

PARTNERS IN CONSERVATION AWARD NOMINATION BOWHEAD WHALE TRACKING PROJECT

External Category: 1) Conservation that furthers the Mission of the Department of Interior; A) Protecting Natural, Cultural, and Heritage Resources and 2) Partnerships that Demonstrate Best Practices

SUMMARY

The Bowhead Whale Tracking Project is an unprecedented collaboration among governmental and Native organizations to document the movements and habitat use of endangered bowhead whales combining state-of-the-art satellite technology with traditional knowledge and methods of hunting. The study is funded primarily by the Minerals Management Service (MMS) and conducted in partnership with the Alaska Department of Fish and Game (ADF&G), the Alaska Eskimo Whaling Commission (AEWC), the North Slope Borough Department of Wildlife Management (DWM), the Canadian Department of Fisheries and Oceans (CDFO), Greenland Institute of Natural Resources (GINR in Copenhagen, Denmark), and Tuktoyaktuk and Aklavik Hunters and Trappers Committees in Canada.

This collaboration, both in the field and in combining science and traditional knowledge, has elevated the research environment for bowhead whales into arenas of unprecedented



Bowhead whales feeding in shallow water near Barrow, Alaska.

productivity. The resultant study has also yielded a new level of insight into bowhead biology that is causing cetacean biologists and resource managers to rethink long established paradigms about relationships between bowhead whales and their environment. New information coming from the study will assist for those agencies and organizations that are tasked with estimating the effects of and developing mitigation for oil and gas

activities in the Chukchi and Beaufort Seas. The study has demonstrated in new ways that collaboration can play a key role in advancing marine mammal science for responsibly managing human development in the rapidly changing Arctic. Moreover, the project has also set a new professional standard for how such studies should be conducted.

BACKGROUND

The endangered bowhead whale (*Balaena mysticetus*) was hunted to near extinction by whalers in the 19th century. It is an important subsistence and cultural resource for the indigenous people living in coastal villages in northern Alaska. Subsistence harvests by Native whalers are regulated by the International Whaling Commission (IWC) and the setting of harvest limits is often contentious and politically-charged on a global scale.

Native people living a subsistence lifestyle, which includes the harvest of marine mammals, especially bowhead and beluga whales, walrus and bearded seals, may view management activities by “outside” organizations as potentially threatening to their way of life. The perception of threat often extends to industrial activities associated with oil and gas. Moreover, this view has sometimes carried over to scientific research in Arctic Alaska. Native hunters, and Native Commissions such as the AEW and Eskimo Walrus Commission, have expressed concerns about the potential for government-sponsored scientific research projects to interfere with annual hunts by displacing or sensitizing animals, thereby making them more difficult, or more dangerous for hunters to obtain. These concerns can make it difficult for researchers to work in a coastal community if the people do not think the research is worthwhile or think it will have a negative impact on their hunting. By involving the hunters in developing the study objectives and planning, local communities have a better understanding of the importance of the results and more control over designing the study to avoid interference with subsistence activities.

Such concerns have made it difficult and expensive to undertake tagging and behavioral studies of bowhead whales and thus prior studies have been quite limited. For a relatively invasive research study (such as one that involves tagging bowheads) to be successful, achieving cooperation and support of Native-stakeholders potentially affected by the project is essential. Direct involvement in the research gives the Native community a partnership in the findings and a say in how the project develops. There are great advantages to the study in having the expertise of people that 1) are familiar with the region and the distribution and behavior of marine mammals, 2) have local knowledge of weather, ice conditions, and other safety hazards, 3) can use traditional knowledge to interpret observations by using what is known from the past. Working in local communities is also cost effective compared with studies involving aircraft and large vessel charter.

CREATING A PARTNERSHIP

In 2004, to design and explore the potential for a cooperative bowhead whale tracking research project involving Native hunters and whalers, and governmental biologists, the MMS funded the ADF&G to hold a series of meetings through a cooperative agreement. A strong consensus was demonstrated and in 2005 MMS contracted with the ADF&G to undertake a 5-year study partnering with the organizations and individuals that had been identified. Using

satellite tags developed and provided by Greenland Institute of Natural Resources (GINR), the first attempt to tag bowheads was at Barrow in September, 2005. The first bowhead was successfully tagged at Barrow in May, 2006. Subsequently, tagging operations have been conducted periodically near Barrow and Kaktovik, Alaska, and near Tuktoyaktuk, Northwest Territories, Canada.



