

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13)

# Arctic Council

## Arctic Marine Strategic Plan

### 2015-2025

*Protecting Marine and Coastal Ecosystems in a Changing Arctic*

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## **The Arctic Marine Strategic Plan 2015-2025**

The Arctic Council is a high-level intergovernmental forum to provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of Arctic inhabitants, including Arctic indigenous peoples on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic. In 2002, the Arctic Council agreed to develop a strategic plan for protection of the Arctic marine environment. In fulfilment of this agreement, the first Arctic Marine Strategic Plan was published in 2004.

The decade since 2004 has been one of rapid climate change, increasing human activity and new emerging threats such as ocean acidification. The speed, pervasiveness and diversity of Arctic change create new challenges and opportunities for sustainable development and environmental protection. In order to address these issues, a second Arctic Marine Strategic Plan for the next decade has been developed by the Working Group for the Protection of the Arctic Marine Environment (PAME) in cooperation with the Arctic Council members, its subsidiary bodies and observers.

This Strategic Plan addresses both short-term and long-term challenges and opportunities, through forty Strategic Actions comprised under four Strategic Goals:

Goal 1: Improve knowledge of the Arctic marine environment, and continue to monitor and assess current and future impacts on Arctic marine ecosystems.

Goal 2: Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.

Goal 3: Promote safe and sustainable use of the marine environment, taking into account cumulative environmental impacts.

Goal 4: Enhance the economic, social and cultural well-being of Arctic inhabitants, including Arctic indigenous peoples and strengthen their capacity to adapt to changes in the Arctic marine environment.

The Arctic Council working groups will coordinate and cooperate closely in its implementation, and the Arctic Council will need to look to governments and agencies for support and participation.

There is also an opportunity for joint action among the Arctic states to promote these strategic actions in relevant international and regional fora.

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## 1. Introduction

The Arctic Council's Arctic Marine Strategic Plan 2015-2025 (AMSP) provides a framework to guide its actions to protect Arctic marine and coastal ecosystems and to promote sustainable development. The AMSP articulates how the Arctic Council can increase its understanding of the impacts of human activities, climate change and ocean acidification.

The AMSP recognizes the importance of acquiring a better understanding of Arctic change so that actions can be taken that allow Arctic inhabitants, including Arctic indigenous peoples to further adapt to the change. The strategic actions identified in the AMSP will guide the work of the Arctic Council and its subsidiary bodies in the coming decade.

## 2. Vision

The Arctic Council's vision for the Arctic marine environment is:

***Healthy, productive, and resilient Arctic marine ecosystems that support human well-being and sustainable development for current and future generations.***

## 3. Strategic Goals

The goals of the 2015-2025 Arctic Marine Strategic Plan are to:

- Goal 1 **Improve knowledge of the Arctic marine environment, and continue to monitor and assess current and future impacts on Arctic marine ecosystems.**
- Goal 2 **Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.**
- Goal 3 **Promote safe and sustainable use of the marine environment, taking into account cumulative environmental impacts.**
- Goal 4 **Enhance the economic, social and cultural well-being of Arctic inhabitants, including Arctic indigenous peoples and strengthen their capacity to adapt to changes in the Arctic marine environment.**

## 4. Scope

The AMSP covers all Arctic marine areas and relates to all key activities affecting Arctic marine ecosystems; including coastal zones, river basins and other areas that are connected to the marine environment. There is no agreed definition of the geographical extent of the Arctic. Arctic Council member states define their relevant Arctic areas.

The AMSP addresses stressors on the Arctic marine environment regardless of whether or not they originate from within or outside the region, recognizing that Arctic marine areas are connected to the rest of the world through chemical, physical, biological and human interactions.

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[\*\*NOTE: include a map on the inside cover – the same as the 2004 AMSP on “Arctic Seas and Coastal Areas”]

## 5. A Changing Arctic

Arctic marine and coastal ecosystems contain abundant natural resources, are largely pristine, and support a wide array of ecosystem services that are necessary to the well-being of people living in the Arctic and benefit all people on a global scale.

Social, environmental, and economic changes occurring in many Arctic societies are affecting the culture and ways of life of people in the Arctic, including notably, indigenous peoples’. These changes can be expected to affect human health as well as the health of the marine environment. Arctic indigenous peoples have proven to be highly adaptable, securing their livelihood in a dynamic and challenging environment. However, the rate, magnitude and diversity of current and projected changes in the region may challenge the adaptive capacities and range of adaptive choices available to Arctic indigenous peoples and local communities.

