

Arctic Council **Status on Implementation of the AMSA 2009 Report Recommendations**

MAY 2013







Arctic Council

**Status on Implementation of the
AMSA 2009 Report Recommendations**

MAY 2013

Guide to Acronyms and Abbreviations

<u>ACRONYM</u>	<u>DEFINITION</u>	<u>ACRONYM</u>	<u>DEFINITION</u>
ABA	Arctic Biodiversity Assessment	MARPOL	<i>International Convention for the Prevention of Pollution from Ships</i>
AIA	Aleut International Association	MEPC	Marine Environment Protection Committee (IMO Committee)
AIS	Automatic Identification System	MPA	marine protected area
AMAP	Arctic Monitoring and Assessment Program (Arctic Council working group)	MSC	Maritime Safety Committee (IMO Committee)
AMATII	Arctic Maritime and Aviation Transportation Infrastructure Initiative	MSI	Maritime Safety Information
AMSA	Arctic Marine Shipping Assessment	NAV	Safety of Navigation (IMO Sub-committee)
AOR	Arctic Ocean Review	NAVAREA	Navigational Area
BC	black carbon	NGO	non-governmental organization
BLG	Bulk Liquids and Gases (IMO Sub-committee)	NOAA	National Oceanic and Atmospheric Administration
CAFF	Conservation of Arctic Flora and Fauna (Arctic Council Working Group)	NOx	nitrogen oxide
CBMP	Circumpolar Biodiversity Monitoring Program	OSR	oil spill response
CSN	CleanSeaNet	PAME	Protection of the Arctic Marine Environment (Arctic Council Working Group)
EBSA	ecologically or biologically significant area	PEC	Pilot Exemption Certificate
EMSA	European Maritime Safety Agency	PM	particulate matter
ENC	electronic navigation chart	PSSA	Particularly Sensitive Sea Area
EPPR	Emergency Prevention, Preparedness and Response (Arctic Council Working Group)	RP3	Recommended Practices for Arctic Oil Spill Prevention
ERMA	Environmental Response Management Application	SAR	search and rescue
EU	European Union	SAREX	search and rescue exercise
FMI	Finnish Meteorological Institute	SDI	spatial data infrastructure
FSUE	Federal State Unitary Enterprise	SDWG	Sustainable Development Working Group (Arctic Council Working Group)
GHG	greenhouse gas	SOx	sulphur oxide
GMDSS	Global Maritime Distress and Safety System	SRS	ship reporting system
HFO	heavy fuel oil	TEK	Traditional Ecological Knowledge
IHO	International Hydrographic Organization	UNCLOS	<i>United Nations Convention on the Law of the Sea, 1982</i>
IMO	International Maritime Organization	VOS	Voluntary Ships Observing Scheme
IMSO	International Maritime Satellite Organization	WMO	World Meteorological Organization
KSAT	Kongsberg Satellite Service		



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EXECUTIVE SUMMARY

The 2013 Status on Implementation of the AMSA 2009 Report Recommendations (the 2013 Status Report) represents the second biennial effort, undertaken by the Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group, to document progress on recommendations contained within the original Arctic Marine Shipping Assessment 2009 Report (AMSA) over the course of the 2011–2013 reporting period.

The AMSA — approved at the 2009 Ministerial Meeting in Tromsø and co-led by Canada, Finland, and the United States — is the culmination of a multi-year Arctic Council effort that assessed ships, their uses of the Arctic Ocean, their potential impacts on humans and the Arctic marine environment, and their marine infrastructure requirements. While circumpolar in scope, the AMSA also considers regional

and local perspectives in its assessment of current and future Arctic marine operations and activities.

The outcomes of the AMSA are various key findings and associated recommendations that, when considered together, represent a strategic framework for future action on enhancing marine safety and protecting the marine environment. More specifically, all 17 recommendations fall under three broad interrelated themes: Enhancing Arctic Marine Safety, Protecting Arctic People and the Environment, and Building Arctic Marine Infrastructure. The first official Status Report, released in 2011 at the Arctic Council Ministerial Meeting in Nuuk, highlighted the significant progress made in advancing these recommendations yet also drew attention to areas where progress is limited or where more work may be needed.

The 2013 Status Report similarly aims to capture the work undertaken by Arctic States, Permanent Participants, Arctic Council Working Groups and others, that respond to the recommendations articulated in the AMSA. Picking up where the 2011 Status Report left off, this most recent iteration continues to focus on initiatives and activities with regional and circumpolar significance while also providing a benchmark against which to evaluate action and progress.

For example, as this document highlights, in the time since the release of the 2011 Status Report, the first legally binding agreement negotiated under the auspices of the Arctic Council came into force. *The Agreement on Cooperation in Aeronautical and Maritime Search and Rescue in the Arctic* (the Arctic SAR Agreement) was signed by all eight Arctic States at the Arctic Council Ministerial Meeting in Nuuk and entered into force in January 2013. Similarly, negotiations towards a legally-binding *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response* in the Arctic have been completed with

signature anticipated at the May 2013 Arctic Ministerial Meeting. Combined, these steps toward treaty-making represent new and significant developments within the Arctic Council.

