

Pribilof Islands Collaborative Executive Summary

Northern Fur Seal Meeting

March 3-4, 2005

Alaska Fisheries Science Center
Seattle, Washington

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Pribilof Islands Collaborative

Meeting Summary, March 3 – 4, 2005

The meeting agenda, list of participants, and other meeting materials follow the meeting summary. Items shown in **bold** reflect agreements made by the stakeholder group and/or points of agreement reached by representatives of different constituent groups. No formal votes were taken. However, disagreements and alternative points of view were actively solicited. Thus, “general agreement” or “broad agreement” should be interpreted to mean that no remaining disagreements were expressed at that point in the discussion.

Purpose of the Pribilof Islands Collaborative

The purpose of the Pribilof Islands Collaborative is to promote a healthy ecosystem and a strong economy in and around the Pribilof Islands while maintaining viable commercial fisheries and subsistence harvests in the central Bering Sea.

The process – to use a representative group of stakeholders to identify areas of agreement on policies, strategies, and actions - will provide participating stakeholders with the opportunity to be proactive, rather than reactive, to a variety of marine resource concerns including fluctuations and declines in populations of northern fur seal, crab, changes in some seabird populations, and reductions in halibut availability around the Pribilof Islands.

I. Meeting Overview (Day 1)

The goals of the meeting were described:

- Approve the materials produced during the last meeting, in January
- Agree on a set of research needs related to the northern fur seal
- Agree on a set of mitigation actions related to the northern fur seal
- Agree on next steps for the PIC

There were no additional items added to this list.

II. Approval of January Meeting Materials (Day 1)

There were four specific sets of meeting materials reviewed and commented on by the stakeholder group:

- Executive summary of the meeting
- Conceptual model of fur seal interactions
- List of research needs / priorities
- Potential action items.

1. Executive summary

Some stakeholders considered the executive summary to be “thin” and requested that future such summaries include some information on the flow of the discussion and the issues raised.

There was some discussion about whether the presentations themselves, or at least summaries of them, should be included in the executive summary. Including the presentations in their entirety would be duplicative, since links to the presentations are posted on the PIC website. In addition, summarizing the content of the presentations runs the risk of misinterpreting what the authors intended to say. The stakeholders agreed that it would be inappropriate, after the fact, to ask the presentation authors to prepare abstracts of their presentations. **It was therefore agreed to simply list the presentation titles in the executive summary, with a one- or two-sentence description of the content, and with links to the website(s) where the presentations are posted.** However, it was also agreed that, in the future, the PIC would ask authors to prepare brief abstracts of their presentations, suitable for inclusion in the meeting summary.

2. Conceptual model

The stakeholders agreed that the conceptual model distributed before the meeting was an accurate reflection of their work at the January meeting. However, they noted that it may be necessary to revise and/or expand the conceptual model in the future, depending on its intended uses.

3. Research needs

The stakeholders agreed that the list of research needs was an accurate reflection of the research needs discussion at the January meeting. However, it was also noted that the list is not prioritized or organized.

4. Action items

The stakeholders agreed that the list of action items was an accurate reflection of the discussion at the end of the January meeting. However, it was also noted that the discussion in January was not completed and was strictly a brainstorming effort. There was no attempt at that time to prioritize the potential actions identified.

III. Constituent Groups’ Perspectives (Day 1)

Prior to the meeting, each constituent group (islanders, industry, conservation organizations) was asked to prepare a brief summary of the main points they had taken away from the last meeting. They were also asked to focus on the science information presented at the meeting, rather than on policy or management actions. In addition, the National Marine Mammal Laboratory prepared a response to the three constituent group papers. These four writeups are included as attachments at the end of this meeting summary. The following subsections therefore present only the main elements of these papers and the discussion they prompted.

1. Islanders’ perspective

The islanders identified six key points:

1. There has been a significant decline in fur seal numbers over the past 50 years, and declines in more recent years cannot be explained by the female harvest of 1956 – 68.
2. Unknowns about female fur seals, pup and yearling health and survival, and factors in the environment beyond the Bering Sea make it impossible to conclude what is causing the decline.
3. Additional unknowns include interaction with commercial fishing and other species, as well as broader ecosystem responses to such interaction.
4. Predation by orca and other predators cannot now be identified as causative factors of the decline, but may be a potential threat if the decline continues.
5. Changes in rookery structure resulting from the population decline may cause stress, which may be an additional threat to the population.
6. Diseases and contaminants do not appear to be a problem now but should be monitored for potential impacts in the future.

The overall conclusion is that there is not any one smoking gun and therefore not just one way to respond to the fur seal decline.

In the following discussion, islanders emphasized the importance of long-term monitoring, especially as a source of ideas for where to look for answers about the causes of the decline. They also highlighted the importance of history and of time lags in the system, and noted data gaps about fur seal foraging and use of the habitat in space and time. The islanders also stressed that they made a conscious decision, under point #3, to use the term “shared use” in addition to “competition” when referring to human use of ecosystem resources. This reflects their perspective that human use does not necessarily have to compete with or damage natural processes.