Native whalers meeting with biologists in Barrow, Alaska.



Canadian Native hunters and biologists from GINR tagging a bowhead whale.

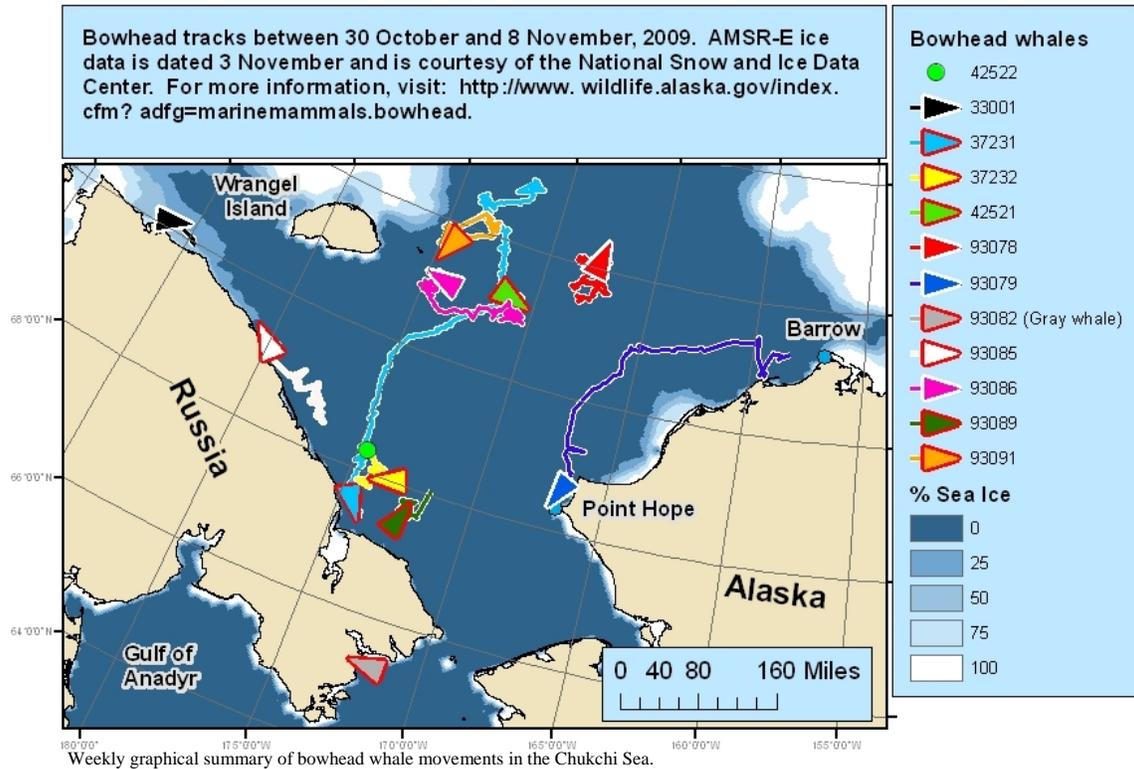
IMPLEMENTING THE PARTNERSHIP

Through 2009, the project has achieved unprecedented success while enhancing collaborative efforts. Although tagging bowhead whales in the Arctic has been attempted in the past, efforts have yielded only mediocre results. The success of the current project is largely due to the extensive efforts of Native hunters to approach and tag whales. Through 2009, 44