This report also documents progress being made within various relevant international fora, including at the International Maritime Organization (IMO), where negotiations continue towards the development of a mandatory code for ships operating in polar waters (Polar Code).

Given the rate of transformation currently being experienced in the Arctic (for example, since the release of the 2011 Progress Report, the Arctic summer sea ice extent reached a new record low), the need for routine updates and information exchange on the various efforts designed to address larger themes of ship safety and marine environmental protection is critical. Accordingly, monitoring and implementation of the AMSA recommendations will continue to be an ongoing part of the PAME agenda, including regular reports to the Arctic Council Ministers.



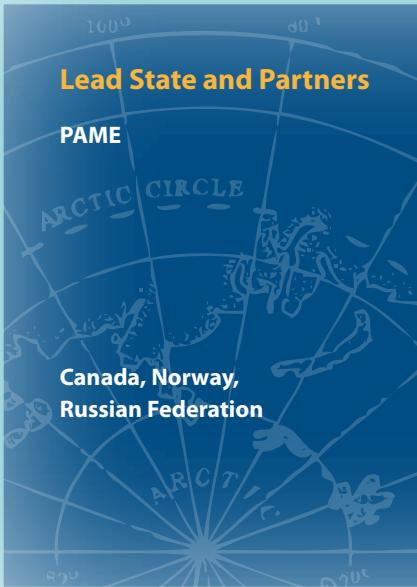
STATUS OF PROGRESS ON RECOMMENDATIONS¹

THEME I — Enhancing Arctic Marine Safety



I(A). Linking with International Organizations

“That the Arctic states decide to, on a case by case basis, identify areas of common interest and develop unified positions and approaches with respect to international organizations such as: the International Maritime Organization (IMO), the International Hydrographic Organization (IHO), the World Meteorological Organization (WMO) and the International Maritime Satellite Organization (IMSO) to advance the safety of Arctic marine shipping; and encourage meetings, as appropriate, of member state national maritime safety organizations to coordinate, harmonize and enhance the implementation of the Arctic maritime regulatory framework.”



Lead State and Partners

PAME

Canada, Norway,
Russian Federation

Status of Recommendation I(A)

PAME member governments submitted and considered reports between 2011 and 2013 on the Arctic activities of IMO, IMSO, IHO, and the Arctic Regional Hydrographic Commission. PAME will continue to monitor the Arctic activities of these and other relevant international organizations and look for opportunities as appropriate to coordinate, harmonize and enhance implementation of the Arctic maritime regulatory framework. For example, the PAME I(B) project identifying options for mitigating the risks of vessel use and carriage of heavy fuel oil supports work on the Polar Code under development at IMO.

In recognition of the potential for significant increases in Arctic shipping as ice margins recede, the IMO and the IHO jointly expanded the Global Maritime Distress and Safety System (GMDSS) Maritime Safety Information (MSI) service to entirely cover the Arctic Ocean with the implementation of five new Navigational Areas (NAVAREAs). Two of these areas have been assigned to Canada, two more assigned to Russia, and one to Norway.

1. Neither this Report nor the information it contains constitutes an assessment by any PAME member government of the consistency with international law, including the Law of the Sea Convention, of domestic laws, regulations, or other measures or resolutions identified or referenced herein. Further, while every effort has been made to document progress made on the AMSA recommendations, this report is not to be interpreted as an exhaustive nor fully comprehensive analysis.



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I(B). IMO Measures for Arctic Shipping

“That the Arctic states, in recognition of the unique environmental and navigational conditions in the Arctic, decide to cooperatively support efforts at the International Maritime Organization to strengthen, harmonize and regularly update international standards for vessels operating in the Arctic. These efforts include:

- *Support the updating and the mandatory application of relevant parts of the Guidelines for Ships Operating in Arctic Ice-covered Waters (Arctic Guidelines); and,*
- *Drawing from IMO instruments, in particular the Arctic Guidelines, augment global IMO ship safety and pollution prevention conventions with specific mandatory requirements or other provisions for ship construction, design, equipment, crewing, training and operations, aimed at safety and protection.”*

Lead State and Partners

PAME

PAME

Canada, Finland, Norway, Sweden, USA

Status of Recommendation I(B)

Through its member governments, PAME monitors and supports IMO’s development of a mandatory code for ships operating in polar waters (Polar Code). PAME member governments have also undertaken a variety of projects to support or complement development of the Polar Code, including gathering information on Arctic vessel traffic and identifying vessel incidents that have resulted in pollution of the marine environment.

Under the leadership of Norway, Russia and the United States, PAME has undertaken a project to identify risks associated with vessel use and carriage of heavy fuel oil (HFO) in the Arctic, possible effects on the environment of an HFO spill, and options for minimizing those risks with the ultimate objective of developing recommendations for international regulations that PAME member governments could pursue at the IMO. Phase I of the project was completed in 2011. Phase II is expected to be completed in the second half of 2013.

Several Arctic states are participating in an IMO effort to assess the impacts of black carbon emissions from international shipping on the Arctic. Possible measurement and control methods are under consideration.



