

Changing Conditions in the Arctic: Public Comments Received 1/24/2011-4/29/2011

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Name

Bruce Wright

Organization**Which Priority Objective would you like to provide comment on?**

Changing Conditions in the Arctic

What near-term, mid-term, and long-term actions would most effectively help the Nation achieve this policy objective?**Introduction:**

I participated on the Pew Ocean Commission as the Science Advisor for Alaska Governor Knowles and generally agree with all 9 objectives. But they are general statements, and I would like to focus on what I perceive as the most pressing topic for the oceans: Resiliency and Adaptation to Climate Change and Ocean Acidification. As the Senior Scientist of the Aleutian Pribilof Islands Association, a regional Native non-profit organization, I work with the Tribes and communities in the Aleutian and Pribilof Islands on renewable energy projects (wind, geothermal, hydro and tidal), energy conservation projects and climate change monitoring and mitigation measures. My harmful algal blooms (HABs), sea level rise and ocean acidification monitoring projects data are revealing regional changes likely driven by increased ocean temperatures and acidification.

The Problem: Oceans becoming saturated with CO₂

The increase of CO₂ into the world's ocean from anthropogenic carbon emissions has resulted in a pH decline of about 0.1 units since the beginning of the Industrial Revolution. Ocean acidification results from the chemical interactions of CO₂, water and the carbonate system of the ocean and results in a decline in the concentration of the carbonate ion, essential for many phytoplankton and zooplankton. Alaska is expected to experience exacerbated effects of ocean acidification since cold northern upwelling waters of Alaska are already laden with CO₂. Ocean acidification could reduce CaCO₃ deposition rates of key calciferous plankton enough that we expect shifts in the food web. Increased ocean acidification could easily result in loss of ocean productivity which would have a direct negative effect on subsistence and commercial marine resources. Some species of shellfish (shrimp, clams, oysters, crab) are already having difficulties maintaining their shells in high acid oceans; if ocean acidity increases too much these species may perish.

As the oceans become more acidic they are less reliable as a sink for CO₂; they are becoming saturated with CO₂. The Southern Ocean has been absorbing less CO₂ from the atmosphere since 1981 even though CO₂ levels have increased 40% due to burning of fossil fuels. Oceans once absorbed half of all human carbon emissions, but the Southern Ocean is taking up less and less and is reaching its saturation point. This is evidence of a positive feedback that could rapidly accelerate the rate of climate change. Climate models predict that this kind of feedback will continue and intensify; as the oceans reach their saturation point more CO₂ will stay in our atmosphere.

The Solution: Remove CO₂ from the biosphere by deacidifying the oceans:

We need to get the acid out of our oceans. Researchers have described a technology to reduce the accumulation of atmospheric carbon dioxide (CO₂) caused by human emissions. The process electrochemically removes hydrochloric acid from the ocean and then neutralizes the acid with a silicate reaction using volcanic rocks; this simulates and accelerates natural chemical weathering. The new technology de-acidifies the ocean's waters. As a result, the ocean's alkalinity would increase, enabling the uptake and storage of more atmospheric CO₂ in the form of bicarbonate. This process may be able to safely and permanently remove excess CO₂ in a matter of decades. This process could be run in remote locations and powered by stranded energy, such as geothermal in Alaska and

especially near volcanoes. To deacidify the oceans would involve building dozens of facilities on coasts of volcanic. The Aleutian Islands are on the Ring of Fire, have many sites with abundant renewable energy (geothermal, wind, hydro and tidal) and the chemistry needed to process the acid in the ocean to an inert byproduct.

What are some of the major obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address the stewardship of the oceans, coasts, and Great Lakes?

It's too late to stop the damage caused by CO₂; we need to reverse the damage.

What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?

Reduce ocean acid levels

Name

Glenn Sheehan

Organization

Barrow Arctic Science Consortium (BASC)

Which Priority Objective would you like to provide comment on?

Changing Conditions in the Arctic

What near-term, mid-term, and long-term actions would most effectively help the Nation achieve this policy objective?

A near-term action that will help all agencies with missions in the U.S. Arctic is to save from demolition and put to sustainable re-use the existing Navy & Air Force hangers and the old runway at the former Naval Arctic Research Laboratory (NARL) on the beach near Point Barrow, Alaska. The facilities should be turned over to local control for multiple uses, but with priority access for the Navy, Coast Guard and federal agencies.

What are some of the major obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address the stewardship of the oceans, coasts, and Great Lakes?

The facilities have periodically been slated for demolition. Negotiations to turn over the facilities to new uses have repeatedly faltered over an insistence that the environmental burden associated with them be placed with any new operator. Other military installations have been turned over without such a rider, and that should be done with these.

What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?

- 1) Air Force & Navy agree "no demolition"
- 2) Interim access to facilities allowed immediately for science users, agency users, the City of Barrow, the Native Village of Barrow and the Tribal College, Iisagvik College.
- 3) Turn over facilities to local entity or entities, without pollution liability tagging along, but with proviso guaranteeing preferential access to some portion of the facilities for national needs such as the Navy and Coast Guard. This will allow the Navy and Coast Guard to plan on access to the hangers for support of marine operations.

We all talk about doing better with less. Here is an opportunity to do better with existing resources that we know can be vital to ongoing research, Search & Rescue, and many other activities here in the Arctic. Let's take advantage of this opportunity.

Name

Peter Saundry

Organization

National Council for Science and the Environment

Which Priority Objective would you like to provide comment on?

Changing Conditions in the Arctic

What near-term, mid-term, and long-term actions would most effectively help the Nation achieve this policy objective?

To address environmental stewardship needs in the Arctic Ocean and adjacent coastal areas in the face of climate-induced and other environmental changes, the Federal Government and its agencies should:

- A. Strengthen the role of the Arctic Council to contribute to regional cooperation and science-based policy making. Arctic Council members should resolve which additional countries can become observers to the Arctic Council.
- B. More actively use traditional ecological knowledge in order to honor traditional views and effectively manage natural resources.
- C. Utilize strength of the U.S., Norway & Russia to encourage firm responses on governance.
- D. Encourage Arctic decision makers to:
 - i. collectively commit to marine spatial planning and develop integrative and holistic plans and agreements for ecosystem management.
 - ii. encourage national and international cooperation when considering the lack of regional resources.
 - iii. fund and plan well for future Arctic actions and create an agenda to use the Arctic as a microcosm for similar regions or countries.
 - iv. encourage strategic assessments of trans-boundary impacts of climate change on Arctic people and resources.
 - v. pin point issues in order to make concrete decisions and provide direction on implementation.

What are some of the major obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address the stewardship of the oceans, coasts, and Great Lakes?**What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?**

Attachment: Attachment included in index: “Comments for the National Ocean Policy Strategic Action Plans from the National Council for Science and the Environment’s 11th National Conference on Science, Policy and the Environment: Our Changing Ocean.” Found on page 104 of document.

Name

Rose Fosdick

Organization

Kawerak, Inc.

Which Priority Objective would you like to provide comment on?

Changing Conditions in the Arctic

What near-term, mid-term, and long-term actions would most effectively help the Nation achieve this policy objective?

Near term: establish a sub-region council seat for Alaska within the Regional Planning Bodies. Currently one represents Alaska/Arctic which dilutes representation of a vast area.

Mid term: apply local traditional knowledge to identify on-going traditional use areas and to be included in marine spatial planning.

Ongoing and Long term: develop standards for collection of data and local traditional knowledge to scientifically prove the changes being experienced by the Arctic.

What are some of the major obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address the stewardship of the oceans, coasts, and Great Lakes?

- 1) Arctic species have generally been isolated from man made disturbance; ie; vessel traffic, sonic testing, oil drilling. We need to balance economic development with conservation of Arctic species that are so diverse. There is a need to collect information that will serve as a baseline to which changes in the Arctic can be compared.
- 2) There are language barriers which results in lack of communication between local traditional knowledge experts, researchers, scientists, regulation drafters by the two major countries that use the Bering Sea, Chukchi Sea, Beaufort Sea. Yet we share the same ocean, currents, marine mammals, fish, birds. We independently study our portion of the ocean's resources and the other half of the information is available but not often referenced due to lack of communication.

What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?

- 1) Sub-regional planning body seat for Alaska.
- 2) Agreement by scientists/researchers on standards and methodology for collecting and reporting data. Ex: for mapping of the Arctic oceans, agree on who will collect info on various use areas by diverse species, traditional use areas for travel and hunting, how to collect information, what data bases to use, how maps will be made (size, details), GIS training.
- 3) Ensure the local people in the Arctic are informed, involved in: a) data collection which will result in a documentation of the changes the oceans are going through. b) informed and involved in the processes which result in the approval of manmade changes (oil development, oil spill response, large vessel traffic, placement and availability of data from monitoring equipment (Ex: sea wave height, ice edge and thickness).
- 4) Inform the general public in the Arctic what changes to expect; ie; large vessel traffic through the Bering Strait

Name

Molly McCammon

Organization

Alaska Ocean Observing System

Which Priority Objective would you like to provide comment on?

Changing Conditions in the Arctic

What near-term, mid-term, and long-term actions would most effectively help the Nation achieve this policy objective?

Recommended near-term action: The NOC should encourage development of a comprehensive research and monitoring plan for the Arctic ecosystem (biology, chemistry, physical conditions, and human uses) that builds upon and enhances the current federal activities, which are currently largely in response to the needs of potential offshore oil and gas development. The plan should be developed to provide information needed by stakeholders such as marine shipping, commercial, subsistence and recreational fisheries, etc. The plan should include both long-term monitoring needs (and the infrastructure required) and shorter-term, hypothesis-driven research. It should take advantage of the new UNOLS vessel (the Sikuliaq), to be available in 2014.

Recommended near-term action: The NOC should recommend that the current and future activities of the Alaska Ocean Observing System, the Global Ocean Observing System, the Global Climate Observing System, the Arctic Observing Network, and the Sustained Arctic Observing Network be coordinated to meet scientific and stakeholder needs for the Arctic system, both nearshore (within the U.S. 200 miles) and offshore (outside the US EEZ)..

Recommended near-term action: The Alaska Ocean Observing System (AOOS) regional data portal should be used as the central data for the Arctic, to provide access to federal, state, local, tribal and private industry environmental (physical, chemical and biological) data. Formal data sharing agreements which provide public access to industry-acquired environmental data should be a requirement of industry use of public resources (oil and gas, minerals, fisheries). Integration of and public access to federal, state, international and private data should be a priority.

Recommended near-term action: The NOC should support downscaling of current climate models for the ocean ecosystems in the Beaufort, Chukchi and Bering Seas in order to incorporate climate change into future scenario planning.

Recommended long-term action: Priority should be given to fund nested ocean and coupled bio-physical models for the Arctic at local, regional and basin-wide scales. Development of an ocean circulation model that assimilates real-time data from buoys, gliders, shore-based radar systems, and other data should be a priority to meet a multitude of needs: oil spill trajectory, search and rescue, contaminant transport, larval fish transport, etc.

Recommended near-term action: An Arctic Sea Ice Atlas (including digitization and retrieval of historic sea ice data) should be developed as a key component of improving sea ice forecasting for the Chukchi and Beaufort Seas.

What are some of the major obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address the stewardship of the oceans, coasts, and Great Lakes?**What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?**

Name

Lawson Brigham

Organization

University of Alaska Fairbanks

Which Priority Objective would you like to provide comment on?

Changing Conditions in the Arctic

What near-term, mid-term, and long-term actions would most effectively help the Nation achieve this policy objective?

Near-term action: Support by the U.S. at the highest USG levels for an International Maritime Organization (IMO) developed mandatory Polar Navigation Code is paramount to enhance marine safety and environmental protection in the U.S. maritime Arctic and throughout the Arctic Ocean. This is one of the key (negotiated) recommendations of the Arctic Council's Arctic Marine Shipping Assessment (AMSA) released in 2009. All 17 of the AMSA recommendations were approved by the U.S. during a lengthy negotiation process (attached AMSA executive summary & recommendations). The USCG at IMO should include appropriate polar experts in the U.S. delegations to IMO committees that are addressing the Polar Navigation Code. IMO initially planned for a 2012 release of a new, mandatory Polar Code to replace the current Guidelines, but it is not yet clear if this timetable can be met. It is critical for the U.S. to take a lead role at IMO in the development and support for a mandatory Polar Navigation Code.

Near-term action: The U.S. is one of the Arctic states that does not have a current Arctic sea ice atlas of its Arctic maritime region. NOAA should be tasked with developing a current & historical atlas of sea ice around the Alaskan coast; the atlas should include simulations/projections of future sea ice conditions using the IPCC sea ice models. While much sea ice research has been conducted in the region for many decades, a sea ice atlas as a practical tool for decision-makers has not been available since 1982 (and that atlas was developed by industry and university experts, not the USG). A comprehensive sea ice atlas of the U.S. maritime Arctic will be invaluable in developing the policy options for marine safety, environmental protection and security issues. The USG has the data and capability to develop such a critical Arctic decision support tool within NOAA and the NOAA-Navy-Coast Guard National Ice Center.

Near-term actions: Implementation of the new Arctic SAR agreement (to be signed in Nuuk, Greenland in May 2011 at the Arctic Council) and design of protocols to apply the Agreements's articles to the U.S. maritime Arctic; a proposed Arctic Council Task Force on Arctic 'oil spill response capacity' should be co-led by the U.S.

Mid-term action: In order to implement elements of marine spatial planning in the U.S. maritime Arctic, all sectors & marine uses must be fully understood & catalogued. One 'missing' component is the lack of a comprehensive & integrated understanding of indigenous marine use. AMSA Recommendation II A. calls on the Arctic states to consider comprehensive surveys of Arctic marine use. The U.S. currently lacks a comprehensive survey of current & future indigenous marine use, and any notion of marine spatial planning should not commence without such surveys being completed.

Mid-term action: Development of Arctic Observing Network not only for scientific research (and understanding of future climate change), but also for operational Arctic marine use to enhance safety and environmental protection. Both Arctic scientific/research needs and operational marine agency needs must be merged before funding any new Arctic observing network.

What are some of the major obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address the stewardship of the oceans, coasts, and Great Lakes?

One of the challenges facing the Arctic states at IMO is to convince the global maritime community of the need for a mandatory Polar Navigation Code, special (Arctic) regulations for ballast water/marine mammal impacts/reduction of ship emissions. The USCG needs to be a leader in these polar/Arctic issues at IMO and the Arctic Council.

Funding issues for prerequisite studies/surveys of the U.S. Arctic must be available in the appropriate federal agencies (for example, USCG, NOAA, USGS).

What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?

Tracking implementation of the 17 AMSA recommendations by each of the Arctic states will be one measure to follow improvement & enhancement of marine safety and environmental protection throughout the Arctic Ocean.

Investment in hydrographic surveys and charting of the U.S. Arctic marine region by NOAA can be closely monitored in the annual budget process.

Dr. Lawson W. Brigham

Distinguished Professor of Geography & Arctic Policy, University of Alaska Fairbanks

Chair & U.S. Lead for the Arctic Marine Shipping Assessment (2005-09) of the Arctic Council

Index:
Attachments to Comments
And Letters Received
Pertaining to Changing Conditions in the
Arctic

Alaska Wilderness League • Center for Biological Diversity • Clean Air–Cool Planet • Defenders of Wildlife • Earthjustice • National Audubon Society • Natural Resources Defense Council • Northern Alaska Environmental Center • Ocean Conservancy • Oceana • Pacific Environment • Pew Environment Group • Sierra Club • The Wilderness Society • World Wildlife Fund

April 28, 2011

Co-Chair Nancy Sutley
Co-Chair John Holdren
Members of the National Ocean Council
National Ocean Council
722 Jackson Place, NW
Washington, DC 20503

Re: Scoping comments on the National Ocean Council's development of a strategic action plan to address changing conditions in the Arctic.

Dear Co-Chair Sutley, Co-Chair Holdren, and Members of the National Ocean Council:

Thank you for the opportunity to submit comments on the National Ocean Council's (NOC) development of a strategic action plan to address changing conditions in the Arctic. 76 Fed. Reg. 4139, 4139–41 (Jan. 24, 2011). The following comments are submitted on behalf of Alaska Wilderness League, Center for Biological Diversity, Clean Air–Cool Planet, Defenders of Wildlife, Earthjustice, National Audubon Society, Natural Resources Defense Council, Northern Alaska Environmental Center, Ocean Conservancy, Oceana, Pacific Environment, Pew Environment Group, Sierra Club, The Wilderness Society, and World Wildlife Fund.

* * * * *

On July 19, 2010, President Obama signed Executive Order 13547, which established a National Policy for the Stewardship of the Ocean, our Coasts, and the Great Lakes.¹ Among other things, the executive order established the NOC and adopted the Final Recommendations of the Interagency Ocean Policy Task Force.² Those recommendations identified “Changing Conditions in the Arctic” as one of nine national priority objectives, or “categories for action.” More specifically, the recommendations called on the NOC to develop a strategic action plan to “[a]ddress environmental stewardship needs in the Arctic Ocean and adjacent coastal areas in the face of climate-induced and other environmental changes” (“Arctic SAP” or “the SAP”).³

We urge the NOC to develop an Arctic SAP that will implement the National Ocean Policy in a way that will ensure healthy, resilient marine ecosystems and continued opportunities for the subsistence way of life in the rapidly changing Arctic. To do so, the Arctic SAP should:

- Help shape future federal actions and activities in the Arctic by establishing an overarching strategy. At its core, this strategy should prioritize the stewardship principles contained in the National Ocean Policy, including science- and ecosystem-based management. The SAP can also help ensure that activities in the region at all levels are well-coordinated, and that future planning efforts have a strong foundation upon which to build.
- Strengthen and improve communication and coordination with local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations. By establishing

¹ See 75 Fed. Reg. 43023, 43023, (July 22, 2011).

² Council on Environmental Quality, Final Recommendations of the Interagency Ocean Policy Task Force (July 19, 2010) [hereinafter “*Final Recommendations*”].

³ *Id.* at 6.

clear guidance for agencies that work in the Arctic, and by coordinating the numerous agency processes that affect Arctic communities, the SAP can help members of local communities understand, participate in, and shape the decisions that will affect them.

- Fill knowledge gaps by shaping a comprehensive Arctic research and monitoring program. This program should be designed to provide and synthesize valuable baseline information—both ecological and socio-economic—that can help managers and planners make more informed decisions. As an integral part of that process, the Arctic SAP can also help to promote and integrate the use of local and traditional knowledge.
- Address specific management issues at the domestic level by recommending specific short-, mid-, and long-term actions that will conform to the National Ocean Policy and help protect opportunities for the subsistence way of life. These recommendations should include management actions designed to: ensure better preparation and more informed analyses before additional decisions about whether and under what conditions to authorize offshore oil and gas activities; prevent and prepare effective responses to shipping accidents, oil spills, and other disasters in the region; address potential impacts of commercial fishing; and identify and protect important ecological areas.
- Facilitate international cooperation and help establish the United States' leadership position on Arctic issues. The SAP should call for U.S. leadership on the international level with respect to: identifying and reducing emissions of black carbon and similar short-lived climate forcers; developing international Arctic fisheries agreements as called for in P.L. 110-243; demonstrating a precautionary approach to oil and gas development including developing the highest standards for oil spill prevention, containment, and response protocols; implementing the recommendations of the Arctic Marine Shipping Assessment; and committing to cooperative and protective management of the Arctic under an Arctic-wide ecosystem-based management plan developed through the Arctic Council. In addition, the United States should ratify the U.N Convention on the Law of the Sea and should at all times set a high standard for inclusion of indigenous peoples and Arctic communities in decisions affecting the Arctic.

More broadly, the NOC's Arctic SAP should establish a path forward with respect to management of major marine subregions of the U.S. Arctic. We urge the NOC to produce a plan that clearly addresses critical issues in: (1) the Beaufort and Chukchi seas; (2) the northern Bering Sea and Bering Strait area north of 60° north latitude; and (3) the southern Bering Sea south of 60° north latitude, the Aleutian Islands, and Bristol Bay.

- In the Beaufort and Chukchi seas, efforts should focus on design and implementation of a long-term research and monitoring plan; identification and protection of important ecological areas; significant reduction in the size of Arctic lease sales; and development and implementation of effective oil spill prevention, containment, and response systems sufficient to meet the unique demands of Arctic conditions. These actions will help ensure that decision-makers have the information necessary to make wise choices about whether, where, and under what conditions industrial activities should be allowed to proceed.
- In the northern Bering Sea and Bering Strait, efforts should focus on research and monitoring related to the potential impacts associated with fishing and shipping activities; development and implementation of more rigorous vessel safety requirements and disaster planning to prevent and prepare for accidents; potential designation of a northern Bering Sea research reserve; identification and protection of important ecological areas. This will help decision-makers prepare for potential increases in vessel traffic and fishing pressure associated with the northward migration of fish stocks.

Alaska Wilderness League • Center for Biological Diversity • Clean Air–Cool Planet • Defenders of Wildlife • Earthjustice • National Audubon Society • Natural Resources Defense Council • Northern Alaska Environmental Center • Ocean Conservancy • Oceana • Pacific Environment • Pew Environment Group • Sierra Club • The Wilderness Society • World Wildlife Fund

• In the southern Bering Sea, Aleutian Islands, and Bristol Bay, efforts should focus on permanent protection of Bristol Bay from offshore oil and gas development; implementation of the Aleutian Islands Fishery Ecosystem Plan; identification, management, and protection of the network of important ecological areas in the Aleutian Islands as a cohesive ecological unit; identification and protection of other important ecological areas; and implementation of the recommendations contained in the Aleutian Islands Risk Assessment. Work in this subregion should support the North Pacific Fishery Management Council's shift toward ecosystem-based management of fisheries. Actions should be designed to minimize the adverse impacts of ongoing—and future—industrial activities in southern Arctic waters.

The comments attached to this letter provide additional detail. We look forward to working with you as the Arctic SAP is developed and implemented, and we welcome your thoughts on the recommendations presented in this document.

Sincerely,

Cindy Shogan
Executive Director
Alaska Wilderness League

Andrew Hartsig
Director, Arctic Program
Ocean Conservancy

Rebecca Noblin
Alaska Director
Center for Biological Diversity

Susan Murray
Senior Director, Pacific
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Alaska Program Co-Director
Pacific Environment

Sierra B. Weaver
Senior Staff Attorney
Defenders of Wildlife

Marilyn Heiman
Director, U.S. Arctic Program
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Erik Grafe
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Earthjustice

Dan Ritzman
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Sierra Club

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Arctic Program Director
Northern Alaska Environmental Center

SCOPING COMMENTS ON THE NATIONAL OCEAN COUNCIL'S ARCTIC STRATEGIC ACTION PLAN

The comments that follow reflect our vision for the National Ocean Council's (NOC) strategic action plan for the Arctic ("Arctic SAP" or "the SAP"). In Section I, we offer a brief description of the U.S. Arctic and an overview of some of the challenges the region faces. Section II recommends a path forward for major marine subregions of the U.S. Arctic, as well as principles and standards that the Arctic SAP should incorporate to implement the National Ocean Policy and promote better conservation, protection, and sustainable management of the Arctic's ocean and coastal resources. Section III addresses how the SAP can help ensure that Arctic communities, tribes, local governments, co-management organizations, and similar entities are involved in management decisions at all levels. In Section IV, we recommend ways that the SAP can advance our scientific understanding of rapidly changing Arctic ecosystems, including by integrating local and traditional knowledge. Section V addresses specific management issues and recommends short-, mid-, and long-term domestic management actions that should be included in the Arctic SAP. Finally, in Section VI, we address ways in which the SAP should address Arctic issues and partnerships on an international level.

SECTION I THE ARCTIC ENVIRONMENT: CHALLENGES AND OPPORTUNITIES

A. The U.S. Arctic

The Arctic has sustained human communities for thousands of years. Many indigenous Arctic residents in Alaska (Alaska Natives) have depended, and continue to depend, on intact ecosystems to provide resources—such as fish, whales, walrus, seals, and seabirds—to support their subsistence way of life. For many residents of the Arctic, there is a direct connection between the continued health of the marine environment and the health of their food supply, their culture, and themselves. The Arctic is critical even for those who live in lower latitudes; it exerts a powerful influence over the earth's climate and acts as an air conditioner for the planet. In addition to its importance to humans, Arctic marine waters are home to some of the world's most iconic wildlife species.

America's Arctic includes all U.S. territory "north of the Arctic Circle and . . . north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain."¹ Arctic marine waters are diverse; it may be useful to consider them as a series of ecologically interconnected subregions.²

In the north, the Chukchi and Beaufort seas support marine mammals such as bowhead and beluga whales, Pacific walrus, polar bears and spotted, bearded, ribbon, and ringed seals. Migratory species from around the globe—including gray, humpback, minke, and killer whales, and millions of seabirds, shorebirds, and waterfowl—take advantage of the burst of summer productivity in the Arctic for breeding, feeding, and rearing of their young. Coastal peoples in the Arctic use marine plants and animals for food, clothing, and other necessities. Many villages along the Beaufort and Chukchi coasts hunt bowhead whales, and view the whale hunt as a centerpiece of their culture. These communities prepare for the hunt year-round, celebrate successful hunts, and share food widely.

South of the Chukchi Sea is the Bering Strait, the gateway to the Arctic Ocean. Each year, all marine mammals that migrate in and out of the western Arctic Ocean travel through this narrow passage. Numerous seabirds also make the journey. Bering Strait waters feed a rich seafloor ecosystem that supports bottom-feeding species such as walrus, gray whales, bearded seals, and spectacled eiders.

¹ 15 U.S.C. § 4111.

² See, e.g., Attachment 1 (map showing subregions of U.S. Arctic).

South of the Bering Strait lies the Bering Sea. Upwelling of nutrient-rich waters occurs along the continental shelf and is concentrated at the deep-sea canyons that connect the shelf to the deep abyss of the central Bering Sea. This upwelling helps fuel the productivity of the region and supports the incredible biological richness of St. Lawrence Island and the Pribilof Islands, home of world-renowned fur seal and seabird breeding colonies. The eastern Bering Sea contains one of the largest and most productive continental shelf regions on the planet. It is home to many of the nation's largest fisheries; pollock caught in this region are used across the globe. The eastern Bering Sea is also home to Bristol and Kuskokwim Bays—a region of global ecological importance for its fish, seabirds, waterfowl, and marine mammals. Salmon, halibut, herring, and marine mammals are irreplaceable mainstays of Alaska Native tradition and culture in this region, and communities rely on these resources for village economies and subsistence way of life. Bristol Bay is also home to the world's largest wild run of sockeye salmon. Together, the waters in Bristol Bay and the Bering Sea support globally important commercial fisheries valued at more than \$2 billion dollars annually.

The Aleutian Islands form the southern boundary of U.S. Arctic waters. The longest archipelago in the world, the Aleutians stretch from the United States to Siberia. The Aleutian chain rises abruptly from the deep Aleutian Trench to form a steep, rocky shelf. Here, rich nutrients, strong currents, and a complex seafloor combine to create an incredibly rich and diverse marine ecosystem. This region supports over 450 species of fish, tens of millions of seabirds hailing from every continent and representing more than fifty species, twenty-five species of marine mammals, and coral gardens that rival those found in the tropics.

B. The Arctic Is Experiencing Rapid and Profound Changes

(1) Climate Change

Climate change is warming the Arctic roughly twice as fast as the rest of the world. That warming is forcing pronounced alterations of the environment that affect Arctic ecosystems and have worldwide implications. The most dramatic change in the Arctic has been the rapid loss of sea ice. In 2007, the seasonal minimum sea ice extent in the Arctic reached a record low—23% lower than it had ever been since satellite measurements began in 1979. In the years following 2007, seasonal ice minima have covered a somewhat larger area, but sea ice coverage in these years has still been among the lowest recorded since 1979. Overall, the rate at which sea ice cover is declining exceeds even the most dramatic predictions from just a few years ago, and scientists now predict the Arctic could be seasonally ice-free by 2030.

Climate-related change, such as loss of sea ice cover, has profound effects on Arctic peoples, opportunities for the subsistence way of life, and Arctic marine ecosystems. Reduced ice cover makes fishing, hunting, and travel more difficult and unpredictable for Arctic peoples. Loss of sea ice also will have dramatic effects on many Arctic species. In more northerly latitudes, a fundamental restructuring of the Arctic marine food web may already be underway, shifting the flow of productivity from primarily benthic and ice-associated food webs to pelagic food webs. The reduction of sea ice also eliminates habitat for ice-dependent species. Loss of sea ice cover, the potential for seasonally ice-free conditions across the Arctic, and other climate-related changes are—and will continue to be—major stressors for many species in the Arctic. These changes may lead to local loss or extinction of species that cannot adapt to the rapidly changing conditions.

(2) Ocean Acidification

The Arctic Ocean is projected to be one of the first regions to be affected significantly by increased ocean acidification.³ Roughly one-third of the carbon dioxide that is added to the atmosphere from the combustion of fossil fuels will dissolve into seawater. There, it reacts to form carbonic acid, which increases the acidity of the water. The solubility of carbon dioxide gas in seawater increases as water temperature decreases. In addition, low-salinity waters have less capacity to buffer acidification than do high-salinity waters. The Arctic Ocean has relatively low water temperatures and—because it receives large volumes of freshwater from increased ice melt and the Mackenzie and other rivers—relatively low salinity. As a result, it is particularly susceptible to acidification. The Arctic's ice cover has acted as a barrier to carbon dioxide absorption and has slowed acidification of the polar sea. But as sea ice disappears, the surface waters of the Arctic Ocean will likely absorb carbon dioxide from the atmosphere at higher rates.