2. Conservation groups' perspective

The conservation groups identified five main points:

1. The fur seal foraging range overlaps extensively with the pollock fishery and this overlap has increased in recent years.
2. Pollock is a dominant prey item for female seals during the breeding season and these seals consume pollock of a size targeted by the fishery.
3. The magnitude of declines in pup production differs between the two Pribilof islands.
4. Fur seal pup weights are not as high as expected based on past patterns; however, the available data from late August may not reflect conditions during the later part of the breeding season.
5. Predation is a likely source of mortality, but probably not the sole factor causing the population decline.

Related to point #1, one stakeholder asked where the impact of such overlap would manifest itself, for example, with starving females or pups not being fed adequately. The conservation group representative responded that this was an area that needed further research, particularly with regard to status of pups in the late season, female survival and fecundity in the following year, the success of implantation. There might be an impact on these and other longer-term demographic factors. It was noted that many causes of such demographic impacts could occur at stages of the fur seal life history that are outside the Bering Sea. **Industry representatives agreed that these are data gaps**, but pointed to data that show that all or most of the females that arrive on the

islands are pregnant. However, the sampling in the rookeries is not exhaustive and, without a tag and recapture program, it is not known what proportion of females return to the island each year and whether females successfully give birth each year.

It was also pointed out that, with regard to point #2, it should be more specific and refer to female seals in the Bering Sea. Andrew Trites noted that there is 100 years of data and that we can explain the decline from the 1950s to about 1975. The decline after about 1975 is a puzzle.

3. Industry's perspective

The industry groups identified five main points:

1. Similar declines across several rookeries suggest declines are not due to differential foraging success at different rookeries.
2. There is insufficient data to determine the level of overlap between size of fish taken by the pollock fishery and by fur seals.
3. Predation by killer whales and entanglement in marine debris may each be sufficient to have caused the recent increased rate of decline in the seal population.
4. Changes in foraging success in the North Pacific during seals' early life stages, as opposed to the Bering Sea, may account for the population decline.
5. Comparisons with fur seal populations on other islands may provide insight into the cause(s) of the decline on the Pribilofs.

There was substantial discussion of the degree of overlap between the pollock fleet and foraging fur seals, both in space and time as well as in terms of the size classes of pollock taken. Industry representatives argued that the fishery is not targeting three and four year olds, but rather fish five years old and older. Evidence that the fleet is successful in such targeting is the fact that the proportion of five year old pollock in the catch is greater than in the pollock population at large. Industry representatives also stated that the fleet is more successful at catching their target size class since the coop went into effect in 1998, because boats no longer have to compete for fish, but can operate more slowly and carefully. Small fish that are caught must be retained and are used in fish meal, but their proportion of the catch is very low (probably less than 1%) and data on the size distribution of the catch is available from the observer data back to 1980. **Several stakeholders agreed that it would be useful to look at the actual observer data to resolve the issue of the size distribution of the pollock fishery catch.**

However, similarly quantitative data are not available for the current size preferences of fur seals, of all age classes, around the Pribilofs. Some stomach content data are available from past periods and the composition of the fur seal diet has changed over time. Industry representatives suggested that it would be useful to look at places where fur seals forage that the fleet does not fish.

However, another participant pointed out that, in terms of spatial overlap with the fleet, it can be misleading to look at the aggregate foraging vectors from the different rookeries, because these can change from year to year depending on conditions. The degree of diurnal migration of pollock was also discussed, as was the potential catch of younger age pollock as the trawl nets traverse the upper water column. However, it was pointed out that the observer data provide a quantitative measure of how much young pollock are being caught by the fleet. One stakeholder who has spent substantial time as an observer noted that they had never seen small pollock in the catch and suggested that they may escape through the mesh of the trawl net.

The group also discussed the possibility that the fishery may be taking roe that is an important food source for seals. Andrew Trites pointed out that fish carrying roe are actually a very poor food source for seals, since their nutritional stores are spent. One participant stated that the pollock fishery had exceeded its quota during the roe season by 192%, but it was pointed out that this was not the Bering Sea fishery, which is always a bit short of their quota. Any exceedance of quota may have occurred in the Gulf of Alaska fishery. In addition, the temporal overlap between the roe fishery and the seals may be limited in time. The fishery does not begin until late January and most of the fur seals have left the Bering Sea by then.

Industry representative pointed out that, while the pollock quota has increased recently, the percentage of the stock caught has gone down because the pollock population has increased more than the quota has. They stated that the fishery could potentially take nearly twice as much pollock as the quota allows and still remain within sustainable catch limits. However, other stakeholders pointed out that the actual amount of pollock needed by other ecosystem components (e.g., predators) is unknown as are the longer-term consequences of persistently depressing the overall pollock abundance through fishery removals. It was pointed out that the pollock fishery takes many times what the marine mammal populations do.

Regarding the evidence for nutritional stress, Andrew Trites stated that there is no evidence for such stress in the summer, but there is no data for after August and agreed with the statement that the summer breeding season foraging trips by females are $\frac{1}{2}$ the length they used to be, there are more pollock in fur seals' diet than in past years, pups are fatter than before, and put mortality rates are $\frac{1}{2}$ those in other marine mammal populations. Other stakeholders and participants argued, however, that nutritional stress may be appearing during the late summer, where there is a data gap, and that density dependent effects may be occurring that are more complex than a simple examination of pup weights would reveal. For example, fewer fur seals could mean that there is more food available for the remaining seals (healthy survivors). There was also some discussion of potential biases in the trend over time of forage trip lengths, since different methods were used at either end of the trend line. However, Rolf Ream explained that the bias that does exist would tend to dampen out the slope of the decreasing trend line, meaning that the decrease that does appear in the data may be even larger than it seems at face value. Andrew Trites cautioned that, rather than look for specific weaknesses in individual studies, it is more fruitful to look for patterns in datasets taken together, i.e., whether several different kinds of data are telling the same story.

