



THE CASE FOR A PAN-ARCTIC MARINE PROTECTED AREAS NETWORK FROM THE STANDPOINT OF MARINE MAMMAL PROTECTION

Moving from Study to Action

A briefing by the Environmental Investigation Agency
Protection of the Arctic Marine Environment (PAME) working group meeting
1 February 2016, Stockholm

Introduction

The Environmental Investigation Agency (EIA) commends the Arctic Council for its historic commitment to environmental protection and its decades of research and work towards the goal of protecting the Arctic Ocean. EIA also commends the PAME (Protection of the Arctic Marine Environment) working group for its targeted work on Arctic marine protected areas (MPAs). As the PAME working group meets in Stockholm this week, EIA urges the member nations of the Arctic Council to prioritize the creation of new marine protected areas and to work toward the establishment of a Marine Protected Area (MPA) network within the Arctic marine environment on an urgent basis. Rapid changes brought about by climate change and increasing risks from industrialization all threaten the Arctic's unique and vulnerable species, such as the beluga whale, that depend on it. If the nations of the Council move swiftly and assertively, there is still time to proactively establish a network of MPAs that will help protect key habitat from long term harm.

Marine Protected Areas and the Arctic Council

The mapping of protected areas and support for new terrestrial and marine protected areas has been a part of the work of the Arctic Council since its inception. In 1996, the Conservation for Arctic Flora and Fauna (CAFF) working group produced *the Circumpolar Protected Areas Network (CPAN) Strategy and Action Plan*, which set a goal for nations to identify “the most significant gaps in the national networks of marine protected areas, and select candidate sites for further action.”¹ This work continued after the Ottawa Declaration, and in 2004, the Arctic Council formally called for the establishment of a network of MPAs as part of the *Arctic Marine Strategic Plan*.² In 2009, PAME published the *Arctic Marine Shipping Assessment (AMSA)* which in its adopted recommendations II(C) and II(D) called for identification of areas of heightened ecological and cultural significance by the Council and to “explore the need for internationally protected areas for the purpose of environmental protection in regions of the Arctic Ocean.”³ A subsequent report by three working groups built on recommendation II(c) of AMSA and identified 97 sites that met the criteria for Particularly Sensitive Sea Areas (PSSAs) as defined by the International Maritime Organization.⁴ Finally, in 2015, PAME's pan-Arctic MPA network Expert Group produced its *Framework for a Pan-Arctic Network of Marine Protected Areas*.⁵ Through its implementation, the Framework envisions supporting the establishment of a system of coherent and scientifically informed MPAs across the Arctic within national jurisdictions.⁶ This Framework was approved and a commitment was made to further develop it in the 2015 Iqaluit Declaration.⁷



In spite of more than two full decades of commendable work by PAME and the Council towards MPA research, the establishment of new MPAs in the Arctic continues to lag well behind efforts at terrestrial conservation. There have also been no substantive commitments made by Arctic Council member nations regarding the size, scope, or timing of the establishment of an MPA network. Creation of PSSAs through the IMO outside of Arctic nation EEZs was also recommended in a 2013 report to the Arctic Council by *Det Norske Veritas*, and this also has not been pursued.⁸

Eleven percent of the Arctic is considered part of a protected area, and while 40 percent of this includes a marine component, it is unclear how much territory is actually protected within the Exclusive Economic Zones (EEZs) of the Arctic Ocean states.⁹ The creation of new MPAs within the Arctic Ocean would support the commitments that each Arctic nation has publicly made towards the Convention on Biological Diversity's Aichi Target 11, which seeks to protect ten percent of coastal and marine areas by 2020.¹⁰ Time is running out for the Arctic states to create a network that will proactively protect key Arctic marine mammal habitat from growing industrial activity and the amplifying impacts of climate change. EIA understands that PAME is currently undertaking an inventory of existing MPAs and we look forward to the results of the analysis and swift action by Senior Arctic Officials to build on and expand existing protections.¹¹

