



# **BRISTOL BAY NATIVE ASSOCIATION**

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## **Overview: Bristol Bay Marine Mammal Council (BBMMC)**

### **Marine Mammal Program Goal:**

*“The Marine Mammals Program promotes research for sustainable marine mammal populations and subsistence harvest activities while emphasizing tribal involvement at all stages of research development and implementation.”*

### **BBMMC History:**

In 1995 the 31-member tribes of the Bristol Bay Native Association (BBNA) formed the Bristol Bay Marine Mammal Council (BBMMC). The membership of BBMMC consists of a representative selected by each Tribal/Village Council. A 7-member Executive Council conducts the business for the BBMMC members. The Council consists of one member from each of the 5 sub-regions of Bristol Bay and two at-large members, all of which are selected by a vote of villages within each sub-region. The Bristol Bay Subregions of the BBMMC consist of the following: Nushagak Subregion includes: Aleknagik, Clarks Point, Dillingham, Ekwok, Ekuk, Koliganek, New Stuyahok, and Portage Creek. Togiak Bay Subregion includes: Manokotak, Togiak, and Twin Hills. The Kvichak Bay/Peninsula Subregion includes: Egegik, King Salmon, Naknek, Pilot Point, Port Heiden, South Naknek, and Ugashik. The Iliamna Lake Subregion includes: Igiugig, Iliamna, Kokhanok, Levelock, Newhalen, Nondalton, and Pedro Bay. The Chignik Subregion includes: Chignik Bay, Chignik Lagoon, Chignik Lake, Ivanof Bay, and Perryville. The general membership and the Council are an accurate representation of the people of each sub-region; as a result they can come together and discuss the marine mammal concerns of each sub-region and look for ways to resolve those concerns.

The purpose of the BBMMC is to promote the conservation of marine mammal populations in the Bristol Bay marine ecosystem for subsistence use by tribal members. The Bristol Bay marine ecosystem represents an area of rich and varied biodiversity. To properly address current and future marine mammal issues in the Bristol Bay area, the BBMMC provides council members with a forum to express their needs and draw attention to their specific concerns. The BBMMC also provides state and federal agencies with the means to effectively communicate with the many villages in the BBNA region.

The BBMMC’s Marine Mammal Program receives its funding from the National Marine Fisheries Service on an annual basis to monitor and manage the marine mammals in the Bristol Bay region. Marine Mammals are an integral part of the culture and economy in Native communities and have been for centuries. Bristol Bay houses a variety of marine mammals: Pacific walrus, harbor seal, beluga whale, Northern sea otter, Steller sea lions, spotted seal, bearded seal, and ringed seal. Native hunters have never looked to just one species for sustenance, they have depended on everything the ecosystem could provide them.

While numerous marine mammal organizations throughout the state are specific to one species, the BBMMC was established to take an ecosystem approach to marine mammal issues. Rather than concentrating on one species -- its population and distribution, habitat, diet, use by humans, and other

factors -- the BBMMC considers all marine mammal species in Bristol Bay. Its goal is to conserve marine mammal species and to promote healthy stocks to continue the traditional subsistence harvest of resources by tribal members. By considering all species as pieces of a bigger picture, BBMMC will be able to better inform tribal members of marine mammals and the overall health of the Bristol Bay ecosystem.

### **Projects - Examples of Ongoing and Completed Projects**

The BBMMC would not only like to inform the tribal councils of marine mammal issues but involve them in establishing research priorities and carrying out the research as well. At each Fall meeting, the BBMMC establishes research priorities. Based upon these, research projects are developed and conducted. In order for BBMMC's research projects to be successfully implemented, and for cost effectiveness, BBMMC conducts research projects cooperatively and establishes a project team composed of experienced scientists and local village experts. Prior to the field season, the project team meet to review a draft project study plan, and delegate tasks or responsibilities that will be completed by each member. Some of the tasks or responsibilities include donations of staff time, equipment, and other projected-related items. The discussions focus on methods to successfully implement a project.

### **Beluga Studies in Bristol Bay**

Since 2002, the project cooperators have cooperatively worked on a beluga satellite tagging project in the Kvichak River for two years. Since 2004, the BBMMC has worked with beluga project cooperators in conducting beluga biopsies (collecting beluga skin samples) in the Kvichak River for genetic marking recapture studies. In 2004, and 2005, the focus of the project shifted to DNA collection and analysis. This means, the skin samples are sent to the National Marine Mammal Laboratory who analyzes the samples and through genetics, they can estimate the population of beluga whales in the area they were sampled, as well as determine what beluga stock they came from, for example, Bristol Bay beluga stock. In 2004, skin was collected from 30 belugas, and in 2005, 13 skin biopsies were collected. In 2006, the beluga biopsy research project was continued in the Kvichak River. The research team successfully collected 50 beluga biopsies. Since project started almost 200 beluga skin biopsies have been collected.

