OVERSIGHT HEARING ON STELLER SEA LIONS

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS

OF THE

COMMITTEE ON RESOURCES HOUSE OF REPRESENTATIVES

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OVERSIGHT HEARING ON STELLER SEA LIONS

THURSDAY, MAY 20, 1999

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FISHERIES CONSERVATION,
WILDLIFE AND OCEANS,
COMMITTEE ON RESOURCES,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:05 p.m. in Room 1334 Longworth House Office Building, Hon. Jim Saxton [Chairman of the Subcommittee] presiding.

Mr. SAXTON. The Subcommittee on Fisheries Conservation, Wildlife and Oceans will come to order.

Good afternoon.

Today, we will discuss the National Marine Fisheries Service's research program on Steller sea lions in the Bering Sea. We are here because there is apparently a great deal of distrust about whether NMFS has an adequate scientific basis for making adjustments to the pollock and mackerel fisheries off Alaska.

We will hear the agency's presentation on the research program, and we will listen to the concerns of a number of witnesses who have legitimate, unanswered questions. It seems to me that the major questions for this hearing are:

> One, do we know what caused the decline in Steller sea lion populations in the Bering Sea?
>
> Two, do we know enough about Steller sea lions and their life history to determine what is preventing their recovery?
>
> Three, has there been a physical change in the Bering Sea which has altered the ecosystem? If that has occurred, could that be the cause of the decline and, therefore, be an impediment to the recovery?
>
> And finally, four, has the Federal Government adequately completed its scientific research responsibilities so as to convince the fishing community that the proposed changes to the fisheries will actually make a difference, or is there so much uncertainty that we really don't know what we are doing?

I believe that the last question is the most important. If you can clearly identify a problem and a solution, then everyone will work together to accomplish the goal. If there is scientific uncertainty, distrust and animosity, then the process of cooperatively working together to find a solution is doomed and will fail.

I would like to recognize others who might have statements. Mr. Gilchrest, do you have any opening statement? Thank you for

coming. I ask unanimous consent that all Subcommittee Members be permitted to include their opening statement in the record.

[The prepared statements follow:]

Statement of Hon. Jim Saxton, a Representative in Congress from the State of New Jersey

Good afternoon. Today we will discuss the National Marine Fisheries Service's research program on Steller sea lions in the Bering Sea. We are here because there is apparently a great deal of distrust about whether NMFS has an adequate scientific basis for making adjustments to the pollock and mackerel fisheries off Alaska.

We will hear the agency's presentation on its research program and we will listen to the concerns of a number of witnesses who have legitimate, unanswered questions. It seems to me that the major questions for this hearing are:

- Do we know what caused the decline of Steller sea lion populations in the Bering Sea?
- Do we know enough about Steller sea lions and their life history to determine what is preventing their recovery?
- Has there been a physical change in the Bering Sea which has altered the entire ecosystem? If that has occurred, could that be the cause of the decline and, therefore, be an impediment to the recovery? And,
- Has the Federal Government adequately completed its scientific research responsibilities so as to convince the fishing community that the proposed changes to the fisheries will actually make a difference, or is there so much uncertainty that we really don't know what we are doing?

I believe the last question is the most important. If you can clearly identify a problem and a solution, then everyone will work together to accomplish the goal. If there is scientific uncertainty, distrust and animosity, then the process of cooperatively working together to find a solution is doomed to fail.

Statement of Hon. Don Young, a Representative in Congress from the State of Alaska

We are here to discuss Steller sea lions in the Bering Sea and the Gulf of Alaska, the lack of science and general information about this animal, and the inability of the agency charged with responsibility for conserving this species to answer basic questions.

Let me briefly summarize the situation we now find ourselves in. For years, the National Marine Fisheries Service (NMFS) has consistently determined that the pollock fishery did not jeopardize the recovery of Steller sea lions.

It is my understanding that NMFS made this determination, either formally or informally, not once or twice, but 39 times. Now, because of the filing of a lawsuit by various environmental groups, NMFS has done a 180-degree turn and finds that the pollock fishery does indeed pose a risk to the recovery of the Steller sea lion. How remarkable! I am really curious how the agency made this determination when no new science has been presented which makes that break-through discovery.

Let me see if I've got the situation properly in perspective:

- No one has debated that the western population of Steller sea lions has been declining. Unfortunately, the agency does not seem to know, and does not seem to care, why the western stock has declined so rapidly in the last twenty years.
- The agency has not requested an increase in its Steller sea lion research budget in at least six years, and probably longer than that, even though Congress increased the funding for Steller research in Fiscal Year 1998.
- Since 1992, the agency has had a research plan, which was developed by the Steller Sea Lion Recovery Plan Team, yet many of the research recommendations have still not been funded.
- The agency has ignored or rejected research projects conducted by scientists outside the agency (and, in fact, some of the research conducted by scientists within the agency) because the conclusions didn't match the agency's latest theory.
- The agency completed no new research projects between its decision in 1996 that the pollock fishery did not pose a jeopardy to the recovery of the western population and the 1998 decision that the fishery did indeed pose a threat to the recovery.

•The agency declared in a report to Congress, as late as October 1998, that "Given the current understanding of the sea lion/fishery prey interactions, additional research is warranted prior to establishing revised management actions."
•The agency drafted and circulated Reasonable and Prudent Alternatives (or RPAs) concluding that there needed to be changes to the pollock fishery even before it had released a draft Biological Opinion.
•The agency appears to have had no intention of including the North Pacific Fishery Management Council in any decision about potential changes in the management of the pollock fishery.

This appears to be a situation where the agency had a theory, but not enough science to either prove or disprove it, and once its bluff had been called by a lawsuit, hid behind the "precautionary principle" and the "best available science" excuses to attack the pollock fishery in the hope that the lawsuit would go away. I am convinced that the agency has neither best available science nor knows whether the management changes in its proposal will have any positive effect on the Steller populations. While NMFS has no clue whether these measures will be good for sea lions, it certainly will have negative effects on fishermen and the communities that depend on this resource.

The North Pacific Fishery Management Council and the Alaskan fishing industry have always been proactive when dealing with potential resource problems. They took action to change management of the Atka mackerel fishery when presented with credible evidence that changes were needed for sea lions. They have taken action to prevent a targeted forage fish fishery in the Gulf of Alaska. They constantly take action to minimize bycatch, to close specific areas when necessary for conservation reasons, and have always set conservative harvest levels. In this case, if they had been presented with credible science in time, they could have taken proactive action to help Steller sea lions. Unfortunately, they were constantly told by the agency that there was not a problem with the pollock fishery.

This is a typical response from this agency. It cannot control the environmental changes occurring in the ocean, will not control predators, but the one area it can control is the fishing fleet. What will happen—based on the closed areas and proposed closed areas I have seen—is that small boat fishermen are going to be forced to fish in seas that are unsafe for that vessel size. The agency is responsible for these people and should consider the effect the closed areas will have on small vessels. Instead, the agency will do whatever it takes to save the Steller sea lion, without having the proper science, and will risk the lives of fishermen because it has the power to do so. This is unacceptable and I am tired of having the lives of my constituents used as barter to stop lawsuits, most of which have no merit anyway!

I am deeply concerned with the actions of the agency in this case. NMFS has more questions than answers and doesn't seem to care that its actions have consequences for fishermen and fishing communities.

Statement of Hon. Frank Pallone, Jr., a Representative in Congress from the State of New Jersey

Thank you, Mr. Chairman, for holding this hearing to discuss the dramatic decline of the Steller sea lion in the north Pacific Ocean. As a coastal district Member, I have always been supportive of protecting our Nation's splendid marine resources. I am also well aware of the complex dynamic that exists when managing marine mammals. I am eager to learn more about the reasons for the Steller sea lion population decline and the role the commercial fishery may play in the depletion of pollock, the principle prey of sea lions.

An alarming decline in the abundance of Steller sea lions has occurred throughout their range over the past 30 years. The estimated population has dropped from about 280,000 non-pups in the early 1960's to approximately 52,200 in 1994. This represents a decline of about 232,000 sea lions, or about 70 percent of the population, in just 34 years. As a result, Steller sea lions were afforded protection as a threatened species under the Endangered Species Act in 1990, and the Aleutian stock is now under consideration for endangered status.

The National Marine Fisheries Service (NMFS) has implemented a Steller sea lion recovery plan and designated areas as critical habitat. NMFS has also restricted commercial fishing activity in Steller habitat in an attempt to stop deleterious impacts on Steller feeding activity. Regrettably, despite these conservation efforts, the Steller population continues to decline.

Uncertainty continues to surround the reasons for this downward trend. Disagreement centers on whether commercial exploitation of pollock and the associated

reduction of a food supply are having as significant an impact to the sea lions as some suggest.

The Steller population crash has indeed coincided with intensified commercial fishing in and around rookeries and haul-out sites. Flagrant overfishing of roe-bearing pollock during the winter spawning season, and a decrease in the abundance of young pollock of the size preferred by juvenile sea lions have undoubtedly played a role in sea lion decline. Yet some reports estimate that pollock numbers in the Bering Sea have been at an all time high during this time period. These ambiguities must be addressed if we are to effectively reverse the species decline.

While it is true that fishery exploitation in Steller habitat took place in the 1980's, it is far too convenient to lay blame solely on overfishing. What other contributing factors could be causing nutritional stress and be preventing a full Steller recovery? Has a change in the Bering Sea ecosystem played a role in prey availability? Has direct mortality from commercial fishing, rather solely overfishing, played an additional role in the sea lions' decline?

I applaud National Marine Fishery Service efforts to amend groundfish management plans in the north Pacific Ocean to ensure that Federal actions do not jeopardize the Steller sea lion. However, in order to ensure the species' full protection, we must minimize any human-induced activity that may be detrimental to the survival of the species. I hope that today's hearing will help identify such activities, clarify actions needed to reverse this unfortunate decline, and define action needed to restore the Steller sea lion to a healthy level.

There is an urgent need to take immediate steps to ensure that future generations can enjoy this wonderful animal. I look forward to learning to what extent the issues I have raised contribute to the necessary protection of the Steller sea lion.

Mr. SAXTON. I would like now to introduce our witnesses on Panel I. We have Dr. Walter Pereyra, Vice Chairman of the North Pacific Fishery Management Council; Dr. Andy Rosenberg, Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service; Ms. Kate Wynne, Marine Mammal Specialist, Alaska Sea Grant Marine Advisory Program; Dr. David Lavigne, Executive Director, International Marine Mammal Association; and Mr. Rick Marks, Steller Sea Lion Caucus.

Would you all take your places, please, at the table, and let me remind you, while you are doing so, that under our Committee rules your statements are limited to five minutes, but your entire statement will be made a part of the record.

Dr. Pereyra, you may begin when you are ready and in your place. Thank you.

STATEMENT OF DR. WALTER PEREYRA, VICE CHAIRMAN, NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

Dr. PEREYRA. Thank you, Mr. Chairman. My name is Dr. Walter Pereyra. I am a former NMFS scientist, and I am presently chairman and part owner of Arctic Storm, which owns and manages two catcher processors in the Bering Sea fishery for pollock and also a couple of catcher boats which participate in that same fishery. I am also vice chairman of the North Pacific Fishery Management Council, which is responsible, together with NMFS, for the conservation and management of the fishery resources in the Federal waters off Alaska. This is my ninth and final year on the council, and I could say something about that but I won't.

Mr. GILCHREST. I would like to hear that part.

Dr. PEREYRA. You might not.

Mr. Chairman, members of the Subcommittee, I am pleased to appear before you today to comment on the issue of the decline of the Steller sea lion populations in certain areas off Alaska. As requested, I will focus my attention on the perceived and actual defi-

ciencies in the Steller sea lion research and management program and also how the National Marine Fisheries Service could improve or expand on its current research program. I will also offer some comments on other research areas that could be pursued to better understand the reasons for the current decline in the western population of Steller sea lions.

I have taken the liberty to review the extensive comments and recommendations of the Council's Scientific and Statistical Committee, but I want to emphasize that the SSC's comments notwithstanding, the conclusions that I have drawn and the recommendations that I have put forth here before you are really my own.

Now, with regard to the decline of the Steller sea lion populations in the Bering Sea and Aleutian Islands and the Gulf of Alaska, there has been a considerable amount of literature on this particular subject, and I think it is pretty well-known that this decline has been quite substantial; but despite the research and scientific inquiry into the factors that have led to this decline, these factors remain poorly understood at best. Moreover, there has been no conclusive evidence that the pollock fishery is the causative factor, either directly or indirectly, in the sea lion's decline, and I would like to note, if I may, that the independent review panel which was established to review the biological opinion and the jeopardy decision, that review panel just issued their report this week, and that report concluded, and I would quote, "The relative importance of environmental changes in the carrying capacity versus the effects of commercial pollock fisheries in the Bering Sea and the Gulf of Alaska on hypothesized food shortages to Steller sea lions is unknown."

Now, in my mind the difficulty with which we find ourselves today was created by the listing of the western population of Steller sea lions as endangered under the ESA in June of 1997 together with our poor understanding of the dynamics of the Bering Sea and Gulf of Alaska ecosystems and their relationship to the Steller sea lion population. This endangered listing immediately put the Council and NMFS in a difficult position of having to take the so-called precautionary management actions to the pollock fishery without the benefit of an adequate understanding of the relationship between the fishery and the Steller sea lion population.

Without such an understanding, we have no assurance that despite our good intentions we, in fact, will be doing anything to benefit the recovery of the Steller sea lion population. We do know, though, that these remedial management measures will negatively impact the economics of the important pollock fishery in waters off Alaska. Furthermore, there is some suggestion that certain of the reasonable and prudent alternatives could actually be hindering the recovery of the sea lion population itself.

Now, in gaining an appreciation of the considerable research required to adequately understand this complex subject, it is helpful to note that the National Marine Fisheries Service concluded in their opinion from the Section 7 consultation that the decline in the sea lion population was due most likely to decreased juvenile survival, with reduced availability of prey identified as the underlying cause.

In response to this conclusion, the National Marine Fisheries Service recommended the RPA's, consisting principally of additional fishery exclusion zones around rookeries and haulouts and so-called time-area restrictions on the pollock fishery, as a means of buffering the sea lions from possible fishery-induced localized depletion of prey stocks. These management measures have been invoked despite the fact that there has been no conclusive proof that the pollock fishery is responsible for any localized depletion of the prey species or that if such localized depletion does in fact occur, that foraging ability of sea lions is compromised in any way.

Now, in looking at the deficiencies that we have in these Steller research and management programs, I feel that the lack of funding, the need to invoke the new measures to manage the fishery following a listing and the narrow focus of the inquiry into the basic reasons for the sea lion's decline appear to be responsible for these deficiencies, and I will go through, I think, some of the areas where I think these deficiencies exist.

The first is localized depletions—the underlying hypothesis driving the finding of jeopardy and the RPA principles is a notion that the pollock fishery is responsible for the localized depletion of pollock within the Steller sea lion's critical habitat and, furthermore, that this localized depletion has negatively impacted the sea lions. Attempts to measure localized impacts of fishing on the population density of pollock by tracking temporal changes in catch per unit efforts in the fishery and the abundance of pollock within the critical habitat have been unsuccessful. Therefore, fishery independent surveys in conjunction with the fishery I feel are going to be required to quantitatively assess the relationship, if there is any at all, between fishing and localized depletion.

Along with studies of fishery-induced localized depletion, there is a need to determine the degree to which localized depletions, if they are occurring, negatively impacts the sea lion's ability to forage successfully, and we have no knowledge of this important relationship either. If the pollock fishery impairs the foraging success, then we need to know more about the relationship between foraging success and the sea lions' overall condition and fitness.

The next area where I think there is a need for expanded research is in the time-area distribution of the pollock. The proposed RPAs involving these time-area regulations of the pollock fishery are premised on an understanding of this distribution and abundance.

Mr. SAXTON. Dr. Pereyra, could you summarize or give us an outline of the balance of your testimony? That would be appreciated. Thank you.

Dr. PEREYRA. Certainly, Mr. Chairman. I think that there is a need to expand the winter surveys in the Bering Sea. There is also a need to expand the summer surveys. If we don't do that, we are not going to know whether we are, in fact, helping or hindering the Steller sea lions by the way we are managing the fishery.

We also have put in a number of closure areas around rookeries since the early nineties. These have never been studied to determine whether or not they, in fact, are helping the Stellers recover at all.

Predator studies—there have been lots of reports on killer whales, so-called orcas. I think these really have never been looked at in a critical manner. There have not been any studies done on orca distribution or abundance levels of orcas and that needs to be done because they could, in fact, be hindering the recovery of the Stellers entirely just by the pressure that they put on the population from their predation.

And lastly, I think very important are ecosystem studies. There has been a lot of information that has been gathered recently on the so-called Pacific Decadal Oscillation, which is a regime shift as in the seventies when we had a major change in the Bering Sea ecosystem. This now seems to be going back the other way. This can have an effect upon the very important small fish populations, the capelin, the herring, the smelts and so forth, that seem to be, based upon some other studies that are being done, seem to be very important to the overall health of the sea lions.

So, in summary, Mr. Chairman, I think there is need, probably somewhere in the neighborhood of $10 to $15 million a year, of additional research money appropriated for these very important studies in the Bering Sea, Gulf of Alaska.

Thank you very much.

[The prepared statement of Dr. Pereyra follows:]

Statement of Dr. Walter T. Pereyra, Vice Chairman, North Pacific Fishery Management Council, Chairman, Arctic Storm, Inc.

My name is Dr. Walter T. Pereyra. I am a former National Marine Fisheries Service ("NMFS") fisheries scientist. Presently I am Chairman and part owner of the Arctic Storm, Inc. ("Arctic Storm"). Arctic Storm owns and/or manages two catcher processors, one of which is in partnership with the Bristol Bay Economic Development Corporation, and two catcher vessels, all of which participate in the Bering Sea and Aleutian Island fisheries for Alaskan pollock. I am also Vice Chairman of the North Pacific Fishery Management Council ("Council") which is responsible together with NMFS for the conservation and management of the fishery resources in the Federal waters off Alaska. I am serving my ninth and final year on the Council.

Mr. Chairman and Members of the Subcommittee: I am pleased to appear before you today to comment on the issue of the decline of the Steller sea lion populations in certain areas off Alaska. As requested, I will focus my attention on perceived and actual deficiencies in the NMFS' Steller sea lion research and management program, and how the agency could improve or expand on its current research program. I will also offer some comments on other research areas that could be pursued to better understand the reasons for the current decline in the western population of Steller sea lions. In developing my thoughts on this subject I have taken into consideration the extensive comments and recommendations of the Council's Scientific and Statistical Committee ("SSC"). The SSC not withstanding the conclusions drawn and recommendations put forth in this statement are my own.

Decline of the western population of Steller Sea Lions

The decline of the Steller sea lion populations in Bering Sea and Aleutian Islands ("BSAI") and the central and western areas of the Gulf of Alaska ("GOA") has been well chronicled. Despite considerable research and scientific inquiry into the factors that have led to this decline, these factors remain poorly understood at best. Moreover, there has been no conclusive evidence that the pollock fishery is the causative factor either directly or indirectly for the sea lions' decline. Despite this scientific uncertainty, though, the NMFS concluded in their Biological Opinion ("BO") following an extensive Section 7 consultation under the Endangered Species Act ("ESA"), that the pollock fishery as proposed for 1999-2002 was "likely to jeopardize the continued existence of the western population of Steller sea lions and adversely modify its critical habitat."

The roles of the Council and its SSC in regards to this Section 7 consultation have been minimal. While we were able to comment at length on the content of the BO and conclusions drawn, the BO itself was exclusively the domain of the NMFS—

they had the responsibility for producing the BO and they alone arrived at the conclusion of jeopardy. Also they alone established the Reasonable and Prudent Alternative ("RPA") principals by which the Council had to shape its suite of recommended RPAs to NMFS for management of the pollock fishery. For the 1999 pollock fishery NWS rejected the Council's RPA recommendations for the summer/fall portion of the fishery. We will meet next month in Kodiak to revise our recommendations for the remainder of this year, and for the year 2000 and beyond.

In my mind the difficulty in which we find ourselves today was created by the NMFS' listing of the western population of Steller sea lions as endangered under the ESA in June 1997 together with our poor understanding of the dynamics of the BSAI and GOA ecosystems and their relationship to the Steller sea lion population. This endangered listing immediately put the Council and NMFS in the difficult position of having to take so-called precautionary management actions to the pollock fishery without the benefit of an adequate understanding of the relationship between the fishery and the Steller sea lion population. Without such an understanding we have no assurance that despite our good intentions we in fact will be doing anything to benefit the recovery of the Steller sea lion population. We do know, though, that these remedial management measures will negatively impact the economics of the pollock fishery. Furthermore, there is some suggestion that certain RPAs could actually be hindering the recovery of the Steller sea lion population.

In gaining an appreciation of the considerable research required to adequately understand the complex subject of the Steller sea lion decline and RPAs, it is helpful to note NMFS' concluding opinion from their Section 7 consultation and the BO. They concluded that the decline in the sea lion population was due most likely to decreased juvenile survival with reduced availability of prey identified as the underlying cause. In response to this conclusion NMFS recommended RPAs consisting principally of additional fishery exclusion zones around rookeries and haulouts, and time-area restrictions on the pollock fishery as a means of "buffering" sea lions from possible fishery-induced localized depletion of prey stocks. These management measures have been invoked despite the fact that there has been no conclusive proof that the pollock fishery is responsible for any localized depletion of prey species or that if such localized depletion does in fact occur, that foraging ability of sea lions is compromised in any way.

Deficiencies in NMFS' Steller sea lion research and management programs

Certain deficiencies can be identified in NMFS' Steller sea lion research and management programs. These deficiencies appear to be due to a lack of funding, the need to invoke new measures to manage the pollock fishery following the listing of the Steller sea lion as endangered, and the narrow focus of the NMFS' inquiry into the basic reasons for the sea lion's decline. Some of these deficiencies have been known for more than 10 years but remarkably little has been invested in research to answer the questions raised. A discussion of the more important research deficiencies follows.

(1) Localized depletion—the underlying hypothesis driving the finding of jeopardy and the RPA principals is the notion that the pollock fishery is responsible for localized depletion of pollock within the Steller sea lion's critical habitat ("CH"); and furthermore, that this localized depletion has negatively impacted the sea lions. Attempts to measure localized impacts of fishing on the population density of pollock by tracking temporal changes in catch-per-unit-effort in the fishery and abundance of pollock within the CH have been unsuccessful. Therefore, fishery independent surveys in conjunction with the fishery are going to be required to quantitatively assess the relationship, if any, of fishing to localized depletion.

Along with studies on fishery-induced localized depletion there is a need to determine the degree to which localized depletion, should it be occurring, negatively impacts the sea lions' ability to forage successfully. We have no knowledge of this important relationship. If the pollock fishery impairs foraging success, we then need to know more as to the relationship between foraging success and the sea lions' overall condition and fitness.

(2) Time-area distribution of pollock—The proposed RPAs involving time-area regulations on the pollock fishery are premised on an understanding of the distribution and abundance of the pollock population at the time of the fishery. Due to the lack of winter surveys and the timing of the summer surveys, time-area RPAs have had to be established in a speculative manner. This has put the conduct of the pollock fishery in jeopardy and raised the possibility of the pollock fishery being forced to operate disproportionately to the distribution of pollock, a situation that would be contrary to the intent of the RPAs themselves.

To reduce the potential risk to both the pollock fishery and the Steller sea lions, there is an immediate need for NMFS to conduct winter surveys to determine the

winter distribution of pollock relative to the CH prior to the start of the fishery. There is also a need to expand and alter the timing of the summer survey to determine the distribution of pollock relative to the CH and the eastern and western portions of the eastern Bering Sea. Both the winter and summer surveys need to be conducted annually, synoptic in nature (multi-vessel) and include surveys of both the on-bottom and off-bottom components of the pollock population.

(3) Efficacy of trawl exclusion zones—Trawl exclusion zones around certain sea lion rookeries have been in place since 1992. To date there have been no experiments or analyses conducted by the NMFS to test the efficacy of these no trawl zones. This lack of experimental studies is disturbing considering that in May, 1997 when it reclassified the western population from threatened to endangered, NMFS stated that it was premature to propose changes to the Steller sea lion protective measures, because "(1) more time is required to assess what, if any, benefit has been derived from the actions currently in place [a reference to the no trawl zones adopted in 1992 and 1993]; and (2) given the limited knowledge of the sea lion/fishery prey interaction and the effect of human disturbance, it is difficult to identify meaningful management actions in addition to those already in place." Recently an industry analyst examined NMFS' site-by-site sea lion count data and demonstrated that rookery sites open to trawling had experienced improving population trends as opposed to those sites closed to trawling. NMFS has refuted this finding but has not offered any research to counter these conclusions. It is imperative that NMFS design and conduct a controlled experiment to directly test the efficacy of the no trawl zones. Only in this manner will it be possible to determine whether the trawl exclusion zones around rookeries are beneficial (or adverse) to the Steller sea lions. It should be noted that the closure this year of the Aleutian Islands to all directed pollock fishing can not substitute for a controlled efficacy experiment of the trawl exclusion zones due to the importance of Atka mackerel as forage for sea lions in this area and the lack of a suitable control to the Aleutian Island closure.

(4) Predator studies—One of the ongoing debates surrounds the possibility that predation by killer whales ("orcas") could be impeding the sea lion's recovery. Fishermen have reported seeing large pods of orcas in the Bering Sea in recent years and observations of killer whales attacking sea lions are common. Unfortunately, due to the dispersed nature of the orca population, their distribution in pods and survey difficulties, our knowledge of the distribution and abundance, and feeding ecology of these known sea lion predators is wanting. Attention should be given to assessing, the size and distribution of the orca population so as to ascertain their potential impact on the recovery of the Steller sea lion.

(5) Feeding studies of captive sea lions by Dr. Andrew Trites and his colleagues associated with the University Marine Mammal Consortium have revealed some illuminating results. For one they have found that pollock may in fact be an unsuitable food source for the Steller sea lion which may explain in part for the decline of the sea lion population despite an increased abundance of pollock. Conversely more oily species such as herring and/or a more diverse diet appear to be more suitable for sea lions. These studies suggest that diet and lack of diversity could be a leading cause for the decline of Steller sea lions. These captive studies need to be expanded and refined to help answer important questions regarding the relationship between the availability of certain species as food for sea lions and the robustness of the Steller sea lion population.

Ecosystem investigations

There is a growing realization that quite possibly a major regime shift associated with the Pacific Decadal Oscillation ("PDO") may help explain the long-term changes we have witnessed in the western population of the Steller sea lion. It has been hypothesized that changes in the position and strength of the Aleutian low pressure could be largely responsible for this regime shift and that this change resulted in fundamental changes in the production characteristics of the entire North Pacific Basin. One change may have been a reduction in the populations of oily forage species such as herring, smelts and capelin, all of potential importance in the diet of Steller sea lions. This in turn may have reduced the carrying capacity of the environment for Steller sea lions, which in turn would have resulted in a population decline. Unfortunately our historical knowledge of the characteristics of the Steller sea lion population is lacking, as is our understanding of the PDO and its effect on the Steller sea lion population.

An examination of the PDO and its possible effect on the Steller sea lion population should become a focused research endeavor. Such a holistic approach to understanding the reasons for long term changes in the sea lion population would be consistent with the recommendations by the NMFS Ecosystem Principles Advisory Panel in their recent report to Congress entitled Ecosystem-based Fishery Manage-

ment. Research into the environmental causes for changes in the sea lion population would benefit from the "Integrated Ocean Observation Plan" as recently recommended to this Subcommittee by the National Ocean Research Leadership Council.

The foregoing comments on deficiencies in the NMFS research and management program on Steller sea lions, and ways in which the agency could improve or expand its current research program are not meant to be critical. I am acutely aware of the difficulties and costs involved in conducting research on Steller sea lions, particularly ecosystem studies. Our SSC has estimated the cost of improved and new research studies in the range of $10-14 million annually. They also have stressed the importance of improved communications on the part of NMFS so that inter-disciplinary and multi-institutional research efforts may emerge.

I hope that my comments may be helpful in moving this much needed research regarding Steller sea lions forward on a broad front. Certainly if we are ever going to be able to manage our fisheries in an adaptive manner, we must gain a better understanding of the reasons for the Steller sea lion decline and the efficacy of management measures taken to mitigate this decline. Without such an improved understanding of the dynamics of the Steller sea lion population and its relation to the fisheries we risk impacting the recovery of the Steller sea lions and the health of the important pollock and other fisheries of the North Pacific.

Thank you.

Mr. SAXTON. Thank you very much, sir.

Dr. Rosenberg.

STATEMENT OF DR. ANDREW ROSENBERG, DEPUTY ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL MARINE FISHERIES SERVICE

Dr. ROSENBERG. Thank you, Mr. Chairman and members of the Subcommittee. I thank you for inviting me to testify before the Committee today on the science supporting NOAA Fisheries' recent biological opinion and the conservation measures to ensure protection for the endangered western population of Steller sea lions. I am Andrew Rosenberg, the Deputy Assistant Administrator for NOAA Fisheries, and I am accompanied by agency regional and headquarter staff to try to help answer your questions.

NOAA is committed to the sustainable stewardship of marine fisheries, as well as to the protection and recovery of endangered and threatened marine species, and we recognize this dual commitment requires us to find a balance between endangered species protection and efficient utilization of fisheries for the U.S. fishing industry and the U.S. public.

Today, I am here to discuss the recent management measures developed with the North Pacific Fisheries Management Council in response to our biological opinion to reduce the potential effects of Alaskan groundfish fisheries on Steller sea lions. Developing these measures has been a complex task due to the competing statutory responsibilities we have and the complexity of the biological, social and economic features of the problem, and in fulfilling our responsibilities, we have used the best available scientific and commercial information.

A recent peer review just cited by Dr. Pereyra of the supporting science of the biological opinion stated, quote, the panel believes that in general the best available data and analysis were used in the preparation of the opinion, end quote. I would like to point out two features of the actions we have taken which we believe are innovative and, though controversial, vitally important in working to-

wards prudent steps for protecting Steller sea lions in a reasonable manner for the fishing industry.

Compared to many endangered species actions, we have had a very high level of public involvement in developing a plan to allow the fishery to operate without jeopardizing the sea lion population. We have had public meetings which normally is not the case with Endangered Species Act actions. We have had open meetings with industry and environmental groups. We have had direct and open interaction with the councils, and we have provided material on our web site prior to the conclusion of the biological opinion in order to allow the public to comment.

Secondly, we have provided substantial flexibility for the council to help us address fishery-related concerns by crafting a framework of principles for reasonable and prudent alternatives, rather than a prescriptive solution to the problem. In other words, we have explicitly recognized in our biological opinion that there are many possible ways to accomplish the goal of protecting sea lions from the indirect effects of fishing.

The western population of Steller sea lions was listed as endangered in 1997 because the measures in place to protect them have not halted the continued decline of the population, and it is vitally important to recognize that at issue in the opinion is the continued decline, not the cause of earlier declines, although they may be related, but they may not in many cases.

The Endangered Species Act requires that each Federal agency ensure that any action carried out is not likely to jeopardize the continued existence of an endangered species or result in adverse modification of its habitat. That is the standard that we are working under, and to engage in that action—any action that is viewed as jeopardizing the continued existence means to engage in that action would reasonably be expected directly or indirectly to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild. That is the way the standard that we are working with under the Endangered Species Act reads.

Our consultations focused on groundfish fisheries because these fisheries and Steller sea lions target the same prey. We have identified indirect interactions with fisheries as one of the factors that may have a continued impact on the ability of Steller sea lions to recover as well as to halt the decline in the first place. The removal of up to 70 percent of the pollock, total allowable catch, from critical habitat areas, combined with evidence that sea lions are nutritionally stressed, that pollock are their most important prey, that fishing and sea lion foraging overlap extensively, all indicate that fisheries are reasonably likely to compete with sea lions and jeopardize their population. This conclusion was confirmed by the recent independent peer review of the science.

ESA requires when an interaction is likely to jeopardize a population that the agency prepare reasonable, prudent alternatives, and, Mr. Chairman, we are well aware that what is reasonable for the fishery and prudent for the sea lions is a judgment call that we are required to make, and it will always be controversial as evidenced by this hearing and the lawsuit in which we are currently engaged, and we believe we have been reasonable for many reasons, and I want to mention a few.

We decided the evidence did not indicate that a reduction in overall pollock quota was necessary, and we also worked extremely hard, and I want to acknowledge NOAA staff here, to ensure that our protection measures were in place so that the fishery could open as planned on January 20th and proceed for a profitable A season which, in fact, did occur, taking the full quota for the A season this past year.

In December the council voted to approve a motion containing a number of conservation measures for the first half of 1999, and again, we had the opportunity to allow the council to craft those measures as opposed to prescribe a set of measures that they had to adhere to. That is the framework principles that I described before.

To be prudent for the sea lions, the reasonable and prudent alternatives, disperse the pollock fishery in time and space and protect sea lions from competition in waters adjacent to rookeries and haulouts.

Our strategy for research and recovery of Steller sea lions is described in the Steller sea lion recovery plan, and that plan which is developed by experts from outside of NMFS, with one exception on the team, uses the same principles that we used in our reasonable and prudent alternatives. Towards this end, the recovery team in NMFS has recently completed four peer review workshops on different elements of the Steller sea lion research effort, and we hope to incorporate those in a revised recovery plan, which is our most urgent objective at this stage, is to revise the recovery plan.

In summary, in the highly charged atmosphere dealing with a very complex issue, NOAA Fisheries is making an effort to strike a balance between the needs of the Alaska groundfish fishery and the needs to protect Steller sea lions, while fulfilling its various mandates under the law. In achieving this balance, the agency has made an unprecedented effort to maximize stakeholder input, but, Mr. Chairman, as with the terms "reasonable" and "prudent," we recognize that one can never have enough stakeholder input for such an important action to satisfy everyone.

The agency is prepared to work closely with stakeholders to ensure the future research and management plans will improve our ability to better evaluate fishery management alternatives to minimize impacts on the Steller sea lion population and, of course, on the fishery.

Thank you for the opportunity, and I will try to answer any questions the Committee may have.

[The prepared statement of Dr. Rosenberg follows:]

Statement of Dr. Andrew A. Rosenberg, Deputy 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 science supporting NOAA Fisheries, recent Biological Opinion and the conservation measures to ensure protection for the endangered western population of Steller sea lions. I am Dr. Andrew Rosenberg, Deputy Assistant Administrator for Fisheries.

The National Oceanic and Atmospheric Administration is charged with and committed to the sustainable stewardship of marine fisheries, as well as the protection and recovery of endangered and threatened marine species. We at NOAA's National Marine Fisheries Service recognize that this dual commitment requires us to find

a balance that ensures the protection of species listed under the Endangered Species Act (ESA) while ensuring the optimal utilization of fisheries for the U.S. fishing industry. In finding this balance, we must comply with a number of legal requirements, including those of the ESA, Marine Mammal Protection Act (MMPA), Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and the American Fisheries Act. Of particular concern to the Subcommittee today are the recent management measures developed with the North Pacific Fishery Management Council in response to our biological opinion to reduce the potential effects of groundfish fisheries off Alaska, particularly the pollock fisheries, on Steller sea lions. Meeting these various requirements has been a complex task, as together they impose a number of competing responsibilities that must be met within a relatively short period of time. We believe we have fully complied with all of our statutory responsibilities in managing these fisheries, using the best scientific and commercial information available in the process. Furthermore, we have done this with a high level of public involvement for an ESA action, and we have provided substantial flexibility in the recommendations of the Biological Opinion to accommodate fishery concerns. Both of these features of the action, we believe, are innovative and helped us work through a very contentious issue.

Requirements of the Endangered Species Act

The ESA requires that each Federal agency shall insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of their habitat. Under the ESA, the term "jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. The term "destruction or adverse modification" means a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.

When Federal actions may result in an adverse effect, either on these species or their habitat, the agency responsible for the action must consult with either the U.S. Fish and Wildlife Service or NOAA Fisheries and develop reasonable and prudent alternatives (RPAs) to minimize or eliminate the adverse effect. NOAA Fisheries, as the agency responsible for authorizing the pollock fisheries as well as for protecting Steller sea lions, is both the "action agency" and the "consulting" agency in this case.

On December 3, 1998, NOAA Fisheries completed an ESA Section 7 consultation on the pollock fisheries of the Gulf of Alaska and Eastern Bering Sea, and the Atka mackerel fisheries of the Bering Sea/Aleutian Islands region following an interactive process with the public and the North Pacific Fishery Management Council. The consultation considered the best scientific and commercial information available, including input received during two public meetings and a North Pacific Fishery Management Council meeting in the autumn of 1998 on possible alternatives to current fishing practices that would reduce the effects of the pollock fisheries on Steller sea lions. That consultation was summarized in a Biological Opinion, as directed by the ESA.

The Biological Opinion contained a description of the proposed fishery actions, a review of the status of western population of Steller sea lions, and an analysis of factors that either may have or are known to have contributed to the 80 percent decline of the western population of Steller sea lions over the past three to four decades. The Opinion recognized that commercial sea lion harvests, subsistence harvests, and incidental fisheries catch are known to have contributed to this decline. The Opinion also recognized that intentional shooting, ecosystem changes, killer whale predation, disease, and pollutants also have contributed to the decline. For example, considerable evidence developed by NOAA Fisheries and other scientists indicates that significant oceanographic changes have occurred in the Bering Sea and Gulf of Alaska ecosystems, with corresponding alteration of prey species available to Steller sea lions. As a result, the environment's carrying capacity for Steller sea lions may have been changed. In short, a number of factors have contributed to the decline of the western population of Steller sea lions.

However, the consultation NMFS conducted last year was concerned with the factors contributing to the continued decline of Steller sea lions, not the original cause of the decline. During the consultation on the 1999 pollock and mackerel fisheries, NMFS examined a number of phenomena that might explain the continued decline of the Steller sea lion. Direct and indirect interactions with fisheries are among

those factors which may continue to have a significant impact on the western population of Steller sea lions. Our consultations focused on the groundfish fisheries because these fisheries and Steller sea lions target the same prey.

The potential for competition between the pollock and Atka mackerel fisheries and the western population of Steller sea lions is difficult to evaluate. The best available evidence suggests that Steller sea lions are nutritionally stressed. That evidence includes data on animal growth, condition, reproduction, and survival (particularly of juvenile sea lions). The evidence also indicates that pollock and Atka mackerel are major prey for Steller sea lions in both the Gulf of Alaska and the Bering Sea regions. In the majority of diet studies conducted to date, pollock or Atka mackerel have been the most frequently consumed prey.

The question, then, is whether the removal of potential prey by the commercial pollock and Atka mackerel fisheries, as proposed, could reduce the foraging success of Steller sea lions and compromise growth, condition, reproduction, and even survival of individuals to the point that the population continues to decline or fails to recover. Scientific analyses indicate that the pollock fisheries of the Gulf of Alaska and Bering Sea overlap with foraging Steller sea lions in at least four important ways.