[Arctic ecosystems are changing rapidly as a result of climate change and human activities with effects both inside and outside the Arctic region. Climate change, ocean acidification and long range transport of air pollution are ~~all~~ is mostly a result of activities outside the Arctic region, while increased activity within the Arctic is also ~~contributing~~ inge to increased pressures and risks. Assessments carried out over the last decade under the auspices of the Arctic Council (see Box 1) have improved our current understanding of changing Arctic conditions and their impact on the Arctic environment. However, there remain a great number of unsolved questions about how human activities are contributing to rapid changes in the Arctic climate and ecosystems, in particular regarding the complex interactions among atmospheric, oceanic, and ecological processes. From the research conducted to date, we have learned that there is ~~The assessments show~~ an unprecedented and increasing strain on the Arctic marine environment, with climate change representing a particularly grave ~~by far the most serious~~ threat].

Climate change has also affected the Arctic more rapidly and fundamentally than any other region in the world, primarily as a result of activities occurring far from the

### Box 1: Examples of Relevant Arctic Council Work

- ✓ Arctic Human Development Report (AHDR 2004)
- ✓ Arctic Climate Impact Assessment (ACIA 2005)
- ✓ Arctic Marine Shipping Assessment (AMSA 2009)
- ✓ Offshore Oil and Gas Guidelines (2009)
- ✓ Assessment 2007: Oil and Gas Activities in the Arctic—Effects and Potential Effects, 2010 (OGA)
- ✓ Snow, Water, Ice and Permafrost in the Arctic assessment (SWIPA 2011)
- ✓ Arctic Biodiversity Assessment (ABA 2013)
- ✓ Arctic Ocean Acidification Assessment, 2013
- ✓ Adaptation Actions for a Changing Arctic (AACA)
- ✓ Recommended Practices in Oil Pollution Prevention (EPPR 2013)
- ✓ Identification of Arctic Marine Areas of Heightened Ecological and Cultural Significance, 2013 (AMSA IIC)
- ✓ Arctic Ocean Review (AOR) Final Report (2013)

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13) Arctic region. The UN Intergovernmental Panel on Climate Change (IPCC) concluded in its Fourth Assessment Report (2007) that average Arctic temperatures have increased at almost twice the global average rate in the past 100 years. In its Fifth Assessment Report (2014), the IPCC confirmed that the Arctic is continuing to experience rapid climate change with reductions in sea ice and permafrost. The IPCC predicts that a nearly ice-free Arctic Ocean at the end of the summer season (September) is likely before the middle of this century.<sup>1</sup> Climate change is by far the most serious threat to Arctic biodiversity and current trends point to major transformative changes in ecosystems within a human life span. Such transformative changes include possible loss of entire habitats, such as multi-year sea ice.<sup>2</sup> Ocean acidification, primarily caused by the ocean's absorption of increased levels of CO<sub>2</sub> in the atmosphere, is occurring rapidly throughout Arctic marine waters. Ocean acidification can result in reduced formation of marine crustacean's shells and organism growth, which could in turn affect the food supply for fish, birds and mammals. The economic impact of ocean acidification could be substantial.

Increasing economic activity is another driver of change in the Arctic. Oil and gas production, mining, shipping, fishing, aquaculture and tourism is already taking place in the Arctic and can further facilitate social and economic development of the Arctic communities through increased infrastructure investment, increased tax revenues for local and state budgets and other ripple effects such as increased employment. Although increased shipping, petroleum activity and extraction of minerals represent important opportunities for

“Three out of four indigenous people perceive climate change to be a problem in their communities and more than 50 per cent mention local contaminated sites, pollution of local lakes and streams and pollution from industrial development as problems in the region. ...despite the rapid changes in the Arctic, most indigenous peoples have maintained their traditional subsistence activities.” (Ref: Survey of Living Conditions in the Arctic (SLiCA) SDWG, 2011)

the Arctic communities, this also entails environmental and social challenges that must be handled in the best possible way. The Arctic is already a major recipient of chemical pollutants, such as mercury and persistent organic pollutants (POPs) carried to the Arctic by long range atmospheric winds and oceanic currents. Arctic ecosystems and the Arctic peoples are exposed to these pollutants through the food chain at levels that are of concern to environment and health authorities. Due to increased awareness and understanding of the impacts that long range pollutants have on the health of people and wildlife in the Arctic, global action is being taken to reduce their sources.<sup>3</sup>

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<sup>1</sup> Climate Change 2013: The Physical Science Basis, Fifth Assessment Report: Summary for Policy Makers, Intergovernmental Panel on Climate Change 2013

<sup>2</sup> Arctic Biodiversity Assessment, CAFF 2013

<sup>3</sup> Global Atmospheric Mercury Assessment; Human Health Assessment 2009; Persistent Organic Pollutants in the Arctic 2009; Arctic Pollution 2009; .....

