BOEM OCEAN SCIENCE

THE SCIENCE & TECHNOLOGY JOURNAL OF THE BUREAU OF OCEAN ENERGY MANAGEMENT

VOLUME 12 ISSUE 1 • JANUARY/FEBRUARY/MARCH 2015

ARCTIC COUNCIL

SPECIAL ISSUE: *Arctic Council*

Arctic Research Commission: Looking Back, Looking Forward

History of the Arctic Council

U.S. Policy and the Arctic Council, a Nexus

BOEM and BSEE Involvement in the Arctic Council

U.S. Activities Completed in 2015 and Current Work

Other U.S. Government Agency Arctic Council Activities

U.S. Chairmanship Themes and Other Activities

BOEM OCEAN SCIENCE

THE SCIENCE & TECHNOLOGY JOURNAL OF THE BUREAU OF OCEAN ENERGY MANAGEMENT

VOLUME 12 ISSUE 1
JANUARY/FEBRUARY/MARCH 2015

BOEM OCEAN SCIENCE is published quarterly by the Bureau of Ocean Energy Management to communicate recent ocean science, technological information, and issues of interest related to offshore energy recovery, marine minerals, and ocean stewardship.

Please address all questions, comments, suggestions, and changes of address to:

Melanie Damour, Senior Editor
BOEM OCEAN SCIENCE
Bureau of Ocean Energy Management
1201 Elmwood Park Boulevard
New Orleans, LA 70123
Melanie.Damour@boem.gov
(504) 736–2783

ON THE COVER
A Qalgi site—used for the annual Whaling Feast held in June—near Point Hope, Alaska. During the Blanket Toss ceremony, a rope from the blanket is tied onto the whale jaw bones. *Photo by John Callahan, BOEM*

All photos courtesy of the Bureau of Ocean Energy Management unless otherwise noted.

Publication services provided by Schatz Publishing Group.

Frequently Used Abbreviations

AACA	Adaptation Actions for a Changing Arctic
AC	Arctic Council
AMAP	Arctic Monitoring and Assessment Program
AMSP	Arctic Marine Strategic Plan
AOOGG	Arctic Offshore Oil and Gas Guidelines
EA-EG	Ecosystem Approach Expert Group
IEA	Integrated Ecosystem Assessment
LME	Large Marine Ecosystem
MPA	Marine Protected Area
PAME	Protection of the Arctic Marine Environment working group
PP	Permanent Participant
SAO	Senior Arctic Official
TLK	Traditional and Local Knowledge

Subscribe

To receive *BOEM OCEAN SCIENCE*, visit **www.boem.gov**, click on the *BOEM Ocean Science* magazine cover, then select "Sign up for Ocean Science" at the bottom of the page, or email **Melanie.Damour@boem.gov**.

For More Information

Check out the Bureau of Ocean Energy Management website at **www.boem.gov**.

The Director's Message

This special issue of *BOEM Ocean Science* is dedicated to BOEM's role, and that of our federal, state, and Alaska Native partners, as the United States assumes a two-year term to chair the Arctic Council, an intergovernmental forum that addresses issues faced by Arctic Nations and the indigenous peoples who live there. The U.S. is one of eight founding nations comprising the Member States of the Council and functions in this role under the leadership of the Department of State.

In many ways, the Arctic underscores our bureau's commitment to safe and environmentally responsible management of Outer Continental Shelf (OCS) resources. To those who live in the Arctic and are experiencing the effects of climate change firsthand, the region is much more than a pristine environment to protect. It is at the heart of their very way of life, rich with resources that are vital to the State of Alaska and our national economy. The Arctic is changing dramatically, and with those changes come opportunities, challenges, and responsibilities.

In this issue of *BOEM Ocean Science*, we explore the history of the Arctic Council and how the forum is structured, as well as what the collective Department of the Interior experience has been with this group of intergovernmental leaders. We include an overview of the U.S. policy connections to the Arctic Council and a summary of future Council initiatives.

Clearly, the environmental and social policies that are to be addressed in the Arctic Council over the next two years will have a lasting impact on our ability to protect fragile Arctic ecosystems while ensuring sustainable development. We have an obligation to future generations to operate with high regulatory standards as we work toward our goals of energy independence, environmental protection, and economic development. We look forward to U.S. participation in the Arctic Council these next two years. Please enjoy this issue of *Ocean Science*.

– Abigail Ross Hopper, Director

BOEM Ocean Science? Arctic Council?

Why would BOEM devote an entire issue of its Science & Technology Journal to the Arctic Council? Many of you are familiar with BOEM's Environmental Studies Program (ESP), a world-class research program and leading contributor of knowledge about our Nation's marine and coastal environment. In Alaska, and primarily in the Arctic, the ESP has invested well over $450 million in research covering such topics as oceanography; protected species; socioeconomics; cultural resources and traditional knowledge; sea ice formation and distribution; and climate change. Several reasons for ESP's success are its reliance on the best available researchers, emphasis on flexibility, integration, adaptive management, and intensive, focused diligence to work collaboratively, leverage resources, and avoid working in a vacuum. This work informs policy decisions regarding development of OCS energy and mineral resources (i.e. stewardship). Similarly, the work of the Arctic Council is underpinned by the best available Arctic science. Therefore, BOEM plays an active role with those participating in Arctic Council activities to promote the goals of collaboration, stewardship, and science-informed decision-making. Science, stewardship, and collaboration are keys to Pan-Arctic "issues of sustainable development and environmental protection." It is for these reasons that this issue of *Ocean Science* is devoted to the Arctic Council. The Arctic is an area that must be viewed from a broader perspective; not just through the lens of a specific country, people, individual project, knowledge system, or economic opportunity. The Council's work serves to bring many different perspectives together and BOEM has much to offer and learn from its Pan-Arctic colleagues.

– Dr. James (Jim) Kendall,
BOEM Regional Director, Alaska OCS Region

For More Information

BOEM Alaska Studies
http://www.boem.gov/akstudies/

A Message from Admiral Papp

Sunset in the Beaufort Sea during the Beaufort 2011 Fish and Lower Trophic Level study. *Photo by Sarah Caroll, University of Alaska, Norcross Fish Lab*

I am honored that BOEM asked me to contribute to *Ocean Science* and would like to thank them not only for this opportunity, but also for committing an entire issue of this magazine to the Arctic Council and its important work.

In April 2015, the United States assumed the Chairmanship of the Arctic Council and, for two years, will have a tremendous opportunity to help shape the future of this increasingly important region. The Arctic is warming at twice the global rate, and melting land-based ice sheets, sea ice loss, and thawing permafrost are just some examples of the drastic changes impacting the people and wildlife that live in one of the harshest environments on Earth. The Arctic Council is the preeminent intergovernmental forum from which all eight Arctic States and six Permanent Participants, representing the indigenous populations, convene to discuss and engage in projects of benefit to the Arctic.

I have been pleased since my arrival at the U.S. Department of State to see the incredible amount of work the Arctic Council undertakes, and the United States is certainly going to emphasize some areas under our leadership. Recognizing the need to incorporate science and traditional knowledge in decisionmaking, one aspect of our Chairmanship will be to support scientific research cooperation. We would do so through a binding agreement that would reduce barriers to access for ships, equipment, research teams, samples, and other logistical issues. Additionally, we want to shine a light on the emerging problem of ocean acidification, a significant concern for the Arctic Ocean, as well as press the Arctic States and Observer States to reduce their black carbon and methane emissions.

