

# AOR

ARCTIC OCEAN REVIEW  
PROJECT



**REPORT FROM THE AOR EXPERT WORKSHOP  
IN SUPPORT OF THE AOR PHASE II REPORT**

**REYKJAVÍK, ICELAND  
20-21 SEPTEMBER 2011**

## **Acknowledgements**

### **Lead countries**

Canada, Iceland, Norway, United States and the Russian Federation.

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# Report from the AOR Expert Workshop in Support of the AOR Phase II Report

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**Reykjavik, Iceland 20-21 September 2011**

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## 1. Context and objectives

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The AOR Expert Workshop was hosted by the PAME Secretariat at the facilities of the Icelandic Natura Hotel in Reykjavik, Iceland. About 50 people participated from Arctic Council member governments, Permanent Participants, observer organizations, academia, and others (see Annex I List of participants).

Building from the outcomes of Phase I, the main objective of the workshop was to contribute to the development of the AOR Phase II Report, focusing on the following:

- The potential opportunities and options to strengthen conservation and sustainable use of the Arctic marine environment.
- Status and trends of arctic marine resources, the science and activities associated with the Arctic marine environment.
- The human dimension in as it relates to the Arctic marine environment and to the thematic areas considered.

The workshop was structured around the main themes for the AOR Phase II report and sought active engagement by participants in determining where there are opportunities and options to strengthen governance within a thematic area.

The contents of this workshop report summarize each of the presentations made by experts and subsequent discussions, and does not necessarily reflect the views or a consensus of all participants. Each of the sessions requested more than one presenter to provide their expert opinion on the respective thematic area in order to offer a more robust perspective on the issue for the workshop participants. This report does not attempt to resolve any contrasting opinions between presenters or participants in any of the thematic sessions, but rather to capture the key elements of each presentation made during the workshop.

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## 2. Thematic presentations and Discussions

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The workshop was organized into the following six sessions where invited experts presented their respective views:

Session I. Arctic Marine Science

Session II: Arctic Pollution Sources

Session III: Living Marine Resources

Session IV: Oil and Gas

Session V: Shipping

Session VI: Integrated Oceans Management / Human Dimension

Following all the presentations the Workshop Co-chairs (Rénee Sauvé and Elizabeth McLanahan) presented the main points emerging from the presentations and discussion periods. All presentations are posted on the PAME homepage at [www.pame.is](http://www.pame.is)

## ***Session I. Arctic Marine Science***

This session was divided into the following two presentations as summarized below:

- The status and trends of Arctic marine science work – *Steingrímur Jónsson*
- Opportunities and options to strengthen and/or coordinate science groups in the fields of arctic marine science - *Steingrímur Jónsson ( on behalf of Thorsteinn Gunnarsson)*

### **Status and trends**

The Arctic marine environment is under significant environmental change due to a wide range of internal and external processes. The most recent research indicated that the Arctic and Arctic sub-seas are in a state of rapid transition, where the recent changes in the extent and duration of open water are causing dramatic effects on Arctic biology, wind, currents, and primary production. While technology has improved the ability to conduct scientific research, there are still many existing knowledge gaps which highlight the importance of establishing a baseline dataset for the Arctic. The remote and hazardous nature of conducting research in the Arctic highlights the need to leverage resource capacity by accessing both scientific and indigenous information sources.

### **Opportunities and Options**

In order to fully understand the extent at which the Arctic Ocean and Arctic sub-seas are transitioning, Arctic Council States should encourage the rapid distribution of scientific information to policy makers, science community, northern communities, and publics. To facilitate this information distribution, the scientific community will need to strengthen relationships with other organizations that have similar interests and convene collaborative workshops and planning meetings. There was considerable discussion regarding opportunities within the International Arctic Science Community (IASC) and several other organizations to strengthen relationships and jointly sponsor activities supporting the leadership provided by the Arctic Council.

## ***Session II: Arctic Pollution Sources***

This session focused on identifying existing and emerging issues of Arctic pollution sources, with particular attention to the impacts on the marine environment; how pollution impacts Arctic inhabitants and communities; and, options for possible future agreements and measures. These topics were divided into the following three presentations as summarized below:

- Priority pollutant sources and their impact on the marine environment – *Helgi Jensson*
- Contaminants and human health – *Duane Smith, James Stotts*
- Preliminary reflections on possible future agreements/ measures – *David L. VanderZwaag*

### **Priority pollutant sources and their impact on the marine environment**

It was noted that recent time series data of legacy Persistent Organic Pollutants (PCB, DDT, HCH, etc.) indicate a decreasing trend over the past two decades in the Arctic marine environment. While these signs are encouraging, the concentrations in animals are still high enough to affect the health of the marine food web, and the pathways and distribution of the contaminants may be affected by climate change in the future. The primary concerns with emerging and current POPs is the lack of pan-Arctic time series data, the high volume of chemicals with POPs characteristics that are being produced on a yearly basis, and the lack of global capacity to determine the long term health effects of new contaminants in the environment. Short term actions for consideration include the necessity

to support a global mercury treaty, ratify the Stockholm convention to reduce levels of POPs, and strengthen measures and plan the safe transport of potentially harmful waste.

