

North Pacific Research Board

Examples of Community Research Interests

(DRAFT: Huntington, 5 July 2006)

Communities around Alaska have supported, participated in, undertaken, and advocated scientific research. Such research can provide valuable information, improve management and decision making, allow local residents to share their knowledge and observations, and enhance local capacity. In some cases, communities or community members have identified research topics that address their interests or concerns. Some such efforts have had a specific focus, whereas others have been broader in scope.

This report presents a brief summary of some examples of community research interests expressed in various places in recent years. The examples are not exhaustive or representative, either in capturing the many statements of research interests or in spanning the full breadth of those interests. Instead, they demonstrate the strong interest of many communities and organizations, the sophistication of the questions they ask, and the opportunity for productive partnerships in research activities. We hope that persons considering research proposals to the NPRB will review these examples and, where appropriate, seek to create collaborative partnerships with communities and organizations with whom they share interests.

Eskimo Walrus Commission

Pacific Walrus Research and Biomonitoring Plan, 2004-2014. April 2005.

- Determine ecosystem carrying capacity for walrus, trends in walrus population, and status of threats to walrus such as climate change, industrial development, and overharvest
- Establish baselines to evaluate trends and changes in walrus health
- Evaluate walrus diet/prey changes for (1) walrus health and (2) contaminants in the food web
- Document the benefits of walrus subsistence to preserving healthy lifestyles and cultural well-being
- Determine human exposure to contaminants and disease via consumption of walrus tissues
- Preserve and share traditional knowledge of walrus subsistence to maintain strong culture in communities

More detailed project ideas are available in the report.

Wisdomkeepers of the North

Conference Final Report. March 1999.

- Improve communication of research results so they can be better used by communities in making decisions
- Establish partnerships between scientists and communities
- Recognize the spiritual dimensions of our relationship with land and sea

Rural Alaska Community Action Program

Alaska Native Fish, Wildlife, Habitat and Environment Statewide Summit Report. August 2002.

- Have scientists give presentations in schools and work with students as a way to give back to the communities
- Establish monitoring program for key indicator species to examine food web changes and impacts
- Document observations of change by those who live close to the land and sea
- Determine sources and pathways of contamination to help reduce pollution
- Identify causes of declines of marine mammals
- Examine causes of death for starfish, including toxicological studies

Alaska Native Science Commission

Regional Meeting Summaries (www.nativeknowledge.org).

- Summaries of observations from around the state, for the regions of the Northwest Arctic, Southeast, Interior, Yukon-Kuskokwim, Western, Arctic, and Southcentral
- Concerns about climate change, abnormalities in fish and animals, environmental change, new species (see web site for details of observations and concerns), implying an interest in research on those and related topics

Bristol Bay Native Association

Letter from Helen Chythlook, Marine Mammals Coordinator, to Clarence Pautzke, NPRB, May 31, 2006.

- Cuts in funding for Qayassiq Walrus Commission have jeopardized projects and programs
- Bristol Bay Summer Youth Stewardship Program: involvement in walrus monitoring, population counts, and related activities on Round Island and at Cape Seniavin
- Steller Sea Lion Population Identification Project: monitoring for pups and documenting traditional ecological knowledge about sea lions in Perryville, in cooperation with The Alaska Sea Otter and Steller Sea Lion Commission
- Traditional Walrus Use and Conservation in Southwest Alaska: gathering more TEK information about walrus use, conservation, etc.
- Harbor Seal Biosampling Program: collecting samples from harvested harbor seals, run by the Alaska Native Harbor Seal Commission, but suspended due to budget cuts
- Concern that most NPRB funding is awarded to universities and agencies, with little funding to Alaska Native organizations; need for grant training and other capacity building

Bering Ecosystem Study

Sustaining the Bering Ecosystem: A Social Science Research Plan. 2006. (Plan prepared for the National Science Foundation, at a community workshop in March 2004 and subsequent meetings and reviews of the document through February 2006.)