In my role as U.S. Special Representative for the Arctic—and in addition to leading all U.S. Arctic diplomacy efforts for the Department of State—I will serve as Secretary of State John Kerry's coordinator of the U.S. Arctic Council Chairmanship. I will diligently work with our extraordinary team to advocate for a variety of issues, including some I've highlighted already, such as scientific cooperation. This is not how I planned to spend my retirement after nearly 40 years in the United States Coast Guard, but I wouldn't have it any other way.

I both started and ended my Coast Guard service with an emphasis on the Arctic. My first assignment was aboard a Coast Guard cutter ported in Adak, Alaska, that frequently sailed through Arctic waters. At the end of my career as Commandant, we completed the first-ever Coast Guard Arctic Strategy, an achievement I am extremely proud of and that continues to productively serve our country. When Secretary Kerry offered me the opportunity to continue working on Arctic issues, saying no just wasn't an option. Once again, I'm serving my country, and I couldn't be prouder to do so at such a critical time for the Arctic and the United States.

I hope you enjoy this issue of *Ocean Science* and learning more about the fantastic work of the Arctic Council.

– Admiral Robert J. Papp, Jr., USCG (ret.)
U.S. Special Representative for the Arctic

Arctic Research Commission: Looking Back, Looking Forward

The Arctic has come of age as a region of interest to the world. This interest is driven by several factors: a warming climate, globalization, and an increasing demand for resources. Current and potential changes in the environment and in economic opportunities will continue to drive investment in observation, scientific research, collaboration and, ideally, international cooperation. The public and private sectors both recognize that adaptation and preparation for the future must be informed by knowledge acquired through multidisciplinary Arctic research. This research also forms the basis of sustainable approaches to everything from resource extraction to life in rural Arctic communities.

As Chair of the U.S. Arctic Research Commission (USARC), many people have expressed to me the need for better information to improve decisionmaking, whether it is an agency reviewing a permit application, a company deciding where and how to invest, or an Inupiat hunter making decisions about where to locate his spring whaling camp. When research dollars are scarce, it is important to provide sufficient funding to these priority needs, as well as to basic research.

Congress created the USARC and the Interagency Arctic Research Policy Committee (IARPC) in 1984 to provide guidance and assistance through the identification of Arctic research priorities and the advancement of agency coordination. The recently adopted five-year IARPC research plan is a good example of the Federal government aligning multi-agency research needs and priorities in the Arctic. BOEM is a major funder of Arctic research and recently released five regional studies of the Beaufort and the Chukchi Seas. By doing so, BOEM enriches the body of knowledge needed by Federal, State, and local governments, as well as industry and the public.

Additional attention will be paid to the Arctic during the United States' two-year Chairmanship of the Arctic Council. Eight Arctic nations (United States, Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, and Sweden) formed the Arctic Council in 1996 as a forum to address sustainable development and environmental issues facing Arctic nations and indigenous peoples. Over the years, the Arctic Council has grown in productivity, participation, and attention. For the next two years, the agenda will have three main themes:

1. Arctic Ocean Safety, Security, and Stewardship;
2. Improving Economic and Living Conditions of Arctic People; and
3. Addressing the Impacts of Climate Change.

Many of the priorities from USARC and IARPC are reflected in these themes. It is the USARC's hope that meaningful progress can be made during this time when the attention level, domestically and internationally, is at an all-time high.

If you would like to know more about the Arctic Research Commission and our work, please visit **www.arctic.gov**.

– Fran Ulmer,
Chair, U.S. Arctic
Research Commission

Frigid landscape near Wainwright, Alaska. *Photo by John Callahan, BOEM*

History of the Arctic Council

The Arctic Council (AC) was formally established in 1996 as a high-level intergovernmental forum to provide a means for promoting cooperation, coordination, and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues—in particular, sustainable development and environmental protection in the Arctic.

The AC's member nations and Permanent Participants (PPs) representing indigenous groups convene at the ministerial level biennially to promote coordinated protection of the Arctic. Between biennial meetings, the AC implements projects and programs that cover the broad areas of environmental protection and sustainable development. Each member State chairs the AC for two years at a time.

In addition to the eight Arctic countries, six PPs represent either a single indigenous people resident in more than one Arctic State or more than one Arctic indigenous people resident in a single Arctic State:

- Aleut International Association (AIA) represents Aleut on the Russian and American Aleutian, Pribilof, and Commander Islands.
- Arctic Athabaskan Council (AAC) represents approximately 32,000 indigenous peoples of Athabaskan descent residing in Arctic and sub-Arctic North America.
- Gwich'in Council International (GCI) represents approximately 9,000 indigenous peoples of Gwich'in descent in Alaska and Canada.
- Inuit Circumpolar Council (ICC) is a transnational non-governmental organization comprised of four Inuit regional organizations in Alaska, Canada, Russia, and Greenland, which collectively represent 150,000 Inuit across the Circumpolar North.
- Russian Association of Indigenous Peoples of the North, Siberia, and Far East (RAIPON) represents 41 groups of indigenous peoples whose combined population totals over 270,000.
- Saami Council is a non-governmental organization with nine member organizations in Finland, Russia, Norway, and Sweden.

Structure and Working Groups

Each member nation appoints a Senior Arctic Official (SAO) to be a focal point for AC activities. SAOs make recommendations to the AC and receive and discuss reports, including those from six working groups:

Arctic Monitoring and Assessment Program (AMAP) measures and assesses the effects of anthropogenic pollutants and reports on the state of the Arctic environment.

U.S. Interagency Lead: U.S. Global Change Research Program (USGCRP)
U.S. Department of the Interior (DOI) Lead: Office of the Secretary
Website: **http://www.amap.no**

Conservation of Arctic Flora and Fauna (CAFF) addresses the conservation of Arctic biodiversity and helps promote practices that ensure sustainability of the Arctic's living resources.

U.S. Interagency Lead: DOI - U.S. Fish and Wildlife Service (USFWS)
DOI Lead and Head of U.S. Delegation: USFWS
Website: **http://www.caff.is**

Protection of the Arctic Marine Environment (PAME) addresses policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from both land- and sea-based activities.