First, the pollock fisheries and feeding Steller sea lions overlap spatially; that is, they occur in the same place. Since the mid to late 1980s, the proportion of the pollock harvested from Steller sea lion critical habitat in the Eastern Bering Sea has increased from 35 to 70 percent of the total Eastern Bering Sea pollock catch. The proportion of the pollock harvested from critical habitat in the Gulf of Alaska has remained high during the same period, at 50 to 90 percent of the total Gulf of Alaska pollock catch.

Second, the pollock fisheries overlap in time with feeding Steller sea lions. Since the mid to late 1980s, large roe fisheries have developed on pollock during the winter period, when Steller sea lions (particularly juveniles and lactating adult females) are thought to be particularly sensitive to changes in availability of prey. In addition, these fisheries have become concentrated in time, increasing the likelihood that they result in localized depletions of prey. For example, since 1990, the Bering Sea pollock fishery has become condensed from about 10 months to less than 3 months.

Third, the pollock fisheries and foraging Steller sea lions overlap in prey selection and prey size. As noted above, pollock is a major prey for sea lions. Furthermore, both adult and juvenile sea lions consume pollock of the same size as those taken by the fisheries.

Fourth, the pollock fisheries and foraging Steller sea lions overlap with respect to the depth of trawling and foraging. While much remains to be learned about the diving capabilities of sea lions, the available information is sufficient to show that their diving patterns overlap with the trawling depths of the fisheries. Furthermore, the pollock resource also moves in the water column, from deeper levels in the daytime to shallower depths at night.

Finally, analyses of prey biomass harvested from areas important to Steller sea lions indicate that the fisheries may remove 40 percent or more of the pollock available to Steller sea lions during some seasons. Essentially, the problem is not the total amount of pollock harvested from Alaska waters, rather the disproportionate amount harvested from critical habitat and the resultant potential for localized depletion.

This extensive removal of pollock from critical habitat, combined with the evidence that sea lions are nutritionally stressed, that pollock are important prey, and that fishing and sea lion foraging overlap extensively, all indicate that the fisheries are reasonably likely to compete with the western population of Steller sea lions and significantly reduce their available prey. Based on this information, the Biological Opinion concluded that the pollock fisheries in the Bering Sea and Gulf of Alaska, as proposed, are likely to jeopardize the continued existence of the western population of Steller sea lions and adversely modify its designated critical habitat.

Concerns about the Atka mackerel fishery were considered by the Council early in 1998. The fishery had become concentrated in both time and area, and evidence of resultant localized depletion of Atka mackerel was observed. In June, 1998, the Council recommended a regulatory amendment to spread the Atka mackerel fishery harvest over time and space to reduce the effects of competition between the Atka mackerel fishery and Steller sea lions. The Biological Opinion concluded that implementation of these conservation measures reduced the effects of the Atka mackerel fishery sufficiently to avoid jeopardy.

The Biological Opinion was based on the best available scientific and commercial data, as analyzed by scientists both inside and outside of our agency. These scientific data and analyses were only part, but an important part, of the Biological Opinion and resulting conclusions. The North Pacific Fishery Management Council

recently convened a review of these data and analyses by a panel of internationally known experts in marine mammal biology.

Development of a reasonable and prudent alternative with public and Council input

Because Federal agencies cannot take actions that jeopardize a listed species or adversely modify critical habitat, the ESA requires that jeopardy and adverse modification be avoided through development of a reasonable and prudent alternative to the proposed action; in this case, authorization of the pollock fisheries. Development of the RPA was initiated in the fall of 1998, when the analyses of the Biological Opinion indicated that conclusions of jeopardy and adverse modification were likely. We drafted management measures and solicited public and Council input to ensure that the fisheries would be able to start in January 1999, as planned.

Early analyses in the Biological Opinion indicated problems with the spatial dispersion of the fisheries, their temporal dispersion, and their potential to compete with sea lions in the waters immediately adjacent to rookeries and haulouts. In the fall of 1998, NOAA Fisheries staff began development of RPAs that would increase spatial and temporal dispersion, and protect prey resources around rookeries and haulouts. It should be reiterated that changes in the total amount of pollock harvest allowed were considered, but not deemed necessary.

In October 1998, public workshops were held in Seattle and Anchorage. The purpose of these workshops was to enlist input from the public on measures to avoid jeopardy and adverse modification.

In November 1998, the RPA was further developed and presented to the North Pacific Fishery Management Council. Again, input from the Council and from the public was solicited on measures to avoid jeopardy and adverse modification.

In late November and early December 1998, NOAA Fisheries developed RPA "principles" to be included in the Biological Opinion, pending the final decision on jeopardy and adverse modification. These principles established the objectives to be met by the RPA as a framework, rather than specifying the exact measures to achieve those objectives. This provided the Council and the industry much greater flexibility in developing solutions to this problem than is usual for ESA actions.

In December 1998, NOAA Fisheries took the framework RPA principles in the final Biological Opinion to the Council to seek their input on measures consistent with that framework that would avoid jeopardy to Steller sea lions and adverse modification of critical habitat. On December 13, 1998, the Council voted to approve a motion containing a number of conservation measures for the first half of the 1999 groundfish fisheries.

On December 16, 1998, NOAA Fisheries accepted the Council motion, with some modification, as part of the RPA. We also recognized that additional measures would be required during the latter half of the 1999 fisheries to avoid jeopardy and adverse modification. These additional measures were discussed with the Council at its February meeting. Again, the Council and public were asked for input prior to the development of an environmental assessment for the Steller sea lions conservation measures needed for the latter half of 1999 and for the 2000 fisheries and beyond.

In April 1999, the Council was asked to review and release a draft environmental assessment on Steller sea lion measures so that final action could be taken in June 1999.

In summary, the RPA, as developed to date, disperses the pollock fisheries in time and space, and protects sea lions from competition in the waters adjacent to important rookeries and haulouts. The goals of temporal dispersion were to protect portions of the critical winter period by prohibiting fishing from 1 November to 19 January, and to disperse the fisheries during the remainder of the year to avoid large pulses of fishing. The goals of spatial dispersion were to spread the distribution of the catch in a manner that mirrored the actual distribution of the pollock stocks and, where the stock distribution is not known, place a cap on the amount of the catch that could be taken from Steller sea lion critical habitat. Zones within which pollock trawling is prohibited were also established to fully protect sea lions (particularly juveniles and lactating females) from the possibility of competition for pollock in the waters adjacent to important rookeries and haulouts. The combined set of RPA principles outlined in the Biological Opinion were developed to achieve these goals.

Related litigation

NOAA's management of the groundfish fisheries off Alaska is the subject of litigation in a Federal court. In that case, a number of environmental groups are challenging the environmental impact statement prepared for the Alaska groundfish

fisheries, as well as the biological opinion addressing the effects of the pollock and Atka mackerel fisheries, and the biological opinion considering the effects of the other Alaska groundfish fisheries on Steller sea lions. Representatives of the groundfish fishing industry and Alaska fishing communities have intervened in the case and filed cross claims challenging, among other things, NMFS' emergency regulations under the Magnuson-Stevens Act that implement the reasonable and prudent alternatives identified in one of the biological opinions. Oral argument on some of the issues in this case was held on May 13th.

Steller sea lions and the American Fisheries Act

While the RPA was being developed, the American Fisheries Act (AFA) became public law. The AFA has changed the structure and nature of the pollock fishery in the Bering Sea. The AFA has only been in effect since January 1999 and the full effects of its measures on the western population of Steller sea lions are not yet apparent. Based on the preliminary results, we are cautiously optimistic that some provisions of the Act will likely further our efforts to avoid jeopardy to the western population of sea lions and adverse modification of its critical habitat. In 1999, one sector of the pollock fleet, the catcher-processors, was able to establish a fishing cooperative which helped to avoid the "race for fish," reduce the daily catch rates, and better disperse the catch over a longer period of time. These are preliminary results from the activities of only one of the four fishery sectors fishing during the first four months of 1999, but they are positive and encouraging. We hope to see similar progress in the other sectors, given the shift in allocation of pollock away from the catcher-processors towards the inshore and Community Development Quota, or CDQ, fleets. Our Alaska Region is working with the North Pacific Fishery Management Council to facilitate the full implementation of the AFA as soon as possible.

Steller Sea Lion Recovery Plan

Our strategy for research and recovery of Steller sea lions is described in the Steller Sea Lion Recovery Plan (Recovery Plan). The first version of the Recovery Plan was completed in 1992 by NMFS and the Steller Sea Lion Recovery Team. This version provided important directions for research into the causes of the decline and general management measures for facilitating recovery. Considerable progress has been made since 1992, and the Recovery Plan is now ready for revision. The Recovery Team and NMFS have recently completed four peer-review workshops on different elements of the Steller sea lion research effort. The workshops and their recommendations will be used to revise and update the Recovery Plan. The revision is expected to be completed by the end of 1999.

The completion of the revised Recovery Plan is our most urgent objective for management efforts related to Steller sea lions. The revised Recovery Plan will not only update the information on the status of the western and eastern populations, but will also incorporate the extensive research results obtained since 1992. In addition to direction for future research, the Recovery Plan will incorporate explicit management strategies to facilitate recovery of the species. The Recovery Plan will guide and coordinate the research and management activities of the multiple agencies involved with Steller sea lion recovery efforts. Finally, the Recovery Plan will also define the criteria needed to determine when the eastern and western populations have recovered and can be removed from the lists of threatened and endangered species.

General research direction and anticipated budget

Specific research topics or themes will be identified and expanded during the revision of the Recovery Plan. Likely research themes will include research on population abundance and trends, life history, health foraging ecology, habitat, fisheries interactions, and environmental effects. NOAA Fisheries funding levels for Steller sea lion research in 1998 was $720,000. In 1999, NOAA Fisheries has a $590,000 base level of funding, plus $850,000 for studies on the effectiveness of current management measures, and an additional $234,000 for recovery studies. When combined with other funding sources, the total 1999 funding level for Steller sea lion research is $3,604,000.

Summary

In summary, NOAA Fisheries is making an effort to strike a balance between the needs of the Alaska groundfish fishery and the need to protect Steller sea lions while fulfilling the varying mandates of the Magnuson-Stevens Act, ESA, MMPA, and the American Fisheries Act. To achieve this balance, we considered the best available scientific information, and hold numerous public meetings to discuss possible alternatives with the North Pacific Fishery Management Council (, the fishing industry, environmental organizations and the public. We have used a flexible, inno-

vative approach to meeting the mandates of the ESA because of the complexity of the issue and the legal mandates and because of the importance of the fishery. Future research and management plans will improve our ability to respond to our complex mandates, and will allow all stakeholders to better evaluate possible fishery management alternatives to minimize impacts on the western Steller sea lion population.

Thank you for the opportunity to testify before the Subcommittee today. I am prepared to respond to questions members of the Subcommittee may ask.

Mr. SAXTON. Dr. Rosenberg, thank you very much for your statement.

Ms. Wynne.

STATEMENT OF KATE WYNNE, MARINE MAMMAL SPECIALIST, ALASKA SEA GRANT MARINE ADVISORY PROGRAM

Ms. WYNNE. Thank you, Mr. Chairman. I appreciate the opportunity to comment on the adequacy of the National Marine Fisheries Service's Steller sea lion research and management programs and on how they might be better integrated. My perspective is based on nearly 20 years of studying marine mammals and their interactions with fisheries, often from the deck of fishing boats, often working hand in hand with National Marine Fisheries Service on research, advisory and outreach projects, and usually, as here, in the midst of conflict.

The Steller sea lion recovery plan published by NMFS in 1992 clearly outlined research needs and a direction for the NMFS' Steller sea lion research program. I believe NMFS' scientists, directly and through collaborative studies, have conscientiously followed this direction in seeking to answer the question, "why are Stellers declining and how can we help them recover." I believe NMFS and other researchers have made great strides toward understanding Steller sea lion biology and ecology and new techniques and technology give me great hope for future breakthroughs, but the causes for continued declines remain unclear, and why is that?

The bulk of Steller sea lion research to date has focused on assessing the existence and mechanisms of food limitation. These are difficult animals and complex questions to study. The environment is dynamic, (and as we know, it is changing) and developing statistically reliable sample sizes is very time-consuming. The research is challenging and understanding develops slowly. So, after a decade of concerted effort, even some fundamental information is incomplete and lacking.

These scientific shortcomings become painfully obvious when they comprise the best available data used by sea lion managers to make decisions that have such hefty social and economic impact, decisions that are forced by uncertainty and by law to be conservative and risk adverse.

Now, in the management arena, NMFS is being asked questions that are related but very different from those addressed in the recovery plan. They may require a very different research approach. Rather than seeking ecosystem level mechanisms that are limiting sea lion recovery, NMFS is being asked specific management-related questions like do humans and sea lions compete for the same prey, and what is critical habitat for Steller sea lions.

This situation does beg for a review, not necessarily of the science involved but of how NMFS as an agency can better integrate the actions of their management and research programs. The left hand and the right hand need to be better coordinated.

A case in point was the establishment of protective no-trawl zones around Steller sea lion rookeries in the early 1990s. A critical opportunity was lost when no experimental design nor follow-up research was incorporated into that action. Now, there is no way to assess the effectiveness of that measure nor to predict the usefulness and value of extending them further to protect haulouts.

I encourage NMFS to continue monitoring the sea lion population and develop technology and studies that will refine our understanding of foraging requirements and other critical habitat needs of Steller sea lions. But I recommend that NMFS encourage its scientists to work more directly with its marine mammal and fisheries managers to design research that is management-related and hypothesis-driven, to design management actions as experiments, and to test the assumptions included so we can learn as we go, and most importantly to assure there is a means of measuring success built into every significant sea lion protective measure that clearly identifies goals and benchmarks so the efficacy of the action can be determined.

Involving stakeholders in the design of such testable management actions perhaps in a manner modeled after the MMPA's take reduction teams would enhance their acceptance and utility, encourage constructive mitigation and reduce the need for retrospective analyses such as today's.

Communication plays an indirect but critical role in building trust and, ultimately, reaching Steller sea lion research and management goals. Within NMFS and NOAA are gifted communicators who could help develop informative sea lion research updates and other means of increasing awareness and understanding at the grass roots level.

These additional efforts will, however, require additional funding. NMFS' scientists already compete for a shrinking piece of the NOAA research budget pie. There are many high profile and critical marine mammal fisheries issues nationwide, including right whales and harbor porpoise in New England. Increased demands on the National Marine Fisheries Service's Steller sea lion research and management programs will, therefore, require congressional support and commitment.

Thank you, Mr. Chairman.

[The prepared statement of Ms. Wynne follows:]

Statement of Kate Wynne, Research Associate Professor, University of Alaska Sea Grant Marine Advisory Program

Preface

The endangered western stock of Steller sea lions continues to decline but unlike most endangered species, the factors initiating their decline and hindering their recovery remain uncertain despite years of concerted study. This testimony is presented, upon request, to address the adequacy of the National Marine Fisheries Service's (NMFS) Steller sea lion research program and to comment on potential improvements and expansion. More thorough reviews of NMFS' sea lion research have been provided by independent reviewers, through a series Steller Sea Lion Recovery Plan workshops, and recently by the North Pacific Fisheries Management Council.

The perspective I provide herein is a product of nearly 20 years studying marine mammals and their interactions with commercial fishermen—often with fishermen on their vessels, often with NMFS in the field, often seeking understanding in a commonly thorny conflict arena. The opinions expressed herein are mine and do not necessarily reflect those of the institution I represent. [A Disclosure Form summarizing my professional experience and recent and proposed NMFS-supported projects is appended to this document.]

Background

The Steller Sea Lion Recovery Plan (SLRP) published by NMFS in 1992 outlined research priorities and a clear direction for NMFS' Steller sea lion research program. Beyond monitoring population trends, the SLRP prioritized the research needed to address the question: "Why are Steller sea lions declining and how can their recovery be encouraged?" Although NMFS has management authority for Steller sea lions throughout the U.S., they have shared responsibility for SLRP-related sea lion research in Alaska with the Alaska Department of Fish and Game (ADFG). Additional Federal funding has supported Steller sea lion research at the Alaska Sea Life Center, the North Pacific Universities Marine Mammal Consortium, and numerous academic institutions.

A number of sources of mortality were identified in SLRP as known or potential contributors to the population's historic decline but no single causative factor ("smoking gun") has been found to account for continued declines. Consequently, by the mid-1990's, much of the research by NMFS and others focused on seeking evidence to support a single, common hypothesis: that food limitation (in prey quality, quantity, or diversity) is reducing survival of juvenile Steller sea lions.

Adequacy of NMFS' science

Unlike El Nino-induced prey shortages, we are NOT seeing classic evidence of acute food shortage in the western stock of Steller sea lions (i.e. thousands of carcasses or starvelings washing ashore). NMFS and other investigators therefore have sought indicators of chronic nutritional stress and its potential impact on the population including physiological compromise detectable in blood parameters, growth and reproductive rates, and foraging effort. By comparing sea lion diet and condition over space (stable eastern stock vs declining western stock) and time (pre-decline vs post-decline), researchers have sought to elucidate key changes in Steller sea lion habitat and determine the role of food limitation in the continued decline. Despite this concerted effort, evidence supporting the food limitation hypothesis remains weak.

This has not been for lack of trying however. I believe NMFS and others have conscientiously addressed the questions they have asked. Our knowledge of Steller sea lion biology and ecology has grown tremendously in the past decade. But until recently, sea lion questions were asked in a broad ecosystem-process context, as directed by the SLRP. By seeking sources of continued decline, NMFS and others have asked a complex set of questions where even the simplest components are logistically difficult, expensive, and time-consuming to answer. Hampered by these research challenges, even some seemingly fundamental questions remain unanswered (e.g. What and where do sea lions eat in the winter?) and the "best available information" in those areas may be suboptimal or incomplete. Such data limitations become particularly obvious and confounding when they form the basis for management decisions of social and economic significance.

But NMFS is now being asked very different questions. Rather than questioning the mechanisms limiting sea lion survival, NMFS is being asked specific management-related questions: What direct and indirect impacts does a particular fishery have on sea lions and/or their prey? Are humans competing with or disrupting sea lion foraging behavior? What IS critical in a sea lion's habitat? How do fish populations respond to sea lion predation and human harvest? These are very different from SLRP questions and may require a revised research approach.

Integrate research and management

In many cases, data needed for sound management actions are lacking because appropriate questions have not yet been asked. This argues for broader integration of NMFS' Steller sea lion management and research efforts. Research focused on specific management-related, hypothesis-driven questions can be designed to generate results with direct management application as well as broader ecosystem insights. Although belated, NMFS' recent steps to develop hypothesis-driven proposals for assessing the impact of commercial fishing pressure on sea lion prey distribution are a commendable move in this direction.

The efficient coordination of NMFS' research and management efforts may be limited by NMFS' infrastructure and the vastly different timelines upon which research

and management programs appear to operate. [There is often a multi-year lag in procuring research funding whereas management issues are often on shorter, more urgent schedules.] But the desirability of such coordination is exemplified by NMFS' establishment of protective buffer zones (trawl closure areas) around Steller sea lion rookeries in the early 1990's. A critical opportunity to study the effects of this management measure was lost when no experimental design nor follow-up research was incorporated into the buffer zone implementation. Consequently there has been no way to directly assess the efficacy of this measure or predict the efficacy of recently implemented trawl closures around haulouts. Such studies could have also been designed to shed light on sea lion habitat requirements and other trophic interactions.

I recommend that NMFS' sea lion researchers work directly with managers to (1) design management actions as experiments and (2) develop a measure of success for all significant sea lion-protective measures implemented: identify goals and benchmarks so the efficacy of the action can be monitored.

In addition, I believe stakeholder involvement in the design of such testable management actions may increase their utility and reduce the need for retrospective negotiations or critiques of assumptions and science involved. "Take Reduction Teams" (TRTs), authorized under the MMPA to develop plans for reducing incidental fishing mortality of strategic stocks, may provide a model for addressing specific sea lion-fishery interactions. Like TRTs, this team could be comprised of biologists and stakeholder representatives, have a limited focus and tight timeline, and develop with NMFS a fishery-specific research plan with clear goals and benchmarks for success. Unlike TRTS, this proposed team would address competitive or indirect interactions between sea lions and fisheries, rather than incidental take.

Communication

The fact this hearing is being held demonstrates that Steller sea lion problems go beyond science and that NMFS should make a concerted effort to improve communications with the public. Misunderstanding and confusion about NMFS' goals has spawned grassroot-level mistrust and resistance to management actions and led to counterproductive expenditures of time and money. I believe we all see Steller sea lions in crisis and share common goals for their recovery—albeit for different reasons (biological, social or economic). The following NOAA communication efforts are suggested as steps to enhance public awareness, understanding and cooperation.

- NOAA's newly appointed Fishery Ombudsman will likely encourage upper level coordination of marine mammal and fisheries issues.
- Outreach at local level: NMFS can facilitate public access to research results through direct mailings of NOAA Tech Memos to affected AK coastal community libraries, and funding should be sought to support NOAA development of a semi-annual newsletter highlighting sea lion research plans and results by NMFS and other researchers.
- Alternate Peer Review: consider requesting the Alaska Scientific Review Group (ASRG) to formally review the design and goals of proposed NMFS' sea lion studies. Currently NMFS presents the ASRG with annual updates on funded sea lion research plans and specific sea lion study results upon request but does not request study plan review.

COMMENTS ON NMFS STELLER SEA LION RESEARCH

Kate Wynne, Research Associate Professor
University of Alaska Sea Grant Marine Advisory Program

Research by NMFS and others has made great strides toward understanding Steller sea lion biology and ecology but cause(s) of continued declines remain unclear.

The bulk of Steller sea lion research effort this decade has focused on assessing the existence and mechanisms of potential food limitation. The questions and animals are difficult to study and many questions fundamental to management needs remain unanswered.

Research based solely on this single hypothesis may no longer be justified.

Recommendations: NMFS researchers should work more closely with the agency's fish and sea lion managers to (1) design management-related, hypothesis-driven sea lion research, (2) design management actions as experiments and (3) develop a measure of success for all significant sea lion-protective measures implemented, identifying goals and benchmarks so the efficacy of the action can be monitored.

Communication plays an indirect but critical role in affecting Steller sea lion research and management goals. NMFS can and should encourage increased aware-

ness and understanding of their research and management goals at the grass roots level and higher.

Mr. YOUNG. [presiding.] Thank you, Kate. Dr. Lavigne.

STATEMENT OF DR. DAVID LAVIGNE, EXECUTIVE DIRECTOR, INTERNATIONAL MARINE MAMMAL ASSOCIATION

Dr. LAVIGNE. Thank you, Mr. Chairman. Mr. Chairman, members of the Subcommittee, first, thank you for the invitation to appear before you today. I would like to begin by providing you with a bit of personal background in the history of my involvement in the Steller sea lion issue.

I am the Executive Director of the International Marine Mammal Association, a not-for-profit organization concerned with the conservation of marine mammals. I am also an adjunct professor in the Department of Zoology, University of Guelph, where I held a faculty position from 1973 through 1996. I am a member of IUCN Seal Specialist Group, and I serve on the Pinniped Fishery Interaction Task Force on the Sea Lion/Steelhead Conflict at Ballard Locks.

My involvement in the Steller sea lion issue began in March of 1991 when I was invited to participate in the Is it Food? workshop held at the University of Alaska Fairbanks. Later that year I submitted an affidavit in the 1991 sea lion litigation. At that time, NMFS acknowledged that the commercial pollock fishery may adversely affect Steller sea lions, but concluded that no harm was likely because the causal connection had not been definitively proven. I argued that NMFS' conclusion was scientifically unjustified because the process of science does not and cannot prove hypotheses. Rather, it attempts to reject them.

The pollock fisheries continued between 1991 and 1998, and in 1997, as we all know, the status of the western population of Steller sea lions was upgraded to endangered. In March of 1999 the Earthjustice Legal Defense Fund asked me to review materials related to Steller sea lions, including the latest biological opinion, and last month I was invited to make a presentation before the Northwest Fishery Management Council's panel of independent scientists in Seattle.

I will now address briefly some of the scientific issues about which you have asked witnesses to testify. One, the biological opinion. In my opinion, the best available scientific and commercial data support a conclusion that the pollock fisheries compete with the western population of sea lions. This does not mean, I must emphasize, that such competition has been demonstrated conclusively. Rather, it means that the data and analyses reasonably support the conclusion that the pollock fisheries are likely to jeopardize the continued existence of the endangered western population of Steller sea lions and adversely modify its habitat.

Two, the reasonable and prudent alternatives. Here, I diverge from the views expressed in the biological opinion. In my opinion, the proposed RPAs are unlikely to avoid jeopardy and adverse habitat modification for the endangered Steller sea lions because they do not remedy the factors that led NMFS to reach its conclusions of jeopardy and adverse modification.

Three, the adequacy of NMFS' scientific research program. It is my impression that NMFS' scientists have tried to devise the best possible research program within the limits of the available funding, given the difficulties of working with a threatened and subsequently endangered species and the logistical realities of working on Steller sea lions in their remote northern terrestrial and marine environments.

I also suspect that they would be the first to admit that the program could have been better if they had more research funding and additional human resources, and I would agree with such an assessment.

How could NMFS improve or expand its current research program? Well, there are a number of areas where additional scientific information is required to improve the basis for making future determinations on the likely effects of the pollock fishery on the endangered Steller sea lions. These include, one, as the review panel noted, there is a need for additional research to delineate better the critical habitat of Steller sea lions.

There is also a need, I feel, to obtain a better understanding of the nature of the, quote, harsh winter period, and its potential consequences for Steller sea lions.

We also need to obtain data on the abundance of pollock in specific areas, particularly in sea lion critical habitat and at specific times, before, during and after commercial fishing in an area to better understand the extent to which the fisheries may cause local depletion of pollock and over what period of time.

And finally, four, I think we need to take a more experimental approach to fishing to really test the hypothesis that the pollock fishery competes with the endangered Steller sea lion.

I would like to end my statement with one additional comment. The available scientific information comes in a variety of forms. These include peer-reviewed primary scientific literature published in independent journals, the so-called grey literature, government reports and the like, reports from meetings, unpublished reports and anecdotal accounts. There is a tendency, particularly among non-scientists and the media, to give equal weight to claims arising from all of these sources. Scientists, on the other hand, who are or should be skeptical by their very nature will instinctively treat the information in the various sources above with increasing vigilance as they proceed from the peer-reviewed literature at one end of the spectrum to anecdotal reports at the other.

It may be of some use to your Committee to apply a similar approach in evaluating the scientific information presented to you. This is important, I think, because some of the apparent scientific controversy on this issue has been generated by unpublished and anecdotal information which has been introduced into the scientific debate in unconventional ways.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Lavigne follows:]

Steller sea lions and pollock fisheries in western Alaska

Statement submitted to:

Subcommittee on Fisheries Conservation, Wildlife & Oceans
Committee on Resources
U.S. House of Representatives
H1-805 O'Neill House Office Building
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by

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"...although we might wish to manage wild marine animals or their environment, as yet we don't know how. What perhaps we humans can manage are our own activities which affect the marine mammals, to our own ultimate benefit or harm."

S.J. Holt (1978, p. 263)

Steller sea lions and pollock fisheries in western Alaska

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Introduction

I have been conducting research on pinnipeds (fur seals, sea lions, walrus and true seals) since 1969. I received a PhD (Guelph) in 1974 and a Dr philos (Oslo) in 1988, both for research on seals. From 1973-1996 I was a professor in the Department of Zoology, University of Guelph. Since 1990, I have been executive director of the International Marine Mammal Association, a not-for-profit organization concerned with the conservation of pinnipeds worldwide. I am currently a member of the World Conservation Union's Seal Specialist Group, and the Pinniped Fishery Interaction Task Force on the Sea Lion/Steelhead Conflict at the Ballard Locks, Seattle. I have been involved in a number of meetings and symposia on the potential interactions between pinnipeds and fisheries, including workshops in South Africa, Canada, and the United States. I also co-edited the book *Marine Mammals and Fisheries* (George Allen & Unwin, 1985).

In March 1991, I was an invited participant in the "Is it Food?" workshop organized by the Alaska Sea Grant College Program and held at the University of Alaska Fairbanks (Anon. 1993). That workshop addressed the question: "Is food availability the key to declining marine mammal and seabird populations in the northern Gulf of Alaska and Bering Sea?" The workshop summary (Anon. 1993) concluded that "food availability seems to be the most plausible explanation for observed declines of pinnipeds and piscivorous birds in the region" and that "nesting birds and juvenile mammals [such as juvenile Steller sea lions] seem to be especially vulnerable to local changes in the availability of quality prey" (Dearborn 1993, p. iv). It went on to note that "the more detailed the explanation of the causes of reduced food availability, whether it be focused on climate change, ecosystem processes, or anthropogenic activity [e.g. commercial fishing], the less unified the support" (Dearborn 1993, p. iv).

Later that year I submitted an affidavit concerning the likely impacts of the pollock fisheries on Steller sea lions in the 1991 sea lion litigation (Lavigne 1991). In that affidavit I argued that the National Marine Fisheries Service's (NMFS) conclusion that the 1991 pollock catch was not likely to jeopardize the continued existence or recovery of Steller sea lions in the Gulf of Alaska was not scientifically justified (Lavigne 1991). At the time, NMFS acknowledged that the commercial pollock fishery may adversely affect the Steller sea lions' health and reproduction, but concluded that no harm was likely because the causal connection, hypothesized by NMFS' own and outside scientists, had not been definitively proven. I argued that NMFS' conclusion was scientifically unjustified because the process of "science" does not (and cannot) prove hypotheses; rather, it attempts to reject them.

I further noted that the available evidence (including that reviewed at the Is it food? workshop) was insufficient to reject a causal relationship between the Gulf of Alaska (GOA) pollock fishery and the sea lion decline, and that neither NMFS nor its scientists pointed to any contrary data, analyses or competing hypotheses to explain adequately the decline in the sea lion population (Lavigne 1991).

As a result of the above considerations, I was unable to reject the hypothesis that increasing the harvest of pollock in the Gulf of Alaska might jeopardize the [then] "threatened" Steller sea lion. I further concluded that the only means of insuring that there would be no likelihood of jeopardy to the sea lion population, as the Endangered Species Act required, was to avoid actions that might diminish the availability of prey to the species.

Between 1991 and 1998, the pollock fishery continued, increasingly within designated critical habitat for Steller sea lions and increasingly during the winter months (Anon. 1998). In 1997, the status of the western population of Steller sea lions in Alaska was reclassified from threatened to endangered under the Endangered Species Act (ESA) (Anon. 1998).

NMFS' 1998 Biological Opinion (Anon. 1998, p. 114) now concludes: that after reviewing the current status of the Steller sea lion, the environmental baseline for the action areas, the effects of the proposed 1999-2002 Bering Sea/Aleutian Islands (BSAI) and GOA pollock fisheries, and the cumulative effects, that these pollock fisheries, as proposed, are likely to jeopardize the continued existence of the western population of Steller sea lions and adversely modify its habitat.

In March 1999, Mr Douglas A. Ruley, Earthjustice Legal Defense Fund, asked me to review materials related to Steller sea lions in the North Pacific, including the latest Biological Opinion. I was subsequently invited by the North Pacific Fishery Management Council to make a presentation on 27 April before the panel of independent scientists established to review the scientific basis for the recent Biological Opinion and other information relative to Steller sea lions and the pollock fisheries off Alaska. Shortly thereafter, I was invited to appear before you today.

In reviewing the 1998 Biological Opinion and related documents, I took essentially the same approach I followed in 1991. I treated the NMFS' current conclusions (outlined above) as hypotheses and asked the question: Are there any data, analyses, or interpretations that would permit me to reject these hypotheses? In short, I was unable to reject either hypothesis (Lavigne 1999).

I then reviewed the Reasonable and Prudent Alternatives (RPAs) included in the Biological Opinion. In my opinion, the proposed RPAs are unlikely to avoid jeopardy and adverse habitat modification for endangered Steller sea lions, because they do not remedy the factors that led NMFS to reach its conclusions of jeopardy and adverse modification (Lavigne 1999).

Below, I address the various issues about which you have asked witnesses to testify.

1. The process used to develop the jeopardy finding

In preparing its Biological Opinion, NMFS appears to have followed the process required by section 7 of the ESA. It performed a thorough review of the available information and, in arriving at its conclusions, generally used the best scientific and commercial data available.

There was only one instance where, in my opinion, NMFS did not use the best available scientific information. Under section 2.2.4.4 Allowance for other marine predators (Anon. 1998, p. 38), the Opinion uses estimates of daily ration from Perez (1990) and Perez *et al.* (1990) to estimate consumption rates for Steller sea lions. Based on work conducted in my former laboratory at the University of Guelph (e.g. Innes *et al.* 1987, Lavigne *et al.* 1986), it is my opinion that the approach outlined in Perez *et al.* (1990) will almost certainly overestimate the daily energy requirements of Steller sea lions (also see Anon. 1991). In this instance, however, it is unlikely that any revision of the Biological Opinion to correct for this possible oversight would change its conclusions.

2. The Biological Opinion

In my opinion, the best available scientific and commercial data support "a conclusion that the pollock fisheries compete with the western population of Steller sea lions." This does not mean -- I must emphasize -- that such competition has been demonstrated conclusively (see Anon. 1998, p. 99). Rather it means that the data and analyses reasonably support that conclusion and I could find no data or analyses that would reject the hypothesis that such competition is occurring.

The major scientific reasons supporting the conclusion that the pollock fisheries, if left unchanged, could reasonably be expected to jeopardize the continued existence of the western population of Steller sea lions are as follows:

- pollock is the major prey item consumed by the western population of Steller sea lions (Anon. 1998, Trites *et al.* 1998);
- the distribution of the pollock fishery overlaps extensively with the distribution of foraging sea lions (Anon. 1998);
- some large scale correlations exist between the decline of Steller sea lions and the increase in the size of the pollock fishery (e.g. Loughlin and Merrick 1989, Trites and Larkin 1992, Trites *et al.* 1998);[1]
- the coincidental developments in the commercial fisheries in Alaskan waters are an obvious possible contributing factor to the decline of Steller sea lions (Trites *et al.* 1998);
- the fishery is now concentrated in space and time and overlaps significantly with critical habitat that has been designated for Steller sea lions (Anon. 1998, Marine Mammal Commission 1999).
- in the BSAI, specifically,
  - the amount and percent of the BSAI pollock TAC caught in Steller sea lion habitat has doubled since the mid-1980s (Anon. 1998, Marine Mammal Commission 1999);
  - the percent of pollock caught within designated critical habitat increased to as much as 70% between 1992 and 1997 (Anon. 1998, Marine Mammal Commission 1999);
  - pollock fishing effort has increased in fall and winter when pollock are more concentrated within critical habitat (Anon. 1998);
  - Steller sea lions continue to decline (Anon. 1998).
- in the GOA, specifically:
  - since 1982, 50-90% of the catch has been taken from Steller sea lion critical habitat (Anon. 1998);
  - the highest removals from critical habitat occur during winter (January) (Anon. 1998, p. 110);
  - Steller sea lions continue to decline (Anon. 1998).

It is reasonable to conclude, therefore, that:

- local reductions in pollock biomass in space (particularly within critical habitat) and time (particularly during winter) are likely to reduce the availability of pollock to endangered Steller sea lions.
- in addition, the pollock fishery is likely to have other negative impacts, such as dispersing the remaining fish and altering the behavior of sea lions.

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[1] Contrary statements that no researchers "have found a convincing relationship between fishing and sea lion declines" may be found on a web page of the North Pacific Universities Marine Mammal Research Consortium. Such statements are refuted, however, later on the same page ("...sea lions declined as catches of halibut and gadoids increased"). They are also refuted by the available evidence (e.g. Loughlin and Merrick 1989, Lavigne 1991; also see Trites *et al.* (1998, Fig. 10).

- the concentration of the pollock fishery in space (critical habitat) and time (winter) is likely to reduce the foraging success of endangered Steller sea lions.
- the proposed pollock fishery is likely to jeopardize the continued existence of the western population of Steller sea lions.

A number of the reasons cited above also support the conclusion that the pollock fisheries, if left unchanged, could reasonably be expected to adversely modify the critical habitat of the western population of Steller sea lions. Furthermore, the very presence of the pollock fishery in Steller sea lion critical habitat may adversely modify that critical habitat by opening up the possibility for interference competition between the pollock fishery and the sea lions (Anon. 1998, p. 55), which might reduce (or exclude) access of Steller sea lions to their principal prey species on a local spatial scale at particular times of the year (especially during winter).

The removal of pollock biomass from Steller sea lion critical habitat by the fisheries could also reduce the availability of pollock to Steller sea lions. Such reduction could reduce the foraging efficiency of Steller sea lions due to exploitation competition (Anon. 1998, p. 55) and, if this were to occur, the actions of the fisheries would adversely modify the critical habitat of the Steller sea lion.

3. The Reasonable and Prudent Alternatives

Here I diverge from the views expressed in the Biological Opinion. In preparing its Reasonable and Prudent Alternatives, it seems that NMFS has gone out of its way to minimize impacts on the fishery, rather than maximizing the likelihood of promoting the recovery of Steller sea lions. For me, this is reminiscent of how NMFS has dealt with similar potential conflicts regarding Hawaiian monk seals (*Monachus schauinslandi*) and commercial fisheries in the Northwestern Hawaiian Islands. When faced with such conflict in Hawaii, NMFS has invariably placed the short-term economic interests of the fishery over the longer term interests of the endangered monk seal (Lavigne *in press*). Arguably, this is also what NMFS has done over the past nine years in the case of the Steller sea lion. And while it has now concluded that the pollock fishery might jeopardize the continued existence of the sea lions, it appears, in developing its RPAs, to have been more concerned with minimizing disruption of the fishery than with applying a truly precautionary approach to the management of the endangered Steller sea lion and its food base.

The only way, in my opinion, to insure no jeopardy is to stop fishing, at the very least, within the critical habitat of Steller sea lions. One wonders if even this would be sufficient. Based on the limited information available on Steller sea lion movements and foraging areas, it seems likely that Steller sea lion critical habitat has been conservatively defined and that closing fisheries only within currently designated critical habitat may be insufficient to insure no jeopardy to Steller sea lions as required under the ESA.

4. Adequacy of the National Marine Fisheries Service's (NMFS) scientific research program.

Time has not permitted me to undertake a detailed review of NMFS' scientific research program on both Steller sea lions and walleye pollock. I am certain that NMFS scientists would say that they have tried to devise the best possible research program within the limits of the available funding, given the difficulties of working with a threatened and subsequently endangered species, and the logistical realities of working on sea lions in their remote northern terrestrial and marine environments. I also suspect that they would be the first to admit that the program could have been better, had they had more funding and additional human resources. I would agree with such assessment.

5. How NMFS could improve or expand its current research program

How to improve the scientific information base related to potential interactions between Steller sea lions and walleye pollock was the subject of some discussion at the hearings of the scientific review panel in Seattle last month. I anticipate that the panel's report will offer a number of specific recommendations that your committee might wish to consider.

There are a number of areas where additional scientific information is required to improve the basis for making future determinations on the likely effects of the pollock fishery on endangered Steller sea lions. The current Biological Opinion is to a large extent determined by the current designation of critical habitat and the view that the winter period is particularly "harsh" for Steller sea lions. It is from these considerations that it seems likely that the concentration of the pollock fisheries in designated critical habitat is *likely* to jeopardize the continued existence of the western population of Steller sea lions and adversely modify its habitat. These considerations point, in my opinion, to several areas where NMFS could improve or expand upon its current research program.