### **Contaminants and human health**

Arctic inhabitants have an acute interest in supporting efforts to globally strengthen the control of pollution sources and environmental contamination. Ensuring a sufficient source of nutritious and safe country food is of high importance to the cultural, economic and social well being of Arctic inhabitants and communities. These sources are being compromised through global pollution sources which accumulate in the food chain and result in contamination levels in Arctic inhabitants that exceed acceptable levels by the World Health Organization. The recent health trend for Arctic inhabitants has shown that the adoption of a western diet into their lifestyle may increase the likelihood of high blood pressure, diabetes, weakening immune systems, and developmental effects in children. The Permanent Participants of the Arctic Council and Arctic States should continue to be involved in developing global partnerships and instrument development to reduce pollution sources, research the effects of new contaminants, and support the development of an agreement on mercury.

### **Opportunities and Options**

Existing international agreements and arrangements relevant to Arctic pollutants are fragmented and do not offer a clear direction on ways to strengthen the prevention and control of Arctic pollutants. However, there are many opportunities within these agreements and arrangements to attain an international consensus to address pollution issues of relevance for the Arctic. States should be encouraged to ratify existing international agreements relevant to Arctic pollution (i.e. Stockholm Convention). Under the existing international agreements and arrangements, implementation measures should be taken to expedite risk assessments and listing considerations for chemicals of high concern in the Arctic. The Arctic States should also encourage the completion of international negotiations and review processes relevant to Arctic pollutants (i.e. Mercury, Short Lived Climate Forcers). The rapid rate of new chemicals introduced into the market each year emphasizes the need for a more proactive approach to chemical management, e.g. registration of chemical, toxicological and eco-toxicological information, before they become an additional factor in the pollution of the Arctic marine environment.

### ***Session III: Living Marine Resources***

This session focused on the trends related to the living marine resources, the main environmental pressures, relationship to humans, and potential options and opportunities to strengthen the management of fishing resources in particular. This session was divided into the following presentations as summarized below:

- Emerging trends and main environmental pressures/stressors on Living Marine Resources and its Human Dimension and options to strengthen relevant agreements/measures - *Alf Håkon Hoel*
- Opportunities and options to strengthen the instruments and measures in the Central Arctic Ocean – *Lisa Speer*

### **Status and trends**

Arctic States manage significant fisheries that are concentrated in the sub-Arctic areas and target pelagic species, invertebrates and ground fish. The Arctic ecosystems are subject to natural variations, and also experiencing the effects of climate change through a substantial seasonal decrease in Arctic sea ice over the last two decades, increase of ocean acidity, changing fish

migrations, and fluctuating temperatures. In the near term, it is unlikely that there will be a central Arctic fishery to coincide with the expansion of open sea ice areas. In the longer term, the possibility exists for fish stocks to extend their geographic range into new arctic areas.

## **Opportunities and Options**

There is an existing framework of global, regional and national mechanisms for the management of Arctic fisheries. The Arctic high seas area is partly covered by a Regional Fisheries Management Organization, the North East Atlantic fisheries Commission (NEAF), while other parts of the high seas in the central Arctic Ocean do not have such an arrangement in place. One option for this area would be to refrain from fishing through an international agreement while advancing scientific information and management. Other proactive approaches for the Arctic as a whole could focus on issues related to sustainable fishing pressure, reducing discards, and identifying the effects of fishing on Arctic ecosystems. Research necessary to ensure the adequate management in the Arctic includes the monitoring of trends in fish stocks (e.g. abundance, type, and location), ecosystem effects of climate change, and determining baseline data regionally (as well as on a pan-Arctic scale). These research requirements suggest that international cooperation in fisheries science needs to be strengthened. On the state level, efforts should be made to integrate fisheries management into broader ecosystem based management frameworks, including in coordination with bordering states in transboundary cases.

### ***Session IV: Oil and Gas***

This session was divided into the following two presentations:

- Emerging trends and main environmental pressures/stressors from offshore oil and gas activities in the Arctic and its Human Dimension – *Dennis Thurston*
- Opportunities and options to strengthen relevant Agreements and/or measures – *Prof. Betsy Baker*

## **Status and trends**

The level of oil and gas activity in the Arctic is likely to increase as current projections for undiscovered technically recoverable hydrocarbon resources in the Arctic are estimated to be substantial, with the vast majority of the resources expected to be found on the continental shelves already under national jurisdiction. The increased exploration activity will act as a catalyst for changes in the local infrastructure, transportation systems and socio-economics of the Arctic communities. The current impact of Arctic oil and gas activity is relatively minor, but any large scale accidental release of hydrocarbons or contaminants could have disastrous consequences to aquatic environments as there is no single proven effective response measure for oil spills in ice infested water. Human health in the Arctic has the potential to be affected by oil and gas activities, but there is limited information to assess the effects which have occurred to date. All levels of government should be involved in identifying the appropriate planning, regulatory, and allocation functions necessary to mitigate the negative environmental and socio-economic effects of oil and gas activity. Improvements should be made to ensure that the Arctic legal regimes and best practices are updated, monitored and enforced in order to prevent the occurrence of oil spills.