Acidification will introduce a fundamental shift in the biogeochemical cycling of the Arctic Ocean. Among the most immediate impacts will be carbonate ion depletion and its related effects, which may have substantial effects on shellfish and other marine organisms that create their shells and other hard parts from calcium carbonate. Among other effects, increasing acidity may also change the growth rates of photosynthetic phytoplankton, the toxicity of marine toxins, the availability of ammonia for uptake by marine plants, and the efficiency of respiration in fish and other marine organisms.⁴ The diversity of the anticipated effects and the inherent complexity of ecosystem interactions make it difficult to predict with certainty how Arctic ecosystems will respond to increased ocean acidification. However, changes brought about by ocean acidification could outstrip the adaptive capacity of many Arctic marine species.

(3) Ongoing and Expanding Commercial and Industrial Activity

Portions of the U.S. Arctic already experience significant levels of commercial and industrial activity. The southern Bering Sea, for example, is subject to substantial commercial fishing activity, and the Aleutian Islands see high volumes of commercial shipping traffic. In the Beaufort Sea, there are limited offshore oil and gas operations near shore, on islands.

Other portions of the Arctic could soon experience increased levels of industrial activity. The Alaska Department of Environmental Conservation has already documented an increase in ship traffic in the Bering and Chukchi seas and as more ice melts, additional ships will seek to transit through the Aleutian Islands and Bering Sea to the Arctic Ocean. Similarly, oil and gas companies are pushing to expand offshore exploration and development in the Chukchi and Beaufort seas, leading to increased seismic testing, drilling, and vessel traffic in Arctic waters. Finally, as sea ice retreats and stocks migrate north, expansion of commercial fishing into Arctic waters may be possible.

Unless managed carefully, the expansion of industrial activities will exacerbate pressure on Arctic ecosystems already under stress from climate change and ocean acidification. Growth of commercial shipping and offshore drilling in the Arctic will result in increased noise, air, and water pollution. Greater emissions of nitrogen oxides and carbon monoxide could triple ozone levels in the Arctic, and increased black carbon emissions would result in reduced ice reflectivity that could exacerbate the decline of sea ice. Increased shipping also increases the chance of introducing invasive species to Arctic ecosystems. Shipping and oil and gas activities in the Arctic Ocean also increase the chance of a catastrophic oil spill. In the Arctic, the relative risk from such spills is high due to the harsh and difficult-to-predict conditions, lack of infrastructure to support response activity, and lack of proven technology to clean up oil in broken

³ See generally M. Steinacher et al., *Imminent ocean acidification in the Arctic projected with the NCAR global coupled carbon cycle-climate model*, *Biogeosciences*, 6: 515–33 (2009).

⁴ See generally, V.J. Fabry et al., *Impacts of ocean acidification on marine fauna and ecosystem processes*, *ICES Journal of Marine Science*, 65: 414–32 (2008).

ice conditions.⁵ In addition, seismic activity, drilling, and vessel traffic from oil and gas operations would introduce significant noise to the marine environment, which can adversely affect fish, whales, and other marine animals. In the future, the introduction of commercial fishing to the Arctic could alter food webs, impact seafloor habitat, cause noise disturbance, and impair opportunities for the subsistence way of life.

(4) International Challenges

Many of the challenges confronting the Arctic are international in scope, both in cause and effect. Three of the most fundamental drivers of change in the Arctic—global warming, ocean acidification, and loss of sea ice—result from activities that are taking place around the world, and their impacts are being felt globally. A particular challenge for the United States and other Arctic countries is the need to reduce short-lived climate forcers, including black carbon, methane, and tropospheric ozone. Black carbon has been estimated to cause up to thirty percent of the human-caused warming in the Arctic,⁶ but this and other short-lived forcers persist in the atmosphere for only a fraction of the time carbon dioxide does. The United States has joined the other seven members of the Arctic Council in committing to reduce these climate pollutants (Tromsø Ministerial Declaration, 2009), but has yet to take significant domestic action to follow-up the commitment.

Other international challenges abound. Arctic marine mammals, birds, and fish stocks migrate without regard to national boundaries and should be protected throughout their ranges. Many of the large marine ecosystems identified by experts working under the Arctic Council transcend national boundaries and must be managed by two or more nations implementing consistent management plans and standards. The impacts of shipping between countries and continents across the top of North America and Eurasia will not be confined to either the country of origin or the country of destination; all Arctic nations will have to cooperate in designating consistent shipping routes that protect biodiversity and ecological values. Those routes will also require international standards governing fuel use, cargo, invasive species, discharges and noise pollution, safety, onshore support, search and rescue, and a host of other considerations—all adequate to protect the unique, fragile and daunting Arctic environment. The United States will have an especially important role due to the amount of shipping traffic that will flow through the narrow and ecologically important⁷ Bering Strait. Increasing Arctic tourism and cruises present similar issues.

Mining and on- and offshore oil and gas development are also on the rise in the circumpolar Arctic. Although subject to national regulation, the cumulative impact of these activities may not be confined to one country, nor may be the immediate impacts of a disaster such as an oil spill from a tanker grounding or collision, pipeline rupture, or blowout. Fishing is another extractive industry that is international in its range and effects, and must be regulated at the international as well as national level. Accelerated melting of permanent ice could allow unregulated exploratory fishing in the international waters of the central Arctic Ocean in the next few years.

Not all international challenges are confined to the commercial sector. The Arctic marine environment remains one of the least studied oceans on the planet. Scientific research and information about the Arctic pose their own set of international challenges. Accessing information relevant to baselines and research is an international Arctic problem; the United States shares all three of its Arctic seas with other

⁵ A recent spill in icy waters in Norway illustrated the difficulties of cleaning oil in ice. See, e.g., *Is og kulde gjør oljeoppsamling vanskelig* (Ice and cold makes oil collection difficult), *Teknisk Ukeblad* (Tech Magazine) (Feb. 21, 2011), available at <http://www.tu.no/miljo/article280133.ece> (Norwegian to English translation via Google Translate).

⁶ See, e.g., David Sims, *Picking the "Low Hanging Fruit" of Arctic Climate Change*, EOS Spheres Newsletter, Institute for the Study of Earth, Oceans, and Space, Univ. of New Hampshire (Summer 2009) at 1, 3.

⁷ Numerous species of marine mammals and birds migrate through the Bering Strait each year.

countries and should lead efforts to make scientific data more easily accessed across national boundaries.

The high seas of the central Arctic Ocean pose their own unique challenges related to the potential activities of non-Arctic States. Extractive and polluting activities conducted by non-Arctic States could have substantial effects within the zones of the five Arctic coastal States, including the United States. Regional cooperation to protect the high seas of the central Arctic Ocean could represent an important step toward establishing customary international law regarding all States' activities.

While Arctic challenges have international dimensions, that cannot become an excuse for failing to address them domestically to the full extent possible. At the same time, however, the Arctic SAP must call for the close cooperation of the State Department as well as other departments and agencies and prescribe specific goals for advancing the protection of the Arctic at the international level through the Arctic Council, the International Maritime Organization, and other international agencies, existing or to be created.

SECTION II IMPLEMENTING THE NATIONAL OCEAN POLICY THROUGH THE ARCTIC SAP

The Arctic SAP should be more than a collection of goals and action items; it should live up to its name by providing an overarching *strategy* that will guide future policy and management decisions. At the heart of this strategy must be the stewardship principles contained in the National Ocean Policy. To ensure that these stewardship principles are implemented effectively, the SAP should facilitate cooperation among entities that work in the Arctic and identify a framework for coordinated management and decision-making. Finally, the Arctic SAP should lay a strong foundation for future planning efforts, including coastal and marine spatial planning. Specifically, the Arctic SAP should help ensure that sufficient baseline scientific information, appropriate monitoring programs, and adequate environmental protections are in place before decision-makers approve actions that may affect the health and resilience of Arctic marine ecosystems. The sections that follow address all these opportunities in greater detail.

A. A path forward for the Arctic

Climate change, ocean acidification, the expansion of industrial activities, and international Arctic issues are all substantial challenges. However, there are also significant opportunities for positive action in the region. The Arctic SAP should capitalize on these opportunities and provide meaningful direction to decision-makers.

The Arctic SAP can help shape future federal actions and activities in the Arctic by establishing an overarching strategy for the region. It can do much to strengthen and improve communication and coordination with local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations. It can also help fill knowledge gaps by shaping a comprehensive Arctic research and monitoring program designed to provide and synthesize valuable baseline information that can help managers and planners make more informed decisions. The Arctic SAP can also address specific management issues at the domestic level by recommending specific short-, mid-, and long-term actions that will conform to the National Ocean Policy and help protect opportunities for the subsistence way of life. Finally, the Arctic SAP is an opportunity to facilitate international cooperation and help establish the United States' leadership position on Arctic issues.

The NOC's Arctic SAP should establish a path forward with respect to management of major marine subregions of the U.S. Arctic. We urge the NOC to produce a plan that clearly addresses critical issues in: (1) the Beaufort and Chukchi seas; (2) the northern Bering Sea and Bering Strait area north of 60° north latitude; and (3) the southern Bering Sea south of 60° north latitude, the Aleutian Islands, and Bristol Bay.

- In the Beaufort and Chukchi seas, efforts should focus on the design and implementation of a long-term research and monitoring plan; identification and protection of important ecological areas (IEAs);⁸ significant reduction in the size of Arctic lease sales; and development and implementation of effective oil spill prevention, containment, and response systems sufficient to meet the unique demands of Arctic conditions. These actions will help ensure that decision-makers have the information necessary to make wise choices about whether, where, and under what conditions industrial activities should be allowed to proceed.

- In the northern Bering Sea and Bering Strait, efforts should focus on research and monitoring related to the potential impacts associated with fishing and shipping activities; development and implementation more rigorous vessel safety requirements and disaster planning to prevent and prepare for accidents; potential designation of a northern Bering Sea research reserve; identification and protection of IEAs. This will help decision-makers prepare for potential increases in vessel traffic and fishing pressure associated with the northward migration of fish stocks.

- In the southern Bering Sea, Aleutian Islands, and Bristol Bay, efforts should focus on permanent protection of Bristol Bay from offshore oil and gas development; implementation of the Aleutian Islands Fishery Ecosystem Plan; identification, management, and protection of the network of IEAs in the Aleutian Islands as a cohesive ecological unit; identification and protection of other IEAs; and implementation of the recommendations contained in the Aleutian Islands Risk Assessment. Work in this subregion should support the North Pacific Fishery Management Council's shift toward ecosystem-based management of fisheries. Actions should be designed to minimize the adverse impacts of ongoing—and future—industrial activities in southern Arctic waters.

B. The Arctic SAP should establish Arctic stewardship standards to guide future policy and management decisions.

One of the key objectives of the Arctic SAP must be the establishment of overarching standards to guide federal agencies as they make policy and management decisions about the region. The National Ocean Policy sets forth a series of stewardship principles that should form the core of these standards. Section 6 of Executive Order 13547 instructs executive departments, agencies, and offices (“agencies”) to implement the National Ocean Policy and its stewardship principles “to the fullest extent consistent with applicable law.”⁹ The Arctic SAP should reinforce this requirement by reiterating and refining key principles as “Arctic stewardship standards.” It should ensure that agencies use these standards to guide future decisions and actions. In other words, agencies should use these standards as criteria to determine whether and under what conditions decisions and actions may be appropriate.

The Arctic stewardship standards articulated in the SAP should apply to all agencies whose decisions or actions—including transboundary decisions or actions—may affect the Arctic. To ensure conformity with the National Ocean Policy, agencies must comply with the stewardship standards “to the fullest extent consistent with applicable law.”¹⁰ We recommend that the Arctic SAP set forth the following Arctic-specific stewardship standards, which are based on the National Ocean Policy articulated in Executive

⁸ IEAs may include areas of the ocean that are used for subsistence purposes; have distinguishing ecological characteristics; are important for maintaining habitat heterogeneity or the viability of a species; or contribute disproportionately to an ecosystem's health, including its productivity, biodiversity, functioning, structure, or resilience. IEAs are discussed in more detail below at Part V.D.

⁹ Executive Order 13547 of July 19, 2010: Stewardship of the Ocean, Our Coasts, and the Great Lakes, 75 Fed. Reg. 43,023, 43,026 (July 22, 2011).

¹⁰ *Id.*

Order 13547 and the *Final Recommendations of the Interagency Ocean Policy Task Force* (hereinafter *Final Recommendations*):¹¹

- (1) Agency decisions or actions must protect, maintain, or restore the health and biological diversity of the Arctic's ocean and coastal ecosystems and resources. When that is not possible, agency decisions must, to the greatest extent possible, minimize adverse impacts—including cumulative impacts—to the health and biological diversity of the Arctic's ocean and coastal ecosystems.
- (2) Agency decisions or actions must improve the resiliency of the Arctic's ocean and coastal ecosystems, communities, and economies, and support the ability to adapt to ongoing and future impacts of climate change and ocean acidification. Agency decisions must, to the greatest extent possible, minimize adverse impacts to the resiliency of the Arctic's ocean and coastal ecosystems, communities, and economies, and to the ability to adapt to climate change and ocean acidification.
- (3) Agencies should use an ecosystem-based approach when making decisions or undertaking actions that may affect the Arctic. Agency decisions and actions should account for the interdependence of land, air, water, and ice, as well as the interconnectedness between human populations and these environments.
- (4) Agency decisions or actions must use the best available science and knowledge, including local and traditional knowledge, to inform decisions affecting the Arctic's ocean and coastal ecosystems. Agency decisions and actions must also be guided by a precautionary approach. Under such an approach, agencies must ensure they have sufficient information before deciding whether to proceed with actions that may have adverse impacts.¹² In addition, “where there are threats of serious or irreversible damage” to the Arctic's ocean and coastal ecosystems, “lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”¹³
- (5) Agencies should seek to increase scientific understanding of the Arctic's ocean and coastal ecosystems, and improve understanding and awareness of changing environmental conditions, trends, and their causes, and of human activities taking place in the Arctic's ocean and coastal waters.
- (6) Agencies should take an open, transparent, and coordinated approach to decision-making, which encourages broad public participation, minimizes confusion, is efficient, and is respectful of the timing of subsistence activities in which many Alaska Native people engage.
- (7) Agencies should strive to promote the foregoing stewardship standards as they cooperate with other Arctic nations and exercise leadership at the international level.

The Arctic SAP should recommend that agencies develop and issue regulations—or at a minimum, policy guidance—to ensure that they effectively integrate the National Ocean Policy and Arctic stewardship standards into their existing processes, practices, and mandates. As a practical matter, this means that

¹¹ See *id.* at 43,023–24; Council on Environmental Quality, *Final Recommendations of the Interagency Ocean Policy Task Force* (July 19, 2010) at 14–18 [hereinafter “*Final Recommendations*”].

¹² Agencies must assess what information is essential to their decisions and to obtain that information before proceeding with actions. See 40 C.F.R. § 1502.22.

¹³ *Final Recommendations* at 16 (quoting Rio Declaration of 1992).

agencies should take steps to ensure that sufficient baseline scientific information,¹⁴ appropriate monitoring programs, and adequate environmental protections are in place before decision-makers approve actions that may affect the health and resilience of Arctic marine ecosystems. Interim management decisions must not be allowed to foreclose future or pending conservation, protection, and management options.

C. The Arctic SAP should facilitate coordination among entities that work in the Arctic, and identify a framework for coordinated management and decision-making.

A wide variety of federal, state, local, tribal, and co-management agencies and organizations have research, policy, and/or management roles relating to Arctic marine and coastal resources. The Arctic SAP should establish a framework to facilitate coordination among these entities.

A number of federal agencies are engaged in decision-making with respect to Arctic management and policy. Some of these agencies have recently completed, or will soon complete, Arctic-specific studies or processes. For example, NOAA recently announced its “Arctic Vision and Strategy,”¹⁵ the U.S. Fish and Wildlife Service is coordinating an “Arctic Landscape Conservation Cooperative” project,¹⁶ the Coast Guard has engaged in a “High Latitude Study,” the U.S. Geological Survey is completing a review of certain scientific information on the Beaufort and Chukchi seas,¹⁷ and the Navy has an “Arctic Roadmap.” The State of Alaska—including its executive branch agencies and the legislature’s “Northern Waters Task Force”—plays a critical role, as well. In addition to the federal and state governments, local governments, tribal governments, Alaska Native corporations, co-management organizations, and other Alaska Native organizations all have a stake in decisions that affect the Arctic. Finally, a number of interagency or “extra-agency” entities are also active in the Arctic, including the North Slope Science Initiative, the Arctic Policy Group, Interagency Arctic Research Policy Committee, and U.S. Arctic Research Commission. The recently announced “cross-agency” Alaska energy team will also play a role.¹⁸

At present, it is not clear how these and other Arctic-related entities and processes relate to and interact with one another. The Arctic SAP should consider all the existing entities that operate in the Arctic, evaluate existing policy, management, and research processes, and clarify “who is responsible for what.”¹⁹ Where possible, the Arctic SAP should identify opportunities to use existing entities and processes to facilitate coordination among different entities. Based on this review, the SAP should recommend a coordinated management structure designed to facilitate cooperation, maximize efficiencies, and identify joint priorities and opportunities for coordinated action. This structure could take the form of a regional planning body as described in the *Final Recommendations*,²⁰ or it could take some other shape. Regardless of the details, it should allow for effective communication and coordination regarding decisions whose impacts may cross jurisdictional boundaries; provide meaningful ways for Arctic communities, tribes, local governments, co-management organizations, and similar entities to

¹⁴ Baseline information should include ecological and socio-economic information and, where appropriate, should be spatially and temporally explicit.

¹⁵ NOAA, NOAA’s *Arctic Vision and Strategy* (Feb. 2011) available at http://www.arctic.noaa.gov/docs/NOAAArctic_V_S_2011.pdf.

¹⁶ See U.S. Fish and Wildlife Serv., *Arctic Landscape Conservation Cooperative* (April 2010) available at http://alaska.fws.gov/lcc/pdf/arctic_factsheet.pdf.

¹⁷ See Press Release, Dep’t of the Interior, *Secretary Salazar Unveils Arctic Studies Initiative that will Inform Oil and Gas Decisions for Beaufort and Chukchi Seas* (Apr. 13, 2010).

¹⁸ See The White House, *Blueprint for a Secure Energy Future* (March 30, 2011) at 12–13.

¹⁹ As part of this review, the Arctic SAP should highlight opportunities to use existing entities or processes to ensure conformance with Arctic stewardship standards and to carry out proposed short-, mid-, or long-term actions, such as developing and implementing an Arctic research and monitoring program or identifying IEAs.

²⁰ See, e.g., *Final Recommendations* at 52–54.

participate in and shape decision-making at all levels; and ensure that decision-makers incorporate the best available science and local and traditional knowledge.

D. The Arctic SAP should lay a strong foundation for future and ongoing planning efforts.

The Arctic SAP should lay the groundwork for future and ongoing planning efforts. These include, among others, NOAA and other agencies' plans for Arctic science, observation, and forecasting; the Department of the Interior's five-year Outer Continental Shelf (OCS) oil and gas leasing programs;²¹ Coast Guard and Navy plans for domain awareness and other operations; planning for ports and shipping routes; and future coastal and marine spatial planning.

The immediate need for improved synthesis of existing scientific information, as well as improved scientific research and monitoring in the Arctic—particularly in the region above 60° north latitude—will be important to virtually all future planning efforts. For that reason, we urge that the Arctic SAP recommend implementation of a long-term scientific research and monitoring program, described in detail in Section IV, below. Similarly, the need to include diverse perspectives and use open and transparent processes is critical to all planning efforts. The Arctic SAP should recommend guidelines to ensure improved involvement of local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations in planning processes, as described in Section III, below.

To lay a strong foundation for coastal and marine spatial planning in particular, the Arctic SAP should address the need to establish appropriately scaled sub-regional planning areas in Alaska. It should also consider issues surrounding regional planning body membership, including member roles and responsibilities, balanced representation, potential *ex officio* representatives and observers, and consultation, stakeholder, and public participation mechanisms.²²

Finally, the SAP should highlight the need for future and ongoing planning efforts to consider reasonably foreseeable cumulative impacts, including impacts associated with the ongoing and expected climate change and ocean acidification.

**SECTION III
ENSURING THAT LOCAL COMMUNITIES HAVE A MEANINGFUL VOICE IN DECISION-MAKING**

Indigenous residents of the U.S. Arctic depend on resources from the ocean to maintain a subsistence way of life. In addition, they have valuable knowledge about their environment and its resources that can help inform planning and decision-making. And in the end, residents of the Arctic must live with the consequences of Arctic policy and management decisions. For all these reasons, the Arctic SAP must ensure meaningful opportunities for participation by local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations.²³

²¹ The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling concluded that “[i]ntegrating five-year [OCS] leasing plans and associated leasing decisions with the coastal and marine spatial planning process will be an important step toward assuring the sustainable use of ocean and coastal ecosystems.” National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling* (Jan. 2011) at 263.

²² For example, the Arctic SAP should consider: how to ensure adequate representation from local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations; mechanisms for formal consultation with the North Pacific Regional Fishery Management Council; and ways to include relevant international or transboundary entities.

²³ A recent report of the Aspen Institute noted the need for nations to improve the ability of Arctic indigenous people to participate in management and policy decision-making processes. See The Aspen Institute Energy and Environment Program, *The Shared Future: A Report of the Aspen Institute Commission on Arctic Climate Change* (2011) at 27.

Alaska Natives are represented by multiple and overlapping entities. Local government institutions, such as city and borough governments, are one such entity. Alaska Natives may also be members of one of the 229 federally recognized tribes in Alaska, or members of one of the state's regional or multiple village Alaska Native corporations. In addition, marine mammal commissions and co-management organizations have unique responsibilities and expertise. Finally, local community and nonprofit groups may provide valuable insight.

The Arctic SAP should acknowledge the diversity of Alaska Native organizations and establish practical guidelines to ensure that agencies take adequate measures to obtain advice and counsel from local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations. In addition, the SAP guidelines should ensure that federal agencies meet government-to-government consultation requirements established in Executive Order 13175²⁴ and President Obama's Memorandum of November 5, 2009.²⁵ Simply holding a hearing in a Native community does not satisfy an agency's obligation to engage in government-to-government consultation.

The Arctic SAP should make clear that local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations must have meaningful opportunities to give direct input into proposed decisions, actions, and planning processes that may affect the Arctic. Agencies must improve on existing outreach and consultation processes, and should consider modifying standard National Environmental Policy Act (NEPA) procedures to better conform to the needs of Arctic communities. For example, when calendaring comment periods and public hearings that may affect Arctic communities, agencies should consider the timing of subsistence activities or other events and adjust comment and hearing schedules to allow full participation by local residents. They should also coordinate with sister agencies to minimize the confusion and burden associated with overlapping or conflicting public comment periods. Finally, agencies should strive to hold meetings and hearings in local Arctic villages, not just Anchorage or other hub communities. If meeting in local villages is not possible, agencies should explore alternative outreach tools, such as video- or teleconference systems. These alternative outreach tools should not be the preferred or default method, and to the extent that agencies must rely on such tools, they must make every effort to give communities ample notification, encourage broad participation, and ensure that the selected communication technology functions as intended.

As the Arctic SAP is developed, the NOC should help coordinate government agencies and assist them in engaging in a dialogue with those people most directly affected by Arctic policy and management decisions. This process will help identify potential conflicts and promote smarter, better-coordinated use of the ocean. Meetings should include local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations, and should provide a forum to openly discuss issues and find answers to questions regarding policy and management decisions that impact Arctic lands and waters.

As discussed in more detail below in Part C of Section IV, representatives from local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations should be given meaningful opportunity to provide and review information associated with scientific or ecological research, monitoring, synthesis, and mapping. Just as important, agencies must ensure that they incorporate information and recommendations from these local and Native organizations into their decision-making and planning. The Arctic SAP should consider partnerships with Arctic school districts, the North Slope Borough Department of Wildlife Management, Ilisagvik College, and other appropriate

²⁴ Executive Order of November 6, 2000, Consultation and Coordination with Indian Tribal Governments, 65 Fed. Reg. 67249, 67249–52 (Nov. 9, 2000).

²⁵ Office of the White House, *Memorandum for the Heads of Executive Departments and Agencies re: Tribal Consultation* (Nov. 5, 2009) available at <http://www.justice.gov/otj/pdf/obama-executive-memo110509.pdf>.

entities to help teach students about Arctic environmental management issues and to employ their skills in ongoing collection of environmental, human use, and impacts monitoring data.

Outreach to local communities, governments, tribes, co-management organizations, and other Alaska Native organizations is one way of incorporating not just knowledge, but the holders of that knowledge into the decision-making process. Greater involvement by Arctic indigenous peoples in the governance of their regions and communities will benefit everyone. British Columbia, for example, engaged in a coastal planning process that included joint marine use planning with First Nations and Canadian agencies; this process followed principles of ecosystem-based management and included meaningful participation of Canadian First Nations.²⁶ Such approaches can help develop long-term solutions to economic and environmental challenges in the Arctic.

SECTION IV IMPROVING SCIENTIFIC UNDERSTANDING OF RAPIDLY CHANGING ARCTIC ECOSYSTEMS

A. State of Arctic Marine Science.

As noted above, Arctic waters vary significantly—physically, ecologically, and in our use and study of them—from the Aleutian Islands to the Beaufort Sea. Any plan to increase our understanding of the region must account for these differences. A natural divide exists around 60° N. latitude. North of that line, seasonal sea ice is a dominant ecological feature and productivity is channeled primarily through the benthic food web. In addition, there is higher freshwater input, weaker tidal strength, and lower solar radiation in the area north of 60° N. latitude. South of 60°, there is little to no seasonal sea ice, and productivity is channeled primarily through the pelagic food web.

Management and research efforts are similarly divided. There is substantial information about the marine ecosystem south of the 60° line from annual trawl surveys over the past thirty years and other research. This information has been used to manage some of the world's largest fisheries. In addition, there is substantial shipping activity along the Great Circle Trade Route through the Aleutian Islands. In contrast, north of the 60° line, there has been relatively little research—with the exception of a recent ramping up of science associated with oil and gas leases in the Chukchi and Beaufort seas—and there is limited industrial activity in this region at this time.

Arctic ecosystems above 60° north latitude are different from other areas of the ocean because we know less about them. Scientists lack information about the abundance, distribution, migration, and role of almost all marine species in Arctic marine ecosystems.²⁷ Even basic information, such as knowledge of the species that inhabit the U.S. Arctic Ocean, either permanently or seasonally, is substantially incomplete. Even where basic information about Arctic marine ecosystem interactions and functions exists, much of it is outdated, collected by scientific methodology that is not directly comparable, or focused on just a small portion of the larger ecosystem. As a result, scientists have a limited understanding of marine ecosystem structure and functioning in the Arctic.

²⁶ See Coastal First Nations-Turning Point Initiative, *Into the Deep Blue: Marine Ecosystem-based Management* (undated) available at <http://coastalfirstnations.ca/files/PDF/intothedeepblue.pdf>.

²⁷ The Arctic Climate Impact Assessment, an international project of the Arctic Council and the International Arctic Science Committee, highlighted basic surveys and monitoring as well as ecosystem-based research as some of the highest priority research actions needed for Arctic marine waters. See Arctic Climate Impact Assessment, ARCTIC CLIMATE IMPACT ASSESSMENT 522 (2005). Further, the North Slope Borough has called for better baseline science to guide decisions, and Senator Begich introduced legislation in the 111th Congress that called for additional Arctic research and coordination. See S. 1562, 111th Cong. (2010).

To make matters worse, water temperatures and sea ice cover—which play important roles in Arctic marine ecology—are changing at a startling pace, limiting the application of older data. For example, studies designed to provide baseline information and understanding of the health, biodiversity, and functioning of Arctic marine ecosystems and the potential impacts of industrial activities were conducted thirty years ago pursuant to the Outer Continental Shelf Environmental Assessment Program (OCSEAP). But because the Arctic ecosystem has experienced significant changes, the data collected under the OCSEAP program may not describe current conditions accurately.

Researchers in recent years have increased collection of scientific data on Arctic resources in conjunction with proposed oil and gas operations. However, these more recent research efforts have significant limitations. Since the conclusion of the OCSEAP program, research efforts have focused on topical studies in smaller areas to answer specific questions and fill identified information needs. While these studies provide valuable information about the physical and biological aspects of a relatively small geographic area, they do not provide adequate information about the broader ecosystem or changes over time. Furthermore, although this research generates potentially informative data, those data are rarely analyzed and synthesized in a way that facilitates their application to management decisions. In short, recent Arctic studies are not generating the synoptic data necessary to inform policy and management decisions, and synthesis of existing data across disciplines is sorely needed.

The recent NOAA Arctic Vision and Strategy calls for increased science, including better foundational science and improved sea ice forecasting. That research is critical to filling a number of known research gaps. However, without an overarching purpose and strategic plan to guide and tie the research together, individual studies will not provide a comprehensive understanding of Arctic marine ecosystems. For this reason, it is unlikely that the NOAA studies will provide a synoptic understanding of the ecosystem. What is needed in the Arctic is a long-term, comprehensive, interdisciplinary research and monitoring program.