Other points mentioned include:

- The importance of improved understanding of the effects of ecosystem changes in the North Pacific and of the effects of orca predation
- The fact that females cannot successfully nurse pups from their blubber stores; they must forage successfully to nurse pups
- There is good information, based on southern populations of fur seals, on what sorts of indicators to use to look for nutritional stress
- Entanglement data for males and females seem to become entangled at a lower rate.
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4. NMFS Alaska Fisheries Science Center perspective

After reviewing the three constituent group writeups, Science Center staff prepared an overview from their perspective that included the following points:

- There is broad agreement that fur seal populations have declined substantially
- There is a lack of understanding about the most important factors causing the decline
- It is critically important for stakeholder groups to work together to promote fur seal recovery.

The Science Center also identified a number of high-priority research needs, including:

- Estimating age-specific rates of reproduction and survival
- Understanding ecology (e.g., foraging behavior) throughout the year
- Extending the information on pup weights beyond the season currently sampled
- Examining condition indices at other rookeries
- Making comparable estimates of entanglement pre- and post-1992.

The Center also discussed the potential value of adaptive management experiments for understanding the potential impacts of commercial fishing, as well as of efforts to minimize entanglement. Finally, the Center noted the potential importance, as well as the complexity, of killer whale predation's effects on the fur seal population.

IV. Review of Research Priorities (Day 1)

The four major categories of research needs identified by scientists at the January meeting were listed:

- Juvenile survival at sea
- Age-specific vital rates
- Natural comparisons between different populations, places, times
- Orca (and other predator) effects.

There was some discussion of additional sub-categories and of the fact that these priorities overlap to some extent. One stakeholder also suggested that the framework presented in Table 1 of the Bowen report on Steller sea lions would be a useful place to start. No decisions were made and the stakeholders were given the homework assignment of caucusing this evening and coming back on the morning of Day 2 with a short list of priority research items and a short list of priority action items.

V. Constituent Groups' Research Priorities (Day 2)

Each constituent group was asked to describe the list of their highest-priority research items. Each short presentation was then followed by discussion, and areas of agreement and disagreement were highlighted.

1. Conservation groups' research priorities

The conservation groups identified six main research priorities:

1. Better information on vital rates, especially for juveniles. Support for the current satellite tracking of weaned pups, but we also need to assess their condition late in the season just before they go to sea. Need to coordinate tracking of individual weaned animals and longitudinal studies of vital rates
2. Continued monitoring of fisheries interactions, such as:

- a. direct mortality caused by capture in fishing gear; know this is not an issue at present but need to keep monitoring to ensure does not increase
 - b. better information on types and sources of debris involved in entanglement
 - c. better understanding of potential negative effects of bycatch of non-target species (e.g., squid) that are important prey items for fur seals. Know that bycatch in pollock fishery is very low, but bycatch may be concentrated in space and/or time in ways that heighten potential for negative effects
3. Natural comparisons between rookeries and populations with different foraging patterns, population trends, etc. For example, compare Bogosloff to Pribilofs, for a full range of indicators.
 4. Additional studies of predation by orcas and other predators. Support NMFS research on orca population size and predation rate, islander observations of orca around the Pribilofs.
 5. Better understanding of how changes in ocean climate and ecosystems affect seals and their prey. Research into the effects of continued fishing of pollock under a MSY strategy (e.g., what are the demographic effects of continued removal of the upper age classes?), and into the needs of other species in the Bering Sea food web.
 6. More detailed examination of the potential for adaptive management experiments, along the lines of the protocol suggested in the Bowen report.

One stakeholder took strong issue with the recommendation, under point #2.c, to focus additional research effort on squid, arguing that so little squid is caught by the pollock fishery, both in absolute terms and in relation to the overall biomass of squid in the system, that it is hard to imagine that squid bycatch is a problem. For example, the bycatch TAC for squid is rarely reached. Other stakeholders responded, however, that the squid bycatch is probably concentrated in space and time, particularly around Zemchung Canyon, and may thus deplete an important food resource for fur seals. NMFS scientists said that there is a data gap with respect to knowledge about the squid biomass and its distribution, and that surveys of forage species would be very useful, although such surveys are not currently on their priority research list. Squid are prey for fur seals, and are often the second most abundant prey item. It was suggested that the important issue here may not be squid bycatch in isolation, but the question of whether there are impacts concentrated around Zemchung Canyon.

There was broad agreement on all the other research priorities listed, particularly for understanding how ocean climate shifts may have changed the overall carrying capacity for fur seals, and for using existing comparisons (point #3) to examine possible causes of fur seal population trends. There was also broad agreement that such comparisons would be a necessary prerequisite to any more detailed examination of possible adaptive management approaches.