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## 6. Principles and approaches

The United Nations Convention on the Law of the Sea (UNCLOS) is the overarching legal framework for human activities that take place in the Arctic marine environment and is the basis for national, regional and global action and cooperation in the marine sector in the Arctic. There is a widely accepted and predictable legal framework for international cooperation and collaboration in a region that has long been characterized by peace and stability. This Strategic Plan is consistent with the rights and obligations covered under UNCLOS and applicable international and regional agreements. Furthermore, the AMSP is based on widely recognized principles and approaches such as sustainable development, the precautionary approach, the polluter pays principle, and Ecosystem Based Management.

### **Ecosystem Based Management**

Ecosystem Based Management (EBM) is a cornerstone of the work of the Arctic Council and an important principle to the Arctic States.

EBM is defined by the Arctic Council as per the 2013 Kiruna Declaration:

*“the comprehensive integrated management of human activities based on best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of ecosystems thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.”*

EBMs is the integrated management of human activities aimed at maintaining healthy ecosystems.

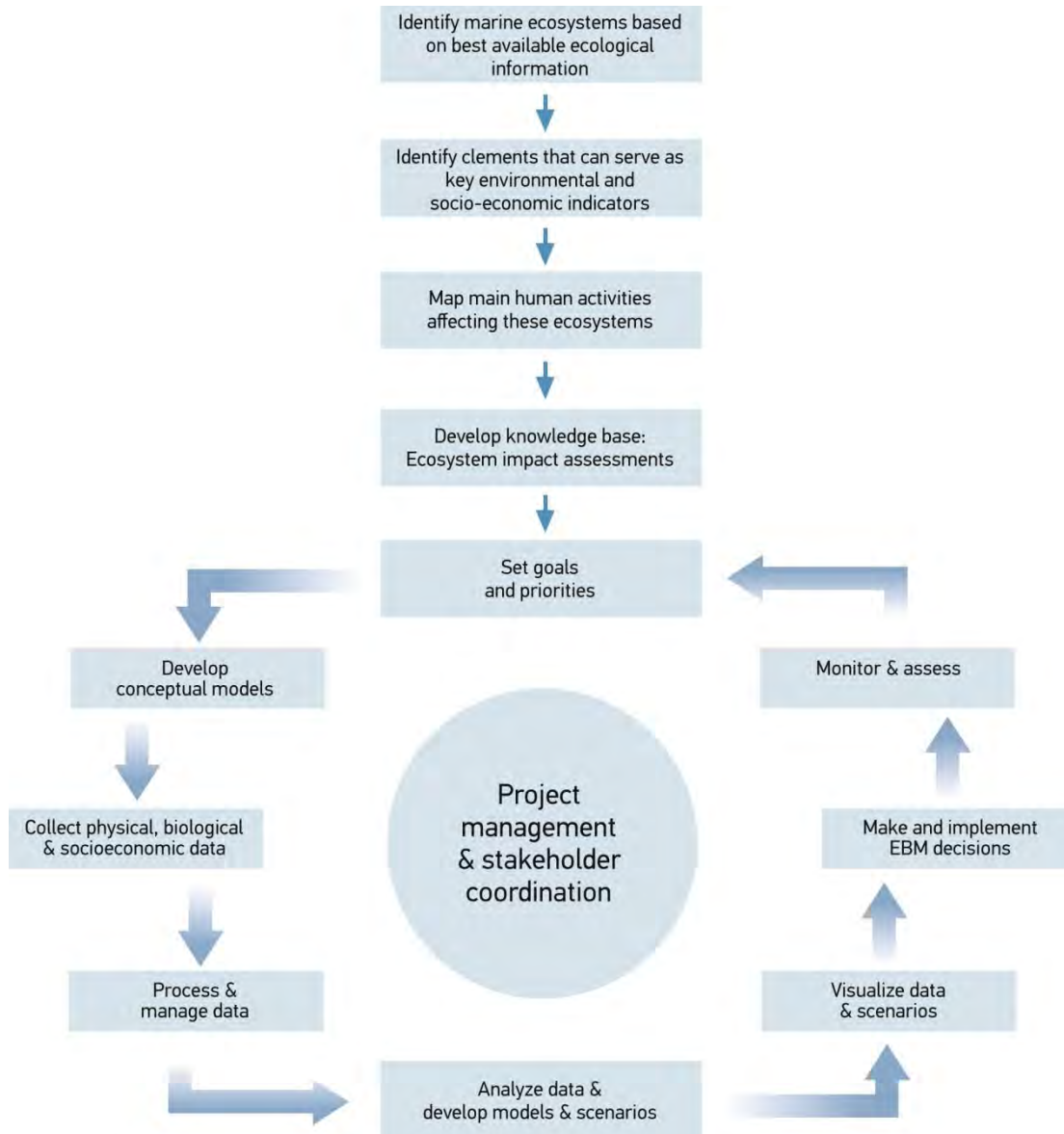
EBM is increasingly being implemented worldwide in recognition that traditional single-sector and single-resource approaches to management are inadequate. The Arctic Council has identified the principles, needs, and opportunities to implement EBM in the Arctic (see Box 2)