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I(C). Uniformity of Arctic Shipping Governance

“That the Arctic states should explore the possible harmonization of Arctic marine shipping regulatory regimes within their own jurisdiction and uniform Arctic safety and environmental protection regulatory regimes, consistent with UNCLOS, that could provide a basis for protection measures in regions of the central Arctic Ocean beyond coastal state jurisdiction for consideration by the IMO.”

Lead State and Partners

PAME

USA, Russian Federation

Status of Recommendation I(C)

PAME completed Phase II of Arctic Ocean Review (AOR) project. The purpose of the project was to analyze potential gaps in global and regional measures for the conservation and sustainable use of the Arctic marine environment, identify opportunities, and make recommendations for the protection and sustainable use of the Arctic marine environment, including shipping activity.

In August 2012, both the U.S. and Russia deposited their instruments of accession to the *International Convention on the Control of Harmful Anti-fouling Systems on Ships*. Under the terms of the Convention, it entered into force for each country three months after the date of deposit.



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I(D). Strengthening Passenger Ship Safety in Arctic Waters

“That the Arctic states should support the application of the IMO’s Enhanced Contingency Planning Guidance for Passenger Ships Operating in Areas Remote from SAR Facilities, given the extreme challenges associated with rescue operations in the remote and cold Arctic region; and strongly encourage cruise ship operators to develop, implement and share their own best practices for operating in such conditions, including consideration of measures such as timing voyages so that other ships are within rescue distance in case of emergency.”

Lead State and Partners

Denmark, Norway, USA

Status of Recommendation I(D)

Norway and Denmark submitted an information paper to IMO’s Sub-committee on Ship Design and Equipment that identified many international, national, industry and NGO standards and guidelines that address safety and environmental protection best practices for cruise ship operations in polar waters. This was based on a paper submitted by the USA and Denmark to PAME I-2011. The PAME Chair also sent a letter to representatives of the cruise ship industry (Cruise Lines Industry Association, Association of Arctic Expedition Cruise Operators, and European Cruise Counsel) encouraging them to develop new or augment their own existing best practices for Arctic operations based on the paper submitted to IMO.



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I(E). Arctic Search and Rescue (SAR) Instrument

“That the Arctic states decide to support developing and implementing a comprehensive, multi-national Arctic Search and Rescue (SAR) instrument, including aeronautical and maritime SAR, among the eight Arctic nations and, if appropriate, with other interested parties in recognition of the remoteness and limited resources in the region.”

<p>Lead State and Partners</p> <p>Arctic Council</p> <p>Arctic Council</p> <p>Arctic States</p> <p>Russian Federation</p> <p>Russian Federation</p> <p>Russian Federation</p>	<p>Status of Recommendation I(E)</p> <p>The Agreement on Cooperation in Aeronautical and Maritime Search and Rescue in the Arctic (Arctic SAR Agreement) was signed by all eight Arctic states at the Nuuk Ministerial Meeting on May 12, 2011. The Arctic SAR Agreement entered into force on January 19, 2013 — 30 days after the date of receipt by the Depository (the Government of Canada) of the last notification that the Parties have completed their internal procedures required for entry into force.</p> <p>The first Arctic Council Search and Rescue exercise took place October 4–6, 2011 in Whitehorse, Yukon, Canada. Eighty delegates and observers from the eight Arctic Council member states took part in this tabletop exercise, which focused on strategic and operational aspects of aeronautical and maritime SAR in the Arctic.</p> <p>Arctic states participated in the first full scale mass rescue operation on September 11–14, 2012, called “SAREX Greenland Sea 2012.” The exercise included both an open sea search operation (simulating a mass rescue operation on a cruise ship) and an in-fjord rescue and evacuation operation off the north-eastern coast of Greenland.</p> <p>In 2011, the Marine Rescue Sub-Center was established in Port Tiksi and operates during the summer season. In 2012, the Marine Rescue Coordination Center Dikson was established and will operate year-round, as well as the Marine Rescue Sub-Center Pevek, functioning in the summer season.</p> <p>Rescue teams of the North Branch of FSUE “Baltic Salvage Company” with diving equipment and oil spill response equipment have been involved, on a regular basis, in carrying out emergency-rescue preparedness onboard the icebreakers FSUE “Atomflot” since 2010.</p> <p>Planning is underway for the construction and renovation of shore-based infrastructure, including administrative complexes, berthing facilities, warehouses for storage of rescue and Oil Spill Response (OSR) equipment in the Ports of Dikson, Tiksi, Pevek and Providenie.</p>
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THEME II — Protecting Arctic People and the Environment



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II(A). Survey of Arctic Indigenous Marine Use

“That the Arctic states should consider conducting surveys on Arctic marine use by indigenous communities where gaps are identified to collect information for establishing up-to-date baseline data to assess the impacts from Arctic shipping activities.”