2. Islanders' research priorities

The islanders presented four main research priorities:

1. Better information on vital rates life histories, for all life stages and especially beyond the Bering Sea, throughout the fur seal's entire range. This should include the continuation of existing projects, be expanded into other seasons, involve larger sample sizes than at present, and include biennial pup production estimates. In general, long-term monitoring should be actively pursued and supported.
2. Improved understanding of nutritional requirements (e.g., total per capita consumption for the year) and of the condition of pups at the end of their first year.

3. Natural comparisons between sites displaying different characteristics and population trends, including comparison of canyons and hotspots to locations outside the Bering Sea, of areas with different combinations of fur seal foraging and commercial fishing pressure (e.g., length of lactating female foraging trips in different areas).
4. More complete and accurate historical overview of events in the system (e.g., population trends of fur seals and key fish stocks, harvests, key research, management closures, changes in commercial fisheries) to allow for easier evaluation of adequacy of data, search for patterns, etc.

With respect to point #3, one stakeholder noted that Art Sowls is currently working on building maps of fisheries management zones and fishing efforts that will be needed for this effort. It was noted that closures to fishing in the Bering Sea are implemented for a number of reasons, many having nothing to do with the fur seal, though they may have some effect on fur seals or provide an opportunity for natural comparisons.

With regard to point #4, the islanders' representative suggested that this information could be used to help address the question of whether "more" is always "better," especially in terms of fur seal numbers.

There was broad agreement with these research priorities.

3. Industry's research priorities

The industry groups presented five main research priorities:

1. Better information on juvenile survival rates in order to help determine whether commercial fisheries cause nutritional stress. There is a data gap for the after-August period in the Bering Sea that could be filled by satellite tagging on pups as they prepare to leave the Islands, to get data on their foraging range and behavior. One problem is that we are starting from scratch with this information; there are no historical data to provide a context for interpreting late season weights. For example, should pup weight normally drop a bit as they are weaned and learn to forage on their own? What's normal? The data on juveniles would help test the hypothesis that something other than nutrition stress near the Pribilofs is the issue. For example, what happens in the North Pacific for the other 2/3 of the year? The changes in the California Current system and El Niños may have had an effect. Should also look at San Miguel Island, where we know fur seals do starve to death sometimes.
2. Better information on vital rates at different life history stages. Need accurate information on the pregnancy rate. Most females on the Islands do breed, but we don't know what proportion of the female population returns each year, nor whether females leave the Islands if their pregnancy isn't successful. The only way to resolve this is to get pregnancy rates at sea and to have a tagging study that permits individual females to be tracked. To be successful, tags need to last more than a year, and NMFS is working on developing such a tag.
3. Natural comparisons between areas with different histories and/or characteristics. For example, fur seal populations are increasing at three sites but declining at others. There is little pollock around the sites where seal populations are increasing; is this due to more diverse prey that is more nutritious than pollock? As another example, sites where seals are increasing are uninhabited; are there impacts of development we haven't identified?
4. Better understanding of ecosystem behavior, including regime shifts and cascading effects on species. What is the big picture?

5. Expanded studies of potential predation effects. For example, it would be possible to take tissue plugs from Orca to analyze composition of their diet.

Point #3 prompted a brief discussion of the potential impact of Island development, but otherwise **there was broad agreement with these five suggested research priorities.**

4. Summary of research priorities

The research recommendations were described as falling into four broad issues areas or categories related to the effects of:

- Commercial fishing activity
- Predation on fur seals
- Changes in ecosystems and in fur seal carrying capacity
- Human activities on the Islands.

In addition, there are more specific questions and hypotheses associated with each of these categories, along with a set of indicators (e.g., vital rates at all life stages) that would be used to evaluate the hypotheses. After some discussion about how to organize this information, the stakeholders agreed that the facilitator would prepare a brief (one to two pages) writeup of the stakeholders' main questions, the hypotheses related to these, and the broad research recommendations. This writeup should focus more on clearly explaining the questions and less on the specific details of the research. However, it will be useful to highlight key data gaps for illustration purposes.

VI. Constituent Groups' Action Recommendations (Day 2)

Each constituent group was asked to describe the list of their highest-priority action items for immediate, or near-term, implementation. Each short presentation was then followed by discussion, and areas of agreement and disagreement were highlighted.

1. Industry's action items

Industry groups identified two areas for immediate implementation:

- Reducing entanglement
- Improving the information base on the spatial and temporal aspects of the fisheries management system and its overlap with fur seal foraging.

The discussion of entanglement identified four major needs, including

1. Cleanup of debris on beaches, especially around fur seal rookeries
2. Better identification of types and sources of debris
3. Outreach and education for the US commercial fishing fleets
4. Raising the visibility of this issue in international forums.

With respect to #1, cleanup, there is a mechanism in place for this, with the Marine Conservation Alliance (MCA) funding periodic cleanups and the islanders supplying the labor. However, several of the islanders made a plea for additional help with the labor involved in cleanup

activities, since these are vary labor-intensive efforts. Islanders raised the issue of the Ocean Clipper and there was general agreement that it should be removed, though no clear agreement about how that would be funded and/or accomplished.