## **Opportunities and Options**

There are many existing international agreements, conventions, measures and best practices relevant to the management of oil and gas activities that should be considered for relevance to the Arctic. The Offshore Oil and Gas Guidelines and Arctic Council Oil and Gas Assessment



recommendations provide the foundation for Arctic States to implement domestic regulations that prevent, reduce and control the pollution of the marine environment as a result of oil and gas activities. An Arctic Oil and Gas working group could be created with representatives from relevant expert bodies. The Arctic Council States could also provide international leadership for offshore oil and gas by promoting the development of global standards including those associated with liability and compensation.

### ***Session V: Shipping***

This session was divided into the following two presentations:

- Emerging trends and main environmental pressures/stressors from shipping in the Arctic and its human dimension – *Jens H. Koefoed*
- Opportunities and options to strengthen relevant Agreements and/or measures – *Ross MacDonald*

### **Status and trends**

The projected increase of Arctic shipping activity will likely be a result of natural resource exploration and exploitation, tourism, and faster transportation routes to northern Asia. All vessels inherently pose a full spectrum of environmental challenges on marine areas (ballast water, waste, fouling, residues, shipwrecks etc.), and must be regulated as early as possible so as to not stress local environments. The possibility for extended Arctic shipping periods has prompted the International Maritime Organization (IMO) to agree to, and begin the development of a binding set of regulations for all polar shipping (Polar Code). The need for a rigorous set of rules specific to the Arctic is due to a number of factors including the lack of existing infrastructure and emergency capacity, dangerous and unpredictable conditions and characteristics of ice, and a remote and extremely cold environment.

### **Opportunities and Options**

It is becoming increasingly important to develop a specific rule-set for responsible operation of shipping in the Arctic. The operation of vessels in Arctic waters will require an understanding of how shipping affects communities, marine living resources, and impacts on marine ecosystems. The unique navigation hazards in the Arctic underscore the need for the timely completion of a mandatory Polar Code to promote vessel safety and protect the marine environment, its resources and the interests of communities. Arctic Council member States have an opportunity to collaborate on the development of a pan-Arctic traffic system, support environmental and cultural considerations in route planning, and educate other states and the shipping community on the risks inherent to Arctic shipping operations.

### ***Session VI: Integrated Oceans Management (IOM)/Ecosystem Based Management (EbM)***

The final session was divided into five presentations as summarized below:

- Status of integrated oceans management in the Arctic: Emerging Trends – *Alf Håkon Hoel*
- Opportunities and options to strengthen Ecosystem-Based Approach to Management (EbM) to address the main pressures and their cumulative impact on the marine ecosystem within the framework of relevant Agreements/measures:
  - ✓ IUCN Ecosystem-based Management in the Arctic Marine Environment Project – *Thomas Laughlin*

- ✓ Integrated planning and coordinated management for the Arctic – *Brooks Yeager*
- Integrated Ocean Management/EbM and the human dimension:
  - ✓ Integrated governance, cumulative governance, burdensome governance? Implementation of integrated oceans management/ecosystem-based management for Arctic residents – *Henry Huntington*
  - ✓ Integrated oceans management/ecosystem-based management and the human dimension – *Gunn-Britt Retter*

## **Status and trends**

The Arctic region covers a vast area with diverse ecosystems and is currently experiencing increased uses and environmental pressures. Such pressures have led to better understandings of the benefit to apply more integrated approaches such as Integrated Ocean Management (IOM) with the aim to address both existing and emerging challenges and their cumulative impacts.

There is an existing array of global and regional rules and guidelines which provide the general direction for Arctic States to engage in an ecosystem-based approach to management. The Arctic Council has agreed to the need for more coordinated and integrated approaches to address the challenges of the Arctic marine environment through the adoption of the Arctic Marine Strategic Plan (AMSP 2004) and projects such as the Best Practices in Integrated Oceans Management in the Arctic (BePOMAr) and the work by the PAME Ecosystem Approach Expert Group.

There is a need to focus more attention on building a baseline data at the pan –Arctic level to better understand the pressures and complex interactions of ecosystems, cumulative impacts of marine activity, effects of climate change, and socio-economic implications for the Arctic region.

## **IOM-EBM and the Human Dimension**

The impacts of climate change, industrial development, shipping, fishing all indirectly and directly affect Arctic communities as they are an integral part of the ecosystem. The engagement of Arctic inhabitants is required from the onset of scientific programs, planning processes, and consultations for resource development at the local, national and international scales. Industry and government initiatives should seek meaningful participation by Arctic inhabitants and communities, and design initiatives that facilitate access and influence without being a burden on communities.