President Obama and Secretary of the Interior Salazar have directed the U.S. Geological Survey (USGS) to assess “resources, risks, and environmental sensitivities in Arctic areas.”²⁸ The USGS will complete an initial review of Arctic science and issue a report that will “examine the effects of exploration activities on marine mammals; determine what research is needed for an effective and reliable oil spill response in ice-covered regions; evaluate what is known about the cumulative effects of energy extraction on ecosystems and other resources of interest; and review how future changes in climate conditions may either mitigate or compound the impacts from Arctic energy development.”²⁹ The USGS study could be an important initial assessment that can help guide future decisions about and investment in Arctic science. The Arctic SAP should consider the USGS study when it becomes available this spring.

B. An Interdisciplinary, Integrated Research and Monitoring Program for the U.S. Arctic Ocean

The National Ocean Council—working with local communities, governments, tribes, co-management organizations, the State of Alaska, industry, environmental organizations, and other stakeholders—should establish a path forward that provides the basic information required to protect the resources of the Arctic, including the subsistence way of life. The most efficient way to accomplish these goals is through implementation of a new OCSEAP-type program for the Arctic region above 60° N. latitude.

To provide the basic information required to make informed decisions about the resources of the Arctic, and to guide decisions about oil and gas and other industrial activities, a new comprehensive research and monitoring program should:

²⁸ See Dep’t of the Interior, *Secretary Salazar Unveils Arctic Studies Initiative that will Inform Oil and Gas Decisions for Beaufort and Chukchi Seas*, available at http://www.doi.gov/news/pressreleases/2010_04_13_releaseA.cfm.

²⁹ *Id.*

- (1) Integrate existing information to give a more holistic picture of what is known and conduct an analysis of the gaps in information to determine the most pressing research and monitoring needs;
- (2) Gain a more comprehensive catalogue of identified species, populations, and habitats, including seasonal migrations;
- (3) Track the physical forcing factors that modulate biological productivity, habitat occupancy and migration pathways;
- (4) Secure a better understanding of trophic linkages, physical and biological processes affecting productivity and other facets of ecosystem structure and functioning, and effects of anthropogenic perturbations;
- (5) Study potential ecological and sociological impacts of climate change, ocean acidification, and industrial activities; and
- (6) Integrate these scientific data to identify IEAs as well as processes and habitats that are sensitive and vulnerable to perturbation, and furnish a basis for marine spatial planning.

A research and monitoring program could be conducted in three phases over the next five to seven years: (1) gap analysis and planning (2011–2012); (2) research and monitoring (2013–2016, with monitoring continuing into the future); and (3) integrating new and old information to provide decision-makers with the basic understanding needed to make effective decisions (2016–2017). As explained in more detail below, each of these phases must be informed by local and traditional knowledge, including planning and peer-review.

(1) Phase I: Gap Analysis and Planning

New research and monitoring should build on what has been learned about the Arctic Ocean already. Thus, the first step in this process is to reconcile the large information gaps with the important research that has occurred. Existing information should be compiled and integrated, and then an analysis of the remaining gaps should be conducted. This gap analysis would then drive creation of an integrated research and monitoring program. The USGS Arctic study is an important step in this direction. However that study is limited in scope, and should be followed by a more comprehensive analysis.³⁰

Scientists should define a research and monitoring plan to fill information gaps based on a comprehensive gap analysis and public input. Following the *Exxon Valdez* oil spill, scientists conducted an analysis and developed a research plan to address knowledge gaps in Prince William Sound and the Gulf of Alaska. This plan—the Gulf of Alaska Ecosystem Monitoring and Research (GEM) plan—should serve as a model that can help guide research and monitoring in the Arctic. The research and monitoring plan developed for northern U.S. Arctic waters should be developed with input from the public and evaluated by an independent panel of experts.³¹

(2) Phase II: Research and Monitoring

Once the information gaps are identified and a research plan devised, the research and monitoring must be executed. As the known gaps in knowledge outlined above show, scientific research and monitoring should include:

- (1) Marine life assessment to provide a year-round picture of the species in each marine habitat and their population trends for key species;

³⁰ For example, Senator Begich called for a more comprehensive analysis in his proposed Arctic Ocean Research and Science Policy Review Act of 2009. See S. 1562, 111th Cong. (2010).

³¹ An outline for such a plan for the Arctic Ocean is included as Attachment 2.

(2) Environmental monitoring to measure atmospheric and physical ocean conditions, such as salinity and temperature, and biological factors, such as productivity and community richness and diversity;

(3) Scientific process studies to understand the way in which the ecosystem functions and is likely to respond to stresses;

(4) Studies designed to identify patterns of subsistence use and changes in well-being as well as potential impacts from industrial activities; and

(5) Documentation and incorporation of local and traditional knowledge.

This research and monitoring should be interdisciplinary, spanning from climate sciences to social impact studies. To the greatest extent possible, it should be conducted in an integrated fashion to better elucidate the processes that underlie the way in which the ecosystem functions.³² This research should build and fill out the current expansion of Arctic marine science that is occurring, including current research associated with Arctic oil and gas lease areas as well as research and monitoring called for in NOAA's Arctic Strategic Plan. Studies should be coordinated and integrated to measure multiple aspects of the ecosystem simultaneously.³³ This type of research and monitoring will give decision-makers the level of information that is necessary to make informed decisions and to ensure the protection of Arctic ecosystems and the subsistence way of life.

(3) Phase III: Data Integration

Once sufficient information is available from the research and monitoring outlined above, that information should be synthesized to demonstrate an understanding of ecosystem structure and functioning, including quantitative models of the food web and a determination of the IEAs of the region. Those models and information provide the basis from which to understand likely impacts of industrial activities and, accordingly, whether and how to allow them. Managers will be able to move from qualitative assertions (i.e., educated guesses) to making quantitative assessments of potential impacts and allow decision-makers to weigh the costs and benefits of industrial activities and to find alternatives that could allow for development while protecting ecosystems and subsistence way of life. It will also provide important information for evaluating impacts from climate change.

A comprehensive research and monitoring program, rather than *ad hoc* research, will build the foundation of Arctic knowledge most efficiently. Comprehensive, integrated research and monitoring will lead to a more complete understanding of the ecosystem, and can help drive response and restoration activities should an industrial accident occur.

³² Integrated research seeks to provide information about multiple characteristics of the ecosystem and the ways in which they interact. Earlier recommendations from the conservation community to the Interagency Ocean Policy Task Force may be a useful resource when considering the design of an integrated research program. See Comments from Conservation Organizations to Interagency Ocean Policy Task Force, *Recommendations for a Framework for Marine Spatial Planning: a Tool to Implement Ecosystem-based Management to Achieve the Goal of Ecosystem Health* (2009) at 11–12.

³³ In an April 19, 2011 “webinar” on the Arctic SAP, representatives from the Arctic SAP writing team indicated that the team has already recognized the need for improved understanding of physical science in the Arctic (such as improved sea ice forecasts). While we are encouraged by this, we urge the drafters of the Arctic SAP to also emphasize the need for ecological studies. A comprehensive planning approach will need to consider ecological linkages and include gaining a better understanding of ecosystem functioning in the Arctic. This knowledge will help with policy decisions in the Arctic as physical and biological changes due to climate change will impact ecosystem functioning. Ecological linkages are important as the highly productive and short food chains could impact species such as marine mammals, which are important to a subsistence way of life.

C. Incorporation of Local and Traditional Knowledge

The Arctic SAP should ensure that local and traditional knowledge is incorporated into any Arctic research and monitoring plan. Arctic peoples have a wealth of local and traditional knowledge. However, mechanisms to make local and traditional knowledge accessible to managers are generally lacking.

Local and traditional knowledge is a different, but equally valid knowledge system whose application can provide essential information, and contribute to scientific inquiry and understanding in a variety of ways.³⁴ In the Arctic, indigenous peoples who have lived in the region for millennia have developed a wealth of knowledge about the environment. They depend on local plants and animals for food, clothing, and shelter, and know a great deal about the species they use and see. Local and traditional knowledge is not a set of unchanging principles and facts. It is a living body of knowledge, tested and refined each time someone goes out on the ice, sea, or land. Documenting this knowledge in its entirety is impossible; however, documenting parts of it is feasible. Local and traditional knowledge is critical to understanding Arctic marine ecosystems.

Comparisons of local and traditional knowledge and scientific knowledge can fill gaps in our understanding of Arctic ecosystems, provide corroboration for results, or point the way to areas where further study is needed.³⁵ It can also provide guidance for the design and implementation of scientific studies, leading to more robust results. For example, local and traditional knowledge helped guide current scientific methods for monitoring bowhead whale surveys.³⁶ Furthermore, local and traditional knowledge covers a long time period, providing information that may not be available in scientific records.³⁷ It can also provide year-round observations, often absent in the Arctic, where most research occurs during the summer months.³⁸ Local and traditional knowledge can offer insight into ecological relationships and interactions that may not be apparent otherwise. For instance, local and traditional knowledge shed light on the relationship between increasing beaver populations, higher numbers of beaver dams that affect spawning habitat for anadromous fishes, and impacts on beluga whales, which prey on those fishes near river mouths.³⁹

Local and traditional knowledge and scientific results may not always agree. Divergence may suggest that further study is necessary, or may indicate that one source of information is in error. Effort should be

³⁴ See, e.g., Johannes, R.E. 1981. Words of the lagoon: fishing and marine lore in the Palau District of Micronesia. Berkeley: University of California Press.; Ford, J., and D. Martinez, eds. 2000. Traditional ecological knowledge, ecosystem science, and environmental management. Invited Feature. Ecological Applications 10(5):1249-1340.; Murray, G., B. Neis, C.T. Palmer, and D.C. Schneider. 2008. Mapping cod: fisheries science, fish harvesters' ecological knowledge and cod migrations in the Northern Gulf of St. Lawrence. Human Ecology 36:581-598.

³⁵ Huntington, H.P., T. Callaghan, S. Fox, and I. Krupnik. 2004. Matching traditional and scientific observations to detect environmental change: a discussion on Arctic terrestrial ecosystems. Ambio Special Report 13: 18-23.

³⁶ Albert, T.F. 2001. The influence of Harry Brower, Sr., an Iñupiaq Eskimo hunter, on the bowhead whale research program conducted at the UIC-NARL facility by the North Slope Borough. In: D.W. Norton, ed. Fifty more years below zero. Calgary, Alberta: The Arctic Institute of North America. p. 265-278.

³⁷ Salomon, A.K., N.M. Tanape Sr., and H.P. Huntington. 2007. Serial depletion of marine invertebrates leads to the decline of a strongly interacting grazer. Ecological Applications 17(6):1752-1770.

³⁸ Noongwook, G., the Native Village of Savoonga, the Native Village of Gambell, H.P. Huntington, and J.C. George. 2007. Traditional knowledge of the bowhead whale (*Balaena mysticetus*) around St. Lawrence Island, Alaska. Arctic 60(1):47-54.

³⁹ Huntington, H.P., and the Communities of Buckland, Elim, Koyuk, Point Lay, and Shaktoolik. 1999. Traditional knowledge of the ecology of beluga whales (*Delpinapterus leucas*) in the eastern Chukchi and northern Bering seas, Alaska. Arctic 52(1): 49-61.

made to consider both scientific information and local and traditional knowledge, subject in both cases to appropriate steps of peer review and scrutiny.⁴⁰

In recent years, an increasing amount of research has included local and traditional knowledge in the Arctic. Major projects, such as the Arctic Council's Arctic Climate Impact Assessment,⁴¹ have incorporated traditional knowledge in efforts to understand what is taking place in the region. The Environmental Protection Agency (EPA) is currently working to incorporate local and traditional knowledge from Arctic communities in its water quality permitting process for the Beaufort and Chukchi seas. Although it remains to be seen how EPA will use or apply this knowledge, EPA's example could be a model for other agencies working in the Arctic. Notwithstanding EPA's efforts, there is much more to be done to make the knowledge of Arctic peoples more widely available, and to ensure that it is incorporated into the management processes that directly affect Arctic people.

There are various methods of obtaining local and traditional knowledge, ranging from intensive documentation of personal histories and activities to more rapid gathering of information at workshops.⁴² Documenting local and traditional knowledge may involve the collection of traditional stories, the cooperative analysis of quantitative scientific measurements, the identification of subsistence use areas, and the recording of observations and understanding of various environmental phenomena. Importantly, researchers must be clear about the goals and intent of a specific effort to engage local and traditional knowledge and those who hold it. There is great value in including the holders of local and traditional knowledge in the process of applying that knowledge to a specific purpose. We are willing to work with the NOC to help develop clear, detailed standards and procedures for reviewing local and traditional knowledge for use by agencies in the U.S. Arctic. Such standards would help increase confidence by the agencies in the local and traditional knowledge it uses, and would provide the holders of local and traditional knowledge a clear target to aim for when providing information relevant to management decisions that affect them.

D. Recommended Actions to Improve Scientific Understanding of the Arctic

(1) Short-term Actions:

- The NOC should receive the report and recommendations of the USGS study on Arctic science in spring 2011, and should incorporate it into the Arctic SAP.

⁴⁰ To the extent that local and traditional knowledge is best reviewed by persons familiar with the settings in which local and traditional knowledge was obtained, peer review of local and traditional knowledge may include other fishermen and hunters as well as researchers from other disciplines who can evaluate the reliability of the sources, the rigor of the documentation method, and other aspects of local and traditional knowledge and the recording thereof.

⁴¹ Arctic Climate Impact Assessment, Impacts of a warming Arctic: Arctic Climate Impact Assessment. Arctic Council and the International Arctic Science Committee (IASC) (2004). <http://www.acia.uaf.edu>.

⁴² See, e.g., Huntington, H.P. 1998. Observations on the utility of the semi-directive interview for documenting traditional ecological knowledge. *Arctic* 51(3): 237-242.; Huntington, H.P. 2000. Using traditional ecological knowledge in science: methods and applications. *Ecological Applications* 10(5):1270-1274. Huntington, H.P., and the Communities of Buckland, Elim, Koyuk, Point Lay, and Shaktolik. 1999. Traditional knowledge of the ecology of beluga whales (*Delphinapterus leucas*) in the eastern Chukchi and northern Bering seas, Alaska. *Arctic* 52(1): 49-61.; Tobias, T. 2009. Living proof: the essential data-collection guide for indigenous use-and-occupancy map surveys. Vancouver, British Columbia: Ecotrust Canada and University of British Columbia Press.; NPRB (North Pacific Research Board). 2005. Science plan. Anchorage: North Pacific Research Board. xi +198p.; Huntington, H.P., P.K. Brown-Schwalenberg, M.E. Fernandez-Gimenez, K.J. Frost, D.W. Norton, and D.H. Rosenberg. 2002. Observations on the workshop as a means of improving communication between holders of traditional and scientific knowledge. *Environmental Management* 30(6): 778-792.

- The NOC should work with Alaska’s U.S. Senators,⁴³ the U.S. Arctic Research Commission, Office of Science and Technology Policy, Interagency Arctic Research Policy Committee and others to commission the National Research Council to conduct a gap analysis of scientific information concerning U.S. Arctic waters, including an evaluation and documentation of local and traditional knowledge and recommendations on how to most effectively and efficiently fill information gaps.
- The NOC should work with the Office of Management and Budget and Congress to establish a funding source to carry out necessary and sustained Arctic research and monitoring. Changes to the Oil Spill Liability Trust Fund could provide an appropriate funding source.
- Scientific research and monitoring that is already taking place and filling important information gaps should be continued. Where information gaps exist, agencies must identify information essential to their decisions, and obtain that information before moving forward.⁴⁴
- Where existing information already indicates that particular regions of the ocean possess significant ecological or subsistence values, those areas should be identified as IEAs.

(2) Mid-term Actions:

- The Arctic science coordination structure under the U.S. Arctic Science Research Policy Act of 1984 should be used to establish an Arctic marine science program that coordinates and conducts research and monitoring under a prioritized comprehensive plan. Specifically:
 - The U.S. Arctic Research Commission—in coordination with the NOC, Office of Science and Technology and Policy, and Interagency Arctic Research Policy Committee—should develop (and periodically update) a comprehensive research and monitoring plan based upon the National Research Council’s U.S. Arctic waters scientific information gap analysis. Development of the plan should include ample opportunities for public participation and comment, and the plan itself should evaluate and justify appropriate levels of funding.
 - The Interagency Arctic Research Policy Committee—in coordination with the NOC, U.S. Arctic Research Commission, and the Office of Science and Technology Policy—should direct the implementation of the comprehensive U.S. Arctic waters research and monitoring plan by identifying and coordinating appropriate lead agencies to conduct specific aspects of the integrated research carried out under the plan.
- Dedicated funding for synthesis activities, including drawing together existing information from various disciplines, as well as addressing the nature and likely direction of cumulative impacts, to better understand the holistic nature of the Arctic marine ecosystem and the effectiveness of various environmental protection measures.

⁴³ For example, in the 111th Congress, Senator Begich introduced legislation calling for a study and report on research on the U.S. Arctic Ocean. See S. 1562, 111th Cong. (2010).

⁴⁴ See 40 C.F.R. § 1502.22.

- The NOC should facilitate the establishment of a yearly Arctic waters ecosystem forum for scientists, decision-makers, local communities, and other members of the public to discuss the latest research and understanding of the state of Arctic marine ecosystems.⁴⁵

- As more data are collected and synthesized, additional IEAs should be identified.

(3) Long-term Actions:

- Arctic research and monitoring carried out under a periodically updated comprehensive plan should continue.

- The Interagency Arctic Research Policy Committee, in coordination with the U.S. Arctic Research Commission, should integrate data to produce regular ecosystem assessments of our understanding of Arctic ecosystems to provide decision-makers and the public a clear basis of information upon which to make management decisions.

- The yearly Arctic waters ecosystem forum described above should continue.

- Identification of IEAs should continue.

SECTION V

THE ARCTIC SAP SHOULD RECOMMEND SPECIFIC DOMESTIC MANAGEMENT ACTIONS

Agencies whose decisions and actions may affect the Arctic should already be implementing the stewardship principles contained in the National Ocean Policy and the *Final Recommendations* as they carry out their existing responsibilities.⁴⁶ In addition to the specific actions recommended above with respect to better understanding the Arctic environment, the Arctic SAP should recommend short-, mid-, and long-term management actions to address specific issues and ensure adequate protection of Arctic ecosystems. These should include management actions designed to: prevent and prepare effective responses to shipping accidents, oil spills, and other disasters in the region; ensure better preparation and more informed analyses before determining whether and under what conditions to authorize oil and gas activities; address potential impacts of commercial fishing; and identify and protect IEAs.

A. The Arctic SAP should recommend specific guidance to ensure availability of effective disaster prevention and response, including vessel tracking, search and rescue, and oil spill preparedness and response.

As summer sea ice retreats and access to the Arctic becomes easier, the region will be exposed to greater levels of industrial activity, including increased commercial vessel traffic and potential increases in oil and gas activity. As these activities ramp up, so does the potential for a significant accident. The Arctic SAP should recognize the need for improved disaster response capability in the Arctic, and should recommend specific actions to address this need.

⁴⁵ This could be a central part of meetings that already occur on an annual basis, such as the Alaska Marine Science Symposium, Alaska Forum on the Environment, or NOAA's open water meeting.

⁴⁶ See Executive Order 13547 of July 19, 2010: Stewardship of the Ocean, Our Coasts, and the Great Lakes, 75 Fed. Reg. 43,023, 43,026 (July 22, 2011) (requiring executive departments, agencies and offices to implement the National Ocean Policy and its stewardship principles "to the fullest extent consistent with applicable law.").

(1) Vessel Traffic

Currently, shipping traffic in America's Arctic is concentrated in the Aleutian Islands, part of the larger North Pacific Great Circle Route that provides the shortest shipping distance between Asia and North America. An estimated 3,100 vessels transit through the Aleutian Islands each year on trans-Pacific voyages.⁴⁷ Most of these vessels do not have oil spill contingency plans or certificates of financial obligation and carry persistent fuel oil that presents a significant threat to the marine ecosystem. Given the region's turbulent weather and remoteness, there has been a history of accidents and spills. The Arctic SAP should address accident prevention and response in the Aleutian Islands region, and should recommend a model for a proactive shipping management regime in the northern region of America's Arctic, especially Bering Strait, as well as the larger circumpolar Arctic.

In addition to existing vessel traffic in the Aleutian Islands, an unprecedented wave of new ship traffic is headed into the increasingly ice-free waters of the northern Bering Sea and beyond. This increased vessel traffic includes cruise ships, oil, gas and mining vessels, and commercial, research and fishing boats. The Arctic Marine Shipping Assessment predicts an increase in regional shipping and resource extraction through the Bering Strait over the next twenty years. Plans for oil, gas, coal, and other mineral extraction in both the Russian and U.S. Arctic support this prediction. In 2007—the year of the lowest minimum sea ice extent on record to date—Canada's Northwest Passage was passable for the first time. In 2008 alone, sixty-two ships used the Northwest Passage for regional shipping; a few even traveled the entire distance through the passage. Increases in vessel traffic also mean increases in noise, air and water pollution, as well as increased risk of accidents and oil spills.

Mandatory tracking and reporting systems—made possible by advancements in communication and tracking technologies—could minimize the risks of vessel accidents, support faster response (safety and environmental), and could, if desired, assist with compliance and enforcement. Satellite Automatic Identification Systems (S-AIS) enables global coverage of vessel activity. Use of S-AIS would help establish “a common Arctic ship reporting and data sharing system” as well as “a common approach to marine traffic awareness and monitoring.”⁴⁸ In potential bottleneck zones, such as the Bering Strait and similar areas that pose an elevated risk of vessel collisions, S-AIS coupled with a local Vessel Traffic Service (VTS) can help avert accidents. In addition to S-AIS, the Long Range Information and Tracking System (LRIT)⁴⁹—adopted via IMO Resolution in 2006—can improve safety and environmental protection. LRIT provides for global identification and tracking of ships, making available to a data center information on ship identity and current location. LRIT could provide accurate information on ships in distress and ships that could lend assistance; it could be an invaluable tool to save lives and minimize pollution of the Arctic marine environment. These systems are simple but effective ways of monitoring ship movements and are already used to some extent in polar waters. Given the sensitive and hazardous nature of the Arctic, the remoteness and limited possibilities for search and rescue, and the paramount importance of preventing accidents, vessel traffic monitoring and information systems should be mandatory in Arctic waters.

The Aleutian Islands Risk Assessment, undertaken in response to the *Selendang Ayu* oil spill, recommended a series of actions to help reduce risk throughout the Aleutian Island region. These include bolstering area contingency planning, enhancing U.S. Coast Guard cutters' towing capabilities, increasing rescue tug capabilities for the North Pacific Great Circle Route, increasing salvage and spill response capability in the Aleutian Islands, and enhancing vessel monitoring and reporting programs.

⁴⁷ Aleutians Island Risk Assessment, Vessel Traffic Overview: <http://www.aleutiansriskassessment.com/summary.htm> (Accessed, 4/8/11)

⁴⁸ *Id.*

⁴⁹ See <http://www.imo.org/OurWork/Safety/Navigation/Pages/LRIT.aspx> and https://extranet.emsa.europa.eu/index.php?option=com_content&view=article&id=52:long-range-identification-and-tracking-system&catid=65&Itemid=91 5/1/11.

The Risk Assessment also recommended establishing restricted areas such as Particularly Sensitive Sea Areas (PSSAs) and implementing associated protective measures. These recommendations, which should be implemented immediately, will be useful for protecting the Aleutian Islands and may provide a model for necessary emergency preparedness, prevention, and response management measures to protect the Bering Sea, Bering Strait, and circumpolar Arctic from potential impacts from increased industrial activities.

(2) Oil Spills

Greater levels of vessel traffic in Arctic waters, along with the potential for more oil and gas activity, heighten the risk of oil spills. Difficult to contain and clean up under the best of circumstances, there is no proven method to clean up an oil spill in the presence of sea ice. A recent tanker spill in the icy waters off Norway's coast affirmed the inadequacy of existing response technologies and capabilities in icy waters.⁵⁰

Oil and gas activities in the Arctic Ocean pose significant risks. As demonstrated by last summer's tragic *Deepwater Horizon* disaster, just a single exploration well can cause a massive oil spill. A very large oil spill could be catastrophic for Arctic wildlife and the people who depend on healthy marine ecosystems to support their subsistence way of life. Based on the geological characteristics of the leased areas in the Chukchi Sea, the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) has acknowledged that a very large oil spill with an initial release rate of 61,000 barrels per day is a possibility at some locations and depths within the leased area.⁵¹ This is comparable to the flow rate from the *Deepwater Horizon* spill, which the government has estimated to range between about 53,000 and 62,000 barrels a day.

Moreover, the Arctic's weather, sea ice, potential short daylight hours, remoteness, and lack of infrastructure may impair—or make impossible—effective spill response.⁵² Severe environmental conditions, such as fog, hurricane-force winds, high seas, seasonal darkness and sub-freezing temperatures, can prevent oil spill response operations in the Arctic from ever getting off the ground, or can bring them to a grinding halt. Unfavorable conditions can persist for days or weeks at a time.

The Arctic's remote location and lack of infrastructure are also significant issues. In the event of a major spill, the U.S. Coast Guard has a responsibility to oversee spill response and protect the marine ecosystem and human safety. However, along much of the Arctic coast, there is a critical lack of infrastructure to support the U.S. Coast Guard in the event of a large or catastrophic spill. Ports and docks to store or launch vessels are far away, with the nearest Coast Guard port 1,300 miles away in Dutch Harbor. Two of the three U.S. icebreakers are out of commission, and most boats in the region are small and not ice-capable. There are no roads between communities or connecting the remote Arctic coastal communities to larger population centers, insufficient communication technology, and no storage for equipment or personnel.

⁵⁰ See, e.g., Is og kulde gjør oljeoppsamling vanskelig (Ice and cold makes oil collection difficult), *Teknisk Ukeblad* (Tech Magazine) (Feb. 21, 2011), available at <http://www.tu.no/miljo/article280133.ece> (Norwegian to English translation via Google Translate).

⁵¹ Bureau of Ocean Energy Management, Regulation and Enforcement, Report to the United States District Court re: *Native Village of Point Hope, et al. v. Salazar, et al.*, No. 1:08-cv-00004-RRB (April 17, 2011).

⁵² The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling observed that the Arctic presents special obstacles for oil spill preparedness and response. See, e.g. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling*, at 303-04 (noting that “successful oil spill response methods from the Gulf of Mexico, or anywhere else, cannot simply be transferred to the Arctic.”).

Further, conventional spill response techniques—inadequate even in more moderate climates—may be wholly unusable under conditions commonly found in the Arctic. The *Deepwater Horizon* disaster showed that in the face of a large spill, both preparedness and current response techniques were lacking. The Arctic is a high-risk frontier where the response gap—when environmental conditions exceed the operating limits of spill response equipment—will almost certainly make operations and any potential oil spill clean-up much more complicated.

Recommended actions related to disaster response

(1) Short-term Actions:

- The NOC should recommend a response gap analysis for high risk areas such as the Aleutian Islands, Bering Strait and Chukchi and Beaufort seas to better inform disaster preparedness and response plans.
- The U.S. Coast Guard and NOAA should review industry and Sub-Area contingency plans to ensure adequacy of response equipment, trained personnel and shoreline and nearshore protection strategies.
- Interim and final recommendations of the Aleutian Island Risk Assessment should be implemented by appropriate federal and state entities.
- The U.S. Coast Guard should complete the Port Access Route Study for the Bering Strait and should consider supporting the designation of Traffic Separation Schemes and “Areas to be Avoided” at IMO.

(2) Mid-term Actions:

- NOAA should survey and map Arctic waters and shoreline for more accurate coastal maps and nautical charts to benefit safe navigation and national security as well as help locate and prioritize sensitive coastal areas.
- NOAA and other agencies should improve oil spill trajectories and modeling oil in ice; this information should be made available to the public, decision-makers, and responders to better inform spill response plans.
- NOAA and other agencies should invest in hydrographic, meteorological and oceanographic data in support of safe navigation and operations. This includes increased support for hydrographic surveys to improve navigation charts and systems and analysis and transfer of meteorological, oceanographic, sea ice and iceberg information.
- Automatic Identification System stations for monitoring commercial traffic in the Arctic should be augmented, and a comprehensive Arctic Marine Traffic Awareness System should be implemented to improve monitoring and tracking of marine activity, to enhance data sharing in near real-time, and to augment vessel management service to reduce the risk of incidents, facilitate response, and provide awareness of potential user conflict.
- Appropriate agencies should ensure periodic full field deployment exercises to practice and test offshore and shoreline response strategies.
- A zero pollution policy for Arctic waters should be implemented.

- Actions to reduce air emissions in the Arctic from shipping should be implemented, such as supporting the development of improved practices and innovative technologies for ships in port and at sea to help reduce current and future emissions of greenhouse gases, nitrogen oxides (NO_x), sulfur oxides (SO_x) and particulate matter (PM), taking into account the relevant IMO regulations.

(3) Long-term Actions:

- Continue to carry out improvements to infrastructure including communications systems, port services, salvage capabilities, and adequate and effective response equipment and facilities, particularly with respect to oil spill response.
- U.S. Arctic icebreaker capacity should be increased.
- Continue to build out U.S. Coast Guard oil spill and emergency response capabilities in the region.

B. The Arctic SAP should ensure that agencies engage in better preparation and more informed analyses before determining whether and under what conditions to authorize oil and gas in the Arctic.