The NMFS Southwest Fisheries Science Center will analyze with other Bristol Bay beluga skin samples collected by the hunters.

The **Nushagak** beluga team was active in Bristol Bay from 15–22 May 2008. One objective of the study was to capture 10 beluga whales and put satellite transmitters on them to track their movements (Fig. 1). Previously we tagged 5 belugas in the Kvichak in 2002, 5 more in 2003 and 5 in the Nushagak in 2006. The collaborative Bristol Bay study of beluga whales within Bristol Bay, initiated in May 2008, completed a fourth field season in 2013 and is currently partway through a fifth. Personnel from National Marine Mammal Laboratory (NMML), National Institute of Standards and Technology, Alaska Department of Fish and Game, Alaska SeaLife Center, Alaska Veterinary Pathology Services, Georgia Aquarium, Mystic Aquarium/Sea Research Foundation, Shedd Aquarium, Woods Hole Oceanographic Institute, as well as the local community were involved in the planning, coordination, and execution of this project. The success of this project would not be possible without the support of the local boat drivers; their skill and expertise have been an invaluable aid in finding and safely catching beluga whales for the project. Funding, originally primarily through NMML, has transitioned with Georgia Aquarium providing the financial support for the project infrastructure and individual researchers obtaining supplemental funding. Authorizations for our activities come from NMFS, ADF&G, BBMMC of the BBNA and various animal care and use committees.

In 2008 the project's primary focus was on beluga whale habitat use in Bristol Bay. This involved capturing and tagging whales with long term satellite tags which recorded location data and transmitted the information to the research team via satellite link. Handling beluga whales provided the opportunity to broaden the scope of our studies by obtaining biological samples. This allowed investigations into other aspects of the health and life history of beluga whales in Bristol Bay. These studies are important to better comprehend the status of belugas in Bristol Bay, but are also valuable in understanding the plight of beluga whales in Cook Inlet. Data collection included body measurements, blood sampling, blowhole swabs, breath samples, blubber biopsies, blubber thickness measurements using ultrasound, fecal samples, and biopsy samples of any remarkable skin lesions. A total of 18 whales were captured, sampled, tagged, and released between two field seasons in May and September of 2008.

In 2012, the project resumed with additional complementary goals. Hearing was tested for the first time in wild belugas, utilizing the same technique used to assess hearing in human infants. Breath samples were obtained to explore potential indicators of health in whale exhales (blows) rather than from blood; once validated, this type of testing would be beneficial when animals cannot be captured, but whose breath could be sampled remotely. Also, a new tag for belugas was used. This smaller tag, called a LIMPET (Low Impact Minimally Percutaneous External-electronics Transmitter), is deployed from an air rifle and has been used in many other whale species. Nine whales were caught and sampled that year.

In 2013, we began to investigate foraging behavior which we continue to investigate this year with improvements to our original procedure. Ten animals were captured in September, 2013 with seven receiving the LIMPET tag and three with the long term tag. The ABWC sponsored the participation of villagers from Buckland and Kotzebue who joined us to learn how to tag belugas in their areas. Following the captures, researchers also remotely deployed two additional LIMPETs from a boat to swimming whales.

The 2014 foraging investigations have been expanded by recording individual animal's vocalization and echolocation (biological sonar) in their attempts to locate and consume prey. Additional priorities in 2014 included ongoing investigation of the validity of breath and blubber in health assessments as both of these samples can be obtained without capturing a whale. Analysis of these samples from previous years shows great potential, but requires fine-tuning, more samples, and further analysis before being considered an acceptable alternative to traditional sampling requiring a whale be caught and handled.

These long term studies on the health and life history of beluga whales in Bristol Bay have been an impressive collaboration of researchers from a variety of government agencies, research centers, contractors, and public aquariums, working alongside local residents. Special thanks go to the Bristol Bay Native Association, Marine Mammal Council for their approval and to Helen Aderman for helping to recommend local experts who have included Ben Tinker, Albert Roehl, Tom Olson, Tom Bavilla, Bernie Lopez, Ray Andrews, Danny Togiak, and Richard Hiratsuka. Also, we greatly appreciate logistical support from the Togiak National Wildlife Refuge, the City of Dillingham, and Kanakanak Hospital.

Another objective was to determine what healthy belugas look like by collecting samples such as blood, blubber thickness, feces, and some stomach contents to provide information on beluga health. Samples like these have not been collected from wild belugas before so first we needed to find out if the samples could be collected. Now that we know we can collect them, the beluga team would like to capture belugas in Cook Inlet and compare the results. Because Bristol Bay belugas are known to be healthy and the population is growing this comparison may tell us what could be wrong with the Cook Inlet belugas.