## **Opportunities and Options**

As human activities in the Arctic increase, there is an increasing need for Arctic States to cooperate on a regional basis to protect the marine environment through application of marine ecosystem-based management approaches. There are a number of initiatives and ongoing work both within and outside the Arctic Council that are exploring the opportunities and options to apply an ecosystem-based approach to marine management. Such initiatives include the new Arctic Council Ecosystems Based Management (EbM) expert working group for the Arctic environment (marine and terrestrial areas) and the PAME-led Ecosystem Approach to Marine Management Expert Group. Furthermore, IUCN is working on an Ecosystem-based Management in the Arctic Marine Environment where the main outcomes are to include:

- Recommendations to advance cooperation on ecosystem-based marine management in the Arctic region.
- Scientific findings (including maps and reports) on areas of ecological and biological significance or vulnerability that should be considered for enhanced protection in the Arctic marine environment.

The opportunity to apply integrated ocean management was emphasized as the Arctic States face mutual challenges that transcend national boundaries (e.g. climate change, receding sea ice, intensifying economic activity, multiple demands for use of the ocean resources and growing interest and economic demand from non-Arctic governments) and the legal and science basis for such cooperation do exist.

It was pointed out that a definition for ecosystem-based management includes the notation of adaptation, with consideration for the cross jurisdictional challenges facing the Arctic environment. The environmental factors affected by climate change in the Arctic, will require greater efforts to convene a scientific and traditional knowledge exchange in order to enhance the baseline data sets available for decision making. Ecosystem based management will be a critical tool in an integrated management framework for the Arctic marine environment.

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### **3. Summary of Key Suggestions**

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Below is a summary of key suggestions received from the workshop without any prejudgment of inclusion or exclusion into the AOR Project.

#### **Session I. Arctic Marine Science**

- ✓ Improve collaboration in Arctic States towards a common research agenda.
- ✓ Establish a mechanism to support accessible and transferrable datasets.
- ✓ Support a single marine science advisory body, or window for the region.

#### **Session II: Arctic Pollution Sources**

- ✓ Arctic States can provide global/regional leadership on strengthening the control of pollutants through implementation of existing instruments or consideration of a regional approach.
- ✓ Permanent Participants and Arctic Inhabitants need to be involved in the policy development process to control pollution sources.
- ✓ Arctic States should proactively provide leadership on a global treaty on mercury, new substances (i.e. Stockholm Convention) and setting standards for a proactive approach to chemicals management.

#### **Session III: Living Marine Resources**

- ✓ Provide greater attention towards the status, trends and role of marine mammals in the Arctic.
- ✓ An ecosystem approach on a pan-Arctic scale is needed to establish baseline data, monitor trends, and determine the effects of climate change.
- ✓ Consider the options available for management of fishing operations in the central Arctic Ocean, while continuing to advance scientific knowledge base.

#### **Session IV: Oil and Gas**

- ✓ Coordinate research activities towards: behavior of oil in sea-ice; contamination effects on Arctic animal populations and ecosystems; socio-economic effects and human health; and, improvements in technology.
- ✓ Form an Arctic Oil and Gas working group with representatives from relevant expert bodies.

- ✓ Build on common principals and guidance from existing Arctic Council initiatives (PAME Arctic Offshore Oil and Gas Guidelines, Arctic Council Oil and Gas Assessment, etc.).
- ✓ Promote the implementation and/or expansion of domestic regulations needed to enact legislation.

### **Session V: Shipping**

- ✓ Arctic States should act on the Arctic Marine Shipping Assessment (AMSA 2009) recommendations.
- ✓ Arctic States should seek to expedite the completion of the IMO Polar Code.
- ✓ Arctic shipping should be supported by: adequate building, safety, and environmental standards; Arctic specific training programs; pan-Arctic communication and traffic systems and consideration for the environmental, socio-economic and cultural considerations in route planning.
- ✓ Consultations should be made between Arctic States and tourism industry to implementing best practices and travel restrictions within dangerous marine areas.

### **Session VI: Integrated Oceans Management**

- ✓ Implementing an ecosystem approach to management on regional and national scales will be a key to addressing cumulative impacts and competing demands on the Arctic marine environment.
- ✓ Pan-Arctic baseline datasets which integrate scientific and traditional knowledge sources will facilitate and strengthen conservation principals and standards.
- ✓ Arctic Council could facilitate data collection, dissemination and scientific cooperation between Arctic and non-Arctic organizations.
- ✓ Provide opportunities for robust indigenous participation while ensuring a minimal cumulative impact and stress on communities.

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## **4. Next steps – Context of the AOR Project**

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The workshop provided an overview of the key issues as presented within a thematic approach that will provide the basis for developing the AOR Phase II Report. The presentations represented an advanced understanding of Arctic issues including the human dimension, and provided several key ideas which will form the advice provided to Arctic Council ministers.

The discussions provided many philosophical, legal and practical insights into the challenges facing the governance of the Arctic marine environment. Subject to the overall mandate of the AOR project, the leads will consider all information provided through presentation and discussion periods when drafting the report.