Lead State and Partners	Status of Recommendation II(A)
CAFF	The forthcoming Arctic Biodiversity Assessment (ABA) includes a Traditional Ecological Knowledge (TEK) compendium of observations in its report. In addition, CAFF through the Circumpolar Biodiversity Monitoring Program (CBMP) is working with numerous partners across the Arctic to implement the Arctic Marine Biodiversity Monitoring Plan, which incorporates community-based monitoring and citizen science into its monitoring plans.
SDWG (Canada/ICC-Canada)	Phase II of the SDWGs “A Circumpolar-Wide Inuit Response to the AMSA” is broadening the consultative process with Inuit communities in carrying out an expanded survey to assess their current use of the sea and how it compares with records from early land and marine use studies. The expanded surveys cover Greenland, Russia (Chukotka), United States (Alaska), as well as broader surveys with Canadian Inuit.
Canada	In 2011, the Canadian Department of Fisheries and Oceans prepared a report entitled “Conversations with Nunavut Communities on Areas of Ecological Importance” that documented traditional Inuit knowledge of important environmental areas. This report was designed to complement an overall strategy to develop a network of MPAs.
Canada (Government of Nunavut)	Since 2007, the Government of Nunavut has been conducting coastal resource inventories. Coastal inventories document and map Inuit knowledge of land and marine use and locations of many coastal and marine species. As of 2012, 10 of the 25 Nunavut communities have completed inventories.
USA	The U.S. Bureau of Ocean Energy Management has continued to build on 30 years of studies related to subsistence use since the AMSA Report was published in 2009, especially in the Beaufort and Chukchi Seas and Bristol Bay area of the Bering Sea.
AIA and Saami Council	The Aleut International Association (AIA) and the Saami Council submitted to PAME meetings in 2011 and 2012 a paper entitled “Development of an Arctic Marine Use Survey Process, a Scoping Paper to Assess Possible Joint Efforts of PAME and other AC Working Groups” to establish baseline data to assess the impacts from Arctic shipping activities on indigenous communities.

Continued on the next page

II(A). Survey of Arctic Indigenous Marine Use *(continued from the previous page)*

Lead State and Partners

AIA

USA Native Corporation
Kawerak, Inc.

Northwest Arctic Borough

Status of Recommendation II(A)

In 2013 the AIA began work on the first phase of a three phase project on building an Arctic marine subsistence use mapping tool which will allow communities to produce scientifically justifiable maps of their subsistence use in the marine environment.

Kawerak, Inc. is conducting a major study to prepare maps showing seasonally defined habitat and subsistence use areas for seals and walrus on the U.S. side of the Bering Strait. The study involves collaboration with nine federally recognized tribes and, to date, has solicited information from 81 local experts.

In 2011, the Northwest Arctic Borough established a Subsistence Mapping Project to identify and map subsistence resources and inform decisions about energy and infrastructure development. The project seeks to foster cooperation with government agencies and provide a foundation for integrating scientific information with local and traditional knowledge.



II(B). Engagement with Arctic Communities

“That the Arctic states decide to determine if effective communication mechanisms exist to ensure engagement of their Arctic coastal communities and, where there are none, to develop their own mechanisms to engage and coordinate with the shipping industry, relevant economic activities and Arctic communities (in particular during the planning phase of a new marine activity) to increase benefits and help reduce the impacts from shipping.”



Lead State and Partners

Norway

Russian Federation

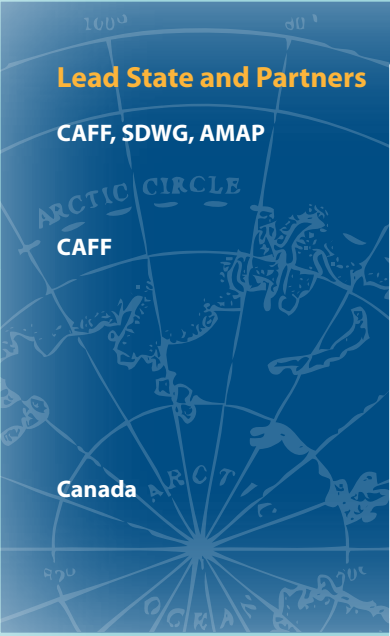
Status of Recommendation II(B)

In 2012, Norway launched BarentsWatch, a comprehensive monitoring and information system that will make relevant information and services related to sea and coastal areas more readily accessible to authorities, decision-makers and the general public.

In 2011 under two laws which give indigenous communities the right to compensation for losses suffered from economic activity damaging native habitats — Federal Law N40 (“On Amendments to the Federal Law”) and the Guarantees of the Rights of Indigenous Peoples of the Russian Federation — Gazprom provided the Yamal people with 765 million rubles (over US\$2 million) in compensation. In 2011, Varteganneft provided 6 million rubles to the Khanty-Mansiysk peoples.

II(C). Areas of Heightened Ecological and Cultural Significance

“That the Arctic states should identify areas of heightened ecological and cultural significance in light of changing climate conditions and increasing multiple marine use and, where appropriate, should encourage implementation of measures to protect these areas from the impacts of Arctic marine shipping, in coordination with all stakeholders and consistent with international law.”



Lead State and Partners

CAFF, SDWG, AMAP

CAFF

Canada


Status of Recommendation II(C)

In December 2012, CAFF, SDWG and AMAP completed a report identifying areas of heightened ecological and cultural significance within the Arctic marine environment. The report identifies approximately 99 such areas.