In applying EBM as an overarching approach and putting it into practice through Strategic Actions, Arctic states and observers will have the opportunity to further promote a common

### **Box 2: Principles of Arctic Ecosystem Based Management**

1. EBM supports ecosystem resilience in order to maintain ecological functions and services.
2. EBM recognizes that humans and their activities are an integral part of the ecosystem as a whole, and that sustainable use and values are central to establishing management objectives.
3. EBM is place-based, with geographic areas defined by ecological criteria, and may require efforts at a range of spatial and temporal scales (short-, medium- and long-term).
4. EBM balances and integrates the conservation and sustainable use ecosystems and their components.
5. EBM aims to understand and address the cumulative impacts of multiple human activities (rather than individual sectors, species or ecosystem components).
6. EBM seeks to incorporate and reflect, to the extent it is relevant, expert knowledge including scientific, traditional and local knowledge.
7. EBM is inclusive and encourage participation at all stages by various levels of government, indigenous peoples, stakeholders (including the private sector) and other Arctic residents.
8. Transboundary perspectives and partnerships can contribute significantly to the success of EBM efforts.
9. Recognizing that ecosystems and human activities are dynamic, that the Arctic is undergoing rapid changes, and that our understanding of these systems is constantly evolving, successful EBM efforts are flexible and adaptive.

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13) understanding and sharing of lessons learned for EBM and to demonstrate this as a best practice internationally.



*Possible Methodology for Applying EBM*



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## 7. Strategic actions

This Strategic Plan sets out a range of actions that can be undertaken by the Arctic Council and its subsidiary bodies, in collaboration with Observers of the Arctic Council and other partners, as appropriate. There is also an opportunity for joint action among the Arctic states to promote these strategic actions in relevant international and regional fora.

The following strategic actions have been developed for each goal according to widely recognized principles and approaches, taking into consideration the Arctic Council mandate of sustainable development and environmental protection, with particular focus on current and emerging knowledge affecting the Arctic marine environment. Emphasis is on strategic actions that are important in a circumpolar Arctic perspective and which are guided by the key findings and recommendations of recently published Arctic Council reports (see Box 1). They focus on conservation and the sustainable use of the Arctic marine environment that supports environmental, socio-cultural, and economic values. The strategic actions support resilient ecosystems and well-being of its current and future generations. This provides the basis for informed policy decisions to ensure responsible stewardship of the Arctic marine environment.

This is not an exhaustive list of actions. It is anticipated that additional actions may be required as new priorities emerge or new information becomes available through, for example, ongoing or new studies by the Arctic Council working groups and others.

### 7.1 Improve and expand the knowledge-base

**Goal 1: Improve knowledge of the Arctic marine environment, and continue to monitor and assess the current and future impacts on Arctic marine ecosystems.**

The Arctic Council provides a forum for regional and international co-operation to improve knowledge of the Arctic marine environment. There is increasing demand for reliable and pertinent information in the Arctic context, which will increase as the region undergoes more development with increased human activities and climatic changes.