U.S. Interagency Lead: Dept. of Commerce (DOC) - National Oceanic and Atmospheric Administration (NOAA)
DOI Lead: BOEM
Website: **http://www.pame.is/**

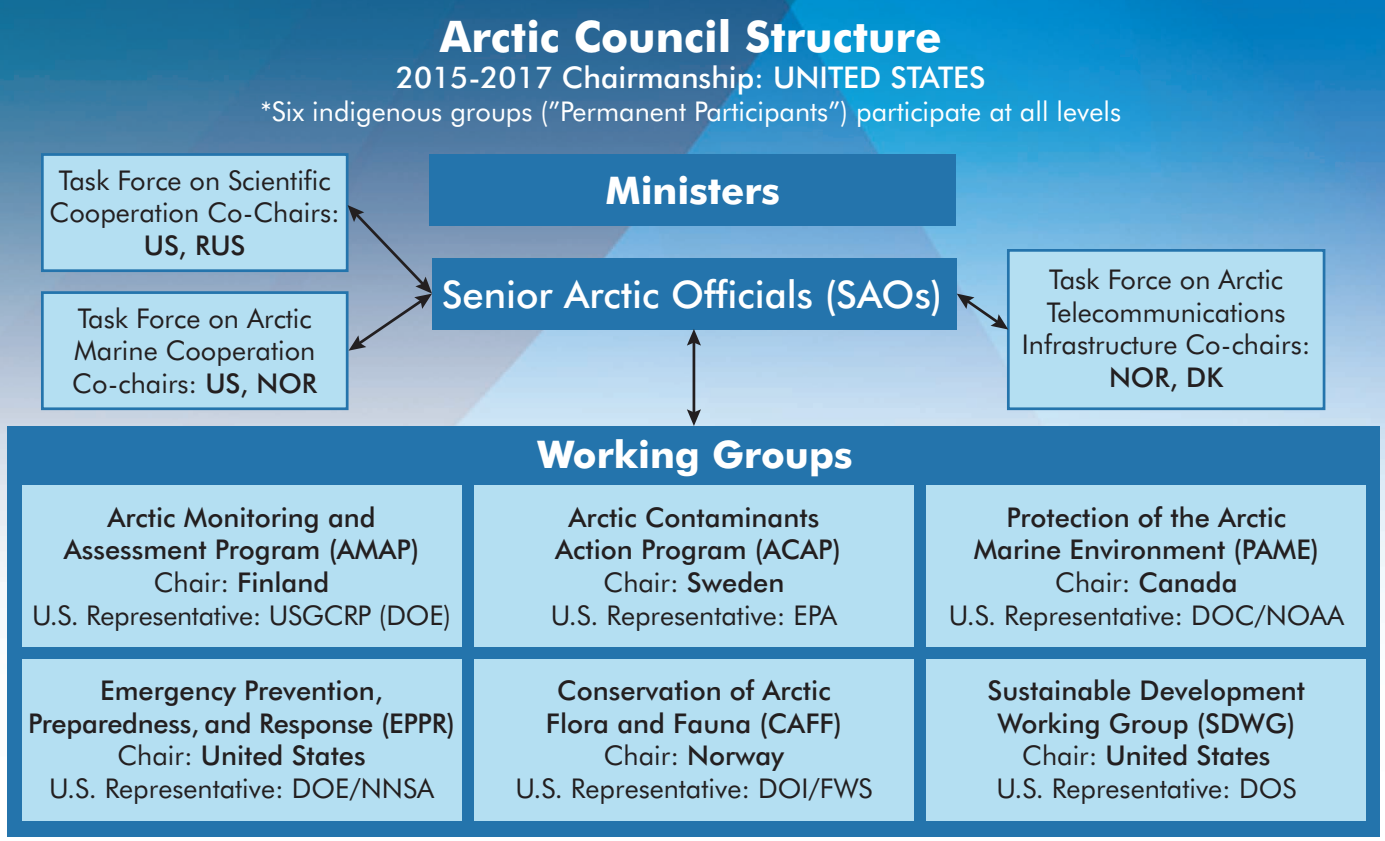
Sustainable Development Working Group (SDWG) works to protect the economies, culture, and health of the inhabitants of the Arctic in a sustainable manner.

U.S. Interagency Lead: Department of State (DOS)
DOI Leads: Bureau of Indian Affairs (BIA), BOEM, Office of the Secretary
Website: **http://www.sdwg.org**

Emergency Prevention, Preparedness and Response (EPPR) deals with the prevention, preparedness, and response to environmental emergencies in the Arctic.

U.S. Interagency Lead: Department of Energy (DOE) - National Nuclear Security Administration (NNSA)
DOI Lead: Bureau of Safety and Environmental Enforcement (BSEE)
Website: **http://www.arctic-council.org/eppr/**

Arctic Contaminants Action Program (ACAP) works to reduce emissions of pollutants and encourage Arctic



governments to take remedial and preventive actions relating to contaminants.

U.S. Interagency Lead: Environmental Protection Agency (EPA)

Website: **http://www.arctic-council.org/index.php/en/acap-home**

Recently Completed Task Forces

In addition to the working groups, three task forces (TF) operate within the framework of the Arctic Council. The TFs are appointed at the ministerial meetings to work on specific issues for a limited time and report to the SAOs. The DOS leads US representation for each of the TFs with interagency leadership assigned to technical expert agencies.

Task Force on Black Carbon and Methane

This TF developed an AC framework for enhanced action to reduce black carbon and methane emissions through enhanced ambitious national and collective action to reduce our overall emissions, and a commitment to report on inventories and actions, and create an Expert Group to support progress on the implementation of the Framework.

Co-chairs: Canada, Sweden

U.S. Interagency Lead: EPA

Website: **http://www.arctic-council.org/index.php/en/tfbcm**

Circumpolar Business Forum Task Force

This TF facilitated the creation of an independent forum—the Arctic Economic Council (AEC)—that will serve as a forum for interaction between the AC and the wider circumpolar business community. The AEC aims to foster business-to-business cooperation to promote responsible economic development and promote indigenous businesses and stewardship in the Arctic.

Co-chairs: Canada, Finland, Iceland, Russia

U.S. Interagency Lead: U.S. Coast Guard (USCG)

DOI Lead: Office of Policy Analysis

Task Force on Oil Spill Prevention

This TF developed a Framework Plan which addressed themes such as measures for improved safety, standards, and cooperation between regulators for petroleum and maritime activities; strengthening of maritime traffic monitoring and management; improvement of maritime services; and reducing risks of use and transport of heavy fuel oil.

Co-chairs: Russia, Norway

U.S. Interagency Lead: BSEE

DOI Lead: BSEE

Website: **http://www.arctic-council.org/index.php/en/tfopp**

– Matt Blazek and Dennis Thurston, BOEM

For More Information

Arctic Council

http://www.arctic-council.org

Arctic Council Task Forces

http://www.arctic-council.org/index.php/en/about-us/working-groups/task-forces

U.S. Policy and the Arctic Council, a Nexus

As interested parties from around the world work to understand, utilize, and protect the Arctic region, it is important for the U.S. to move forward with a disciplined approach in a thoughtful, responsible manner; one that leverages expertise, resources, and cooperation from the State of Alaska, Alaska Natives, and other stakeholders throughout the international community.

The approach the U.S. is taking is through a comprehensive Arctic policy and strategy articulated in a series of directives, reports, and executive orders:

- National Security Presidential Directive and Homeland Security Presidential Directive (NSPD 66/HSPD 25) Arctic Region Policy, January 9, 2009.
- National Strategy for the Arctic Region (NSAR) (2013) and Implementation Plan (2014)
- Executive Order—Enhancing Coordination of National Efforts in the Arctic (Arctic EO) (2015)
- National Ocean Policy (2010) and Implementation Plan (2013)
- Managing for the Future in a Rapidly Changing Arctic—Integrated Arctic Management (IAM) (2013)
- Interagency Arctic Research Policy Committee 5-Year Research Plan (2013)

The NSAR (2013) and its Implementation Plan (2014) form the primary basis for U.S. actions to achieve our goals. Our strategy is built on three lines of effort:

- advance U.S. security interests;
- pursue responsible Arctic region stewardship; and
- strengthen international cooperation.