In addition to the tagging and sampling we also collected skin biopsies from 22 belugas that were not captured first. We do this by approaching a beluga with a boat and throwing a harpoon with a special biopsy tip. Skin samples are being used to estimate the size of the beluga population by using genetics to identify individuals. If a beluga is sampled more than once we can identify it and know if has already been sampled. The number of “re-samples” tells how many belugas are in the population. If you re-sample a large number then your population is small. If most of your belugas have not been sampled before, your population is large.

The **Nushagak** beluga team included combining western science and local Alaska Native knowledge which were instrumental to the science and biology researchers due to their local knowledge of the area and their boat skills. The Local experts were Albert Roehl, Tom Olson (Cuyrung Tribal Council members), and Tom Bavilla, Jr., Ben Tinker, and Fred Bartman (Aleknagik Traditional Council members).

The **Kvichak** beluga team collected over 100 skin samples in three days. We have been doing skin biopsies on the Kvichak side since 2004. The experienced beluga crew members Nick Apokedak and Gus Tallekpalek are members of the Levelock Village Council. Now we have collected approximately 300 biopsies from this area.

These studies are approved by and done in cooperation with the Bristol Bay Native Association, Bristol Bay Marine Mammal Council. Other cooperators include the Alaska Beluga Whale Committee, National Marine Fisheries Service, National Marine Mammal Laboratory, U.S. Fish and Wildlife Service (Togiak Refuge), and the Alaska Department of Fish and Game.

The Bristol Bay Marine Mammal Council graciously thanks the Project cooperators for dedicating their time and research equipment in successfully completing the research projects. This is a prime co-management example of Native organizations and agencies cooperatively working together to get something done for the people of Bristol Bay.

Besides research projects, in 2003 the BBMMC Council developed the Bristol Bay Beluga Whale Management Plan. The Plan includes: goals, conservation measures, subsistence harvest guidelines, use of beluga whales, reporting and monitoring, education, information, public involvement, research, and enforcement. Copies of the Plan were circulated to all 32 tribal villages for review, comment, and recommendations. The Plan is reviewed periodically by the BBMMC Council for amendments as needed.

### **Marine Mammal Harvests**

The Marine Mammal Program collects voluntary harvests from Bristol Bay marine mammal subsistence hunters. Hunters voluntarily comment on their observations such as changes in weather patterns due to changing sea ice conditions from warmer weather, how changes are affecting where the ice-associated seals and non-ice seals migrate. Fall, Spring, and Winter harvests and hunter observations comments are voluntarily provided. BBNA would like to continue working collaboratively with Bristol Bay Tribal hunters to voluntarily collect marine mammal harvests, but again, the hunters would like to be compensated for their voluntary harvest information disclosed to BBNA. The Bristol Bay hunters do not want agencies to mis-use their hunter information. Even though the Bristol Bay tribal members do not always hunt marine mammals, that does not mean they have stopped hunting, but they will hunt marine mammals, if the environmental conditions allows them to harvest marine mammals successfully.

## **Bristol Bay Imapriim Ungungsiit Marine Conservation Project**

The overall goal of this project is to start implementing the Bristol Bay Regional Vision which helps guide resource development decisions and values subsistence. These activities are in line with the Bristol Bay Regional Vision that seeks to protect the land and waters to sustain the subsistence lifestyle by encouraging local people to participate in land use (GIS mapping) planning and game management through advisory councils. The project also increases the knowledge and involvement of local people in environmental issues and processes that further protects the land and waters.

## **Other Past Marine Mammal Program Projects** **Steller Sea Lion TEK & Rookery Project**

The Steller Sea Lion Research Initiative-Native Village of Perryville Project was successfully completed in 2004. This project was encouraged by the Native Village of Perryville due to the decline in Steller sea lions in their area and on the Alaska Peninsula region in general. Some of the Alaska Peninsula communities have not harvested Steller sea lions for subsistence use for more than ten years. Phase One of this Project was gathering important traditional ecological knowledge (TEK) information on subsistence uses of Steller sea lions from elders and subsistence users in the Perryville community. Phase Two of the project was conducting a population assessment using accepted small boat survey techniques and the identification of Steller sea lion haulouts and rookeries. The underlying reasons for conducting this project were to document traditional knowledge regarding subsistence uses of Steller sea lions, to assess the Steller sea lion population in the area, to identify haulouts and rookeries, and to increase the local research capacity of Perryville residents through training and use of modern research techniques.

On April 22, 2004, the Bristol Bay Native Association Natural Resource Department staff met with the Native Village of Perryville Council to review the final Project Report to NMFS.

