**PAME Shipping Related Recommendations - Follow Up Matrix**

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| **Arctic Council Mandate**  |  |  |
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 | **Mandate Source** | **Responsibility for Implementation** | **Link to other AC Mandate** | **Current/Future****Follow up actions** | **Status:**Complete/ Ongoing  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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. | AMSA IA | PAME & AC States  | AOR Rec. #11AOR Final Report Section 3.4 | * Ongoing efforts by PAME to link with international organizations and identify areas of common interest (e.g., IMO, ARHC, IICWG, IALA, IWC, NAMMCO), such as ocean noise and ship strikes
* See “Opportunities for Cooperation Action” on AOR Final Report pp. 40-41, which sets forth excellent list of options AC could pursue on shipping-related issues
 | Ongoing, but no new follow up activities identified at present. |
| **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 of the Arctic environment. | AMSA IB | AC States | AOR Rec. #3AOR Rec. #6 and AOR Final Report Section 3.4.3(11)AOR Final Report Section 3.3.5AOR Final Report Section 3.4.3(11)AOR Rec. #6AOR Rec. #6 | * IMO Mandatory polar code due to be completed in 2014
* [Support implementation of the Polar Code through collaborative approaches such as port state control guidelines]
* HFO Report Phase I and II finalized and submitted to PAME-1 2014
* IMO Efforts to address black carbon emissions
* Arctic Council Task Force on Black Carbon and Methane
* Arctic Council Task Force On Oil Spill Prevention
* Pursue AC “best practice” guidelines that encourage the carriage by ALL vessels of AIS transponders
 | Complete (2014/15)PAME member governments to consider report recommendations and take action as appropriatePAME to monitor?PAME to monitor and contribute if/as appropriate.PAME to monitor and contribute if/as appropriateNew PAME shipping project? |
| **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. | AMSA IC | PAME & Arctic States |  | * AMSA IID Report submitted to PAME-I 2014
* Arctic Ocean Review report
* Other State actions ongoing
 | PAME member governments to consider report recommendations and take action as appropriateThis is an ongoing item, but no new follow up follow up activities identified at present |
| **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. | AMSA ID | PAME | AOR Rec # 4 and Rec. #7AOR Final Report Section 3.4.3(9) | * Arctic Marine Tourism Project
 | Anticipated completion of AMTP in 2015, ongoing follow up required |
| **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. | AMSA IE | AC Member States |  | * Agreement on Cooperation on Aeronautical and Maritime Search And Rescue in the Arctic - signed by Arctic Ministers in May 2011
* Supporting SAR agreement actions ongoing
 | Complete |
| **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. | AMSA IIA | Permanent Participants and AC States | AOR Rec. #1AOR Final Report Section 3.4.3(5)  | * Some work completed under the ABA and by the Aleut International Association and by other Arctic states?
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| **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. | AMSA IIB | AC Member States/SDWG |  | * Ongoing work within Arctic States
 | Ongoing, but no new follow up identified at present- reporting only if identified by PAME member government |
| **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. | AMSA IIC | AMAP/SDWG | AOR Rec. #18 | * AMSA IIC Report identifying areas of heightened ecological significance completed by CAFF, SDWG and AMAP in 2013
* Actions to identify and/or protect those areas ongoing within each Arctic states’ jurisdiction
 | Ongoing by Arctic States |
| **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. | AMSA IID | PAMEAC Member States | AOR Rec. #13AOR Final Report Section 3.4.3(7) | * AMSA IID report finalised and submitted to PAME-I 2014
* PAME work to examine the availability of port waste reception facilities in the Arctic completed
 | PAME member governments to consider report recommendations and take follow-up action if/as appropriate.  |
| **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. | AMSA IIE | AC Member States | AOR Rec. #3 ABA Rec #9AOR Final Report Section 3.3.5AOR Final Report Section 3.4.3(2) | * ABA section on invasive species - a baseline for future work
* Ballast Water convention ratified by 36 states, including Canada, Sweden, Norway, Denmark and Russian Federation
* Encourage, support, and/or undertake a project in to research BWM systems that are effective in colder settings of polar regions and into anti-fouling systems that are durable on ships operating in ice covered waters.