5.1 Critical habitat. In my opinion, more research is required to delineate better the critical habitat of Steller sea lions. Given what is already known about their daily and seasonal movements at sea, I suspect that the currently designated critical habitat grossly underestimates the extent of habitats that are critical to the continued survival and recovery of the western population of Steller sea lions. Further research, using satellite transmitters and time depth recorders, on male and female Steller sea lions of various ages (particularly juvenile animals and lactating females) throughout the entire year, and over several years, will be required to adequately define meaningful critical habitat for Steller sea lions.

5.2 The "harsh" winter period: The current Biological Opinion states (p. 107) that "The winter months are considered to be a period of greater sensitivity of sea lions to lack of available prey and competition. This sensitivity is a function of both the life history of sea lions and **their greater metabolic demands during the harsh winter period**" (emphasis added).

As I pointed out to the review panel last month, this is another area where further research could better inform future Biological Opinions. The most serious potential metabolic problem, and one which might be investigated at least in a preliminary way using heat flow models, has to do with the ability of young, small, lean Steller sea lions to deal with winter temperatures, both on land and in water. They, and possibly lactating females, would be the most vulnerable components of the Steller sea lion population to winter conditions. Lean pups might well find themselves below their lower critical temperatures (e.g. Lavigne *et al.* 1982, Hansen and Lavigne 1997). This would require them to increase their metabolic rates to maintain a constant deep body temperature (homeothermy). Increased metabolic costs in the absence of adequate food resources would put the animals into a classic positive (or run-away) feedback loop, i.e. thin sea lions would have to increase metabolic rate to keep warm and, in the absence of adequate food, they would have to draw on body energy stores, which would make them even thinner, and the process would go on until the animal eventually would succumb to hypothermia. And, of course, throughout this process, lean hungry sea lions would likely spend more time at sea, perhaps venturing farther offshore, in search of food, leaving them increasingly vulnerable to predation (Watts 1996). Both factors, hypothermia and increased risk of predation, could contribute to the apparent increase in natural mortality of juvenile sea lions observed coincident with the population decline.

5.3 Potential effects of the pollock fisheries on endangered Steller sea lions: The current Biological Opinion is based on the view that the concentration of the pollock fisheries in both space (particularly within critical habitat) and time (particularly during the "harsh" winter period) causes local depletion of an important food resource for endangered Steller sea lions (particularly for immature animals, during winter).

This is one area where more scientific and commercial data are critically needed. Data on the abundance of pollock in *specific* areas (and especially within sea lion critical habitat, and during the winter fisheries, if such fishing practices continue) before, during and after commercial fishing of an area would provide quantitative data on the extent to which pollock abundance and, hence, its availability to sea lions, is reduced by the fishery over the time. Continued monitoring after the fishing boats have left an area would provide valuable information on the time course of local depletion and reduced availability of pollock to Steller sea lions.

Also, during the discussions in Seattle last month, there seemed to be some agreement among scientists that an experimental approach to the fishery was really required to learn more about the potential impacts of the pollock fishery on endangered Steller sea lions. The way the fishery has been conducted in recent years provides no new information on the nature of potential interactions between it and Steller sea lions. The view was expressed that the fishery should be managed first with a view to satisfying the no jeopardy or adverse habitat modification criteria, as required by the ESA. Having met those requirements, the fishery could then be managed in a way

designed to provide valuable information on the potential impacts of the pollock fishery on endangered sea lions. By taking an "experimental" approach to the commercial fishery, both the industry and NMFS should be in a better position to evaluate the potential impacts of the fishery on Steller sea lions. Obviously, such an experimental approach would require major changes in how the fisheries are operated and, likely, would have economic consequences for the industry.

Discussion

It is agreed that the western population of Steller sea lions in Alaska has declined over the past 30 years by at least 80 per cent (Anon. 1998). The reason or reasons for the continuing decline are not entirely understood and at least 12 possible factors have been posited as potential explanations for the decline (NRC 1996). Of these 12 factors, two seem to predominate: fishery effects on food availability for Steller sea lions, and long-term ecosystem shifts that have affected food availability for Steller sea lions (e.g. Trites 1998, Trites *et al.* 1999).

NMFS' task, in preparing its Biological Opinion, was not, however, to determine which of these two or other factors are responsible for the decline of Steller sea lions in Alaska. It was simply to express an opinion as to whether the pollock fishery is *likely* to jeopardize the continued existence of the western population of Steller sea lions and adversely modify its habitat. Indeed, under the Endangered Species Act, NMFS must "insure" that the pollock fisheries are <u>not</u> likely jeopardizing sea lions or adversely modifying their critical habitat. Thus the burden of proof is on the fisheries to demonstrate that they are not jeopardizing the species or adversely modifying its critical habitat.

One of the problems facing anyone attempting to evaluate the NMFS' Biological Opinion and its proposed Reasonable and Prudent Alternatives -- whether they be outside scientists or committees like yours -- relates to the wide array of available information, much of which seems to present conflicting views of the problems faced by endangered Steller sea lions. In order to sort through the maze of apparently conflicting information, it may be helpful to remember that, from a scientific perspective, not all sources of information can be considered equal. Some examples:

- **Peer-reviewed primary scientific literature, published in independent journals:** In most areas of science, the peer-reviewed literature documents the current state of knowledge and is the main source of information.
- **The so-called "grey" literature:** This includes papers published by government departments and non-governmental organizations, which usually have not received the benefit of *independent* peer review and have not been accepted for publication in the primary scientific literature. They do not enjoy the same status as primary publications and, in fact, some scientific journals resist referring to such papers

precisely because they have not been peer reviewed, and because of their normally restricted distribution and, hence, availability.

- **Reports from meetings:** Reports from scientific meetings and workshops often provide useful reviews of topical issues. Many such meetings produce agreed reports that document the nature of the discussion and any conclusions or recommendations arising. But they still represent only the views of the participating scientists.
- **Unpublished reports:** Unpublished reports are not normally considered part of the scientific literature. They include drafts of papers that may subsequently be submitted for consideration by a scientific journal, or manuscripts that have actually been submitted and rejected. Reference to such unpublished reports is usually not permitted in the primary scientific literature.
- **Anecdotal reports:** Such reports, by scientists and others, are not normally considered to be part of the scientific information base. Nonetheless, such reports might raise interesting questions or hypotheses that could be examined scientifically,

There is a tendency -- particularly among non-scientists and the media -- to give equal weight to claims arising from all of the above sources of information. Scientists, on the other hand, who are (or should be) sceptical by their very nature, will instinctively treat the information in the various sources above with increasing vigilance as they proceed from peer-reviewed literature to anecdotal reports.

It may be of some use to your committee, therefore, to apply a similar approach in evaluating the scientific information presented to you.

For example, the Biological Opinion (p. 73) refers to a study by Rosen and Trites (*in prep.*). Much has been made of this "study," in newsletters and annual reports of The North Pacific Universities Marine Mammal Research Consortium (NPUMMRC 1996, 1998), and on its World Wide Web site (http://www.marinemammal.org). Its purported results, that captive sea lions fed exclusively on a diet of pollock lose weight, seem to surface in every discussion of Steller sea lions. But, as the Biological Opinion notes, the paper "is not available in written form, but has been reported at meetings of the North Pacific Fishery Management Council and in other public discussions," including the recent meeting of the review panel in Seattle.

The question becomes, therefore, how much credence should be placed on this report? For those of us who have kept pinnipeds in captivity, the results are neither surprising nor particularly interesting. Captive seals often lose weight at certain times of the year, even when being fed a diet of high energy herring. And without the details of the Steller sea lion experiment, at least in the form of an unpublished manuscript, the report amounts to anecdotal information. Numerous unanswered questions remain, such as: how many sea lions were involved in the study, their ages and sexes, when was the study conducted, were the herring and pollock used in the experiment the same size, etc. Until a paper surfaces to address these and other questions, little weight should be placed on the results.

There are several other instances where the waters have been muddied by unconventional scientific practices. A recent example relates to the appearance on the World Wide Web of a manuscript on ecosystem change and the decline of marine mammals in the Eastern Bering Sea (Trites *et al.* 1999). Within days, a magazine article (Drouin 1999) discussing this manuscript appeared, suggesting that the magazine was given access to the manuscript even before it appeared on the web. Contrast this approach with normal scientific practice, where a manuscript is submitted to a peer-reviewed scientific journal, likely revised in light of reviewers comments and then, if deemed acceptable, it would eventually appear in the scientific literature. Only after acceptance or publication would one normally expect to see it featured in the media or in magazine articles. Regardless, at the present time, the manuscript in question remains an unpublished and non-refereed manuscript, and not part of the normal scientific information base.

In evaluating the Biological Opinion, including the RPAs, we are also constrained both by the language of the ESA and by the realities of how science is conducted. Implicit in much of the literature on Steller sea lions and pollock fisheries is a tendency to amass information in support of a particular conclusion, and to demand convincing evidence or "proof," for example, that the actions of the pollock fishery are jeopardizing the continued existence of endangered Steller sea lions. Amassing evidence in support of any position is, however, antithetical to the scientific method and, ultimately, the "scientific method" is not designed to prove things are true, but rather to disprove them.

Pinnipeds, including Steller sea lions, are aquatic members of the order Carnivora. They evolved in highly productive marine ecosystems and, with the exception of modern monk seals (*Monachus spp.*), virtually all extant species live in relatively cold, productive seas (Lavigne *et al.* 1989). Predators, such as sea lions, have evolved, as Sidney Holt (1982) noted, "to require certain concentrations of food items, distributed appropriately by season and locality. If those concentrations are no longer available," Holt continued, "the marine mammal will have a lessened ability to recover fully from depletion, even if protected, or indeed might not be able to survive at all... Up to a point, it will [acclimatize] to the new conditions -- perhaps by seeking other kinds of food...perhaps by feeding elsewhere than habitually. The ability of an animal...so to [acclimatize]...is however limited."

Considering the Steller sea lion, Holt's comments seem prophetic. Steller sea lions in Alaska are showing signs that the population is short of food. Adult body mass is smaller than in the past; juveniles are smaller and grow more slowly than in the past, and appear to be experiencing high rates of mortality; and the population has been declining for more than 30 years.

The food shortage to Steller sea lions may be explained by two (and possibly more) hypotheses:

1) Food is in short supply because of the existence of large pollock and other fisheries operating within the critical habitat of Steller sea lions. (This hypothesis was the only

one rated by the National Research Council (1996, p. 145) to have a "high" likelihood of involvement in the decline of Steller sea lions since 1980.);

2) Appropriate food is in short supply because of long term environmental changes in the parts of the North Pacific (e.g. Trites 1998, Trites *et al.* 1999).

These two hypotheses are not necessarily mutually exclusive. Let's accept that long term environmental changes in regions of the North Pacific have led to a change in prey availability for Steller sea lions. If this were correct, there is very little managers can do about it. But, if food has become scarce because of such changes, then further depletion of the food base by commercial fisheries should only exacerbate the problem. And the latter possibility is something that managers can attempt to mitigate.

Returning to Holt's earlier comments, we really have no idea of the range of concentrations of food items over which Steller sea lions can acclimatize, and how these need to be distributed appropriately by season and locality to allow sea lions to survive (and hopefully recover) in Alaskan waters. But the only way to insure that the commercial pollock fishery is not likely to cause or exacerbate a food shortage problem, and thereby jeopardize the continued existence of endangered Steller sea lions, is to insure that the fishery does not contribute in any way to reducing the availability of a prey species that is important to the depleted sea lion population. And, the only way to attempt that is to develop RPAs that separate the fishery and the sea lions in space and time in order to minimize the likelihood of future competition.

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Mr. YOUNG. Thank you, Doctor.
Mr. Marks.

STATEMENT OF RICK MARKS, STELLER SEA LION CAUCUS

Mr. MARKS. Mr. Chairman, when you drop that gavel today and we all go home, 20 Alaskans will have traveled 80,000 miles and spent 20,000 of their own dollars to come here and let this Committee know that this is a crisis situation in Alaska. These Alaskans are members of the Steller Sea Lion Caucus, which includes Unalaska, Akutan, Aleutians East Borough, False Pass, King Cove, Kodiak, Kodiak Island Borough and Sand Point. These communities, which are in closest proximity to Steller sea lion haulouts and rookeries, are heavily dependent on Bering Sea and Gulf of Alaska and other groundfish fisheries for employment and for municipal tax revenues.

I would like to preface my remarks by telling you that recently we have had some very good discussions with the National Marine Fisheries Service regarding research. There is a scientist in Kodiak right now working with our folks and that we will participate proactively with the agency to develop a research program.

However, Mr. Chairman, I am here to tell you on behalf of the caucus that the Steller sea lion management process has broken, and I am going to tell you why, but first, I will tell you what the council thinks about it, and I quote, "there is considerable scientific uncertainty regarding the relationships between pollock fisheries and the western population of the Steller sea lions. The uncertainty has placed the industry at risk and forced the council to react to ESA concerns in a very compressed time frame and make critical decisions based on incomplete and conflicting data. This is not acceptable." That is from the council's December meeting.

Steller sea lion conservation measures are implemented as amendments to council-managed FMPs. The council and the public should have had full access through the Magnuson-Stevens Act public participation process. Unfortunately, this did not occur properly, and I am going to tell you why.

Greenpeace, et al., filed against the Secretary on April 15th. NMFS was on notice for at least six months that they were in a dogfight with the environmental industry. However, at the October council meeting the science and statistical committee minutes did not have any reference to the Steller sea lion issue. Clearly, as late as October, the scientific arm of the council never had any clue it was going to be playing a role in such a divisive and time-sensitive issue.

The draft biological opinion was dated October 22nd, and that already included RPAs directed only at the pollock trawl fishery before any substantive council or public consideration and in advance of the formal jeopardy finding. Since the RPAs are only required in cases of jeopardy, the agency had predetermined a condition of jeopardy and predetermined that pollock trawling was the sole cause of the problem. The council was informed by NMFS at the November meeting that it would be required to address the RPAs at the December meeting. However, NMFS did not provide the 200-plus page biological opinion until December 3rd, leaving just three days before the start of the council meeting and no time for a

substantive review of the document by anyone, in particular the public.

This is clear in that the SSC stated at the December meeting, quote, "The process has hampered the SSC's ability to thoroughly review the document, and although the SSC was requested to comment on appropriate actions, we were not presented with information to complete such a task and there is an inadequate understanding of the roles of the council, the public, the SSC and in the ESA legal process."

Despite the fact that the agency had six months advance notice, mitigation measures were still implemented under an intolerable time frame as emergency regulations despite the council having no scientific information on which to base their decisions and that the agency has not provided any indication in the fact that the situation was any different from any other years when no jeopardy determinations were made. Clearly the lawsuit was both the difference and the emergency, and to wait six months to do anything suggests that there was not going to be an open process to include anyone.

In addition, the only formal conduit for constituent participation is the Steller sea lion recovery team. NMFS' staff informed the advisory panel at the December council meeting that the recovery team was not consulted at all in the development or implementation of the biological opinion or the RPAs.

I would like to comment to Dr. Rosenberg's point about the independent review substantiating the agency position. I would like to read, the independent review also includes a few other things, which I will quote, "The relative importance of environmental changes in carrying capacity versus the effects of commercial pollock fisheries in the BSAI, in the Gulf of Alaska on hypothesized food shortages to Steller sea lions is unknown." Ongoing, "It is not possible to know if RPAs specified in the opinion will significantly promote the recovery of the western stock of Steller sea lions," and finally, "high priority should be given to research." But here's the nut, Mr. Chairman, we don't have a research program and for nearly a decade we have not had one, and we are no closer to Steller sea lion recovery.

To make matters worse the agency has proposed a $1 million net reduction in Steller sea lion funding for the year 2000. That money was being used to deal with energetics, foraging dynamics and Steller sea lion/killer whale interactions. That is what that money was going to be for. Clearly, we have got a problem, and this process continuing will continue to make the agency vulnerable to ESA-driven lawsuits and the industry to sudden untested restrictions.

The Greenpeace staff has already informed the SSC and the public at the December council meeting that pollock-style litigation on Atka mackerel and Pacific cod are next up on the hit parade.

I will conclude, Mr. Chairman, Steller Sea Lion Caucus submits that there is a stronger correlation between environmental lawsuits and trawling restrictions than there is between Steller sea lions and commercial fishing. The only way to insulate the agency in the industry from economy-trashing lawsuits is for Congress to build accountability into a scientific, administrative and stakeholder process, and this is how we can do it.

Formalizing the agency Steller sea lion research program which incorporates a peer review. It requires annual reporting of progress and research prioritization. We can also formalize and fund a peer-reviewed independent Steller sea lion research program based in Alaska that can test all hypotheses, not just those of the agency's liking.

We can create and fund a Steller sea lion position at the council, specifically designated to work cooperatively with the agency and the public to ensure efficient communication and development of an EIS process whereby new information is continually rolled into the council's EIS process.

We can use this year's MMPA reauthorization to implement a take reduction team-style program for Steller sea lions in Alaska. We can ensure that the agency is accountable and responsive to Secretarial Order #3206 with respect to native tribal entities, and we can also require the agency to reconstitute and reinvigorate the Steller sea lion recovery team.

Mr. Chairman, on behalf of the Steller Sea Lion Caucus, I thank you very much for that opportunity.

[The prepared statement of Mr. Marks follows:]

Sea Lion
Caucus

Testimony of the Steller Sea Lion Caucus
Before the U.S. House of Representatives
Chairman Don Young, Alaska
Committee on Resources
Chairman Jim Saxton, New Jersey
Subcommittee on Fisheries Conservation, Wildlife & Oceans
By Rick E. Marks
May 20, 1999

Mr. Chairman, on behalf of the members of the Steller Sea Lion Caucus we thank you for this opportunity to participate in the oversight hearing on the management of Steller Sea Lions. The Sea Lion Caucus is comprised of the fishery-dependent communities of Southwest Alaska which are the closest in proximity to the Steller sea lion rookeries and haulouts.

The Caucus membership includes the City of Akutan, the Aleutians East Borough, City of False Pass, City of King Cove, the City of Kodiak, the Kodiak Island Borough, the City of Sand Point, and the City of Unalaska. These communities are heavily dependent on the Bering Sea and Gulf of Alaska pollock and other groundfish fisheries for employment and municipal tax revenues. The purpose of the Caucus is expressed by the following goals:

- Active support of Federal, State, and Local efforts to promote the long-term recovery of the Steller Sea Lion population.

- Active support of Federal, State, Local, and Industry efforts to provide for a sustainable North Pacific groundfish fishery, and sustainable fishing communities.

- Aggressive and continuous participation in the long-term Steller Sea Lion recovery effort, including the promotion of an open, public discourse on the National Marine Fisheries Service's ESA process, best available scientific and commercial data, and the use of the North Pacific Fishery Management Council and the Steller Sea Lion Recovery Team in all efforts to recover sea lions while sustaining the Region's commercial fisheries.

- Promotion of cooperation between Governmental and independent scientists, including objective and credible peer review of **all** scientific and commercial data, theories, and research protocols.

- Promotion of educational efforts to explain the fact of the Steller Sea Lion decline, and efforts being made to recover this important marine species.

The management of SSL is the most critical issue facing these coastal communities. Due to the seriousness and far-reaching implications of this issue, the residents expect and deserve a thorough, deliberate process through which the federal government addresses the SSL situation. What they have received in reality is something very different.

Mr. Chairman, on behalf of these Alaskan communities, I am here to tell you the process, or more accurately, the lack thereof, is cause for serious concern. Alaskan communities, as well as fishermen from Washington State and Oregon are at the mercy of the National Marine Fisheries Service, the ESA, and the target of Greenpeace, the Sierra Club and the American Oceans Campaign...and the odds are not good.

Through our testimony, the Caucus will provide the Members of your committee with an understanding of how severely the process is broken and suggest alternatives intended to resolve our concerns.

The SSL Caucus members understand the Endangered Species Act (ESA) places the ultimate responsibility for rendering Biological Opinions with the National Marine Fisheries Service (NMFS). The statue requires the agency to "use the best scientific and commercial data as well as traditional knowledge available" but does not require NMFS to work in a vacuum. Inherently, the SSL Caucus believes the agency cannot work effectively in a vacuum but rather through an orderly series of steps, involving a number of parties working to implement a recovery plan. This plan should be based on the best information and designed to achieve appropriate and measurable conservation objectives.

Sadly, the main components of an orderly management process (i.e. scientific, administrative, and stakeholder) are ill-used or nonexistent. This is clearly evident in statements made by the North Pacific Fishery Management Council (NPFMC) and the Council's Science & Statistical Committee (SSC) and Advisory Panel (AP).

The NPFMC passed a motion at the December 1998 meeting which stated:

> There is considerable scientific uncertainty regarding the relationships between pollock fisheries and the Western population of Steller sea lions. The uncertainty lies at the heart of concerns expressed by the AP and SSC. The Council recognizes and shares these concerns. The uncertainty has placed the industry at risk, and forced the Council to react to ESA concerns in a very compressed time frame and make critical decisions based on incomplete and conflicting data. This is not acceptable.

The Council's SSC stated at the December 1998 meeting:

> In general, the SSC shares the discomfort with the speed of the process expressed in public testimony and by others. The process has been hampered by the SSC's ability to thoroughly review the document. Further, it has provided less peer review than is desirable. There is inadequate understanding of the roles of the Council, the public, and the SSC in the ESA legal process....

The SSC continued to address the specifics of the Biological Opinion by stating "The SSC again shares the general discomfort over the large amount of uncertainty in the data and large data gaps. Uncertainty allows many approaches and interpretations, none of which can be overwhelmingly supported by rigorous science at this time...."

At the December 1998, meeting the Council's AP stated that the agency:

> failed to consider a large body of relevant scientific information... not consulted with, or maintained the activity of the SSL Recovery Team... not been responsive to an internal federal policy regarding peer review of ESA activities...failed to provide any analyses to the AP to quantify the impacts of the proposed RPA's on SSL and the coastal communities...not provided enough time for a through deliberative process to address the final Biological Opinion... and failed to include objective or reasonable criteria in a formal recovery plan process.

Scientific Process

In 1933, renowned ecologist Aldo Leopold expressed the philosophy that the means to achieving a conservation objective is research. We agree - it is far better for these communities to live under a management regime based on the most rigorous scientific research possible, rather than just whatever is available coupled with a heavy dose of the *"Precautionary Principle"*.

Unfortunately, the scientific method being applied to SSL is inadequate for several reasons. First, the agency has failed to consider a large body of scientific information pertinent to meso-scale ecosystem changes and fishery-SSL interactions which is a requirement of the ESA and federal interagency policy for ESA activities. Second, the agency has failed to assess the efficacy of prior/pending mitigation measures through a formal deliberative scientific process. Third, the agency has elucidated no quantifiable differences between the projected impacts on SSL by the 1999 groundfish fishery versus the impacts of fisheries on SSL during other years when "non-jeopardy" decisions were issued by the agency.

I. Failure To Use Consistent ESA Policy and Best Available Scientific And Commercial Data

The NMFS is currently operating under an interagency policy which requires an independent peer review process to ensure the best biological and commercial information is being used in the ESA decision making process (59 FR 34270, July 1, 1994, attached).

Section (B)(1) of this policy specifically addresses circumstances when scientific disagreement is sufficient to warrant special review. The "Special Circumstances" Section (B)(1) reads as follows:

> Sometimes, specific questions are raised that may require additional review prior to a final decision, (e.g. scientific disagreement to the extent that leads the Service to make a 6 month extension of the statutory rulemaking period). The Services will determine when a special independent peer review process is necessary and will select the individuals responsible for the review. Special independent peer review should only be used when it is likely to reduce or resolve the unacceptable level of scientific uncertainty.

A 1995 report authored by UK scientist I.L. Boyd titled "Steller Sea Lion Research" is possibly the most comprehensive review of SSL research in existence. It addresses SSL research through specific terms of reference including a review and comment on current data, research objectives, and future agency recommendations. In the report, Dr. Boyd provides his own set of specific recommendations to clarify linkages between managing fisheries and other top predators, such as SSL. Oddly, the report was never mentioned or even listed in the agency's 200+ page Biological Opinion which included a reference list of more than 250 articles, technical memoranda, Masters Theses, symposium reports, and unpublished manuscripts (Boyd, 1995).

The fact that all NMFS's mitigation measures (current and proposed) are directed at the pollock fishery clearly indicate that NMFS has determined the pollock fishery to be the single cause of decline in the SSL population. In addition to Boyd (1995), we firmly believe the NMFS marine mammal biologists have failed to consider a large body of scientific information prior to issuing the Summary Draft Biological Opinion. This additional scientific information runs counter to both the NMFS' single hypothesis that the pollock fishery is causing the decline, and to the Interagency

Policy on ESA activities which require the agency to "...use the best scientific and commercial data available." (ESA Section 7(a)(2); 59 FR 34270).

To the best of our knowledge NMFS has not considered the following sources of available scientific and commercial data as required by law:

1) There is conflicting information regarding the implications of diet and the decline of sea lions. Merrick (et.al, 1997) reported a highly significant correlation between prey diversity and SSL population decline. More specifically, as diet diversity decreases — sea lion numbers decrease. Resident SSL groups feeding on fewer prey species experienced a more pronounced rate of decline compared to SSL groups feeding in areas offering a suite of prey species. Fadely (et.al., 1994) also implicate diet composition and prey abundance/acquisition in the decline of SSL.

2) SSL populations reached peak densities during the 1960's. Since that time, starting in the late 1970's, the population has declined significantly. According to NMFS oceanographer Dr. Bill Peterson (personal communication, NMFS presentation to Pacific States Marine Fisheries Commission, October 12, 1998, Sun Valley, Idaho) the Gulf of Alaska and North Pacific region experienced substantial shifts in species composition, a direct result of oceanographic changes in the form of reduced upwelling, warming, and other El Nino-related events. These physical and biological oceanographic changes were followed by substantial shifts in prey species composition which has forced cascading affects across trophic levels, impacting SSL, piscivorus marine bird populations, sea otters (*Enhydra lutris*), and killer whales (*Orcinus orca*) (Alverson, 1992; Boyd, 1995; Merrick, 1995; Trites and Larkin, 1996; Estes, et. al., 1998; Merculieff, 1998). Existing research documents a shift in SSL diet correlated with this "regime shift", from one of small pelagic fish to a diet dominated by pollock (Alverson, 1992; Merrick et. al., 1997).

3) The Scientific and Statistical Committee (SSC) of the North Pacific Fishery Management Council (NPFMC) recommended several alternative hypotheses be examined to determine the root cause(s) of SSL decline (NPFMC-SSC, 1998). The fact that the SSC has recommended investigation in these specific areas clearly indicates viable alternatives have not been satisfactorily examined by NMFS biologists.

The NPFMC-SSC list of hypotheses requiring investigation includes the following:

#1: Physical oceanographic conditions in the eastern Bering Sea and North Pacific changed in the mid-1970's. This change influenced the productivity of several species.

#2: Among the species that declined were forage fishes high in fat, including capelin, herring, eulachon and sandlance.

#3: At the start of the fatty forage fish decline, the W. SSL stock was high in abundance. The forage fish decline initiated the subsequent decline in SSL.

#4: Walleye pollock numbers increased as the W. SSL decreased and became the major prey of SSL.

#5: Pollock as a prey item are less nutritiuous than forage fish, to the point that SSL in captivity show declines in health when fed solely on pollock. By implication feeding on pollock is contributing to the decline.

#6: The present fishery for pollock adversely affects the availability of prey limiting the ability of SSL to recover.

4) The Committee on the Bering Sea Ecosystem (et.al., 1996) indicated the inability to adaptively manage resources (incl. marine mammals) in the region is a direct result of our meager understanding of the system. The Committee suggested a top research priority should be to more fully understand the relationships between ecosystem dynamics, pollock and other prey species, predators, and anthropogenic activities if we are to reverse declines in species such as SSL.

5) Research indicates increasing adult pollock biomass may actually have a negative impact on the abundance of small pollock (Livingston, 1993). Density-dependent cannibalism may result in a dampening in the abundance of a given year class of pollock. Predation by adult pollock has been shown to inflict a large amount of mortality which varies interannually. Trites (et.al., 1998) has suggested increasing adult pollock biomass could result in less (or at least, more variable) individual juvenile pollock available to juvenile SSL.

6) No supporting evidence is currently available which suggests the commercial pollock fishery, which targets Age-4+ fish (Hallowed, 1998; Hughes, 1998) has had any demonstrated impact on the abundance of juvenile pollock (Alverson, 1998; Fritz and Ferrero, 1998). Alverson (1998) indicates that despite periodic and significant increases (>400%) in the abundance of Age-0 to Age-2 pollock (preferred prey size for juvenile SSL), the SSL population did not respond to this positive trend in prey numbers.

7) Southeast Alaska contains three major rookeries. SSL on these rookeries are counted individually during stock assessments. In the western population, only a subset of rookeries is included in the assessment as "trend sites." Thus, all individual counts are reported in the eastern stock and only trend sites are reported in the western stock.

At the eighth meeting of the Alaska Scientific Review Group November 18-20, 1998, AKSRG recommended to NMFS that the method for calculating western SSL stock populations be the sum of direct counts of adults, juveniles and pups at all sites and that the estimate not be reduced for Nmin (i.e. "minimum population estimate" calculated first by estimating the minimum stock size - and then reducing the population estimate further to assure that the true stock size is equal to or greater then the estimate). This adjustment would ensure consistency between the methodologies used to estimate the western and eastern populations. There has been no formal indication the agency has/will adjust the assessment process to account for this recommendation.

8) On December 31, 1998, just three weeks after the NPFMC SSL deliberations, NOAA issued a press release elucidating the existence of dramatic large-scale changes in the Bering Sea ecosystem. Included in the release were references to extensive seabird die-offs, rare algal

blooms, poor salmon returns, abnormally warm ocean temperatures and altered ocean currents and atmospheric conditions. Also highlighted in the article was the need for research to meet the challenge of preserving diverse populations of fish, marine mammals, and birds in this highly variable environment (NOAA, 1998). Despite the fact that NMFS representatives present at the council SSL deliberations were quoted in the release, none of these issues were ever presented by the agency for council consideration.

9) On January 21, 1999, NMFS advised the NPFMC (Pennoyer, 1999) which issues and principles still required council consideration. In the section "Pollock Trawl Exclusion Zones", NMFS clearly stated that fishing within 10 nm of the remaining GOA haul-out sites will be phased out for 2000 and beyond, "absent other management alternatives submitted by the Council that are both compelling and equivalent in terms of sea lion protection."

The SSL Caucus is deeply concerned regarding this stated position taken by NMFS. First, the agency itself has yet to produce any compelling evidence linking SSL and commercial fishing throughout the 1990's while disregarding a plethora of scientific information. Second, the agency has never managed to assess the benefit/harm of any SSL conservation measure. Third, in NOAA's FY2000 budget request, NMFS proposed a net *reduction* in SSL research funding of $1.08 Million, (i.e. $330,000 for the North Pacific Universities Marine Mammal Consortium and $750,000 for the US National Fish & Wildlife Service). The research programs that NMFS has proposed to terminate are currently examining SSL energetics, nutritional value of SSL forage and SSL interactions with killer whales — all of which are key to testing alternative hypotheses regarding SSL decline. In light of these facts, it seems highly unlikely the agency will ever generate compelling evidence.

10) Finally, there is a growing concern over the lack of scientific accountability coupled with the use of the *"Precautionary Principle"*. The central tenet of this philosophy is to allow for management decisions to move forward in situations where the data are less then perfect. Members of the SSL Caucus appreciate the concept of caution when exact scientific information is not available. However, implementation of a cautious strategy must be coupled with an articulated research plan designed to collect the missing information that is forcing the initial risk-averse decision-making.

Unfortunately, with respect to SSL, the agency is not being held accountable for developing a rigorous program, articulating research and funding priorities within in that framework, and considering alternative hypotheses and data. Any scientific information inconsistent with the agency's sole hypothesis of prey availability is being disregarded and research funding reduced. We are increasingly concerned the *"Precautionary Principle"* is fostering a disincentive for rigorous and open SSL research within the agency.

II. Failure To Assess Efficacy of Current/Pending Mitigation Measures

NMFS cannot determine the positive or negative effects of current and pending measures vis a vis the SSL jeopardy condition due to the fact that a coordinated scientific program is nonexistent. The SSL Recovery Team (SSLRT) was developed to review components of a SSL Recovery Plan (SSLRP), rank research priorities, evaluate research hypotheses and methodologies, coordinate SSL-related studies, and provide a basis for updating the SSL Recovery Plan (NMFS, 1998). Unfortunately, the SSLRT convened only two of the originally scheduled four workshops and has for all intents and purposes, ceased to function. The SSLRP has apparently never received sufficient funding to achieve full implementation (Boyd, 1995). To our knowledge, the body that NMFS has formally recognized as playing a key role in SSL recovery has not been re-convened or even consulted on the current jeopardy situation.

During 1991-1993, NMFS implemented protective 10 and seasonal 20 nm trawl exclusion zones in numerous areas in the Gulf of Alaska and Bering Sea. To date, NMFS has not assessed the effectiveness of these initial protective measures. The agency has publically recognized the logical need to reassess the effectiveness of these SSL protective measures before the addition of any new measures by the following statement: "Given the current understanding of the sea lion/fishery prey interactions, additional research is warranted prior to establishing revised management actions." (NMFS, 1998; see also NMFS-Alaska, 1998a).

Section 7 (3)(A) of the ESA requires that in the event jeopardy is determined to exist, the action agency shall suggest reasonable and prudent alternatives which would result in avoidance of the jeopardy condition outlined in ESA Section (a)(2). In the case of SSL, the record clearly indicates NMFS is not able to estimate the impacts on the western population of SSL for current or proposed measures with respect to the jeopardy condition. This is further supported by the statement in the NMFS DRAFT Biological Opinion — "At present, our understanding of predator-prey-fishery dynamics is limited, and much of the information necessary to evaluate direct links between the fisheries and sea lions is not available." (NMFS-Alaska, 1998b). Clearly, NMFS cannot meet the ESA jeopardy avoidance requirements of Section 7(3)(A) due to a lack of relevant scientific information.

The NPFMC and NMFS has implemented additional SSL protection measures. For example, three mile no-entry buffer zones were established in 1990; seasonal apportionments in the GOA and Bering Sea (1991) pollock fisheries and GOA Atka mackerel fishery (1999); 1998 measures to reduce AI Atka mackerel fishing effort near SSL rookeries; 1997 measure prohibiting directed fishing on forage fish such as capelin, sand lance, and myctophids. To date, the efficacy of any of these measures has never been quantified. Fritz and Ferrero (1998) concur, stating "These initial measures partitioned some fishing effort away from sea lion habitats, but the conservation benefits remain uncertain." We strongly question any process that advocates moving forward with additional conservation measures when the impacts, positive or negative, of the current measures have not been assessed.

III. Failure To Quantify How The 1999 Groundfish Fisheries Will Impact SSL More Severely Compared to Other Years

NMFS issued non-jeopardy Biological Opinions on the Alaska groundfish fisheries Alaska in 1991 and 1996. Each of these opinions concluded that the fisheries were not likely to jeopardize the continued existence and recovery of the SSL (NMFS-Alaska, 1998b).

In December 1997, the NPFMC proposed a 60% increase in the 1998 total allowable catch (TAC) for pollock in the Western and Central Regulatory Areas of the GOA based on increases in groundfish biomass. NMFS re-initiated the ESA consultation process and concluded the 1998 TAC increase would not likely jeopardize the continued existence of the western population of SSL, nor would it result in degradation/adverse modification of SSL critical habitat (NMFS, 1998).

NMFS re-initiated consultation because the previous consultation expired at the end of 1998, and is therefore required before the beginning of the fishery in 1999. NMFS has yet to quantify how the 1999 fisheries will differ in their impact on SSL. In fact, NMFS has not provided any evidence that the 1999 groundfish fishery is any different or will have a negative effect on SSL compared to the fisheries in 1991, 1996, and 1998.

In conclusion, it remains unclear how NMFS can render an accurate Biological Opinion and provide effective measurable RPA objectives in light of the following: 1) a failure to consider a substantial body of scientific and commercial data pursuant to ESA and embodied in the federal interagency policy on ESA peer review; 2) a failure to assess the efficacy of existing/pending mitigation measures as part of a formal deliberative scientific process; 3) a failure to reconcile how the 1999 groundfish fishery will increase the potential for jeopardy compared to other years when no jeopardy rulings were issued by the agency; and 4) a lack of positive correlations between increased pollock populations and higher SSL populations and between rookery protection zones and SSL populations.

Administrative Process

The agency has openly commented on the active role of the public and the NPFMC in a cooperative and coordinated process designed to resolve the SSL issue (see Commerce, 1999; Pennoyer, 1999). Since SSL conservation measures are implemented as components of council-managed FMP's, the NPFMC through its committee structure, and the public, should have full participation through the Magnuson-Stevens Act process. Unfortunately, the administrative component of the process has been woefully inadequate and is most assuredly not reflective of the agency's self-proclaimed open and cooperative position. This is clearly evident in a review of the chronology by which the current RPA's were developed/implemented.

The NMFS "Summary of DRAFT Biological Opinion" was available October 22, 1998. The October 1998 NPFMC SSC minutes contained no references to the SSL issue. Clearly, the SSC was not aware, at that time, it would be playing an active role in such a critical issue.

The "Summary of Draft Biological Opinion" already included a list of RPA's. The fact that NOAA drafted RPA's prior to council and public consideration, and in advance of a jeopardy determination clearly indicates the agency pre-determined a finding of jeopardy. The fact that the RPA's only affected the pollock fishery indicates NMFS has pre-determined that the pollock fishery was the sole cause of the SSL decline.

Despite the fact that the pollock fishery is managed by the NPFMC, no scientific information was given to the council upon which to base the management changes to the fishery. This fact clearly indicates that NMFS never had any intention of including the council or the public in any facet of developing the SSL protective measures in the pollock fishery.

NMFS staff informed the council at the November 1998 meeting that the Section 7 consultation process was a NOAA/NMFS decision. The council "could give suggestions" but that the agency would decide the jeopardy finding and the final RPA's. NMFS staff explained that the NPFMC would then be required to address the RPA targets at the December 1998 meeting. NMFS staff indicated the NPFMC would be required to meet the RPA targets by implementing changes "with some latitude" to the FMP, pursuant to the Magnuson-Stevens Act. The agency would issue an Emergency interim rule to implement the changes. Clearly, the council's role was relegated to implementing the agency's predetermined conclusion.

The NPFMC's SSC was informed by NMFS staff they would be expected to address the RPA's at the December 6, 1998 meeting, the issue of jeopardy was apparently forgone conclusion. NMFS did not provide the 200+ page Final Biological Opinion until December 3, 1998, leaving no time for a substantive review of the document. In fact, the SSC stated in the December 1998 minutes "The process has hampered the SSC's ability to thoroughly review the document...." and "Although the SSC was requested to comment on appropriate actions that might be taken at this meeting to meet the RPA's for the 1999 fishery, the SSC declines to do so. We were not presented with information to complete such a task."