In the past, there has been relatively little oil and gas activity in the Arctic OCS. However, decreasing summer sea ice and increasing economic incentives have caused the oil and gas industry to target Arctic waters, especially the Beaufort and Chukchi seas. In recent years, leasing in the Arctic has increased dramatically, seismic exploration has expanded, and there have been proposals to drill exploration wells in the Beaufort and Chukchi seas. To satisfy the National Ocean Policy's stewardship principles, decision-makers in the Arctic must engage in more comprehensive preparation before deciding whether or under what conditions to permit offshore oil and gas activity in the U.S. Arctic.

As noted above, the Arctic presents many hurdles and unique challenges to oil spill response. Beyond the threat of a major oil spill, seismic exploration, drilling, and vessel traffic from oil and gas operations would introduce significant noise to the marine environment, which can adversely affect fish, whales, and other marine animals. Exploration and production activities also discharge oil, toxic muds, and other fluids into the water, and emit potentially harmful pollutants into the air.

Before deciding whether or how to allow oil and gas activities to proceed in Arctic waters, Arctic managers and decision-makers must do a better job of laying the groundwork. First, as noted above, knowledge of the Arctic ecosystem is limited in significant ways, making it difficult to assess accurately the potential impacts of offshore oil and gas exploration and development. Lack of information could also hamper the efficacy of response efforts in the event of a large oil spill. As a result, decision-makers need access to improved information about Arctic ecosystems. Second, under the current leasing system, industry can buy oil and gas leases almost anywhere in open OCS planning areas, regardless of the ecological value of the lease tract. This puts the cart before the horse. More complete information about the region is needed to make informed decisions about whether and under what circumstances oil and gas activities may proceed. Agencies must obtain this information, including identifying IEAs, *before* leasing and other oil and gas operations take place. If—after obtaining essential information—agencies decide to authorize additional oil and gas lease sales in the Arctic, they should narrowly delimit areas available for leasing. This will allow for a more meaningful assessment of resources and potential impacts. At a minimum, agencies should exclude IEAs from planning areas or lease sale areas, as well as any surrounding acreage necessary to protect the functioning of those IEAs. Finally, there is no proven way to effectively clean up spilled oil in broken ice conditions. It is of utmost importance to develop and implement effective, efficient spill containment, and response systems sufficient to meet the unique demands of Arctic conditions. Going forward, decisions about whether and how to authorize oil

and gas activities in the Arctic must be based on sound scientific information, thoughtful planning, and a demonstrably effective response and rescue capability.

Recommended actions related to the oil and gas activities in the Arctic

(1) Short-term Actions:

- BOEMRE should schedule no new lease sales in Arctic waters in its upcoming 2012–2017 OCS leasing program.
- BOEMRE and other agencies should ensure that they obtain information essential to inform ongoing decisions about oil and gas activities in Arctic waters.
- As described above, the NOC should work with other agencies and entities to commission and implement a gap analysis of scientific information on Arctic waters.

(2) Mid-term Actions:

- A comprehensive, integrated research and monitoring program—as described above—should be implemented and three to five years of data should be collected and evaluated as a basis for policy decisions on whether, when, where and how to proceed.
- IEAs should be identified using existing knowledge and an inclusive process. These IEAs should be protected from the adverse effects industrial activities, including impacts from leasing and oil and gas activities if federal agencies authorize such activities.
- Safety and oil spill prevention, containment, and response infrastructure, plans, and technology should be developed, tested, and proven effective in the Arctic Ocean.
- Congress and administrative agencies should implement reforms to the framework of laws, regulations, and policies that govern OCS oil and gas operations, including developing Arctic-specific regulations and policies.

(3) Long-term Actions:

- Safety and oil spill prevention, containment, and response infrastructure, plans, and technology should be continually tested, reviewed, and improved to ensure that the Arctic has the highest level of preparedness.
- As described above, IEAs and associated protective measures should be subject to periodic review to ensure that they change or expand in response to environmental changes.

C. The Arctic SAP should support the North Pacific Fishery Management Council’s efforts to move toward ecosystem based fisheries management.

As discussed at the outset, portions of U.S. Arctic waters—predominantly the Aleutian Islands and southern Bering Sea—support large and important commercial fisheries. These include the pollock fishery (the largest fishery by volume in the U.S.), the Bristol Bay salmon fisheries, and the king crab fisheries of the Bering Sea, which have been popularized in the *Deadliest Catch* television series. In contrast, industrial commercial fishing in the northern Bering Sea is relatively limited, and there is no commercial fishing in federal waters of the U.S. Chukchi and Beaufort seas.

The North Pacific Fishery Management Council (“NPFMC” or “the Council”), which manages federal groundfish fisheries in U.S. Arctic waters, is one of the longest-standing management bodies governing industrial activities in Arctic waters. Over the last decade, the Council has implemented several ecosystem measures. For example, the Council has an ecosystem committee that meets regularly, and it has developed a Fishery Ecosystem Plan for the Aleutian Islands. The NPFMC has capped eastern Bering Sea groundfish removals at 2 million metric tons to help safeguard ecosystem functioning. Large swaths of seafloor habitat are protected from bottom trawling, and some smaller Aleutian Island coral gardens are protected from all bottom contact gear. The Arctic SAP should support and encourage the NPFMC’s movement toward ecosystem-based fisheries management.

The Council has also implemented a proactive management approach to the northward expansion of commercial fishing. For waters north of the Bering Strait, the NPFMC established a precautionary, science-based approach to the northward expansion of commercial fisheries under the Arctic Fisheries Management Plan (Arctic FMP). Pursuant to that plan, no commercial fisheries in the region can occur until it can be determined that such fisheries could be conducted sustainably, including evaluating potential impacts to subsistence activities. The NOC should work with the Council to review the NPFMC’s Arctic FMP to evaluate that approach as a management model for the expansion of all industrial activities in Arctic waters.

In addition to the ecosystem-based measures noted above, the Council has closed the northern Bering Sea to bottom trawling to allow research on the potential impacts of bottom trawling in the region before deciding whether to allow trawling to expand northward. As the transition zone between the Chukchi Sea and southeast Bering Sea, the northern Bering Sea is a distinct biological system driven by the seasonal formation and retreat of winter sea ice. It is the center of significant climate change research, including a \$50 million program operated by the National Science Foundation and North Pacific Research Board, designed to understand the ecosystem and how changing climate conditions and physical forces may affect marine mammals and seabirds and adjacent commercial fisheries to the south. The northern Bering Sea offers ideal conditions to study the changing climate and its influence on U.S. Arctic marine ecosystems and subsistence resources used by coastal tribes. The NOC should build upon the work of the NPFMC by working with local communities, the NPFMC, State of Alaska and others to designate the northern Bering Sea, along with the Bering Strait and southern Chukchi Sea, as a dedicated research region. Further focus on the region and continued protection would be a long-term investment in sound science-based resource management.

Recommended actions related to fisheries management:

(1) Short-term Actions:

- Work with the NPFMC to review the Arctic FMP as an approach to the expansion of industrial activities in Arctic waters and evaluate that approach as a model for the Arctic SAP to build upon.
- Ask the NPFMC to review the National Ocean Policy and report on how the Council will implement the policy. This review and report should address ecosystem measures that the NPFMC has implemented as well as how NPFMC ensures protection of ecosystem health and the subsistence way of life when setting catch levels.
- Consider building on the Council’s Northern Bering Sea Research Area by working with local communities, the NPFMC, State of Alaska and others to designate the northern Bering Sea, Bering Strait, and southern Chukchi Sea as a research reserve.

- Evaluate potential measures to help enable the NPFMC to continue its move towards ecosystem-based fisheries management and implement its precautionary, science-based Arctic FMP.

(2) Mid- and long-term Actions:

- Review the NPFMC's report on implementing the National Ocean Policy and initiate measures designed to support the Council's move toward ecosystem-based fisheries management. These measures should be designed to help the NPFMC ensure that fisheries catch levels maintain ecosystem health.
- Continue to work with the NPFMC to support implementation of the Council's precautionary, science-based approach to expansion of commercial fishing in the Chukchi and Beaufort seas.

D. The Arctic SAP should recommend identification and protection of IEAs.

One significant way to carry out the stewardship principles in the National Ocean Policy is to identify and protect IEAs. As described above, identification of IEAs should be an ongoing part of an integrated, long-term scientific research and monitoring program for the Arctic.

Areas within an ecosystem are not equal in ecological terms; some areas contribute disproportionately to ecosystem structure and functioning, including use by human populations. IEAs may include areas of the ocean that are used for subsistence purposes; have distinguishing ecological characteristics; are important for maintaining habitat heterogeneity or the viability of a species; or contribute disproportionately to an ecosystem's health, including its productivity, biodiversity, functioning, structure, or resilience. Identification and protection of IEAs will help conserve critical wildlife habitats and traditional-use areas, preserve ecosystem resilience, and ensure continued ecosystem functioning.

IEAs should be mapped and identified as part of the comprehensive Arctic science plan described above. Once identified, IEAs should be incorporated into agency decision-making processes and planning efforts, including marine spatial planning and decisions about whether and under what circumstances industrial activities can occur. IEAs in Arctic waters should be protected from industrial activities. Protective designations may vary based on each area's ecological role and the particular threats it faces. The underlying goal, however, should remain constant: to protect the important ecological functions of the IEA. Protecting these areas will help preserve the health, biodiversity and resiliency of Arctic marine ecosystems, which in turn help support vibrant Arctic coastal communities. Protection of subsistence resources and practices will require sound environmental management of any industrial activity in offshore waters of northern Alaska. Identification and protection of IEAs should occur in conjunction with precautionary, science-based management of the region as a whole.

The concept of protecting the most ecologically important regions of the ocean is not new. Norway, for example, has undertaken a thorough planning process that includes the identification of areas that are important to the ecological functioning of the Barents Sea ecosystem. Norway's forthcoming update of the 2006 integrated management plan for the Barents Sea – Lofoten Area provides an example of how to protect important areas of the offshore environment. The updated plan will protect ecologically sensitive areas like the important fish spawning areas in the Lofotens, and the marginal ice zone and the polar front, which is an oceanographic feature important to the healthy functioning of the Barents Sea.⁵³ Furthermore, the new plan will also call for additional scientific study to address unknown environmental

⁵³ Anon, St.meld.nr. 8 (2005–2006) Helhetlig forvaltning av det marine miljø i Barentshavet og havområdene utenfor Lofoten (forvaltningsplan). Ministry of Environment, Oslo (2006) (available in English from the Norwegian Ministry of Environment).

processes and effects. One of these is the need to understand the cumulative effects on the marine environment of both environmental stresses—such as climate change and ocean acidification—as well as anthropogenic activities like fisheries, vessel traffic, and oil and gas activities.

Recommended actions related to the identification of IEAs

(1) Short-term Actions:

- The Arctic SAP should consider threats and establish or recommend appropriate protection measures for known IEAs, such as Unimak pass, Near Islands, Buldir Island, Bristol Bay, Pribilof Islands, St. Lawrence Island, Bering Strait, Barrow Canyon and the corresponding sea ice lead system along the Chukchi Sea coast, Hanna Shoal, and the eastern Beaufort Sea whaling deferral area.
- The Arctic SAP should initiate or recommend an initial year-long effort to identify additional IEAs. This effort should use the existing knowledge of Arctic waters and should bring together information from local communities, tribes, marine mammal co-management organizations, scientists, and other experts.

(2) Mid-term Actions:

- As more data are collected and synthesized, additional IEAs should be identified.
- Threats to identified IEAs should be evaluated and appropriate protection measures put in place, including monitoring of identified IEAs.

(3) Long-term Actions:

- To account for rapidly changing conditions in the Arctic and to incorporate additional scientific information as it becomes available, periodic evaluations (e.g., every five years) should be conducted to assess existing IEAs and identify additional IEAs. These periodic assessments should determine if existing IEAs are maintaining their important roles, assess emerging threats, and determine if current management measures are adequate or still needed. Management measures should be adjusted to maintain the important roles of IEAs, while allowing ecologically sustainable industrial activities to occur.
- The Arctic SAP should explore the need for internationally designated marine areas in the Arctic. This could be done through the use of appropriate tools, such as "Special Areas" or PSSA designations.

SECTION VI

THE ARCTIC SAP SHOULD RECOMMEND SPECIFIC INTERNATIONAL ACTIONS

The Arctic SAP should identify and recommend priority actions on the international level that will help position the United States as a leader on circumpolar Arctic issues. Support of international efforts that bear on the Arctic is critical to the long-term success of the Arctic SAP, and to protection of the U.S. and circumpolar Arctic.

The Arctic SAP should support important international efforts that are already underway. For example, the SAP should call on the United States to support and participate in the Arctic Council's international agreement on aeronautical and maritime Arctic search and rescue. The SAP should also support efforts by the Arctic Council to develop additional agreements, such as regional oil spill response cooperation, and to strengthen the Arctic Council Secretariat. The Arctic SAP should advocate implementation of the

recommendations of the Arctic Council's 2009 Arctic Marine Shipping Assessment (AMSA), which identified a number of actions designed to improve safety and protect the marine environment of the circumpolar Arctic. For example, the SAP should call for the development of "Special Area" designations related to oil, noxious liquids, garbage, and other wastes. It should also support appropriate vessel restrictions and routing tools, such as "Areas To Be Avoided," speed restrictions, traffic separation schemes, monitoring, and reporting measures designed to reduce the risk of whale strikes.

The International Maritime Organization (IMO) is working to develop an effective and protective International Code of Safety for Ships Operating in Polar Waters (the Polar Code). The Code, as currently being formulated, envisions a number of prescriptions. These include vessel standards that provide for safe operations in ice and low temperatures; the ability to render assistance, including icebreaking assistance; the availability of effective life-saving appliances capable to perform their functions at the minimum anticipated service temperature; and the avoidance of negative environmental effects from normal operations. The Arctic SAP should recommend that the United States take a leadership role in the development of the Polar Code. The Arctic SAP should also advocate for IMO designation of PSSAs or other areas designated for the purpose of environmental protection in Arctic Ocean regions.

The IMO also has the authority to create Emission Control Areas (ECA). The United States has petitioned the IMO for a North American ECA, which was subsequently adopted by the IMO in March 2010. However, the North American ECA currently omits Western Alaska, the Aleutian Islands, and the rest of the U.S. Arctic. The Arctic SAP should recommend that U.S. Arctic waters be included in an amendment to the North American ECA to protect the health of vulnerable Alaskan populations and reduce emissions of the precursors of tropospheric ozone (NO_x) and black carbon, two potent climate-forcing agents.

In 2008, the United States adopted a specific policy goal to address the potential of commercial fishing beginning in the international waters of the central Arctic Ocean. This area, beyond the exclusive economic zones (EEZs) of the five Arctic coastal states, has been frozen for at least 800,000 years. However, rapid warming has replaced permanent ice with seasonal ice, creating large ice-free areas in summer for the first time in recent years. The primary ice-free area is directly adjacent to the U.S. and Russian EEZs north of the Bering Strait and includes continental shelf and slope areas at fishable depths. This area is well within reach of distant water fishing vessels. Already, the U.S. Coast Guard has documented the research activities of a Chinese research icebreaker in this region. As prescribed in PL 110-243, the Arctic SAP should support efforts by the State Department to negotiate a new international Arctic fisheries agreement that would close the international waters of the central Arctic Ocean to commercial fishing unless and until scientific research and management measures can be put in place to ensure sustainability and ecosystem health.

Many other international actions are necessary to improve our understanding of, and provide adequate protection for, the circumpolar Arctic. The Arctic SAP should recognize the need to strengthen, improve, or create international efforts to: respond to disasters such as shipping accidents or oil spills; designate an international network of protected areas; engage in cooperative mapping efforts with other Arctic Nations; reduce ocean noise from vessels and other sound sources; develop standards and mandatory measures to reduce black carbon emissions from ships operating in Arctic waters; and coordinate with Arctic indigenous groups. The SAP should also recommend that the United States exercise leadership on climate change through international treaties such as the United Nations Framework Convention on Climate Change (UNFCCC). Finally, the Arctic SAP should recommend that the United States join the United Nations Convention on the Law of the Sea.

Recommended actions related to international Arctic issues:

(1) Short-Term Actions

- The Coast Guard, the Department of State (through the Bureau of Oceans and International Environmental and Scientific Affairs) and NOAA should ensure that members of the U.S. delegation to PAME familiar with the AMSA report are part of the U.S. delegations to all meetings of the IMO working on the Polar Code.
- The Coast Guard should lead an effort within the IMO to prioritize the development of environmental protection measures to be included within a mandatory Polar Code, including restrictions on black carbon emissions.
- The United States should encourage the Arctic nations to cooperate in utilizing ecosystem-based management approaches in the Arctic, and, through the Arctic Council, establish frameworks and institutions to share information, develop standards and methodologies, assess progress, and encourage the participation of civil society in planning and management decisions. The large marine ecosystems which the Council has delimited on the basis of ecological considerations should be utilized as a basis for this effort.
- Support pan-Arctic efforts towards surveying Arctic indigenous marine use including work being undertaken by Arctic indigenous groups.
- Take steps to ensure that scientific data and documented traditional knowledge of the Arctic held by U.S. agencies is accessible to the agencies of other Arctic countries and cooperate in efforts to build a more comprehensive and open method of sharing Arctic data among countries and interested groups and individuals.

(2) Mid-Term Actions

- Working with Native and other communities as well as the other appropriate federal and state agencies, EPA should lead an effort to inventory sources of black carbon emissions in Alaska and assess their impacts on the health of Arctic communities and on Arctic climate. If appropriate, begin developing a proposal to the IMO for a regional or circumpolar ECA to facilitate regional reductions of black carbon emissions and to lay the groundwork for reductions of black carbon emissions from ships.
- Develop and implement an agreement and protocol governing international circumpolar response to an oil spill, nuclear accident or other disaster based on realistic assessments of their actual effectiveness in reducing and eliminating the impacts of an accident.
- Support the State Department's negotiation of new international Arctic fisheries agreements, as described in P.L. 110-243, to close the international waters of the central Arctic Ocean until scientific knowledge and management measures are in place to show it can be conducted without harming the health of the ecosystem. Help coordinate the supporting expertise available at NOAA, the U.S. Coast Guard, and other agencies in support of this objective.
- Explore the use of the Convention on Long-Range Transboundary Air Pollutants and other existing international and regional agreements, as well as the potential for new agreements, to reduce emissions of short-lived climate forcers contributing to Arctic warming.

- Work with other Arctic countries to identify areas in need of special environmental and cultural protection from Arctic shipping and resource extraction, whether in international or national waters, and explore existing and new mechanisms for doing so within the context of the IMO, the Convention on Biological Diversity, UNCLOS, the 1995 Fish Stocks Agreement, and elsewhere.
- Assess and explore means of reducing the release of methane and other greenhouse gases due to the melting of permafrost.
- Periodically update the Arctic SAP to take account of current work and recommendations of the Arctic Council.

(3) Long-Term

- Follow up on items listed under Short- and Mid-Term Actions, above.
- Effect a comprehensive set of international agreements and practices, with provisions for monitoring and compliance, the primary object of which is to protect the resilience of Arctic ecosystems and which protects the rights of Arctic peoples and is based on the best scientific information available.

CONCLUSION

The Arctic faces serious challenges, including rapid climate change, ocean acidification, and the expansion of industrial activities. A strong Arctic SAP can help the United States address these issues effectively, on both the domestic and international level. To do so, it should establish an overarching strategy based on the stewardship principles contained in the National Ocean Policy, including science- and ecosystem-based management. It should help ensure that local communities, governments, tribes, co-management organizations, and similar Alaska Native organizations understand, participate in, and shape the decisions that will affect them. Moreover, it should help improve our understanding of Arctic ecosystems by advocating a comprehensive Arctic research and monitoring program that promotes and integrates the use of local and traditional knowledge. Finally, it should recommend specific short-, mid-, and long-term management actions—domestic and international—designed to preserve the resilience of Arctic ecosystems and protect opportunities for the subsistence way of life.

The recommendations contained in this comment letter are consistent with the National Ocean Policy, the *Final Recommendations*, and U.S. Arctic policy, National Security Presidential Directive 66 and Homeland Security Presidential Directive 25. We urge the NOC to consider them carefully, and incorporate them into the forthcoming outline and draft versions of the Arctic SAP. We look forward to working with you as you continue to develop the SAP.


Attachment 1

Subregions of the U.S. Arctic

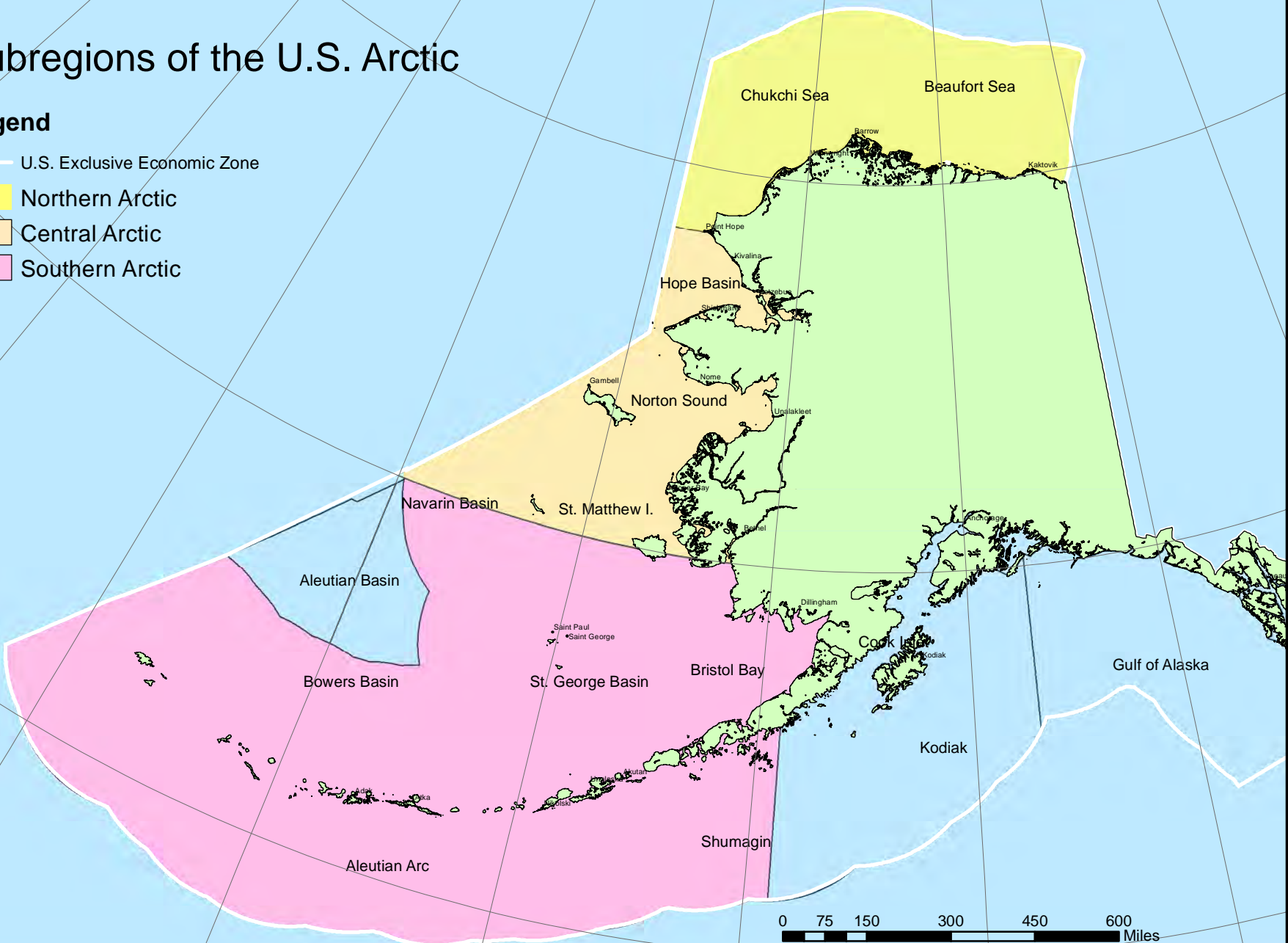
Legend

 U.S. Exclusive Economic Zone

 Northern Arctic

 Central Arctic

 Southern Arctic



Attachment 2

Attachment 2
A Scientific Research and Monitoring Plan for the U.S. Arctic Ocean

Compared with other marine ecosystems, very little is known about the living marine resources in the U.S. Arctic Ocean. We recognize that the recent losses of sea ice during summer are fundamentally changing the ways these ecosystems function, but we still know little about how these food webs work. Even our knowledge of what species inhabit the U.S. Arctic Ocean, either permanently or seasonally, is substantially incomplete. Permitting large-scale industrial activities in the absence of even basic knowledge of the composition and functioning of the marine ecosystem sets the stage for inadvertent environmental degradation at best, and catastrophic interactions at worst. The risks of adverse interactions are exacerbated by the rapid rate of environmental change in the Arctic, and our limited knowledge of existing resources and conditions makes it difficult even to detect ecosystem responses to change. The following science plan is intended as a guide toward systematically improving our knowledge of Arctic marine ecosystem structure and function.

The geographic scope of this science plan includes the exclusive economic zone (EEZ) of the U.S. Arctic Ocean, extending from the northern Alaskan coastline to the continental shelf break to the north, from the Bering Strait in the west to the Canadian border to the east. Most of the plan should be completed within four years. In recognition of the great scientific value of long-term data sets, however, the monitoring should be continued indefinitely, with at least a multi-decade planning horizon.

The essential elements of the plan are grouped into six categories: gap analysis, resource assessment, environmental monitoring, scientific process studies and synthesis. These elements are intended to (1) define existing information and research needs; (2) gain a more comprehensive catalogue of identified species, populations and habitats, including seasonal migrations, (3) track the physical forcing factors that modulate biological productivity, habitat occupancy and migration pathways; (4) secure a better understanding of trophic linkages, physical and biological processes affecting productivity and other facets of ecosystem functioning, and effects of anthropogenic perturbations; (5) study sociological impacts, and (6) integrate these scientific data to identify processes and habitats that are sensitive and vulnerable to perturbation and furnish a basis for marine spatial planning. Each of these constituent efforts must be informed by local and traditional knowledge (LTK) at all stages, including planning and peer-review.

I. Gap Analysis

- A. Conduct a comprehensive gap analysis to determine what scientific research is currently being done and what additional information is needed.

II. Marine Life Assessment

- A. Conduct a comprehensive survey of species occupying each marine habitat, including communities in the benthic, pelagic and littoral zones, and ice-associated communities. Whenever feasible these surveys should be conducted seasonally to identify migrations and patterns of periodic habitat use.

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- B. Conduct periodic population assessments for exploited and selected important species. These assessments should be spatially explicit, and include migratory species (birds, marine mammals and some fish). These assessments will provide crucial baselines for evaluating impacts of industrial development and ecosystem change.

III. Environmental Monitoring

- A. Establish a network of fixed monitoring stations to track physical forcings and local biological responses. This station network should be patterned along the lines of the National Science Foundation's Long Term Ecological Research Network (LTER) and NOAA's oceanographic buoys adapted to the US Arctic Ocean, with sampling stations allocated to both the Chukchi and Beaufort seas. These stations will measure physical factors in the ocean including temperature and salinity, acidity, alkalinity and nutrients as functions of seawater depth, along with current profilers at strategically chosen locations; atmospheric factors including surface temperature, wind speed and direction, insolation, gas composition, and particulate density and composition; and biological factors such as primary and secondary productivity, zooplankton abundance and composition, benthic species presence, community richness and diversity, and community assemblages associated with sea ice.
- B. Support remote monitoring by satellite and aircraft to track sea ice extent, surface albedo and ocean color in collaboration with NOAA, NASA and NSIDC.
- C. Establish a systematic process for incorporating LTK for early detection of unanticipated ecosystem change, and for review by LTK experts for accuracy and completeness.
- D. Periodically update the resource assessments identified in "II" above to track ecosystem responses to climate change and industrialization.
- E. Monitor detection of invasive species, including species displaced by warming seawater temperatures to the south, and exotic species introduced by industrial activities.

IV. Scientific Process Studies

- A. Identify processes strongly coupled with biological production, species' distribution and abundance, and support research that will improve understanding of them aimed at improving prediction of community responses to short- and long-term environmental stressors. This research should include identification of the species interactions that structure the biological community, which includes studies of the food web to determine linkages and energy flow through the ecosystem, as well investigations to determine the processes responsible for nutrient cycling.
- B. Prioritize research to initially emphasize known proximate sources of ecosystem stress, including processes strongly affected by transition from light limitation to nutrient limitation resulting from continued sea ice loss, effects of warmer water temperatures on growth and provisioning requirements of selected target species (especially young-of-the-year and juveniles), and sensitivity to acidification from increases in atmospheric carbon dioxide.

V. Sociological and Ecosystem Impact Studies

- A. Identify historical and current patterns of land and subsistence use, and conduct a survey of social and psychological well-being in North Slope communities to document current conditions in these communities.
- B. Monitor changes in patterns of land and subsistence use, and in measures of social and psychological well-being in North Slope communities affected by oil development.
- C. Conduct studies to determine potential impacts from industrial activities in the Arctic Ocean, such as research on the effects of noise on Bowhead whales, as well as the potential effects from produced waters, drilling muds, routine discharges, and other emissions on the ecosystem.