CAFF will work over the summer for a release of the Arctic’s protected areas indicator in late 2013, which will have a specific focus on the marine environment. The Arctic Biodiversity Assessment (ABA) and the Circumpolar Biodiversity Monitoring Program (CBMP) also provide the baseline information necessary to follow-up on this recommendation. Two key CBMP biodiversity monitoring plans (Freshwater and Marine) are currently being implemented and the Terrestrial ecological monitoring plan will begin implementation in 2013. All of the international steering committees for these plans will produce regular, periodic assessments with delivery of the first scheduled for 2016.

In 2011, Canada completed a process to identify and prioritize 38 new ecologically or biologically significant areas (EBSAs) in the Canadian Arctic. Canada will review and update its existing Western Arctic EBSA’s in 2013. These processes will serve as the foundation for the development of a network of MPAs.

II(C). Areas of Heightened Ecological and Cultural Significance *(continued from the previous page)*



Lead State and Partners

Denmark/Greenland

Russian Federation

USA

USA

Status of Recommendation II(C)

Denmark/Greenland finalized a national process to identify and prioritize marine areas of heightened ecological significance around Greenland in April 2011. Twelve areas were identified. Information and data generated from the national process was submitted as a contribution to the AMSA II(C) report. Building on that, Denmark/ Greenland has initiated a national process to identify measures relevant to Arctic marine shipping in six prioritized marine areas of heightened ecological significance (primarily within national jurisdiction). A pilot project on the three areas of highest priority has been initiated.

Within the last few years, the Russian Federation has designated about 30 percent of its Arctic territory as special protected natural areas. Particularly for inclusion in oil spill contingency plans, the Russian Federation determined that there are eight natural reserves, two wildlife sanctuaries, and one biosphere natural reserve. All of these special protected natural areas include areas within the marine environment.

The United States in collaboration with the State of Alaska through the Alaska Regional Response Team has developed maps of environmentally sensitive marine and coastal areas including the Bering, Chukchi and Beaufort Sea sand coasts, most recently updated in 2012.

In an ongoing fashion, the U.S. Bureau of Ocean Energy Management studies areas in the U.S. Arctic for ecological and cultural significance and uses the information to identify possible impacts from offshore oil and gas activities as well as to mitigate or defer such activities. The U.S. Bureau of Ocean Energy Management has also sponsored new environmental, physical oceanographic, meteorological, ice, and socio-economic studies (including subsistence) studies that are used in environmental impact assessments.



II(D). Specially Designated Arctic Marine Areas

“That the Arctic states should, taking into account the special characteristics of the Arctic marine environment, explore the need for internationally designated areas for the purpose of environmental protection in regions of the Arctic Ocean.”

Lead State and Partners

PAME

PAME

Canada, Denmark, Finland,
Norway, Russian Federation,
Sweden, USA

Denmark/Greenland

Status of Recommendation II(D)

PAME has initiated a project that will explore the need for, and as appropriate make recommendations regarding, internationally designated areas in the high seas area of the Arctic Ocean that warrant protection from the risks posed by international shipping activities. The project is expected to be completed in 2013.

PAME has examined the availability and adequacy of port waste reception facilities in Arctic ports and encouraged member governments to update information on such facilities in the IMO database established to track and publicize such information. Once IMO adopts a resolution designating a Special Area under MARPOL Annex I, III, IV or VI, the availability of adequate port reception facilities must be demonstrated before the Special Area restrictions on discharges from ships may become effective.

PAME member governments developed a comprehensive summary, submitted as a report to PAME II-2012, of measures and tools available through the IMO to protect the marine environment from international shipping activities. Such tools and measures include MARPOL Special Areas, routing measures and PSSAs.

Denmark/Greenland has initiated a process to evaluate associated protective measures that may be used in possible Particularly Sensitive Sea Areas (PSSA) designated through the IMO.





II(E). Protection from Invasive Species

“That the Arctic states should consider ratification of the IMO International Convention for the Control and Management of Ships Ballast Water and Sediments, as soon as practical. Arctic states should also assess the risk of introducing invasive species through ballast water and other means so that adequate prevention measures can be implemented in waters under their jurisdiction.”

Lead State and Partners

CAFF

ARCTIC CIRCLE

Russian Federation

Denmark/Greenland

USA

Canada

Status of Recommendation II(E)

The Arctic Biodiversity Assessment contains a component focusing on invasive species which provides a description of the current state of invasive species in the Arctic; creates a baseline for use in global and regional assessments of biodiversity; provides a basis to inform and guide future Arctic Council work on invasive species; identifies gaps in the data record; identifies key mechanisms driving change; and produces scientific and policy recommendations.

The Russian Federation ratified the *Ballast Water Management Convention* on May 24, 2012.

Denmark ratified the *Ballast Water Management Convention* in September 2012 and has enacted domestic implementing legislation. Furthermore, Denmark and Greenland are currently discussing a coordinated ratification and implementation of the Convention in Greenland, as this will require amendments to legislation in both countries.

As of October 31, 2012, 36 States representing 29.07% of the global merchant fleet have ratified the *Ballast Water Management Convention*. Canada, Sweden and Norway became parties to the Convention prior to 2011.