The Arctic Council has proven to be an important provider of scientific-based assessments, taking into account traditional and local knowledge. Informed policy decisions depend on improved understanding of the Arctic marine environment and drivers of change, attained through accurate, accessible and foundational scientific data, such as topographic, hydrographic, oceanographic and meteorological information, and other marine spatial data, as well as traditional and local knowledge. Implementing effective EBM also requires knowledge about natural variability and vulnerability of ecosystems to stressors and their various effects.



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Several existing Arctic Council initiatives support this goal, such as AMAPs Trends and Effects Monitoring Programme and CAFFs Circumpolar Biodiversity Monitoring Programme (CBMP) which works with partners across the Arctic to harmonize and enhance long-term marine monitoring efforts, including the Sustained Arctic Observing Networks (SAON). Increased scientific and research cooperation with the Permanent Participants and observers of the Arctic Council will also foster improved knowledge of the Arctic marine environment. Current knowledge of Arctic marine ecosystems differs from area to area in the Arctic and a number of international research initiatives and organizations are active in the region.

Current knowledge of Arctic marine biodiversity and ecosystems is fragmentary, and while information is improving, ecosystems are inherently complex and undergoing rapid changes associated with multiple stressors and their various effects. These changing conditions and their potential for impacts on Arctic inhabitants, including Arctic indigenous peoples, continue to present policy challenges.

**Strategic actions:**

- 7.1.1 Strengthen scientific cooperation and joint monitoring among the Arctic states, and with other states, organizations and stakeholders involved in Arctic research or traditional and local knowledge, with a focus on prioritizing research issues, filling knowledge gaps, and developing mechanisms to share and exchange observational data.
- 7.1.2 Improve, synthesize, and respond to emerging knowledge across all disciplines and sectors to include government, academic and industry information, and traditional and local knowledge.
- 7.1.3 Improve the understanding of cumulative impacts on marine ecosystems from multiple human activity-induced stressors such as climate change, ocean acidification, local and long range transported pollution (land and sea-based), marine litter, noise, eutrophication, biomass overharvesting, invasive alien species and other threats.
- 7.1.4 Improve the predictive capacity and develop a common understanding of the likely future impacts of climate change and other emerging threats, such as ocean acidification.
- 7.1.5 Enhance local involvement in the collection of information and monitoring of the marine environment including by using traditional and local knowledge in the work of the Arctic Council.
- 7.1.6 Improve and coordinate communication of knowledge generated in Arctic Council assessments to the circumpolar and global community.
- 7.1.7 Continue the development and standardizing of data sharing and management at a circumpolar level.

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13)

- 7.1.8 Improve awareness of Arctic shipping activity and its impacts, promote expanded information sharing of ship traffic data among Arctic states and, as appropriate, other stakeholders, and update selected parts of the 2009 Arctic Marine Shipping Assessment (AMSA) Report, including those pertaining to the volume, composition and destination of Arctic shipping, shipping impacts, and key infrastructure needs such as hydrographic surveying and nautical charting.
- 7.1.9 Strengthen, where feasible, the collection, observation, monitoring and dissemination of relevant data on the Arctic marine environment. This could include hydrographic and bathymetric data; oceanographic data (including tides and currents) and meteorological information for numerical modeling and forecasting; pollutants; climate change-related impacts (especially ocean acidification); and ecosystem and biodiversity status and trends (including invasive species and other metrics of environmental change).
- 7.1.10 Strengthen the development of circumpolar procedures for, and improve remote sensing capabilities to support, ice detection, monitoring, and forecasting and improve the provision of near-shore and off-shore ice information (current and forecast conditions).
- 7.1.11 Support continued development of circumpolar indicators of changes and stressors across the Arctic marine environment, as well as metrics for monitoring biodiversity.

## 7.2 Conserve and Protect Ecosystem Function and Biodiversity

### **Goal 2: Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.**

Arctic marine ecosystems are under increasing pressure from multiple stressors including climate change, ocean acidification, long-range pollution, invasive species and increased human activities. These stressors, individual and cumulative, pose a challenge to the health and sustained viability of Arctic marine ecosystems. Stressors often exacerbate one another, leading to amplified cumulative impacts. Adding to that is the complex and trans-boundary nature of those stressors, which means that solutions often will require international and regional co-operation.

Arctic ecosystem services are of local, regional and global importance. Taking an ecosystem approach to management (EBM) can enhance the resilience of marine and coastal biodiversity and help to safeguard marine ecosystems and their functions, allowing people to continue to benefit from the services that flow from healthy ecosystems.