## ANNEX I – List of Participants

Name	Contact Information
<b>Invited Speakers for Session I. Arctic Marine Science</b>	
... on status and emerging trends of Arctic science work (15 min)	<b><u>Steingrímur Jónsson</u></b> University of Akureyri and Marine Research Institute, Borgir v/Norðurslóð 600 Akureyri, Iceland Email: <a href="mailto:steing@unak.is">steing@unak.is</a>
...on agreemens/measures (15 min)	<b><u>Steingrímur Jónsson on behalf of Thorsteinn Gunnarsson</u></b> Senior Adviser Icelandic Center for Research Email: <a href="mailto:thorsteinng@rannis.is">thorsteinng@rannis.is</a>
<b>Invited Speakers for Session II: Arctic Pollutant Sources-Chapter 1</b>	
...on priority pollutant sources (15 min)	<b><u>Helgi Jensson</u></b> Senior consultant Human resources secretariat Environment Agency of Iceland Tel: +354 591 2000 Email: <a href="mailto:helgij@Umhverfisstofnun.is">helgij@Umhverfisstofnun.is</a>
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..... on agreements/measures (15 min)	<b><u>Prof. David L. VanderZwaag</u></b> Professor of Law Marine & Environmental Law Institute Dalhousie University Halifax, Canada Email: <a href="mailto:David.vanderzwaag@dal.ca">David.vanderzwaag@dal.ca</a>
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... on emerging trends (20 min)	<b><u>Alf Håkon Hoel</u></b> Regional Director Email: <a href="mailto:ahhoel@gmail.com">ahhoel@gmail.com</a> / <a href="mailto:Alf.Haakon.Hoel@imr.no">Alf.Haakon.Hoel@imr.no</a>
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<b>Invited Speakers for Session IV: Offshore Oil and Gas-Chapter 3</b>	
....on emerging trends (15 min)	<b><u>Dennis Thurston</u></b> Bureau of Ocean Energy Management, Regulation and Enforcement U.S. Department of the Interior Anchorage, Alaska Tel (907) 903-1511 Email: <a href="mailto:Dennis.Thurston@boemre.gov">Dennis.Thurston@boemre.gov</a> <a href="mailto:akdino@ak.net">akdino@ak.net</a>

....on agreements/asures (15 min)	<b>Prof. Betsy Baker</b> Associate Professor and Senior Fellow for Oceans and Energy, Institute for Energy and the Environment Vermont Law School Email: <a href="mailto:bbaker@vemontlaw.edu">bbaker@vemontlaw.edu</a>
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<b>Invited Speakers for Session VI. Integrated Ocean Management-Chapter 5</b>	
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## ANNEX II – AOR Workshop Agenda

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Co-Chairs: *Elizabeth McLanahan/USA and Renee Sauve/Canada*

### Tuesday 20<sup>th</sup> of September

08:30-9:00

#### **Registration and Refreshments**

09:00-09:30

#### **Opening of the Workshop**

- ✓ Overview of Phase II and Timeline (Canada)
- ✓ Presentation of the AOR Phase II Outline/Table of Content (Canada)
- ✓ Introduction of participants

09:30-10:45

#### **Session I. Arctic Marine Science**

- ✓ Status and emerging trends of Arctic science work (15 min)-John Calder (15 min) - *Steingrímur Jónsson, University of Akureyri and Marine Research Institute.*
- ✓ Opportunities and options to strengthen and/or coordinate relevant science groups and/or agreements/measures (“gaps”) (15 min)-*Thorsteinn Gunnarsson, Senior Adviser, Icelandic Center for Research*
- ✓ Discussions and inputs from participants (30 min)

10:45-12:00

#### **Session II: Arctic Pollutant Sources**

- ✓ Contaminants – main emerging trends and stressors:
  - priority pollutant sources and their impacts on the marine environment (land, sea and atmospheric activities) (15 min)-*Helgi Jensson, Senior consultant, Environment Agency of Iceland*
  - Contaminants and human health (15 min)-*Duane Smith ICC Canada/James Stotts ICC Alaska*
- ✓ Opportunities and options to strengthen relevant agreements/measures (“gaps”) (15 min)-*Prof David L. VanderZwaag, Professor of Law, Marine & Environmental Law Institute, Dalhousie University*
- ✓ Discussions and inputs from participants (30 min)

13:00-14:00

#### **Session III: Living marine resources**

- ✓ Emerging trends and main environmental pressures/stressors on Living Marine Resources and its Human Dimension and options to strengthen relevant agreements/measures (20 min)-*Alf Hakon Hoel, Regional director, Institute of Marine Research , Tromsø*
- ✓ Opportunities and options to strengthen relevant Agreements/measures (“Gaps”) (10 min)-*Lisa Speer, Director, International Oceans Program, Natural Resources Research Defense Council (NRDC)*
- ✓ Discussions and inputs from participants (30 min)

## **14:00-15:00**

### **Session IV: Offshore Oil and Gas**

- ✓ Emerging trends and main environmental pressures/stressors from offshore oil and gas activities in the Arctic and its Human Dimension (15 min)-*Dennis Thurston, Bureau of Ocean Energy Management, Regulation and Enforcement Alaska Region.*
- ✓ Opportunities and options to strengthen relevant Agreements/measures (“Gaps”) (15 min)-*Prof. Betsy Baker, Associate Professor, Vermont Law School.*
- ✓ Discussions and inputs from participants (30 min)