The U.S. issued regulations effective June 21, 2012, that establish a ballast water discharge standard based on the *Ballast Water Management Convention*. All ships discharging ballast water in U.S. waters must comply with the discharge standard according to the Implementation Schedule for Approved Ballast Water Management Methods.

Canada held a 2011 workshop and issued a report assessing the level of risk posed by ships transiting to and from Arctic ports for the introduction of aquatic invasive species.

Northern Sea Route Administration



II(F). Oil Spill Prevention

“That the Arctic states decide to enhance the mutual cooperation in the field of oil spill prevention and, in collaboration with industry, support research and technology transfer to prevent release of oil into Arctic waters, since prevention of oil spills is the highest priority in the Arctic for environmental protection.”

Lead State and Partners

EPPR

EPPR

EPPR

Norway

European Maritime Safety Agency (EMSA)

Status of Recommendation II(F)

EPPR in cooperation with other Arctic Council Working Groups and in accordance with the task given by the Arctic Council Ministerial Meeting in Nuuk on May 12, 2011, has collected recommendations and best practices in the prevention of marine oil pollution as part of the Arctic Council Recommended Practices for Oil Spill Prevention Project (RP3). The report from the RP3 project will be submitted to the 2013 Arctic Council Ministerial Meeting.

EPPR prepared the report “Arctic Emergencies: Current and Future Risks, Mitigation, and Response Cooperation”.


EPPR has initiated a project called: “Preventing Morbidity and Mortality Among Arctic Oil Spill Response Workers”. The purpose of this project is to conduct research, develop guidelines and recommend effective measures to prevent morbidity and mortality among oil spill response workers in the Arctic environment.

As of July 1, 2012, the Norwegian Pilotage Act and regulations issued pursuant to the Act were made applicable to Svalbard, thus introducing the state pilotage service, compulsory pilotage, and Pilot Exemption Certificate (PEC) for Svalbard. This is an important oil spill prevention measure. The same rules apply for waters around Svalbard as for mainland Norway, *i.e.*, vessels with a length of 70 meters or more and passenger vessels with a length of 24 meters or more are subject to compulsory pilotage when sailing in Svalbard internal waters. For vessels carrying dangerous and/or polluting goods the length limits are shorter.

EMSA is now operating CleanSeaNet (CSN), the EU’s near real-time satellite-based oil spill and vessel monitoring system which can be used in certain Arctic areas.

II(G). Addressing Impacts on Marine Mammals

“That the Arctic states decide to engage with relevant international organizations to further assess the effects on marine mammals due to ship noise, disturbance and strikes in Arctic waters; and consider, where needed, to work with the IMO in developing and implementing mitigation strategies.”



Lead State and Partners

CAFF

Russian Federation

Status of Recommendation II(G)

CAFF has finalized the Arctic Biodiversity Assessment (ABA) report for release at the 2013 Arctic Council Ministerial Meeting. The report describes the status and trends for Arctic biodiversity, the way it is used by humans and the various threats affecting it. The report provides a first ever description of the state of the Arctic's biodiversity. The assessment consists of four components: (1) *Arctic Biodiversity Trends 2010 — Selected Indicators of Change*, which provides a preliminary snapshot of status and trends of Arctic biodiversity; (2) a full scientific assessment of Arctic biodiversity, (3) a TEK Compendium; and (4) a Summary for Policy Makers. Further information can be accessed at <http://caff.is/marine>, www.cbmp.is, and <http://caff.is/assessments>.

In 2012, the Russian Federation identified the boundaries of an area in the Arctic (White Sea area) where harp seals congregate during certain times of the year and developed recommendations on how ship traffic can avoid harming the seals in this area. These recommendations were shared with the shipping industry.

II(H). Reducing Air Emissions

“That the Arctic states decide to support the development of improved practices and innovative technologies for ships in port and at sea to help reduce current and future emissions of greenhouse gases (GHGs), Nitrogen Oxides (NOx), Sulfur Oxides (SOx) and Particulate Matter (PM), taking into account the relevant IMO regulations.”



Lead State and Partners

Russian Federation

Member States through IMO (with USA Leadership)

Status of Recommendation II(H)

Based on IMO regulations and recommendations, the Russian Federation has determined operational energy efficiency indices, both for marine and river cargo ships, assessed an Energy Efficiency Design Index for some Russian ships constructed in the last ten years, and calculated the quantity of greenhouse gas emitted by marine and river transport vessels. Ice class ships were also considered in this study. The Russian Federation is also implementing a technical regulation that mandates all new Arctic ships be designed and constructed taking into account the requirements of MARPOL Annex VI's Chapter 4.

In recognition of the increasing awareness of the impacts of black carbon (BC) emissions on climate change, a Correspondence Group of IMO's Subcommittee on Bulk Liquids and Gases (BLG) was given a mandate to focus on BC emissions from international shipping that impact the Arctic. In doing so, it will develop a definition for BC, consider and identify the most appropriate methods of measurement, and identify and collate control measures to reduce the impact of BC emissions from international shipping. IMO's Marine Environmental Protection Committee (MEPC) will consider the results of this work at its 65th Session (May 13–17, 2013).