These efforts are informed by the following guiding principles:

- safeguard peace and stability;
- make decisions using the best available information;
- pursue innovative arrangements; and
- consult and coordinate with Alaska Natives.

Besides setting domestic Arctic policy and strategy for the U.S. and actions to be taken (including those of BOEM), these documents contain directives for meaningful participation of the U.S. in the work of the Arctic Council (AC) and other international initiatives. For example, the 2013 NSAR clearly articulates that, "[t]he United States is an Arctic Nation with broad and fundamental interests in the Arctic Region, where we seek to meet our national security needs, protect the environment, responsibly manage resources, account for indigenous communities, support scientific research, and strengthen international cooperation on a wide range of issues." The 2015 Arctic EO goes on to establish that: "The United States has a responsibility to strengthen international cooperation in the Arctic, mitigate the greenhouse gas emissions driving climate change, better understand and manage the impacts of climate change in this region, develop and manage resources responsibly, and serve as stewards for valuable and vulnerable ecosystems."

U.S. Arctic policy clearly encompasses many of the AC's objectives in such matters as protecting the environment and conserving its natural resources; balancing economic development, environmental protection, and cultural values; and increasing our understanding of the Arctic through scientific research and traditional knowledge—these, by the way, are also BOEM's goals.

Implementation of our National Arctic Policy and involvement with, and support of, AC projects are interrelated and mutually supporting. An example of this is an integrated approach to Arctic management, or IAM—a science-based, whole-of-government approach to stewardship and planning in the U.S. Arctic that integrates and balances environmental, economic, and cultural needs and objectives. It is an adaptive, stakeholder-informed means for looking holistically at impacts and sensitivities across the U.S. Arctic and generating sustainable solutions. IAM is an important part of the NSAR and a central premise of the 2013 report to the President, *Managing for the Future in a Rapidly Changing Arctic*. This approach is critical to successfully meeting our national goals, as well as many of the objectives of the AC, such as implementation of an ecosystem-based approach to management.

Recognizing the importance of, and the need for, thoughtful, collaborative management efforts, the AC has worked and will continue to work with partners—across institutional boundaries and across international datelines—to help study and preserve the Arctic Region and its many unique resources. Goals that also resonate with BOEM's stewardship responsibilities.

– Dennis Thurston and James Kendall, BOEM

Mountains in the distance, Northwest Arctic Borough. *Photo by BOEM*

BOEM and BSEE Involvement in the Arctic Council

BOEM/BSEE (formerly Minerals Management Service–MMS, until 2010) have been involved in the work of the Arctic Council (AC) since its formation in 1996. Most of this history is related to Outer Continental Shelf (OCS) oil and gas issues and, therefore, within the Protection of the Arctic Marine Environment (PAME) Working Group. Before the AC was established, MMS provided an author and input into the Arctic Environmental Protection Strategy (AEPS) *Arctic Offshore Environmental Impact Assessment* guidelines published in 1997.

Simultaneously, MMS helped develop the *Arctic Offshore Oil and Gas Guidelines* (AOOGG), also published in 1997. Both documents established a common understanding and approach to regulating and managing the international petroleum industry and offshore resources. The AOOGG was updated substantially in 2002 and 2009 under the U.S. leadership, represented by MMS.

In 2004, the Arctic Monitoring and Assessment Program (AMAP) Working Group began a major assessment of the effects of oil and gas activities on the Arctic environment, wildlife ecology, and people, and MMS was selected as a co-lead for the U.S. with Norway. Work lasted through 2007 and involved nearly 200 international experts. In 2010, the *AMAP Assessment 2007: Oil and Gas Activities in the Arctic—Effects and Potential Effects* (the "OGA") was published. It contains 35 recommendations to Arctic States and the petroleum industry for improving safety and environmental performance and reducing negative socioeconomic and human health impacts.

In 2011, the year following the *Deepwater Horizon* oil spill in the Gulf of Mexico, PAME reevaluated the need for more focused guidance on safe offshore operations. Simultaneously, the Arctic Ministers directed the Emergency Prevention, Preparedness and Response (EPPR) Working Group to develop recommendations and best practices for prevention of major marine pollution incidents. Led by the U.S. (now BOEM), PAME held two workshops, one on Health Safety and Environmental Management Systems that was conducted jointly with EPPR and the other on Safety Culture, both resulting in published workshop reports. EPPR, with contributions from BSEE and BOEM, published the *Recommended Practices for Pollution Prevention* (RP3) report in 2013. PAME, with substantial contributions from BOEM and BSEE, then developed *Arctic Offshore Oil and Gas Guidelines: Systems Safety Management and Safety Culture, Avoiding Major Disasters in the Arctic Offshore Oil and Gas Operations* (published in 2014). These guidelines—aimed at Arctic regulators—focused on preventing or mitigating failures within Arctic offshore operations that can lead to major disasters.

BOEM and BSEE have been involved in other marine-related AC initiatives. PAME developed an *Arctic Marine Strategic Plan* (AMSP) 2004–2014 for guiding the marine agenda of the AC for environmental protection and sustainable development using an integrated ecosystem approach to stewardship. In 2009, the *Arctic Marine Shipping Assessment* (AMSA) was published and contains 17 recommendations to countries preparing for future shipping and vessel traffic in the Arctic. BOEM/BSEE (then MMS) personnel were involved as contributors and authors in its preparation. In 2010, PAME asked AMAP, Conservation of Arctic Flora and Fauna (CAFF), and the Sustainable Development Working Group (SDWG) to implement AMSA's recommendation to identify Arctic marine areas of heightened ecological and cultural significance. A team, co-led by the U.S. (represented by BOEM), the Kingdom of Denmark, Norway, and Canada, spent three years developing the 2013 report on *Identification of Arctic Marine Areas of Heightened Ecological and Cultural Significance*. The report mapped and described areas throughout the Arctic Ocean that fit the criteria of Particularly Sensitive Sea Areas (PSSA) from the International Maritime Organization. BOEM was involved in the development of the 2013 PAME *Arctic Ocean Review* (AOR) that analyzed international and regional instruments and agreements relevant to Arctic maritime activities management and made 24 recommendations on ways to strengthen governance for conservation and sustainable use of the marine environment.

– Matt Blazek and Dennis Thurston, BOEM

For More Information

AEPS Arctic Offshore Environmental Impact Assessment guidelines (1997)

http://www.unece.org/fileadmin/DAM/env/eia/documents/EIAguides/Arctic_EIA_guide.pdf

Arctic Offshore Oil and Gas Guidelines (AOOGG) (2009)

http://www.pame.is/images/03_Projects/Offshore_Oil_and_Gas/Offshore_Oil_and_Gas/Arctic-Guidelines-2009-13th-Mar2009.pdf

Arctic Marine Strategic Plan (AMSP) (2004, 2015)

http://www.pame.is/index.php/projects/arctic-marine-strategic-plan

Oil and Gas Activities in the Arctic — Effects and Potential Effects (OGA)

www.amap.no/oga

Identification of Arctic Marine Areas of Heightened Ecological and Cultural Significance

http://www.amap.no/documents/doc/identification-of-arctic-marine-areas-of-heightened-ecological-and-cultural-significance-arctic-marine-shipping-assessment-amsa-iic/869

PAME Health Safety and Environmental Management Systems and Safety Culture workshop reports

http://www.pame.is/images/03_Projects/Offshore_Oil_and_Gas/Offshore_Oil_and_Gas/AOOGG_2014/PAME_AOOGG_03_2014_Systems_Safety_Management_and_Safety_Culture_web.pdf

Sea ice at Kotzebue Sound, Alaska.
Photo by Michael Haller, BOEM

U.S. Activities Completed in 2015 and Current Work

Protection of the Arctic Marine Environment (PAME) Working Group

BOEM/BSEE personnel were busy on many projects in 2015.