Beluga Whales: A Key Arctic Species Threatened by Climate Change

The overall impact of climate change on the Arctic ecosystem cannot be overstated. In its 2013 Arctic Biodiversity Assessment, CAFF emphasized that climate change is not only the largest stressor on the region, but one that exacerbates all other impacts.¹² Species like the beluga whale (*Delphinapterus leucas*), will be adversely impacted by the dramatic shift in their habitat. Belugas are an ice associated species; in a 28 year study populations along the western coast of Greenland consistently moved further away from shore as ice coverage declined.¹³ Less predictable sea ice may also increase the possibility of fatal large scale entrapments.¹⁴

As large and opportunistic predators, belugas prey on Arctic cod, herring, Arctic char, as well as a range of crustacean species. The abundance of these prey species is in turn likely to be negatively impacted as oceanic acidification damages the zooplankton and invertebrates that underpin the fragile Arctic ecosystem.¹⁵ The northward migration of species like minke or humpbacks will likely increase competition for the same prey species with belugas.¹⁶ Additionally, the loss of sea ice may also increase predation from killer whales, which have been sighted further north than their historic range.¹⁷

The changing climate will also likely lead to the successful introduction of more invasive species, either from northward migration or from vessel traffic.¹⁸ In tests performed on beluga whales caught from the Beaufort Sea along northern Alaska and Canada, ten percent of the whales were infected with *Toxoplasma gondii*, a parasite that can cause blindness in humans if consumed in uncooked meat.¹⁹

Finally, there is the possibility of increased hybridization between the beluga and its closest genetic relative, the narwhal (*Monodon monoceros*). A recently recovered skull from Disko Bay in western Greenland was found to have characteristics of both species, with an unusually pronounced lower jaw



and snout.²⁰ Increased sightings of animals with similar features have also been reported by hunters. The long term results of such interbreeding would likely reduce the genetic distinctiveness both species.

Human-induced Threats to Belugas and Other Marine Mammals in the Arctic

Oil and Gas Development

According to a 2008 assessment by the United States Geological Survey (USGS), fully 13 percent of the world's remaining technically recoverable oil and 30 percent of the world's technically recoverable natural gas exists within the Arctic Circle.²¹ Seismic exploration for these resources could increase the risk of large scale ice entrapments. Between 2008 and 2010, three large and unprecedented fatal entrapments of over 1,000 narwhals in 2008 and over one hundred in 2009-2010 occurred after seismic surveys were conducted for the first time in late September, coinciding with the narwhal's typical migration.²² Researchers have hypothesized that the noise from exploration caused the narwhals to delay their migration, leading to the mass entrapments.

While the rate of development for these resources is subject to global economic pressures given the expensive investment required, should more companies attempt to pursue oil and gas in the Arctic Ocean it will greatly increase the likelihood of an oil spill. Although the Council has made cooperation and response to marine oil pollution a binding agreement and a priority for future work, even under ideal circumstances cleaning up an oil spill in the Arctic Ocean remains difficult if not impossible.²³ Were a spill to occur, it would have serious repercussions for marine mammals. For instance, recent studies on killer whales suggest that many cetaceans are unable to see or avoid oil slicks and run a risk of internal as well as external damage as a result.²⁴ In the aftermath of the 1989 Exxon Valdez oil spill in Alaska's Prince William Sound, the resident population of killer whales in Prince William Sound lost 33 percent of its population.²⁵ Not only would these impacts have repercussions for the local ecosystem, it could threaten the food security of indigenous peoples in the region who depend on marine mammals for sustenance.²⁶

Shipping

Shipping through the Arctic's Northern Sea Route (NSR) along the northern coast of the Russian Federation, and eventually through the Northwest Passage and Transpolar Sea Route is projected to increase significantly in coming decades. By one projection, traffic in and out of the Bering Strait is expected to increase between 100 and 500 percent from 2015 levels by 2025.²⁷