Throughout the process, the NPFMC and the public were in the dark with respect to the existence of any process. The NPFMC's SSC minutes reflect a serious lack of direction provided to the council, by the agency. For example, the SSC stated "There is inadequate understanding of the roles of the council, the public, and the SSC in the ESA legal process...." and "All parties involved in the process would benefit from a clarification of the roles of the various bodies." (SSC minutes, December 1998).

NOAA's Summary of FY 2000 budget request (p.1-3) NOAA indicates that partnerships to protect and recover at-risk species on the West Coast "...were based upon the significant flexibility of the Endangered Species act...." and that these relationships "promote the economic strength of the Nation and enhance the recovery of at-risk species."

The SSL Caucus respectfully disagrees. Not only is there a lack of a process and a federal-constituent partnership — but the inflexibility of the ESA has resulted in two environmental lawsuits and implementation of untested SSL conservation measures which have whip-sawed the industry, increased operating costs, and most importantly — compromised fishermen's safety.

Furthermore, lacking a measurable focused recovery program, we are no closer to enhancing the recovery of SSL and NMFS is concurrently reducing funding for future SSL research. This parochial approach has increased the agency's vulnerability to ESA-driven lawsuits and ultimately, the industry, to sudden and untested conservation restrictions. The future is clear — Greenpeace staff informed the NPFMC's SSC and members of the public at the December 1998 NPFMC meeting that SSL ESA "pollock-style" litigation can be expected in the Atka mackerel and Pacific cod fisheries in the near future.

Stakeholder Process

The Steller Sea Lion Recovery Team (SSLRT) was developed to evaluate the direction and adequacy of research and management programs. It also was intended to allow for substantive input by various constituencies. According to NMFS staff, the SSLRT was not considered in the development/implementation of the Biological Opinion and the RPA's.

The lack of agency coordination with the SSLRT is alarming. Prior to the finding of jeopardy in 1998, the SSLRT met just seven times since inception in 1994. It remains unclear how the SSLRT fits into any formal agency process if permitted to languish in periods of inactivity. Since we believe a formal federal research program is a necessity, the SSLRT must be re-invigorated with a well defined role.

Additionally, the agency has neglected Secretarial Order #3026 regarding agency responsibilities to tribal entities for federal ESA activities. The Order indicates the Secretaries of Commerce and Interior will carry out their ESA activities "in a manner that harmonizes the Federal trust responsibility to tribes...." (Secretarial Order #3206). The departments are required to work directly with tribal entities, consider tribal concerns, and make available information related to the management of tribal resources. The absence of any formal federal SSL constituent process available to the Alaskan Native communities clearly indicates the agency has neglected the intent of the Secretarial Order.

Conclusion

The SSL Caucus submits there is a stronger correlation between environmental lawsuits and trawling restrictions than there is between SSL and commercial fishing. The only way to remedy this harmful cycle and insulate the agency from frivolous environmental lawsuits is to formalize a science-based research/recovery program, build in federal accountability, formalize the role of the SSLRT in the federal recovery strategy, and implement a formal MMPA SSL constituent process which takes into account Native participation. The overall objective of these program components will focus on implementing the necessary conservation measures commensurate with the best scientific information.

The SSL Caucus suggests the following recommendations designed to improve the management process for SSL in Alaska:

Improving The Scientific Process

- Formalize a federal SSL research program which incorporates a peer-review of all agency SSL actions, requires annual reporting of progress and research priorities
- Formalize and provide funding for a peer-reviewed independent SSL research program based in Alaska
- Create and fund a SSL position at the NPFMC specifically designated to work cooperatively with the agency and the public to ensure efficient communication and development of a NPFMC EIS process whereby new information is continually incorporated into the council's EIS process

Improving The Stakeholder Process

- Use the MMPA reauthorization to implement a take reduction team-style constituent process to address the SSL problem in Alaska
- Ensure that the agency is accountable and responsive to Secretarial Order #3206 regarding cooperation and consideration of Native concerns
- Require the agency to specify and formalize the role of the SSL Recovery Team

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Mr. YOUNG. Thank you, Mr. Marks. I want to thank the panel. This is an excellent panel. Mr. Hansen, do you have any questions?

Mr. HANSEN. No, Mr. Chairman, I don't have any questions.

Mr. YOUNG. I will have some questions. Don't act so surprised. Because I came in late, I thought I would give you the first opportunity. Mr. Gilchrest?

Mr. GILCHREST. I don't mind going.

Mr. YOUNG. Go right ahead.

Mr. GILCHREST. It probably would help if I went after you, Mr. Chairman, but I guess a couple of basic questions. Do sea lions or juvenile sea lions eat pollock? I guess, does everybody agree that they eat pollock?

Ms. WYNNE. At different times of the year, yes.

Mr. GILCHREST. Everybody agrees that they eat pollock, and are they an important source of nutrients for their diet, a major source of nutrients? It seems that some people up here disagree how important the pollock are to the sea lions, and I guess NMFS had decided that they are an important source so there needs to be a reduction in the catch or some type of buffer between where the sea lions are and where the pollock are, and that is the disagreement that Mr. Marks has with NMFS.

Dr. ROSENBERG. If I may, Congressman, it is clear that sea lions eat pollock. It also is clear that pollock is the most important prey item currently for sea lions. We are not maintaining that there needs to be a reduction in pollock fishing but that that fishing needs to be spread out in time and space so that it does not overlap with sea lion feeding areas quite so much as it currently does.

Mr. GILCHREST. How would that impact the fishermen?

Dr. ROSENBERG. Well, that, of course, is the difficult and controversial part. It impacts different types of fishermen in Alaska in different ways. In many cases, the impact, which is—well, in all cases, the impact is economic, although in some cases it relates to safety because it may require fishermen to either stay at sea longer or to move to additional areas. That is of great concern certainly in the industry and of great concern to us.

What we are trying to do and believe that we have done for the first season within Alaska, the first six months of the year, is to accomplish those goals but still allow the catch to be taken in an economic fashion, and that is our understanding of the progress of the first season and not to increase, certainly not to increase risk to fishermen by spreading it out in as reasonable a way as we can.

Mr. GILCHREST. If I could just get to Mr. Pereyra.

Dr. PEREYRA. Yes, Mr. Chairman.

Mr. GILCHREST. Did you call me Mr. Chairman? That might be the future, I guess. Not for a while, Don.

Mr. Pereyra, what part of Mr. Rosenberg's statement will you disagree with?

Dr. PEREYRA. Well, I think I can't disagree with the statement in that portion of it but I don't think it tells the whole story. If you go back in time and even the NMFS' data will show that small pelagic schooling species, like smelt, herring and capelin and so forth, back in the early seventies and so forth, were the principal diet of the Steller sea lions and that——

Mr. GILCHREST. Why are they not?

Dr. PEREYRA. Now, we find them eating pollock. We also find them——

Mr. GILCHREST. Why are they eating pollock now instead of the others?

Dr. PEREYRA. It is the only thing that is left.

Mr. GILCHREST. Why is pollock the only thing that is left?

Dr. PEREYRA. Because of this regime shift which occurred back in the seventies. I mean, this seems to be one of the hypotheses that has been put forward.

Mr. GILCHREST. What do you mean regime shift?

Dr. PEREYRA. Well, the Aleutian low pressure system which tends to dominate the circulation pattern of the north Pacific moved, and that caused the temperature regime in the Bering Sea to become much warmer. It also changed the current patterns, and that is looked upon as being one of the influencing factors, along with the elimination of many of the apex predators, like whales, for example. Over 75,000 whales were taken out of the north Pacific, also, and those factors have changed the actual composition of the resources which were available for Steller sea lions and it is sort of similar if you had elk eating——

Mr. GILCHREST. The Steller sea lions didn't move, though?

Dr. PEREYRA. No. Steller sea lions are a land mammal, so they are sort of restricted to the land, and that is one of the problems we face. We don't have a really, what I would say a good picture as to what the causative factors are here, and just because they are eating pollock today doesn't necessarily mean that, in fact, we have a cause and effect relationship.

The other thing which I think the NMFS' data shows is that the size spectrum of pollock which the juveniles are consuming tends to be smaller than those which are found in the commercial fishery. Also, the smaller pollock tend to be higher up in the water column than where the commercial fishery is prosecuted.

So you have a natural separation just by the way in which the different sizes of pollock are distributed. If pollock was really and the fishery were really interacting, we would be having a serious problem with the pollock fishery intercepting Steller sea lions in our nets and we don't. The data shows that we don't, and we have observers out on our boats. So that is—I don't know if that is satisfactory.

Mr. GILCHREST. Thank you, Mr. Chairman.

Mr. YOUNG. Thank you. You can ask other questions down the line. You all right? Okay.

Dr. Rosenberg, your testimony implied that the budget for Steller sea lions research actually increases in fiscal year 2000. Mr. Marks says it decreases by $1 million. Where are we on the NMFS' study program of good science?

Dr. ROSENBERG. Mr. Chairman, I am sorry if I gave the impression that the request increases in the year 2000. There has been a substantial increase from '97 to '98 and from '98 to '99 in Steller sea lion research. For 2000 the request is lower in fact, not the agency's request, I would have to say the President's request of course because there are many competing interests. The agency has talked with the council and with the recovery team, and we have quite a long list of research we would like to do, and I think the

figure was used before of a $10 million research program. That comes from the discussions we have had with the recovery team and with the council. We can certainly identify $10 million worth of projects, but in the overall competing priorities within the budget, the President's request does include a decrease in the year 2000. Not far——

Mr. YOUNG. Specifically for Steller sea lions?

Dr. ROSENBERG. In terms of line items, specifically for Steller sea lions.

Mr. YOUNG. But this is the most crucial area we are dealing with right now under NMFS; is that correct?

Dr. ROSENBERG. It is a very important area. There is obviously many important areas.

Mr. YOUNG. If we are to give you some money, you are going to go forth with the study or should we give it to Kate?

Dr. ROSENBERG. In fact, Mr. Chairman, we do give money to Kate because she does extremely good research. Currently, as does the State, we would go forward with research programs cooperatively with the State, the Sea Life Center, the North Pacific Marine Mammal Consortium if we have the opportunity to do so. That depends on the resources available to us in addition to our own program, of course.

Mr. YOUNG. My concern, and I will get back to a couple of others here, but NMFS made 39 determinations, 39 of them, Bering Sea, Aleutian Island, Gulf of Alaska, pollock fisheries does not cause jeopardy to the Steller sea lion's population. December 1998 NMFS reversed course about 100 percent and made a jeopardy finding that BS and AI and Gulf of Alaska pollock fisheries do cause jeopardy. Now what information did you base that on it was different prior to 1998 because you don't have the science to do that.

Dr. ROSENBERG. Actually, earlier in the year, in 1998, at the beginning of the year, in our consultation then, we indicated that there was new information related to continuing decline of the population and, in fact, overlap of feeding areas and fishing areas and that it clearly was cause for concern and that we would continue to work on that. In addition—so that was at the beginning of the year. It was not in—well before October of 1998.

In addition to that, we were engaged in a consultation on the Atka mackerel fishery which the council responded to by providing measures to spread out the fishery, exactly the same kinds of things we are talking about for pollock, much earlier in the year, and we had been discussing the changes in the Steller sea lion population that had occurred which were causes for concern well before October '98.

So, yes, we did believe that prior to that time that the measures we had in place were working but there was clear evidence in late '97 or early '98 that the decline was continuing and that we needed to try to find some other means of arresting that decline and ultimately reversing it.

Mr. YOUNG. Well, I have a letter here October 1998 that says in conjunction with the listing chase, NMFS indicated it was taking steps to reassess the effectiveness of existing protective measures. Given the current understanding of sea wolf/fishery prey inter-

actions, additional research is warranted prior to establishing revised management actions.

Dr. ROSENBERG. Mr. Chairman, I believe you are referring to a Marine Mammal Protection Act report. I would certainly say that it is correct that we would like to have additional research. In fact, I would probably have to return my Ph.D. if I didn't always say at the end of every discussion that I would like to have more research and better information. We certainly believe that that is an important thing to do, but under the Endangered Species Act we don't feel that we have the ability to simply wait for that conclusive research. The standard we are working to is likely to jeopardize the continued existence, and the information we have at hand as validated by the peer review panel indicates that we are likely to jeopardize the continued existence of this stock.

Mr. YOUNG. Of course, you and I have a great difference of opinion on that, and, number one, I don't believe NMFS right now is on my blacklist, if you want to know the truth, because you are supposed to be an agency that promotes, advises and maintains a single yield of fisheries. Now you say you are implementing the Endangered Species Act, but you are doing it without information scientific, and a number of Steller sea lions, whoever established how many should be there I don't know, and what basis it was established on. What bothers me also, your research has never taken consideration of predator problems, and doctor, thank you for bringing that up. You know, every time there is a decrease in species, NMFS says it is the fault of the fishermen. Now, you cannot convince me of that. Not only are there whales that occur in this, there are other factors that could be possibly part of the problem. Now you are affecting the great many people's lives with danger and, if my information is correct, in 1990 we set aside restricted areas and no one has done any research in seeing where that has improved the sea lion population. Now, if you haven't studied that, how do you know what you are imposing, and the doctor just explained it very carefully, most of what the sea lions consume are at a different level and we have no interdiction or bycatch of sea lions by the pollock fisheries. So what do you base this on that this causes the problem, the pollock fishery causes the problem in the decline of sea lions, when you haven't studied the areas you set aside in 1990? That was nine years ago.

Dr. ROSENBERG. Mr. Chairman, you indicated that I couldn't convince you so I am not sure that I should try.

Mr. YOUNG. You can try because you are paid for it.

Dr. ROSENBERG. Okay. In that case I would like to try.

Mr. YOUNG. All right.

Dr. ROSENBERG. First of all, I disagree with the assertion that we have not looked at the measures we have in place. We have certainly continued to do pub and nonpub surveys in those rookery areas. We have done feeding studies in those rookery areas. We have done designs for the kinds of experiments that people would like to do which are extremely difficult to do; that is, to assign to a particular protection area exactly how much protection it provides to the population as a whole. We have done tagging studies or, if you like, tracking methods to monitor trends in individuals for those protected areas and at haulout sites and rookeries. So we

have done an extensive series of studies of what is going on within the rookery areas, those areas that we are protecting.

In addition to that, we have monitored the population, which is the ultimate measure of whether those protection areas are sufficient. I would say that it is pretty clear that they are not sufficient because the population is declining, but that does not mean in any sense that they are either unimportant or ineffective. We certainly would think that the population would have declined much more than it did if we did not have the existing protection measures in place around rookeries and haulouts.

Mr. YOUNG. Let me go back to the comment of Dr. Pereyra, is it right, the comment where there has been no interdiction of sea lions during pollock fishery. Now, where is the scientific information available that says the pollock fishery affects the sea lion? Apparently, there is availability of fish, you let them catch the quota, the quota is out there, and my information is there is a huge amount of fish with no decline in the population of pollock. Now, how can you relate the theory that the fishery is causing the decline? Have you considered other predators, not only the whales, but others maybe that affect the fish stock itself being part of the problem? If you are not catching them in the nets, you are not disturbing them by the vessels, where do you get your correlation that the fishing is a problem?

Dr. ROSENBERG. While I would agree we are not currently catching sea lions in the nets, I believe historically there was a much larger incidental take and a direct take of sea lions. However, it is very clear and there is ample sighting evidence that the fishery is operating in areas where sea lions feed. I don't agree with Dr. Pereyra that the depth or size composition is different for the sea lions as it is for the fishery. I don't agree that that is interpretation of our data and our biological opinion doesn't agree with that. So we have no question that there is an overlap in terms of the areas and an increasing overlap because the fishery has increasingly moved into the critical habitat area, such that now in recent years, until this year, up to 70 percent of the catch was taken within the critical habitat area, which was defined by where sea lions feed and live.

So there is a clear relationship spatially between where the fishery operates and where the sea lions are feeding and growing. There also is very clear information that indicates that the dominant prey item for sea lions is pollock currently. It may well be true that in the past they fed on other kinds of fish that were more available at the time. Those fish are not available to them now. They are currently feeding on pollock.

Mr. YOUNG. How many square miles does that critical habitat encompass?

Dr. ROSENBERG. I don't know that number off the top of my head.

Mr. YOUNG. Is that some more of that scientific information you used to make this decision?

Dr. ROSENBERG. Well, I certainly can get you the number. I am afraid I just don't know it off the top of my head, Mr. Chairman.

Mr. YOUNG. I have this deep concern in this issue, and I am going to try to convince your agency and the Congress to see if we can't have more true science involved because I don't think you

have the true science. I mean, it is not your fault, but you are making decisions that it does have a great effect upon, not only individuals, but also maybe the fishery itself, as the doctor has mentioned.

I think that, you know, Kate has got a good operation in Kodiak. I don't see any reason why there can't be some more activities in that arena. I also don't think you can divorce the seal problem away from the sea lions problem. They are predators. No study has been put into that. I think there is a great deal—and your enthusiasm to respond to certain interest groups and not using sound science has put into question the National Marine Fisheries Service.

I have been with this outfit for 26 years, and I have slowly seen a decline of this branch and not really, I think, fulfilling their obligation to the fisheries. You know why you were created. If you go back to the history of it, you might have a better understanding of why you are sitting at that table and I do believe that the fishing and the sea lions are compatible, but I don't think in the case that has been presented to us has been done scientifically.

Mr. Gilchrest and I will always agree that good science should be the only thing we rely upon. We don't see good science especially for cutting back on a million dollars out of this year's budget. That is probably—you know, like I say, if we can, we are going to try to give the money back to you or somebody else.

Mr. Saxton, do you have any questions? Mr. Marks, you want to comment on this?

Mr. MARKS. I have been sitting over here very patiently.

Mr. YOUNG. Well, you are supposed to appear agitated and not patiently. You got to be jumpy a little.

Mr. SAXTON. Just do like the does.

Mr. MARKS. I think you need to be an Alaskan to do that.

If I may comment to Dr. Rosenberg's comment about establishing a correlation between fishing and sea lions, it is important to understand that the Steller sea lion decline first started in the mid-seventies and that was concurrent with this regime shift we are speaking of where we saw the system shift from a system dominated by herring, capelin, sand lance to a pollock-dominated system. The near shore fishery that Dr. Rosenberg is talking about in the quote, "critical area" unquote, did not really start until perhaps into the mid-eighties. So we have already seen the Steller sea lion decline start even when there was just trace amounts of fish being taken in the critical habitat. So the very basis of this causation we question significantly.

Additionally, if you look at the trend data for the populations, in the eastern area where arguably most of the concentrated fishing is occurring, Steller sea lion populations are actually doing the best. If you look in the western where the fishery is least concentrated, Steller sea lions are doing the worst. So we still don't see this strong correlation, and the agency has admitted in some of their documentation the correlation is not there but we just have to be cautious, and we think this might work, so there we go, and that is a big concern to us.

If I might add to Mr. Gilchrest's question, I was trying to get to it before, he was talking about do sea lions eat pollock. Certainly they do. However, if you look back into the mid-seventies prior to

this regime shift 32 percent of their diet was pollock. Herring and sand lance and capelins, small oily fish was 61 percent of their diet during this same period. So they were definitely perhaps preferring, for lack of a better word, to eat that particular type of oily fish.

After the regime shift, '90 to '93, 85 percent of the diet is pollock and only 18 percent is herring, capelin and sand lance. So we have seen this major shift in what is going on with what is available to sea lions. This is one of the alternative hypotheses that we have not been able to get anyone to look at, that is the appropriate versus the available prey. Is a pollock-dominated system the best thing for Steller sea lions? We are not certain that it is.

With respect to the diet overlap, the agency has some information that indicates there may be some partial overlap between what juvenile sea lions eat and what the fishery takes. However, it doesn't necessarily automatically mean that that is a bad thing. Someone up front commented there is plenty of pollock out there, and there is. If there wasn't, you would see a competitive exclusion where sea lions and fisherman would be taking completely different pollock because they would be competing and that would force that, but there is no competitive exclusion because there seems to be enough pollock for everybody.

So there is different ways to look at this. The fact we haven't tested these alternative hypotheses is what is really frosting our hind parts.

Mr. YOUNG. Would it be possible that the nutritionally-stressed sea lion, although his stomach can be full, can't really be as strong or as well as he would with a fatter type fish? Is that possible? I mean, just because he is eating lots of pollock and apparently there isn't interference there, is the pollock so lacking in nutritional value that it can stress the sea lion?

Ms. WYNNE. Well, as I am sure you know, there are some preliminary studies that have been going on with captive animals—and are continuing now—to study the dietary components and nutritional value of different prey items and the effect on the sea lions. Obviously, you are going to have to eat more, probably eat more pollock to get the same fat in your system as you would herring.

I guess to elaborate a little bit on the discussion that has gone on before here, the questions that everyone's asking right here are huge, and to actually determine whether there is competition going on is a tremendous investment of time and money, and you may never get there. I would suggest that rather than belaboring the question of has the environment changed or did we as humans change something, that you pick up more specific smaller questions, something that, as my testimony suggested, is a management-driven question that you can bite off a small chunk off and chew on, get an answer and that answer may help you figure out what is going on in the big system, but it is a moving target and what happens——

Mr. YOUNG. The reason for concern, of course you are well aware of it. You are in Kodiak. The concern here is the impact upon the Aleutians Borough, the small communities, the fishermen themselves and the danger they risk taking because of these new buffer

zones being proposed and then no one has proved the existing buffer zones work. The concern I have, we bite a little piece of that apple, which I agree with you it doesn't help those communities, it doesn't help those fisherman that face those high seas, and we may be doing something that we think is correct but doesn't solve the problem we are faced with, and in the meantime I am being honest with you, I haven't found a Steller sea lion that votes for me yet. If you give me some, I might have a different attitude, but I am just saying that it is important that we, in our enthusiasm, do what is under the law and under the emotionalism of the Steller sea lion to look at the aspect why this problem occurs without sacrificing the human factor, too. That is my job, and I hope NMFS understands my interest in this, too, but to do it just because to say I got to do it, we are using the best science available, which I am going to eliminate before I get out of this job. Best science available is the weakest crutch that you possibly can use. It should be the best science, not what is available, the best science.

So that is really where I am coming from, and I am rambling now, Mr. Chairman, I apologize for that. I got the gavel.

Ms. WYNNE. I agree with you entirely. My point is, if you look at the entire Bering Sea and try to quantify the changes that have gone on and how that might have affected Steller sea lions, you will never get to those points that you are saying the communities need to know. If you start at the bottom and work up towards those questions, you can address some of those questions. If you look at a specifically small area intensively, you might get some answers. One of the problems and most basic things we don't know about Steller sea lions is what they eat year round, every month of the year, in different areas and how that has changed. We have little snapshots because we have spread our effort over a huge area, and my contention would be that if you take a smaller piece of the picture, focus on it, get more complete information on a small scale, have directed management-oriented questions that you have from your constituents about the habitat use of those animals in a certain area, you will get those answers, plus you will have one piece of a huge puzzle that may take years——

Mr. YOUNG. In the meantime I have to make sure that those communities have to survive.

Ms. WYNNE. Absolutely.

Mr. YOUNG. Not at their cost and that is going to be the question.

Mr. Gilchrest.

Mr. GILCHREST. Just a quick question for Ms. Wynne. Do you have a place that should be studied now to do what you are saying should be done, and would you agree or disagree with NMFS' management plan doing the process of that study?

Ms. WYNNE. Well, obviously I have a bias. I could tell you what that is. I am not sure which part of NMFS' management plan you are asking me to compare it to.

Mr. GILCHREST. Well, the management plan for pollock which we are discussing today. The management plan for pollock, I guess Dr. Pereyra disagrees with at this point, and Mr. Marks disagrees with. I am not sure where Mr. Lavigne is on this, but the management plan for pollock which Mr. Marks disagrees, Dr. Rosenberg

feels that it is necessary at this point. So where is the place that you think should be studied? How long would that study take, and I hope the regime doesn't change during the course of that study, and do you feel that Dr. Rosenberg has an adequate management plan for pollock during the course of that study? I don't know if I should put you on the spot.

Mr. YOUNG. Not when he is giving her money.

Ms. WYNNE. No. Again, I have a bias because in my backyard not only am I a member of the Kodiak community and subsist there and a part of that economy, but I am a biologist in the area that I think is the most intriguing place in Alaska for a number of reasons. Biologically, not only does it have incredible fishing effort, a number of different fisheries. It has one of the greatest concentrations of some of the piscivorous whales, humpback and fin whales, who are doing well, by the way, in light of the fact that the pinniped declines (of harbor seals and Steller sea lions) have been centered right there in Kodiak.

So, to me, my personal bias, (and I just happen to be living there, too,) is that Kodiak makes for a great study area, not to just look at pollock and sea lions, but to look at an entire predator-prey relationship—you have to define your universe somehow, and that would be a palatable size for defining that universe, something you could study, and whether that would exclude NMFS' management plan I couldn't say. I think it would help refine some of the—or maybe even test some of the assumptions that were put into the play with the buffer zones, for instance, that you could actually create the study to test some of the assumptions that went into that.

Mr. MARKS. Representative Gilchrest, if I may, Mr. Chairman?

Mr. YOUNG. I am going to tell you yes, about one minute because I am about ready to excuse this panel and call the next panel up, primarily for the recognition of the time is weighted and we are going to have a vote in about 20 minutes so I would like to get the second panel up as near as possible.

Mr. MARKS. The point I will make is Kodiak could be a sensible spot to do this because three of the eight areas that the agency is pending to close down, three of the eight haulout areas are located around Kodiak Island. They are critical areas for the small boat trawl float. They are right there near Kodiak. That might be a good place for us to start where we can get the biggest bang for our buck to address the pending measures that may be coming down into 2000.

Mr. YOUNG. I want to thank the panel, well done, and we will be looking at this issue again.

Now, I will introduce—bring our second panel up. The second panel we have is Ms. Beth Stewart, representing the Honorable Dick Jacobsen, Mayor of the Aleutians East Borough, who was unable due to weather problems to arrive here in Washington, DC, and the fish are running; the Honorable Frank Kelty, Mayor of the City of Unalaska; Mr. Al Burch, Executive Director of Alaska Draggers Association; Dr. George Owletuck of Anchorage, Alaska; and Mr. Peter Van Tuyn, Trustees for Alaska.

We will start out with Ms. Beth Stewart.

STATEMENT OF BETH STEWART, NATURAL RESOURCES DIRECTOR, ALEUTIANS EAST BOROUGH

Ms. STEWART. Mr. Chairman, panel members, thank you so much. My name is Beth Stewart. I am the Natural Resources Director for the Aleutians East Borough.

Mr. YOUNG. Bring that mike in front of you, please.

Ms. STEWART. In our written comments to you, you will find a map of the Aleutians East Borough and with that a second map that shows you where the current closures are, where the new closures are going to be, and you can see from looking at that map that for the villages of King Cove and Sand Point, who are actively involved in the pollock trawl fishery, as well as other fisheries in the region, this new plan is going to leave very little room for people to fish.

We are home to the smallest of the trawlers that operate in the Bering Sea and the Gulf of Alaska. All of our trawlers are also limit seiners, and the Alaska limit seine is a 58-foot limit. So these are boats that are going to have a very difficult time fishing 20 miles offshore. They pack 150,000 pounds at the maximum. They fish in very dangerous waters. The Bering Sea has a fiercer reputation, but having been on the Gulf side, I am not sure I understand why.

I am not going to read my comments to you today. I am going to summarize quickly in honor of your time constraints. Five of our six villages are Alaska Land Claim Settlement Act villages. Four of those villages are the home of the remaining Eastern Aleut population. The last village, Akutan, is one of the—it is the oldest continuously settled habitation in the Aleutians. It is a very small population of western Aleuts. These are people who are still harvesting Steller sea lions directly as subsistence take for their dietary needs. They are not traditionally involved in commercial fishing. They are working to develop a P. cod fishery. They don't have a boat harbor. They live with very small 16-foot skiffs, but they are tied to the land and the sea in the same way that people from Sand Point, Cold Bay, King Cove, False Pass and Nelson Lagoon are.

They noticed about 15 years ago that there was another decline, as they call it, of the Steller sea lion population, and as they always have, in the face of what was apparent to them, they began cutting back on the number of Steller sea lions that they take. So that in my conversations with them in the last month we believe now that they probably take three a year which represents a substantial decline in their personal takes of Stellers. So it is important to them that the Steller sea lion population return to its healthier levels, but it is not the first time they have seen a decline in Steller sea lions in the region, and they certainly don't expect it to be the last time.

They associate this decline, as do people in False Pass, King Cove and Sand Point, with a decline of, what they call locally, candle fish. This would be referred to by scientists as capelin. They are called candle fish because when you dry them, it just takes a few of them lit by a match to start a fire with wet driftwood on the beach. We have no trees in the area so you burn whatever it is that floats ashore. Candle fish are a high fat item and a prized survival

species for people in the region. We have noticed a shift and some hopeful sign that candle fish are coming back.

Sand Point and King Cove, although people there will sometimes get subsistence meat from relatives in Akutan, currently have no active subsistence hunters for Steller sea lions. What they do have is a strong desire to be diversified fishermen. They have combination vessels. They have learned over time not to fish a single species, so they take pollock, salmon, herring, halibut to the extent they can with the IFQ rules, and crab when they are around. These folks are strongly impacted by the measures taken for Steller sea lions and began to get involved in this issue in 1990 when Steller sea lions were listed as threatened. They became very active in the MMPA reauthorization, worked to build coalitions with environmental organizations and in our own region ended the practice of shooting Steller sea lions.

I am sure it is not news to the Chairman, but Alaska had an attitude about seals and sea lions dating from the 30s and 40s, that they were salmon predators, that they were nuisances and that they needed to be shot. When I was growing up, we got paid three dollars a nose for seals. I hear others made less. There was never a bounty on Steller sea lions, probably because if you hit one, they generally sink right away, but people were encouraged to shoot them, and they grew up thinking this was appropriate behavior.

It became clear in 1990 that that idea had changed, and we made extensive efforts to make sure people quit shooting not only Stellers but seals, and given the relationships between fishermen and small communities someone is always mad at someone else, so if this was going on we would hear about it today and we don't. We have successfully ended the practice of shooting these animals, except for subsistence takes.

We were hopeful at the time that the National Marine Fisheries Service would spend a lot of money and time trying to come up with a better way to deal with this situation. I guess we are making some progress this week, but we have been largely disappointed about the efforts being made to collect more than just scant samples of the population status. We strongly support the remarks that Kate Wynne made. We believe that you have to have some kind of focused scientific investigation so that Steller sea lions can recover so that we know what to expect and so that everyone can get on with making a living in a way that doesn't cost one species or another its ability to survive.

Thank you very much.

[The prepared statement of Mr. Jacobsen follows:]

TESTIMONY OF DICK JACOBSEN
Mayor, Aleutians East Borough

The Aleutians East Borough

The Aleutians East Borough includes the westernmost portion of the Alaska Peninsula and the first few islands in the Aleutian Island Chain (**Figure 1**). The Borough includes the communities of Akutan, False Pass, King Cove, Cold Bay, Sand Point, and Nelson Lagoon. Nearly 2,400 people live within the Borough. A majority of the Borough's population is Native Alaskan, most are Eastern Aleuts.

Commercial fishing is the lifeblood of the Borough. Subsistence fishing and hunting is also important to the communities. Most local fishermen are combination fishermen. They fish a wide range of species including salmon, herring, cod, pollock, halibut and sablefish. Most of the local fleet is comprised of vessels under 60 feet in length. These vessels are restricted to the relatively protected waters near shore. The majority of the total personal income in the Borough comes from commercial fishing and related services. A 1987 survey conducted for the North Pacific Fishery Management Council and the Aleutians East Borough revealed that 87% of the employment in the City of Sand Point was attributable to the seafood industry. Reduced fishing opportunities and low prices for salmon in recent years have increased the importance of pollock, cod, and other groundfish species as a source of personal income.

The Aleutians East Borough government is almost entirely dependent on commercial fishing to provide funding for Borough services. Most of the Borough's tax revenue comes from a combination of a 2% Borough-wide raw fish tax and the Borough's share of the Alaska State raw fish tax **(Figure 2)**. For Fiscal Year 1999, 91% of the estimated $3.8 million in Borough revenues came from a combination of these taxes. Data from 1993-1997 show that groundfish, principally pollock, has become the most economically valuable species processed in the Borough **(Figure 3)**.

The majority of the Borough's raw fish tax revenue in 1997 came from groundfish species, principally pollock and cod. Borough and Alaska State fish taxes support a wide range of capital projects, including roads, harbors, buildings, and the Borough school district. The cities of Sand Point, King Cove, False Pass, and Akutan also impose a fish tax on fish processed in their communities, providing the primary source of revenue for these cities. The cities and villages of the Aleutians East Borough epitomize fishery dependent communities.

Our Concerns

Borough residents are deeply concerned about the measures that are being taken by the National Marine Fisheries Service (NMFS) in an attempt to conserve Steller sea lions under the Endangered Species Act (ESA). The western population of the Steller sea lion

was listed as an endangered species in 1998. Residents are deeply committed to maintaining healthy fishery and marine mammal populations. However, they believe that the management measures taken by NMFS under the ESA are based on questionable scientific assumptions. These assumptions have led to management measures that severely restrict the pollock fishery and undermine the foundation of the fishery dependent communities of the Aleutians East Borough. These management measures may be irrelevant or counterproductive to sea lion recovery. The key concerns Borough residents have with the existing approach to Steller sea lion management are:

(1) A failure to consider the traditional knowledge of Native Alaskans.

(2) A failure to consider the full range of scientific knowledge available.

(3) A failure to accommodate the needs of fishery dependent communities.

Failure to Consider Traditional Knowledge of Native Alaskans

The Native Alaskan residents of the Borough have inhabited this region for nearly 9,000 years. Throughout that time, they have seen significant changes in populations of fish and marine mammals. As an example, the Eastern Aleut word for cod translates as "the fish that stops" or "the fish that is not there" a reflection of the cyclical nature of cod abundance. Recent scientific research on climate change in the Bering Sea supports these local observations of fish and marine mammal population cycles. Native Alaskan residents have observed Steller sea lion population changes for decades, long before a scientific research program was established. In fact, subsistence hunters in Akutan, the last Borough village that still hunts Steller sea lions, noted the current decline in sea lion population several years ago and responded by reducing their takes, a customary practice.

Traditional knowledge should be incorporated into the ESA management process. The Department of Commerce agrees. On June 5, 1997, Secretary Daley and the Secretary of the Interior signed the Secretarial Order *American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act*. This order states that during ESA Section 7 consultations, agencies in the Department of Commerce (NMFS) shall coordinate with affected Indian tribes and "make use [of] the best available scientific and commercial data by soliciting information, traditional knowledge, and utilizing the expertise of, affected tribes in addition to data provided by the action agency during the consultation process." The Secretarial Order also states that in "developing reasonable and prudent alternatives the Services [NMFS] shall give full consideration to all comments and information received from the affected tribes."

This order further states that "the Departments shall, within one year of the date of this Order [June 5, 1998], develop recommendations to the Secretaries to supplement or modify this Order and its Appendix, so as to guide the administration of the Act in Alaska. These recommendations shall be developed with the full cooperation and participation of

Alaska tribes and natives." NMFS has not yet developed these recommendations. NMFS should have developed these recommendations by June 5, 1998, according to the Secretarial Order. Native Alaskans in the Aleutians East Borough have not yet been contacted to participate in forming these recommendations.

The listing of the Steller sea lion as an endangered species and the emergency regulations enacted to protect it profoundly affect Native Alaskans dependent on commercial fishing. Clearly, the knowledge of Native Alaskans needs to be thoroughly considered. Borough residents sincerely wish to work with NMFS to develop reasonable management measures for Steller sea lion conservation. Native Alaskan residents hope that NMFS will begin including Native Alaskans in the management process. The traditional knowledge of Native Alaskans could help provide NMFS with better information on the amount of subsistence harvests, the diets of sea lions, and the location of sea lions missed by the annual aerial surveys.

Failure to Consider the Full Range of Scientific Knowledge Available

Borough residents continue to be concerned by the numerous assumptions and assertions used by NMFS to support their finding that the pollock fishery jeopardizes Steller sea lion populations. This finding of "jeopardy" under the ESA has resulted in severe restrictions of the pollock fishery and strict management measures. NMFS is undertaking a peer review of the science used to support their management measures. This peer review may support some of NMFS' science. However, other scientists remain concerned with the scientific hypotheses used by NMFS to support their management measures.

The Scientific and Statistical Committee (SSC) of the North Pacific Fishery Management Council (council) has repeatedly raised concerns about the scientific process being used. The SSC is an independent advisory body of fishery and marine mammal scientists. At the April 1999 council meeting the SSC noted that the draft Environmental Assessment/Regulatory Impact Review (EA/RIR) prepared by NMFS:

> presupposes that regulation of the pollock fishery through spatial and temporal dispersal will improve the condition of the Steller sea lion population, and parenthetically, the Bering Sea and Gulf of Alaska ecosystems. This point of view further assumes that the fishery impacts Steller sea lions through local depletion of food sources or some other mechanism. As noted in the past, the SSC found no compelling scientific information to support either of these two assumptions.

The number of assumptions that NMFS makes to link pollock fishing to the decline of the Steller sea lion requires extensive amounts of data, much of which is incomplete. At the December 1998 council meeting, the SSC stated that it "again shares the general discomfort over the large amount of uncertainty in the data and the large data gaps." With so much uncertainty, NMFS should carefully reconsider the ESA jeopardy finding for the pollock fishery.

In many cases, this lack of data has been offered as a reason to limit pollock fishery in the spirit of precautionary management. NMFS has advocated reducing the amount of pollock that can be harvested near Steller sea lions by creating 10 nautical mile closed areas around haulouts. These haulouts and the closed areas around them encompass near shore fishing grounds in the Gulf of Alaska **(Figure 4)**. Closing these areas severely limits the fishing grounds that are available to fishermen.

While the Aleutians East Borough supports efforts to reduce potential adverse impacts on Steller sea lion populations, the management measures proposed so far lack an effective way to measure their effect. Ten nautical mile closures around rookeries were imposed in 1991 after Steller sea lions were listed as threatened under the ESA. Nevertheless, the population has continued to decline. Unfortunately, there has been no scientific program to measure the potential effectiveness of these closed areas to improve the Steller sea lion population. It makes little sense to continue to close areas to pollock fishing if that approach is not effective.

NMFS should expand its existing research program and focus considerable effort on testing its management measures. The SSC has also supported testing the hypotheses used to explain the decline in Steller sea lion populations. The SSC supports testing the efficacy of existing management measures. Eight years after they were first put into place, NMFS has developed a new research plan to test the efficacy of no-trawl zones around Steller sea lion rookeries. This program begins research that members of the Gulf of Alaska fishing industry requested NMFS initiate in 1991 when these no-trawl zones were established. The limited research program that NMFS has proposed may take years to arrive at any conclusion regarding the efficacy of these closed areas.

Borough residents have serious concerns that the existing management measures may be counterproductive and fail to address the root cause of the Steller sea lion population decline. NMFS and independent scientists have shown that capelin, eulachon, and other small fatty fish collectively known as forage fish are the preferred prey items for Steller sea lions. Independent scientists have shown that feeding Steller sea lions a diet of pollock alone fails to provide the animals with adequate nutrition for their long-term health.