## **15:15-16:15**

### **Session V: Shipping**

- ✓ Emerging trends and main environmental pressures/stressors from Shipping in the Arctic and its Human Dimension (15 min)-*Jens H. Koefoed, Norwegian Maritime Directorate*
- ✓ Opportunities and options to strengthen relevant Agreements/measures (“Gaps”) (15 min)-*Ross McDonald, Manager, Special Projects and Arctic Shipping, Transport Canada*
- ✓ Discussions and inputs from participants (30 min)

## **Wednesday 21<sup>st</sup> of September**

### **09:00-11:00**

#### **Session VI: Integrated Ocean Management**

- ✓ Status of Integrated Ocean Management in the Arctic - Cumulative impacts and emerging trends (15 min)-*Alf Hakon Hoel, Regional director, Institute of Marine Research , Tromsø*
- ✓ Opportunities and options to strengthen Ecosystem-Based Approach to Management (EbM) to address the main pressures and their cumulative impact on the marine ecosystem within the framework of relevant Agreements/measures (“Gaps”)
  - *Thomas Laughlin, Deputy Head of the Global Marine Program, IUCN (15 min)*
  - *Brooks Yeager, Executive Vice President for Policy, Clean Air—Cool Planet (15 min)*
- ✓ Integrated Ocean Management/EBM and the human dimension
  - *Henry Huntington, Science Director, Arctic Program, Pew Environment Group (15 min)*
  - *Gunn-Britt Retter, Head of Arctic and Environmental Unit, Saami Council (15 min)*
- ✓ Discussions and inputs from participants

### **11:00-12:00**

#### **Session VII: Conclusions and next steps**

- ✓ Summary from the AOR leads (15 min)
- ✓ Discussions (20 min)
- ✓ Wrap-up and Next steps (10 min AOR Leads)

**Close of Workshop at 12:00**

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## ANNEX III – AOR Phase II Project Plan

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*The Arctic Ocean Review (AOR) is a multi-phased project that will result in a review of the global and regional measures that are in place for the protection of the Arctic marine environment, and options to address any gaps or weaknesses. This project will address both sea and land-based activities influencing the state of the Arctic marine environment, and will result in a phase I report on existing measures (2011) and a final report with recommendations (2013) for endorsement by the Arctic Council Ministers.*

### **1. Introduction**

The Arctic marine environment is subject to increasing pressures, resulting from climate change and pollution on the one hand, and from economic activities on the other. The Arctic Council is at the forefront of these emerging issues through the development of various in-depth reports and assessments, such as the State of the Arctic Environment Report, Arctic Climate Impact Assessment, Arctic Marine Shipping Assessment, and Arctic Oil and Gas Assessment among others. Because of the work of the Arctic Council, the pressures to the Arctic marine environment can be better understood and are higher on the international agenda than in recent years. It is therefore timely to undertake a review of global and regional measures (voluntary and mandatory) that are relevant to the conservation and sustainable use of the Arctic marine environment, as well as activities of the Arctic Council in order to clearly demonstrate Arctic states' stewardship efforts to the global community.

The AOR is encouraged by:

- The Arctic Marine Strategic Plan, adopted by the Arctic Council in 2004, provides the foundation for both the Arctic Council and PAME's mission and objectives. It specifically requires PAME to "Periodically review the status and adequacy of international/regional agreements and standards that have application in the Arctic marine environment, new scientific knowledge of emerging substances of concern, and analyze the applicability of a regional seas agreement to the Arctic" (Strategic Action 7.3.4).
- The common objectives and priorities for the Norwegian, Danish and Swedish chairmanships of the Arctic Council (2006-2013) has given high priority to the theme of integrated management, as well as ensuring a sustainable and ecosystem-based approach to resource development in the Arctic.
- Objective II of the PAME Work Plan 2009-2011 asks PAME to "Determine the adequacy of applicable international/regional commitments and promote their implementation and compliance".
- Commitments by the global community to sustainable development and protection of marine biodiversity and the marine environment through the application of the ecosystem approach and integrated coastal and ocean management.

### **2. Objectives**

The overall objective of the AOR is to provide guidance to Arctic Council Ministers as a means to support effective governance for the Arctic marine environment through

cooperative, coordinated, and integrated approaches. The AOR will also play an important role in demonstrating Arctic States' stewardship efforts in the Arctic.

To recap, the Phase I and II objectives are as follows:

Phase I Objectives (2009-2011):

- Compile information on global and regional measures that are relevant to the conservation and sustainable use of the Arctic marine environment;
- Survey the status and trends in the Arctic marine environment in cooperation with other working groups of the Arctic Council;
- Disseminate compiled information through communication products/tools, and conduct outreach to both communicate efforts and obtain input;
- Prepare a compilation document that will review global and regional measures that are relevant to the conservation and sustainable use of the Arctic marine environment and identify and highlight potential weaknesses. (This document will form the basis of discussion for the technical workshop); and,
- Develop a status report for Arctic Council Ministers.