With respect to #2, source identification, it is apparently possible to identify the source of at least a portion of the debris. One source identification study has been completed (although it did not identify fishing-related debris down to the level of gear type) and there has been some success with having gear experts examine samples of debris and categorize it by gear type. However, it was judged impractical to accomplish detailed source identification in the field during cleanups, because of the variety of debris and the fact that its makeup changes over time. It might be useful to develop an illustrated guidebook, or key, to help in identifying debris, but this would probably not provide the level of information possible from consulting gear experts.

With respect to #3, outreach and education, individual associations are coordinating on the development of a code of conduct and associated outreach and education materials for commercial fleets regarding disposal at sea of nets and net fragments. Industry representatives emphasized that MARPOL prohibits much disposal of debris at sea and that this provides a legal framework for the code of conduct.

With respect to #4, international forums, the industry representatives stated that the heads of gear associations, and not the MCA, would be the appropriate people to remind international treaty signatories of their obligations.

The discussion of the second area was relatively brief, with industry representatives stating that they have already begun the process of working with NMFS to map out the fisheries management system.

There was general agreement with the following specific action items:

- I-1. The PIC Steering Committee will write a letter to MCA to encourage MCA to expand its support for debris cleanup and identification
- I-2. Individual industry associations will develop a common code of conduct regarding debris disposal at sea, making fleet-specific adjustments as needed
- I-3. Industry representatives will continue their collaborative work with NMFS to better describe the spatial and temporal features of the commercial fishing system, and its potential overlap with fur seals.

2. Islanders' action items

The islanders identified five areas for immediate implementation:

- 1. Reducing onshore disturbance, including moving the road at Zap rookery and debris removal from beaches, particularly including the Ocean Clipper
- 2. Expanding LTKW efforts
- 3. Using fishing fleets for marine mammal observations
- 4. Increasing the flexibility in seal harvest regulations
- 5. Improving research facilities on the islands.

With respect to #1, reducing onshore disturbance, the road at Zap rookery was built there to allow commercial seal harvesters ready access to the rookery. At present, it is not needed for that

purpose and is a potential source of disturbance. NMFS owns one side of the road and the Tanadgusix Corporation (TDX) the other. Moving it would be a local issue and it was not clear how the PIC would or could be involved. **Islanders agreed that this issue will be dealt with locally** and will include outreach to residents to avoid this area as much as possible. The Ocean Clipper was considered dealt with in the discussion of industry's action items.

With respect to #2, expansion of the LTKW effort, there was a broad discussion about ongoing efforts and possible options for expanding the range of sources for this sort of information. Industry is working with Henry Huntington on methods for capturing LTKW information of several kinds, including on marine mammals, from commercial vessel captains. One participant mentioned that the North Pacific Research Board (NPRB) is considering funding a range of LTKW projects across the region and that they are lacking adequate guidance on goals, objectives, and priorities. The stakeholders agreed that it would be useful to send the NPRB a letter with recommendations. They also agreed that the LTKW subcommittee should be reconstituted to work on these tasks, and that it should engage Henry Huntington for his advice. (The following paragraph describes additional LTKW efforts.)

With respect to #3, improving marine mammal observations, there was some discussion of options for using commercial fishing fleets to make orca observations. While industry representatives said that it was impractical for deckhands to be given the additional responsibility to record sightings of marine mammals, they noted that observers do have this responsibility. In addition, as part of a proposal to fund LTKW efforts, islanders are proposing to develop a data sheet for local skippers to use to record orca sightings around the islands.

With respect to #4, increasing the flexibility in seal harvest parameters, islanders noted that the existing regulations do not permit adjustments to the timing and location of the seal harvest. Some islanders suggested that distributing the take among rookeries and/or shifting its timing could take pressure off some rookeries and benefit the fur seal population. The PIC has considered analogous situations in the past, and found that a written position paper describing the issue and outlining options facilitated decision making. In addition, PIC members can participate in the EIS process by providing comments prior to June. The stakeholders agreed that the interested islanders should draft a position paper for the PIC to consider, at which point the PIC could decide to comment as a group to the EIS process.

With respect to #5, improving research facilities on the islands, several islanders noted that increased research efforts require additional space and facilities (e.g., for holding seals for nutritional studies). In addition, the ability to host research efforts on the islands themselves would contribute to the economy of the islands. A full-fledged planning study, including building designs, was roughly estimated to cost about \$200,000 and the funding for that is not currently available. The stakeholders therefore agreed to conduct a "no-cost" planning effort through conference calls and as part of the regular PIC meetings. This effort would focus on developing a common vision and a concept paper that could then be used to help raise funds.

There was general agreement with the following specific action items:

- P-1. Islanders will develop a more complete plan for collecting LTKW information, using a \$4000 grant from the American Fisheries Society
- P-2. The PIC will draft a letter the North Pacific Research Board (NPRB) to provide them with guidance and priorities for funding LTKW projects. The PIC LTKW subcommittee will be reconstituted and will solicit advice from Henry Huntington.

- P-3. The PIC LTKW subcommittee will contact the halibut fleet, which has an active interest in gathering information on orca activity, to develop a means of integrating this information with other PIC sources.
- P-4. Islanders will prepare a position paper describing proposed changes to seal harvest regulations and submit it to the stakeholders for review and potential approval
- P-5. The PIC Steering Committee will begin discussing general plans for improved research facilities on the islands.