Steller sea lions require a diverse diet and high calorie fatty forage fish. Stomach samples from Steller sea lions collected in the 1950's and 1960's show a much higher percentage of forage fish in the diets of Steller sea lions in the 50's and 60's than now. Scientists using survey data collected from Pavlof Bay, near King Cove, have shown that beginning in the mid-1970's capelin populations declined rapidly. There was no commercial capelin fishery during this period so the decline in population probably reflects natural changes in environmental conditions. This is the same period when the Steller sea lion population began to decline rapidly. The Pavlof Bay survey continues to provide valuable data to scientists researching the sea lion population decline.

Borough residents believe that NMFS must incorporate the findings of these independent scientists into the Steller sea lion management process. Closing areas to pollock fishing will not increase the abundance of fatty forage. The fishing communities of Alaska recognize the importance of forage fish to Steller sea lions. In fact, in 1995 the Aleutians East Borough and representatives of the Kodiak fishing fleet sponsored an amendment to ban any future development of a commercial fishery for forage fish. This precludes the possibility of depleting this essential component of the Steller sea lion diet. Local fishermen believe that natural cycles in the abundance of forage fish are the root cause for the declining Steller sea lion population. Recent scientific analysis supports this belief.

An essential component of future research programs is accurate sea lion counts. The methodology that is being used to estimate the Steller sea lion population is not adequate to definitively answer many questions about population trends. Currently, NMFS estimates the Steller sea lion population by selecting specific trend sites that are sampled during each annual count. These trend sites are sampled using a combination of aerial photographs, aerial visual estimates, and vessel-based visual estimates. NMFS scientists also estimate the number of pups at rookery sites by spooking the adults off the site and counting remaining pups. In almost every year NMFS conducts these counts only once.

The Steller sea lion counts provide a snapshot of the population during a very specific time of year. This snapshot is useful for providing information about general trends in population. It is not useful for providing accurate seasonal information on the population of animals at specific sites. This type of information is critical to any program that attempts to estimate the efficacy of NMFS management measures in improving Steller sea lion populations. Regular year-round counts using mounted video cameras, observers, or other year-round monitoring technology are essential for future research.

The research program NMFS proposes is essential, and we sincerely hope that funding for this research is made available. Borough residents hope that independent research efforts, such as those being conducted by the North Pacific Universities Marine Mammal Research Consortium will continue to be supported.

Recently, Congress appropriated $6.6 million to the Dinkham Sands fund to conduct research on issues affecting the marine ecosystem off Alaska. This money has been passed to the University of Alaska at Fairbanks. These funds can be used to support a wide range of research programs by independent scientists that may answer many questions about Steller sea lions. These funds should pass directly into the hands of the researchers. The University of Alaska at Fairbanks should be able to provide these funds to researchers with a very low level of administrative overhead.

Failure to Accommodate the Needs of Fishery Dependent Communities

The Regulatory Flexibility Analysis prepared by NMFS in conjunction with the EA/RIR on Steller sea lions clearly recognizes the dependence of Borough communities on commercial fishing. NMFS recognizes that the communities of King Cove and Sand

Point, home to most of the Borough's local fishing fleet, rely on commercial fishing. The Regulatory Flexibility Analysis states, "by any measure, these two communities are fundamentally dependent upon fishing and fish processing."

During the 1999 pollock season, NMFS established 10 nautical mile (nm) circular pollock trawl exclusion zones around Steller sea lion haulouts in the Gulf of Alaska. These trawl exclusion zones are in addition to existing rookery no trawl exclusion zones. NMFS established these pollock trawl exclusion zones in an attempt to reduce the amount of pollock harvests near haulouts. There is no clear scientific evidence to suggest that excluding pollock fishing near sea lion haulouts will increase the Steller sea lion population.

Under the emergency management measures proposed by the council and accepted by NMFS, eight pollock trawl exclusion zones were exempted for closure: Cape Barnabus, Gull Point, Rugged Island, Point Elrington, Cape Ikolik, the Needles, Mitrofania, and Sea Lion Rocks. The areas around these haulouts were identified as critical fishing grounds by the Gulf of Alaska fishing fleet. Two of these areas, Sea Lion Rocks and Mitrofania are critical to fishermen in the Aleutians East Borough **(Figure 4)**. All of these exempted zones are scheduled for closure in 2000. Closing these areas will have serious long-term effects on the fishing fleets and fishing communities of Alaska.

The NMFS' Biological Opinion establishing the rookery and haulout closures stated that some of the Steller sea lion conservation principles "may be accomplished by an incremental or phased approach if the incremental approach does not jeopardize the continued existence of the western population of Steller sea lions." The areas around Sea Lion Rocks and Mitrofania could be left open without jeopardizing Steller sea lion conservation. Populations of Steller sea lions at these two locations have stabilized or increased in recent years, even in the presence of pollock fishing **(Figure 5)**. In fact, the Steller sea lion population in the western Gulf of Alaska has stabilized in recent years **(Figure 6)**.

The areas around both Sea Lion Rocks and Mitrofania are inshore areas relatively protected from dangerous weather, and are favored by the local trawl fleet. Analysis of State of Alaska fish ticket data indicates that a significant portion of the total catch in the western Gulf of Alaska comes from within the areas around Sea Lion Rocks and Mitrofania **(Table 1 and 2)**.

Closing near shore areas forces smaller local boats into the more dangerous weather conditions offshore. The weather in the western Gulf of Alaska is notoriously difficult to predict and conditions can change rapidly. Small local vessels that are fishing further offshore have less protection from the islands and bays that near shore fishing areas provide. Closing Sea Lion Rocks and Mitrofania and limits the near shore areas available to the local fleet. If few near shore areas are open, large vessels and small local vessels have fewer places available for safe fishing. This increases the competition among vessels

and many small local boats cannot compete with the larger vessels unless they go offshore where fewer vessels fish. They risk their safety and lives in these less-protected waters.

Residents of the Aleutians East Borough have proposed several options to keep Sea Lion Rocks and Mitrofania open for the local fleet for the year 2000 and beyond. These proposals would limit the rate and total amount of pollock that could be taken from within these areas. These proposed measures are additional restrictions within 10 nautical miles of Sea Lion Rocks and Mitrofania, including:

- a 150,000 pound trip limit
- limiting the size of the trawl net
- a horsepower limit
- establishing a vessel size limit (e.g., under 60 feet)
- establishing catch limits within 10 nm of Sea Lion Rocks and Mitrofania. Fishing within these areas would close once the catch limit within a site is reached.

All of these measures slow down the fishery and provide near shore fishing opportunities for small local vessels. The pollock fishermen in the Aleutians East Borough have made several offers to NMFS to improve the overall record-keeping and monitoring of catch in the Gulf of Alaska pollock fishery that these modified measures would require. Local fishermen are willing to cooperate with NMFS in establishing a monitoring program. NMFS has not begun working with local fishermen to establish monitoring programs as part of Steller sea lion management.

Clearly, the Borough will be profoundly affected by restrictions in pollock fishing. Although the emergency regulations do not require dramatic reductions in the overall total allowable catch in the western and central Gulf of Alaska, they do require a significant shift in the timing and location of the fishery.

These changes could limit the fishing opportunities available to local fishermen and reduce local tax revenue. Redistributing the fishery spatially could prevent fishermen from fishing safe areas near shore and prevent them from targeting larger more valuable fish. Closing the areas around Sea Lion Rocks and Mitrofania is not likely to dramatically improve the Steller sea lion population overall, but it will severely limit the local fleet.

Future of the Fishery and Steller Sea Lions

The residents of the Aleutians East Borough are committed to sustainable fisheries, healthy Steller sea lion populations, and successful fishing communities. Borough residents are willing to work with NMFS, independent scientists, and other fishermen to accomplish these goals. In return, they hope to share their traditional knowledge, improve the understanding of the causes behind the Steller sea lion population declines, and establish management alternatives that consider fishing communities. Borough residents hope that NMFS will include fishery dependent communities in their management plans.

Table 1: Pollock Landings (metric tons) Inside 10nm of Proposed Sea Lion Rocks Haulout Closure in Area 610 (NMFS Western Gulf Groundfish Area)

Year	Sea Lion Rocks (610)	Total Quota (610)	Percentage in Area 610
1988	18	5,033	0.4%
1989	0	13,568	0.0%
1990	0	8,591	0.0%
1991	92	26,770	0.3%
1992	533	16,396	3.2%
1993	1,973	20,563	9.6%
1995	1,297	29,743	4.4%
1996	3,493	24,047	14.5%
1997	2,500	26,422	9.5%
1998	3,822	29,869	12.8%

Note: Due to a lack of observer and logbook data, precise haul information is unavailable. As a proxy, landings from inside ADF&G Statistical Areas 605503 and 605504 were labeled as "inside Sea Lion Rocks." All other 610 pollock landings were considered "outside" this haulout zone. Source: NMFS

Table 2: Pollock Landings (metric tons) Inside 10 nm of Proposed Mitrofania Haulout Closure in Area 620 (NMFS Central Gulf Groundfish Area)

Year	Mitrofania (620)	Total Quota (620)	Percentage in Area 620
1988	0	3,749	0.0%
1989	0	13,175	0.0%
1990	0	4,574	0.0%
1991	0	5,474	0.0%
1992	12	15,364	0.1%
1993	0	24,161	0.0%
1995	717	11,762	6.1%
1996	184	11,723	1.6%
1997	4,510	31,640	14.3%
1998	6,759	52,430	12.9%

Note: Due to a lack of observer and logbook data, precise haul information is unavailable. As a proxy, landings from inside ADF&G Statistical Area 585531 were labeled as "inside Mitrofania." All other 620 pollock landings were considered "outside" this haulout zone. Source: NMFS

Figure 1: Aleutians East Borough

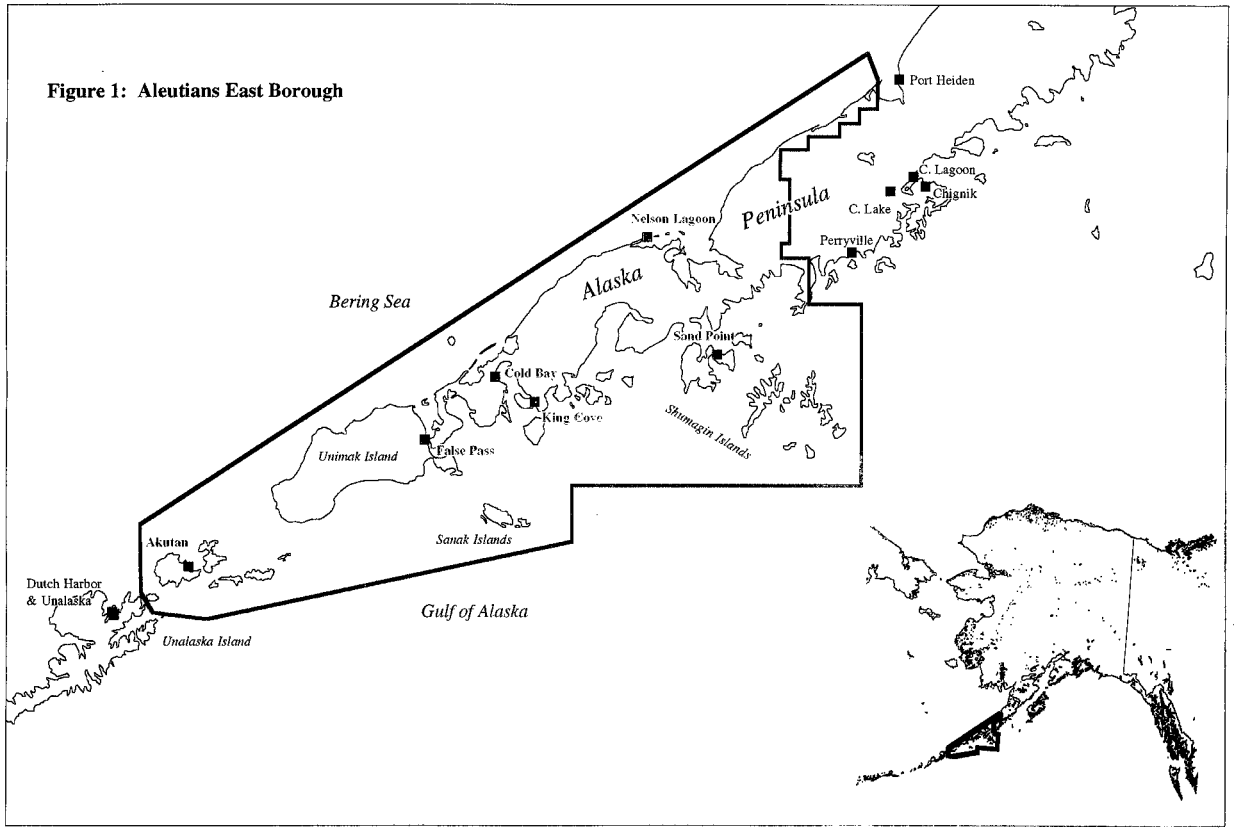


Figure 2: Aleutians East Borough Fishery Tax Revenue and Total Expenditures (Source: AEB Financial Office)

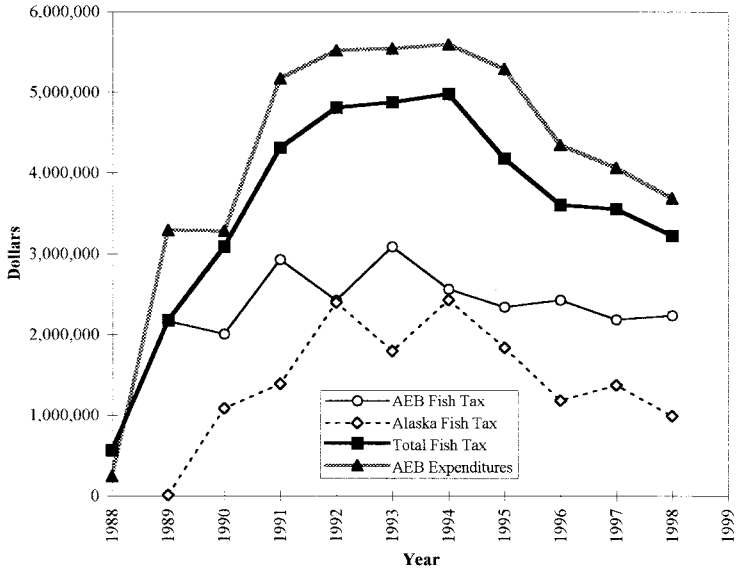


Figure 3: Exvessel Value of Fishery Landings in the Aleutians East Borough 1993-1997

Source: Aleutians East Borough (Includes landings from local and non-local vessels)

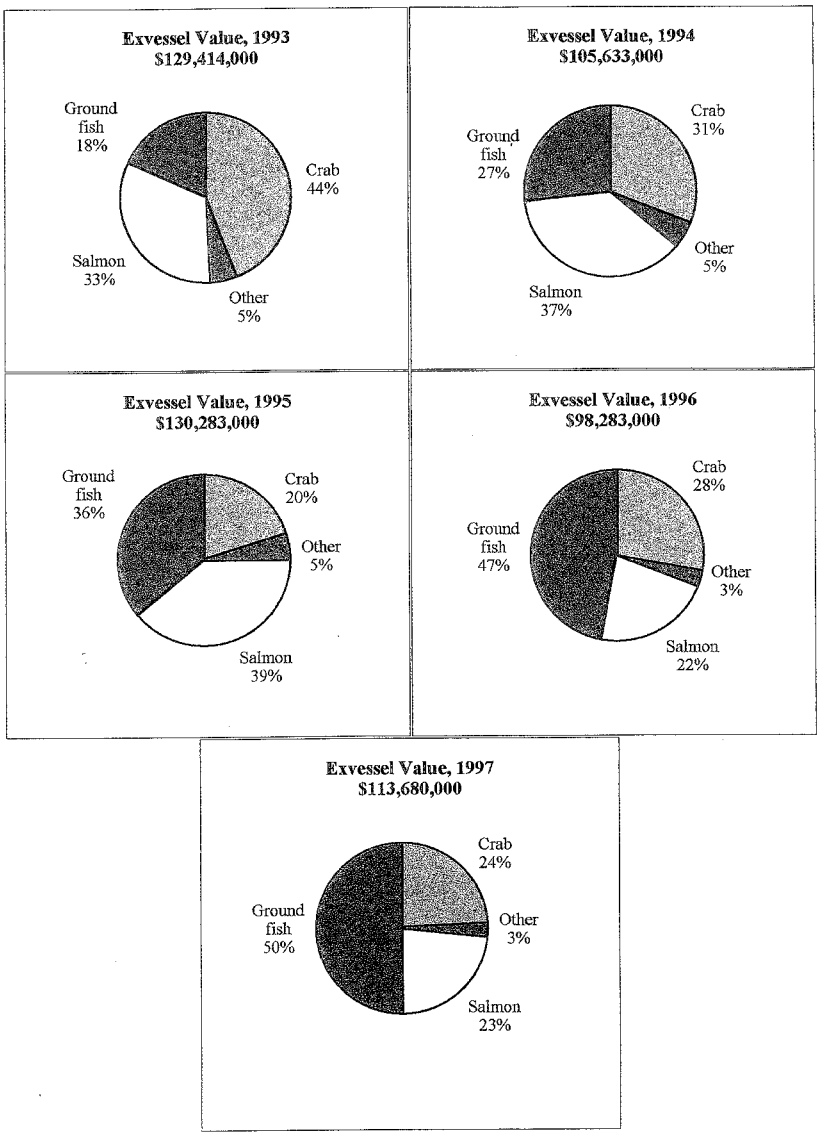


Figure 4: Steller Sea Lion Rookery and Haulout Exclusion Zones (Western Gulf of Alaska: Chirikof to Unalaska)

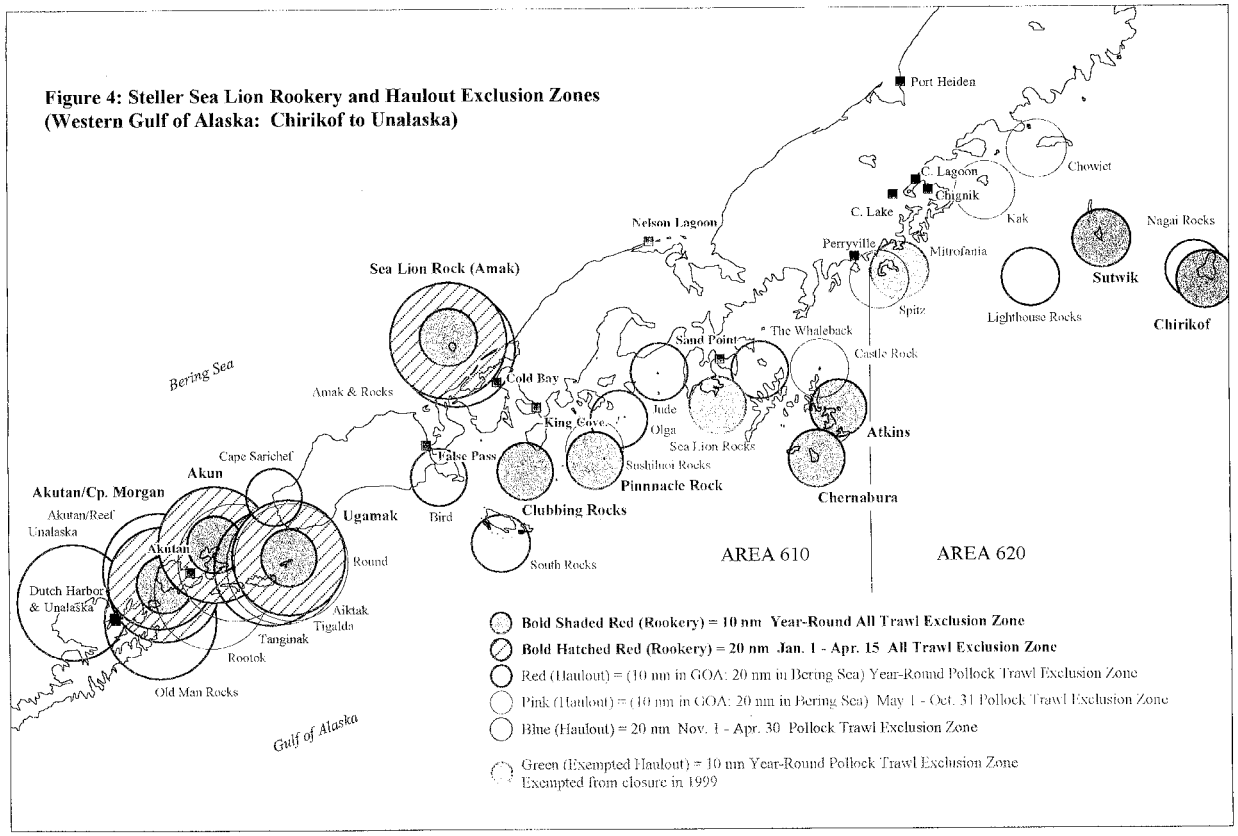


Figure 5: Steller Sea Lion Population Trend in Western Gulf of Alaska Rookeries and Haulouts: Lighthouse Rocks to Bird (Source: NMFS)

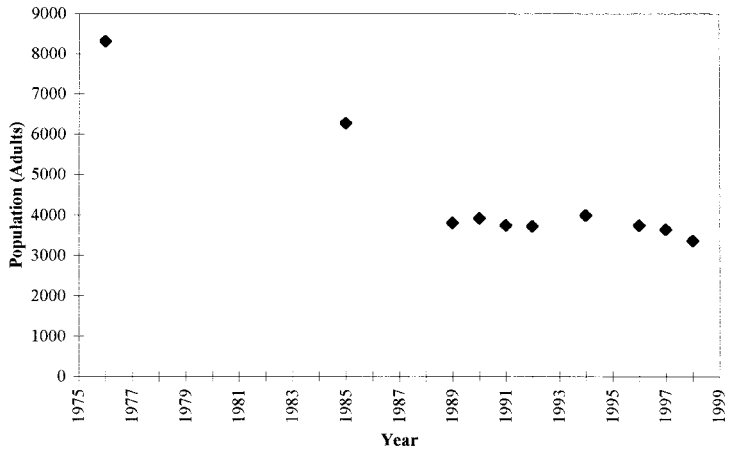
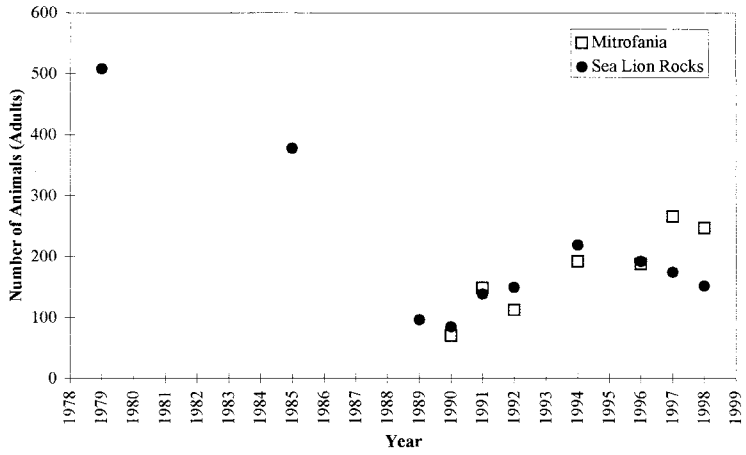


Figure 6: Steller Sea Lion Population Trends at Mitrofania and Sea Lion Rocks (Source: NMFS)



Mr. YOUNG. Thank you, Beth, good job.
Frank Kelty.

STATEMENT OF HON. FRANK V. KELTY, MAYOR, CITY OF UNALASKA

Mr. KELTY. Mr. Chairman, members of the Committee, thank you for the opportunity to speak to you today on this very important issue. My name is Frank Kelty. I am the Mayor of the City of Unalaska, this nation's number one commercial fishing port for 10 years in a row in tonnage landed and in dollar value. Each year between 500 to 700 million pounds of product is processed in my community, and the dollar value of that product is well in excess of $100 million. The total value of the pollock fishery in Alaska is $1 billion annually.

The City of Unalaska, I would like to say up front, supports Steller sea lion research and has provided funding to the North Pacific Marine Science Foundation Consortium. It is a consortium of universities, University of Alaska, University of Washington, and the University of British Columbia. We have been funding, have put it in—earmarking it in our budget annually since its inception. The consortium receives its funding from the seafood industry, grants, support sector businesses and coastal communities.

The City of Unalaska has also used taxpayers' dollars to become interveners in the Greenpeace-National Marine Fisheries lawsuit. Why would we use taxpayers' dollars on these issues? Because the fishing industry in Unalaska is the only economic base we have, and the pollock fishery in our community is the most important part of our fishery-based economy, and I will say that again. It is the only economic base we have and the pollock fishery is the most important part of our fishery-based economy.

In 1997, National Marine Fisheries figures show that 93 percent of all product landed and processed in Unalaska was groundfish. Eighty-three percent of that amount was pollock. This shows the importance of the pollock fishery in the Bering Sea to our community.

During my 30 years working in the Alaska seafood industry I have seen the crash of the crab and shrimp stocks in the Gulf of Alaska in the 70s. I lived and worked in Unalaska during the Bering Sea Red King crash in the 80s. I have seen firsthand the devastation of coastal communities whose economic base has disappeared overnight. Employment in the community will be hurt, not just in the local processing plants but in all sectors. We have support sector businesses that have invested hundreds of millions of dollars—millions of dollars in our community. Their revenues would be hurt. The people that they employ in the transportation, marine repair, retail stores, fuel companies, longshoremen, city work force will all be impacted. The City of Unalaska, with a major decline in revenues, would have to cut back on our services, programs and capital projects that we have would have to be delayed or stopped.

There is a section in the Magnuson-Stevens Act that talks about protection for fishery-dependent communities. We should remember that section as we review these regulations. The most damaging impact will be on the seafood processing industry, both onshore and offshore sectors, and the fishing fleets that provide products for

these operations. They have invested hundreds of millions of dollars in their shore plants, factory trawlers that process at sea and use Unalaska as their support base and in catcher vessels that deliver to these operations.

I would like to share with you some of the problems the seafood industry has encountered because of the recent adoption of the RPAs. The roe season was impacted with a 5 percent reduction. The roe season is the most important part of the pollock fishery and is critical to the bottom line of the fishing fleet and processors.

The Aleutian Island pollock area was closed. This affected fishing fleets, our local processing plants, the at-sea processors and revenues to the community of Unalaska. That area is valued at over $50 million a year.

The new RPA regulations require a stand down between fishing seasons, which is very costly to industry. You are geared, you have to stop for a period of time and then restart again. You have got your crews, you have bought supplies but you have to stop and start again.

Moving the fishing fleet away from sea lion critical habitat areas and reducing the amount of fish taken from these areas, as well as other proposed area closures or buffer zones, could dramatically reduce the amount of fish available to processors and fishing fleets. This could lead to quality concerns of the product received by shore plants by our fishing vessels who have to fish farther away and have longer running time to get their product to the plants. Fishing in these areas that the fleet hasn't traditionally fished could lead to bycatch problems, gear conflict and could impact all fishery-dependent communities in the Bering Sea and the Gulf of Alaska.

National Marine Fisheries has imposed a jeopardy finding. My community and other fishery-dependent communities and the seafood industry of Alaska that supports these communities are the ones facing jeopardy now. I would ask this Committee to advise National Marine Fisheries of your concerns with the biological opinion, jeopardy finding and the RPAs. Are these decisions on good science and research? Do changes need to be made to these regulations?

We would ask for your support for substantial funding for independent research with peer review. Continued research for this billion-dollar-a-year fishery is critical to the economic well-being of the State of Alaska, the community of Unalaska and the seafood industry.

Thank you very much, Mr. Chairman.

[The prepared statement of Mr. Kelty follows:]

TESTIMONY BEFORE THE SUBCOMMITTEE ON
FISHERIES CONSERVATION WILDLIFE AND OCEANS

Mr. Chairman and Members of the Committee,

Thank you for the opportunity to speak before you today on this very important issue. My name is Frank Kelty and I am the Mayor of the City of Unalaska, this nation's #1 commercial fishing port for the past ten years in tonnage landed and dollar value. Each year, 500 million to 700 million pounds of product is processed in my community, and the dollar value of that product is in excess of 100 million dollars annually. The total value of the pollock fishery in Alaska is one billion dollars per year.

My community has major concerns with the process that was used to develop the Jeopardy findings, biological opinions, and the reasonable and prudent alternative for the pollock fishery under the Endangered Species Act. Was the best science used? Was the research they worked off of current and up to date? Was a peer review performed on the science and research data? Or were these regulations driven in haste by the National Marine Fisheries Service/Green Peace Lawsuit?

The City of Unalaska supports stellar sea lion research and has provided funding in excess of $30,000 to the North Pacific Marine Science Foundation Consortium of Universities, since its inception. The North Pacific Marine Science Foundation includes the University of British Columbia, University of Alaska, and the University of Wash.

This Consortium receives it funding from the seafood industry, support sector businesses, and coastal communities. The City of Unalaska has also used taxpayer's dollars to become intervenors in the Green Peace/National Marine Fishery Service lawsuit. Why would we use taxpayer's dollars on these issues? Because the fishing industry in Unalaska is the only economic base we have, and the pollock industry in our community is the most important part of our fishery based economy. In 1997, NMFS figures showed that 93% of all product landed and processed in

Unalaska was groundfish. 83% of that amount was pollock. This shows the importance of the pollock fishery in the Bering Sea to our community.

During my 30 years working in the Alaskan seafood industry. I have seen the crash of the crab and shrimp stocks in the Gulf of Alaska, and I lived and worked in Unalaska during the Bering Sea red king crab crash in the early 80's.

I have seen, first hand, the devastation of coastal communities whose economic base has disappeared overnight. Employment in the community will be hurt, not just in the local processing plants, but in all sectors. We have support sector businesses that have invested millions of dollars in our community. Their revenues will be hurt, the people that they employ in transportation, marine repair, retail stores, fuel companies, longshoremen, and City work force will all be impacted. The City of Unalaska with a major decline in revenues would have to cut back on services, program, and capital projects would have to be delayed or stopped.

There is a section in the Magnuson Stevens Act that talks about protection for fishery dependent communities. We should remember that section as we review these regulations. The most damaging impacts will be to the seafood processing industry. Both to onshore and offshore sectors, and the fishing fleets that provide the product to these operations. They have invested hundreds of millions of dollars in shoreplants, factory trawlers that process at sea and use Unalaska as their support base, and in catcher vessels that deliver to these operations.

I would like to share with you now some of the problems the seafood industry has encountered because of the recent adoption of the RPA's. The roe season was impacted with a 5% reduction. The roe season is the most important part of the pollock fishery, and is critical to the bottom line of the fishing fleet and the processors.

Aleutian Island area pollock closure impacted the fishing fleets, our local processing plants, the at-sea fleet and revenues to the community of Unalaska. This fishery is valued at over $50 million dollars.

The new RPA regulations require a Stand down provision between seasons which is very costly to the industry.

Moving the fishing fleet away from sea lion critical habitat areas, and reducing the amount of fish taken from these areas, as well as other proposed area closures or buffer zones, could dramatically reduce the amount of fish available to all processors and fishing fleets. This could lead to quality concerns of the product received by shore plants by our fishing vessels who will have to fish farther away, and having a longer running time to get their product to the plants. Fishing in areas that the fleet hasn't traditionally fished could lead to bycatch problems, gear conflicts and could impact all fishery dependent communities in the Bering Sea and the Gulf of Alaska.

National Marine Fishery Service has imposed a jeopardy finding. My community, other fishery dependent communities, and the seafood industry of Alaska that supports these communities are the ones facing jeopardy now. I would ask this committee to advise the National Marine Fishery Service of your concerns with the biological opinion, jeopardy findings, and the RPA's. Are these decisions based on good science and research? Changes need to be made to these regulations. We would ask your support for substantial funding for independent research with peer review. Continued research for this billion dollar a year fishery is critical to the economic well being of the State of Alaska, the community of Unalaska, and the seafood industry.

Thank You.

8.5.4.1 Dutch Harbor/Unalaska

Dutch Harbor/Unalaska is located approximately 800 miles southwest of Anchorage and 1,700 miles northwest of Seattle. Unalaska is the 11th largest city in Alaska, with a reported year-round population of just over 4,000. The name Dutch Harbor is often applied to the portion of the City located on Amaknak Island, which is connected to Unalaska Island by a bridge. Dutch Harbor is fully contained within the boundaries of the City of Unalaska, which encompasses 115.8 square miles of land and 98.6 square miles of water (Alaska Department of Community and Regional Affairs, 1998).

The population of Unalaska is primarily non-Native, although the community is culturally diverse. According to the 1990 U.S. Census, there were 682 total housing units, and 107 of these were vacant. More than 2,500 jobs were estimated to be in the community. The official unemployment rate at that time was 1.0%, with 7.8% of the adult population not in the work force. The median household income was reportedly $56,215, and 15.3% of residents were living below the poverty level.

Dutch Harbor/Unalaska has been called *"... the most prosperous stretch of coastline in Alaska."* With 27 miles of ports and harbors and several hundred local businesses, most of them servicing, supporting, or relying on the seafood industry, this city is the heart of the Bering Sea fisheries.

Dutch Harbor is not only the top ranked fishing port in terms of the tonnage of fish landed in Alaska, but has held that distinction for the Nation, as a whole, each year since 1989, and ranked at or near the top in terms of value of fish landed over the same period.

Virtually the entire local economic base in Dutch/Unalaska is fishery-related, including fishing, processing, and fishery support functions such as fuel, equipment supply, repairs and maintenance, transshipment, and cold storage. Indeed, Dutch Harbor/Unalaska is unique among Alaska coastal communities in the degree to which it provides basic support services for a wide range of Bering Sea fisheries (Impact Assessment Incorporated, 1998). It has been reported that over 90% of the population of this community considers itself directly dependent upon the fishing industry, in one form or another (NPFMC 1994).

Historically, Dutch Harbor was principally dependent upon non-groundfish (primarily king and Tanner crab) landings and processing for the bulk of its economic activity. These non-groundfish species continue to be important components of a diverse processing complex in Dutch Harbor. In 1997, for example, nearly 2 million pounds of salmon, more than 1.7 million pounds of herring, and 34 million pounds of crabs were reportedly processed in this port.

Nonetheless, since the mid-1980s, groundfish and particularly pollock has accounted for the vast majority of landings in Dutch Harbor/Unalaska. Again, utilizing 1997 catch data, over 93.5% of total pounds landed and processed in this port were groundfish, 83% of which were pollock.

The facilities and related infrastructure in Dutch Harbor/Unalaska support fishing operations in the eastern Bering Sea, Aleutian Islands and GOA management areas. Processors in this port receive and process fish caught in all three areas, and the wider community is linked to, and substantially dependent upon, serving both the inshore and at-sea sectors of the fishing industry.

In a profile of regional fishing communities, published by the Council in 1994, the local economy of Unalaska was characterized in the following way:

> *"If it weren't for the seafood industry, Unalaska would not be what it is today. . . In 1991, local processors handled 600 million lbs. of seafood onshore, and 3 billion lbs. of seafood were processed offshore aboard floating processors that use Dutch Harbor as a land base. Seven shore-based and many floating processors operate within municipal boundaries."* (NPFMC, 1994, p. 26).

While these figures presumably include both groundfish and non-groundfish species, and current sources identify at least eight shore-based processing facilities, they are indicative of the scope of this community's involvement in, and dependence upon, seafood harvesting and processing.

Because of this high level of economic integration between Dutch Harbor/Unalaska and, in particular, the pollock fishing industry, any action which significantly reduced or substantially redistributed the total catch of pollock from the eastern Bering Sea or Aleutian Islands (and to a lesser extent the GOA) management areas would be expected to have a negative impact on the port and surrounding community.

While the port continues to be actively involved in support operations for crab, salmon, herring, and other groundfish fisheries, these resources do not hold the potential to offset economic impacts which would be associated with a significant reduction in pollock landings. Indeed, the newest and largest of the processing facilities in Dutch Harbor are dedicated to pollock surimi production, and could not readily shift production to an alternative species or product form, even if such an opportunity were to exist.

Detailed data on costs, net earnings, capital investment, and debt service for the harvesting, processing, and fisheries support sectors in Dutch Harbor/Unalaska are not available. Therefore, it is not possible to quantify net economic impacts on this community. It is apparent, however, that there are no alternative fisheries into which the port might diversify, in order to offset a significant reduction in pollock target fishing activity. Neither are there prospects (at least in the foreseeable future) for non-fishery related economic activity in Dutch Harbor/Unalaska that could substantially mitigate impacts from a significant reduction in locally based pollock fishing activity.

While Dutch Harbor has been characterized as one of the world's best natural harbors, it offers few alternative opportunities for economic activity beyond fisheries and fisheries support. Its remote location, limited and specialized infrastructure and transportation facilities, and high cost make attracting non-fishery related industrial and/or commercial investment doubtful, at least in the short-run. [40]

Without the present level of pollock fishing and processing activities, it is probable that many of the current private sector jobs in this community could be lost or, at the very least, could revert to highly seasonal patterns, with the accompanying implications for community stability observed historically in this and other Alaska seafood processing locations dependent upon transient, seasonal work forces. It is likely, for example, that the number of permanent, year-round residents of Dutch Harbor/Unalaska would decline, perhaps significantly. This, in turn, would alter the composition and character of the community and place new, and different, demands on local government.

The municipal government of the City of Unalaska is substantially dependent upon the tax revenues which are generated from pollock fishing, processing, and support activities. While a detailed treatment of municipal tax accounts is beyond the scope of this assessment, it is clear that, between the State of Alaska's

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[40] Sea floor minerals exploration, including oil drilling, in the region have been discussed. No such development seems likely in the short run, however. Unalaska, also, reportedly expected nearly 6,000 cruise ship visitors in 1996.

Fisheries Business Tax and Fishery Resource Landings Tax revenues (both of which are shared on a 50/50 basis with the community of origin), local raw fish sales tax, real property tax (on fishery-related property), and permits and fees revenues associated with fishing enterprises, the City of Unalaska derives a substantial portion of its operating, maintenance, and capital improvement budget from fishing, and especially pollock fishing, related business activities. Should the pollock harvest in the eastern Bering Sea or Aleutian Islands management areas be substantially reduced, the municipality could experience a very significant reduction in its tax base and revenues.

The local private business infrastructure which has developed to support the needs and demands of the fishery-based population of Dutch Harbor/Unalaska would very clearly suffer severe economic dislocation, should the number of employees in the local plants and fishing fleets decline in response to pollock catch reductions. Insufficient cost and investment data exist with which to estimate the magnitude of net economic impacts to these private sector businesses.

Mr. YOUNG. You did that well. You timed it just right.
Mr. Burch.

STATEMENT OF AL BURCH, EXECUTIVE DIRECTOR, ALASKA DRAGGERS ASSOCIATION

Mr. BURCH. Boy, he sure don't need a loud speaker.

Mr. Chairman, before I give my testimony, I would just want to acknowledge that we did have a meeting, very good discussion, with the Secretary of Commerce about research. I would like to thank the Secretary for his willingness to work with Alaskans on a research program. We had that meeting yesterday afternoon. I was very pleased.