VI. Data Integration and Marine Spatial Planning

- A. Construct ecosystem models including a quantitative nutrient-phytoplankton-zooplankton (NPZ) model and an Ecopath model to evaluate how predicted ecosystem responses compare with data observed from the monitoring programs. Identified inadequacies will highlight areas requiring further research.
- B. Archive monitoring data in a publicly accessible database that is continuously maintained. Also, monitoring results should be periodically included in GIS maps to facilitate identification of Important Ecological Areas (IEAs) and important subsistence areas in the US Arctic Ocean and how they may change through time. Important Ecological Areas are geographically delineated areas with distinguishing characteristics that contribute disproportionately to an ecosystem's health or are particularly vulnerable to disturbance.
- C. Integrate the results of the monitoring and research described above with a marine spatial planning effort that identifies IEAs as well as all potential energy sources and their availability to markets to help minimize the likelihood of adverse consequences associated with industrialization.

North Slope Borough

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Edward Itta, Mayor

April 28, 2011

Co-Chair Nancy Sutley
Co-Chair John Holdren
Members of the National Ocean Council (NOC)
National Ocean Council
722 Jackson Place, NW
Washington DC 20503

Submitted online at: <http://www.WhiteHouse.gov/administration/eop/oceans/comment>

Re: Notice of Intent to Prepare Strategic Action Plans for the Nine Priority Objectives for Implementation of the National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes

Dear Co-Chair Sutley, Co-Chair Holdren, and Members of the National Ocean Council:

The North Slope Borough (Borough) appreciates this opportunity to comment on the National Ocean Council's (NOC's) Notice of Intent to Prepare Strategic Action Plans for the Nine Priority Objectives for Implementation of the National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes ("Strategic Action Plans"). Our comments are directed primarily at Priority 8, "Changing Conditions in the Arctic," but will in places also apply to the other priority objectives.

Our ability to respond with detailed recommendations is challenged by the vast scope of actions proposed by NOC. Moreover, North Slope stakeholders' capacity to effectively participate in this process is challenged by the sheer number of overlapping planning processes currently underway. At this time we are serving as a cooperating agency (CA) with (1) the Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE) on the environmental impact statement (EIS) for the five-year Outer Continental Shelf oil and gas leasing program for 2012–2017, (2) the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) in the preparation of an EIS on the Effects of Oil and Gas Activities in the Arctic Ocean, and (3) the Bureau of Land Management (BLM) regarding the National Petroleum Reserve

Alaska (NPR-A) Integrated Activity Plan (IAP)/EIS. Additionally, the Borough has ongoing involvement with the Environmental Protection Agency (EPA) on a variety of matters, including the development of new National Pollutant Discharge Elimination System (NPDES) general permits for the Chukchi and Beaufort Seas, numerous Notices of Intent (NOI) for discharge under the existing NPDES general permit submitted by operators, and commenting and other engagement on air permit applications submitted for OCS exploration drilling. We are also preparing comments on the United States Coast Guard's (USCG) Port Access Route Study in the Bering Strait (PARS). Finally, we continue to devote substantial resources and attention to existing and proposed listings under the Endangered Species Act (ESA) (polar bears, ice seals, Pacific walrus) and related issues concerning critical habitat designation.

This list, of course, does not include every substantial federal process underway in the Arctic. It should, however, suffice to demonstrate the need for coordination of federal activities in the region. As a primary goal, NOC should seek to greatly improve the coordination of all planning efforts in the Arctic. A critical aspect of this goal must be to include the residents of the Arctic—and their local contemporary and traditional knowledge—in the planning for the region.¹ This will require improving communication and coordination with local governments, tribes, Alaska Native Claims Settlement Act (ANCSA) corporations, and other Alaska Native organizations, especially the various marine mammal user groups. As part of this effort, the Mayors of the North Slope Borough and Northwest Arctic Borough should receive regular briefings from personnel primarily responsible for the deliverables on the Strategic Action Plans as they relate to the Arctic.

Data Gaps

While the Arctic marine ecosystem is known to be rich and complex, it is poorly understood. There are broad data gaps, and unfortunately the Arctic marine ecosystem is difficult and expensive to study.² We have long argued for a comprehensive federal research effort to provide a foundation of scientific information on the Arctic. We hope that NOC will carefully coordinate with other federal agencies so that resources are not wasted duplicating efforts underway elsewhere.

The National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling, Staff Working Paper No. 13 contains a good description of the significant data gaps that exist with respect to a broad range of Arctic marine resources.³ The U.S. Geological Survey (USGS) is also preparing a data gap analysis for the Beaufort and Chukchi Seas. Among other things, the USGS is supposed to examine the effects of oil and gas exploration activities on marine mammals, determine what research is needed for effective oil spill response in ice-covered regions, evaluate what is known about the cumulative effects of energy extraction on ecosystems and other resources of interest, and review how future changes in climate conditions may mitigate or compound the impacts from Arctic energy development. NOC should review the findings and recommendations of Staff Working Paper No. 13 and the USGS report and act on them where appropriate.

Climate Change

We are pleased that climate change will be a focus of the Strategic Action Plans and urge you to not lose sight of the human dimension of climate change impacts in the Arctic. Climate change is already affecting our subsistence traditions. It is critical that NOC understand the importance of climate change on subsistence resources and traditions. Most Borough residents are Inupiat Eskimos who derive the majority of their nutritional and cultural sustenance by hunting marine mammals from the Chukchi and Beaufort Seas.⁴ Climate change therefore presents risks to our physical and cultural survival. Some of the impacts we are already seeing from rapid climate change include:

- Higher than usual temperatures are becoming more common,⁵ as are extreme weather events.⁶ Warming temperatures can result in conditions that make winter travel more difficult and unsafe.⁷
- Hunting is dangerous or impossible on ice when early breakup and late freeze-up create poor ice conditions.⁸ Access to subsistence resources is restricted and there is increased risk and reduced efficiency to our hunting.⁹
- The lack of haulout ice platforms for seals and walrus is causing problems for the species and is reducing hunter access.¹⁰
- The composition, distribution, density, and availability of subsistence species is changing.¹¹
- The quality of animals is changing.¹² For example, ice seals have thinner blubber and therefore produce less oil.
- Communities are increasingly vulnerable as winter freeze up occurs later in the season. The lack of early autumn sea ice allows for greater wave action and greater impacts to the coast. Storm surges are eroding coastlines, washing out roads and damaging other infrastructure, making travel difficult, and endangering human life.¹³
- Thawing of permafrost results in habitat changes, sinking buildings, and melting ice cellars, making long-term storage of traditional foods more difficult.¹⁴
- Fisheries are changing with changes in ocean circulation, currents, water temperatures, ice coverage and nutrient availability.¹⁵ Decreases and changes in fish stocks directly affect the economic and dietary well being of subsistence users.
- All of these changes and interruptions are affecting the transference of traditional ecological knowledge.¹⁶

For these reasons NOC should be sure to include collaborative research to understand fully the impacts of climate change on subsistence and to investigate adaptation and mitigation strategies for the coastal subsistence communities in the U.S. Arctic. The agencies need to collaborate with indigenous populations to understand traditional knowledge and practices, and to understand how subsistence resources and practices are changing. Having traditional knowledge will be essential to formulate effective adaptation and mitigation strategies.¹⁷ The health and cultural activities of our people will be harmed by a decline in subsistence practices.¹⁸

Offshore Oil and Gas Activities

For many years, the Borough has expressed its reservations about the impacts of offshore oil and gas activities in the Arctic Ocean. Two sets of recent comments are illustrative of Borough concerns. Please review the Borough's June 30, 2010 and March 31, 2011 comments on the Bureau of Ocean Energy Management, Regulation and Enforcement's (BOEMRE's) Notice of Intent to Prepare and Scope an Environmental Impact Statement (EIS) for the Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2012–2017 in connection with your development of strategic action plans. These comments are attached as Exhibits A and B, and we incorporate them by reference.

We have also distilled some of our views in a document entitled "North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions." This document has been shared with Secretary Salazar and officials within BOEMRE. (It is attached as part of Exhibit B). BOEMRE has agreed to work with the Borough through a Memorandum of Understanding to further these policy positions. We ask that each of the Borough's eight policy positions serve as guidance as NOC develops its strategic action plans.

We also ask that NOC take careful note of the work of the National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling. The Commission's Final Report, issued in January 2011, included many recommendations relevant to NOC's mission. A section entitled "Beyond the Gulf of Mexico: Frontier Regions" captures many of the special challenges presented in U.S. Arctic waters. In addition, the Commission produced a number of staff working papers that should be assimilated by NOC as it moves forward with its work. Particularly relevant is Staff Working Paper No. 5, "The Challenges of Oil Spill Response in the Arctic." A 2010 report commissioned by the Pew Charitable Trusts, "Oil Spill Prevention and Response in the U.S. Arctic Ocean, Unexamined Risks, Unacceptable Consequences," also contains information that NOC should assimilate as it moves forward with its work.

Capacity Building in the U.S. Arctic: Arctic Marine Infrastructure and Oversight

The North Slope Borough's eight policy positions (baseline science, stricter regulation, cumulative impacts, revenue sharing, discharge/emissions, oil spill prevention and response, Coast Guard presence, and compulsory marine pilotage) broadly address the

need for capacity building in the U.S. Arctic, including the collection of baseline data, the restructuring of regulatory systems that govern Arctic commercial activities, and the funding and development of basic Arctic assets and infrastructure.

Our comments in this letter, as well as our comments in other documents referenced in this letter, reflect a common frustration among Arctic stakeholders that the United States consistently puts “the cart before the horse” with respect to Arctic offshore planning. While we perceive that policymakers in Washington, D.C. are generally willing to listen to our concerns, Congress in particular has often failed to provide the resources necessary to ensure that the government’s goals for the Arctic can be met responsibly. The need for resources and infrastructure continues to grow as sea ice recedes and makes way for greater vessel access, oil and gas activities, maritime shipping, tourism, fishing, and other commercial activities.

The 2009 Arctic Marine Shipping Assessment¹⁹ identified the planning and infrastructure needed to reduce impacts from increased marine shipping associated with new Arctic commercial activities, including impacts associated with oil spills and illegal discharges of pollutants, ship strikes of marine mammals, the introduction of invasive species, emissions of black carbon and other air pollutants, and underwater noise pollution. Mitigation of such impacts requires both strong international coordination and a reasonable commitment of national resources for planning and infrastructure.

Effective oil spill prevention and response, navigation aid placement, vessel traffic management, ship compliance inspections, security considerations, and emergency response capability in the Arctic’s oceans are all predicated on active monitoring of vessel traffic and swift emergency response capability in times of crisis. The U.S. Coast Guard plays a primary federal role in these activities, and extreme Arctic conditions justify an important role for the Coast Guard in the Beaufort and Chukchi Seas. But the ability of the Coast Guard to engage meaningfully in U.S. Arctic waters ultimately depends upon the commitment – including the commitment of resources – by Congress.

Congress recently enacted the Coast Guard Reauthorization Act, which encourages the Coast Guard to enter into negotiations through the International Maritime Organization to execute agreements to promote coordinated action among Arctic nations regarding placement and maintenance of aids to Arctic navigation; appropriate Arctic marine safety, tug, and salvage capabilities; oil spill prevention and response capability; Arctic maritime domain awareness, including long-range vessel tracking; and Arctic search and rescue.

While the Borough is encouraged by Congress’s willingness to direct the Coast Guard to engage in Arctic planning processes, we are discouraged by Congress’s apparent unwillingness to provide the necessary resources for meaningful planning as well as infrastructure development—in particular funding needed for polar icebreakers, search and rescue assets, and the development of an Arctic port. Congress has also been unwilling to pass revenue-sharing legislation that would give the State of Alaska and local governments the financial resources necessary to develop such capacity at a

regional and local level. NOC and federal agencies will struggle to undertake meaningful steps to address changing conditions in the Arctic absent a meaningful commitment by Congress to Arctic capacity building, including the collection of baseline data, the restructuring of regulatory systems that guide Arctic commercial activities, and – critically – the funding and development today of basic Arctic assets and infrastructure that will serve the needs of the nation tomorrow.

Although Congress ultimately retains the authority to direct the expenditure of federal funds, NOC should prioritize as a short-term planning goal the identification of specific funding needs and timelines necessary to move forward with the development of basic Arctic assets and infrastructure, including polar icebreakers, search and rescue assets, and the development of an Arctic port. Part of this effort should include the identification of alternative funding mechanisms, such as federal revenue-sharing.

Human Health Impact Assessment

Climate change and the industrialization of our ocean raise a host of profound concerns within our communities, not the least of which are the direct and indirect impacts to our residents' health and culture. Previous research has identified the potential for a variety of negative health outcomes associated with the changes underway in our region, including increases in diabetes and related metabolic conditions resulting from dietary changes, more frequent asthma exacerbations, increased exposure to pollutants, increased injury rates, and rising rates of substance abuse, domestic violence, and suicide.²⁰ An integrated Human Health Impact Assessment should therefore be a central part of NOC's work. Support for performing such an assessment can be found in the Final Recommendations of the Interagency Ocean Policy Task Force, NEPA, and Environmental Justice Executive Order 12898.

It is critical that mere completion of an Integrated Human Health Impact Assessment must not be the end goal. Rather the Assessment must be designed and conducted so as to identify all potential health related impacts and serve as the basis for crafting mitigation measures necessary to mitigate those impacts.

Process

The North Slope Borough is the largest municipality in the United States, covering 89,000 square miles. The Borough's jurisdiction stretches from the U.S.-Canadian border across to the western border of Alaska; our coastline extends across the Beaufort and Chukchi Seas. Over 71% of NSB residents are Inupiat.²¹ As an Arctic government, we were disappointed to learn that the initial planning and drafting efforts associated with the Strategic Action Plan for addressing "Changing Conditions in the Arctic" was initiated long before comments were received and, more importantly, without the participation of key Arctic stakeholders, including the North Slope Borough. Although we understand the need for internal deliberation among federal stakeholders, we do not understand the reason why substantial, advanced planning and drafting took place in

advance of meaningful community outreach. Without knowing how advanced the planning process is today, we remain optimistic that the review of comments as well as planned community outreach activities will play a principal role in the development of the Strategic Action Plans from the foundation up.

Conclusion

Thank you for considering these comments. We look forward to working with NOC as it continues developing the strategic action plans for implementing the National Ocean Policy.

Sincerely,



Edward. S. Itta
Mayor

Attachments: Exhibit A, June 30, 2010 Comments on Bureau of Ocean Energy's Notice of Intent to Prepare and Scope an Environmental Impact Statement for the Outer Continental Shelf Oil and Gas Leasing Program for 2012-2017

Exhibit B, March 31, 2011 Comments Re: Notice of Intent to Prepare and Scope an Environmental Impact Statement for the Outer Continental Shelf Oil and Gas Leasing Program for 2012-2017

Cc: Senator Lisa Murkowski
Senator Mark Begich
Congressman Don Young
Governor Sean Parnell
David Hayes, Department of the Interior
Kim Elton, Department of the Interior
Pat Pourchot, Department of the Interior
Rex Rock, President and CEO, ASRC
Harold Curran, CAO, NSB
Bessie O'Rourke, NSB Attorney
Taqulik Hepa, NSB Director, Department of Wildlife Management
Dan Forster, NSB Director, Planning Department
Karla Kolash, Advisor the Mayor, NSB, Mayor's Office
Andrew Mack, Advisor to the Mayor, NSB Mayor's Office

Endnotes

¹ Use of this knowledge not only helps fill in the gaps of Western science data, it increases trust and local stakeholder support for planning efforts. See e.g., Heather Lazrus and Jennifer Sepez, *The NOAA Fisheries Alaska Native Traditional Environmental Knowledge Database*, 27 PRACTICING ANTHROPOLOGY, Winter 2005, at 35 (traditional knowledge is needed since the temporal depth of NOAA's scientific measurements and records may be almost ineffectually shallow in some Alaskan locations); Omer Chouinard, Steve Plante, and Gilles Martin, *The Community Engagement Process: A Governance Approach in Adaptation to Coastal Erosion and Flooding in Atlantic Canada*, 31 CANADIAN J. REGIONAL SCIENCE 507 (2008), available at www.cjrs-rcsr.org/archives/31-3/Chouinard-final2.pdf (researchers interested in climate-related adaptation measures engaged and interviewed residents from Canadian coastal communities dealing with serious flooding and erosion problems; the process served to give more credibility to previous research efforts and to strengthen bridges between the community and civil servants).

² See, e.g., U.S. Gen. Accounting Office, ALASKA NATIVE VILLAGES: MOST ARE AFFECTED BY FLOODING AND EROSION, BUT FEW QUALIFY FOR FEDERAL ASSISTANCE (2003), available at <http://gao.gov/new.items/d04142.pdf> ("Alaska has significant [environmental] data gaps," in part due to "a lack of monitoring equipment in remote locations."); ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT at 16, 26, available at http://www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf [hereafter AMSA 2009 Report] ("[T]he Arctic Ocean is the least sampled of the world's oceans, and many areas remain where few, if any, soundings have been recorded.").

³ The formal title for Working Paper No. 1 is "Offshore Drilling in the Arctic: Background and Issues for the Future Consideration of Oil and Gas Activities". Of particular relevance is Section VI: "Filling Scientific Data and Oil Spill Response Research Gaps in the Arctic".

⁴ See Wernham, *Iñupiat Health and Proposed Alaskan Oil Development: Results of the First Integrated Health Impact Assessment/Environmental Impact Statement for Proposed Oil Development on Alaska's North Slope*, 4 ECOHEALTH 500, 506 (2007) (North Slope villages harvest between 300 and 800 pounds of subsistence foods per capita annually, among the highest harvest figures in Alaska; the consumption of subsistence foods has been estimated to provide roughly 50% of caloric needs).

⁵ See Gordon McBean et al., *Arctic Climate: Past and Present*, in ACIA SCIENTIFIC REPORT 22–23 (2005) available at http://www.acia.uaf.edu/PDFs/ACIA_Science_Chapters_Final/ACIA_Ch02_Final.pdf; Allen J. Parkinson et al., *Potential Impact of Climate Change on Infectious Disease in the Arctic*, 64 INT'L CIRCUMPOLAR HEALTH 478, 479 (2005) (in the past two decades, Arctic ambient temperatures have warmed at twice the rate of the rest of the world); PowerPoint Presentation of Alaska Sub-Cabinet on Climate Change, in Copenhagen, Denmark (Dec. 15, 2009) <http://www.climatechange.alaska.gov> (reporting a 3.1 degrees Fahrenheit change in mean annual temperatures throughout Alaska between 1949 and 2008).

⁶ See Henry Huntington & Shari Fox, *The Changing Arctic: Indigenous Perspectives*, in ACIA SCIENTIFIC REPORT 74, 82 (2004), *supra* note 5; Mark Nuttall, *Hunting, Herding, Fishing, and Gathering: Indigenous Peoples and Renewable Resource Use in the Arctic*, in ACIA SCIENTIFIC REPORT 660-62 (2004).

⁷ See Nuttall, *supra* note 6, at 656.

⁸ See *id.*, at 660.

⁹ See Huntington & Fox, *supra* note 6, at 68; Jacqueline P. Hand, *Global Climate Change: A Serious Threat to Native American Lands and Culture*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10329, 10331 (May 2008).

¹⁰ See Vera Metcalf & Martin Robards, *Sustaining a Healthy Human-Walrus Relationship in a Dynamic Environment: Challenges for Comanagement*, 18 ECOLOGICAL APPLICATIONS S148, S152 (2008); Jessica Cardinal, PACIFIC WALRUS MANAGEMENT IN A WORLD OF CHANGING CLIMATE: EXPERIENCES AND OBSERVATIONS FROM KING ISLAND WALRUS HUNTERS 21 (2004), http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/4255/Cardinal_ocr.pdf?sequence=1.

¹¹ See, e.g., Mike Campbell, *Subarctic Goose Now Finds Alaska the Place to Winter Over*, ANCHORAGE DAILY NEWS, Sep. 10, 2009, available at <http://www.adn.com/2009/09/10/930591/subarctic-goosenow-finds-alaska.html> (as many as 40,000 Pacific Brant now winter in Alaska, compared with the 3,000 that wintered in the state before 1977); *Sources of Breeding Season Mortality in Canadian Arctic Seabirds*, 62 ARCTIC 333–41 (2009) (warmer temperatures are bringing more storm events, including incidents of heavy fog, rain, freezing rain, wet snow and stronger winds, that contribute to mortality rates for Arctic birds); Sue Steinacher, *Census Shows Decline of the Western Arctic Caribou*, ALASKA FISH & WILDLIFE NEWS, July 2008, http://www.wildlifenews.alaska.gov/index.cfm?adfg=wildlife_news.view_article&articles_id=385&issue_id=64.

¹² See Regional Paper: Native Peoples and Native Homelands, US National Assessment of the Potential Consequences of Climate Variability and Change, US Global Change Research Program, <http://www.usgcrp.gov/usgcrp/nacc/education/native/native-edu-6.htm> (last modified Oct. 12, 2003).

¹³ See GAO Report, *supra* note 2; Ctr. for Climate & Health, Alaska Native Tribal Health Consortium, CLIMATE CHANGE AND HEALTH IMPACTS, POINT HOPE, ALASKA, 22 (2009), available at <http://www.anthc.org/chs/ces/climate/upload/Point-Hope-CCHIA-Draft-Final.pdf> [hereafter Point Hope Report].

¹⁴ *Id.* at 2, 20–21 (reporting that in Point Hope, ice cellars are thawing as well as being washed in due to ocean erosion, “and there are currently no community alternatives for storage of whale meat and blubber.”).

¹⁵ See Huntington & Fox, *supra* note 6, at 77 (Aleutian Islands residents have observed non-indigenous warmwater fish species coming farther north than ever before); see also Dan Joling, *Acidity in Alaska Ocean Waters Puts Fisheries at Risk*, ANCHORAGE DAILY NEWS (Aug. 24, 2009), <http://www.adn.com/2009/08/24/909455/acidity-in-alaska-oceanwaters.html>.

¹⁶ See Nuttall, *supra* note 6, at 670; Bob Reiss, *Barrow, Alaska: Ground Zero for Climate Change*, SMITHSONIAN MAGAZINE (Mar. 2010), available at <http://www.smithsonianmag.com/science-nature/Barrow-Alaska-Ground-Zero-for-Climate-Change.html> (stating that some elders report that conditions have changed so much that they have begun to doubt their ice knowledge).

¹⁷ See Stephen R. Braund, *Traditional Knowledge, Environmental Protection Agency, Literature Review of North Slope Marine Traditional Knowledge 1* (2010) (unpublished study) (traditional knowledge often has answers to questions that otherwise will be left open and therefore unacted-upon while expensive long-term studies are commissioned and take place).

¹⁸ Regarding the health benefits of subsistence, see Wernham, *supra* note 4, at 503, 506; Point Hope Report, *supra* note 16, at 10–13.

¹⁹ See AMSA Report, *supra* note 2.

²⁰ See Wernham, *supra* note 4.

²¹ C.E. Shepro, *et al.*, North Slope Borough 2003 Economic Profile and Census Report, Barrow, Alaska, North Slope Borough, Department of Planning and Community Services (2003).

EXHIBIT A

**June 30, 2010 Comments on Bureau of Ocean Energy's
Notice of Intent to prepare and Scope an Environmental Impact
Statement for the Outer continental Shelf Oil and Gas Leasing
Program for 2012-2017**

North Slope Borough

OFFICE OF THE MAYOR

P.O. Box 69
Barrow, Alaska 99723
Phone: 907 852-2611 or 0200
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email: edward.itta@north-slope.org

Edward S. Itta, Mayor



June 30, 2010

Mr. J. F. Bennett
Chief, Branch of Environmental Assessment
Bureau of Ocean Energy
381 Elden Street, MS 4042
Herndon, Virginia 20170

Submitted online at: ocs5years.eis.anl.gov

Re: Notice of Intent To Prepare and Scope an Environmental Impact Statement (EIS) for the Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2012–2017

Dear Mr. Bennett:

The North Slope Borough (Borough) appreciates this opportunity to comment on the Bureau of Ocean Energy's (BOE's) Notice of Intent to Prepare and Scope an Environmental Impact Statement (EIS) for the Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2012–2017.

On May 3, 2010, the Borough submitted extensive comments to Renee Orr of your agency (the Minerals Management Service (MMS) at the time) on the Revised OCS Oil and Gas Leasing Program for 2007-2012. We incorporate those comments fully herein, and attach them as Exhibit 1 for reference. Those comments were submitted less than two weeks following the BP Deepwater Horizon drilling platform explosion that killed 11 workers and began an oil blowout and spill that continues to foul the Gulf of Mexico even today.

Impact of the Deepwater Horizon Explosion and Spill on the OCS Planning Process

More than ten weeks into the spill, BP can only say that the flow of oil will, at the earliest, be stemmed by a relief well that will take at least another month to complete. In a recent New York Times article, technicians involved in attempts to plug the Gulf flow acknowledge

that the relief well effort may not even succeed.¹ According to the article, the “kill” procedure currently being used could even end up damaging the well further, hindering later efforts to seal it.² The true extent of this unparalleled ecological disaster and the resulting economic and cultural devastation are difficult to grasp and to quantify in any meaningful way. Clearly, the impacts will be felt for decades to come.

A spill of such scale occurring in arctic waters is our worst nightmare. Throughout the almost 40 years since the Borough’s founding in 1972, we have vigorously argued against a reckless expansion of oil and gas exploration and development into the complex, fragile, and remote ecosystem of the Beaufort and Chukchi Seas. We have taken issue with industry claims that state-of-the-art technology, worker training, and compliance with all applicable laws and best industry practices could reduce impacts from routine operations to “insignificant” levels and the potential for a catastrophic spill to near zero. We have pointed to enormous data gaps with respect to the arctic marine ecosystem as compared with other OCS areas, and questioned uncritical agency acceptance of industry assurances regarding noise, air, and water quality impacts and oil spill prevention and response capabilities. We have asked repeatedly how much, or in the case of arctic waters, how little, agencies had to know about the ecology of a region to feel comfortable allowing activities to occur there. We continue to have concerns that the prolonged darkness, frigid temperatures, increasingly frequent and severe storm events, and other arctic conditions have not appropriately been accounted for in routine operation and spill prevention and response planning. We have seen intimate, centuries-old local knowledge of our waters, wildlife, and subsistence practices—and our decades-old first-hand experience with the industrial impacts—ignored or discounted by companies and agencies intent upon hastily securing project approvals. Yet projects are often challenged by the very conditions that companies and agencies have discounted.

The obvious lesson to be learned from the ongoing tragedy in the Gulf of Mexico is that far greater caution must be exercised by the regulated industry and regulating agencies to adequately address worst case scenarios and prepare to timely respond to them.

In our May 3, 2010 comments, we commended Secretary Salazar for exercising caution in canceling the proposed arctic lease sales under the 2007-2012 OCS Leasing Program, but did not directly oppose the permitting of proposed 2010 exploratory drilling operations on existing leases in the Beaufort and Chukchi Seas.³ We chose instead to seek the opportunity to consult with the Secretary as he considered the fate of those proposed operations. As events unfolded in the Gulf, he later made the decision to halt drilling this year in our waters. That was the prudent thing to do.

We have heard that arctic operations would in many respects be different from those undertaken in the Gulf. But the root causes of the Deepwater Horizon explosion and spill are still not fully understood. No one can credibly say that what occurred in the Gulf could not occur here. Factors that apparently contributed to the tragedy in the Gulf include the cozy relationship

¹ Henry Fountain, BP Discussing a Backup Strategy to Contain Oil, New York Times (June 28, 2010), available at <http://www.nytimes.com/2010/06/29/us/29wells.html>.

² *Id.*

³ See Exhibit 1, May 3, 2010 Comments, at p. 2.

between industry and regulators, an unquestioning deference to industry claims of safety, lax agency oversight, inadequately tested spill prevention and response equipment and procedures, and the failure to identify or plan for a true worst case spill scenario. Each of these has been present in the review and oversight of OCS operations in arctic waters. Added to these are the unique challenges of operating and responding to a disaster in the arctic environment.

BOE must decide how to proceed in the face of daily reminders that industry and government at all levels were unprepared for the Deepwater Horizon explosion and spill, and with no knowledge of how to fully ensure that such a disaster will not happen again. We suggest that it would be irrational to decide that drilling operations can proceed responsibly in the arctic at this time. We ask the Secretary to make the commitment now that no sales will be conducted in the Arctic until the root causes of the Gulf explosion and spill are fully understood.

Additional Considerations for OCS Planning

Leasing and drilling decisions must be based on baseline ecosystem knowledge, which continues to be lacking. We ask that the Secretary recognize the need to collect this knowledge before any sale is conducted (and certainly before any operations are allowed to occur). Operators and regulators must know what biological resources are present in (or migrate through) the region, what uses they make of the area, what impacts from other sources they are already experiencing, and what trends are transpiring due to climate change or other factors.

Secretary Salazar has already acknowledged that there are significant data gaps with respect to the arctic marine ecosystem and the associated changes being caused by accelerating climate change. He has ordered the U.S. Geological Survey (USGS) to prepare a report by October 1, 2010 outlining the effects of oil and gas exploration on marine mammals and other resources, determine what research is needed for effective and reliable oil spill response in ice-covered regions, evaluate what is known about cumulative effects of energy extraction on ecosystems and other natural resources, and review how ongoing climate change may mitigate or compound arctic energy development impacts.