The Native Village of Perryville Council made comments and recommendations. The Council was concerned during the 2003 Steller sea lion population survey; no pups were counted at the sites. The Council recommended continuous population survey for three to five years to get an accurate population count with pups at the Steller sea lion rookery haulouts. A resolution from the Native Village of Perryville Council passed in December 2004 is attached and a program summary of the proposed continuation of the Native Village of Perryville's Steller Sea Lion Population Identification Project. BBNA will continue seeking additional funds to continue this Project as it is a community request from the Alaska Peninsula area. There needs to be up-to-date research data from the Bristol Bay region and the Alaska Peninsula region. We are willing to participate as Project Cooperators with any state or federal agencies, and non-profit organizations willing to provide funds or technical support in continuing this project on a long term basis.

## **Walrus TEK Project**

The Walrus TEK Project was recently conducted in Togiak, Alaska and its intent was to gather important traditional ecological knowledge on subsistence uses of walrus in Bristol Bay. Two local research assistants from Togiak interviewed 15 elders and experienced walrus hunters on walrus TEK information, and map documentation by hunters was completed. The topics covered in the walrus traditional ecological knowledge project included: walrus population trends from ten years back to the present as

observed from experienced traditional walrus elders and hunters; subsistence activities involving walrus, which included identification of historical traditional walrus subsistence sites; identification of current walrus subsistence sites; traditional methods of walrus hunting used by the Togiak Native ancestors and present methods used; weather patterns; identification of walrus migrating routes; identification of walrus haul-out sites; identification of walrus feeding areas; traditional subsistence uses of walrus meat, walrus skin, and preservation methods; walrus ivory and skin uses; traditional walrus conservation uses in ensuring the continuity of walrus hunting, and old time walrus hunting stories. BBNA completed the final report to the Pacific Walrus Conservation Fund. We would like to seek additional funding to expand on this Project.

### **Port Heiden Harbor Seal Research Project:**

Oak Foundation awarded the Bristol Bay Native Association (BBNA) a two-year grant for \$ 185,977 - "Building capacity for conservation and marine mammal co-management in Alaska." The project cooperators are the Alaska Native Harbor Seal Commission (ANHSC), and the Indigenous People's Council on Marine Mammals (IPCoMM). BBNA will be conducting a Port Heiden Harbor Seal Population Identification Project, TEK component using GPS mapping technology. On September 4, 2008 this project was approved by the Port Heiden Village Council and a Seal Site Coordinator and two seal biotechnicians will provide local expertise in population identification counts of harbor seals in the Port Heiden area, and gather important local traditional ecological knowledge on harbor seals in the Port Heiden area. GPS map documentation will be included in the field and TEK component of this Project.

### **FY 2009-FY2011-Project Title:** "Iliamna Lake Freshwater Seal Study: Characterizing Local Use Patterns, Local Traditional Knowledge, and Seal Population Ecology"

This project proposes to gather valuable environmental baseline information on the unique seal population inhabiting Iliamna Lake, and to gather local traditional knowledge from nearby communities that have traditionally harvested seals from the lake. The Lake Iliamna tribal communities have requested this research because they are concerned with the absence of publically available information on the seal population, and are worried that the proposed Pebble Mine may affect the seal population, and the traditional subsistence harvests.

To accomplish these goals, the Bristol Bay Native Association, in collaboration with the local tribal communities of Pedro Bay, Kokhanok, and Iliamna, and with UAA, ANHSC, ADF&G, and NOAA, will train community members to participate as seal research technicians who will then 1) gather important LTK regarding freshwater harbor seals in the Lake Iliamna area through interviews and surveys; 2) conduct aerial, boat, and ice based surveys of seal habitat areas and numbers of animals hauled out throughout the year; and 3) work with hunters to voluntarily collect tissue samples from harvested seals for health and genetic studies. At the completion of the Project, lead Lake Iliamna tribal communities, the Bristol Bay Native Association, and UAA shall work with state and federal agencies in compiling a report of the results of this Project for presentation to local communities and other interested parties.

### **Community Involvement**

This tribally initiated cooperative research program will merge the local traditional knowledge of subsistence harvesters with established research organizations to begin to understand the dynamics of the Lake Iliamna seal population to not only establish the database of scientific information available but could potentially lead to management decisions to ensure sustainability of this unique population of freshwater seals. The tribal governments of Iliamna, Kokhanok and Pedro Bay have passed resolutions supporting this research proposal,

and the Bristol Bay Native Association is the lead organization. Research plans and training sessions will be conducted at the start of the project in each community, local community members will be hired to conduct the research, and results will be maintained throughout the project in an easily available (web-based) format, and presented to each community at the end of the project.

The BBMMC and the BBNA Marine Mammal Program works with all of the BBNA Tribally enrolled communities in other marine mammal related issues and works cooperatively with other state and federal agencies on research projects. If you have any questions, or have any marine mammal related questions, call us at (907)-842-5257, extension 340, or use our toll free number at 1-800-478-5257, extension 340. BBNA also has a web page of the Natural Resource Department Program at [www.bbna.com](http://www.bbna.com).