Ship strikes and collisions are a serious threat to bowhead whales, while the smaller Arctic cetaceans, belugas and narwhals, will face increased pressure from noise pollution. For instance, researchers observing the Saguenay River in Canada found that the number of belugas passing through each hour dropped by 60 percent over just four years, corresponding with a sharp rise in motorized boat traffic.²⁸ Ice breakers have proven especially disruptive, with beluga whales exhibiting a flight response at distances up to 50 kilometers.²⁹ Icebreakers are currently a mandatory escort for any major ship traversing the NSR, and if the route expands as many predict, a more constant level of disruptive noise across much of the beluga's Russian range is assured.



Uncertain conditions and rising traffic also increase the possibility of an accidental oil spill. Although efforts are underway to update these nautical charts, less than one percent of Arctic waters have been surveyed with modern techniques capable of penetrating sea ice within the Exclusive Economic Zone of the United States.³⁰ This poses an added challenge even to ice strengthened vessels. In 2015, the commercial icebreaker *Fennica* opened a 39-inch gouge in its hull on an uncharted shoal while traveling through an area near Dutch Harbor that had not been surveyed since 1935.³¹ According to an analysis by Lloyd's of London, there were 55 shipping incidents within the Arctic Circle's waters in 2014, up from just three in 2005.³² As recently as 22 January 2016, an accident during ship-to-ship reloading operation leaked oil into the Russian Federation's Kola Bay when a pipe ruptured.³³

All of these activities will occur in an Arctic Ocean that is lacking in sufficient infrastructure. The Guggenheim Foundation has suggested that fully developing these resources will require a further US\$1 trillion in infrastructure investment from public and private sources to develop the region safely.³⁴

Benefits of Marine Protected Areas

The benefits of MPAs have been well documented by the Arctic Council and its working groups.³⁵ As outlined in the *Framework*, they offer refuge for marine species, protect natural ecological areas of value, and can even help replenish populations that are depleted or extirpated outside of the MPA.^{36,37} These areas can also reduce the immediate impacts of noise, or pollution from nearby sources, as well as direct impacts like ship strikes on larger cetaceans. As the 2013 Arctic Ocean Review aptly notes, "The most effective way to reduce collision risk is to keep marine mammals and ships apart."³⁸

However, it must be stressed that any created MPAs must have protections that do not just exist on paper. In a study of 87 MPAs in 2014, researchers found that 59 percent of them were not ecologically distinguishable from the fished areas surrounding them.³⁹ The authors concluded that the most effective MPAs depended on an accumulation of five factors: 1) "no take" designation, 2) well enforced management, 3) at least ten years old, 4), larger than 100 km,² and 5) isolated by deep water or sand bars.⁴⁰

Conclusion and Recommendations

The establishment of a pan-Arctic MPA network is necessary to ensure the long term survival of key Arctic species like the beluga whale. Twenty years have passed since the Arctic Council began discussing an Arctic MPA network. It is time to move swiftly from study to action. EIA is calling on the Arctic Council's eight member nations to formally commit to the establishment of a pan-Arctic MPA network that includes:

- Aggressive time-bound goals for the creation of new protected areas in the Arctic region as a whole;
- Aggressive time-bound commitments by each member nation for the creation of new MPAs within their EEZs;
- Joint action at relevant bodies, such as the IMO, to create additional protections for areas on the Arctic High Seas; and



- The best scientific evidence and analysis available, prioritizing precautionary principles, connectivity, flexibility in relationship to climate change induced threats, and the protection of unique and keystone marine species, including the beluga whale.

At this week's meeting, EIA urges the working group to ensure the timely publication of the results of its review of existing MPAs for review by Senior Arctic officials at their next meeting and to follow this with a careful analysis of gaps in the existing MPA structure so that the working group and governments can move expeditiously to identify additional areas for protection.

EIA looks forward to working together with delegations, scientific experts, civil society and other stakeholders to move this important work forward in 2016 and beyond.

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