THEME III — Building the Arctic Marine Infrastructure



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III(A). Addressing the Infrastructure Deficit

“That the Arctic states should recognize that improvements in Arctic marine infrastructure are needed to enhance safety and environmental protection in support of sustainable development. Examples of infrastructure where critical improvements are needed include: ice navigation training; navigational charts; communications systems; port services, including reception facilities for ship-generated waste; accurate and timely ice information (ice centers); places of refuge; and icebreakers to assist in response.”

Lead State and Partners

PAME

CAFF

SDWG (Iceland, United States)

Denmark/Greenland

Finland

Russian Federation

Russian Federation

Status of Recommendation III(A)

At its September 2012 meeting, PAME reviewed information submitted by the USA regarding the World Meteorological Organization’s Voluntary Ships Observing (VOS) Scheme and adopted a decision to educate Arctic Council member governments and the shipping industry on how increased participation in the program is an extremely cost-effective measure for supporting Arctic marine safety, efficiency, and weather and climate prediction and research.

The Arctic Spatial Data Infrastructure (Arctic SDI) led by CAFF within the Arctic Council will create the framework and standards for spatial information exchange and integration.

Building on past efforts and projects from the PAME and SDWG working groups, the Arctic Marine and Aviation Transportation Infrastructure Initiative (AMATII) was formally approved in May 2012 with the goal of helping decision-makers evaluate northern infrastructure — ports, airports and response capability — by inventorying maritime and aviation assets in the Arctic. The AMATII contains three related deliverables with final approval anticipated for May 2013. These deliverables include an Arctic Maritime and Aviation Infrastructure Database, a web-based, searchable inventory of baseline public port and airport data; an Arctic Maritime and Aviation Infrastructure Map that hosts layers of port and airport infrastructure for a graphical representation of asset locations; and a Guidance Document that includes the proceedings of the Port and Airport Infrastructure Workshop, as well as case studies and illustrative stories of northern aviation and marine infrastructure. This project has been pursued with extensive support of the Institute of the North.

Denmark/Greenland is currently elaborating new sea charts for the Greenlandic west coast, from Kap Farvel in the south to Uummannaq in the north. Greenland is also evaluating possibilities to introduce a formalized requirement for ice guides. Both initiatives are expected to contribute to increasing navigational safety in Greenlandic territorial waters.

The Finnish Meteorological Institute (FMI) (including the Finnish Ice Service) is currently increasing its commitment to the Arctic and building its capability to offer weather and ice monitoring services to customers operating in the Arctic region.

The major ports in the Russian Arctic — including Murmansk, Archangelsk, Kandalksha, and Dudinka — are now capable of receiving ship-generated waste and have all developed Port Waste Management Plans. Murmansk can receive MARPOL Annex I, IV, and V wastes. The other three ports can receive bilge water and MARPOL Annex IV and V wastes.

The Admiral Makarov State Maritime Academy’s Maritime Training Center in St. Petersburg recently established courses for training navigators on sailing in icy conditions.

III(A). Addressing the Infrastructure Deficit *(continued from the previous page)*

Lead State and Partners	Status of Recommendation III(A)
Canada	<p>In 2012, a dedicated spill response barge became permanently stationed in Tuktoyaktuk Harbour. Additionally, a small craft harbour to service inshore commercial fishing and other marine operations is under construction in Pangnirtung, Nunavut. The harbour is expected to be operational in 2013.</p> <p>Several potential places of refuge for the Svalbard area have been surveyed. They are currently awaiting final approval before being released as official places of refuge.</p> <p>In 2010 the electronic navigation chart (ENC) coverage in the Svalbard area was extended with 17 new General ENCs. Based on inputs from the main stakeholders, a long term survey plan for the territorial waters of Svalbard has been developed. The guidance for the plan provides that the whole Svalbard area shall be covered by adequate ENC/navigational charts, except for a few areas that are seldom visited. Cruise traffic routes in the west and north will be prioritized. In 2011, a total of about 1700 km² was surveyed along the coast of Svalbard.</p>
Norway	
Norway	



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III(B). Arctic Marine Traffic System

“That the Arctic states should support continued development of a comprehensive Arctic marine traffic awareness system to improve monitoring and tracking of marine activity, to enhance data sharing in near real-time, and to augment vessel management service in order to reduce the risk of incidents, facilitate response and provide awareness of potential user conflict. The Arctic states should encourage shipping companies to cooperate in the improvement and development of national monitoring systems.”

Lead State and Partners

PAME

Status of Recommendation III(B)

Since 2011, PAME member governments have been actively exploring how to increase Arctic vessel traffic awareness. Member governments have shared information about their national vessel traffic monitoring systems, how other governments can request access to such information, and modalities for sharing such information. PAME has also hosted a presentation by the European Maritime Safety Agency (EMSA) and a commercial satellite AIS provider on current and evolving capabilities for increasing Arctic maritime domain awareness. PAME is exploring how it might work with and benefit from the services provided by EMSA.