 | Completed, but Iceland yet to ratify convention. Ongoing work within States needed to monitor and assess risks from invasive species.  |
| **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. | AMSA IIF | EPPRAC Task Force on Oil Spill Prevention | AC TF on Oil Spill PreventionAOR Rec. #18AOR Final Report Section 3.4.3(3) | * EPPR completed RP3 project in 2013, which included relevant recommendations
* AC Task Force currently working on Action Plan
* PAME project with assistant of consultant to study how best to address preparedness and response for hazardous bulk chemicals transported by vessels in the Arctic?
 | OngoingNew PAME project? |
| **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. | AMSA IIG | PAMECAFF | ABA Rec #3AOR Rec. # 11 & #12AOR Final Report Section 3.3.6 and Section 3.4.3(6) | * ABA addressed issues related to marine mammals and contained renewed recommendations
* IWC workshop to consider the impacts of noise on marine mammals planned for early 2014
* AOR Rec. #11 states Arctic Council should increase collaboration with IMO, IWC and NAMMCO for information sharing and cooperation between their respective working groups and sub-groups on cetacean-related issues such as ocean noise and ship strikes.
* AOR Final Report Section 3.3.6 states that “More emphasis and focus on impacts of increase Arctic marine operations on marine mammals is needed to delegations to IMO, IWC and NAMMCO.”
 | Ongoing, but new actions may be rolled into AOR/ABA recommendations follow upNew AC Working Project to contribute info to IWC’s Ship Strike Database? |
| **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. | AMSA IIH | AC Member States | AOR Rec #6AC Task Force on Black Carbon and Methane, AOR Final Report Section 3.4.3(11), PAME 2013-2015 Work Plan on IIH (p. 7) | * MARPOL Annex VI introduced
* IMO correspondence group on Black Carbon
* Arctic Council Task force on Black Carbon will make recommendations at 2015 ministerial
* PAME study with assistance of consultant to create an inventory of current ship air emissions in the Arctic?
 | Ongoing, expected that AC Task Force may guide new action itemsNew PAME Project? |
| **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. | AMSA IIIA | AC Member StatesPAMESDWG | AOR Final Report Section 3.4.3(8) | * Arctic States continue to build up the infrastructure individually within their own jurisdictions, including creating new charts, places of refuge, portside and vessel infrastructure
* AMATTII database created
* PAME to work with ARHC and member governments to assess and publicize current state of Arctic nautical charting and explore partnerships among member governments to leverage limited hydrographic research and nautical charting resources
 | Ongoing, mostly State responsibility for follow up actions.New PAME project?  |
| **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. | AMSA IIIB | PAME | AOR Final Report Section 3.3.1 (Monitoring of shipping operations – AIS – LRIT) AOR Final Report Section 3.4.3(4)PAME 2013-2015 Work Plan on IIIB (p. 7)PAME 2013-2015 Work Plan (p. 8) | * States continue to implement improved AIS capabilities for traffic monitoring
* PAME continues to welcome ideas for how to increase marine traffic awareness
* PAME to work with IALA to support the sustainable design, implementation and operation of aids to navigation as well as related infrastructure?