- How are Bering Sea residents surviving amid social and environmental changes in the region?

--Research themes on People and the Environment, Subsistence, Commercial Fisheries and Other Economic Development, Public Health and Safety, Policy and Management, covering a range of topics identified by Bering Sea residents:

- Ecological health/stability
- Climate change and loss of sea ice
- Affects on modes and hazards of travel
- Availability of subsistence foods
- Availability of traditional/culturally important resources
- Changing economic opportunities; economic vulnerability
- Development and its beneficial and detrimental impacts on environment and communities
- Environmental contamination
- Public health
- Social vulnerabilities/ resilience (adaptability)
- Education
- Resource management
- Migration
- Preservation of language and cultural knowledge

--Emphasis on community partnerships for research

Aleut Marine Mammal Commission

Email message from Peggy Osterback, Executive Director, to Henry Huntington, June 21, 2006.

--Interested in participating in discussions about research activities in and around the Aleut region

--Developing a regional "Sentinel" marine mammal observer program, in cooperation with the National Marine Mammal Laboratory, and hoping to extend this program from three villages currently (Akutan, Atka, King Cove) to all 11 Aleutian Island and Alaska Peninsula communities, and also to coordinate with Sentinel Programs on St. Paul and St. George in the Pribilofs to have consistent methods, etc.

--Working with the Alaska Native Harbor Seal Commission and the Alaska Dept. of Fish and Game to conduct harbor seal and sea lion subsistence surveys

--Providing the region's link between regulatory agencies and Alaska Native communities

National Research Council

Site visit summaries from Appendix D, *Elements of a Science Plan for the North Pacific Research Board*. 2004.

--Kodiak

- Marine mammal interactions with fish and fisheries, especially killer whales, sea lions, and sea otters
- Shark interactions with fish and fisheries
- Herring spawning areas, harvest sustainability
- Salmon population trends and migratory patterns
- Crab and shrimp population dynamics and factors that influence them

- Climate change and fisheries
- PSP
- Pollution from the *Exxon Valdez* oil spill
- Impact of forage fish and smaller organisms on the entire food chain
- Greater local involvement in science, including receiving results, providing cultural training for scientists working in the area, and greater use of local knowledge for monitoring and research

--Barrow

- Ecosystem research, for example on marine mammal prey and also interactions among marine mammals, such as killer whales and other whales and seals
- Impacts of human activity (e.g., ship strikes, industrial noise, and pollution) on marine mammals and fish
- Impacts of climate change on ice, subsistence species, and their predators and prey
- Monitoring of animals for disease, toxins, and starvation
- Greater involvement in science, including identifying which research projects are priorities, using traditional knowledge more, and helping with sample collection

--Juneau

- Causes of declines of marine mammals and fish, especially salmon
- Effects of farmed and hatchery fish on wild salmon stocks
- More nearshore and species-specific research, for example sea lion-fisheries interactions, sea otter-sea urchin interactions, and crab, rockfish, sea lion, and seabird declines
- Salmon declines in the Yukon-Kuskokwim region and their relationship to changes in halibut distribution and availability in the Pribilofs
- Spawning patterns of herring in Southeast Alaska
- Crab population declines in the Gulf of Alaska
- Assessing and monitoring the impacts of contaminants
- Assessing and monitoring the impacts of climate change
- Distinguishing natural cycles from anthropogenic forcing
- Greater use of traditional knowledge in formulating research questions

--Kotzebue

- Documentation of traditional knowledge
- Beluga whale migration routes and population dynamics, plus monitoring of health parameters such as blubber thickness
- Changes in seal populations and health indicators such as blubber quality
- Impacts of climate change
- Impacts of contaminants
- Sustainability of fish stocks for subsistence and commercial uses

--Dillingham

- Inadequacy of single-species management
- Overharvesting of ocean resources generally
- Marine mammal-fishery interactions, e.g., beluga predation on salmon
- Impacts of climate change