Phase II Objectives (2011-2013):

- Take into account major new developments;
- Analyze potential opportunities in global and regional instruments and measures to achieving environmental, economic and socio-cultural outcomes;
- Outline options to address potential opportunities to strengthen the conservation and sustainable use of the Arctic marine environment; and,
- Produce a final AOR Report to Arctic Council Ministers that will: summarize opportunities to strengthen global and regional instruments and measures for management of the Arctic marine environment; outline options to address these opportunities; and, make agreed recommendations to help ensure a healthy and productive Arctic marine environment in light of current and emerging trends.

### **3. Phase I Deliverables**

Phase I deliverables include convening an experts workshop (Fall 2010) that addressed the status of the Arctic marine environment and the potential weaknesses and/or impediments identified through reviewing global and regional measures that are relevant to the conservation and sustainable use of the Arctic marine environment. The outcomes of this workshop, was presented in an AOR Summary Workshop report for the Senior Arctic Officials Meeting (Fall 2010).

In addition to finalizing an AOR Phase I report, the project leads also developed several communication products to demonstrate the Arctic Council's stewardship efforts including an AOR brochure, Outreach/Communication Strategy, and website.

### **4. Scope and Approach**

The AOR will not initiate a new assessment, but will produce a report on the global and regional measures in place for the conservation and sustainable use of the Arctic marine environment. The report will also include recent and ongoing activities of the Arctic Council. It may be necessary for the lead countries to revisit the scope and

approach at a later date and whether the activities of other organizations need to be included.

#### Phase II (2011 – 2013):

This phase will analyze the information collected in Phase I with an emphasis on areas where the Arctic Council can effectively add value to the existing mechanisms of governance for the Arctic marine environment. An important question here is how the members of the Arctic Council can further develop and build on existing mechanisms that have proven to be effective.

### **5. Project Management**

The AOR is led by Canada, Iceland, Norway, Russia, and the United States. Project leadership will be provided by lead countries' Heads of Delegation (HoD) to whom the Lead Authors will report (see project structure - Annex A).

The overall responsibility of the Lead Authors is to coordinate and consolidate inputs received at relevant meetings (AOR and PAME meetings) and from the Chapter Authors as per the AOR Phase II timeline and integrate these inputs into consolidated draft versions of the AOR Report in collaboration with the co-lead countries and the PAME Secretariat.

The overall responsibility of the Chapter Authors is to draft their respective chapter taking into account the information collected in the AOR Phase I Report, major new relevant developments, including recent and ongoing activities of the Arctic Council and inputs from relevant meetings / workshops, and develop drafts as per the AOR Phase II timeline in collaboration with the Lead Authors.

PAME HoDs have updated their nominated points of contact within their respective governments to form the Project Expert Group for AOR Phase II. This expert group will contribute to the organization of the technical workshop/international conference and the production of documents and solicit input from Permanent Participants and other Arctic Council Working Groups.

### **6. Outcomes**

#### Phase II (2011 – 2013)

The challenges and opportunities in existing global and regional instruments and measures (voluntary and mandatory) which were identified in phase I (see report), will in phase II be analyzed in order to address the question how the members of the Arctic Council can further develop and build on existing mechanisms that have proven to be effective to solve these issues.

As a first step, consultants will be approached to prepare theme-based papers which will contain an analysis of the information contained in phase I. Theme-based workshops will be arranged, as necessary.

These papers, in addition to the phase I report will be the basis for a Phase II workshop and an international conference/workshop with the aim to further discuss potential ways to strengthen instruments and measures in 2012

The Phase II report will be based on the outcomes of the phase I report, the theme-based papers and the results of the international conferences/workshops. It will integrate this analysis with the objective of producing recommendations that outline

opportunities for the Arctic Council to improve current mechanisms for the conservation and sustainable use of the Arctic marine environment.

A final AOR Report will be presented for endorsement at the Arctic Council Ministers meeting in 2013, which will include advice and guidance for policy makers.

## **7. Main Components, Timeline and Major Milestones**

### Phase II (2011-2013): Analysis of information and Reporting to the Arctic Council:

The second phase of this project will follow-up on the information collected in Phase I by analyzing potential opportunities in global and regional measures in place for the conservation and sustainable use of the Arctic marine environment, including Arctic Council activities, and outline options to address these opportunities.

The major deliverable for Phase II will be a final report to Arctic Council Ministers that will summarize potential opportunities and the options to address them, as well as recommendations for endorsement by Arctic Council Ministers to help ensure a healthy, productive and safe Arctic marine environment in light of current and emerging trends.

1. Conduct an analysis of the information from the Phase I report to determine opportunities to strengthen:
  - a. Instruments and measures
  - b. Existing legislation, policy and guidelines; and
  - c. Develop new mechanisms as appropriate.
2. Prioritize opportunities in order of importance, to the extent possible, according to the degree of potential impact to the Arctic marine environment (includes the immediacy of occurrence, magnitude of impact, etc.)
3. Outline options to address opportunities
4. Provide advice to the Arctic Council Ministers.

