

Pribilof Islands Collaborative

Short Summary
of
Northern Fur Seal Meeting
March 3-4, 2005
Alaska Fisheries Science Center
Seattle, Washington

The second meeting of the Pribilof Islands Collaborative (PIC) concerning northern fur seals was convened on 3-4 March, 2005 at the National Marine Fisheries Service, Alaska Fisheries Science Center in Seattle, WA. The goals of the meeting were to:

- I. Approve the materials produced during the January PIC meeting.
- II. Agree on a set of research needs for the northern fur seal.
- III. Agree on a set of mitigation actions related to the northern fur seal.
- IV. Agree on next steps for the PIC.

The goals are addressed in order below.

- I. Approve the materials produced during the January PIC meeting.
 - Executive Summary of January PIC meeting was approved with changes suggested for subsequent meetings.
 - Conceptual Model of northern fur seal interactions was accepted. Updates or changes will likely be necessary.
 - List of research needs presented at the January meeting was accepted with the understanding that it is incomplete and has not been prioritized or organized.
 - List of action items prepared at the January meeting was accepted with the understanding that the list is not intended to be complete or prioritized.

Each stakeholder group composed a list of key points from the first northern fur seal PIC meeting. The groups were asked to limit their points to the scientific understanding of northern fur seals and to refrain from listing policy or management actions. The National Marine Mammal Laboratory prepared a response to the stakeholder lists.

A. Pribilof Islanders' Perspective

- There has been a significant decline in northern fur seal numbers over the past 50 years. Recent declines cannot be explained by the female harvest from 1956-68.
- Unknowns about female northern fur seals, pup and juvenile health and survival, and factors beyond the Bering Sea make it impossible to determine the cause of the decline.
- Additional unknowns include interaction with fishing and other species, and ecosystem responses to such interaction.

- Predation by orca and other predators is not a cause of the decline, but may be significant if the decline continues.
- Changes in rookery structure may be causing stress.
- Disease and contaminants are not causes of the decline but should be monitored.

B. Conservation Groups' Perspective

- Northern fur seal foraging overlaps with the pollock fishery, this overlap has increased in recent years.
- Pollock of the size targeted by commercial fishery is a dominant prey of female northern fur seals during the breeding season.
- Declines in pup production are different between islands.
- Pup weights are not as high as expected. However, data as currently collected, may not reflect conditions during the later part of the breeding season.
- Predation is a source of mortality, but not the sole factor causing the continued decline.

C. Industry Perspective

- Similar declines across several rookeries suggest no differential foraging success.
- There is insufficient data to determine the overlap between the size of fish taken by pollock fishery and northern fur seals.
- Predation by killer whales and entanglement may each be the cause of the decline.
- Changes in foraging success in the North Pacific, as opposed to the Bering Sea, may account for the population decline.
- Comparisons of northern fur seal populations on other islands (e.g. Bogoslof, Commanders) may provide insights into the causes of the decline.

D. NMML Perspective

- Northern fur seal populations have declined.
- There is a lack of understanding of the most important factors causing the decline.
- It is critical for stakeholder groups to work together to promote fur seal recovery.

NMML 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 current sampling season.
- Examining condition indices at other rookeries.
- Making comparable estimates of entanglement pre- and post-1992.

II. Agree on a set of research needs related to the northern fur seal.

Four major categories of research needs were identified by scientists at the January meeting:

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

Each constituent group was asked to list their highest-priority research items. Discussion followed each presentation, and areas of agreement or disagreement were highlighted.

A. Conservation groups' research priorities

1. Better information in vital rates, especially for juveniles.
 - a. Support current satellite tracking of weaned pups
 - b. Assess pup condition late in the season, just before they go to sea
 - c. Coordinate tracking of individual weaned animals
 - d. Longitudinal studies of vital rates
2. Continued monitoring of fisheries interactions.
 - a. Direct mortality caused by capture in fishing gear to ensure it does not become a significant factor
 - b. Types and sources of debris involved in entanglement
 - c. Potential negative effects of bycatch of non-target species (e.g. squid)
3. Natural comparisons between rookeries and populations with different foraging patterns, population trends, etc.
4. Additional studies of predation (orca and other).
 - a. NMFS research on orca population size and predation rate
 - b. Islander observations of orcas around Pribilofs
5. Understanding of how changes in ocean climate and ecosystems affect northern fur seals and their prey.
 - a. Effects of not managing Bering Sea fisheries with an effective ecosystem based management strategy
 - b. Needs of other species in Bering Sea food web (e.g. other predators)
6. Examination of adaptive management experiments, along lines suggested in Bowen report.