* Explore options for enhancing cooperation among Arctic States and other Flag States whose vessels sail in the Arctic on monitoring and surveillance of Arctic marine traffic; consider one or more agreements or arrangements to this end
* PAME will explore opportunities for updating the Arctic ship traffic data contained in the AMSA report for use in studies, assessments, trend analyses, and the development of recommendations that enhance Arctic marine safety and support protection of Arctic people and the environment.
 | Ongoing |
| **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. | AMSA IIIC | EPPR |  | * The agreement on *Marine Oil Pollution Preparedness and Response in the Arctic* was signed by Ministers at the 2013 Ministerial
* Follow up actions to implement the treaty ongoing
* Anything to propose regarding the second sentence of IIIC re: regional bilateral capacity agreements?
 | Completed  |
| **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. | AMSA IIID | AC Member States | EPPR RP3AC TF on Oil Spill PreventionAOR Final Report Section 3.3.4 | * Arctic Regional Hydrographic Commission established in 2010
* Arctic States continue to invest in Hydrographic data
* New Arctic METAREAS established
* CAFF Arctic Spatial Data Infrastructure (Arctic SDI) initiative
 | Ongoing, mostly State responsibility, instruments in place for regional cooperation |
| **The Arctic states should support work at the IMO and other international organizations with recognized competence to promote and advance safe, secure, reliable and environmentally sound shipping,** including through: timely completion and implementation of the Polar Code; efforts regarding training requirements for officers and crew of ships operating in polar waters; adoption as appropriate of ship routing and reporting measures (including vessel traffic services); and discussions regarding enhancement of weather and ice forecasting and nautical charts to aid navigation. Arctic states should also encourage ratification to enable entry into force and implementation of the Ballast Water Management Convention and research into ballast water management systems that are effective in colder settings of polar regions | AOR Rec. #3 | AC Member StatesPAME |  | * Current Activity:
* AMTP/Sustainable tourism initiative
* IMO Polar Code finalization
* Establishment of ARHC
* AC Task force on Black Carbon, Methane and SLCF
* AMSA IID report being finalized
* HFO Phase 1 and 2
* Continued ratification of ballast water convention
* IMO group on Black carbon
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| Arctic states should explore the possibility of developing voluntary guidelines and, if appropriate, **best practices in implementing such guidelines for sustainable tourism**. Moreover, that the role the cruise industry plays in facilitating tourism in the region and the impacts of this industry on Arctic peoples, ecosystems and the environment should be acknowledged. The Arctic Council should also give consideration towards the development of a broader sustainable tourism initiative. | AOR Rec #4 | PAMESDWG | AMSA ID | * Arctic Marine Tourism Project (AMTP)
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| Arctic states should explore, within an appropriate time after the mandatory Polar Code has been adopted, **collaborative approaches to encourage effective implementation of any future related IMO measures** for the Arctic, including the possible development at IMO of port state control guidelines and/or initiatives within existing port state arrangements | AOR Rec #5 | AC Member StatesPAME |  |  |  |
| Arctic states should support **ongoing work at the IMO to address black carbon emissions** from international shipping in Arctic waters including considering amendments to MARPOL or other IMO instrument. | AOR Rec #5 | AC Member StatesPAME | AMSA IIH |  |  |
| Arctic States should consider approaches, including at IMO, to address safety and environmental concerns with respect to other types of vessels that, due to their size, routes, and nature of activity, may not be subject to the Polar Code | AOR Rec #7 | AC Member StatesPAME |  |  |  |
| **The Arctic Council should increase collaboration with IMO, IWC and NAMMCO** for information sharing and cooperation between their respective working groups and sub-groups on cetacean-related issues such as ocean noise and ship strikes and consider Ecosystem-based Management (EBM). Additionally, Arctic states should consider taking more proactive efforts in the IMO, IWC and NAMMCO on these issues such as by contributing to the IWC ship strike database. | AOR Rec #11 | AC Member StatesPAME EBM Expert GroupCAFF | AMSA IIGABA Rec #6 | * IWC Workshop
* AMSA IIC and IID reports
 |  |