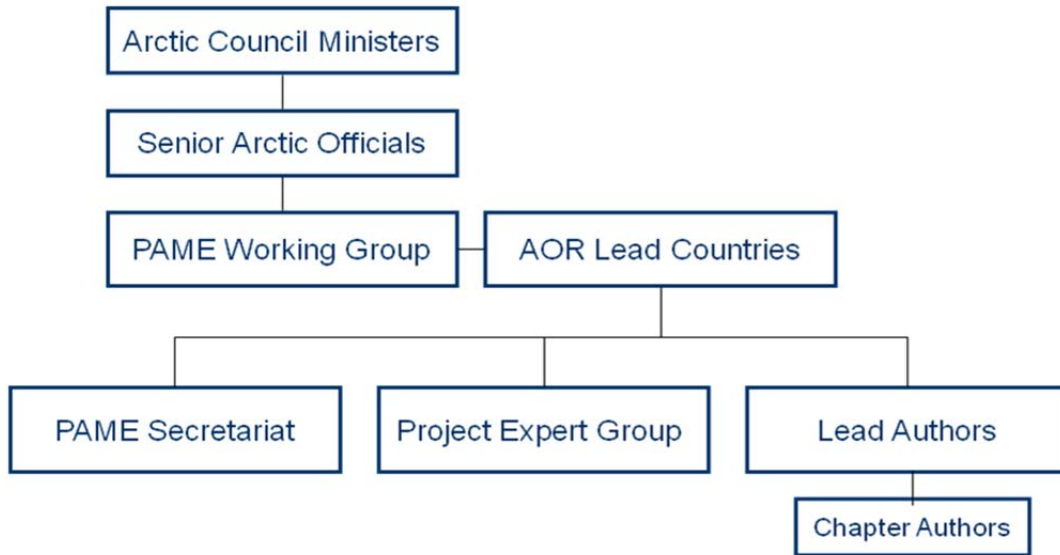
Detailed timeline for AOR Phase II is in Annex B

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## Annex A - Project Management

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# AOR Phase II Project Management



## Annex B - AOR Phase II Timeline 2011-2013<sup>1</sup>

2011						
	June					
<b>Phase II:</b>						
<b>Phase II</b>	Terms of Reference (June 1 <sup>st</sup> )					
	Workshop Agenda (June 1 <sup>st</sup> )					
	Propose Project Manager Candidates (June 13 <sup>th</sup> )					
	Invitations for workshop (June 13 <sup>th</sup> )					
2011						
	July	August	September	October	November	December
<b>Meetings</b>			PAME II – 2011 Workshop and AOR Conference (Sept. 19 <sup>th</sup> - 23 <sup>rd</sup> )		SAO Meeting (Nov. 8 <sup>th</sup> – 9 <sup>th</sup> )	
<b>Reports</b>	-			PAME II- 2011 Summary Report	AOR P2, PAME Progress Reports to SAOs	

<sup>1</sup> May be adjusted in accordance with other planned Arctic Council-related meetings



<b>Milestones</b>	Secure <del>Project</del> Manager (July 18 <sup>th</sup> )  Confirm <del>Workshop</del> Presenters (July 18 <sup>th</sup> )	<b>AOR</b> -Update P1 report -P2-Outline	-					<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <b>October 2011 – January 2013:</b> Project Coordinator and Co-Leads to lead development of the Phase II Report and Recommendations, consulting with experts, etc. and facilitate negotiations on the Report and Recommendations.       </div>
<b>2012</b>								
	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>		
<b>Meetings</b>	Leads Meeting (TBC)		27-29 March meeting in Washington D.C.	PAME I – 2012 (March/April - TBC)	Deputy Meeting (TBC) Ministers			
<b>Reports</b>			- Progress Report to PAME/SAO	Summary Report - PAME I, AOR				
<b>Milestones</b>	<b>Chapter Abstracts Annotated Outlines</b> (end of Jan):		<b>First draft of chapters or detailed abstracts</b> (end of March)					<b>“zero” draft AOR report</b> (rough first draft)
<b>2012</b>								
	<b>July</b>	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>		
<b>Meetings</b>	Leads Meeting (TBC)		PAME II – 2012 Workshop/Conference (CANADA - TBC)		SAO Meeting (TBC)	Leads Meeting - Final Draft (TBC)		

<b>Reports</b>			PAME II- 2012 - Summary Report	Reports to SAOs - AOR - PAME Progress		
<b>Milestones</b>			1 <sup>st</sup> draft AOR Report to include draft Recommendations	2nd draft AOR Report		
<b>2012</b>						
	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>
<b>Meetings</b>		PAME I – 2013 (TBC)	SAO MEETING (TBC)		AC Ministerial (TBC)	
<b>Reports</b>						
<b>Milestones</b>	Final AOR Draft - Revisions by Author	AOR Report: - PAME Endorsement	AOR Report - SAO endorsement		AOR Report - AC Ministerial endorsement	
	Recommendations - Final negotiations	WG				



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