One stakeholder took strong objection to 2c., arguing that little squid is caught by the pollock fishery. Other stakeholders responded that squid bycatch is probably concentrated in space and time, particularly around Zemchung Canyon, and may be a locally important northern fur seal food resource. NMML scientists said this is a data gap, and surveys would be useful but are not on their priority list. It was suggested that the important issue was not squid bycatch in isolation, but cumulative impacts around Zemchung Canyon. There was broad agreement on all other research priorities listed.

B. Pribilof Islanders' research priorities

1. Better information on vital rates and life histories for all life stages throughout the northern fur seal range
 - a. Continuation of existing projects
 - b. Expansion into other seasons
 - c. Larger sample sizes
 - d. Biennial pup production estimates
 - e. Actively pursue long-term monitoring
2. Improved understanding of nutritional requirements and condition of pups after year 1.
3. Natural comparisons between different sites.
 - a. Canyons and hotspots to locations outside Bering Sea
 - b. Areas of different northern fur seal foraging and commercial fishing pressure
4. More complete and accurate historical overview of events in the system to determine adequacy of data, search for patterns, etc.
 - a. Population trends of northern fur seal and key fish stocks
 - b. Harvest records
 - c. Management closures

There was broad agreement with these research priorities.

C. Industry's research priorities

1. Information on juvenile survival rates.
 - a. Data gap after August in Bering Sea
 - b. No historical data to provide context
 - c. What happens in North Pacific for 2/3 of the year?
 - d. Changes in California Current and El Niño events
 - e. San Miguel Island
2. Vital rates at different life history stages.
 - a. Pregnancy rates for females at sea
3. Natural comparisons between areas with different histories or characteristics.
 - a. Increasing and decreasing population trends at areas with:
 - i. Different pollock populations
 - ii. Different levels of human disturbance
4. Better understanding of ecosystem behavior, regime shifts, cascading effects on species.
5. Expand analysis of predator effects.
 - a. Tissue samples from orca for fatty acid analysis of diet

There was broad agreement with these suggested research priorities.

After discussion, the research priorities were assigned to four broad issues areas or categories. These were:

1. Commercial fishing activity
2. Predation

3. Changes in ecosystems and northern fur seal carrying capacity
4. Human activities

More specific hypotheses and questions associated with these broad issue areas were discussed, but were not listed during the meeting.

III. Agree on a set of mitigation actions related to the northern fur seal.

Each constituent group was asked to list their highest-priority actions for immediate or near-term implementation. Where appropriate, specific action items for the PIC were identified.

A. Industry's action items

1. Reduce entanglement.
 - a. PIC encourage MCA to expand its support for debris cleanup and identification
 - b. Industry develop common Code of Conduct regarding debris disposal at sea
2. Improve information base on spatial and temporal aspects of fisheries.
 - a. Industry continue collaboration with NMFS to better describe spatial and temporal features of commercial fisheries and overlap with northern fur seal feeding areas

B. Pribilof Islander's action items

1. Reduce onshore disturbance.
2. Expand LTKW efforts.
 - a. PIC draft letter to NPRB to provide them with guidance and priorities for funding LTKW projects
 - b. PIC contact halibut fleet to integrate their info on orca activity
3. Use fishing fleets for mammal observation.
4. Increase flexibility in northern fur seal harvest regulations.
5. Improve research facilities on the islands.
 - c. PIC Steering Committee will begin discussing general plans for improve research facilities

C. Conservation groups' action items

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

IV. Agree on next steps for the PIC

The PIC began discussion on how to address the remaining high-priority issues: crab, halibut, and seabirds. Some stakeholders preferred to address seabirds next considering the similarity of the main questions for seabirds and those for northern fur seals. Other stakeholders preferred to address the economic issues of the Pribilof Islands, particularly halibut and crab. Stakeholders initially agreed to address all three issues in a single, 5-7 day meeting in early September in Anchorage. Subsequent discussion in the Steering Committee has resulted in a revised schedule to address crab, halibut, and other economic issues on the Pribilof Islands in September 2005, a seabird meeting in January 2006, and a meeting in March or April 2006 to synthesize the results of the PIC process and to identify final outcomes and make recommendations to the appropriate entities. This schedule must still be approved by the PIC stakeholders.