Arctic Marine Strategic Plan (AMSP)

The Arctic Council Ministers tasked PAME with developing an updated AMSP for 2015–2025 to inform the marine-related activities of the Arctic Council Working Groups for the next 10 years. BOEM helped develop the updated AMSP, which categorizes strategic actions under four goals:

1. improve knowledge of the marine environment, and monitor and assess current and future impacts;
2. conserve and protect ecosystem function and marine biodiversity to enhance resilience and provision of ecosystem services;
3. promote safe and sustainable use of the marine environment—taking into account cumulative impacts—and minimizing risks from human activities; and
4. enhance the well-being of Arctic communities, and strengthen their capacity to adapt to change.

Marine Protected Area Expert Group (MPA-EG) Pan-Arctic MPA Network Framework

In keeping with the focus of the AC for promoting environmentally sustainable development through protecting ecologically and biologically important marine areas; enhancing management cooperation; protecting cultural heritage and ways of life; and promoting functional connectivity within and between protected areas, the PAME MPA EG—with experts from Canada, the United States, and Norway—established a framework for a network of MPAs. The Pan-Arctic MPA Network framework defines terminology, goals, etc., and develops ways to integrate domestic Arctic MPA networks into the international effort. The framework supports an integrated approach to managing the Arctic marine environment, but it is non-binding (each Arctic State will integrate the MPA network as it sees fit).

Some deliverables from the Canadian Chairmanship and moving forward into the U.S. Chairmanship include:

- enhancement of the Pan-Arctic MPA Network to include stakeholder engagement and communication as a part of the project on Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities;
- a project on inventory mapping of existing MPAs; and
- a desktop study on area conservation measures and linkages to categories of Arctic biodiversity.

Joint Ecosystem Approach Expert Group

In 2007, PAME established an EG on the Ecosystem Approach (EA) to Management (the EA-EG) to help balance competing interests and encourage environmental sustainability. In 2011, this became a PAME-led joint EG with other AC Working Groups (AMAP, CAFF, and SDWG). Norway and the United States are co-lead countries under PAME.

The EA-EG promotes EA management through AC processes and member nations by including six elements in the framework:

1. identify the ecosystem,
2. describe the ecosystem,
3. set ecological objectives,
4. assess the state of the ecosystem
5. value ecosystem goods and services, and
6. carry out adaptive management.

The first two items are near completion; the EA-EG has identified 18 Arctic large marine ecosystems (LMEs) and is now setting ecological objectives and working on Integrated Ecosystem Assessments (IEA).

BOEM, as a member of the EA-EG, attended two recent EA workshops. The first, held in 2014, developed an IEA and related EA aspects, with a focus on evaluating the physical and biological state of two LMEs: the Barents Sea and Beaufort Sea. The second, held in 2015, evaluated Arctic States' existing ecological management objectives (use of living

A project called "Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities" was approved for the 2015–2017 work plan and includes early community involvement, two-way communication, trust building, partnerships, use of traditional and local knowledge (TLK), etc.

and non-living resources, environmental protection and nature conservation in national legislation and management systems); reviewed developments and methodologies for defining a comprehensive set of ecological objectives as a step in implementing a more holistic management approach; and learned about the principles and values embedded in the use and management of living resources and the wider nature by indigenous peoples of the Arctic.

The joint EA-EG will prepare a scoping white paper on the "Status of Setting Ecological Objectives in the Arctic" in 2016. The EG will submit an implementation status report to Ministers in 2017.

Oil and Gas Contact Group

The Oil and Gas Contact Group, led by the U.S. (BOEM), contributes to the work of PAME's other EGs on oil and gas issues. It also updates guidance in the Arctic Offshore Oil and Gas Guidelines (AOOGG) 2009 to maintain applicability and pertinence. To help keep guidance current and useful, PAME addresses the topic at each meeting.

Recently, the AC changed to a more focused follow-up approach. The 2014 *AOOGG Systems Safety Management and Safety Culture Report* expanded on certain important issues versus overhauling the entire guidelines.

Guidance for engaging local communities and indigenous peoples in offshore oil, gas, and other marine activities is virtually unchanged from 1997. Since then, valuable new experiences, lessons learned, and best practices have been developed. A project called "Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities" was approved for the 2015–2017 work plan and includes early community involvement, two-way communication, trust building, partnerships, use of traditional and local knowledge (TLK), etc.

Co-led by the U.S. (BOEM), Canada, Aleut International Association, Saami Council, and Inuit Circumpolar Council, the project will prepare a report on mechanisms (e.g., legal mandates, declarations, guidelines, recommendations, and best practices) for engaging indigenous peoples and local communities in Arctic marine activities. A future public workshop will address principles of meaningful engagement and provide examples of best practices and lessons learned

The Dakhka Khwaan Dancers perform at the Yukon Conference Centre in Whitehorse, Yukon Territory, Canada, in October 2013. *Photo by the Arctic Council Secretariat*

Adult bearded seal with a head-mounted Mk10 SDR in Kotzebue Sound, Alaska, in 2011. *Photo by John Jansen, Alaska Fisheries Science Center, NOAA Fisheries*