At the same time, the National Marine Fisheries Service has initiated an effort to prepare an EIS on the Effects of Oil and Gas Activities in the Arctic Ocean. The EIS will analyze the effects of both geophysical surveys and exploratory drilling, address cumulative impacts over a longer time frame, consider a more reasonable range of alternatives, and perhaps most important to our majority-Iñupiat residents, analyze the range of mitigation and monitoring measures for protecting marine mammals and their availability for subsistence uses.

The decisions you make with respect to the 2012-2017 OCS Oil and Gas Leasing Program can only be improved by reference to the results of these contemporaneous USGS and NMFS review processes.

Decisions can also be improved by better knowledge of the capacity to clean up oil spills in arctic waters. We ask the Secretary to work with other agencies and Congress to allow for realistic oil spill response demonstrations under a range of arctic conditions. Without a comprehensive range of such tests, we are left with no more than industry assurances of response

capability. Such assurances proved wildly inaccurate in the Gulf of Mexico, and must not be the basis for allowing any drilling to occur in far more challenging arctic waters.

As stated in our May 3 comments, the essential components of the precautionary approach adopted in August 2009 by the Department of Commerce in its Arctic Fishery and Management Plan should be adopted by the Department of the Interior with respect to the same arctic waters. The Commerce approach was adopted largely in response to the recognition that a warming arctic is bringing rapid and unpredictable change to the region. The revelations concerning failures in planning, preparation, oversight, and spill response in the less extreme and better understood waters of the Gulf only bolster the arguments for caution in the challenging frontier of the Arctic. Significantly, U.S. Coast Guard Commandant Thad Allen, now overseeing the federal spill response in the Gulf, cheered the adoption of the Fishery Management Plan as “a wise proactive measure to ensure that we find the right balance between the environment and economics for a healthy and sustainable Arctic region.”⁴ We suspect that his current responsibilities in the Gulf would leave Commandant Allen no less an advocate for caution in the Arctic. We ask that in preparing the Draft 2012-2017 OCS Leasing Program you review in particular the portions of our May 3, 2010 letter concerning the language and approach of the Arctic Fishery Management Plan,⁵ and either adopt a comparable approach and conditions for oil and gas leasing here, or explain why the caution appropriate with respect to fisheries is not appropriate with respect to oil and gas operations.

Finally, we want to take this opportunity to commend you personally for your leadership in recognizing for the first time the requirement and appropriateness of incorporating in an EIS dealing with a federal action in Alaska a human health impact analysis (HIA). Through your early efforts as the 2007-2012 OCS Leasing Program was developed, language was included that spurred MMS and the Bureau of Land Management to conduct HIAs in association with oil and gas lease sale-specific EIS efforts that followed. We hope to see this new Program more clearly define the need for and scope of HIA and appropriate mitigation measures to be included in all BOE lease sale and exploration and development reviews.

Conclusion

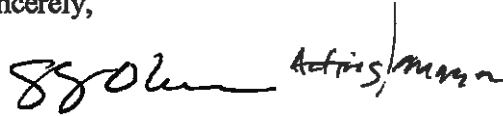
We understand that the adoption of a five-year OCS leasing program essentially acts as a place holder necessary to allow sales within any particular planning area. We suggest that no sales should occur, and no operations should be permitted until the root causes of the Gulf explosion and spill are fully understood. Should the Secretary choose to hold a place under the Five-Year Leasing Program for arctic sales, we ask that the identification of any such sales be strongly qualified by language clearly stating that the standards for ecosystem knowledge, health impact assessments, and demonstrated oil spill prevention and response capability have been elevated considerably.

⁴ Commerce Secretary Approves Arctic Fisheries Management Plan , Web Journal of Admiral Thad Allen (Aug. 21, 2009), available at http://blog.uscg.dhs.gov/2009_08_01_archive.html.

⁵ See Exhibit 1, May 3, 2010 Comments, at p. 7-9.

Thank you for considering these comments. We look forward to working with you as BOE continues developing the 2012-2017 OCS Oil and Gas Leasing Program.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Itta, Sr.", with a vertical line extending upwards from the end of the signature.

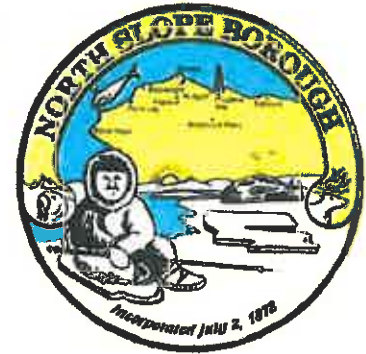
Edward S. Itta, Sr.
Mayor

Attachment: Exhibit 1, May 3, 2010 Comments

North Slope Borough

OFFICE OF THE MAYOR

P.O. Box 69
BARROW, ALASKA 99723
☎ 907 852-2611 ext. 200
Fax: 907 852-0337



Edward S. Itta, Mayor

May 3, 2010

Ms. Renee Orr
Chief, Leasing Division
Minerals Management Service, MS 4010
381 Elden Street
Herndon, VA 20170-4817

Submitted via e-mail: PRPcomments@mms.gov.

Re: Remand of the 2007–2012 OCS Oil and Gas Leasing Program

Dear Ms. Orr:

The North Slope Borough appreciates this opportunity to comment on the Preliminary Revised OCS Oil and Gas Leasing Program for 2007-2012 (PRP). Our comments will largely focus on the PRP's expanded environmental sensitivity analysis beginning on page 104 of the document. We had intended to comment only briefly on the Secretary's revisions to the overall leasing schedule that reflect his balancing of the potential for discovery of petroleum with the potential for harm to the environment or coastal zone. In light of recent events, we will have more to say on the need for caution in allowing drilling operations in our harsh yet vulnerable arctic marine environment.

LEGAL BACKGROUND

In *Center for Biological Diversity v. U.S. Dept. of Interior*, D.C. Cir. No. 07-1247, 07-1344 (April 17, 2009), the DC Court of Appeals identified certain analytical defects in the 2007-2012 Five-Year Program, vacated it, and remanded the program to Interior.

On remand, the April Opinion required the Secretary to:

1. Conduct a "more complete comparative analysis of the environmental sensitivity of different areas of the Outer Continental Shelf," 43 U.S.C. § 1344(a)(2)(G);
2. Determine "whether its reconsideration warrants the exclusion of any proposed area in

the Leasing Program. *See* Watt I, 668 F.2d at 1314” and, finally;

3. Reassess “the timing and location of the Leasing Program ‘so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone,’ as required by Section 18(a)(3). 43 U.S.C. § 1344(a)(3).”

In an order dated July 28, 2009, the Court stayed its mandate pending the completion of proceedings on remand.

The “Preliminary Revised Program - Outer Continental Shelf Oil and Gas Leasing Program 2007-2012” represents the Department of Interior’s effort to remedy the defects identified above.

GENERAL COMMENTS ON PRP

When Secretary Salazar announced the PRP on March 31, I expressed relief at his decision to cancel planned lease sales in our arctic waters while scientists gather and evaluate more information. It was the right decision, dictated by appropriate caution in the face of many unknowns, for this 5-Year Leasing Program.

Although the PRP would allow operations to occur on existing leases despite our long expressed concerns over the risks involved, I said shortly after the decision was announced that, overall, it was a balanced one. I said at the time that I am sensitive to our need as a state to develop our resources, and that I am concerned that we get it right. To be clear, the Borough’s long-standing position with respect to offshore operations remains unchanged. We will continue to oppose all offshore activities that we believe pose a threat to our subsistence way of life, the health of our residents, wildlife resources, and the arctic marine environment. We believe that this position is supported by the facts and evidence, and dictated by general principles governing the sound application of science and responsible public policy.

When Secretary Salazar came to Alaska last year, he talked about the importance of balancing energy exploration and community concerns in the Arctic Ocean. When I met with him earlier this year in Washington, we talked again about finding this balance. Without reversing our opposition to offshore drilling in arctic waters, I said upon the release of the PRP that it perhaps achieves that goal of balance by allowing exploration of existing leases and also creating what amounts to a pause in new leasing until we have a better understanding of the real and potential impacts of industrial operations and the appropriate conditions to apply to operations proposed in our waters.

The Borough’s initial and measured response to this PRP was not formulated lightly. It represented a somewhat nuanced departure from a decades-old policy more simply and directly opposed to OCS leasing and operations in arctic waters. That original policy is based on our strong and continuing beliefs that the risk of a significant oil spill cannot be eliminated, that the capability does not exist to effectively respond to such a spill in our

remote and challenging environment, and that, in any event, too little is known about this ecosystem and the potential impacts on its resources, both from a cataclysmic spill and from routine operations, to credibly balance the potential risks against the projected benefits.

Our decision not to simply continue to oppose all offshore drilling, but to accept limited, carefully planned, and environmentally sound exploration on existing leases, was the product of much internal debate and recognized the desires and concerns of other affected stakeholders, including some on the North Slope. It was also contingent upon the need for strict operating conditions and comprehensive marine mammal monitoring and other scientific research to be required in association with all industrial activities that are allowed to occur.

This approach recognizes that powerful political and economic forces are unified in support of arctic OCS development, and it is consistent with our confidence that as more knowledge and understanding of the arctic marine ecosystem is gained, federal and state agencies will be more inclined and compelled to protect it. In canceling the scheduled North Aleutian Basin sale, Secretary Salazar said that the Bristol Bay region is one place that is "simply too special to drill." He cited the region's world-class sockeye salmon runs and abundant wildlife. "It is a national treasure that we must protect," he said. We believe that as our region, its resources, and our centuries-old subsistence culture become better understood, our country's only arctic waters will come to be recognized as a national treasure as well.

On page 7 of the PRP, Secretary Salazar explains his reasons for removing from the 2007-2012 Leasing Program further arctic sales. He cites "the difficulty of removing oil spilled in icy waters and our current limited ability to predict the effects of climate change in the Arctic Region." We note with regret that the Secretary failed to include the broad and significant knowledge gaps that exist across so many disciplines with respect to arctic waters in general, and the Chukchi Sea in particular. We recognize that the governing laws require only consideration of existing information, but have stressed that responsible decision makers must acknowledge that where there exists less than a certain threshold of reliable information, required impact assessments and the decisions that must be based upon them simply cannot be made with any credibility.

We are greatly encouraged that Secretary Salazar states in the PRP that during his management of the OCS lease sale program:

"...sales in frontier areas will be timed with the goal of using results from exploration activities to inform planning for subsequent sales. With respect to the Chukchi, exploration of existing leases will inform Interior in analyzing the full impacts of potential development and will provide industry with important information regarding the magnitude of recoverable resources to justify the needed infrastructure to bring the resources to market.

In both the Beaufort and Chukchi Sea Planning Areas, industry holds many existing leases that have yet to be explored. Therefore, before additional leases are offered, it is important to gather additional scientific information and data from exploration on existing leases.”

However, we are concerned that this statement recognizes only the need to gain much needed scientific data in association with permitted industrial activities, and does not acknowledge the perhaps greater need to aggressively begin the gathering of long-term ecosystem-wide data that would identify not only current environmental characteristics and resource numbers, distributions, and health, but would also allow for assessment of changes and trends driven by climate change and other factors. Clearly, in these “frontier areas”, there is a need for both finer scale project-driven monitoring and study, and broader scale ecosystem-wide research to “inform Interior in analyzing the full impacts of potential development”.

Further, it is unlikely that allowing the exploration on existing leases will fully inform MMS regarding the full range of impacts of potential development. First, exploratory drilling and associated operations are proposed to occur during a short open water season of less than three months. Development and production would require the placement of infrastructure that would produce year-round impacts. Second, there are no extensive studies of impacts (direct, indirect, or cumulative) coupled to Shell’s OCS exploration plans. Certainly Shell will further delineate the subject hydrocarbon reservoirs, but we are not aware of extensive, robust scientific studies planned that will trace, for example, the fate of discharged chemicals as they move through the food chain, or the impacts of the huge volume of airborne pollutants to marine species, or the likely adverse effects of the unprecedented discharge of so much anthropogenic noise pollution into both the Beaufort and Chukchi Seas to the many marine mammal species for which the acoustic environment is so crucial to their survival during a single season. Having rigorously reviewed Shell’s OCS exploration plans we know that relatively little new scientific information regarding impacts to all potentially affected species, the marine ecosystem, and the broader environment will be gathered. The focus of the science that will be conducted is focused largely on avoiding impacts to marine mammals within prescribed sonification zones around drilling structures and vessels.

POLICY IMPLICATIONS OF GULF OF MEXICO OIL SPILL

President Obama claimed last month that OCS drilling has become so advanced that oil spills and blowouts are a thing of the past. Unfortunately, even as he said this, Australia was still assessing the damage from the August 21, 2009 Timor Sea blowout, which poured millions of gallons of oil into the ocean off Western Australia for 74 days before it could be sealed off. Then, tragically, on April 20, an explosion at a British Petroleum (BP) exploratory drilling rig in the Gulf of Mexico (GOM), 120 miles south of New Orleans and 48 miles from the nearest coast, killed 11 workers and initiated what many fear could become the worst oil spill disaster in U.S. history since the Exxon Valdez. News accounts can hardly do justice to the epic human and environmental tragedy that is unfolding in the wake of the accident. In spite of all the efforts to contain the oil and

prevent its spread, the leading edge of the spill has made landfall. While estimates of the leak rate seem to change daily, it seems clear that the spill could soon surpass the size of the 1969 Santa Barbara spill, and if the leak cannot be contained, it could exceed the size of the 1989 Exxon Valdez Alaska oil spill in only a matter of weeks.

It appears at this point that the spill could devastate wildlife and coastal communities across an enormous area of the GOM, and possible even that its direct effects may be felt along the Atlantic seaboard and beyond should oil be captured by the Gulf Stream and transported around the Florida panhandle. Most of the immediately affected communities in the GOM rely heavily on natural resources of coastal waters to sustain their economy and to feed their families. As so many Alaskans affected by the Exxon Valdez spill know all too well, it is likely that the environmental, economic, social, health and cultural effects of a spill of this magnitude would be felt for many years.

Both the fact that the explosion and spill occurred, and the fact that the response has been seemingly disorganized and ineffective call into question the credibility of industry and MMS claims of drilling safety and spill response capability here, in arctic waters, as well as across all OCS planning areas. In short, the balance among values that Secretary Salazar and I discussed and that he sought to achieve with this PRP may have shifted.

It would be easy today, in light of there having just been a blowout associated with an exploratory drilling operation and an ongoing spill, to call for the Secretary's denial of Shell's proposed 2010 Beaufort and Chukchi drilling operations. I am not yet ready to do that. I have made the commitment to work with the Secretary, with Shell, with my communities, with subsistence user groups, and with other stakeholders to seek common ground if there is common ground to be found. Make no mistake, the burden is now on Shell and MMS to affirmatively demonstrate that what occurred and is occurring in the Gulf of Mexico can not occur in the Beaufort or Chukchi Sea this coming open water season. I will trust in Secretary Salazar to carefully consider the facts of that case as they are revealed over time, realign the balance as necessary, consult directly with the Borough, and make the appropriate call with respect to Shell's proposed operations based on all applicable legal mandates and his own demonstrated good judgment.

Some things are already clear with respect to the situation in the GOM. The drilling technology and redundant safety and spill prevention systems employed at the BP facility had been touted as state-of-the-art. To our knowledge, this is the first serious explosion and blowout to occur on the latest generation of deepwater drilling equipment. In theory, given modern blowout control technology, such an event is virtually impossible. Nevertheless, this incident, just like last fall's blowout in Australia's Timor Sea, reminds us that the possibility of a catastrophic event is never far away. According to an April 28 article in the Seattle Times, an average of two fires and explosions occur weekly on Gulf of Mexico oil platforms and offshore rig workers in the Gulf of Mexico have been dying in accidents at the rate of one every 45 days since the mid-1990s.

During the planning and evaluation of this drilling operation when it was proposed, BP downplayed the possibility of a catastrophic accident. In the exploration plan and the

associated environmental impact analysis for the well, BP suggested it was unlikely, or virtually impossible, for an accident to occur that would lead to a massive oil spill and serious environmental damage. Whatever causes are identified as a result of what will surely be a lengthy investigation, clearly, alone or in combination, these technologies and systems failed.

As we have found typically to be the case here, great reliance appears to have been placed by regulatory officials in the GOM on the company's assertions that preparation, planning, and redundancies would render a major spill nearly impossible. As a result, claims of spill response capability were taken on faith and subjected to little rigorous analysis. In response to comments submitted on Shell's proposed 2010 OCS exploratory drilling proposals in the Beaufort and Chukchi Seas, North Slope Borough officials have been repeatedly told by industry and federal management authorities alike that companies performing OCS drilling have fail-safe systems for their drilling rigs. The same was true in the GOM, and the systems failed.

Response scenarios for the BP GOM project never envisioned a spill of the current magnitude, or that reasonably foreseeable environmental conditions could so thoroughly thwart even basic response and recovery measures. The wind and wave conditions have been too rough for effective booming or the operation of mechanical skimmers in some areas, and, with the exception of two small tests, in situ burning has not yet proven an effective response option. Almost two weeks into the spill, dispersants have been used with questionable effectiveness, and some mechanical recovery has occurred. Large scale burning has been thwarted by high winds and the heavy emulsification of the oil as it percolates up from the seabed floor. Heavily emulsified oil does not ignite or burn reliably. The inability to burn such oil from a subsea leak has been a longstanding Borough concern, a concern dismissed by both state and federal agencies. Efforts by robotic submarines to shut off the flow of oil have been unsuccessful and BP officials are now forecasting that completion of a relief well could take up to three months.

As tragically difficult as it is proving to be to deal with a major oil spill in the Gulf of Mexico, it would certainly be a far more significant challenge to respond to a spill under even commonly occurring arctic conditions. We are remote, there is little infrastructure to support a large scale spill response effort and there is no fleet of fishing vessels available to be brought into service. There are no large communities from which to draw workers and volunteers to assist in wildlife recovery and rehabilitation. In addition to the GOM's challenging wind and sea conditions, responders here would have to cope with sub-zero temperatures, all manner of ice conditions, and months of prolonged darkness. Frigid air would affect the ability to deploy dispersants and frigid water would impact their effectiveness. We remain unconvinced, despite industry and some agency claims, that burning or any other available response measure would be effective on a large scale under dynamic broken ice conditions. With an OCS exploratory drilling season of only a few months here, it is conceivable that a late-season incident could result in a discharge persisting under the ice for much of our six-month arctic winter.

In announcing his decision to remove from the 2007-2012 OCS Leasing Program further leasing in the Beaufort and Chukchi Seas, Secretary Salazar emphasized that the move should not be construed to suggest that the exploration of existing leases cannot be safely conducted. Rather, he said, he intended to proceed deliberately to analyze the results of exploration and monitoring activities, and consider other relevant data, which will provide him with the opportunity to make more informed decisions regarding arctic sales in the 2012-2017 Program. We expect that among that "other relevant data" will be the recognition that major spills can happen in U.S. waters; that they can be associated with drilling operations and not just with the transportation of oil; and that state-of-the-art technologies and operator assurances are no guarantee either that prevention is near certain or that an effective spill response can be mounted under all conditions.

NEED FOR A PRECAUTIONARY APPROACH

The Arctic is changing rapidly due to global warming. The sea ice is retreating and thinning. Storms, erosion and other coastal processes are increasing in frequency and severity. Longstanding current, water temperature and salinity, and other oceanographic patterns are shifting. The variety, numbers, distribution and health of marine resource populations are changing.

In August 2009, Secretary of Commerce Gary Locke approved the Arctic Fishery Management Plan. The Plan covers federal waters north of the Bering Strait in the Chukchi and Beaufort Seas and prohibits expansion of commercial fishing in those waters until researchers gather sufficient information on fish and the arctic marine environment to prevent adverse impacts of commercial harvesting activity on the ecosystem. It is recognized that warming ocean temperatures, migrating fish stocks and shifting sea ice conditions resulting from a changing climate may potentially favor the development of commercial fisheries. The Plan establishes a framework for sustainably managing arctic marine resources. It initially prohibits commercial fishing in the Arctic waters of the region until more information is available to support sustainable fisheries management. The plan was recommended by the North Pacific Fishery Management Council in February 2009. In announcing his adoption of the Plan, Secretary Locke said that:

"As Arctic sea ice recedes due to climate change, there is increasing interest in commercial fishing in Arctic waters," said Locke. "We are in a position to plan for sustainable fishing that does not damage the overall health of this fragile ecosystem. This plan takes a precautionary approach to any development of commercial fishing in an area where there has been none in the past."

Secretary Locke was not alone among administration officials in recognizing the need for caution where the Arctic is concerned. In his August 21 Web Journal, U.S. Coast Guard Commandant Admiral Thad Allen wrote of the adoption of the Fisheries Management Plan "This is a wise proactive measure to ensure that we find the right balance between the environment and economics for a healthy and sustainable Arctic region."

It is the sincere hope of the North Slope Borough that at this critical juncture in our nation's history -- when our arctic region is the subject of debates at the intersection of issues as diverse and important as the health of the global environment, the economy, energy security, international boundaries, the extinction of species, and the responsibilities and integrity of government -- this administration will exercise restraint, dispense with both polarizing political rhetoric and the fantasy that we can aggressively pursue offshore development while ensuring protection of the marine environment and the welfare of arctic residents when we do not have a good understanding of what is out there and how it is changing. We hope the Department of the Interior and MMS will adopt, with respect to OCS oil and gas leasing, the precautionary approach embodied in the Department of Commerce's Arctic Fisheries Management Plan.

While the focus of the Plan and of the policies underlying it is, of course, fisheries, the management philosophy it embodies would seem as well suited to meeting the responsibilities of the Department of the Interior as it is to meeting those of the Department of Commerce in dealing with the same waters and resources. To put it another way, we challenge the Interior Department to explain why a precautionary approach is not warranted with respect to oil and gas leasing and operations in arctic waters.

Much of the specific language of the Plan would seem as befitting of a responsible OCS arctic leasing program as of an arctic fisheries management plan. (Council). Table ES-1 of the Plan states:

The Council's (North Pacific Fishery Management Council's) policy is to proactively apply judicious and responsible fisheries management practices, based on sound scientific research and analysis, to ensure the sustainability of fishery resources, to prevent unregulated fishing, and to protect associated ecosystems for the benefit of current users and future generations. For the past 30 years, the Council's management policy for Alaska fisheries has incorporated forward-looking conservation measures that address differing levels of uncertainty. This management policy has in recent years been labeled the precautionary approach. Recognizing that potential changes in productivity may be caused by fluctuations in natural oceanographic conditions, fisheries, and other non-fishing activities, the Council intends to continue to take appropriate measures to insure the continued sustainability of the managed species. It will carry out this objective by considering reasonable, adaptive management measures, as described in the Magnuson-Stevens Act and in conformance with the National Standards, the Endangered Species Act, the National Environmental Policy Act, and other applicable law. This management policy takes into account the National Academy of Science's recommendations on Sustainable Fisheries Policy.

As part of its policy, the Council intends to consider and adopt, as appropriate, measures that prevent unregulated fishing, apply the Council's precautionary, adaptive management policy through community-based or rights-based management, apply ecosystem-based management principles that protect managed species from overfishing and protect the health of the entire marine ecosystem, and where appropriate and practicable, include habitat protection and bycatch constraints. All management

measures will be based on the best scientific information available. Given this intent, the fishery management goals are to provide sound conservation and sustainability of the fish resources, provide socially and economically viable fisheries for the well-being of fishing communities, minimize human-caused threats to protected species, maintain a healthy marine resource habitat, and incorporate ecosystem-based considerations into management decisions. This management policy recognizes the need to balance competing uses of marine resources and different social and economic goals for sustainable fishery management, including protection of the long-term health of the ecosystem and the optimization of yield from its fish resources. This policy will use and improve upon the Council's existing open and transparent process of public involvement in decision-making.(emphasis added)

In addition, Section 2.2 (page 4) of the Plan describes the Council's Management Policy for Arctic Fisheries:

The Council recognizes the different and changing ecological conditions of the Arctic, including warming trends in ocean temperatures, the loss of seasonal ice cover, and the potential long term effects from these changes on the Arctic marine ecosystem. More prolonged ice-free seasons coupled with warming waters and changing ranges of fish species could together create conditions that could lead to commercial fishery development in the Alaskan Arctic EEZ. The emergence of unregulated, or inadequately regulated, commercial fisheries in the Arctic EEZ off Alaska could have adverse effects on the sensitive ecosystem and marine resources of this area, including fish, fish habitat, and non-fish species that inhabit or depend on marine resources of the Arctic EEZ, and the subsistence way of life of residents of Arctic villages. The Council views the development of an Arctic FMP as an opportunity for implementing an ecosystem based management policy that recognizes these issues in the Alaskan Arctic EEZ.

The Council's management policy for the Arctic EEZ is an ecosystem-based management policy that proactively applies judicious and responsible fisheries management practices, based on sound scientific research and analysis, to ensure the sustainability of fishery resources, to prevent unregulated or poorly regulated commercial fishing, and to protect associated ecosystems for the benefit of current users and future generations. This management policy recognizes the need to balance competing uses of marine resources and different social and economic goals for sustainable fishery management, including protection of the long-term health of the ecosystem and the optimization of yield from its fish resources. Recognizing that potential changes in productivity may be caused by fluctuations in natural oceanographic conditions, fisheries, and other non-fishing activities, the Council intends to continue to take appropriate measures to insure the continued sustainability of the managed species and to prepare for possible fishery development in the Arctic (Lellis 2004). This policy will use and improve upon the Council's existing open and transparent process of public involvement in decision making.

Finally, in Appendix C, on page 89, Recommended Conservation Measures are offered with respect to oil and gas activities. We suggest that MMS respond to these as proposed mitigation measures in the final proposed plan and associated EIS:

The following recommended conservation measures with respect to Oil and Gas Exploration, Development, and Production should be viewed as options to avoid and minimize adverse impacts and promote the conservation, enhancement, and proper functioning of EFH(Essential Fish Habitat):

- 1. As part of pre-project planning, identify all species of concern regulated under federal or state fishery management plans that inhabit, spawn, or migrate through areas slated for exploration, development, or production. Pay particular attention to critical life stages, and develop options that avoid and minimize adverse effects from any associated activities. Modify the project design, timing, or location and use adaptive management.*
- 2. Avoid the discharge of produced waters into marine waters and estuaries. Re-inject produced waters into the oil formation whenever possible.*
- 3. Avoid discharge of muds and cuttings into the marine and estuarine environment. Use methods to grind and re-inject such wastes down an approved injection well or use onshore disposal wherever possible. When not possible, provide for a monitoring plan to ensure that the discharge meets EPA effluent limitations and related requirements.*
- 4. To the extent practicable, avoid the placement of fill to support construction of causeways or structures in the nearshore marine environment.*
- 5. As required by federal and state regulatory agencies, encourage the use of geographic response strategies that identify EFH and environmentally sensitive areas. Identify appropriate cleanup methods and response equipment.*
- 6. To the extent practicable, use methods to transport oil and gas that limit the need for handling in environmentally sensitive areas, including EFH.*
- 7. Ensure that appropriate safeguards have been considered before drilling the first development well into the targeted hydrocarbon formations whenever critical life history stages of federally managed species are present.*
- 8. Ensure that appropriate safeguards have been considered before drilling exploration wells into untested formations whenever critical life stages of federally managed species are present. If possible, avoid such work entirely during those time frames.*
- 9. Ensure that oil and gas transportation and production facilities are designed, constructed, and operated in accordance with applicable regulatory and engineering standards.*
- 10. Evaluate impacts to EFH during the decommissioning phase of oil and gas facilities, including possible impacts during the demolition phase. Minimize such impacts to the extent practicable.*

The caution demonstrated by Secretary Salazar in canceling the remaining arctic sales under the 2007-2012 OCS Leasing Program ought to be applied as well to the 2012-2017 Program now being formulated. There is simply no possibility that all information necessary to meaningfully inform his decisions with respect to this unique ecosystem will be available before the next Leasing Program is announced. Caution demands that additional lease sales not be held in the Beaufort and Chukchi planning areas until a comprehensive multi-agency research program can be devised and executed. That simply can not occur within the next two years.

ENVIRONMENTAL JUSTICE

MMS should be sensitive to local communities in its revised program and address issues of environmental justice. Federal agencies must "make achieving environmental justice part of ... [their] mission[s]." Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Agencies must work to ensure effective public participation and access to information, and must "ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public."

In the memorandum to heads of departments and agencies that accompanied Executive Order 12898, President Clinton specifically recognized the importance of procedures under NEPA for identifying and addressing environmental justice concerns: "[e]ach Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA]." The memorandum emphasizes the importance of NEPA's public participation process, directing that "each Federal agency shall provide opportunities for community input in the NEPA process." Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices."

Environmental justice concerns have been a serious issue during prior NEPA processes in the Arctic. For example, public review and comment periods, like this one, have sometimes occurred during critical whaling and other subsistence activity seasons when many of the key individuals in the communities were likely unavailable. Additionally, proposed actions have occurred in such rapid succession that Native communities have run up against limits in their capacity to produce thoughtful and meaningful reviews, which the agencies ask for and expect. The pressure to review, comment on, and ultimately live with the rapid pace of industrial activities creates stress and other adverse impacts to individuals living in arctic communities. As MMS proceeds, it should be aware that multiple, overlapping, fast-tracked planning processes have serious impacts on the communities and residents of the Arctic.

