr. Terry Maple of Zoo Atlanta written to APHIS, in which Dr. Maple describes his surprise that APHIS would grant the Suarez operation a permit for exhibition. Dr. Maple points out that the Suarez Brothers Circus uses doctored records to identify their animals and the Suarez Brothers claimed that one of their bears came from Zoo Atlanta, when in fact, that bear had died in a German Zoo in 1994. The use of falsified records is grounds for denying the owners a permit for exhibition. So why was one granted?

Under the AWA, we require that acquisition and disposition records for regulated animals identify where the owner acquired the animals and where the animals were placed if they left the facility. While we require accuracy and truth in the documents, in cases such as the importation of these polar bears, we rely on the Department of the Interior's U.S. Fish and Wildlife Service (FWS) to determine the accuracy of the importation documents.

FWS reviewed the importation documents for these imported polar bears and issued a Marine Mammal Protection Act (MMPA) import permit. We are aware that FWS has taken the information supplied by Zoo Atlanta and investigated the allegations. Any results of determinations made subsequent to their investigation must be obtained from FWS.

Section 2.11(a)(5) of the AWA states that an initial license may be denied if the applicant "has made any false or fraudulent statements, or provided any false or fraudulent records to the Department." Although the application for licensure under the AWA does not require submission of the acquisition and disposition records, a subsequent recordkeeping violation, if substantiated, may be grounds for AWA enforcement action.

APHIS, while invited to testify, declined the Committee on Resources' request, so I pose this question to my friends with the United States Fish and Wildlife Service. I understand that accurate records describing the history of the bears is required for import and export permits (as well as permits for exhibition). Why was this deceptive organization complete with falsified records given an import permit for these animals?

It is true that, because of prior commitments by Department and Agency officials, APHIS declined to provide scheduled oral testimony. However, APHIS provided written testimony for the 2001 reauthorization hearing before this Committee. In addition, Dr. Barbara Kohn, from our Animal Care program, was present at the hearing to answer any questions.

As previously indicated, we respectfully defer to FWS regarding all questions on the import documentation for these animals, as FWS is the Federal agency that has authority for the importation of polar bears under the MMPA.

And what is the status of the export permit?

FWS is also the Federal agency that is responsible for the exportation of the polar bears under the MMPA. Accordingly, all questions regarding import and export activities of these polar bears would be more appropriately answered by FWS.

QUESTION FROM CONGRESSMAN FRANK PALLONE

1. Under the Animal Welfare Act (AWA) regulations, variances for specific standards may be issued by APHIS. Under the newest marine mammal regulations, polar bear primary enclosures must allow the animals access to water. During their summer performances in Puerto Rico, the polar bears in the Mexican circus were being maintained for most of the day in their secondary enclosures their transport cages, without access to water. The regional inspector apparently issued a variance on this point, because the trainer insisted the bears were acclimated to tropical heat. However, the granting of this variance at the regional level violated APHIS procedure. How was this allowed to happen and what is being done about this procedural violation now? What will APHIS do in the future to prevent such a violation from happening again?

We wish to clarify that no variances have been applied for or given with respect to Circo Suarez. When the inspector reported the protocol the facility planned to use for the polar bears during part of the day and most of the night (the use of the secondary or transport cages), APHIS consulted with several polar bear husbandry experts and discussed the issues of housing and access to water. These experts recommended that the bears would require adequate ventilation, access to fresh drinking water, and should be separated during feeding for their own safety. Based on these recommendations, APHIS determined that the secondary arrangements for these polar bears were not inconsistent with permanent facilities that house polar bears in terms of confinement at night, separation at feeding, and access to enclosure pools during the daytime.

2. Under the Marine Mammal Protection Act (MMPA), a facility/entity seeking to import or export marine mammals for public display must either have an AWA exhibitor's license or meet APHIS regulatory standards (that is, if a facility is foreign, it must meet the standards that licensees in the U.S. must meet). Comments submitted to the U.S. Fish and Wildlife Service (FWS) during the MMPA import permit public comment period for the Mexican circus questioned the issuance of an AWA license by APHIS and urged FWS to request APHIS to reconsider the license or at least reconsider the material upon which the license was based. Apparently, FWS made no such request, yet nevertheless issued the import permit. Subsequent to the entry of the Circus into Puerto Rico and onsite inspections by APHIS, a number of serious violations were cited—some were addressed and corrected while at least one—the one regarding the bears' access to water—never was. In short, the concerns of the commentors were confirmed—the license was issued to an entity that was ultimately incapable of complying with APHIS regulations.