Bone carvings. *Photo by John Callahan, BOEM*

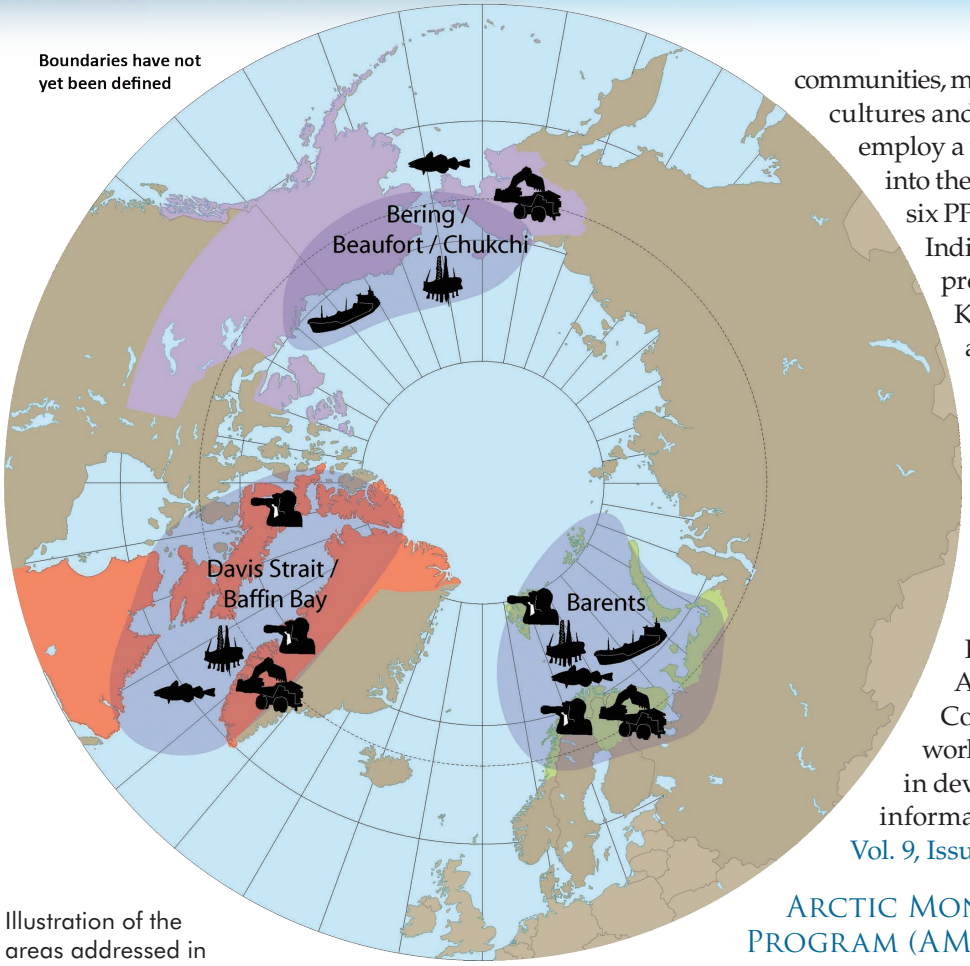


Illustration of the areas addressed in the Adaptation Actions for a Changing Arctic (AACA) initiative.

from stakeholders. Workshop results will be in the final project report and posted on the PAME website.

Emergency Prevention, Preparedness and Response Working Group (EPPR)

BSEE has been an active participant in oil spill and emergency prevention, preparedness, and response initiatives in the EPPR Working Group. A recent project led by NOAA, the Arctic Environmental Response Management Application (ERMA), is a GIS mapping platform to assist in oil spill response by providing information on all response assets and threatened environmental resources. BSEE is leading a project to develop an inventory of spill response assets throughout the Arctic. Other projects include updating the Operational Guidelines in support of the Agreement on Marine Oil Pollution Preparedness and Response, and drafting the chapter on In Situ Burning in the International Maritime Organization's guide on *Oil Spills on Water and Broken and Solid Ice Conditions*.

Sustainable Development Working Group (SDWG)

Project work includes encouraging incorporation of TLK into AC activities. TLK is linked to Arctic human health, socioeconomic issues, adaptation to climate change, energy and Arctic communities, management of natural resources, and Arctic cultures and languages. The six AC Working Groups employ a variety of approaches to integrating TLK into their work. The SDWG, collaborating with all six PP organizations and with support from the Indigenous Peoples Secretariat, developed the project, "Integrating Traditional and Local Knowledge." It builds on accomplishments and best practices already achieved and helps develop a more consistent approach for integrating TLK throughout the AC. After two workshops and consultation with the SDWG Heads of Delegation and the AG's working groups and task forces, the co-leads developed seven recommendations for the integration of TLK into AC work (leads: Canada, Kingdom of Denmark, United States, Aleut International Association, Gwich'in Council International). BOEM made two workshop presentations and was instrumental in developing the recommendations. For more information about TLK, see *BOEM Ocean Science* Vol. 9, Issue 2, April/May/June 2012.

Arctic Monitoring and Assessment Program (AMAP) Working Group

In 2011, the AC directed Senior Arctic Officials to "review the need for an integrated assessment of multiple drivers of Arctic change as a tool for Indigenous Peoples, Arctic residents, governments and industry to prepare for the future..." This resulted in the Adaptation Actions for a Changing Arctic (AACA) project to promote more timely, informed, and responsive policy and decisionmaking in the Arctic.

- AACA-A – The Arctic Council's SDWG led this initiative which compiled assessments and reports prepared by AC Working Groups over the past 10 years, looking for findings and recommendations that could inform adaptation options and actions for the AC and member states. (Completed in 2013)
- AACA-B – Led by Canada and Russia, this effort focused on adaptation activities being implemented by AC member states at the national, sub-national, regional, and local levels. (Completed in 2013)
- AACA-C – In May 2013, the AC asked the AMAP Working Group to prepare a report on the marine and terrestrial areas of the Barents Region, Baffin Bay/Davis Strait Region, and Bering/Beaufort/Chukchi Region. Due at the 2017 AC ministerial meeting, the report will help decision makers and stakeholders develop adaptation tools and strategies for dealing with climate change and other environmental stressors. BOEM will write the Bering/Beaufort/Chukchi Region Regional Assessment.

– Matt Blazek and Dennis Thurston, BOEM

Other U.S. Government Agency Arctic Council Activities

Federal agencies are continuously collaborating with each other and with State, local, and tribal entities to determine the best methods for completing Arctic Council (AC) projects and objectives with one National voice.

Recently, the President issued an Executive Order (EO) for *Enhancing Coordination of National Efforts in the Arctic* to enhance collaboration between all government agencies (Federal, State, local), tribal governments and organizations, and public and private institutions and organizations. The EO also establishes an Arctic Executive Steering Committee to coordinate Federal Arctic activities and provides cohesive guidance to departments and agencies.

The Department of State (DOS) coordinates almost 100 projects at any given time by working with U.S. Heads of Delegation (HoD) for the six AC working groups. Here is a glimpse into the working groups and tasks forces that involve other Federal agencies.

For ACAP, the EPA leads the U.S. participation in identifying sources of contamination and pollution control technologies in the Arctic region. The EPA chairs Project Steering Groups for reducing pollutants such as black carbon and mercury emissions from coal-fired power plants, zinc smelting, and gold production. The EPA co-chairs the Integrated Hazardous Waste Management Strategy and participates in the Indigenous Peoples Contaminants Action Program.

AMAP's working group involves Federal agencies such as the U.S. Arctic Research Commission; NOAA's assistance with the *Arctic Climate Impact Assessment* (2004); BLM's contributions to the *Oil and Gas Activities in the Arctic—Effects and Potential Effects* (2010); and the U.S. Geological Survey's (USGS) involvement in the 2011 Snow, Water, Ice and Permafrost in the Arctic Assessment, and the 2013 Arctic Ocean Acidification Assessment.

CAFF is the only current working group with a DOI representative as HoD (USFWS). The Circumpolar Biodiversity Monitoring Program (CBMP) and the Arctic Biodiversity Assessment (ABA) are addressing Arctic biodiversity. CBMP, co-led by BLM and the North Slope Science Initiative, is integrating efforts to monitor the Arctic's living resources; the ABA initiative (2013) describes the current state of ecosystems and biodiversity.