- Ecosystem studies to determine relationships between various trophic levels and causes of observed changes to fish, marine mammals, and seabirds
- Monitoring of health parameters of marine mammals such as blubber thickness to identify ecosystem changes
- Greater involvement of local residents and their knowledge

--Fairbanks

- More research on nearshore areas, especially in the Bering and Beaufort Seas to understand their role in the whole ecosystem
- Impacts of reduced sea ice cover on commercial and subsistence activities, shellfish contamination and availability, harmful algal blooms, and gray whale habitats
- Effects of deep-sea production on the ocean ecosystem, such as that associated with vents along the Aleutian Islands
- Greater involvement of local communities and their knowledge

--Anchorage

- Long-term impact of fisheries on the regional ecosystem on a large scale
- Causes of salmon declines
- Effects of boat traffic on whales
- Identification of essential fish habitats
- Nearshore mapping
- Monitoring of seafood and marine mammals for health parameters

--Bethel

- Causes of salmon declines and variability, particularly factors during their sea phase
- Impacts of pollution and contaminants on fish and seabirds
- Ecosystem studies
- Economic and social science research
- Greater use of traditional knowledge

Pribilof Islands Collaborative

Research interests and priorities statements, available at

http://www.worldwildlife.org/beringsea_erbc

--Fur seals: a consensus statement about fur seal research indicated five core questions:

- What is the effect of changes in ecosystem state in the Bering Sea and North Pacific Ocean on the northern fur seal population and on the system's overall carrying capacity of the northern fur seal?
- What are the historic and contemporary effects of predation by killer whales and other predators on the northern fur seal population?
- What are the effects of commercial fishing activity in proximity to the Pribilof Islands on the northern fur seal population?
- What is the effect of historic and commercial fishing activities in the North Pacific Ocean and Bering Sea on the northern fur seal population?
- What is the effect of other human activities on the northern fur seal population?

(More discussion of these questions can be found at

http://www.worldwildlife.org/beringsea_erbc/furseal_0305_consensus.pdf)

--Crab and Halibut: several questions were identified by each of the various constituencies involved in the Pribilof Islands Collaborative, but no consensus was presented. The various questions are available at http://www.worldwildlife.org/beringsea_erb/Priority%20research%20from%20caucus%20groups%202020.pdf

--Seabirds: several questions are presented, with no ranking implied in the order

- Effects and fate of offal discharges (including shore-based and at-sea processing)
- Fate/location of auklets and other species that periodically “disappear” from the Pribilofs
- Winter distribution of seabirds around the Pribilofs
- Population trends and nearshore surveys of seabirds on the Pribilofs (vs. some known data from elsewhere in the Bering Sea)
- Pribilofs seabird population trends pre 1970s (e.g., midden studies)
- Differences in population trends between St. Paul and St. George – what are sources of observed variation from one island to another?
- Establish protocol to collect stomachs and tissues from harvested birds (unutilized data source)
- Effect of native foxes on populations of seabirds (e.g., via experimental eradication/control)
- Pelagic seabird distribution data post-1985 (e.g., John Piatt’s work on NPPSD)
- Identify “Pribilof” bird origins: are some actually St. Matthew Island birds?
- Can oceanographic features/underlying geomorphology predict seabird concentrations/distribution? Is there predictability?
- Direct impacts of commercial fisheries and the population level
- Study the forage base (e.g., capelin and sandlance): temporal and spatial distribution in relation to variation in oceanography/temperature
- Beached bird surveys (i.e., via Island Sentinel program): establish baseline of species composition and numbers; monitor marine debris; drift studies; carcass persistence
- Effects and occurrence of plastic ingestion in Pribilof birds

Seabirds priorities can be found at

http://www.worldwildlife.org/beringsea_erb/Priority%20research%20needs_seabirds.pdf