How does APHIS determine that a facility qualifies for a license or meets licensing standards? If in-person inspections are not part of the process, how can APHIS be certain a facility does and will continue to comply with APHIS regulations? Upon what kind of documentation and materials does APHIS rely? And how often does a facility that requires APHIS approval under the MMPA public display requirements receive such approval when in fact it is subsequently determined that the facility is in violation—worse, *routine* violation—of these regulations?

The licensing procedure under the AWA requires submission of an application and "in-person" physical inspection of the facilities. Any noncompliant items found must be corrected and the facility reinspected before a license can be issued. Once regional office personnel determine that the applicant meets AWA requirements, they will issue a license.

The facilities used by Circo Suarez for the polar bears while in the United States were subject to the licensing provisions of the AWA, which require onsite inspection of the facilities. The Circus' truck unit was brought to Animal Care's regional office in Raleigh, North Carolina, for inspection, and the primary enclosure facilities were

inspected onsite in Puerto Rico. These inspections were performed prior to Animal Care's issuance of Circo Suarez' license for exhibition. These procedures are the same for all license applicants.

Following the MMPA public comment period on the application to FWS for the import permit, APHIS and FWS discussed issues raised as they related to the license by USDA/APHIS. These issues included comments forwarded by FWS from the MMC. APHIS also reviewed written materials supplied to FWS by the owner of the polar bears; however, provisions of the MMPA require only verification of licensure under the AWA.

If animals are not present during the inspection, all procedures and protocols for the animals are discussed and the requirements of the AWA are reconfirmed. APHIS has no jurisdiction over prior care in other countries, but care and handling requirements while in the United States are reaffirmed. Once a facility is licensed under the AWA, it is afforded the same due process protections as any other licensee or registrant. APHIS determines which violations are considered severe or critical and addresses each citation on an inspection report on the basis of the alleged violation and the effect on the health of the animal.

Based on the multiple instances of noncompliant items cited at Circo Suarez interspersed with inspections without any noncompliant items cited, APHIS initiated an investigation in August 2001. Because this investigation is ongoing, we cannot discuss the case in further detail at this time.

3. The MMPA allows import permits to be issued for polar bears for the purpose of public display as long as the exhibitor holds a license under 7 U.S.C. 2131 et. seq. of the AWA. Furthermore, the AWA has specific standards for polar bears stating that air and water temperatures in indoor facilities shall be sufficiently regulated by heating or cooling to protect the marine mammals from extremes of temperature, to provide for their good health and well-being, and to prevent discomfort. And the AWA requires primary enclosures housing polar bears to consist of a pool of water, a dry resting and social activity area, and a den. USDA has given Suarez Bros. Circus permission to keep its seven polar bears in conditions well below the minimum standards of the AWA by allowing the polar bears to be kept in small, barren transport cages for up to 65 percent of the time—without access to a pool or air conditioning—while in the hot and humid climate of Puerto Rico. The circus was charged with cruelty by local authorities on August 15, 2001, when the polar bears were found suffering in 113-degree heat without access to the required pool and air conditioning. Congress expects Federal agencies, in this case the USDA, to enforce all Federal laws designed specifically to ensure the humane treatment of marine mammals. Would the USDA immediately reverse this AWA variance, notify the circus that these polar bears may be seized in the case of unrelieved suffering, and prepare for confiscation?

As stated previously, APHIS has not issued a variance for the housing conditions of the polar bears at Circo Suarez. In addition, APHIS inspectors have found through multiple onsite inspections that the facility is in compliance with all appropriate AWA requirements. The current charges in Puerto Rico apply to one alleged incident and not to a state of unrelieved suffering. If APHIS found the animals to be in a state of unrelieved suffering and the owner was unwilling or unable to remedy the situation, APHIS would, of course, take all appropriate legal action, including confiscation. Nevertheless, given the history of the bears having lived and traveled extensively in Central and South America for 10 years in apparent good health, it may be difficult to determine that climatic conditions in Puerto Rico represent circumstances to which the bears are not acclimated. In addition, both the primary and secondary arrangements for these polar bears are consistent with permanent facilities that house polar bears.

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