3. Conservation groups' action items

The conservation groups identified seven areas for immediate implementation:

1. Reducing entanglement and beach debris
2. Expanding LTKW efforts
3. Improving research facilities on the islands
4. Data exchange with Russian fur seal researchers
5. Mapping project of key ecosystem features
6. Investigating experimental management options
7. Conducting socioeconomic studies of the Pribilof Islands economy.

The first three items were discussed previously.

With respect to #4, Russian data, there is sensitivity because of the privatization of Russian research facilities and consequent pressures for space, which make it more difficult to continue storing older seal data and sample collections. The loss of historical data is accelerating and preserving these data is of paramount importance to NMFS scientists and other researchers. This issue should not be addressed at a high level, but rather with contacts between individual working scientists. WWF has committed to an initial effort this summer through its office in Vladivostok, and NMFS is also involved. There is nothing additional the PIC can do at this point.

With respect to #5, mapping, this project is already underway, with work being performed by Art Sowls, and the products will be brought to the PIC. There is therefore nothing additional the PIC can do at this point.

With respect to #6, experimental management, the stakeholders received a copy of a memo evaluating a proposed large-scale Steller sea lion experiment prepared by the Alaska Fisheries Science Center in June 2003. This memo was described as an excellent review of the constraints and opportunities involved in these approaches and several participants familiar with the memo urged the stakeholders to carefully consider the cautions it expresses. Further discussion of experimental management identified three phases in this process.

The first phase is an examination of what can be learned from existing closures and patterns of fishing, as well as from further analysis of available data. There was broad agreement among the stakeholders about the necessity of this as a first step and about its potential value. (Such efforts would be included in the research priorities described as "natural comparisons" in preceding sections.) The second phase is the description and evaluation of alternative experimental designs that would be appropriate to the fur seal context, and there was also broad agreement among the stakeholders about the value of this effort. Experience with the Steller sea lion problem, and with other approaches to adaptive / experimental management should be reviewed as part of this phase. Some participants pointed out the importance of having control areas for any such experiments,

but also of understanding enough about underlying mechanisms and processes to be able to design intelligent experiments with indicators likely to measure the desired signal. For example, participants pointed to the data gaps previously identified (e.g., late season pup condition) as pieces of information that would be extremely helpful, even necessary, for designing experiments with a decent chance of success. The third phase would be the actual implementation of an experiment, which would involve manipulating fisheries effort in an attempt to elucidate impacts on fur seals.

The discussion shifted somewhat to a consideration of what threshold(s) of evidence or information would be required to actually implement a management experiment in this third phase. For example, one stakeholder argued that, before implementing a large-scale experiment to examine the role of fisheries in causing nutritional stress, it would be important to have some evidence that nutritional stress was occurring. It was also pointed out that, in general, the larger and more costly the research (experimental or otherwise), the higher the bar in terms of having prior evidence for the validity of the hypothesis and/or the likelihood of getting interpretable results. Conservation group representatives stressed that their aim is not to shut down fisheries but to answer important questions about the decline of the fur seal population.

With respect to #7, socioeconomic studies, there was broad agreement on the importance of this, and island representatives noted that detailed socioeconomic studies have already been conducted.

There was general agreement with the following specific action items:

- C-1. Reducing entanglement and beach debris
- C-2. Expanding LTKW efforts
- C-3. Improving research facilities on the islands
- C-4. Data exchange with Russian fur seal researchers
- C-5. Mapping project of key ecosystem features
- C-6. Investigating experimental management options
- C-7. Conducting socioeconomic studies of the Pribilof Islands economy.

VII. PIC Management Issues (Day 2)

The meeting then moved to the consideration of several issues related to the management of PIC and to determining next steps.

1. PIC financial report

There is \$13,000 remaining from the NOAA allotment and PIC has received \$10,000 from SWAMC (Southwest Alaska Municipal Council). After paying expenses related to this March meeting, the budget will be “zeroed out.” However, another \$50,000 is expected from NOAA and \$40,000 from the Oak Foundation, for a total expected income of \$90,000 in the near future. This is expected to pay for four additional meeting, including facilitation expenses. NMFS is consulting with its lawyers to determine whether there are any FACA concerns that would hinder the payment of NOAA’s \$50,000.

There is a need to rethink how the day-to-day work of the collaborative will be accomplished, now that Meg King is no longer working on the project. At present, Denise Woods is providing most of this support, using WWF funds. However, WWF would like to see more participation by other organizations in the administrative and logistical tasks of the collaborative. This prompted a

discussion about expanding the membership of the Steering Committee to foster more participation, and there is no barrier to this. Larry Cotter, of the Aleutian Pribilof Islands Community Development Association (APICDA), mentioned that APICDA may be receiving significantly less money now. However, if their finances permit, he will ask their board to give a large sum (about \$20,000) to the PIC, but would like to see that matched by one or more organizations other than WWF.

2. Press and public affairs

The PIC has been receiving increased attention, especially from Senator Stevens' office. Stakeholders suggested that this was a positive indicator of accomplishment and visibility, but that some of the attention may reflect a lack of faith in and/or understanding of the collaborative process, particularly in terms of its efforts to avoid polarization among constituent groups. **The stakeholders agreed that the Steering Committee will prepare a short press release or white paper**, explaining the PIC's purpose, its approach, and its accomplishments. This will serve as the basis for approaching receptive reporters and a framework for face-to-face discussions with Stevens' office, NOAA, and the Council.