The Department of Energy, NOAA, BSEE, and the USCG participate in EPPR's mission to prevent, prepare for, and respond to environmental emergencies in the Arctic. BSEE leads the inventory efforts of Arctic-specific equipment, vessels, and other resources. BSEE and the USCG are identifying plans and operations for the draft IMO/EPPR *Guide to Oil Spill Response in Ice and Snow Conditions*, and they contribute to the Arctic Environmental Response Management Application GIS mapping platform developed and used by NOAA.

PAME relies on many Federal agencies to address policy and non-emergency pollution prevention from land- and sea-based activities. NOAA is the co-lead for many important initiatives, including the *Arctic Marine Shipping Assessment* (2009) and associated follow-up projects. It is assisted by the USCG, the Ecosystem Approach to Management Expert Group, and the Marine Protected Area Expert Group. Several interagency partners contribute to the Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities project (2017). NOAA, BSEE, and the USCG contributed to the development of the Arctic Marine Strategic Plan 2015-2025.

Supporting the DOS, the DOI's Office of the Secretary and BIA play critical roles in the SDWG, addressing socioeconomic, cultural, and health issues of Arctic indigenous communities. Some SDWG efforts stemmed from other working groups or task forces, such as integrating ecosystem-based management into the working group's processes and identifying marine areas of heightened cultural significance for the AMSA IIC Report.

Additionally, the DOS co-chairs the Scientific Cooperation Task Force (2013-2015). The DOS, BSEE, and EPA contributed to the task force on Oil Spill Prevention (2013-2015).

– Matt Blazek and Dennis Thurston, BOEM

The Arctic Council flag waving proudly outside the Haparanda Stadshotell, during the SAO Meeting held November 14–15, 2012, in Haparanda, Sweden. *Photo by the Arctic Council Secretariat*

U.S. Chairmanship Themes and Other Activities

The Chairmanship brand "ONE ARCTIC: Shared Opportunities, Challenges & Responsibilities" shows that all of us, not just the Arctic States and people, share in responsibly managing the region.

U.S. Chairmanship Structure

Chair of the Council: Secretary of State John F. Kerry
Coordinator of the Chairmanship: Special Representative for the Arctic Region, Admiral Robert J. Papp, Jr., USCG (ret.)
Special Advisor on Arctic Science and Policy: U.S. Arctic Research Commission Chair, Fran Ulmer
Chair of the Senior Arctic Officials: Ambassador David Balton
Senior Arctic Official (SAO): Julia L. Gourley

Under U.S. Chairmanship, the goals will be to:

1. continue strengthening the AC as an intergovernmental forum;
2. introduce new long-term priorities into the AC; and
3. raise Arctic and climate change awareness within the U.S. and across the world.

The proposed organizational thematic areas under U.S. Chairmanship include: the Arctic Ocean, Arctic communities, and Arctic climate. Under these themes, projects include:

1. Arctic Ocean

Search and Rescue (SAR) Exercises. Strengthen cooperation under the Arctic SAR Agreement. (U.S. Lead: USCG)

Marine Environmental Protection. Increase sharing of information on oil spill preparedness and response capabilities in broken ice and ice covered areas. (U.S. Lead: DOC-NOAA)

Marine Protected Areas (MPAs) Network. Develop a Pan-Arctic Network of MPAs utilizing examples of national MPAs and ecosystem-based management practices for marine activities. (U.S. Lead: DOC-NOAA)

Arctic Ocean Cooperation. Promote a mechanism to coordinate and enhance management of increasing human activity such as a regional seas arrangement (U.S. Lead: DOC-NOAA).

Arctic Ocean Acidification. Respond to the recommendations of the Council's 2013 Arctic Ocean Acidification Assessment including enhanced monitoring and awareness. (U.S. Lead: DOC-NOAA, DOS-Oceans, Environment and Science-Office of Ocean and Polar Affairs (OES-OPA)

2. Arctic Communities

Renewable Energy. Develop a Remote Communities Renewable Energy partnership to demonstrate the feasibility of village-level electrification through clean, renewable energy and to foster public-private-partnerships in renewable and energy efficient technologies. (U.S. Lead: DOE-National Renewable Energy Laboratory, DOI, DOS-OES-OPA)

Community Sanitation and Public Health. Develop a "Water and Sewer Challenge" research effort by hosting conferences to attract investment in clean, safe, affordable, and reliable water and sewer services in remote communities across the Arctic. (U.S. Lead: HHS-Centers for Disease Control and Prevention)

Yellowknife, Canada SAO Meeting October 21–23, 2014. Family photo with the Senior Arctic Officials from the eight Arctic States and the Heads of Delegation of the six Indigenous Permanent Participant organizations. *Photo by the Arctic Council Secretariat*

Arctic Water Resources Vulnerability Index (AWRVI). Develop an integrated assessment tool for community resilience and vulnerability to freshwater access. (U.S. Lead: DOS-OES-OPA)

Freshwater Security. Promote an Arctic Freshwater Synthesis (AFS) examining the role of freshwater in other Arctic systems, and historic and projected changes to the Arctic freshwater system and their key drivers (U.S. Lead: DOE-Office of Biological and Environmental Research)

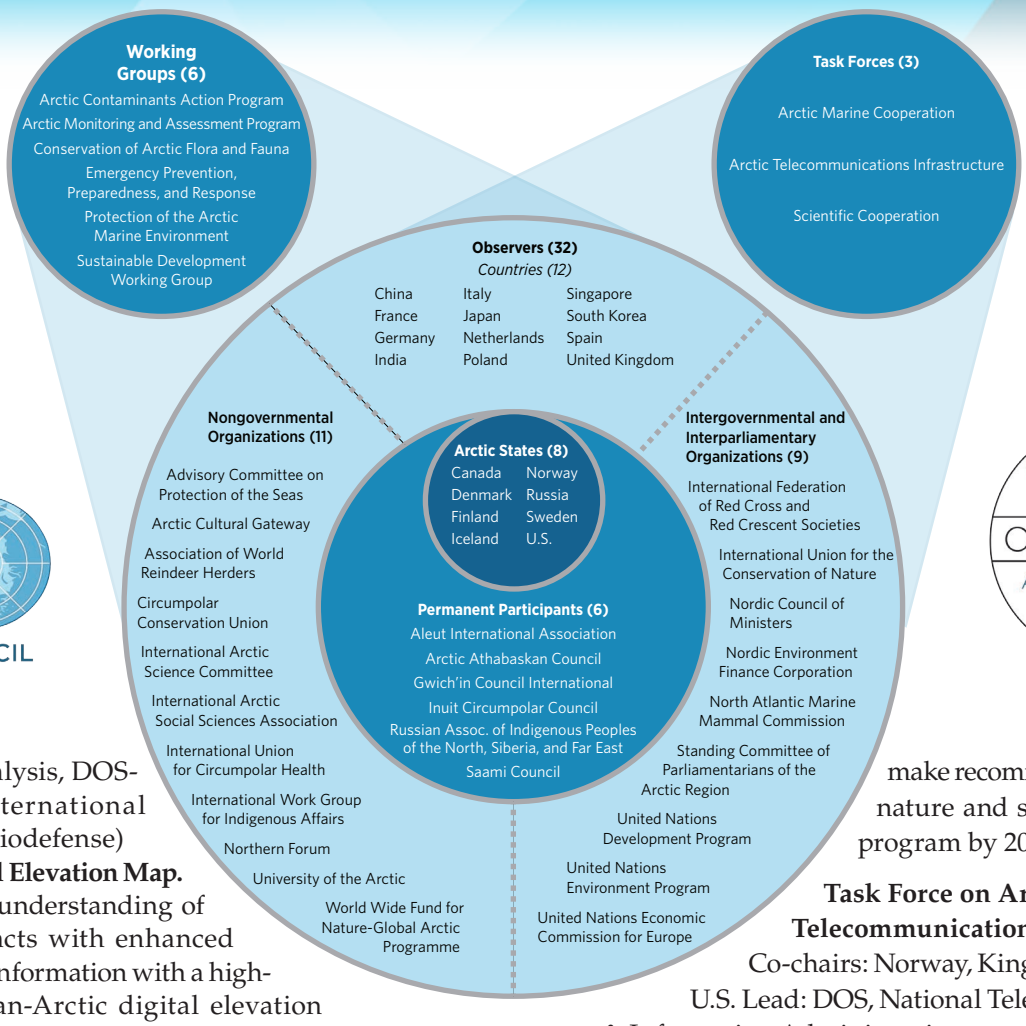
Telecommunications Infrastructure. Establish a telecommunications infrastructure expert group within the SDWG to promote the eventual build-out of commercial telecommunications infrastructure in the Arctic.