To avoid the mistakes of the past and mitigate some of the stresses on community members, MMS must work with communities, ensure appropriate opportunities for input, and be aware of processes that its sister agencies may be undertaking at the same time. MMS must communicate with tribal governments and local officials to determine the optimal time to hold meetings or public hearings in order to gain maximum participation and meaningful review. Often the tribal and local government offices in these small communities are overburdened and overwhelmed by the amount of information requested from them by the various agencies involved in oil and gas projects as well as various mining and transportation projects. Dialogue with tribal and local governments about the importance of the proposed EIS and expectations regarding participation by the affected communities is imperative. For this to be meaningful, it must be more than just another letter sent to the local government offices.

HUMAN HEALTH IMPACT ASSESSMENT

In addition to concerns about the NEPA process, members of arctic communities are worried about the potential human health impacts from proposed oil and gas exploration, development, and production activities. These concerns include air quality issues and subsequent increases in respiratory problems, contamination of subsistence resources through water and air pollution, displacement and impairment of access to subsistence resources and associated food insecurity, and social issues associated with increased contact with non-resident industrial workers. MMS is obligated by NEPA, by Executive Order 12898, and by subsequent guidance from CEQ, to assess possible human health impacts. A commitment to perform this required assessment at the lease sale planning phase was made in the original 2007-2012 Leasing Program. We ask that with the PRP, that commitment be reaffirmed, and that it be made clear that a project specific assessment must be completed in association with all NEPA-reviewed proposals. Further, it must be acknowledged that the assessment is not itself the required objective. It is but a means of identifying potential health related impacts. The legal mandate then is to attempt to mitigate those identified potential impacts.

ENVIRONMENTAL SENSITIVITY ANALYSIS

General Comments:

We are told on page 106 of the PRP that “For the purposes of this analysis, relative environmental sensitivity is defined as the vulnerability of an OCS planning area’s ecological components (i.e., coastal habitats, marine habitats, marine fauna, and marine productivity) to the potential impacts of OCS oil and gas activities in comparison to the same ecological components in other OCS planning areas.”

At the direction of Secretary Salazar in response to the Court’s order, the Minerals Management Service has re-analyzed all 26 OCS planning areas to better determine the relative environmental sensitivity of several ecological components to multiple impacts of offshore oil and gas development. The inadequate original environmental sensitivity analysis relied on only two studies conducted by Continental Shelf Associates in 1990 and 1991, and one dataset, the National Oceanic and Atmospheric Administration’s Environmental Sensitivity Index. The expanded analysis continues to rely on those sources to analyze the sensitivity of shoreline/coastal habitats, but goes further to analyze sensitivity of offshore/marine resources to oil and gas activities. The expanded analysis also relies on nearly 50 reports and studies, many of which were not considered when the original 2007-2012 relative environmental sensitivity analysis was prepared.

The expanded environmental sensitivity analysis is divided into the three components of the marine environment that may be affected by oil and gas activities: marine habitats, marine productivity, and marine fauna (i.e., birds, fish, marine mammals, and sea turtles). The expanded analysis considers the relative sensitivity of the marine environment of all planning areas to oil spills and other potential factors, such as sound, physical disturbance, climate change, and ocean acidification.

While this expanded approach is certainly an improvement over the previous one, we find that it is still lacking in several significant respects. MMS does not include all of the best available science in its analysis, and, more importantly, appears to bias the results for the Chukchi and Beaufort Seas by making assumptions that are not supportable based on existing science and knowledge.

One of the weaknesses of the analysis is that MMS does not consider the influences of past activities in the planning areas. The Beaufort and Chukchi planning areas have experienced very limited anthropogenic activities (i.e., oil and gas, commercial fishing, shipping, recreation, etc.) compared to the other planning areas. Thus these areas are in near pristine condition. Wildlife here are likely not to have experienced those human activities before. They are correspondingly likely to be more reactive (i.e., more sensitive) than organisms in other OCS areas. MMS should consider this in its analysis.

MMS also ignores uncertainty in the data that exist. There are many substantially large data gaps for the Chukchi and Beaufort planning areas. There are large differences in the quantity and quality of data that exist among the planning areas. The potential exists for unintended consequences and unforeseen yet significant impacts if caution is not exercised in making leasing decisions where uncertainty and data gaps exist. Therefore, uncertainty in the knowledge base must be considered in the analysis. Greater caution must be exercised for those areas with limited or out of date information.

Another weakness of the new analysis is that it inappropriately and disproportionately focuses on species that are listed as threatened or endangered and on federally designated areas. Species at risk and other protected species and resources should also be given more weight in the analysis. The sensitivity analysis must be further enhanced and expanded, and agency biases removed, for it to be a useful tool for decision makers and the public.

Specific Comments:

- Pg. 7, 3rd full paragraph, 2nd sentence: It is not clear how consideration of the "difficulty of removing oil spilled ice waters" and the "limited ability to detect the effects of climate change" were incorporated into the environmental sensitivity analysis.
- Pg. 38, Land Use and Existing Infrastructure, 2nd paragraph, 1st sentence: The potential for newly constructed infrastructure associated with the 5-year program is biased low for our region. There has been a tremendous increase in interest in the Chukchi Sea. In Sale 193, Shell spent approximately \$2.1 billion on leases with particular interest in the Burger prospect. If the Burger prospect is developed, there will be at least 60 miles of pipeline just to reach shore. Assuming the oil will ultimately be transported down the TransAlaska Pipeline, there will be a need for approximately 175 to 200 miles of pipeline to connect to existing infrastructure. Thus, just for one foreseeable development, there could be more than 200 miles of pipeline. Other foreseeable developments in the Beaufort Sea and Chukchi Sea could add even more miles of pipeline.

- Pg. 39, Marine Mammals, 1st paragraph, 3rd sentence: It is not clear how MMS determined that there are only three threatened or endangered marine mammals in the Chukchi Sea. Bowheads (endangered), humpback whales (endangered), fin whales (endangered), Chukchi Sea polar bears (threatened), and Beaufort Sea polar bears (threatened) all occur in the Chukchi Sea. Additionally, MMS must consider the other species that are currently being considered for listing, such as ringed and bearded seals, and Pacific walrus. On page 7 of the document, Secretary Salazar stated that the limited knowledge of the effects of climate change was taken into account in the revised environmental sensitivity analysis. If that were so, MMS should have included the species currently being considered for listing, especially since the justification for listing was directly related to climate change.
- Pg. 39, Marine Mammals, 1st paragraph, 9th sentence: MMS states that "such effects would likely be short-term and not result in population-level effects." As the Borough has pointed out in many previous comments, MMS has no data to support this assertion. There are very few data on the duration of deflection of bowhead whales away from oil and gas activities and there are no data on population level effects on any marine mammal. In fact, there are only a few marine mammals in the Arctic for which there are reasonable population or trend estimates for which one could assess population level effects. Additional data are needed before the federal government allows for further exploration in the Arctic, or a precautionary approach is needed that allows for the collection of data and revision of activities if impacts are occurring.
- Pg. 39, Marine Mammals: It is not clear why MMS does not include all marine mammals in its analysis instead of only those that are listed. Other marine mammals must also be considered.
- Pg. 105, Table 8: It is unclear how the Beaufort and Chukchi planning areas are defined as being "more sensitive" and "less sensitive", respectively. If MMS truly took into account the extreme difficulty of cleaning up spilled oil and the effects of climate change, both of those arctic planning areas should be in the "most sensitive" category. Additionally, because of the relative infrequency of oil and gas activity in the Arctic, as well as the migratory nature of many species, most animals are not and may never be habituated to human activity in the region. Finally, the current limited knowledge base, the limited baseline information, also must be considered in the analysis of environmental sensitivity. The many unknowns would dictate that human activities proceed slowly as the information base "catches up" to the demands for knowledge.
- Pg. 107, Oil Spills, 1st paragraph, 2nd sentence: MMS notes that it "does not consider risk nor do the rankings for environmental sensitivity reflect potential risk." It is not clear why this is the case. Environmental sensitivity is directly tied to risk and potential risk. If the risk is low, then the environmental sensitivity is in large part meaningless. If the risk is high, then environmental sensitivity is extremely important. In the Arctic, sea ice creates a situation that heightens the risk of an oil spill and increases the difficulty of clean-up efforts. These factors must be included in the environmental sensitivity, if the analysis is going to provide meaningful information to the public or decision makers.

- Pg. 107, Sound, 1st paragraph 3rd sentence: "This analysis assumes that monitoring and mitigation measures, such as the use of independently contracted protected species observers to monitor exclusion zones around source vessels..." This assumption is not valid for the Beaufort and Chukchi Seas. Oil companies hire their own observers and tightly control the data that are released. This part of the analysis is flawed because of an assumption that is false.
- Pg. 108, Habitats and Biota Analyzed, last paragraph, 4th sentence: MMS states that marine mammal harvests are managed "within the potential biological removal of each stock." This statement is not true. The use of potential biological removal was developed to manage incidental catches in commercial fisheries. Subsistence harvests are managed by the International Whaling Commission (bowheads) or through co-management agreements between the Fish and Wildlife Service or the National Marine Fisheries Service and Alaska Native Organizations.
- Pg. 109, last paragraph: "...sensitivity is determined from the likely response of the resource to the environmental perturbation." This statement is misleading. For example, oil and gas impacts to marine mammals in the Arctic are relatively novel. There are many fewer human activities in the Arctic, such as limited shipping and a much lower amount of oil and gas activity. The Arctic (Beaufort and Chukchi planning areas) are much closer to pristine condition than the other planning areas. Because of this lesser amount of activity and lesser exposure in the Arctic, the responses of the resources are going to be much different. Bowhead whales for example are much more sensitive to industrial sounds than any other marine mammal that has been studied. This may in part be due to the relatively limited exposure that they have experienced in the past.
- Pg. 111, Table 9: MMS ranks the marine fauna of the Beaufort and Chukchi Seas near the bottom. The agency concludes that the marine fauna are among the least sensitive of all the planning areas. This conclusion is not valid. Most of the species of marine mammals in the Arctic are being considered for listing under the Endangered Species Act, primarily because of the dramatically changing environment. Also, as mentioned above, the species have limited previous exposure to anthropogenic activities and there is limited knowledge about marine mammals and other marine fauna, especially when compared with other planning areas. All of these factors would suggest that the marine fauna in the Beaufort and Chukchi seas are actually more sensitive than other areas.
- Pg. 112, 1st paragraph, 2nd sentence: MMS states "coastal environmental resources face the most significant environmental consequences from contact with spilled oil." This statement shows one of the MMS biases we have contested for years. The statement is not true for the Arctic. Sea ice, snow, and cold temperatures reduce the diversity and abundance of organisms in coastal areas. Therefore, spilled oil on the surface of the water, or in the water column, or at the sea floor, will likely have much greater consequences (with some exceptions for marine mammal haul outs or concentration areas and estuaries), than oil in coastal environments.
- Pg. 114, 3rd paragraph, last sentence: "...other planning areas along the Pacific and Alaska coasts have low ESI sensitivity ranks because of the presence of exposed rocky shorelines." It is not clear how this statement is reflective of the Chukchi and Beaufort Seas planning areas. There are very few exposed rock shorelines in

either of these areas. The habitats within a hundred miles of the current leases are predominated by fine sands, gravel beaches, muddy inlets, extensive estuarine lagoon systems, and inundated tundra. Table 10 on page 113 suggests that those types of habitats are among the most sensitive, yet sensitivity scores in Table 11 on page 116 suggest that the Chukchi is among the least sensitive and the Beaufort is also ranked much lower than it should be. The entire coast adjacent to areas that have been leased should all have sensitivity scores above 8. The average score should be much higher than MMS indicates in Table 11. MMS's analysis is flawed.

- Pg. 120, Table 13: It is not clear how MMS includes resilience or vulnerability in their assessment of sensitivity of marine habitats. If oil were spilled in Arctic marine habitats, the oil may persist for many, many years because of the extremely limited ability to clean up oil in broken and solid ice conditions, frigid temperatures, remote locations, limited infrastructure, and prolonged periods of darkness. That persistence of oil could lead to impacts to habitats and resources over a long period of time and a broad area. Resilience and vulnerability need to be considered in environmental sensitivity analyses.
- Pg. 121, 1st paragraph, 2nd sentence: "While marine oil spills are unlikely to contact benthic habitats,...". This statement is misleading. MMS and oil companies have promoted the use of dispersants in cleaning up spilled oil. Dispersants essentially move spilled oil from the surface of the ocean into the water column and to the ocean floor (i.e., the benthic habitat). In the case of the ongoing Gulf of Mexico spill, more than 100,000 gallons of dispersants have already been used. MMS must consider the toxicity of dispersants and the high likelihood that dispersants will be used in an oil spill (and thus cause spilled oil to contact the benthic habitat) in its sensitivity analysis.
- Pg. 121, 2nd paragraph, 1st sentence: MMS states that "pelagic habitats are assumed to be most sensitive to oil spills" yet on page 112, they state that "coastal environmental resources face the most significant environmental consequences from contact with spilled oil". It is not clear which area MMS considers to be the most sensitive, coast or pelagic habitats, nor is it clear how these apparently differing positions of sensitivity affects the overall analysis.
- Pg. 121, 2nd paragraph, 3rd sentence: In this sentence, MMS suggests that in the event of an oil spill, the habitat would return to normal within a year or so with "no remnant evidence of the spill." This sentence does not reflect the best available science. The remnants of the Exxon Valdez oil spill have persisted for more than 20 years in some locations. The statement also does not take into account sea ice. Spilled oil could become entrained or frozen into sea ice. Once the ice melted, the oil would be released and could impact habitats and biota. Sea ice might melt in the following summer or persist for years before melting. Thus, spilled oil in the Arctic could persist for several years or longer.
- Pgs. 122 and 123, last paragraph on pg. 122 and Table 14: This section lacks the detail needed for evaluating the revised analysis. The last paragraph on page 122 provides a general overview of how the sensitivity scores for marine habitats were calculated, but no details are provided about the scores that MMS gave for "abundance value", "sensitivity coefficient", or "the number of federally

designated areas". It is not possible for the public, other agencies, or decision makers to evaluate the new analysis if details are not provided.

- Pg. 124, Birds, 2nd paragraph, last sentence: MMS incorrectly concludes that impacts to birds from factors unrelated to oil spills are "individually and collectively much smaller than the potential effects from a large crude oil spill." While it is true that a large oil spill would have large impacts to marine and coastal birds, MMS inappropriately and inconsistently dismisses the impacts from those other factors, such as collisions with structures, disturbance, loss of foraging habitat, etc. MMS and industry routinely assert that the chances of an oil spill are very, very small. If that is the case, than the impacts to marine birds from those other factors will be individually and collectively extremely important to consider in a comparative sensitivity analysis.
- Pg. 125, bullet #2: As mentioned above, oil may persist in some environments in the Arctic for more than one year. Thus, sensitivity analysis of bird populations must include analysis of impacts over multiple years.
- Pg. 125, bullet #4: This assumption is not valid. It is not clear but would appear that MMS has used only breeding bird information for its analysis of the abundance of birds that might be impacted by an oil spill. It is not apparent that MMS has considered non-breeding birds (e.g., breeding birds from the southern hemisphere that "over winter" in the northern hemisphere, such as Short-tailed Shearwaters, which number in the millions) or birds migrating through the area (e.g., King Eiders or loons that migrate through the Chukchi and Beaufort Seas between breeding areas in Canada and wintering areas in the Pacific or adjacent waters). The result is a negative bias in bird abundance for the Chukchi and Beaufort planning areas. This shortcoming could substantially and possibly significantly alter the results of the sensitivity analysis.
- Pg. 125, last paragraph: It is not clear how or even if MMS incorporates uncertainty into its sensitivity analysis. There is relatively little recent data about basic information for marine and coastal birds in the Beaufort and Chukchi Seas. Little is known about distribution, movements, abundance or trends of most marine and coastal birds. Because the data are limited, MMS should incorporate uncertainty in its analysis. The greater the uncertainty, the more caution should be reflected in decisions that are made.
- Pg. 126, 1st paragraph, 3rd and last sentences: Here is an example where MMS has made a mistake in its sensitivity analysis with regards to birds. The decision was made that "the population [of birds] [should be] apportioned across the OCS planning areas unless particular population segments could be attributed to a specific OCS planning area." MMS does not take into account the migration of birds. For example, almost the entire populations of King and Common eiders migrate through planning areas in the Bering Sea and the Chukchi and Beaufort Seas planning areas. Those birds could potentially be exposed to impacts from spilled oil and other factors in each planning area they move through. By apportioning, or dividing the population among planning areas, MMS negatively biases its analysis and results, especially for the Chukchi and Beaufort Seas.
- Pg. 126, 3rd paragraph: MMS has assigned each and every OCS planning area the exact same sensitivity value for abundance of both marine and coastal birds. The result

is that the analysis is not helpful at all. The OCS planning areas do not have the same sensitivity with regards to birds, but that situation is overwhelmed with the decision made by MMS to make all areas equal. Some measure of relative sensitivity is needed.

- Pg 126, last paragraph: MMS should include candidate species in its analysis. Candidate species are often considered “warranted but precluded” for listing as threatened or endangered. Thus candidate species should perhaps be listed (and have additional protection) but agencies do not have the time or funds needed to list them. In the current analysis, MMS inappropriately gives too much weight to already listed species. It should also consider other species that are declining or are small in size. Uncertainty in the data and limited knowledge about species should also be incorporated into the analysis.
- Pg. 127, top equations: It is not clear what data MMS used for its “sensitivity value”. More information is needed to evaluate the revised sensitivity analysis.
- Pg. 128 and 129, Table 15: MMS must provide more information about this table. It is not clear how it determined the general abundance of coastal and marine birds. Because it gave the same value to all planning areas for sensitivity for abundance of marine and coastal birds, the main factor that is being used for birds (see comments for page 126), involves those species that are listed as threatened or endangered. This seems unwise because it ignores information and also encourages the listing, perhaps unnecessarily, of bird species that would then influence future sensitivity analyses.
- Pg. 131, 2nd paragraph, 1st sentence: MMS’s analysis of sensitivity of marine fishes is biased. It uses the “weight of commercial landings” to estimate the relative abundance of fish for each planning area. The result for the Chukchi and Beaufort planning areas is biased low because there are no commercial fisheries in the planning area, but there are large stocks of fishes that support abundant marine mammal and marine bird populations. The data on the biomass of fish stocks is extremely limited or absent for these two planning areas. Recently the North Pacific Fisheries Management Council acknowledged the limited data and closed the Chukchi and Beaufort Seas to commercial fishing until the data were available to appropriately manage any fisheries that might develop.
- Pg. 133; Marine Mammals, 2nd paragraph, last sentence: MMS again negatively biases results for the Chukchi and Beaufort planning areas. It ignores marine mammals that they consider “extralimital”, such as humpbacks in the Arctic. Humpbacks have occurred in the southern Chukchi Sea for many, many years. Russians have noted the occurrence of humpbacks off the north coast of Chukotka in the southern Chukchi Sea. Moving several hundred miles farther north, from the southern to northern Chukchi or western Beaufort seas, is not a major shift (i.e., not extralimital) in distribution for marine mammals. Furthermore, sightings of humpbacks are becoming regular, suggesting there has been a shift in distribution as opposed to “extralimital sightings”. A similar situation exists for fin whales in the Chukchi Sea. MMS must include these species in its sensitivity analysis.
- Pg. 133, last paragraph: It is not clear how MMS determined the sensitivity of marine mammals to oil spills. Additional information is needed for the public and decision makers to evaluate the revised analysis.

- Pg. 134, 1st sentence: MMS states that it does not want to speculate about the marine mammal behaviors in response to industrial activities. This is probably appropriate. However, MMS should not ignore the best available data that do exist. The literature is relatively rich with regards to impacts from industrial activities to bowhead whales. MMS should also be consistent. The agency frequently speculates when it comes to making statements about the limited longevity or small magnitude of impacts to marine mammals from industrial activities (see comments for page 39). MMS should not speculate in that situation until they have data to support statements that “effects will be short-term and not result in population-level effects.”
- Pg. 134, Listing Status, 1st paragraph, last sentence: Agencies that are evaluating species for listing have already undergone an initial assessment of whether petitions for listing have merit. Because of this initial assessment, species under consideration for listing should be evaluated in MMS’s sensitivity analysis.
- Pg. 134, last paragraph, last sentence: MMS states that “...shoreline habitat that some marine mammals may use is captured in our shoreline sensitivity analysis.” It is not apparent how this occurred. It appeared that MMS only used habitat type (i.e., rocky, muddy, etc. substrate) for the sensitivity analysis of shorelines and not habitat use by marine mammals. Therefore, the analysis does not incorporate use by marine mammals. The categories that MMS uses for shoreline sensitivity are not on a fine enough scale to capture importance to marine mammals. In the Arctic, MMS must consider the sensitivity of molting areas for belugas and haul out areas for spotted seals and walrus.
- Pg. 135, Sensitivity to Underwater Sounds: MMS’s title for this section is misleading. It does not use existing data. It generally evaluated sensitivity of species based on the frequency of their calls and how they use sound. It does not use the data that exist about how marine mammals respond to sound. For example, bowhead whales are extremely sensitive to low levels of sound. There are numerous publications and reports that contain that information. The information should be used to assess the sensitivity of the Beaufort and Chukchi planning areas.
- Pg. 136 and 137, Table 17: The Chukchi and Beaufort planning areas have been ranked too low in this analysis. MMS did not consider the best available scientific information in its analysis as is pointed out above.
- Pg. 146, last paragraph: MMS assessed the “average production (annual amount of carbon produced per acre of ocean surface)” as part of their sensitivity analysis. How does MMS deal with advection of nutrients, phytoplankton, and zooplankton from one planning area to another? This is extremely important in a sensitivity analysis. For example, a large amount of nutrients, phytoplankton, and zooplankton is transported from the Bering Sea to the Chukchi and Beaufort Seas. This transport provides for a much greater abundance of biota in the Chukchi and Beaufort Seas. Impacts in the Bering Sea could substantially impact the Chukchi and Beaufort Seas planning areas.

CONCLUSION

Again, we commend Secretary Salazar for his decision to remove from the revised 2007-2012 OCS Leasing Program proposed sales in the Beaufort and Chukchi Seas. Given all that was known, and unknown, on March 31, the decisions he made with respect to Alaskan waters and other OCS areas around the country seemed a good faith attempt at a reasonable balance between enhancing the potential for discovery of petroleum with the potential for harm to the environment. It is impossible to deny that things changed on April 20. Some basic assumptions, repeated often for years by industry but also recently voiced by President Obama and the Secretary himself, regarding the safety of OCS drilling and the capability of even the most sophisticated of operators and the responsible agencies to effectively respond to a major oil spill, must now be re-examined. We, like the Secretary and all other interested parties, will await the conclusions of the investigation into the Gulf of Mexico tragedy. The results of that investigation may not be available for a long time. If the Exxon Valdez experience teaches us anything, it is that the likely impacts of the ongoing spill may be felt for decades.

An early take-home message for us from the unfolding catastrophe in the Gulf, occurring as it did at this crucial juncture in the Administration's assessment of federal OCS policy, is that our country cannot afford to drill in all especially sensitive and risky areas even with current state-of-the-art technologies. Using whatever credible ranking system you may choose, it seems to us that the arctic marine ecosystem must be considered as highly sensitive as other OCS regions, while being less subject to the mitigation of potentially catastrophic harm. With the assumption that blowouts can-not happen in U.S. waters now shattered, the oil industry and the responsible federal agencies have a heightened burden to make the case that drilling in our arctic waters is not simply an unprecedented disaster of enormous magnitude waiting to happen. The tragic situation still unfolding in the Gulf of Mexico only serves to highlight what we have been saying for decades: that despite the best intentions, planning, preparation, preventative measures, training and technologies, accidents do, and will always, happen.

Again, thank you for the opportunity to comment.

Sincerely,


Edward S. Itta
Mayor

Exhibit B to North Slope Borough's 4.28.11 comments to NOC

EXHIBIT B

**March 31, 2011 Comments Re: Notice of Intent to Prepare
And Scope an Environmental Impact Statement for the Outer
Continental Shelf Oil and Gas Leasing Program for 2012-2017**

North Slope Borough

OFFICE OF THE MAYOR



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Edward S. Itta, Mayor

March 31, 2011

Mr. J. F. Bennett
Chief, Branch of Environmental Assessment
Bureau of Ocean Energy Management, Regulation and Enforcement
381 Elden Street
Mail Stop 4042
Herndon, Virginia 20170-4817

Submitted online at: ocs5yearsais.anl.gov

Re: Notice of Intent To Prepare and Scope an Environmental Impact Statement (EIS) for the Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2012–2017

Dear Mr. Bennett:

The North Slope Borough (Borough) appreciates this opportunity to once again comment on the Bureau of Ocean Energy Management, Regulation and Enforcement's (BOEMRE's) Notice of Intent to Prepare and Scope an Environmental Impact Statement (EIS) for the Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2012–2017.

On June 30, 2010, the Borough provided extensive comments on this EIS, which are already part of the record. On July 1, 2010 there was issued an indefinite extension of the scoping period, and on December 1, Secretary Salazar made an announcement describing an updated oil and gas leasing strategy for the OCS establishing the current comment deadline.

While the Borough was clear in our earlier comments with respect to our views on continued arctic OCS oil and gas leasing and operations, several points deserve renewed emphasis in light of subsequent events and newly available information. In addition, we have distilled these views in a document entitled "**North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions**", which we have shared with Secretary Salazar and officials within BOEMRE and which are attached. We acknowledge and appreciate that BOEMRE has agreed to work with the Borough through an MOU to further these policy positions.

Each of the Borough's eight policy positions should serve as guidance as your agency develops the arctic components of the 2012-2017 Program.

Specific Recommendations

The Borough offers the following specific recommended changes to the basic structure of the OCS Leasing Program as it is applied in arctic waters.

First, there are broad data gaps that exist with respect to the arctic marine ecosystem and the rapid, unpredictable changes occurring within that ecosystem. Moreover, it is difficult to collect, analyze, and report good data, and, North Slope stakeholders have a relatively limited capacity to effectively participate in multiple overlapping planning processes. For all these reasons, only a single lease sale should be held in each of the Beaufort and Chukchi Sea planning areas during the term of the 2012-2017 Program.

Second, the size of each of the two arctic planning areas should be reduced by removal of all areas that have been consistently deferred from leasing in the past. These include the Eastern Beaufort Sea deferral area, (also known as the Barter Island deferral area), the Barrow spring lead system deferral area, and the Chukchi Sea polynya, nearshore or coastal deferral area. This would focus the attention of agency planners and stakeholders on tracts that could realistically be expected to be offered, while greatly reducing the stress and anxiety of our community residents that is rekindled with each planning process that first proposes and then defers from leasing areas critical to subsistence success.

Finally, we recommend that BOEMRE adopt mitigation measures similar to those adopted by the Bureau of Land Management (BLM), with respect to its management of certain broad areas within the National Petroleum Reserve-Alaska (NPR-A). To its credit, the BLM recognized that during the lease sale planning phase it would not have sufficient information available across the multi-million acre NPR-A to make one-size-fits-all decisions regarding appropriate protections for certain species. Within distinct large areas identified as important for caribou, waterfowl, and hydrologic systems that support fish, the agency applies mitigation measures that require lessees to conduct pre-activity, multi-year, site-specific research to assess the resource presence and use within the area of their proposed operations. With planning areas as large as the Beaufort and Chukchi Seas, BOEMRE is faced with very similar challenges in identifying appropriate mitigation at the lease sale stage. The burden should be shifted to the OCS lessees to adequately study the areas of their proposed operations in order to better inform agency decision makers charged with protecting resources and uses that may be affected by those operations.

New Relevant Information

We are confident that BOEMRE will consider the relevant new information generated since the initial Notice of Intent to prepare and scope this EIS was published on April 2, 2010, and that the agency will adjust its Program development schedule to the extent necessary in order to capture in the EIS analysis critical information expected to become available in the near future.

Of particular importance to the country's overall strategy with respect to the leasing and permitting of oil and gas operations in OCS waters is, of course, the work of the National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling. The Commission issued a Final Report in January that included many recommendations grouped in nine distinct areas:

- Improving the Safety of Offshore Operations: Government’s Role
- Improving the Safety of Offshore Operations: Industry’s Role
- Safeguarding the Environment
- Strengthening Oil Spill Response, Planning, and Capacity
- Advancing Well-Containment Capabilities
- Overcoming the Impacts of the *Deepwater Horizon* Spill and Restoring the Gulf
- Ensuring Financial Responsibility
- Promoting Congressional Engagement to Ensure Responsible Offshore Drilling
- Moving to Frontier Regions

In the section dealing with the last of these subject areas, the Final Report captures the special challenges faced by decision makers confronting growing industry and national interest in U.S. arctic waters. At the same time, while the arctic marine ecosystem is known to be rich and complex, it is poorly understood and difficult and expensive to study. We have long argued for the comprehensive federal research effort to provide a foundation of scientific information on the Arctic now recommended by the Commission.

Each of the Commission’s recommendations has been made after careful investigation and deliberation, and must be addressed in the 2012-2017 Program EIS. Clear explanations and justifications must be provided in the event that any are not adopted.