I appreciate the opportunity to speak before this Subcommittee. I am Al Burch, Executive Director of the Alaska Draggers Association in Kodiak, Alaska. Most of the trawl vessels I represent, including my own two trawlers, the Dawn and the Dusk, are small trawlers under 100 feet in length and most are owned by Kodiak residents.

I started fishing shrimp out of Seward with my brother Oral in 1960. When our plant was destroyed by the '64 earthquake, we moved to Kodiak. During those early years, we did whatever we could to keep the boats busy, a little crab, shrimp, salmon, halibut, herring, charters, seals and sea lion reduction. In those days, there was a bounty on seals and the bounty helped put food on the table. Sea lions were considered predators on salmon. During World War II, prior to the start of the salmon season, the Navy and the Army would strafe the sea lion rookeries as a public service.

In the mid-70s there was a big change in the central western Gulf of Alaska. Shrimp and crab started to disappear. Fortunately, Alaska Department of Fish and Game had kept two bays closed to shrimp fishing as controls. The shrimp in these bays disappeared just as fast as the shrimp in the open bays so we knew it wasn't the fisheries that caused the decline.

Without shrimp, we had to look for other opportunities and got a job fishing Pacific cod for a Portuguese joint venture and went on to fish joint venture pollock in the Shelikof straits. When the local processing plants geared up to process groundfish, we fished and still fish for the Kodiak shore-based plants.

Mid-70s, during years that the shrimp and the crab declined, there were a lot of other things that changed. The water warmed up. One summer we had sea lion diving on our trawl nets. They could really tear up the net. I think our crews spent as much time mending web as they did fishing.

The other thing that happened was a buildup of pollock in Shelikof straits in the spring. In 1977 my brother called NMFS and asked them to come out and look at Shelikof straits. The director at that time told him there wasn't any pollock in Shelikof straits. About two years later, NMFS did look at Shelikof straits and figured out that there was more than a million metric tons of pollock spawning there. At that moment, NMFS decided that all pollock in the Gulf spawned in the Shelikof. It wasn't true but a lot of research was done on the idea that all Gulf pollock spawned in the Shelikof straits.

Kodiak is a fishing-dependent community. It is the only port in Alaska whose fleet is composed of all gear types, the only port that processes all fisheries from pollock to urchins, the only port in Alaska that operates year round, and the only port in Alaska with a resident processing work force. Our homes are here. Our children are raised here.

Any downturn of Kodiak's economy is hardest on the processing plant workers. If there is not work most of the year for the processing plant workers, they have to leave. The vessels struggle but not all economically survive. When survival is difficult, some vessel owners can't afford to properly maintain their vessels, and there are more accidents at sea, more loss of life.

When the economy turns sour, small businesses fail. The whole community feels the economic stress, and the usual social problems that are part of any economic downturn occur. The community begins to come apart.

I know what it is like in an economic downturn. Kodiak went through a major downturn in the eighties when the shrimp and crab fisheries were lost and the processors had not made the investments to buy machinery to process groundfish.

I have been in jeopardy on the water a few times, but the jeopardy I, and many like me, now face is the prospect of losing everything we worked for all our lives to protect sea lions. We are being closed out of the nearshore waters.

In the Gulf of Alaska I am not sure we can find much pollock offshore, but I am sure that fishing offshore represents a real danger to our boats and crews. When nature took away the shrimp and crab, it was a trade. Pollock for shrimp, cod fish for crab. If National Marine Fisheries Service would hire the Kodiak pollock fleet to monitor the sea lion haulouts, I would consider that a reasonable trade. Otherwise I think mugging probably describes my view.

Kodiak's pre-state history left Kodiak with a strong conservation ethic. The Russians wiped out the fur-bearing marine mammals. Whalers wiped out the whales. The Federal Government mismanaged salmon. The foreign fisheries wiped out the Pacific Ocean perch. All of these species have been rebuilt, some at great short-term cost to our community.

The community of Kodiak has willingly paid the price for the rebuilding. All of us want a healthy ecosystem and a sustainable fisheries for ourselves today and for all future generations. I have been a member of the North Pacific Fisheries Management Council's advisory panel for 22 years. Every conservation action the advisory panel has ever recommended and every conservation measure the council has recommended has been based on scientific research and the recommendations of the Science and Statistical Committee, except for the sea lion protective measures.

Marine mammal biologists' current theory, as I understand it, is that the pollock fisheries which in the Gulf of Alaska takes only 7 to 10 percent of the pollock biomass spread out in three separate openings, each lasting 3 to 20 days depending on the quota, creates localized depletion of pollock. The biologists admit that they have no data to show localized depletion, but they believe that that is the problem. Apparently, the marine mammal biologists' belief carries more weight than any research.

I have kind of lost faith in the ability of the leadership in the agency to provide the research we need. There are many good scientists in the agency but they are not the leadership. I would feel more comfortable if Congress exercised annual oversight to include scientists outside the National Marine Fisheries Service in the oversight. If there is not a long-term coordinated research plan developed that looks at what sea lions do every month of the year, we will continue for the next 25 years hearing there is not enough data or the sample size is too small to be meaningful. Our communities will be extinct but the Steller sea lion will still be around.

Thank you.

[The prepared statement of Mr. Burch follows:]

TESTIMONY OF AL BURCH, EXECUTIVE DIRECTOR, ALASKA DRAGGERS ASSOCIATION
BEFORE THE U.S. HOUSE OF REPRESENTATIVES
CHAIRMAN DON YOUNG, ALASKA
CHAIRMAN JIM SAXTON, NEW JERSEY
SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS
MAY 20, 1999

INTRODUCTION

I appreciate the opportunity to speak before this subcommittee. I am Al Burch, executive director of the Alaska Draggers Association in Kodiak, Alaska. Most of the trawl vessels I represent, including my own two trawlers the Dawn and the Dusk, are small trawlers under 100 feet in length and most are owned by Kodiak residents.

PERSONAL HISTORY

I started fishing shrimp out of Seward with my brother Oral in 1960. When our plant was destroyed by the 1964 earthquake we moved to Kodiak. During those early years we did what ever we could to keep the boat busy: a little crab, shrimp, salmon, halibut, charters, seals and sea lion reduction. In those days there was a bounty on harbor seals and the bounty helped put food on the table. Sea Lions were considered predators on salmon. Prior to the start of the salmon season the Navy and Army would strafe the sea lion rookeries as a public service.

In the mid-1970's there was a big change in the Central/Western Gulf of Alaska. Shrimp and crab started to disappear. Fortunately Alaska Department of Fish and Game had kept two Kodiak bays closed to shrimp fishing as controls. The shrimp in these bays disappeared just as fast as the shrimp in the open bays, so we knew it wasn't the fishery that caused the decline.

Without shrimp we had to look for other opportunities and got a job fishing Pacific cod for a Portugese joint venture and went on to fish joint venture pollock in Shelikof Strait. When the local processing plants geared up to process groundfish we fished, and still fish, for the Kodiak shorebased plants.

THE MID-1970'S

During the years that shrimp and crab declined there were a lot of other things that changed. The water warmed up. One summer we had sea lions diving on our trawl nets. They could really tear up a net. I think our crews spent as much time mending web as they did fishing.

Before shrimp started to decline the shrimp catches were pretty clean. We didn't catch very many other species. But in the mid-1970's we started seeing a lot of small pollock in our shrimp trawls. I really remember that because trying to separate the little pollock out of the catch was a real problem for the boats and for the plants. Before the mid-1970's we didn't see much pollock. The foreign vessels fished pollock, but pollock was offshore in those days.

The other thing that happened was a build-up of pollock in Shelikof Strait in the spring. In 1977 my brother called NMFS and asked them to come out and look at Shelikof Strait. The director at that time told him there wasn't any pollock in Shelikof Strait. About two years later NMFS did look at Shelikof Strait and figured out that there was more than a million metric tons of pollock spawning there. At that moment NMFS decided that all the pollock in the Gulf spawned in Shelikof. It wasn't true, but a lot of research was done on the idea that all the Gulf pollock spawned in Shelikof Strait.

THE COMMUNITY OF KODIAK

Kodiak is a fishing dependent community. It is the only port in Alaska whose fleet is composed of all gear types; the only port that processes all fisheries from pollock to urchins; the only port in Alaska that operates year round and the only port in Alaska with a resident processing workforce. Our homes are here. Our children are raised here.

Any downturn of Kodiak's economy is hardest on the processing plant workers. If there is not work most of the year the processing plant workers have to leave. The vessels struggle but not all economically survive. When survival is difficult some vessel owners can't afford to properly maintain their vessels and there are more accidents at sea, more loss of life.

When the economy turns sour small businesses fail. The whole community feels the economic stress and the usual social problems that are part of any economic downturn occur -- the community begins to come apart.

I know what it is like in an economic downturn. Kodiak went through a major downturn in the 1980's when the shrimp and crab fisheries were lost and the processors had not made the investments to buy the machinery to process groundfish.

THE CURRENT CRISIS

I've been in jeopardy on the water a few times. But the jeopardy I, and many like me, now face is the prospect of losing everything we worked for all our lives. To protect sea lions we are being closed out of the near shore waters.

In the Gulf of Alaska I'm not sure we can find much pollock offshore but I am sure that fishing offshore represents a real danger to our boats and crews.

It isn't just the Kodiak pollock fleet that faces jeopardy, it's every fishery that is at risk. The marine mammal biologists have indicated they will be looking at other fisheries -- maybe Pacific cod next or maybe herring. Even salmon fishermen are concerned that their fisheries may be closed in the future to protect sea lions.

When nature took away the shrimp and crab it was a trade -- pollock for shrimp, codfish for crab. If National Marine Fisheries Service would hire the Kodiak pollock fleet to monitor the sea lion haul-outs I would consider that a reasonable trade, otherwise I think "mugging" probably describes my view.

CONSERVATION

Kodiak's pre-State history left Kodiak with a strong conservation ethic . The Russians wiped out the fur bearing marine mammals. Whalers wiped out the whales. The federal government mismanaged salmon. The foreign fisheries wiped out the Pacific Ocean Perch. All of these species have been rebuilt, sometimes at great short term cost to our community.

The community of Kodiak has willingly paid the price for the rebuilding. All of us want a healthy ecosystem and sustainable fisheries for ourselves today and all future generations.

When I started fishing I thought that if we made sure to leave enough shrimp on the grounds the shrimp would never disappear. We did not know anything about regime shifts then.

It took years for the scientists to figure out that the change from shrimp and crab to groundfish was a natural event that probably occurs every 20 years or so. It took me less time to figure out that if the shrimp were all in the bellies of the cod fish that I should figure out how to fish cod fish.

I think most everyone in Kodiak knew that sea lions were declining in the 1980's. It seemed like just another of the changes that nature had decided to make. Industry pressured National Marine Fisheries Service to start the threatened designation before an environmental group filed suit. The agency did not do anything until Greenpeace filed a lawsuit in 1991. At that time ten mile no trawl zones around the rookeries were implemented.

All the industry groups, including Alaska Draggers Association, worked hard to stop any shooting of sea lions. Trawlers made changes to avoid catching sea lions in their nets.

Back then we asked the agency what other measures might be implemented if sea lions did not start recovering. The agency always said there was nothing more they would do.

THE SCIENCE

I've been a member of the North Pacific Fishery Management Council's Advisory Panel for 22 years. Every conservation action the Advisory Panel has ever recommended and every conservation measure the Council has recommended has been based on scientific research and the recommendations of the Science and Statistical Committee -- except for the Sea Lion Protective measures.

I've listened to all the marine mammal biologists presentations and asked questions and as near as I can tell the only real data is:

1. Sea lions populations declined greatly during the 1970's and 80's while pollock increased.
2. Sea lions are still declining in the 1990's, but at a much lower rate than in the 1980's.
3. The declines are lowest where there is the greatest diversity of diet.
4. In most areas pollock is now the major food item for sea lions.
5. Research by Dr. Andrew Trites indicates that sea lions lose weight if pollock is the only food they eat. (This finding has been dismissed by NMFS since the paper has not yet finished its peer review).

The marine mammal biologists current theory as I understand it is that the pollock fishery, which in the Gulf of Alaska takes 7 to 10% of the pollock biomass spread out in three separate openings, each lasting 3 to 20 days, depending on the quota, creates "localized depletion" of pollock. The biologists admit that they have no data to show localized depletion but they believe that is the problem. Apparently a marine mammal biologist's "belief" carries more weight than any research.

I am very frustrated that though Steller Sea Lions have been declining for over 20 years there has not been a thought out comprehensive research plan to look at diet, nutritional needs, changes in available prey nor what sea lions do in the winter months. Most all the research work has been done in the summer, yet the pollock fishery is basically a winter fishery.

It has been about eight years since the Steller Sea Lions have been listed. And after eight years of research all the marine mammal biologists can say is "we believe localized depletion of pollock caused by the fishing industry is the problem". I have kind of lost faith in the ability of leadership in the agency to provide the research we need. There are many good scientists in the agency, but they are not the leadership. I would feel more comfortable if Congress exercised annual oversight and included scientists outside National Marine Fisheries Service in the oversight.

If there is not a long term coordinated research plan developed that looks at what sea lions do every month of the year we will continue for the next twenty-five years hearing "there is not enough data" or "the sample size is too small to be meaningful" and our communities will be extinct but the Steller Sea Lion will still be around.

APPENDIX TO WRITTEN COMMENTS BY AL BURCH, EXECUTIVE DIRECTOR, ALASKA DRAGGERS ASSOCIATION

One of the things I've learned on the North Pacific Fishery Management Council's Advisory Panel is that observations made by fishermen are called "anecdotal data" and observations made by scientists are "scientific data". To make sure my comments are treated as "scientific information" I worked with Alaska Groundfish Data Bank to document from the scientific literature my statements about how our ecosystem changed in Kodiak since 1960.

CENTRAL/WESTERN GULF OF ALASKA POLLOCK BIOMASS

Prior to 1976 NMFS made two surveys in the Gulf of Alaska. One in 1961 and one done over the three summers 1973-75. The estimated pollock biomass in the Central/Western Gulf of Alaska from the 1961 survey was 48,000 MT. The 1973 survey biomass estimate was 522,200 MT. (Pereyra,W.T. and L L. Ronholt. 1976)

No further bottom trawl surveys were conducted until 1984. The 1984 trawl survey pollock biomass was estimated at 730,431 MT. The 1984 hydroacoustic survey in Shelikof Strait was estimated to be 1,757,823 MT. The bottom trawl survey does not assess the young year classes well which accounts for the difference between the hydroacoustic survey biomass and the bottom trawl survey. (North Pacific Fishery Management Council 1998).

CENTRAL/WESTERN GULF OF ALASKA CHANGE IN SPECIES COMPOSITION

The 1961 survey indicated that pollock represented 16% of the total round fish biomass. The 1975 survey indicated that pollock represented 76% of the total round fish biomass.

By species group the 1961 survey estimated that of the total fish and invertebrate biomass flatfish, including halibut, represented 38% of the biomass, commercially important invertebrates (crab and shrimp) represented 27% of the biomass and roundfish represented 23% of the biomass.

The 1973 survey results shows that of the total fish and invertebrate biomass flatfish represented 31%, commercially important vertebrates represented 15%, and round fish represented 51%.

The remaining percent of the biomass in 1961 and 1973 represented sharks, rays and forage fish. (Pereyra,W.T. and L L. Ronholt. 1976)

SEA LION DECLINES IN THE CENTRAL GULF OF ALASKA TREND ROOKERY AND HAULOUT SITES: ADULT AND JUVENILE SEA LIONS (Strick,J.M. etal, 1997 and Sease,J.L. 1999)

The Sea lion decline appears to have three phases:

- 1976 through 1985: Sea lion population declined from 25000 animals to 20000 animals. The average rate of decline for this period was 2% per year. Counts were made in the years 1976 and 1985.
- 1985 through 1989: Sea lion population declined from 20000 animals to 9000 animals. The average rate of decline for this period was 11%. Counts were made 1985 and 1989.
- 1989 through 1998: Sea lion population declined from 9000 animals to 5000 animals. The average rate of decline for this period was 4.5%. Counts were made 1989, 1990. 1991, 1992, 1993 1994, 1996, 1997 and 1998.

OTHER CHANGES IN THE CENTRAL GULF OF ALASKA ECOSYSTEM

Though looking only at single species has been the standard for many years, scientists and National Marine Fisheries Service have recognized that the ecosystem as a whole, including the physical oceanography, must be considered in order to assess the causes and impacts of change.

A number of fish eating birds also declined in the same time period that sea lions declined, but the shellfish eating birds did not show a decline. Bird biologists are able to directly sample the food items brought to the nest during breeding season and monitor the breeding success and chick survival directly. They can also monitor large die-offs of birds. The following summary is from K. J. Kuletz , etal, 1997.

> In the 1970's there was a shift from a regime typified by high abundance of shrimp, capelin, and Pacific sandfish to one dominated by pollock, cod and flatfish. Concurrent with this shift the following marine bird and mammal species declined.
>
> BIRD SPECIES WHICH DECLINED BY AT LEAST 50% 1989-1993 in Prince William Sound: Loons, cormorants, mergansers, Bonaparte's gull, glaucous winged gull, black legged kittiwake, arctic tern, pigeon guillemots, marbled murrelets, parakeet auklet and puffins. All of these birds feed on fish.
>
> The birds that feed on shellfish such as goldeneyes, harlequin ducks, black oyster catchers did not decline.
>
> MARINE MAMMALS WHICH DECLINED IN PRINCE WILLIAM SOUND: Harbor Seals and Sea Lions. Decrease in killer whales which prey on seals also noted.
>
> The authors state that "The observed long term changes in populations of marine birds and mammals and the data on seabird diets, were consistent with the hypothesis that an ecosystem change occurred in Prince William Sound that negatively affected piscivorous birds." The authors also note that the timing of changes in the Gulf of Alaska was similar to the timing in Prince William Sound.

ALTERNATIVE HYPOTHESIS FOR THE SEA LION DECLINE

NMFS hypothesis is that the pollock fishery deprives sea lion of food by creating localized depletion. Other work suggests that pollock does not provide adequate nutrition for young sea lions. The corollary to this hypothesis is that the decline in forage fish has deprived young sea lions as developed by D.J. Hanson 1997 in an abstract quoted below.

> "The decline of the harbor seal, *Phoca vitulina richardsi*, in the western Gulf of Alaska was concurrent with the collapse of the shrimp trawl fishery in the same area between 1976 and 1981. Over the approximately the same time period (1976-1979 to 1985), the rate of decline of specific local breeding populations of the northern sea lion, *Eumetoias jubatus*, increased. Shrimp, slow-moving and relatively easy to catch, have been reported as the primary prey item of newly weaned harbor seal pups, and they may play a similarly important role in the diet of northern sea lion pups; young pinniped pups may need time and practice to acquire the speed and agility to catch fast moving prey to catch fast moving prey such as finfishes. Capelin, *Mallotus villous*, a forage fish of harbor seals and northern sea lions, also declined in abundance in the early 1980's in the western Gulf of Alaska; capelin may be of importance to older pinniped pups, providing a high lipid food source for the build-up of fat reserves for thermal insulation and growth. With the decline in abundance of both shrimp and capelin, young inexperienced harbor seals and sea lions may no longer be able to compete successfully with other predators for these food items. Thus, harbor seal and sea lion pups may be starving after they leave the rookeries."

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Mr. YOUNG. Thank you, Al.
Mr. George Owletuck.

STATEMENT OF GEORGE OWLETUCK, ANCHORAGE, ALASKA

Mr. OWLETUCK. Thank you, Mr. Chairman, Subcommittee members. Thanks for the opportunity to testify today. My name is George Owletuck from Marshall, Alaska. I am a lifelong Yup'ik Eskimo hunter and commercial fisherman. I hold a bachelor's degree from the University of Alaska, and I have worked for Senator Stevens for three years in his Alaska office. I have worked for Senator Lyman Hoffman in the Alaska Legislature for rural issues, and I have worked for the Yukon-Kuskokwim Coastal Research Service Area on coastal research issues for two years, and the past year I had worked for the Alaska Inter-Tribal Council as their natural resources director representing Alaska Native interests. My individual testimony is as a concerned Alaskan Native over the long-term decline of animal species in Alaska waters.

Subsistence uses of land animals, waterfowl, salmon and marine mammals have provided for the sustenance of Alaska Native families for millennia. Entire indigenous Alaska cultures revolve around the harvests, utilization and distribution of various plant and animal species. Alaska Native societies still depend on this hunting, fishing and gathering lifestyle for nutritional, physical and spiritual well-being. Immersing oneself in the wilderness of creation instills a growing awareness of the creator and the laws of nature over a lifetime of living the hunting, fishing and gathering lifestyle. This acute awareness conveys the sense that the creator has established a balance in nature to sustain the food chains in the web of life. Alaska Natives, indeed indigenous peoples, maintain cultures that perpetuate lifestyles of living in harmony with the environment, creation to preserve this delicate balance in nature.

I am going to summarize this whole statement here.

The severe declines of animal populations such as sea lions suggest that the intense commercial harvests of Alaska waters have upset the balance of their delicate ecosystems. The declines in Steller sea lions began in the eastern Aleutian Islands in the early seventies where a massive trawl fishery for pollock was concentrated at the time. Further declines occurred in the Gulf of Alaska and along the Aleutian chain as large-scale groundfish trawling moved into those regions. No declines in sea lions have occurred in southeast Alaska where no high volume groundfish trawling occurs. Lack of available food is the leading explanation for the declines in sea lions and other species.

The average amount of pollock harvested annually from waters of critical habitat where sea lions feed and breed has increased from 672 million pounds in 1986 to 1.79 million pounds in this decade. The fisheries have also become concentrated into the fall and winter when adequate food availability is most crucial for sea lions. Thus, the evidence suggests that populations of pollock predators have dropped at least in part because of an intense and concentrated fishing.

A National Oceanic and Atmospheric fisheries' recent Steller sea lions stock assessment show population declines from 110,000 in

1978 to fewer than 40,000 today. Steller sea lions were listed as threatened in 1990, and those found in the Bering Sea, Aleutian Islands and Gulf of Alaska were reclassified as endangered in 1997.

The problem is not with the conclusions of jeopardy and adverse modification. The problem is with the agency's failure in the RPA to address the underlying problems or to avoid jeopardy to the sea lion or adverse modification of its critical habitat. The National Marine Fisheries Service must act aggressively to halt the sea lion decline and recover this endangered animal. NMFS should prohibit trawling in all critical habitats surrounding sea lion rookeries and haulouts, should dramatically reduce the catches of pollock, Atka mackerel and other fish essential for sea lion survival in at-sea foraging areas, reduce the overall catches of pollock and other groundfish, particularity the catches of spawning pollock and spread the remaining catch over the entire year and over broader areas of the Bering Sea and Gulf of Alaska, rather than allowing the catch to be concentrated in time and space as it is now.

Managers must recover the sea lions over time while still protecting the Alaska communities that rely on fishing for jobs. For millennia Natives have depended upon these animals for cultural, spiritual, nutritional and economic survival. Increased involvement of Native elders and leaders in research, regulation and enforcement is necessary for effective policy making. To date this has not happened. Indeed, at the same time NMFS has been reviewing the impacts of fisheries on the sea lions, it is also attempting to review the impact of the fisheries on the ecosystem as a whole. Yet, it is doing this without the involvement of the local people. It rushed through the National Environmental Policy Act process apparently because it did not want to slow down the commercial fisheries. Even the Environmental Protection Agency noted NMFS' failure to involve local people. In a letter, they stated that NEPA, ANILCA and the Federal trust responsibility requires that the supplemental environmental impact statement respectfully analyze proposed projects which could potentially conflict with Indian tribes, the effects on subsistence uses and needs and whether proposed actions are consistent with Federal agencies, fiduciary trust responsibility for Native Alaskans. EPA also noticed that SCIC lacked and continues to lack a discussion of the impacts of the fishing management plan on Native subsistence users and should include an analysis of direct, indirect and cumulative impacts on subsistence users as required by NEPA.

Another note in the EPA letter was that completely missing from the decision-making process was consultation with Federally recognized tribal governments in Alaska in accordance with general trust responsibility and the recent Presidential Executive Order of May 31, 1998, consultation and coordination with Indian tribal governments. Tribal governments are uniquely qualified to provide knowledge about resource trends and potential impacts to people and resources in their homelands.

I have attached this letter to my testimony, and I would like to convey that the use of Alaska Native traditional knowledge and wisdom, along with ecosystem-based research, is in order. We must ensure that trawl fisheries do not overexploit these waters in order to maintain the balance in nature necessary to sustain the food

chains in the Bering Sea and the Gulf of Alaska ecosystems. We must protect this delicate balance in nature to preserve sustainable fisheries and the Alaska Native hunting, fishing and gathering lifestyle.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Owletuck follows:]

Statement of George Owletuck, Anchorage, Alaska

Mr. Chairman, and distinguished members of the Subcommittee on Fisheries Conservation, Wildlife and Oceans. Thank you for the opportunity to testify on the National Marine Fisheries Service's (NMFS) scientific research program on Steller sea lions and the process used to develop the jeopardy finding, the Biological Opinion, and the Reasonable and Prudent Alternatives (RPA) for the pollock fishery under the Endangered Species Act.

My name is George Owletuck, from Marshall, Alaska. I am a lifelong Yup'ik Eskimo subsistence hunter and fisherman. I hold a 1995 Bachelor's of Education from the University of Alaska, Anchorage. I've served under The Washington Center's 1992 National Minority Leader's Fellowship in the DC office of U.S. Senator Ted Stevens and served on his Alaska staff for three years. I worked for Senator Lyman F. Hoffman in the Alaska State Legislature on rural issues. I served as the Director of the Yukon-Kuskokwim Coastal Resource Service Area addressing coastal resource issues under the Federal Coastal Zone Management Act. I recently served as the Natural Resources Director for the Alaska Inter-Tribal Council, a consortium representing Alaska Native interests. My individual testimony is as an Alaska Native subsistence hunter and fisherman concerned over the long-term decline of animal species in Alaska waters.

Subsistence uses of land animals, waterfowl, salmon, and marine mammals have provided for the sustenance of Alaska Native families for millennia. Entire indigenous Alaska cultures revolve around the harvests, utilization and distribution of various plant and animal species. Alaska Native societies still depend upon this hunting, fishing and gathering lifestyle for nutritional, physical, and spiritual well-being. Immersing oneself in the wilderness of Creation instills a growing awareness of the Creator and the Laws of Nature over a lifetime of living the hunting, fishing and gathering lifestyle. This acute awareness conveys the sense that the Creator has established a balance in nature to sustain the food chains in the web of life. Alaska Natives, indeed indigenous peoples, maintain cultures that perpetuate lifestyles of living in harmony with the enviromnent—Creation—to preserve this delicate balance in nature.

The severe declines of animal populations, such as sea lions, suggest that the intense commercial harvests of Alaska waters have upset the balance of their delicate ecosystems. The National Marine Fisheries Service needs to address the imminent extinction of Steller sea lions in Alaska waters. The billion-dollar groundfish trawl fishery is strongly linked to the drastic decline of marine animal populations in Alaska. Devastating marine animal population declines coincide with the development of high-volume trawl fisheries in the same times and areas. Steller sea lions, harbor seals, seabirds and salmon feed on the same fish targeted by the groundfish trawl fisheries. The population of sea lions has declined 80 percent over the last three decades. The sea lions are "endangered" under the Endangered Species Act. Northern fur seals are "depleted" under the Marine Mammal Protection Act. Returning salmon numbers have plummeted so severely that the Yukon-Kuskokwim River fisheries have been declared a disaster by the state of Alaska.

Drastic population declines suggest that the concentration of the fisheries in time and space have detrimental effects on sea lions. The declines in Steller sea lions began in the eastern Aleutian Islands in the early 1970s, where a massive trawl fishery for pollock was concentrated at the time. Further declines occurred in the Gulf of Alaska and along the Aleutian chain as large-scale groundfish trawling moved into those regions. No declines in sea lions have occurred in southeast Alaska, where no high-volume groundfish trawling occurs. Lack of available food is the leading explanation for the declines in sea lions and other species, and all of these species, but particularly sea lions, compete directly with the massive fisheries for pollock, Atka mackerel, and other groundfish.

Moreover, these fisheries have become extremely concentrated into sea lion critical habitat, which was designated based expressly on the need for adequate food in these areas. The average amount of pollock harvested annually from waters of critical habitat where sea lions feed and breed has increased from 672 million pounds in 1986 to 1.79 million pounds in this decade.

The fisheries also have become concentrated into the fall and winter, the when adequate food availability is most crucial for sea lions. Thus, the evidence suggests that populations of pollock predators have dropped, at least in part, because of intense and concentrated fishing. A NOAA Fisheries' recent Steller sea lion stock assessment show population declines from 110,000 in 1978 to fewer than 40,000 today. Steller sea lions were listed as threatened in 1990, and those found in the Bering Sea, Aleutian Islands and Gulf of Alaska were reclassified as endangered in 1997.

For these reasons, I strongly support the conclusions of jeopardy and adverse modification. The problem is not with the conclusions, the problem is with the agency's failure in the RPA to address the underlying problems or to avoid jeopardy to the sea lion or adverse modification of its critical habitat.

The National Marine Fisheries Service (NMFS) must act aggressively to halt the sea lion decline and recover this endangered animal. NMFS should (1) prohibit trawling in all critical habitat surrounding sea lion rookeries and haulouts; (2) dramatically reduce the catches of pollock, Atka mackerel and other fish essential for sea lion survival in at-sea foraging areas; (3) reduce the overall catches of pollock and other groundfish, particularly the catches of spawning pollock; and (4) spread the remaining catch over the entire year and over broader areas of the Bering Sea and Gulf of Alaska, rather than allowing the catch to be concentrated in time and space as it is now.

Alaska Native communities are directly affected by the drastic declines in Alaska marine species. Managers must recover the sea lions over time while still protecting the Alaska communities that rely on fishing for jobs. The Alaska pollock fishery is worth an estimated $670 million annually. For millennia, Natives have depended upon these animals for cultural, spiritual, nutritional and economic survival. Increased involvement of Native elders and leaders in research, regulation and enforcement is necessary for effective policy-making. To date, this has not happened. Indeed, at the same time NMFS has been reviewing the impacts of the fisheries on the sea lions, it is also attempting to review the impact of the fisheries on the ecosystem as a whole. Yet it is doing this without the involvement of local people. It rushed through this National Environmental Policy Act (NEPA) process apparently because it did not want to slow down the commercial fisheries.

Even the Environmental Protection Agency (EPA) noted NMFS' failures to involve local people:

> **Concern with the Supplemental Environmental Impact Statement (SEIS) lacking a discussion of impacts on Alaska Natives'subsistence needs and uses**
>
> Our comment stated that NEPA, Alaska National Interest Lands Conservation Act (ANILCA) and the Federal trust responsibility requires that the SEIS respectively analyze proposed projects which could potentially conflict with Indian tribes (40 CFR 1502.16), "the effects on subsistence uses and needs" (16 U.S.C. Section 3120(a)), and whether proposed actions are consistent with Federal Agencies' fiduciary trust responsibility for Native Alaskans. We also noted that Congress recognizes the importance of subsistence lifestyles even when utilizing threatened or endangered species by granting taking exemptions for the Endangered Species and Marine Mammal Protection Acts at 16 U.S.C. Section 1539(e).
>
> Our comment was that the SEIS lacked and continues to lack a discussion of the impacts of the Fishing Management Plan (FMP) *on Native subsistence users* and should include an analysis of direct, indirect and cumulative impacts on subsistence users as required by NEPA (40 CFR 1502.16). We strongly recommend that you consult with subsistence users regarding the impacts of the fisheries. Notably absent from the SEIS is consultation with the tribes that have hunted and fished the region for centuries and depend on it for subsistence . . .
>
> Another aspect which was completely missing from the decision making process was consultation with Federally recognized Tribal governments in Alaska in accordance with the general trust responsibility and the recent Presidential Executive Order of May 31, 1998, *Consultation and Coordination with Indian Tribal Governments* (E.O. 13084). Tribal governments are uniquely qualified to provide knowledge about resource trends and potential impacts to people and resources in their homeland areas. The SEIS has not directly consulted tribal governments, and thus cannot provide a complete discussion of significant environmental impacts.

I have attached this letter to my testimony, and it underscores the frustration we have with NMFS.

The use of Alaska Native traditional knowledge and wisdom along with ecosystem-based research is in order. This approach will be an effective process for identifying appropriate strategies to address the severe declines of animal species in Alaska waters. We must ensure the trawl fisheries do not over-exploit these waters in order to maintain the balance in nature necessary to sustain the food chains in the Bering Sea and the Gulf of Alaska ecosystems. We must protect this delicate balance in nature to preserve sustainable fisheries and the Alaska Native hunting, fishing and gathering lifestyle.

Mr. Chairman, and distinguished members of the Subcommittee on Fisheries Conservation, Wildlife and Oceans. Thank you for the opportunity to testify today.

Mr. SAXTON. [presiding] Thank you very much.

Mr. Van Tuyn.

STATEMENT OF PETER VAN TUYN, TRUSTEES FOR ALASKA

Mr. VAN TUYN. Thank you, Mr. Chairman. I am the litigation director of Trustees for Alaska, which is a nonprofit public interest and environmental law firm in Anchorage. We are based in Anchorage. We, along with Earthjustice Legal Defense Fund, represent Greenpeace, American Oceans Campaign and the Sierra Club in the pending lawsuit on the North Pacific groundfish fisheries.

My testimony will be directed primarily to NMFS' obligations under the Endangered Species Act, the Magnuson-Stevens Act and NEPA with respect to those fisheries. Before I begin, though, I would like to illustrate why we are here. We have got three pictures of what was once the largest sea lion rookery in the world. The first picture shows that rookery in 1969. The second picture shows that same rookery in 1979, and the final picture shows that rookery in 1986. Those numbers are no better today, Mr. Chairman. That is why we are here.

The United States Supreme Court said in the renowned Tennessee Valley Authority case that the Endangered Species Act, when passed, was the most comprehensive legislation for preservation of endangered species ever enacted by any nation. That is still true today. Section 7 of the Endangered Species Act requires Federal agencies undertaking actions which may impact listed species to consult with an expert agency. This consultation is to ensure that that agency's actions are not likely to jeopardize the continued existence of a listed species or result in the adverse modification of its critical habitat.

It is somewhat unique in the case at hand where the National Marine Fisheries Service is both the action agency charged by the Magnuson-Stevens Act with implementing and managing the fisheries and the expert agency charged by the Endangered Species Act with protecting listed species.

Importantly, under the Endangered Species Act, listed species get the benefit of the doubt. Thus, NMFS had to show that the pollock fishery was not harming the Steller sea lion or its habitat, and its December 1998 biological opinion reveals that it could not make this showing.

The question was raised earlier why NMFS felt over the years and through prior consultations that it could make this showing. The difference is that the Steller sea lion has continued its very drastic decline, being downgraded from threatened to endangered in 1997, and throughout all of the previous consultations the food stress issue was identified as a possible cause, and pointed research was identified as something that could change the agency's

consultation opinion at some later date. That later date concluded in December 1998 with the jeopardy and adverse modification findings, based in part on the new information that concerned localized depletions of pollock, information that was not available before that time.

In line with the Endangered Species Act, and as you have heard here this afternoon, NMFS then laid out a reasonable and prudent alternative that would set the stage for avoiding jeopardy and avoiding adverse modification of habitat. It was at this point that NMFS took its unprecedented step of asking the Council to review the reasonable and prudent alternatives. Not unexpectedly, the Council, which is industry-dominated, diluted every single management measure which NMFS had said was necessary to avoid jeopardy and adverse modification. It moved the bar from where the scientists said it should be to a lower level.

NMFS then adopted all of the Council's changes with no explanation as to how moving the bar down protected the Steller sea lions from jeopardy or adverse modification. This raises Endangered Species Act concerns. As the United States Supreme Court said, Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording listed species the highest of priorities.

We have also heard today that the Magnuson-Stevens Act somehow excuses or gives NMFS the obligation to take the Council's thoughts into account when developing the reasonable and prudent alternatives. I beg to differ, Mr. Chairman. The Magnuson-Stevens Act and the Endangered Species Act are actually quite complementary. Both require that NMFS act as a careful steward of marine resources. In fact, at the bottom line, if there is a conflict between the Endangered Species Act and other law, the ESA requires agencies to alter ongoing projects to afford listed species the highest of priorities.

Thus, while it was not necessarily improper for NMFS to allow the Council to review the reasonable and prudent alternatives, it was improper for NMFS to lower and sanction the Council's actions with no regard for what they had to do with the Steller sea lions.

Finally, I will touch on the National Environmental Policy Act which, when used correctly, could have avoided the situation in the first place. Under that landmark environmental law, the twin goals of which are to inform decision makers and inform the public participation of agency action, the agency should be doing a big picture spot check of the impacts of its actions. That means throughout the twenty-odd years of NMFS' management of groundfish fisheries in the North Pacific, it should have looked at the full impact of its actions. If it could have foreseen through that process the problems that were coming, we might not be in the crisis situation we are in today.

In conclusion, Mr. Chairman, if you protect the ecosystem and analyze it through these NEPA analyses, you are also protecting the sustainability of the fisheries. That is a key point because as goes the Steller sea lions, so will go the rest of the Bering Sea, including the fisheries.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Van Tuyn follows:]

Statement of Peter Van Tuyn, Trustees for Alaska

Mr. Chairman, and distinguished members of the Subcommittee on Fisheries Conservation, Oceans, and Wildlife, thank you for the opportunity to testify today regarding the National Marine Fisheries Service's (NMFS) development of the Biological Opinion, jeopardy and adverse modification finding, and reasonable and prudent alternatives for the management of the pollock fishery in the Bering Sea and Gulf of Alaska. I am the litigation director for Trustees for Alaska, a non-profit public interest environmental law firm based in Anchorage, Alaska. We, along with the Earthjustice Legal Defense Fund, represent Greenpeace, the American Oceans Campaign, and the Sierra Club in the pending lawsuit against the National Marine Fisheries Service over the conduct of the massive North Pacific groundfish fisheries and their impact on the endangered Steller sea lion. My testimony today will be directed primarily to the obligations of NMFS under the Endangered Species Act (ESA), the Magnuson-Stevens Act (MSA), and the National Environmental Policy Act (NEPA) with respect to the management of those fisheries.

As the Supreme Court noted in *TVA v. Hill,* the Endangered Species Act was, when passed, "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." That is still true today. Section 4 of the Act sets up a process by which imperiled species are designated as either threatened or endangered, and section 9 prohibits the "taking" of any such listed species or its habitat.

Section 7 of the ESA—which is what we are talking about today—requires that any Federal agency undertaking an action that may affect a threatened or endangered species must engage in formal consultation with the expert agency to "insure" that its actions are not "likely to jeopardize the continued existence," or "result in the destruction or adverse modification of" the critical habitat of that species. That consultation process results in a Biological Opinion giving the agency's view of whether such jeopardy or adverse modification is likely to occur. If the expert agency finds that jeopardy or adverse modification is likely to occur then the expert agency must "suggest those reasonable and prudent alternatives which [it] believes will" avoid such jeopardy or adverse modification.