Continued on the next page



III(B). Arctic Marine Traffic System *(continued from the previous page)*



Lead State and Partners

Norway, Russian Federation

Norway

Denmark

Russian Federation

USA

Status of Recommendation III(B)

In July 2012, the IMO Sub-Committee on Safety of Navigation (NAV) approved a joint Russian/Norwegian proposal for a mandatory ship reporting system in the Barents Area (Barents SRS). Provided adoption by the Marine Safety Committee (MSC) at its next session, the system will become effective in June 2013. The purpose of the system is to secure ships safe navigation within the Barents area, and to be able to initiate search and rescue (SAR) and pollution prevention measures around a relevant position, not only by using the available SAR units but also the participating ships known to be in that particular area.

In July 2010, Norway launched its first AIS satellite, AISSat-1. The satellite operates in a polar orbit at an altitude of 600 km. It is used by the Norwegian Coastal Administration and the Norwegian Coast Guard to monitor vessel traffic in remote areas, where before the traditional land-based stations just reached 40 nautical miles from shore. This small and innovative satellite has given a new dimension to the monitoring of ship traffic in the Arctic, and the AIS information has also successfully been used by Kongsberg Satellite Services (KSAT) in the near real-time oil spill and vessel detection services provided worldwide. A second satellite, AISSat-2, is planned to be launched in 2013.

Denmark has studied the possibility of utilizing AIS data received from polar orbiting satellites for improving the monitoring and tracking of marine activity in the waters around Greenland. The results so far are promising. It is possible to detect AIS signals from space, and the detection efficiency seems to be acceptable, particularly in remote areas with relatively low density of vessels. Satellite AIS services are now commercially available from at least two sources and the European Space Agency is in the process of establishing such capability for the EU in the longer term. A small experimental Danish satellite was launched in March 2013.

The Russian Federation adopted a federal law in July 2012 that establishes the institutional and technical requirements on safety of navigation in the Northern Sea Route in order to prevent pollution from ships.

Based on satellite AIS data, the U.S. submitted detailed information and several graphical maps to PAME in September 2012 on aggregate Arctic vessel traffic data for the period June 2011–June 2012.

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III(C). Circumpolar Environmental Response Capacity

“That the Arctic states decide to continue to develop circumpolar environmental pollution response capabilities that are critical to protecting the unique Arctic ecosystem. This can be accomplished, for example, through circumpolar cooperation and agreement(s), as well as regional bilateral capacity agreements.”

Lead State and Partners

Arctic States

Status of Recommendation III(B)

Pursuant to a decision taken at the 2011 Nuuk Ministerial Meeting, Arctic states negotiated a legally-binding *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic* for adoption at the 2013 Kiruna Ministerial Meeting.

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III(C). Circumpolar Environmental Response Capacity *(continued from the previous page)*





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III(D). Investing in Hydrographic, Meteorological and Oceanographic Data

“That the Arctic states should significantly improve, where appropriate, the level of and access to data and information in support of safe navigation and voyage planning in Arctic waters. This would entail increased efforts for: hydrographic surveys to bring Arctic navigation charts up to a level acceptable to support current and future safe navigation; and systems to support real-time acquisition, analysis and transfer of meteorological, oceanographic, sea ice and iceberg information.”

Lead State and Partners

CAFF

Canada, Denmark, Norway, Russian Federation, USA

Russian Federation

Norway

USA

Status of Recommendation III(D)

The Arctic Spatial Data Infrastructure (Arctic SDI), led by CAFF, will establish a joint technical collaboration among the national mapping agencies surrounding the Arctic to consolidate geographic reference data as a basis for analyzing and monitoring the Arctic environment

An Arctic Regional Hydrographic Commission was established in October 2010 by the five Arctic coastal States. The Commission has met annually since its formation to promote the exchange of hydrographic information, knowledge and data required to improve nautical charting to facilitate safe navigation and protection of the Arctic marine environment. A key interest of the Commission is to advance Arctic hydrographic data collection through use of new technologies and platforms of opportunity as an aid to improve modern chart coverage.

Since 2011, the Russian Federation’s Hydrographic Service has been investigating the Northern Sea Route’s least-studied areas, with specialized vessels surveying a 31,000 square km area of the sea floor. Survey results have been digitized and developed in electronic navigation charts. Sixty-eight marine electronic navigation charts were issued based on the survey results. By the end of 2012, two hundred charts were developed.

The Norwegian Pilot Guide consists of eight volumes of sailing directions for the Norwegian coast, Svalbard and Jan Mayen. The Norwegian Pilot Guide Volume 7, which covers Svalbard and Jan Mayen, was made available in English in July 2012.

In June 2011, the U.S. Office of Coast Survey published the “Arctic Nautical Charting Plan” which included descriptions of the foundational data needs for better charting in the U.S. Arctic and showed the outlines for 15 proposed new charts in the region. The first new chart, NOAA Chart 16161 — Approaches to Kotzebue, was published in May 2012. The next new chart, NOAA Chart 16190 — Bering Strait North, is planned for release in summer 2013. The U.S. also produces Sailing Directions (volumes 180–183) and the NOAA Coast Pilot (volume 9) to support navigation in U.S. and Arctic waters as well as 36 electronic navigational charts (ENCs) and 39 raster charts for U.S. waters included in the area covered by the Arctic Regional Hydrographic Commission.