| **Develop guidelines and implement appropriate spatial and temporal measures** where necessary to reduce human disturbance to areas critical for sensitive life stages of Arctic species that are outside protected areas, for example along transportation corridors. Such areas include calving grounds, den sites, feeding grounds, migration routes and moulting areas. This also means safeguarding important habitats such as wetlands and polynyas. | ABA Rec #6 | CAFFPAME | AMSA IID | AMSA IIC Report |  |
| **Reduce the threat of invasive alien/non-native species to the Arctic** by developing and implementing common measures for early detection and reporting, identifying and blocking pathways of introduction, and sharing best practices and techniques for monitoring, eradication and control. This includes supporting international efforts currently underway, for example those of the International Maritime Organization to effectively treat ballast water to clean and treat ship hulls and drilling rigs. | ABA Rec #9 | PAMECAFF | AMSA IIE | * AMSA II(D)- Specially designated Arctic Marine Areas
* "Developing a new Arctic Council Arctic
* Marine Strategic Plan (AMSP)"
* "Framework for an Arctic MPA network"
 |  |
| **Reduce the threat of pollutants to Arctic biodiversity.**a. Support and enhance international efforts and cooperation to identify, assess and reduce existing and emerging harmful contaminants.b. Support the development of appropriate prevention and clean up measures and technologies that are responsive to oil spills in the Arctic, especially in ice-filled waters, such that they are ready for implementation in advance of major oil and gas developments.c. Encourage local and national action to implement best practices for local wastes, enhance efforts to clean-up legacy contaminated sites and include contaminant reduction and reclamation plans in development projects. | ABA Rec #11 | AMAPEPPR/PAME (b) |  |  |  |
| **Hazardous ice detection, forecasting and Monitoring-** In order to improve the detection and forecasting of hazardous sea ice in areas of offshore oil and gas operations and shipping, it is recommended that Arctic Council states cooperate to improve the hazardous ice detection and monitoring programs for Arctic waters. This includes satellite services, and the production and dissemination of ice maps in real time. It is also recommended that the Arctic Council expand the investigation into the use of Unmanned Aerial Vehicles(UAV) in the Arctic to include monitoring ice conditions in major Arctic shipping lanes and providing operational support for oil spill response. | EPPR RP3 | PAME | AMSA IIIBAMSA IIID | AC Task Force on UAV |  |
| **Circumpolar marine environment risk assessment (CMERA).**  It is recommended that the Arctic Council inventory existing risk assessments in the Arctic, identify common elements and environmental differences, as well as methodologies for undertaking these activities, and conduct a circumpolar marine environment risk assessment, if appropriate, in order to better link the sensitivities of the Arctic marine environment with scientific calculations on risks caused by shipping and offshore oil and gas activities in the Arctic Ocean both presently and in the future. | EPPR RP3 | EPPR(Inventory of existing risk assessments for Arctic shipping activities shouldn’t be that much of a challenge. And shouldn’t that be PAME, not EEPR? |  | EPPR- CMERA Workshop in fall 2013 |  |
| **Facilitate oil spill prevention research and regulatory cooperation** -It is recommended that the Arctic Council establish a mechanism whereby regulators are able to share information on best practices, processes, regulatory approaches as well as compliance and operational information (e.g. near-miss data). Analysis of identified trends can be undertaken and various data collection done in an effort to identify Arctic specific prevention practices while fostering circumpolar collaboration through the pooling of resources. The initial results of this initiative could include the creation of a joint database and regular meetings of regulators. Over time, it has the potential to develop into an Arctic Oil Pollution Prevention Centre of Excellence. Ensure appropriate infrastructure is in place for emerging Arctic shipping lanes. | EPPR RP3 | PAME/EPPR | AMSA IIFAC TF on Oil Spill Prevention | * Item in TF Action Plan (future actions)
 | Ongoing |
| **Ensure appropriate infrastructure is in place for emerging Arctic shipping lanes** -To ensure safe development and mapping of emerging Arctic shipping lanes in order to prevent oil pollution incidents, it is recommended that the Arctic Council conduct an analysis of existing and emerging shipping lanes, identify gaps in infrastructure and mapping, and work towards enhancing the safety of Arctic shipping lanes. | EPPR RP3 | PAME | AMSA IIIA |  |  |