In addition, the Commission’s efforts produced a number of Staff Working Papers, including papers No. 5 addressing “ The Challenges of Oil Spill Response in the Arctic” and No. 13 “Offshore Drilling in the Arctic: Background and Issues for the Future Consideration of Oil and Gas Activities”. The analyses contained in these and the other white papers must also be considered in this EIS.

In conjunction with the discussion presented in paper No. 5, BOEMRE should include in the EIS a detailed description of the recent oil spill in Norwegian waters. BOEMRE should apply the lessons that can be learned from the response, reportedly plagued by weather, ice, equipment, logistical, and other organizational challenges, all likely to arise in connection with a spill in Alaskan waters.

Likewise, paper No. 13 contains a good description of the significant data gaps that exist with respect to a broad range of arctic marine resources. As we referenced in our June 30, 2010 comments, the U.S. Geological Survey (USGS) has been tasked with preparing a special review of information that is known about the Beaufort and Chukchi Seas, specifically examining the effects of exploration activities on marine mammals, determining what research is needed for an effective and reliable oil spill response in ice-covered regions, evaluating what is known about the cumulative effects of energy extraction on ecosystems and other resources of interest, and reviewing how future changes in climate conditions may either mitigate or compound the impacts from arctic energy development. The findings and recommendations of the USGS report must be considered in the EIS in conjunction with paper No. 13.

BOEMRE is also engaged with the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) in the ongoing preparation of an EIS on the Effects of Oil and

Gas Activities in the Arctic Ocean. The NMFS EIS will analyze the effects of geophysical surveys and exploratory drilling, address cumulative impacts over a longer time frame, consider a more reasonable range of alternatives, and perhaps most important to our residents, analyze the range of mitigation and monitoring measures for protecting marine mammals and their availability for subsistence uses. Though the timing of its preparation and release relative to the preparation of this EIS is unclear, if it is available, its analysis and conclusions should inform BOEMRE's ultimate decisions regarding continued leasing and industrial operations in northern waters.

Human Health Impact Assessment

The decisions facing BOEMRE and other agencies with regard to arctic OCS leasing and operations spark a host of profound concerns within our communities. Primary among these concerns is the potential for the increased industrialization, alone and in combination with other factors, to cause both direct and indirect impacts to the health of our residents. BOEMRE made a commitment in the 2007-2012 Leasing Program to conduct a thorough human health impact assessment at the later lease sale phase of NEPA review and planning.

Through the Borough's participation as a cooperating agency with the former MMS' Alaska Region in preparation of an Arctic Multi-Sale EIS, we experienced some frustration as the agency appeared not to be meeting this commitment before that planning effort was cancelled last year. Despite acknowledgement that the agency was obligated by NEPA, Environmental Justice Executive Order 12898, and by subsequent guidance from the CEQ to assess possible human health impacts, the analysis provided by the Borough for use in the EIS was relegated to an appendix, was not appropriately integrated into the broader impact analysis relating to other resources, and did not lead to any meaningful discussion of appropriate mitigation measures necessary to address identified potential health effects.

We ask that in developing the 2012-2017 Program, BOEMRE reaffirm its commitment to conduct a full and comprehensive project-specific human health impact assessment in association with all NEPA reviews. As we have stated before, BOEMRE must further acknowledge that the assessment must not itself be the end goal. It must be designed and conducted so as to identify all potential health related impacts, and serve as the basis for the crafting of mitigation measures necessary to mitigate those impacts.

Conclusion

The North Slope Borough has asked to participate with BOEMRE as a cooperating agency in the preparation of this 2012-2017 OCS Leasing Program EIS. As a regional municipal government with long experience and expertise in reviewing OCS leasing, exploration, and development proposals, and special expertise concerning the arctic marine environment, its wildlife resources, and the subsistence culture, practices, and needs of the Native people of northern Alaska, the Borough is qualified to be accepted as a cooperating agency under the Council on Environmental Policy NEPA guidelines. We anticipate that our role would be confined to issues concerning the potential inclusion of arctic sales in the Program, and that our limited input and focus would be on issues concerning the size, timing, and location of such arctic sales.

Thank you for considering these comments. We look forward to working with you as BOEMRE continues developing the 2012-2017 OCS Oil and Gas Leasing Program.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward S. Itta, Sr.", with a stylized flourish at the end.

Edward S. Itta, Sr.
Mayor

Attached: NSB Arctic Offshore Oil and Gas
Development Policy Positions

Cc: Taqulik Hepa, Director, NSB Department of Wildlife Management
Dan Forster, Director, NSB Department of Planning and Community Services
Bessie O'Rourke, NSB Attorney
Karla Kolash, Advisor to the NSB Mayor
Andy Mack, Advisor to the NSB Mayor

North Slope Borough

Arctic Offshore Oil and Gas Development Policy Positions

Summary

Baseline Science

Provide funding for scientific research to gather adequate baseline data prior to new offshore activity. Support a collaborative approach to research and data sharing, such as the North Slope Science Initiative (NSSI). Tie specific research requirements to industrial activity.

Stricter Regulation

Require OCS production to use pipelines to shore-based facilities rather than tanker transportation. Require MMS to apply regulations and stipulations more vigorously. Improve standards in the leasing process. Require negotiation of CAAs with NSB for other marine mammals species.

Cumulative Impacts

Require detailed discussion of area-wide cumulative impacts in EIS/EA documents, including socio-cultural impacts. Stipulate limits on the number of projects allowed in an area at one time.

Revenue Sharing

Revenue sharing to offset impacts should be included in all phases of development, including pre-lease seismic and sampling work. Use the NPR-A model for early funding. Broaden acceptable uses for CIAP funds.

Discharge/Emissions

Require zero-volume discharge standards in arctic waters. Require reinjection of all cuttings, muds, produced waters and other byproducts of exploration and development. Write subsistence considerations into the Clean Water Act. Do not allow "disaggregation" as a strategy to avoid obtaining a Clean Air Act PSD permit.

Oil Spill Prevention and Response

Spill prevention and response are twin concerns in the OCS. Spill prevention efforts should be viewed as an investment that pays dividends in avoiding the costs of a spill. Best available technology related to undersea pipelines is an example of a worthy spill prevention investment. Spill response should be anchored in provable cleanup technologies, and real-world demonstrations of cleanup capabilities should be required before activity begins.

Coast Guard Presence

Offshore development and increasing vessel traffic point to the need for an effective U.S. Coast Guard presence. Congress should fund a year-round Coast Guard station with oceangoing and airborne response capabilities.

Compulsory Marine Pilotage

Add a provision in federal law that requires state-licensed Alaska marine pilots on qualified vessels in the Beaufort or Chukchi Seas.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Baseline Science

Provide funding for scientific research to gather adequate baseline data prior to new offshore activity. Support a collaborative approach to research and data sharing, such as the North Slope Science Initiative (NSSI). Tie specific research requirements to industrial activity.

Evaluation of impacts from oil and gas development has to start with an understanding of conditions prior to new activity. This understanding comes from a robust data set that should be gathered in anticipation of development. Baseline science is crucial to any assessment of change over time from natural and industrial causes. Mitigation measures are evaluated against this baseline data and best practices are established over time with its confirmation.

The federal government should enable baseline science before activity commences and should commit to collaborative research, data sharing and analysis through an organization such as NSSI, which brings together scientists from federal, state and local agencies, as well as industry and other organizations for just this type of collaboration.

Pre-leasing activities should mirror the approach that BLM has taken in NPR-A with its pre-activity study program. The needs are even greater offshore because the risks are greater. NEPA requires that MMS determine what effect any development scenario will have on the environment. Without adequate baseline science, such a determination is suspect and can be easily challenged.

Areas of incomplete baseline data include:

1. Air quality
2. Water quality
3. Marine mammal migration and habitat
4. Subsistence impacts
5. Health impacts.

The Borough is by no means alone in recognizing large data gaps in Arctic Ocean science. In its most recent multi-sale Draft EIS for the Beaufort and Chukchi Seas, MMS identified numerous areas in which data is insufficient. We look forward to working with the federal government in pursuit of increased research and better understanding of offshore areas.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Stricter Regulation of OCS Operations

Require MMS to apply regulations and stipulations more vigorously. Require OCS production to use pipelines to shore-based facilities rather than tanker transportation. Improve standards in the leasing process. Require negotiation of CAAs with NSB for other marine mammals species.

Alaskans and NSB residents have a lot to gain from new oil and gas development – especially the infrastructure associated with long-term jobs, maximized use of TAPS, and a healthy tax base. OCS development could add substantially to the North Slope's infrastructure, or it could bypass it entirely. It all depends on how the resources are transported to market. If they are piped to shore-based facilities and fed into existing or planned pipelines, then Alaskans can reap their fair share of economic stimulus from development in adjacent waters – even without federal revenue sharing.

However, there is no inherent barrier to producing oil from self-contained rigs and transporting the product by tanker to distant markets. Nor does any law or lease sale stipulation prevent oil companies from choosing that approach if it is in their economic interest. This must be resolved prior to development.

In the past decade, MMS has been increasingly lax in its interpretation of laws and enforcement of regulations as the nation's overseer of planning and operations for offshore development. Environmental concerns have been routinely ignored and impact assessments conducted with little vigor. In fact, the litigation that halted Shell's exploration plan was rooted in MMS' decision to substitute an EA for a full EIS, which requires little or no public input. Another example is the elimination of "Stipulation 5" from the pending draft EIS for arctic lease sales. This stipulation establishes a consultation process aimed at avoiding conflict between industry operations and subsistence activities.

The Conflict Avoidance Agreement (CAA) process has played a valuable role in bringing together developers and subsistence bowhead whaling communities to ensure that company operations do not compromise traditional subsistence whaling activities. This model should be extended to include other marine mammal species on which the Inupiat depend for nutritional and cultural survival. NSB should represent local concerns in CAA negotiations regarding these other species.

MMS planning, review and oversight of leasing processes need a thorough overhaul so as to honor the intent of existing laws and regulations. A guiding principle in this effort should be that MMS lease agreements must, at a minimum, meet or exceed standards set forth in the MMPA.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Cumulative Impacts

Require detailed discussion of area-wide cumulative impacts in EIS/EA documents, including socio-cultural impacts. Stipulate limits on the number of projects allowed in an area at one time.

Each discreet development activity has specific effects on air and water quality, marine life, habitat, and nearby communities. In combination with other projects or activities, an individual project can have unanticipated additional impacts. Cumulative effects can be significant, not only in areas of intensive development, but also where there is gradual expansion or infill.

Dramatically increasing impacts from climate change add a new dimension to any discussion of cumulative impacts and should be factored into the cumulative impacts review process. No single entity has the responsibility for comprehensive planning for oil and gas development in arctic waters and coastal areas.

The process for cumulative effects analysis and management is hampered by the absence of a coordinated review of planned industrial activities by all permitting agencies. A global, coordinated analysis should be required in the EIS/EA process. This analysis should consider limiting the number of projects in the region.

Cumulative impacts studies should include an overall analysis of the arctic region as a whole, including analysis of the Beaufort and Chukchi Seas.

Because of the sudden and significant level of impacts due to climate change in the Arctic, development should be phased gradually to allow for adequate study of the combined environmental effects.

Impacts to the health, social structure and culture of communities should also be subjected to substantial analysis.

North Slope Borough Arctic Offshore Oil and Gas Development Policies

OCS Revenue Sharing

Revenue sharing to offset impacts should be included in all phases of development, including pre-lease seismic and sampling work. Use the NPR-A model for early funding. Broaden acceptable uses for CIAP funds.

Beyond three miles, the OCS is controlled by the federal government. State and local governments have very little input in decisions. Local communities bear all the direct risks of offshore development – environmental, social, cultural and economic – yet they receive very little in exchange. This is deeply disconcerting to us, because it suggests that the federal government either doesn't place much value on our ancestral connection to the ocean, or it doesn't recognize the risks to our most important subsistence food supply. The ocean is the cradle of our culture. It is where we most need to have a voice, yet we have almost none.

The Federal Government has a long established policy of sharing revenues from mineral leases with state and local governments. Any new revenue sharing program should be based on existing programs that acknowledge impacts and risks to local communities. A federal OCS program could provide direct payments to municipalities, as in the Gulf of Mexico Energy Security Act of 2006. If funds are not distributed directly to local governments, the NPR-A Impact Aid program offers another model, although it has been susceptible to state legislative interference in the disbursement of funds. The program could be improved if proof of impact by coastal communities were established in federal law and not required as a component of funding in the state appropriation process.

The authorized uses of revenue sharing funds should be as broad as those defined in the NPR-A Impact Aid program, but not restricted to particular issues like the Coastal Impact Aid Program (CIAP).

Any revenue sharing program should acknowledge that impacts begin before lease sales occur and extend beyond completion of the development project.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Discharge and Emissions

Require zero-volume discharge standards in arctic waters. Require reinjection of all cuttings, muds, produced waters and other byproducts of exploration and development. Write subsistence considerations into the Clean Water Act. Do not allow "disaggregation" as a strategy to avoid obtaining a Clean Air Act PSD (Prevention of Significant Deterioration) permit.

Discharge

The use of world-class technologies in arctic waters should be accompanied by world-class environmental standards. Zero-volume discharge is required in the northern region of the Barents Sea and in state waters of the Beaufort Sea, where it has proved to be both technically feasible and cost-effective. Technological options that could satisfy the zero volume discharge requirement include use of a separate injection well, backside injection of an exploration well, or barging to shore, as is done in state waters.

The zero volume discharge requirement should also apply to sanitary waste, gray water and ballast water, as these will pollute the sea where our residents hunt for food. Traditional knowledge among subsistence whalers indicates that no amount of sanitary waste should be dumped in the ocean, as any type of human scent causes deflection of the whale migration. The Clean Water Act should be amended to protect subsistence activities by requiring zero volume discharge in all exploration and production activities.

The Borough is actively engaged in analysis of discharge options through a panel of its Scientific Advisory Committee, which is working with agencies and industry to identify preferred discharge policies.

Emissions

OCS operators are currently able to avoid the use of best available air pollution control technology in many cases. This is accomplished through a strategy of "disaggregation," in which companies artificially divide their operations into "separate" pollution sources so as to stay below the threshold that triggers a technical review aimed at determining the best pollution control technology. Disaggregation should not be allowed. All emissions associated with a company operation should be considered under a single Clean Air Act permit. This is the best way to assure that the best available technology is required under appropriate circumstances.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Oil Spill Prevention and Response

Spill prevention and response are twin concerns in the OCS. Spill prevention efforts should be viewed as an investment that pays dividends in avoiding the costs of a spill. Best available technology related to undersea pipelines is an example of a worthy spill prevention investment. Spill response should be anchored in provable cleanup technologies, and real-world demonstrations of cleanup capabilities should be required before activity begins.

Spill prevention must have the greatest emphasis in arctic waters. It can save industry from having to deal with spill response, which is likely to achieve only partial success in remote, icebound waters of the Arctic Ocean. Spill prevention includes three actions covered in the following pages: stricter regulation of OCS operations, compulsory marine pilotage with independent reporting duties, and a significant Coast Guard presence in the Arctic Ocean.

Spill prevention measures must also be built into undersea pipelines, including corrosion prevention systems, corrosion monitoring systems and leak detection systems. Recent experience in the Prudhoe Bay field demonstrates the need for these measures.

Adequate spill response should include a demonstration of industry's ability to retrieve spilled oil in broken or refreezing ice conditions during the transitional periods of spring and autumn. Purposely spilling a small amount of oil in representative conditions is worth the risk of minor contamination in order to prove the true extent of industry's spill response readiness. Allowing OCS development without such a demonstration means we are accepting substantial risk on the basis of a wish and a promise. As national policy, this is fundamentally irresponsible. A phased approach to a real-world demonstration could start with a laboratory prototype as a first step.

Spill response equipment should conform to "best available technology" standards.

The Borough's Scientific Advisory Committee is completing its final report on spill prevention and response.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Coast Guard Presence

Offshore development and increasing vessel traffic point to the need for an effective U.S. Coast Guard presence. Congress should fund a year-round Coast Guard station with oceangoing and airborne response capabilities.

Effective oil spill prevention and response in the Arctic Ocean are predicated on active monitoring of vessel traffic and swift emergency response capability in times of crisis. The U.S. Coast Guard plays a primary role in these activities in other coastal oil provinces, and extreme arctic conditions justify an important role for the Coast Guard in the Beaufort and Chukchi Seas.

Increased needs for navigation aid placement, vessel traffic management, ship compliance inspections, security considerations and emergency response capability clearly suggest that enhanced federal safety infrastructure and maritime resources need to be committed to this region. These needs include an expansion of the Marine Exchange with real-time data sharing that includes the NSB, the Barrow Arctic Science Consortium (BASC) and AEWG.

As sea ice continues to recede and make way for greater vessel access, international maritime shipping, tourism and commercial fishing may also add to marine traffic and increase the need for an expanded U.S. presence in arctic waters.

North Slope Borough Arctic Offshore Oil and Gas Development Policy Positions

Compulsory Marine Pilotage

Add a provision in federal law that requires state-licensed Alaska marine pilots on qualified vessels in the Beaufort or Chukchi Seas.

Vessel traffic is increasing in the highly sensitive marine environment of the Chukchi and Beaufort Seas as oil companies show unprecedented interest in offshore prospects and shippers eye the rapidly receding ice pack with visions of an arctic shipping route. This intensifying interest in commercial uses of the Arctic Ocean causes North Slope residents grave concerns about the risk of oil spills and other industrial accidents. Among the most promising ways to minimize shipping accidents in the Beaufort or Chukchi Seas is to require the use of state-licensed marine pilots on all "qualified vessels" entering these waters. Federal regulations already allow the state to declare compulsory marine pilotage in federal waters. The Borough would like to see this state primacy codified in federal law.

Currently, the Arctic has state-licensed pilotage only in the nearshore state waters. Beyond the three-mile limit, there is only a voluntary system for ships that may be associated with oil and gas exploration, seismic testing, maritime shipping, tourism or any other commercial interest. This gives little comfort to North Slope residents, since almost all the industrial activity proposed for arctic waters would occur outside the current compulsory pilotage areas. Expanded compulsory pilotage is an important first step toward policies that will protect Alaska's arctic waters and preserve the traditional way of life for the whaling culture of the North Slope.

The State of Alaska recently issued a notice of a proposed regulatory change to extend compulsory state pilotage beyond three miles in the Chukchi and Beaufort Seas. This proposal faces strong resistance from industry. The NSB believes that licensed marine pilots with Alaskan experience will increase safety through their extensive knowledge of local conditions. They are clearly best suited to the task of navigating Beaufort and Chukchi waters. This precautionary approach will help to reduce the risk of accidents, and the use of marine pilots who independently report to the state will help to decrease residents' anxiety over increased offshore activity.

Compulsory marine pilotage is required in all other Alaskan waters. Surely the waters of the Arctic are just as precious.

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Comment Receipt

Thank you for your comment, Tom Lohman. The comment tracking number that has been assigned to your comment is **10MMS5YR86172**. Please refer to the comment tracking number in all correspondence relating to this comment.

Comment Date: March 31, 2011 08:39:08PM CDT
2012-2017 OCS Oil and Gas
Programmatic EIS 10MMS5YR86172
Scoping Comment:
First Name: Tom
Last Name: Lohman
Organization: North Slope Borough
Country: USA
Privacy Preference: Don't withhold name or address from public record
Attachment: C:\fakepath\3.31.11_2012-
2017_OCS_Leasing_Program_Comments.pdf

Questions about submitting comments over the Web? Contact us at: ocs5yeareis@anl.gov or call the 2012-2017 OCS Oil and Gas Programmatic EIS Webmaster at (630)252-7207
begin_of_the_skype_highlighting (630)252-7207 end_of_the_skype_highlighting.

**Comments for the National Ocean Policy Strategic Action Plans
from the
National Council for Science and the Environment's
11th National Conference on Science, Policy and the Environment:
Our Changing Oceans**

For three days in January 2011, the National Council for Science and the Environment (NCSE) convened 1,250 leaders in ocean science, policy, management and education, conservation and business to explore issues affecting the world's changing oceans. Their objectives were to advance science based decision-making on oceans by:

1. sharing the most current state of the science;
2. linking science to policy and other decisions;
3. communicating key messages and reframing issues;
4. developing targeted and actionable recommendations; and,
5. catalyzing long-term collaborations

Meeting participants put forth a spectrum of ideas on specific challenges facing the world's oceans. Here we present those recommendations that are germane to the National Ocean Policy process, mapped onto the nine Priority Objectives from the Final Recommendations of the Interagency Ocean Policy Task Force. Recommendations that were not targeted for the National Ocean Policy Strategic Action Plans (e.g., recommendations directed at Congress or the private sector) are not included here.

Because there is considerable overlap among these priority areas, some recommendations are included in more than one area, but we also encourage those working on individual priorities to view recommendations in related areas (for example, ecosystem-based management is very much connected with marine and spatial planning).

Because of the nature of the conference, there is considerable diversity in the types of ideas put forth - research, policy, education and outreach; regional, national and international; single agency, multi-agency and public-private partnerships. There is also considerable diversity in the budgetary implications of the recommendations. We recognize that the current budgetary situation places considerable constraints on the NOC process; constraints that may limit that ability of the government to implement some excellent ideas contained in this document. We ask you to be a forward looking as possible in considering the recommendations included here and "do your best."

In addition to the nine priority areas, we encourage the National Ocean Council to develop sets of cross-cutting recommendations in the areas of education (including public education, and pre-professional STEM and workforce education as well as attention to diversity of those knowledgeable about the oceans) and science (inventory and monitoring, observations, and fundamental and applied research). We are concerned that without such cross-cuts, the need for a comprehensive and integrated approach to ocean and coastal education and research, is not likely to be addressed.

We also encourage cross-cutting looks at particular issues such as the importance of oceans for human health and well-being and energy – both traditional (oil and gas) and alternative (wind and waves).

These recommendations are presented in spirit of constructive suggestions from the conference participants. Not all of the conference participants endorse all of the recommendations, and no recommendation should be interpreted as official input from the organizations where conference participants work. For additional information about the conference please go to www.OurChangingOceans.org.

We hope that you find this input helpful. We would be pleased to meet with the members of the National Ocean Council and your various teams and to assist in other ways.

Best wishes and success with your important work.

Margaret Leinen
Conference Chair

Peter Saundry
Executive Director

Priority Area 8. Changing Conditions in the Arctic

To address environmental stewardship needs in the Arctic Ocean and adjacent coastal areas in the face of climate-induced and other environmental changes, the Federal Government and its agencies should:

- A. Strengthen the role of the Arctic Council to contribute to regional cooperation and science-based policy making. Arctic Council members should resolve which additional countries can become observers to the Arctic Council.
- B. More actively use traditional ecological knowledge in order to honor traditional views and effectively manage natural resources.
- C. Utilize strength of the U.S., Norway & Russia to encourage firm responses on governance.
- D. Encourage Arctic decision makers to:
 - i. collectively commit to marine spatial planning and develop integrative and holistic plans and agreements for ecosystem management.
 - ii. encourage national and international cooperation when considering the lack of regional resources.
 - iii. fund and plan well for future Arctic actions and create an agenda to use the Arctic as a microcosm for similar regions or countries.
 - iv. encourage strategic assessments of trans-boundary impacts of climate change on Arctic people and resources.
 - v. pin point issues in order to make concrete decisions and provide direction on implementation.



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**National Ocean Council
via web form**

NATIONAL OCEAN COUNCIL OPEN COMMENT PERIOD ON STRATEGIC OBJECTIVES

The following list of suggestions stem from a graduate and undergraduate seminar at UAF, International Relations of the North. We addressed priority objective # 8: Address environmental stewardship needs in the Arctic Ocean and adjacent coastal areas in the face of climate-induced and other environmental changes. Accordingly, we focused on governance issues.

Question 1: What near-term, mid-term and long-term actions would most effectively help the Nation to achieve this policy objective?

Near-term:

- The social network of stakeholders, agencies and their responsibilities should be identified and networked (or map existing network) so that a coordinated approach to stewardship is possible.

Objectives for a coordinated approach should be identified through the following actions:

- Define stewardship for coordinated planning purposes (we support multiple definitions, but they should build on each other)
- Determine which resources are the highest priority for short-term conservation action?
- What are the most effective venues for debating stewardship goals or developing regional strategies?
- Ask how might communities define thresholds of change --e.g. encroachment of development into subsistence areas-- that could be monitored and mitigated by federal and state funding mechanisms
- NOAA's Legislative Atlas of the Ocean should be completed for Alaskan waters, and include regional and local government plans

Mid-term:

- Research the comparative vulnerability and resilience of Arctic coastal communities for adaptation
- Strengthen institutions for decision-making so that local-tribal-regional-state and federal strategic planning processes are more inclusive and responsive to addressing problems

Long-term:

- Develop a networked governance approach to stewardship that incorporates and strengthens existing institutions and builds new ones only where gaps are identified that cannot be met with existing institutions
- Strengthen the Arctic Council, including supporting a consistent funding approach

Question 2: What are some of the main obstacles to achieving this objective; are there opportunities this objective can further, including transformative changes in how we address stewardship of the oceans, coasts and Great Lakes?

Some of the main obstacles include: differing visions of the Arctic, such as a homeland versus a resource frontier; funding streams that do not require coordination; conflicts between subsistence uses and the corporate sector.

While addressing this objective, the nation could take advantage of developing public interest in marine planning in Alaska and build off of the marine and coastal strategic action agendas of recent meetings and funded capacity-building projects such as: the Arctic Governance Project, workshops sponsored by PEW and the Oak Foundation on marine spatial planning, the Strengthening Institutions Project relating to institutional capacity to steer change, and etc.

Question 3: What milestones and performance measures would be most useful for measuring progress toward achieving this priority objective?

Milestones and performance measures:

- explicitly link monitoring systems (SAON, Arctic Social Indicators database, etc.) to discussion and decision-making bodies
- harmonize national standards for reporting demographic, economic, social and environmental change across the Arctic, in concert with the Arctic Council

We thank you for the opportunity to comment on this stage of the strategic plan formation, and look forward to engaging more with the process.

Sincerely,

Chanda L. Meek, PhD and students of the course, International Relations of the North
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April 29, 2011

National Ocean Council
722 Jackson Place, N.W.
Washington, DC 20503

Submitted via www.whitehouse.gov/administration/eop/oceans/comment

Re: Development of Strategic Action Plans

To Whom It May Concern:

This letter is sent to urge the administration to use caution in its development of national policy and strategic action plans for the stewardship of the ocean, our coast and the great lakes. Since Alaska contains about half of the nation's coastline, the impacts of your decisions will have profound implications for the economic future of Alaska. Many Alaskans depend entirely upon the ocean for their livelihood and well-being and all Alaskans depend significantly upon the ocean for commerce and transportation. My family background includes commercial fishermen and my personal background includes mining, timber, seaborne commodity export, recreation and commercial fishing that depend upon the health of and reasonable access to Alaska's oceans.

Local stakeholder consideration is essential.

Ocean policy needs to include a robust process for taking into account the local environmental, social and economic conditions. A policy that attempts to establish broad brush principles for management from Florida to Alaska will certainly work poorly for most areas. The policies must be flexible enough to adjust to local conditions.

Reasonable access to the ocean for commerce.

Alaska, probably as much as any other part of the nation, is dependent upon the ocean for its social and economic health. For example, the inland waterways of Southeast Alaska are essential to maintain healthy fishing, tourism, timber and mining industries that support the economy of the area. Access to the entire region is by air or water borne means only, the existing road system touches the region at each end only and those access points are about 650 miles apart. Policies that do not provide for maintenance of reasonably convenient access to the area's ocean will have a very negative impact on the region. In other areas of the State, such as remote areas of the Western coast, ocean activity is primarily limited to fishing and recreational activities. In many of those areas the traditional economic opportunities are stressed and largely tapped out and a viable future must include new economic development that most certainly will need access to the ocean. A policy that attempts to maintain everything as it is today will doom these areas to a painful economic and social decline.

Adaptation to environmental changes.

It is clear that the earth is changing today, as it has for all of its existence, and it will continue to change in the future. These changes will take many forms, some of which we cannot imagine today and the science of predicting those changes is in its infancy. For instance, after many years and countless expenditures on the subject of climate change, the best science can say today is that history suggests that the earth will be in the middle of a new ice age in about 100,000 years, probably more severe than the last one. In the more relevant short term, it appears that the earth is at a fairly warm state and this may drive several potential changes in the Arctic coastal environment. Research to assess and predict these changes is an essential part of ocean policy to help guide decisions on coastal community evolution and ocean resource management. The policies need to provide guidance for making prudent future decisions based upon the best predictive science in hand and provide adequate flexibility to not hamstring future economic development.

Make sure change is really needed.

Alaska's coastline is at near peak health and biological productivity. Management of Alaska's coastal resources produces a wild fish harvest unequaled in the world and with one tragic exception, the Exxon Valdez oil spill, a harmonious record of commerce related use of the ocean. These two, often conflicting or competing, uses of the ocean have coexisted in Alaska for centuries. Since Statehood, a diverse suite of concurrent uses of ocean resources has yielded an economy where both renewable and non-renewable resource development have flourished. The same waters, Cook Inlet, that produce the oil and gas that underpin a vibrant economy for Southcentral Alaska also produce record harvests of fish to support a robust recreational and commercial fishing industry. Federal ocean policy should be careful not to undermine such success stories and not be so myopic in focus that such successes are precluded in the future.

Thank you for consideration of my comments and best of success in your deliberations.

Sincerely Yours,
Steve Denton