With respect to the endangered Steller sea lion, NMFS is the "action" agency because it manages the groundfish fisheries. NMFS is also the "consulting" agency, because it is charged with protecting marine mammals such as the Steller sea lion.

The important thing to remember about this consultation process is that the species always gets the benefit of the doubt. So, in this case, the agency must show that the huge pollock fishery does not jeopardize the continued existence of the Steller sea lion or adversely modify its critical habitat. That proved to be a showing that the agency's experts could not make.

I understand that the focus of today's hearing is on the process that resulted in this determination, so I want to back up a little bit to discuss the facts that triggered this consultation. First, and most importantly, the Biological Opinions that governed the Bering Sea and Gulf of Alaska both stated on their faces that they would no longer be valid for the 1999 fishery, so NMFS really had no choice but to prepare a new Biological Opinion. In addition, Congress passed the American Fisheries Act and the North Pacific Fishery Management Council adopted the Inshore/Offshore Amendments, both of which substantially changed the way the pollock fishery was prosecuted and would have required new consultation. Moreover, the Steller sea lion was downgraded from threatened to endangered in 1997, indicating that then-existing conservation measures were not stemming its decline. These are just a few of the factors that led to the reinitiation of consultation and the current opinion.

As this consultation proceeded, it became apparent to NMFS scientists that the massive commercial pollock fishery was likely to jeopardize the continued existence of the Steller sea lion and to modify its critical habitat. This determination was spurred, in part, by new information indicating that the fisheries do indeed cause localized depletion of pollock and Atka mackerel, the two most important prey species for Steller sea lions.

When NMFS began to realize this, it took—from our perspective—the unprecedented and unusual step of asking for a special Council meeting to discuss its likely conclusion. The Endangered Species Act neither requires nor prohibits NMFS from involving the Council in the consultation process. But by inviting a political body like the fishery management council to weigh into the process, NMFS injected politics into its scientific decision. As I will detail, those politics have made matters worse for the fishery and for the Steller sea lion.

The final Biological Opinion was released on December 3, 1998. Despite the fact that the Endangered Species Act requires NMFS to determine the content of the

reasonable and prudent alternatives, the Biological Opinion contained what the agency termed a "framework Reasonable and Prudent Alternative." At its December meeting, the Council diluted every single management measure that NMFS said in the Biological Opinion was required to prevent jeopardy and adverse modification. None of these measures were based on maintaining the health of the Steller sea lion, but were instead aimed at maintaining the profits of the commercial fishing industry. NMFS then adopted them without explaining how the sea lion was protected given the dilution of the framework alternative.

This clearly violated both the letter and the spirit of the ESA. To quote **TVA v. Hill**: "Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities." That mandate was not followed in this instance.

So the notion that NMFS failed to involve the Council in the development of the Biological Opinion and the Reasonable and Prudent Alternative is not supported by the facts. The real problem with the process was that NMFS completely failed to inform the Council how limited the Council's discretion was in this instance. While NMFS was within its rights to ask the Council the best way to implement the measures that NMFS determined are necessary to protect endangered Steller sea lions, NMFS had no authority to allow the Council to lower the bar by weakening the effectiveness of the Reasonable and Prudent Alternative. This was a complete abdication of its authority by NMFS and simply cannot be tolerated under the Endangered Species Act.

Nothing in the Magnuson-Stevens Act changes this conclusion, moreover. Rather, the Magnuson-Stevens Act and the Endangered Species Act are complementary in that they both require NMFS to act as a careful steward of marine ecosystems.

Although Magnuson-Stevens does not specifically reference the Endangered Species Act, it clearly requires that the Secretary of Commerce (and thus NMFS) must ensure that proposed Fishery Management Plans, Plan amendments and regulations comply with "other applicable law." "Other applicable law" obviously includes the Endangered Species Act. If there is a conflict between the ESA and the agency's duties under its authorizing statute, the ESA "require[s] agencies to alter ongoing projects" and "afford[s] endangered species the highest of priorities." In sum, Magnuson-Stevens itself requires NMFS to comply with "other applicable law," including the Endangered Species Act, in managing United States fisheries. If there were a conflict between the authorizing statute (Magnuson-Stevens) and the Endangered Species Act, the Endangered Species Act governs.

Again, if NMFS wanted to seek input from the Council through the Magnuson-Stevens process, that was not necessarily impermissible or improper, but the Council process does not give NMFS the authority to weaken protections required by the Endangered Species Act.

Better, though, would have been for NMFS to use the well-established National Environmental Policy Act process for this purpose. Indeed, any concerns about public or Council involvement in the Endangered Species Act process could have been remedied had NMFS complied with the National Environmental Policy Act. NEPA requires that agencies strive to coordinate their NEPA compliance "with environmental impact analyses and related surveys and studies required by . . . the Endangered Species Act." NMFS' own Section 7 regulations reinforce this requirement, stating that it "will attempt to provide a coordinated review and analysis of all environmental requirements." The Council on Environmental Quality—the special Federal agency charged with implementing the National Environmental Policy Act—has regulations which further reinforce this duty.

Despite the law, NMFS expressly avoided a coordinated, integrated, review of Steller sea lion issues in its recent Environmental Impact Statement, even though the Section 7 Biological Opinions were being prepared concurrently with the Impact Statement. Had NMFS followed the correct process, the public and the Council could have submitted comments on the Biological Opinion and its consequences for the fishery. Indeed, NMFS could have used this process to seek specific input from the Council on management alternatives which would sustain the necessary protections for the endangered Steller sea lion as identified in the Biological Opinion, while at the same time minimizing the impact to the fishery of implementing such measures. Indeed, NMFS could have, and should have, used the NEPA process over the last twenty years to evaluate the full effects on the North Pacific of these fisheries—which may have helped avoid crisis situations like that with which we are now faced. This it did not do.

NMFS' failure in trying to avoid jeopardy to the endangered Steller sea lion and adverse modification of its critical habitat was to unnecessarily and improperly politicize an already controversial process. Neither the sea lion, nor the fisheries, are better off for it.

Thank you for the opportunity to testify on this important subject.

Mr. SAXTON. Thank you very much, Mr. Van Tuyn. Let me just begin by saying that all of you gave very, very good testimony. I would just like to give each of you a minute or so to reflect on what the first panel discussed, and give us your impressions of what you heard from the first panel.

Ms. STEWART. I think it is hard for me to separate what I heard from the first panel from what I have been hearing during the course of the most current round of Steller sea lion discussions at the council level with NMFS' staff and in other meetings, but I think that of the scientists that spoke Kate Wynne offered the first practical suggestion that has been offered by anybody in a long time, and that is, you have to set aside some area where you are going to focus and notice what happens in that area and then inform yourself about what else you might want to be looking at further on out, instead of taking this massive but very general view of the interactions between those animals and their environment. That is, I think, the kind of thing that has been frustrating for folks in our area who live every day with Steller sea lions and fish and other animals, but these glittering generalities, these big from the sky views of what is happening with the resource are not helpful, you need daily contact, you need constant experience in the area to see what is going on. So that is all I think I have to say.

Mr. KELTY. I would concur with Beth's statements. I think it is encouraging the meeting we had with Secretary Daley yesterday and National Marine Fisheries officials gave us, I think, some encouragement that they are understanding where we are coming from and our concerns. I think it is the science and the research is critical that we get increased funding. As I stated in my testimony, it is a billion dollar a year fishery, but you have got communities that are totally dependent on that fishery and fishing fleets, people who have spent their lives living in that area, and it is critical that we work on good research.

I mentioned in my testimony that crab collapse in 1981. We had 150 million pounds a year of Red King crab, and with no warning, fishery was gone, went from 150 million pounds down to 30 million pounds in 1 year. The next year it was gone totally and no warning, you know. Our community was almost 5,000 people in those days. Within two years it was down to 1,500, businesses were closed, plants were closed, and you know, I don't want to see problems like that occur again in my lifetime, and it is critical that we work off good science and have adequate funding, substantial funding for research.

Mr. SAXTON. Thank you.

Mr. Burch.

Mr. BURCH. Thank you. I agree with the previous two speakers. It is difficult to separate what happened today with what I have been hearing in the past. I think my frustrations are, is the lack of action after the 1990 lawsuit, the recovery teams that were created but not used. Encouraged with the meeting, again as I stated, with the Secretary yesterday, I think if we can carry forward and have more open meetings and they can convince us, you know, that their data is adequate, and that is going to be very difficult for me

to accept because, you know, it is just a total lack of data out there that is being used.

Mr. SAXTON. Thank you.

Mr. Owletuck.

Mr. OWLETUCK. Thank you. A comment made by the individual who was sitting on the left here, I forgot his name, but he made a reference to the fact that the research was being done without consultation of the people who live up in the area, and I think that is something that needs to be addressed. No further comments. Thank you.

Mr. SAXTON. Thank you.

Mr. Van Tuyn.

Mr. VAN TUYN. Mr. Chairman, the most telling thing I have heard in today's presentation, and in fact we have been hearing it from NMFS for a while, is their inability to look forward and create a vision for what this fishery needs to look like in the future to sustain itself and the health of the Bering Sea ecosystem. A lot of comments were made about the peer review report that was released two days ago. This is a perfect example of how the agency is not focusing on the future but looking backward toward the jeopardy and adverse modification to see what, if anything, is wrong with that opinion. Let's move on. Let's do something that gives us a vision for the future. Let's make sure that this ecosystem is protected and that the fishery is sustainable.

Thank you.

Mr. SAXTON. Thank you. Mr. Van Tuyn, the pictures that you showed us were very telling, and they show that over—what was it, a 26-year period?

Mr. VAN TUYN. Nineteen sixty nine through 1986.

Mr. SAXTON. That the population has declined, and I don't think that anybody takes issue that the population has declined. I don't think anyone takes issue with that. The question is why. Do you have any information to offer as to what the problems are?

Mr. VAN TUYN. I believe it is actually two questions, Mr. Chairman. One is, why did it decline and the second very important question is what is inhibiting its recovery. What we are talking about here is the recovery of the Steller sea lion, and what the scientists have said is that the pollock fishery is inhibiting the recovery of the Steller sea lion. That is in essence what they are saying, and this is the food stress issue that has come up. In fact, if you look at the peer review, while it was really unnecessary, its conclusions support 100 percent what we are saying, which is that the pollock fishery jeopardizes the Steller sea lion and adversely modifies its critical habitat, and in the context of recovery that is what needs to change.

Mr. SAXTON. Let me ask a question, Mr. Van Tuyn, to you first and anyone else can comment who wishes to. This is a chart which shows from 1989 through 1998 the estimated population of the Steller sea lion goes up to a point and then decreases, and by coincidence or something, the decrease in population seems to be synonymous with the closure of the fishery. Is there an explanation that you can offer for that?

Mr. VAN TUYN. Mr. Chairman, the type of——

Mr. SAXTON. In closed areas I am reminded.

Mr. VAN TUYN. Sure, and if you look over a significantly longer period of time what you see in the areas where there has been no trawling, in southeast Alaska, for example, the Steller sea lion populations have been stable for quite some time. If you look in the areas where there has been heavy trawling, we have noticed this 80-plus percent decline in Steller sea lion populations. Those numbers which look at over a longer period of time than those reflected in that chart are scientifically—I am not the scientist, I am only the lawyer—but are scientifically more valid.

Mr. SAXTON. As the Chairman would say if he were still here, Ms. Stewart looks like she's aggravated.

Ms. STEWART. Yes. I listened to the instructions for informing the Chair that I might want to respond earlier on. You can make a lot of loose associations between bars on a graph and what might have happened. I think for us, comparing the western/central Gulf of Alaska and the Bering Sea to the eastern Gulf actually raises more questions. The eastern Gulf has a very small pollock population. If they have the kind of pollock population we have, likely they would have the same problems with Stellers that we have is a conclusion I could draw. Pollock is not a significant component of the ecosystem in southeastern.

Southeastern has a more stable crab population than we have. They have more stable herring populations than we have. Southeastern is apparently part of a different ecosystem, and I am glad for them. I live in Juneau. I get fresh seafood whenever I want it. That is a thrill for me. I think we noticed an even more interesting trend, and this is what disturbs us in terms of the battle that we all seem to be locked in trying to find somebody to blame for the current Steller sea lion decline.

Among people who oppose trawling for a variety of reasons, it looks good to try and hang this one on the trawl industry. The trawl industry didn't start off at the peak of that population and then drive it down. Other things seemed to be in play. We have a long-time series of data from Pavlof Bay, which is the Aleutians East Borough. Pavlof Bay at one time during this period of time Al mentioned, during the shrimp and crab days, was predominated by capelin and shrimp in the biomass there. This is data looked at by a bird biologist at USGS wondering about the decline of seabirds in the same area, and pollock were down on that X axis, laying flat almost, right on the line.

So when you watch that chart, all of the sudden you see this really smooth but precipitous decline of capelin. Capelin were not commercially fished by anybody. There were no markets for them or obviously people would have fished them. This wasn't some conscientious choice people made. Shrimp followed that same line downhill. Shrimp were heavily exploited at the same time. Their decline didn't occur any more steeply or any differently from the capelin decline, and as that slope went like this, the pollock numbers came up like this. So that today's data indicate for Pavlof Bay we have a roughly even biomass, but the construction of that biomass is inverted from what it was in the earlier days.

We find these relationships interesting and certainly worth pursuing. If that is the problem, if there is some cyclical nature to pollock-salmon associations, shellfish-capelin association, surely those

will have effects on directed commercial fisheries in those species and specifically on animals like seabirds, Steller sea lions, harbor seals, beluga whales that depend more heavily on those high fat, high energetic fish. Those are the kinds of things we want to look at.

It doesn't mean that we might not want to protect the population of animals that Stellers are eating today. They can't find capelin, they have to eat something, and it may be pollock, but we want a better picture, a longer-term understanding of where we are going so that when we get into these cycles, we have some ability to predict what is a useful response, how can we act in a way that is going to be responsible toward sea lions, that is going to be responsible toward fishermen who live in the area and depend on the area, particularly Native fishermen, instead of deciding that we don't like a particular style of fishing and this looks like a good way to end it.

I think that is the point all of us have been trying to make here. This is too important an issue to get hung up on simple answers where you can link up something based on very little data.

Mr. SAXTON. Thank you.

Mr. Owletuck, in one of your previous statements you mentioned that the National Marine Fisheries Service would be well served to take more stock of Native knowledge. Is there anything in your knowledge or in Native knowledge, as you put it, that would indicate that there had been Steller cycles previously in history?

Mr. OWLETUCK. Mr. Chairman, when questions of that nature present themselves, what comes to my mind is the fact that anthropologists from such esteemed universities such as Harvard go through the jungles of South America and they consult with, quote, unquote, witch doctors or elders for their pharmaceutical knowledge, and likewise, many Native communities in Alaska wish to have scientists who come into their communities, or biologists, consult with them and their elders who have generations of what scientists would call anecdotal observations of their environment, and their intimate knowledge of their environment can and has in other parts of the world contributed to scientific knowledge. As a matter of fact, in Alaska, scientists who are involved in arctic research are starting to publish findings that confirm what elders have been telling them for years prior to their published findings.

Mr. SAXTON. Thank you. But do you have any knowledge of the cyclical patterns that have occurred, cyclical patterns that data can point to? Mr. Burch is not looking aggravated.

Mr. BURCH. We had a person on Kodiak that was in charge of the archaeological digs on one of the traditional villages there on the island where the old village is. They dug back about 400 or 500 years in the Midden Heaps there, and there was a definite shift. The village would shift between salmon and marine mammals. Dr. Rich Kenech, he is now out in Dutch Harbor working in that area. I don't know if he has documented any food pattern shifts there, but he definitely did on Kodiak. So there has been prior shifts.

Mr. SAXTON. Well, thank you very much. I have learned a lot today, and I am sure that others have as well. I want to thank you all for being here and for travelling so far to do so. You have made a real contribution to our knowledge, and we thank you for that.

The Members may have some additional questions, and if there are any, we will submit them to you in writing, and the hearing record will remain open for 30 days in order to give you adequate time to respond.

I would also like to ask unanimous consent at this point to include all Members' statements in the record. Thank you very much for coming and the hearing is adjourned.

[Whereupon, at 4:05 p.m., the Subcommittee was adjourned.]

[Additional material submitted for the record follows.]

[The background memorandum prepared by the Subcommittee on Fisheries Conservation, Wildlife and Oceans follows:]

DON YOUNG, CHAIRMAN

U.S. House of Representatives
Committee on Resources
Washington, DC 20515

May 18, 1999

MEMORANDUM

TO: Members, Subcommittee on Fisheries Conservation, Wildlife and Oceans

FROM: Subcommittee Majority Staff

RE: Adequacy of the National Marine Fisheries Service's (NMFS) Scientific Research Program on Steller Sea Lions and the Process Used to Develop the Jeopardy Finding, the Biological Opinion, and the Reasonable and Prudent Alternatives for the Pollock Fishery under the Endangered Species Act.

On Thursday, May 20, 1999, at 2:00 p.m. in Room 1334 Longworth House Office Building, the Subcommittee on Fisheries Conservation, Wildlife and Oceans will hold an oversight hearing on Federal research initiatives regarding Steller sea lions. Those invited to testify include: Dr. Walter Pereyra, Vice Chairman, North Pacific Fishery Management Council; Dr. Andrew Rosenberg, Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service; Dr. Dayton L. Alverson, Natural Resources Consultants, Inc.; Ms. Kate Wynne, Marine Mammal Specialist, Alaska Sea Grant Marine Advisory Program; Dr. David Lavigne, Executive Director, International Marine Mammal Association; Mr. Rick Marks, Steller Sea Lion Caucus; Mr. Al Burch, Executive Director, Alaska Draggers Association; The Honorable Dick Jacobsen, Mayor, Aleutians East Borough; Mr. Frank V. Kelty, Mayor, City of Unalaska, Alaska; Mr. George Owletuck, Anchorage, Alaska; and Mr. Peter Van Tuyn, Trustees for Alaska.

BACKGROUND

Steller Sea Lions:

The Steller or Northern sea lion (*Eumetopias jubatus*) is the largest member of the sea lion family and is found from southern California throughout the Gulf of Alaska and the Bering Sea and as far west as Hokkaido, Japan (see attached map of geographic distribution). Steller sea lions spend much of their time on land in areas classified as either haulout sites or rookeries. Haulouts are populated by both sexes and are not used as areas for reproduction, while rookeries are used for pupping, nursing and mating. Female Steller sea lions reach sexual maturity between the ages of 3 and 7, while males do not reach reproductive maturity and participate in breeding until approximately 8 to10 years. Males compete for females and females often mate with more than one male. Mating occurs on land. The gestation period for Steller sea lions is approximately 50 to 51 weeks and females generally give birth to one pup. According to the 1998 Biological Opinion, "(r)elatively little is known about the life history of sea lions during the juvenile years between weaning and maturity".

Since 1994, two distinct populations of Steller sea lions have been identified in U.S. waters with the dividing line between the two stocks drawn at Cape Suckling, Alaska. The western stock numbers

approximately 43,200 animals and the eastern stock numbers approximately 23,900 animals (according to the 1995 stock assessment). The western stock is currently listed as endangered and the eastern stock is listed as threatened. The eastern stock, with the exception of rookeries in northern California, has shown a stable if not increasing population. The western stock has shown continuous declines since first surveyed in the1960's. No Steller sea lion abundance figures exist prior to 1964 and population trends cannot be determined prior to that time.

A number of possible reasons for the decline of the western population have been debated, including both naturally-occurring causes and man-induced causes. There are a number of potential natural causes including: disease, predation, parasites, and changes in the ecosystem. In addition, a number of potential causes are related to interactions with man including: intentional harvest for subsistence usage, intentional illegal killing, incidental mortality due to interaction with commercial fishing operations, pollution and toxins in the environment, rookery disturbances, and nutritional stress because of competition for forage species.

It is also unclear whether sea lion distributions have changed as a result of the regime shift that has occurred in the Bering Sea. This regime shift was a climate-driven change in the physical environment which may have changed the entire organization of the ecosystem. While some data is available from Russian sources, more research is needed to determine whether populations have shifted from normal haulouts and rookeries in Alaska. According to the December 1998 Biological Opinion, "(t)he movement patterns of Steller sea lions are not yet well understood...Calkins and Pitcher (1982) reported movements in Alaska of up to 1500 km."

Endangered Species Act and Steller Sea Lions:

Under the Endangered Species Act (ESA) of 1973 (P.L. 93-295) and the Marine Mammal Protection Act (MMPA), jurisdiction over marine mammals is split between two Federal agencies, the U.S. Fish and Wildlife Service (under the Department of the Interior) and the National Marine Fisheries Service (under the National Oceanic and Atmospheric Administration within the Department of Commerce). The U.S. Fish and Wildlife Service (FWS) has jurisdiction over sea otters, polar bears, manatees, dugongs, and walruses while the National Marine Fisheries Service (NMFS) has jurisdiction over all other marine mammals, including Steller sea lions.

The ESA defines an endangered species as any species which is in danger of extinction throughout all or a significant portion of its range. The Secretary (in this case, the Secretary of Commerce) is required to make his decision to list a species as endangered or threatened based on the "best scientific and commercial data available" at the time of listing. At the time of listing a species, the Secretary is directed to identify and designate areas of habitat that are critical for the species. Critical habitat means those areas occupied by the species at the time it is listed which have those physical or biological features essential to the conservation of the species and which may require special management or protection. The Steller sea lion was listed as threatened under the ESA in 1990 through an emergency rule. The action listing the Steller sea lion as threatened also required three-nautical-mile buffer zones (no fishing zones) around major sea lion rookeries in the Bering Sea, Aleutian Islands, and the Gulf of Alaska despite critical habitat not being identified.

The Secretary must designate critical habitat using a formal rulemaking procedure. In designating critical habitat, the Secretary is to make decisions based on the best scientific data available and must take into consideration the economic impact and other relevant impacts of specifying any area as critical habitat. The Secretary may exclude an area from the critical habitat designation if he determines that the benefits of

exclusion outweigh the benefits of inclusion, unless the exclusion would result in the species becoming extinct. While the Steller sea lion was listed as threatened in 1990, the rule designating critical habitat for Steller sea lions did not became final until August 27, 1993. This designation listed all rookeries and haulout areas in Alaska and established aquatic zones extending 20 nautical miles seaward from each boundary. In addition, three "aquatic foraging areas" were established: Shelikof Straits (Gulf of Alaska), Bogoslof Island (southeastern Bering Sea), and Seguam Pass (Aleutian Islands).

Section 7 of the ESA provides that when any Federal agency takes an action, authorizes an action, or funds an action which might affect a listed species, the agency is required to consult with either the Fish and Wildlife Service or the National Marine Fisheries Service to ensure that the action will not likely jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat of that species. If NMFS determines that jeopardy to the species will occur should the Federal action proceed (commonly called a "jeopardy opinion"), NMFS is required to issue a Biological Opinion stating whether there are other "reasonable and prudent alternatives" (RPAs) that may be used that would allow the activity to proceed.

A Steller sea lion recovery team was appointed in April 1990 and a recovery plan was published in January 1993. The recovery plan included recommendations for an intensive research program. This recovery plan was scheduled for review and possible revision in 1997.

In 1994, a workshop on genetics concluded that the Steller sea lion population in Alaska was actually two separate genetically-differentiated stocks and the western population was uplisted to endangered status in 1997.

In January 1996, NMFS issued two Biological Opinions (one each for the Bering Sea/Aleutian Island groundfish fishery and for the Gulf of Alaska groundfish fishery) which concluded that neither fishery were "likely to jeopardize the continued existence of Steller sea lions". In January 1997, NMFS again determined that the groundfish fisheries were not likely to jeopardize the continued existence of Steller sea lions and a new formal Section 7 consultation was not necessary. In February 1998, NMFS determined that the 1996 Biological Opinion for the Bering Sea/Aleutian Islands groundfish fishery would remain valid for the 1998 season. In March 1998, NMFS also determined that the 1996 Biological Opinion would remain valid for the Gulf of Alaska groundfish fishery.

Despite several formal and informal Section 7 consultations which found the pollock fishery did not jeopardize the recovery of Steller sea lions, NMFS published a Biological Opinion in December 1998 which concluded that changes in the management of the Bering Sea/Aleutian Islands pollock fishery, the Gulf of Alaska pollock fishery, and the Atka mackerel fishery were necessary because these fisheries jeopardized the continued existence of the western population of the Steller sea lion. This jeopardy opinion was a result of Section 7 consultation under the Endangered Species Act.

The Pollock and Atka Mackerel Fisheries:

Pollock (*Theragra chalcogramma*) is the most abundant groundfish species in the Bering Sea and is managed as a part of the Bering Sea/Aleutian Islands (BSAI) Groundfish Fishery Management Plan (FMP). The Gulf of Alaska pollock fishery is considered to be a separate stock from the BSAI stock and is managed under the Gulf of Alaska Groundfish FMP. Both management plans consist of limited entry and permits, catch quotas, seasons, in-season adjustments, gear restrictions, closed areas, bycatch limits, recordkeeping

and reporting requirements and observer coverage. Pollock feed on krill-like organisms and fish (primarily juvenile pollock). The primary impact on pollock recruitment is prey on juvenile pollock by adult pollock (37 percent of the juvenile mortality is due directly to predation by adult pollock). In relation to this impact, Steller sea lions only account for approximately 0.6 percent of the pollock mortality, and the commercial fishery accounts for approximately 12.5 percent.

According to the North Pacific Fishery Management Council, the biomass in the BSAI has remained relatively stable since 1994, with slight decreases in 1997 and 1998. The exploitable biomass is expected to increase after 1999 due to a strong 1996 year class. The biomass in the Gulf of Alaska decreased in 1995; however, the levels have risen since 1995 and the spawner biomass is expected to peak in 1999 or 2000.

The pollock fishery is primarily targeted by trawlers and is the largest fishery in the United States in terms of volume and fifth largest in the United States based on value. The value of the fishery based on the 1997 harvest is $242 million (ex-vessel value) and the value of the processed product is estimated to reach $673 million. These figures do not include capital investment values of the fishery or payroll. If these values are added, the fishery has a value of more than a billion dollars.

The Atka mackerel fishery is also regulated under the BSAI Groundfish FMP and mackerel are primarily harvested by catcher processor trawlers. In 1996 this fishery was valued at approximately $29 million (ex-vessel value). The biomass in the BSAI peaked in 1991 and the stock has shown a downward trend since then.

The Gulf of Alaska Groundfish FMP allows Atka mackerel to be harvested only as a bycatch of other fisheries. The stocks are not sufficient to support a commercial fishery and there are indications that the Gulf may be at the edge of the species' range and are only available when the Aleutian portion of the stock is strong. Because much of the Atka mackerel fishery takes place in areas designated as critical habitat for Steller sea lions, and due to concerns about localized depletions, the North Pacific Fishery Management Council took proactive steps in 1998 to begin moving a major portion of the fishery out of critical habitat areas.

Bering Sea Regime Shift:

It has been widely noted that the Bering Sea experienced a regime shift, most recently in the 1970's. While little is known about the causes of this shift, fisheries, marine mammals, and seabirds have all experienced population and distribution changes as a result of this shift. In a 1996 National Research Council (NRC) publication, The Bering Sea Ecosystem, the Council noted that "climate driven variability in the Bering Sea ecosystem is significant, occurs at many different time scales, and appears to affect many ecosystem components. It appears that climate has caused relatively rapid shifts in the organization of this marine ecosystem – most recently in the late 1970's – and that changes over periods of decades may have larger effects than those over yearly periods".

The NRC report also notes that the Bering Sea fishery became dominated by pollock in the late 1960's. The decline in Steller sea lions was noticed in the 1970's and there has been some speculation that there is a correlation between the increase in pollock (or decrease in other fish populations) and the decline in Steller sea lion populations. Because of this shift in both fisheries and marine mammal populations, there is much speculation about the direct and indirect effects of changing fisheries on marine mammal populations. The NRC report concludes that "the most likely explanation of events in the Bering Sea ecosystem is that a

combination of decadal or regime shift in the physical environment acted in concert with human exploitation of predators (whales, other fish) to cause pollock to dominate the ecosystem and other predatory fish populations to greatly increase in abundance. As a result, some forage fishes that have higher nutritional value than pollock became less available to some marine mammals and birds, leading to their decline. The increase of adult pollock and other predatory fishes in the past 20 years might also be responsible for keeping the forage fishes relatively scarce."

In addition, some research has been done both by independent researchers and by scientists within NMFS and the U.S. Fish and Wildlife Service which questions whether the carrying capacity for the entire Bering Sea may have changed because of this regime shift.

Steller Sea Lion Research:

Research has been conducted primarily by three organizations -- the National Marine Fisheries Service's National Marine Mammal Lab (NMML) in Seattle, the State of Alaska's Department of Fish and Game, and the North Pacific Universities Marine Mammal Research Consortium (a consortium of research facilities including the University of Alaska, the University of British Columbia, the University of Washington, and Oregon State University).

NMFS and the State of Alaska have divided research projects between the two entities, and the coordination and cooperation between the two entities has been good. However, funding is provided through Congressional appropriations and is controlled by NMFS. Since NMFS proposes the budget requests to Congress, research funding for State-sponsored research is dependent on NMFS requests. Budget requests by NMFS have remained level at $1.44 million since Fiscal Year 1994.

The North Pacific Universities Marine Mammal Research Consortium was formed in late 1992 and receives funding from the fishing industry. The goal of the Consortium is to "undertake a long term program of research on the relation between fisheries and marine mammals in the North Pacific Ocean and the eastern Bering Sea". In Fiscal Year 1997, Congress included funding for the Consortium in addition to funds provided by the fishing industry. This Congressional appropriation was in addition to funding for NMFS research and did not reduce the amount available for NMFS-initiated research. Coordination between the Consortium and NMFS has been poor.

In 1992, the Steller Sea Lion Recovery Plan Team drafted a Steller Sea Lion Recovery Plan. The recovery plan includes a four-page outline of recommendations for research proposals. The recovery plan was scheduled for review after five years. A list of research proposals in order of priority is also included. A majority of these priorities deal with identification of habitat, management of direct disturbances by man, and tagging projects. A research program for aerial surveys and stock assessment methods was also contemplated.

In 1995, NMFS contracted with Ian Boyd of the British Antarctic Survey, Natural Environmental Research Council, to review its Steller sea lion research program. The report made a number of recommendations to improve the research program and to improve coordination between the three research entities. The report also noted that much of the NMFS research effort was being concentrated on examining the link between the Steller sea lion declines and food availability. The report notes that "(a)lthough much work needs to be done, no additional evidence of low food availability inducing low juvenile survival has

been forthcoming in recent years". The report also raises the theory that Steller sea lions and commercial fisheries may not directly compete since the fisheries target fish that are not important to juvenile sea lions.

More recent, independent research indicates that pollock is a poor nutritional component of Steller sea lion diet, and fish such as herring and mackerel are more important to the health of juvenile sea lions. Since pollock are carnivorous and cannibalistic, adult pollock prey on juveniles of their own species in addition to herring and mackerel -- all of which are important to juvenile sea lion survival. Because of this theory, fishermen have argued that adult pollock should be removed from areas important to juvenile Steller sea lions so that other species of fish are available in larger quantities.

To further confuse the issue, the Biological Opinion states that "Merrick *et al.* (1995) compared pup sizes at different sites where Steller sea lion populations were either decreasing or increasing, to determine if pup size or growth may be compromised in decreasing populations. Their results were not consistent with that hypothesis; rather, they found that pups about two to four weeks of age were larger at sites in the Aleutian Islands and GOA than they were in southeast Alaska or Oregon." This raises the question of whether juvenile survival is actually the most important element in the recovery of the western population.

Despite these recommendations and conflicting conclusions regarding the importance of pollock to juvenile Steller sea lions, the agency has determined that Steller sea lions are not getting enough food, possibly because of localized depletion of pollock due to the commercial fishery. In order to allow sea lions to have more pollock available, restrictions on the commercial fisheries in the Bering Sea and the Gulf of Alaska have been required by the Biological Opinion.

Some have raised the concern that a reduction in the harvest of adult pollock may actually result in increased predation on juvenile pollock by adult pollock, further reducing food for juvenile Steller sea lions. NOAA scientists report that an increase in juvenile pollock may also increase predation on other important prey species such as herring and mackerel. Therefore, a possible solution would be to increase effort on both adult and juvenile pollock to allow other important prey species to increase in critical areas. No research has been designed to test this theory.

A number of gaps such as those noted above appear in the NMFS research program, and many of these are admitted in the 1998 Biological Opinion. The bulk of NMFS research appears to have been based on the single hypothesis that food limitation for juvenile Steller sea lions has been the major impediment to Steller sea lion recovery. Research by the Consortium, while unmatched by NMFS research, calls into question some of the conclusions reached by NMFS. Rather than conducting its own studies to test the Consortium's research, NMFS has merely rejected the findings.

In addition, no-trawl zones were first established in 1990 and no formal research program has been developed to determine the effectiveness of these zones. The Marine Mammal Commission's Annual Report to Congress for 1997 advises that "the most effective way to develop and evaluate appropriate fishery management measures may be through an experimental approach whereby different regulations or management measures are applied to different haulout sites and feeding areas".

In response to concerns about peer review of both NMFS and the Consortium's research projects, NMFS convened a panel of marine mammal scientists to review its own research projects and conclusions. The report is due in mid- to late May. Ian Boyd was again asked to participate in the peer review but due to scheduling conflicts, he was unable to participate with the group. He did, however, do an independent review

of the Biological Opinion and his comments are in Members' folders with the witnesses' testimony and will be made a part of the record for this hearing.

Process:

On approximately 39 occasions, NMFS either formally or informally determined that the pollock fishery did not pose a danger to Steller sea lion recovery. In the 1996 Biological Opinion for the Bering Sea/Aleutian Islands groundfish fishery, NMFS found that "available data were not sufficient to assess any possible relationships between the pollock fishery and sea lion abundance". The agency reached similar conclusions in both 1996 and 1998 in comprehensive biological opinions for the Gulf of Alaska groundfish fisheries.

This determination that "no jeopardy" existed was held until as late as October 13, 1998 when, in a report to Congress, NMFS stated, "After reviewing the best available science and commercial information available on the current status of Steller sea lions and groundfish in Alaska, the environmental baseline for the action area, and the effects of the 1998 GOA fishery, NMFS concluded that the TAC increase is not likely to jeopardize the continued existence of the western population of Steller sea lions and is not likely to destroy or adversely modify designated critical habitat for the species in Alaska in 1998." The report further states that "Given the current understanding of the sea lion/fishery prey interactions, additional research is warranted prior to establishing revised management actions."

Less than one month later, the agency reversed its no jeopardy determination. A summary of the Draft Biological Opinion, released on October 22, 1998, was 26 pages long (including charts and tables). The final Biological Opinion was then released on December 3, 1998, and was 224 pages. Both the draft and final Biological Opinions included changes in the management of the Bering Sea and Gulf of Alaska groundfish fisheries. The "reasonable and prudent alternatives" (RPAs) broke the fishery into new seasons (four rather than three), increased the size and number of no-trawl zones around rookeries and haulout areas, capped the percentage of the harvest which could be taken in any one season, and reduced the amount of harvest allowed in critical habitat areas.

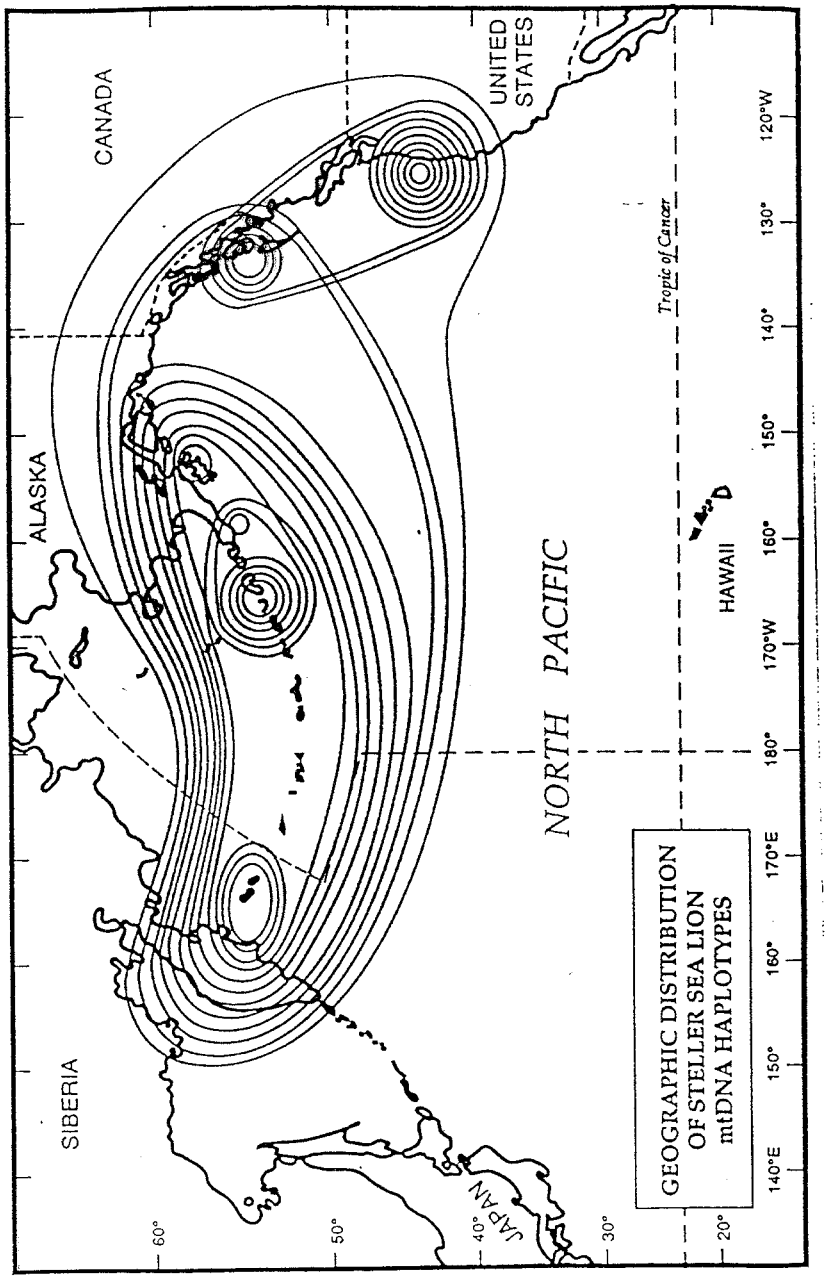
These RPAs were drafted before the Biological Opinion was available and before any decision on jeopardy was published. In addition, these RPAs proposed changes to the management of the pollock fishery without any consultation or input by the North Pacific Fishery Management Council, the Federal entity responsible for managing our fishery resources. The goals of the RPAs were to spatially and temporally distribute the fishery, and the Council was allowed to suggest alternatives to the proposed RPAs at the December Council meeting. However, because the goals were general in nature, it was difficult for industry to propose alternatives before the RPAs took effect in January. The Council did adopt and forward modifications to the proposed RPAs to the Secretary. These modifications were accepted on a provisional basis and affected only the "A" season. Additional modifications were required of the Council before the rest of the fishery can be opened for the rest of 1999 and the 2000 seasons. Final action is required by the June Council meeting for these modifications to be approved.