Suicide Prevention and Resilience. Create a common, science-based system of metrics to track suicidal behaviors and key correlates, interventions, and outcomes across Arctic States. (U.S. Lead: HHS-Office of Global Affairs)

3. Arctic Climate

Short-lived Climate Pollutants. Promote implementation of the recommendations from the Black Carbon and Methane Task Force and the Short-lived Climate Forcers Task Force, including reporting on domestic black carbon inventories, increased data collection and monitoring and improved monitoring of methane releases in the Arctic. (U.S. Lead: DOS-Office of the Special Envoy for Climate Change)

Arctic Climate Adaptation and Resilience. Complete the Arctic Resilience Report and recommendations, produce reports and fact sheets for the general public on high-priority climate risks and vulnerabilities in the Arctic region, and encourage testing of Adaptive Capacity Indices in Arctic communities. (U.S. Lead: DOI-Office



of Policy Analysis, DOS-Office of International Health and Biodefense)

Pan-Arctic Digital Elevation Map. Improve the understanding of climate impacts with enhanced topographic information with a high-resolution pan-Arctic digital elevation model for the Arctic. (U.S. Lead: DOI-USGS)

Early Warning Indicator System. Encourage development an early warning indicator system for climate impacts in each Arctic State that could be linked into a single Pan-Arctic network. (U.S. Lead: U.S. Global Change Research Program, DOS-Office of Global Change)

Task Forces under the U.S. Chairmanship

Task Force on Scientific Cooperation
Co-chairs: U.S., Russia
U.S. Lead: National Science Foundation
DOI Lead: BOEM
Website: http://www.arctic-council.org/index.php/en/sctf

- To work toward an arrangement on improved scientific research cooperation among the eight Arctic States. Key areas identified for improvement of scientific cooperation include sharing of data and metadata; facilitating the movement of people, samples, and equipment across borders for the purposes of conducting research; facilitating logistics and access to research areas; and facilitating access to research facilities.

Task Force on Arctic Marine Cooperation
Co-chairs: U.S., Norway
U.S. Lead: DOC-NOAA

- The mandate of this TF is to consider future needs for a regional seas program for the Arctic Ocean and to make recommendations on the nature and scope of any such program by 2017.

Task Force on Arctic Telecommunications Infrastructure
Co-chairs: Norway, Kingdom of Denmark
U.S. Lead: DOS, National Telecommunications & Information Administration

- The TF will coordinate a circumpolar assessment of telecommunications infrastructure and networks and deliver a completed assessment to include, among other things, recommendations for public-private partnerships to enhance telecommunications access and service in the Arctic by 2017.

Raising Awareness of the Arctic

- As part of the U.S. Chairmanship, the DOS is conducting a public outreach campaign among foreign and domestic audiences to raise awareness that America is an Arctic nation and to highlight why the Arctic is a strategic priority for the U.S. BOEM recently produced a short pamphlet called "Alignment with U.S. Arctic Strategy" highlighting some of the bureau's activities.
- The University of Alaska-Fairbanks will host a Model Arctic Council for students from all eight Arctic States in connection with the March 2016 SAO meeting in Fairbanks.

– U.S. Department of State

For More Information

Alignment with U.S. Arctic Strategy
http://www.boem.gov/align

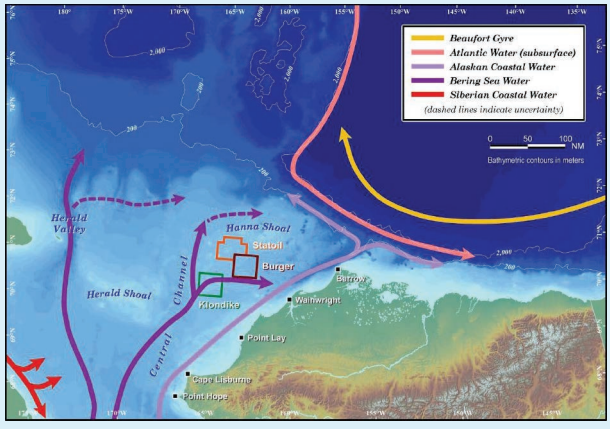
BOEM OCEAN SCIENCE
Bureau of Ocean Energy Management
Mail Stop GM 676E
1201 Elmwood Park Boulevard
New Orleans, LA 70123

New Waves

Late-Breaking News & Information

New BOEM Study Focuses on Climate Change

The U.S. Outer Continental Shelf (OCS) offshore the State of Alaska is in the midst of several important environmental and social transformations, including climate-change pressures, increasing maritime traffic, and exploration of offshore energy resources. Attention is increasingly being focused on the responsible stewardship of the region, especially as reductions in seasonal sea ice have permitted increases in commercial activities. To best manage, sustain, and grow this wealth of resources, it is critical to understand how this region will respond to increasing climate change and human development.



Map of the Chukchi Sea showing the region's generalized current system and study sites.

In light of the potential impacts of climate change, BOEM recently completed a study: "Biogeochemical Assessment of the Outer Continental Shelf Arctic Waters" to investigate the current status of its biogeochemistry. The study focused on the implications of climate change-related processes on the carbon biogeochemistry of the North Aleutian Basin and the Chukchi Sea. The study began in the Bering Sea as a partnership with the Bering Sea Project (BSP), funded by the National Science Foundation (NSF) and the North Pacific Research Board (NPRB).

This study quantifies the magnitude and fate of net community production (NCP), the primary energy source for secondary producers and higher trophic levels during 2008 and 2009. It also considers the response and vulnerability of the wider region to ocean acidification (OA), another manifestation of climate change. In naturally vulnerable areas, OA processes can cause substantial habitat stresses for marine organisms that build shells, skeletons, and tests from calcium carbonate, like several commercially important species in the Bering Sea. For more information about this BOEM study, please see the study report at: **http://www.data.boem.gov/PI/PDFImages/ESPIS/5/5460.pdf**.