whales have been efficiently instrumented in U.S. and Canadian waters, nearly all by Native hunters that have been compensated for their time and use of their boating equipment. The satellite tags, modified for bowheads by the GINR, have exhibited remarkable longevity with some whales being tracked for nearly a year during their annual migration through Alaskan coastal waters between wintering areas near the Gulf of Anadyr in Russia and summering areas in the eastern Beaufort Sea in Canada. To facilitate the study of bowhead movements and habitat use, data on whale movements and diving behavior have been analyzed by ADF&G scientists using Geographical Information Systems and merged to great effect with other available data on sea ice coverages, bathymetry, and other ocean conditions. These analyses are forcing bowhead biologists to reconsider the paradigm of how the whales make their annual migration and use specific habitats along the way. Another striking discovery has been the extent to which some bowheads have been able to spend weeks to months under continuous sea ice. The aggregation of most of the tagged population in waters near the Gulf of Anadyr opens the intriguing possibility that bowheads are feeding there.

COMMUNICATING THE FINDINGS

Compelling maps summarizing incoming data have been shared weekly with the scientific community and public through email and on an extremely popular ADF&G website. In addition to weekly posting, summaries of tagging activities and maps of the movements of tagged whales are sent to nearly 150 individuals or organizations through a mass emailing. This information is forwarded to hundreds of interested individuals leading to sometimes lively chains of discussion as Natives and scientists share knowledge and experiences relevant to the postings. Other data analyses, summaries, manuscripts and peer-reviewed papers are available on the website. Investigators also give regular presentations at venues ranging from gatherings in villages to International and National professional meetings. The summaries and related discussions have generated much excitement among those interested in bowhead whales and their biology. The study is expected to continue for several more years and tagging will soon spread to additional whaling villages, including those on St. Lawrence Island in the Bering Sea.



Information from this study directly complements the hunter's knowledge about bowhead movements that was documented in an associated study and will soon be available as an MMS Final Report.

STRATEGIES AND TOOLS

A variety of mechanisms have been used to provide support for the Bowhead Tracking Partnership. MMS and Canadian DFO have contributed funding directly. ADF&G, NSB and the National Marine Fisheries Service (a minor partner) have provided in kind funding as salaries or access to research permits. Funding to ADF&G from MMS has been provided through cooperative agreements and contracts. Native whalers and hunters have been given payments for boats, fuel, and personal involvement through invoicing ADF&G.

THE PARTNERS

The Minerals Management Service (Dr. Charles Monnett, Project Officer) provided funding and oversight for the study.

The Alaska Department of Fish and Game (Lori Quakenbush (PI) and Robert Small) has been the primary contractor throughout both phases of the study. They designed and promoted the study, organized meetings, arranged logistics, provided compensation to Native participants, selected and distributed tagging equipment and tags, managed data and produced data summaries, maps, and reports. They also maintain the project website and are responsible for mass emails of study results. Staff has participated in tagging and other field activities as needed.



A bowhead whale being tagged with a modified harpoon handle and biopsy needle.

The Alaska Eskimo Whaling Commission (Harry Brower, Chairman), Tuktoyaktuk and Aklavik Hunters and Trappers Committees in Canada, and several individual whalers (Billy Adams) or hunters have provided essential boats and related safety equipment as well as detailed knowledge about how to approach whales with small boats for tagging. Most whales in the

study were tagged by experienced Native crews having extensive knowledge about operating in the challenging marine environment of the Beaufort Sea.

The North Slope Borough Department of Wildlife Management (Dr. Craig George, Senior Wildlife Biologist) has been a partner with ADF&G since the inception of the study. Staff played a pivotal role as liaison with the Native community in villages along the Alaska Beaufort Sea and have helped generate local enthusiasm for the study. NSB biologists have assisted with logistics, and assisted with planning and logistics for field work. NSB assisted with communication when field work was underway and accompanied field teams as needed.

The Canadian Department of Fisheries and Oceans (Lois Harwood, Wildlife Biologist) worked with ADF&G to build support for field work in Canada. DFO served as liaison with local hunters and provided much of the funding for local logistics and tagging activities.

The Greenland Institute of Natural Resources (Dr. Mads Peter Heide-Jorgensen) in Copenhagen, Denmark, developed and adapted the satellite tags used on bowhead whales in the study. They made numerous visits to Alaska to train local whalers, hunters and biologists in the use of the tags and deployment system. They accompanied field crews during tagging operations as needed.