In addition, the agency has not requested participation by Native Alaskans or solicited other traditional knowledge in developing the Section 7 consultation as suggested by the Secretary of Commerce's own directive.

ISSUES

- Is the overall NMFS research program adequate to determine both the cause of the decline and to indicate measures to recover sea lions?
- Is funding for the current NMFS research program adequate? Has NMFS requested sufficient funding for its research program?
- The agency appears to have ignored other NOAA scientific studies which show coincidental changes in carrying capacity of marine mammals in the Bering Sea, possibly due to a regime shift in the whole north Pacific Ocean. Is there coordination between different divisions within NMFS?
- The agency does not appear to have taken into account any other Federal agencies' scientific studies which may show similar correlations to declines in other populations such as seabirds in the north Pacific Ocean. Does NMFS coordinate with the U.S. Fish and Wildlife Service on issues concerning the Bering Sea?
- The agency appears to have ignored any outside research (even if Federally funded) that may show other conclusions. What steps are being taken to coordinate research projects and priorities with private research groups?
- Alternative research has shown that pollock is a poor nutritional component of Steller sea lion diet, and fish such as herring and mackerel are more important to the health of Stellers. What nutritional studies are currently being performed or contemplated for the future by NMFS?
- Does NMFS research show that commercial fisheries are impeding the recovery of the western population of Steller sea lions?
- Should Fishery Management Councils have a role in determining changes to management plans for commercial fisheries in dealing with endangered species?
- Has the agency conducted a thorough, independent peer review of its own research and conclusions?

Attachment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GEOGRAPHIC DISTRIBUTION
OF STELLER SEA LION
mtDNA HAPLOTYPES

[The prepared statement of Mr. Boyd follows:]

Statement of I.L. Boyd

1. Preamble

1.1. This comment is based around the questions put to the independent Scientific Panel that was constituted by the North Pacific Fisheries Management Council to review the Biological Opinion issued by NMFS on 3 December 1998. The Opinion concerned authorization of Atka mackerel and walleye pollock fisheries in the Bering Sea-Aleutian Islands fishing grounds and the walleye pollock fishery in the Gulf of Alaska. Although invited to participate, other commitments did not permit me to sit on this panel.

1.2 The comment also forms a written response to an invitation to appear as a possible witness before the Congressional hearing of the House Resources Committee on 20 May 1999. Again, due to other commitments, I was unable to take up this invitation.

1.3. Declaration of interests. This comment is a personal point of view. It does not necessarily represent the views of my employer. There will also be no financial consequence for me whatever decisions are made about the fisheries management actions being proposed in the Opinion. I have received no payment for this comment and I have no affiliation, income or other association with any U.S. government agency, the fishing industry or any non-governmental organization that has an interest in this issue. My interests are purely academic.

Question 1. Do the best available scientific and commercial data in the opinion support a conclusion that the pollock fisheries compete with the western population of Steller sea lions?

2. **Sub-question 1.1** Were the best scientific and commercial data available considered in addressing the issue of potential competition between Steller sea lions and the pollock fisheries?

2.1 The opinion is a reasonably thorough review of the literature and available data. It is built upon the twin pillars of opinion that Steller sea lions are suffering food deprivation indicated by poor body condition and that the major demographic impact of this is observed amongst juveniles. However, the Opinion could have amplified key issues relating to the level of confidence that one can place in supporting data and, in particular, it could have done a better job of identifying critical gaps in basic knowledge. Some of these can be summarized as follows:

(i) Current estimates of Steller sea lion population trends are, to an important degree, uncertain. While there is without doubt a continuing overall decline in numbers in the western population, the rate of decline is inconsistent among regions and in some parts of the western population there would even appear to be a slight increase in numbers.

(ii) The data used to build many of the current ideas about the causes of the decline in Steller sea lions (high juvenile mortality, poor body condition) are now somewhat out-dated (collected in the 1970s-1980s). The demographic and physiological indices derived from these data have specific problems associated with them, especially in relation to how well they represented the population they were taken from, even at the time the samples were obtained.

(iii) The Opinion, in general, ignores evidence that does not provide positive support for the main hypotheses. For example, despite recent research efforts that were designed to target sensitive periods of the reproductive cycle, there is no evidence that adult females or their pups suffer reduced body condition. Although, for practical reasons, these studies were restricted to rather narrow time periods within the reproductive cycle, the studies were designed around the responses of related pinnipeds to known periods of food deprivation. The fact that no evidence of either acute or chronic food deprivation has been detected seems not to have resulted in an adjustment the opinion expressed by NMFS.

(iv) Insufficient attention may have been given to parallel studies of related pinnipeds. Steller sea lions are particularly difficult to study so it seems reasonable that NMFS should draw as much information as possible from studies of other pinnipeds that have general implications. For example, information about foraging ranges shows that pinnipeds generally forage over much greater distances and are apparently more able to move in directed ways to foraging grounds than had generally been expected in the past. Set in this context, it is therefore possible that the concepts of critical habitat and localized depletion as presented in the Opinion require to be updated.

(v) Although studies of diet have taken place and these are useful, knowledge of the diet of Steller sea lions is still not very substantial, especially from the GOA and BSAI. Diet sampling is known to be biased and it could be argued that the way in which diet has been assessed to date was likely to show that Steller sea lions depended on pollock because samples have mainly been obtained from locations adjacent to known areas of pollock concentration. The important question is, how representative is this of the diet of the population as a whole and especially of the diet at critical phases of the annual or life cycle?
(vi) The Opinion could have done more to highlight the potential interpretations of the diet information. The fact that sea lions and the fishery apparently take pollock of a similar size range does indeed provide evidence of overlap and of potential competition, but it also could be used to suggest that there is no competitive exclusion of sea lions and that sea lions are not having any trouble competing with the fishery. If the fishery really does deplete the major size classes it takes then we would expect sea lions to concentrate their predation upon the size classes that are not fished so heavily. Perhaps Fig. 40b provides some supporting evidence for this?

2.2. Several important statements within section 5 of the Opinion appear not to be well supported by data. These include:

P99, paragraph 2. *There is general scientific agreement that the decline of the western population of Steller sea lions results primarily from declines in the survival of juvenile Steller sea lions.* While it is true that the observed population decline could, in theory, be due to reduced juvenile survival, there is very little evidence for this. In fact, populations are more sensitive to adult female survival so there are also good theoretical reasons for suggesting that a smaller reduction in this parameter could have resulted in the decline, although evidence is also lacking for this. Again, the data used to derive this conclusion are somewhat out of date and of questionable quality.

P99, paragraph 2. *There is also general scientific agreement that the cause of the decline in the survival of juvenile Steller sea lions probably has a dietary or nutritional cause.* Again, the evidence for this is lacking and, as stated above, if one weighs up the evidence supporting such a statement with the evidence against, it would really be impossible to derive such a sweeping conclusion. However, it does remain as a primary hypothesis.

P99, paragraph 5. *There seems to be general agreement in the scientific community that the western population of Steller sea lions would fare better on a more diverse diet consisting of herring, capelin, or eulachon.* Beyond a few inconclusive pilot studies of captive sea lions, no evidence exists to support such a strong statement.

P101, paragraph 4. *The winter months are an important foraging periods for Steller sea lions because their greater metabolic demands during the harsh winter period increase their energy demands and make them more sensitive to reductions in prey availability.* Also see item (a) in paragraph 2 on page 102. The energy demands of Steller sea lion in winter have never been measured. I would not dispute the idea that the winter months are likely to be an important foraging period, but we really do not know anything about relative sensitivities to prey availability at different times of year in any pinniped. These types of animals exhibit behavioral and physiological mechanisms that can be used to balance energy budgets throughout periods of fluctuating prey abundance.

P108, paragraph 3. . . . *seem to rely on aggregations of walleye pollock.* While there are dietary studies that support the view that Steller sea lions feed mainly on pollock in some parts of their range, there is no evidence that they require aggregations of pollock.

P85, paragraph 4. . . . *but the effect* [of intentional take of Steller sea lions] *would not account for the total decline of the western population.* There is little evidence to support this statement. If one adds up all the records of intentional kill there is a shortfall and these numbers do not account for all the decline. However, there appears to have been a culture of extermination directed towards the Steller sea lion in Alaska and we have to accept that the records of intentional killing may fall well short of the true levels of killing that took place through the 1960s and 1970s. Some of the anecdotal descriptions of what went on are, frankly, shocking if they are to be believed.

P71, paragraph 2. I feel that the way in which the potential impact of the subsistence harvest has been portrayed diminishes its potential significance. There are few management options available to improve the lot of the Steller sea lion. Stopping the intentional killing is perhaps the most obvious, easily implemented and immediate action that could be taken. The value of 6 percent given in this paragraph is misleading. If one considers this as a proportion of the mor-

tality that is actually causing decline then the percentage taken in a subsistence harvest is closer to 15 percent.

P102, paragraph 4. *As a result, there is a high risk that the western population of Steller sea lions could become extinct within the foreseeable future if their decline is not abated and their rate of increase is not improved.* On the surface, this is a reasonable statement, but it ignores some of the basic principles of population regulation and, to a degree, it contradicts the food-limitation hypotheses that is clearly being pursued as a policy by NMFS. If food is the limiting factor, then we would expect that, through the processes of density-dependence, the population would self regulate to match its food supply. Although unpredictable population fluctuations can occur because of the intrinsic dynamics, in general, we would expect the population to stabilize at a reduced level, if it was being regulated by a density-dependent process. What this statement in the Opinion is implying is that NMFS does not believe that a density-dependent process is operating which suggests to me that they believe that it is not just food depletion that is responsible for the decline of Steller sea lions.

2.3. The final statement I have highlighted above in section 2.2 indicates a further philosophical flaw. On P100, NMFS provides the three assumptions that, in their view, require to be addressed by the Opinion. To my mind, a central assumption must also be that Steller sea lion populations will exhibit classical density-dependence. I have found no acknowledgment within the Opinion that this is a possibility. As a result, it would appear that little research has taken place to examine the population data for evidence of density-dependence. In my view, it is remarkable that the decline in the Steller sea lion has continued in a sustained manner for so long. This suggests several possible processes:

(i) The population is continuing to track a resource that is in long-term decline.

(ii) Because of time lags and difficulties with collecting high quality population data (and perhaps because nobody has looked), density-dependent recovery/stabilization of the population is already under way but cannot be detected at present.

(iii) The population is being regulated by a factor that is insensitive to density.

2.4. Item (i) could result from long-term changes in the environment that are being tracked by sea lions or from a sustained increase in fishing pressure on the food resources that support Steller sea lions. I see no evidence for a long-term, sustained increase in fishing pressure, except perhaps in terms of the apparent increased localization of the fishery around possible critical habitat, especially in the BSAI region. Conversely, there is evidence of a proximate change in the environment, although how this impacts Steller sea lions is uncertain. Item (ii) requires to be eliminated by improving the population data and revisiting its analysis. Item (iii) is the most problematical possible underlying cause of the decline because there are few factors that are completely insensitive to density. Two such factors are pollution and predation by a numerous and powerful predator that regards Steller sea lions as a secondary or tertiary prey item and whose own population dynamics is unaffected by whether or not Steller sea lions can be hunted. The only two groups of predators that potentially fit this description are man and killer whales.

3.**Sub-question 1.2** Do the available scientific and commercial data provide a reasonable scientific basis to conclude that the pollock fisheries, if left unchanged, could reasonably be expected to jeopardize the continued existence of the western population of Steller sea lions?

3.1 Based on the arguments I have made above concerning density-dependence and the fact that the functional relationship between pollock and Steller sea lions is unknown, I think the answer to this question would have to be a qualified no.

3.2. I do not believe that food depletion caused by a viable, commercial and unsubsidized fishery, on its own, is likely to result in the extinction of the Steller sea lion. In the worst case, it could deplete the population to such an extent that it would then become vulnerable to additional stresses, including natural disasters and bycatch, that could cause extinction. In my view, so long as the fishery was not subsidized, the fishery would go extinct long before the sea lion.

3.3. It seems most probable that Steller sea lions, like most pinnipeds, forage on the most abundant prey within their range. If the current stock assessments for pollock are to be believed, then there would appear to be sufficient pollock for sea lions. It is possible that sea lions rely on locating prey patches and if a fishery reduces the frequency of patches in the environment or the quality for sea lions (note may be different from their size), then they may have trouble balancing their energy budgets at critical times. However, there are several lines of evidence that do not support this argument, even though it is an area that merits much more theoretical and practical research. These are:

(i) If sea lions relied on locating prey patches, we might expect a strong interaction between fishing vessels and sea lions (as happens between Hooker's sea lions and pelagic trawl squid fisheries in New Zealand). The logic for this is that fishing vessels will predate patches which should also attract sea lions and also, in the eyes of a sea lion, some of the densest aggregations of pollock to be found will be at the back of fishing vessels. As far as I am aware there is no strong interaction between fishing vessels and sea lions. An explanation for this may be that, due to many decades of depredation by man of sea lions around fishing vessels, there has been very strong selection for vessel avoidance by sea lions, assuming that such a feature could be an inherited trait.

(ii) Probably the most critical nutritional phase in the life-history of Steller sea lions is early lactation when mothers (the reproductively active segment of the population, which is critical to the dynamics of the population) are restricted to foraging within a specific radius of the breeding rookeries. At all other times they are free, at least in theory, to move to where the food is. Thus, even if patch distribution is altered to the detriment of sea lions, they have flexibility in where and how they forage. Experimental studies both in pinnipeds and other predators show that these predators have quite remarkable flexibility and are rarely bound to a stereotypic pattern of behavior. During early lactation, when this flexibility is greatly reduced resulting in potentially greater sensitivity to the distribution of food, the current data do not suggest that mothers are encountering nutritional stress.

3.4. The Opinion did not appear to contain any statement about the probable social and financial costs of the proposed RPAs. In my view, it is very difficult to assess the validity of RPAs without these. For example, if the net cost to the industry of introducing the RPAs was negligible then, even without supporting biological data, they could be considered to be reasonable and prudent. Conversely, if they resulted in severe financial or social distress then one may not come to the same conclusion.

4. **Sub-question 1.3** Do the available scientific and commercial data provide a reasonable scientific basis for the conclusion that the pollock fisheries, if left unchanged, could reasonably be expected to adversely modify the critical habitat of Steller sea lion?

4.1. Much of my response to sub-question 1.2 is also relevant to the assessment of effects on critical habitat. The jury is still out on exactly what "critical habitat" Steller sea lions require. Our's is still a very land-based view of these animals.

5. **Question 2.** If you conclude that the available data and analysis support the conclusion that the pollock fisheries could reasonably be expected to either jeopardize the continued existence of the Steller sea lion or adversely modify its critical habitat, then are the principles for establishing the RPAs adequately supported by the available scientific and commercial data?

The Opinion provides the logic for the proposed RPAs. However, since little is known about how either the spatial or temporal distribution of pollock affects Steller sea lions then there seems to be little scientific evidence to underpin the RPAs. Nevertheless, if one wishes to adopt a cautious approach in a situation where there is almost no information then the RPAs, as proposed here, would appear to be reasonable. In particular, preventing extreme spatial and temporal concentration of fishing effort would appear to be a prudent action, even if there is little foundation for this in the scientific data.

In my view, the central questions are, what level of risk is there associated with continuing with the present fisheries policy and how would this be changed by the recommended RPAs? As I have indicated, I believe the level of risk associated with the current policy is likely to be low because there is no strong evidence linking the decline in Steller sea lion abundance with the pollock fishery. Unfortunately, it is impossible to formally quantify the risk involved.

5.3. Nevertheless, the decline in the population of Steller sea lions has, almost without doubt, multiple causes, with many different factors contributing to the decline. The strength of the contributing factors will also vary in space and time and it may not be sensible to imagine that a single dominant factor will emerge from well designed research. Moreover, even if such a factor did emerge, it may be beyond our capabilities to do much about it. Manipulating the fishery is one of the few tools we have available to us and the current RPAs are an honest attempt by NMFS to satisfy the demands of its many constituents.

5.4. As stated in 3.4, the validity of the proposed RPAs really depends on the financial and social cost-benefit analysis. If this has been done, then it does not appear to have been made available in the current documentation. Therefore, it really is impossible to judge the meaning of "reasonable" in the context of these RPAs.

6. **Sub-question** The views of the panel are solicited as to other approaches that could be considered by the Council for the longer term, and that would still be supported by the available scientific and commercial data?

6.1. The problem with the RPAs as they stand is that they are a shot in the dark. There is no way of properly assessing either if they are a reasonable approach or their subsequent effectiveness. They are only supported by simple conceptual models with no predictive capability. If they are implemented then it should be understood that they are being carried out because there is a perception that something has to be done to alleviate the decline of the Steller sea lion, not because they have a reasonable chance of succeeding in their objective. The currently proposed RPAs may help our consciences but they are much less likely to help Steller sea lions.

6.2. In reality, whatever the root cause of the decline in the Steller sea lion population is, there are relatively few factors that managers have the power to control. Since it appears that by-catch and illegal hunting may be under control, reducing either fishing pressure on their food source and legal hunting are about all that remains to be manipulated.

6.3. I have already gone on record as saying that the most immediate and reasonable prudent action that could be taken would be to stop all hunting of Steller sea lions. Unlike the RPAs proposed in the current Opinion, we know this will have an immediate impact on the number of Steller sea lions. If society values Steller sea lions enough, then it may be reasonable to compensate local peoples for the loss or suspension of their traditional right to hunt Steller sea lions.

6.4. In the meantime, much more could be done to examine ways of modelling the interactions between Steller sea lions and fisheries with a view to developing properly constructed management strategies that, if applied in the long-term, might be both effective and be seen to be effective. This would also provide a consistent framework within which the fishery could plan its investment and operational strategy.

6.5. The Steller Sea Lion Recovery Plan has manifestly failed to achieve its objectives, despite much investment in research. At the same time, one of the best regulated and most thoroughly investigated fisheries in the world has been managed with little formal recognition of the need to include competing top-food-chain predators as explicit parts of the pollock stock assessment models. We have the intellectual foundations to achieve such an integration but institutional barriers prevent meaningful progress. If the United States wishes science to begin to provide practical, strategic solutions to the problem of Steller sea lion interactions with pollock then it has to break these barriers down.

6.6. In the end, the problem of what should be done to help Steller sea lions out of the hole they are in is not one that science can solve. It is a matter for the democratic process to decide if people place a higher value on having Steller sea lions than cheap fish or if they are willing to take the risk involved in trying to have both.

Statement of Rick E. Marks, Sea Lion Caucus

1. The agency seems to have made a very sudden decision that the pollock fishery constitutes jeopardy to Steller sea lion recovery. In fact, the restrictions to the fishery were imposed by emergency rule. Hasn't the agency continuously determined that the fishery did not pose a risk to Steller recovery? What occurred that not only changed the agency's decision on jeopardy, but also did so rapidly enough that the agency had to act under an emergency rule?

To date, the agency HAS NEVER explained which specific changes in the fishery precipitated emergency actions to protect the continued existence/recovery of sea lions. There were no apparent, significant deviations looming for the 1999 fishery compared to other years (i.e. 1991, 1996, 1998) when "no jeopardy" findings were recorded by the agency. In our opinion, the ONLY immediate difference was the lawsuit filed by the conservation community. There is simply no rational alternative explanation available.

Regarding the timing issue, the agency actually had enough advance notice to avoid the "emergency" situation. In fact, the agency was formally served on April 15, 1998 and on notice prior to that when the environmental community filed an intent to sue. Clearly, the agency was well aware for a MINIMUM of six months that problems existed with the management of SSL. Yet as late as October 1998, the Council was not actively considering new SSL mitigation measures.

2. Your testimony talks about stakeholder involvement in NMFS'decision-making process. Has there been any stakeholder process in this case?

NMFS SSL stakeholder process is NON-EXISTENT. During the December Council meeting, NMFS staff was very clear, stating that the agency was both the "acting" and "offending" agency and not required to consider any outside mitigation alternatives. Agency staff also indicated the SSL Recovery Team was NOT consulted on the RPA's. The Council became involved only very late in the process and under such an imposing time constraint that it was severely restricted in what alternatives it could consider.

The normal conduits for public involvement are through the Council public comment process and the SSL Recovery Team. Since both of those options were not readily available, public access was handicapped from the start.

Furthermore, according to Secretarial Order #3206, the agency is required to work closely with Native entities to ensure their natural resource interests are given due consideration. Since there was no stakeholder process, the Native entities were not afforded consideration pursuant to this SO.

One way to address the lack of process and public input is to mandate development of a "Take Reduction Team-style" approach for SSL in Alaska. TRT's were a component of the 1994 MMPA amendments designed to address commercial fishing-mammal interactions. This concept, already in practice, could be adopted for the SSL situation. It would increase stakeholder input, improve communication, and ensure that all information is given thorough consideration.

3. Under the normal ESA process, a Biological Opinion will contain an economic analysis. Does this Biological Opinion contain such an analysis?

The December 3, 1998 Biological Opinion does not contain an economic analysis component. Section 5.0 titled "Effects Of The Actions" appears to be the appropriate section for the community impact analysis. However, this section is devoted solely to the impacts of the actions on sea lions, rather than a more comprehensive approach including both impacts on SSL AND the human environment.

4. Your testimony discusses the Scientific and Statistical Committee (SSC) of the North Pacific Council. What is this body, and is it made up primarily of people with scientific backgrounds? How did the SSC feel about the NMFS research program and the speed of the decision that management of the pollock fishery needed to be changed?

SSC's provide scientific advice to the regional management councils. Section 302(g) of the MSFCMA specifies that each council shall establish an SSC to assist in the development, collection, and evaluation of statistical, biological, economic, social, and other relevant information for consideration in the FMP development and amendment processes.

The North Pacific Council's SSC is composed of thirteen members representing the following: NMFS' Alaska and Juneau Fisheries Science Centers; USU, Dept. of Economics; UAF, School of Fisheries/Ocean Sciences; ADF&G; USFWS; Univ. of California at Davis, Dept. of Agricultural Economics; UA Juneau, Center for Ocean Studies; Oregon Dept. of Fish & Wildlife; and the International Halibut Commission. Despite the impressive membership, this body was not consulted to any significant extent.

The North Pacific Council's SSC clearly articulated its concerns regarding the pace of the process and lack of sound scientific information upon which to build sensible mitigation measures. Despite the fact that the fishery is managed by the Council with scientific input from the SSC, no scientific information was provided by the agency.

The SSC minutes from the December 1998 meeting accurately reflect the problem—"Although the SSC was requested to comment on appropriate actions that might be taken at this meeting to meet the RPA's for the 1999 fishery, the SSC declines to do so. We were not presented with information to complete such a task."

At the same meeting, the SSC expressed its concerns regarding the quality of the data by stating "The SSC again shares the general discomfort over the large amount of uncertainty in the data and large data gaps. Uncertainty allows many approaches and interpretations, none of which can be overwhelmingly supported by rigorous science at this time. . . ."

5. In your opinion, was the agency helpful in developing alternatives to the "Reasonable and Prudent Alternatives"?

During the December 1998 Council meeting, agency representatives were willing to discuss mitigation measures with constituent groups. Unfortunately, the agency representatives present at the meeting were not the decision-makers. Hence, it was very difficult to get a read on exactly where the agency was at with respect to mitigation proposals.

Furthermore, members of the SSC, full Council and public were totally unaware of their role and the degree of flexibility available to them. The agency vacillated with respect to the Council's role and direct, clear communication was not evident.

A case in point—the perceived lack of flexibility is evident in that the Council's RPA recommendation included a four-season fishing strategy for the GOA. This approach was previously implemented and RESCINDED by the Council due to management complications and ineffectiveness. If the council was afforded any amount of flexibility or the agency was fully and openly cooperative, the final RPA's would not have included a provision previously deemed unworkable by the Council.

We conclude from this result the agency (a) did not fully inform the Council of the scope of available flexibility, and (b) had pre-determined to a large extent, the final RPA's.

6. Were the goals of the RPA's clear enough that the Council and industry could develop alternatives which would accomplish the same goals as the draft RPA's?

YES & NO. Yes, the draft RPA's were specific in that agency's central objective was to disperse and delay the spatial and temporal aspects of the fishery. Although this approach was developed in the absence of any direct correlation between fishing and SSL, the agency was clear in its intent.

The problems occurred because there was insufficient time, no supporting data, and no process by which the agency, Council, and public could examine impacts of past and future measures as well as current and historical SSL distribution and pollock fishing patterns to aid in the development of sensible mitigation measures to address the main objective.

In fact, preliminary 1999 catch and survey data already indicate the RPA's may have concentrated the fishery in space and time, exactly OPPOSITE from agency intentions. The groundfish fleet that was spread around Kodiak Island during the 1991-1998 seasons, fished in fewer areas in a more concentrated fashion during the first 1999 season. If this characteristic continues for the duration of the year, the RPA's will have had the opposite effect and we will be no closer to understanding the impacts of these measures on SSL. It begs the question, "Does the agency have any clue how it is impacting SSL and the fishery-dependent communities?"

7. Do you think it is appropriate that the Council was involved in making the decisions to alter management of the pollock fishery to mitigate for Steller sea lion protection?

YES. The SSL RPA's were directed at the groundfish fishery and implemented as emergency amendments to the standing FMP. Since the Council manages the groundfish fishery, it should be involved in the development/implementation of RPA's. In addition, the Council has the necessary expertise to make such decisions if given adequate data and opportunity. Unfortunately, we do not believe the process afforded full and efficient Council input.

8. Do you think that there is a problem when the "action agency" and the "consulting agency" involved in a Section 7 consultation are the same agency? Do you think there should be some kind of peer review required in such situations?

YES, This is a very serious problem which must be addressed. The SSL situation is a perfect example of how the system is broken. By not requiring some form of review, the system will continue to expose the agency to litigation.

The agency currently has a policy (joint, with the USFWS) on peer review of ESA activities. In the case of SSL, NMFS merely chose not to follow the policy. Agency staff indicated the policy applies only to listing actions and no other activities under the Act. Clearly, the agency has misinterpreted their own policy, particularly in instances like SSL where the quality of the science is in question (see 59 FR 34270, July 1, 1994, Section (B)(1) titled "Special Circumstances").

In the case of SSL, this scenario allowed the agency to dismiss alternative hypotheses absent research and prevented scientific input from oceanographers, independent scientists, and both fishery and avian biologists. To our knowledge only NMFS marine mammal biologists and protected species policy makers were utilized in the development of the RPA's. This cloistered process prevents consideration of the best available scientific information which is in direct conflict with the statute.

In our opinion, legislation which permits autonomy by a single department within a single Federal agency is seriously flawed. It exposes the agency to litigation and its constituency to management by whipsaw. The simple fact that the agency imposed a second round of intrusive management measures and is considering a third without ever having assessed the effectiveness of the first set of measures is a clear indication we have a serious problem.

At a minimum, an agency in the position of "consulting with itself" should be required to consult with a second Federal agency to allow for appropriate checks and balances. At best, there should be a peer review required in all such situations and especially where the science is seriously in question.

9. Do you believe that all haul out areas should be surrounded by buffer zones? If not, why not?

NO. The agency, in setting selection criteria for haul out protection, has overextended its application of the "Precautionary Principle." First, rather than protect every single site that ever exhibited a specified level of use post-1979, the agency should have adopted a more common-sense approach based on current ecosystem conditions and SSL site-dependence, fishing activity, and SSL population trends, balanced with human safety and community economic concerns.

For example, the Ugak site off the eastern edge of Kodiak Island has never functioned as a major SSL haul out during the past 40 years. In fact, since 1989, only 16 individual animals were observed at this site (15 in 1992, and 1 in 1994). Even though this site is not currently being used by SSL, it was one of first three sites closed by the agency's RPA's for the 1999 fishing season. Similar situations exist for sites located at Cape Barnabas, Rugged Island, and Cape Ikolik haulouts slated for closure in the year 2000.

There are several haul outs where SSL numbers have fluctuated without trend (i.e. Cape Ugat, Gull Point, Sea Lion Rocks) or increased (i.e. Mitrofania) in the presence of trawling. It is unclear how a Federal agency required to use the best available science could justify closing these key fishing areas.

Second, closing all remaining key near shore fishing areas virtually eliminates all research opportunities to assess SSL-fishing interactions. A research plan utilizing these haul outs should be developed to assess the efficacy of past and pending mitigation measures.

10. Do you believe that the aerial surveys of selected rookeries adequately reflect Steller sea lion populations?

NOT EXACTLY. The methodology for estimating population size for the eastern and western stocks of SSL is inconsistent. The eastern stock is estimated by direct counts on the rookeries. The western stock estimates are derived from counts on a subset of rookery "trend" sites.

This discrepancy resulted in the November 20, 1998 consistency recommendation by the Alaska Scientific Review Group to the NMFS. The AKSRG recommended that the methodology used to calculate the western stock be the sum of direct counts of adults, juveniles, and pups at all sites. The AKRSG also stated that the resulting population estimate should not be reduced for Nmin (i.e. "Minimum population estimate" calculated first by estimating the minimum stock size and then reducing the population estimate further to assure that true population size is equal to or less than, the estimate). These adjustments would ensure consistency between the two regions. There is no formal indication the agency intends to adjust the assessment process to reflect these recommendations.

Members of the coastal communities have also expressed concerns that many animals may be unaccounted for during the assessment process. Members of the Native communities believe that NMFS, working cooperatively to incorporate local knowledge, will produce more accurate assessment results.

Mr. Chairman, on behalf of the SSL Caucus, thank you for the opportunity to participate in this process and respond to your follow-up questions.

Statement of Simeon Swetzof, Mayor, and John R. Merculief, City Manager, City of Saint Paul, Pribilof Islands, Alaska

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to provide testimony on this issue of critical importance for the community of 700 Pribilof Aleuts where we live. The rich marine ecosystem around the Pribilofs supports the largest concentrations of marine mammals, seabirds, and fish stocks in the Northern Hemisphere. As a people whose traditions and survival are bound to the marine wildlife sustained by the Bering Sea, the Pribilof Aleuts are concerned about the long-term future of the Steller sea lion and the continued health of the Bering Sea fisheries and ecosystem. For generations, Steller sea lions have been an important source of food for Aleuts and other native peoples, and the traditions involved in the subsistence hunt of sea lions and other species are an important part of our culture.

In recent years the community of St. Paul has developed a port and other infrastructure necessary to attract in-shore processors and allow the development of a local fishery. Located within 65 miles of more than 50 percent of the nation's commercial fisheries, St. Paul's harbor is today one of the busiest in Alaska and has become the second highest generator of fish tax revenue for the State. Our small boat commercial fishing fleet is one of the most successful in the State, in terms of its ability to harvest the species it is allowed to target. Improvements to the Harbor financed by the Federal, state, and local governments, are underway which will further enhance St. Paul's importance to the fishery.

As a result, the community of St. Paul, the State of Alaska, and the Federal Government have an important economic stake in the continued health of the Bering Sea's commercial fisheries, the survival of threatened and endangered species such as the Steller sea lion, and the management measures implemented by the National Marine Fisheries Service (NMFS) and the North Pacific Fisheries Management Council (the Council) to regulate the fisheries and the ecosystem.

The City of St. Paul has participated actively in recent Council hearings on the management changes in the Bering Sea pollock fishery recommended by NMFS to protect Steller sea lions and other issues. At these hearings the Mayor of St. Paul has provided testimony and community statements on behalf of the Pribilof Aleuts and subsistence hunters urging NMFS, and the Council, to act conservatively in implementing protection measures that could adversely impact Alaska's fishermen, its fishing industry, and fishery-dependent communities like St. Paul.

This is particularly true when the causes impeding the recovery of the Steller sea lion are not fully understood and the scientific evidence is inconclusive. While these causes are not completely understood, and may never be, given the array of possible contributing factors, the community of St. Paul supports: (1) increased funding for research into ecosystem management, and (2) greater local participation in resource management, including scientific research at the local level in locations such as the Pribilofs that allow for the use of native/traditional knowledge. We believe that a critical component missing in NMFS' analysis and biological opinion are the economic, cultural, and biological impacts of their actions on local communities such as St. Paul, and the wealth of native knowledge and local input that has been bypassed by NMFS scientists and regulators. Focusing resources and attention on the above two proposals will permit the development of adequate responses that will possibly help to reverse the Steller sea lion's decline and contribute to the general health of the Bering Sea ecosystem. We urge you to consider them.

1. Increased Funding for Research:

The unique hydrophysical and biological processes surrounding the Pribilof Islands create a marine ecosystem which supports the largest populations of seabirds, marine mammals, and fish stocks in the Northern Hemisphere. For this reason, St. Paul Island is an ideal location for research and studies on a local level to understand these processes and develop effective resource management policies.

In the past, the City of St. Paul and the U.S. Department of State have co-sponsored studies such as *The Bering Sea Ecosystem,* a book prepared by the National Research Council in 1996 and the Pribilof Marine Ecosystem Research Progam by Dr. Mikhail Flint of the Russian Academy of Sciences. Both studies support the conclusion that a fisheries management regime that considers the ecosystem as a whole, and is not framed in a single species context, ensures sustainable commercial fisheries and healthy marine mammal and seabird populations. The focus of an ecosystem approach to fisheries management, therefore, is to prevent the creation of imbalances in fish stocks that in turn may impact and create imbalances in predatory species such as Steller sea lions and affect the long-term viability of the commercial fisheries.

Congress must remember that during the 1980's the City of St. Paul was a leading voice in the Bering Sea calling for ecosystem research and management. The City, in conjunction with the State Department and some members of the environmental community, faced the opposition of the fishing industry, the Council, and even NMFS, to push through the National Research Council study. Now that work is cited by everyone as the starting point for fisheries research and policy-making in the Bering Sea. The City of St. Paul has been a leader in the effort to understand and manage these issues, and will continue to be involved.

The City of St. Paul, moreover, supports further research into the natural processes and dynamics of the Bering Sea and Gulf of Alaska ecosystems, in order to shed light on phenomena such as the "regime shifts" and predator-prey interaction. For example, there have been higher than usual reported incidences of killer whale attacks on sea lions and sea otters and many have attributed the declining Steller sea lion populations to these attacks. Very little is understood about these interactions and their impact on the health of the Steller sea lion population as a whole. Others have indicated that subsistence hunting has impeded the recovery of Steller sea lions. However, this disregards the fact that killer whales and Native Alaskans have consumed Steller sea lions for thousands of years and in doing so contributed to maintaining healthy sea lion populations and keeping the ecosystem in balance.

The small community of St. Paul has for years spent considerable City funds to support studies in the aforementioned areas and believes that they point the direction as to how commercial fisheries can be sustainably managed to the benefit of fishermen, coastal communities, industry, and the ecosystem. These studies also in-

dicate that we know very little about the natural processes that govern the ecosystem. For this reason we support and welcome increased funding by the State and Federal administrations for research on ecosystem-based management and the natural processes that govern the ecosystem, including the area around the Pribilof Islands. Only by understanding how the ecosystem functions can we hope to develop the policies that are necessary to manage the commercial fisheries sustainably and protect the health of endangered species such as the Steller sea lion.

2. Local Participation and Use of Native/Traditional Knowledge:

Stewardship of marine wildlife, including Steller sea lions, and marine fisheries must be improved by increasing participation of Bering Sea and Gulf of Alaska coastal communities in policy and decision-making affecting these resources. When coastal communities and their residents are given a stake in the health of the resources in state and Federal waters, long-term sustainability becomes an achievable goal.

In the Pribilof Islands, the Ecosystem Conservation Office has formed a Pribilof Islands Marine Mammal Commission to promote proper subsistence hunting techniques, and encourage the conservation of sea lions and other marine mammals through traditional knowledge and scientific research. In addition, the Ecosystem Conservation Office has developed co-management agreements with NMFS to share responsibilities in the management of Steller sea lions and Northern fur seals. The people of St. Paul believe that co-management agreements may present an effective way of protecting Steller sea lions on the local level because they engage the local population in the management and protection of species that are culturally and economically valuable to the community, and allow for the exchange of information between members of the community and NMFS scientists.

With an important cultural and economic stake in the protection and conservation of endangered or threatened Bering Sea species, the Pribilof Aleuts support efforts to incorporate Native concerns and knowledge into the decision-making process. The people of my community have an extensive, generations-long, body of knowledge regarding Steller sea lion behaviors, eating habits, foraging areas, migration patterns, and rookeries that has been often overlooked by NMFS and outside scientists.

For this reason we support partnering between Federal, state and local agencies, environmental organizations, community and Native organizations and scientists to collaboratively develop plans to protect Steller sea lion populations on a local level, and particularly in critical habitat areas such as the Pribilof Islands. This plan must be tailored to the area designated for protection as the factors affecting sea lions may be different in diverse geographical areas. Moreover, protection plans should incorporate and seek ways of channeling, to the extent possible, the wealth of local and traditional knowledge which exists in most Alaskan communities but which is often disregarded or underutilized by outside scientists.

3. Management of the Bering Sea Commercial Fisheries:

NMFS' biological opinion bases its recommended actions in the pollock fishery on the argument that the fishing effort is concentrated too intensively during the fall and winter seasons in certain geographic areas, which include Steller sea lion critical habitat and foraging areas. For this reason they recommended that the Council implement measures that have dispersed the pollock fishery temporally and spatially away from the Aleutian Chain towards the central Bering Sea and the Pribilof Islands.

One of St. Paul's future objectives is to develop multispecies processing capability (including pollock) in-shore. There are several advantages to this from the perspective of the fishing industry and NMFS. Multispecies processing capability on St. Paul Island would allow a portion of the fishing fleet that has been dispersed by NMFS' recommended actions to use St. Paul Island as a base, thereby reducing costs, increasing efficiency (by reducing unproductive delivery time), reducing dead loss, and increasing safety for fishermen. Use of the St. Paul Harbor allows the intensive fishery effort in the Bering Sea to be distributed throughout the entire ecosystem in a manner that has less localized impact on Steller sea lions, and other species, and is consistent with NMFS' objectives. Finally, St. Paul sees multispecies processing capability on the island as an important part of bringing processing in-shore and developing sustainable fisheries in a way that is consistent with the goals of the Sustainable Fisheries Act and the American Fisheries Act.

Ultimately, conservation of the commercial fisheries, seabirds, and marine mammals of the Bering Sea will be achieved through management policies that promote in-shore processing, local stewardship and co-management, an ecosystem approach to the utilization of fisheries, and joint management of straddling and migratory fish stocks with the Russian Federation.

These are issues that the people of the Pribilofs have advocated for years. The Pribilof Islands are literally in the middle of these issues and are a key piece to: (1) understanding the processes affecting the Bering Sea ecosystem and (2) gauging the success of measures implemented to protect the Steller sea lion and other species. The people of St. Paul are aware of the importance of balancing the needs of the subsistence hunters, the fishermen, the fishing industry, and the ecosystem. We have done this balancing for hundreds of years.

Mr. Chairman, and distinguished members of the Fisheries Conservation, Wildlife, and Oceans Subcommittee, thank you for this opportunity to provide written testimony on behalf of the City of St. Paul. We look forward to discussing these issues with you and your staffs.

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