3. Next steps

With the fur seal issue dealt with, at least in terms of agreeing on research priorities and specific action items, the stakeholders discussed how to address the remaining high-priority issues, crab, halibut, and seabirds.

There was extensive discussion of the pros and cons of dealing with the three issues in various sequences. Some stakeholders suggested that seabirds would be easier and require less preparation, as well as being useful indicators of ecosystem condition. Other stakeholders thought that the economic consequences of reduced crab and halibut catches made those two issues the highest priority. However, it is likely that meetings on halibut and especially crab would require a good deal of lead time to organize the science presentations. In addition, the PIC has a number of action items to accomplish, coming out of this meeting and the summer is not suitable for a meeting because of stakeholders' fishing activities.

The stakeholders agreed to address all three issues in a single, lengthy (5 – 7 days) meeting in early September in Anchorage. While there were benefits to meeting in the Pribilof Islands, this would not be feasible given the number of different people who would need to fly in and out during a meeting focusing on such a wide range of issues. This meeting will follow the model used for the fur seal issue. The Steering Committee will therefore need to identify experts, work with them to prepare science presentations, and develop an agenda.

VIII. Adjourn (Day 2)

The meeting was adjourned.

DRAFT
Pribilof Islands Collaborative (PIC):
Promoting a Strong Economy and a Healthy Ecosystem
Northern Fur Seal Meeting
March 3-4, 2005
Alaska Fisheries Science Center
Seattle, Washington

Meeting Purpose:

Continue to work together on one of the agreed primary issues, Northern Fur Seals (NFS). Building on the common education we all received during the last meeting in January, (1) reach agreement on what factors are likely the most important with respect to fur seal declines, (2) reach agreement on what research is most important to our understanding of the problem/ what research plan will the PIC support and (2) reach agreement on some actions PIC stakeholder groups can undertake and/ or will support to understand and mitigate the decline.

DAY ONE: Thursday March 3

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|--------------------|---|
| 1:00 pm | Gather at Traynor Room, Alaska Fisheries Science Center- network and coffee |
| 1:15 | Meeting Overview <ul style="list-style-type: none">-Introductions-Meeting purpose/ goals-Agenda review |
| 1:45 | Review of materials produced during January meeting <ul style="list-style-type: none">- Executive summary (for approval)- Conceptual model (for review and perhaps further development)- Research needs / current research- Potential action items (draft from brainstorm session) |
| 2:15 – 2:30 | BREAK |
| 2:30 – 5:00 | Constituent groups' perspectives <ul style="list-style-type: none">- Constituent groups present most important points from Jan meeting- Link constituent groups' points to research priorities and action items- Define degree of agreement among constituent groups |
| 5:00 - ??
items | Constituent groups caucus to develop list of high-priority research and action items |

DAY TWO: Friday March 4

- 8:00 am Gather at Traynor Room, Alaska Fisheries Science Center- network and coffee
- 8:15 – 10:15 Discuss and reach agreement on research program PIC will support
- 10:30 – 10:45 BREAK
- 10:45 – 12:30 Discuss and reach agreement on mitigating actions PIC can undertake or endorse
- 12:30 pm LUNCH
- 1:45 – 2:45 Conclude discussion on actions/ wrap up (for now) with northern fur seals: follow-up?
- 2:45 – 3:15 Financial Report
- 3:15 – 3:30 BREAK
- 3:30 – 5:00 Next Steps for the PIC
- Where do we go from here with respect to the other resources of concern (halibut, seabirds, crab)?
 - How do we gather and incorporate LTKW into this and future PIC efforts?
 - Press

March 3-4, 2005 Northern Fur Seal Meeting Participants List

Last Name	First Name	Organization	Phone	Email	Address	
Bernstein	Brock	<i>Meeting Facilitator</i>	805-646-8369	brockbernstein@sbcglobal.net	308 Raymond St.	Ojai,
Bengtson	John	NMML	206-526-4016	john.bengtson@noaa.gov	7600 Sand Point Way, N.E.	Seattle
Benson	Dave	Pollock Conservation Coop	206-258-5139		23701 Jefferson Point Rd., N.E.	Kingsport
Bryant	Beth	Univ. Washington	206-685-2417	bebryant@u.washington.edu	3707 Brooklyn Ave. NE	Seattle
Burkanov	Vladimir	NRC, Inc.	208-528-4298	vladimir.burkanov@noaa.gov	7600 Sand Point Way, N.E.	Seattle
Butzner	Lisa	NPLA	202-282-4684	lisa@npla.net		
Calkins	Don	ASLC	907-224-6325	don_calkins@alaskasealife.org	305 Railway	Seward
Cotter	Larry	Aleutian Prib. Island Comm. Dev. Assn.	907-586-0161	lcotter@apicda.com	234 Gold St.	Juneau
Fadely	Brian	NMFS	206-526-6173	Brian.fadely@noaa.gov	7600 Sand Point Way, N.E.	Seattle
Fowler	Chuck	NMFS	206-526-4031	charles.fowler@noaa.gov	7600 Sand Point Way, N.E.	Seattle
Fritz	Lowell	NMFS	206-526-4246	lowell.fritz@noaa.gov	7600 Sand Point Way, N.E.	Seattle
Gelatt	Tom	NMML	206-526-4040	tom.gelatt@noaa.gov	7600 Sand Point Way, N.E.	Seattle
Haflinger	Karl	Seastate		karl@seastate.com	P.O.Box 74	Vashon
Hawkins	Anne	Univ. Washington		ah1@u.washington.edu	3707 Brooklyn Ave. NE	Seattle
Jacobs	Jan	American Seafoods	206-256-2641	jan.jacobs@americanseafoods.com	2025 1st Ave, Suite 900	Seattle
Johnson	Shelley	Alaska Oceans Program	907-929-1562	shelley@alaskaoceans.net	308 G. Street, Suite 219	Anchorage
Kashevarof	Andy	Tanaq	907-859-2255	andy6320@hotmail.com	P.O. Box 951	St. George 99591
Kirkwood	Char	City of St. Paul Island	253-946-5362	ckirkwood@earthlink.net	31424 7th Place S.W.	Federal Way
Kruse	Gordon	UAF	907-465-8458	gordon.kruse@uaf.edu		
LeClair	Claire	AMCC		northsister@acsalaska.net		
Lekanof	Dennis	St. George Traditional Council	907-859-2205	Dj_lekanof@hotmail.com	P.O. Box 940	St. George 99591
Lekanof	Flore	St. George Tanaq Corp.	425-271-5860	lekanof@comcast.net	14625 SE 176 th St., #P102	Renton
Lekanof	Mary	St. George Tanaq Corp.	425-271-5860	lekanof@comcast.net	14625 SE 176 th St., #P102	Renton
Lestenkof	Phillip	CBSFA	907-546-2597	plestenkof@cbsfa.com	P.O. Box 288	St. Paul

Lestenkof	Aquilina	St. Paul Ecosystem Conservation Office	907-546-3230	aquilina@tdxak.com	P.O. Box 86	St. Pa
MacGregor	Paul	At-Sea Processors Association	206-624-5950	pmacgregor@mundtmac.com		Seattl
Maclean	Steve	The Nature Conservancy	907-276-3133	smaclean@tnc.org	715 L Street, Suite 100	Anch
Malavansky	Andrew	St. George Traditional Council		andymalavansky@yahoo.com	P.O. Box 986	St. G 9959
Massey	Justin	Trustees of Alaska	907-276-4244	jmassey@trustees.org	1026 4th Avenue, Suite 205	Anch
McCarty	Heather	CBSFA	907-586-4260	rising@ptialaska.net	319 Seward Street, Suite 3	Junea
Melovidov	Myron	CBSFA/ City of St. Paul	907-546-3171	mmelovidov@hotmail.com	P.O. Box 167	St. Pa
Melovidov	Robert	CBSFA	907-546-2597	rmelovidov@tdxak.com	P.O. Box 87	St. Pa
Merculief	John R.	City of St. Paul Island	907-546-3110	stpaulak@hotmail.com	P.O. Box 901	St. Pa
Philemonof	Ron	TDX		ron@tdx.alaska.com	4300 B Street, Suite 220	Anch
Pletnikoff	Karen	A/PIA	907-222-4286	karenp@api.ai.org	201 E. 3rd Avenue	Anch
Prokopiof	Larry	St. George Fisherman's Association	907-859-2450	lpro_62@yahoo.com	P.O. Box 947	St. G 9959
Richardson	Robby	Ecotrust	415-465-2297	robby@ecotrust.org		Portla
Ream	Rolf	NMML	206-526-4328	rolf.ream@noaa.gov	7600 Sand Point Way, N.E.	Seattl
Reed	Glen	Pacific Seafoods Processors Assn	206-281-1667	info@pspafish.net	1900 W. Emerson Place, Suite 205	Seattl
Robson	Bruce	WWF Consultant		brucerobson@comcast.net	3519 S. Main St.	Seattl
Schane	Demian	Earthjustice	907-586-2751	dschane@earthjustice.org	325 4th Street	Junea
Sheard	Whit		541-915-1187	whitsheard@yahoo.com		Bird
Smith	Thorn	NPLA	206-282-4639	thorndog@npla.net		Seattl
Stump	Ken		206-517-5657	amchitka@earthlink.net	957 N. 35 th St.	Seattl
Swanson	Lori	Groundfish Forum	206-909-5959	loriswanson@seanet.com	4241 21st Avenue West	Seattl
Thomson	Arni	Alaska Crab Coalition	206-544-7560	accrabak@earthlink.net	3901 Leary Way NW, #6	Seattl
Trites	Andrew	University of British Columbia	604-822-8181	trites@zoology.ubc.ca	6248 Biological Sciences Rd.	Vanco
Williams	Margaret	World Wildlife Fund	907-830-4349	margaret.williams@wwfus.org	1250 24th St. NW	Wash 1132

Woods	Denise	World Wildlife Fund	907-279-5504	denise.woods@wwfus.org	406 G. Street, Suite 303	Anch
Zacharof	Richard	St. Paul Tribal Government	907-546-3200	rzacharof@tdxak.com	P.O. Box 86	St. Pa
Zavidil	Phillip	St. Paul Ecosystem Conservation Office	907-546-3230	pzavidil@tdxak.com	P.O. Box 86	St. Pa