In implementing this Strategic Plan, the Arctic Council has the opportunity to continue its support for immediate and early actions, communication and response to conserve and protect Arctic marine ecosystems. Achieving this goal will require an ecosystem approach. This

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13) in turn will require attention to all key activities affecting not only the marine ecosystem but also related coastal zones. Initial steps already taken include the identification and delineation of eighteen Arctic Large Marine Ecosystems (LMEs) and the description of Areas of Heightened Ecological and Cultural Significance within them. In addition CAFFs CBMP network has identified marine areas to harmonize and integrate efforts to monitor the Arctic's living resources and to facilitate Arctic biodiversity conservation and the sustainable use of the region's natural resources. These marine areas correlate with the LMEs Applying an ecosystem approach and assessing the cumulative effect of development activities on them will be critical in conserving and protecting ecosystem function and marine biodiversity and will inform appropriate management, monitoring and adaptation measures.

**Strategic actions:**

- 7.2.1 Promote the implementation of the ecosystem approach to management in the Arctic through synthesis and application of the results of relevant work by the Arctic Council and associated efforts by relevant organizations.
- 7.2.2 Identify and assess threats and impacts to areas of heightened ecological and cultural significance and how such areas may be influenced in the future by climate change and other human induced changes and activities.
- 7.2.3 Identify and develop tools and methodologies for assessing cumulative impacts and risks for Arctic marine ecosystems and areas of heightened ecological and cultural significance with the aim of using them for integrated assessments.
- 7.2.4 Encourage the Arctic states to implement appropriate measures, – or to pursue such measures at relevant international organizations to protect Arctic marine Areas of Heightened Ecological and Cultural Significance. Focus should be on species and ecosystems particularly at risk from climate change and cumulative impacts, including areas of refuge for ice-associated species that are, or are expected to become particularly important to Arctic marine biodiversity under future climate conditions.
- 7.2.5 Develop and encourage the Arctic states to implement common measures and support research into technology and techniques for early detection and reporting of marine invasive species in the Arctic marine environment.
- 7.2.6 Identify and map areas of the marine environment that are particularly vulnerable to the effects of ocean acidification to inform appropriate monitoring and adaptation measures.
- 7.2.7 Promote cooperation among Arctic and non-Arctic states to address threats to the staging and wintering grounds and migrating corridors of migratory species using the marine environment.
- 7.2.8 Actively support efforts, in cooperation with indigenous peoples, to:

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13)

- *reduce long range pollution accumulating in the Arctic marine food-chains, and;*
- *address climate change and ocean acidification by reducing emissions and implementing adaptation measures, as a matter of urgency.*

7.2.9 Limit the impacts of climate change in the short term through concerted efforts to create inventories of and reduce emissions of short lived climate forcers, in particular black carbon and methane.

7.2.10 ~~[[Advance the development of] [Implement] a pan-Arctic network of marine protected areas to strengthen marine ecosystem resilience and contribute to human wellbeing, including traditional lifestyles, within the broader context of Ecosystem Approach<sub>es</sub> (e.g. LME Strategic Objectives, data sharing, risk assessments, etc), monitoring and climate change.]]~~

~~[Develop [Advance the development of] [Implement] a pan-Arctic network of marine protected areas, based on the best available scientific knowledge, to strengthen marine ecosystem resilience and contribute to human wellbeing, including traditional lifestyles, within the broader context of Ecosystem Approach.]~~

### 7.3 Promote Safe and Sustainable Marine Resource Use

#### **Goal 3: Promote safe and sustainable use of the marine environment, taking into account cumulative environmental impacts.**

Improved access to the Arctic, national and regional priorities, and growing global demand for natural resources are driving an increase in resource extraction, shipping activities, and interest in living marine resources. Safe and sustainable use of living and non-living marine resources should be promoted in a manner that maintains the structure of eco-systems, their functions and productivity, applies EBM and provides economic opportunity. There is substantial potential for economic development in the Arctic that will benefit both local communities as well as the Arctic states.

Pollution in the Arctic marine environment comes primarily from sources outside the region. Impacts from increased economic activities inside the region can, combined with impacts from climate change, ocean acidification and long range pollution, produce cumulative impacts that put strain on these ecosystems. Mining, oil and gas activities, shipping, Arctic settlements, legacy sites such as military bases and mines, and land-based activities, are current and potential sources of marine pollution within the Arctic.

Overharvest was historically the primary human impact on many Arctic marine species, but sound management has successfully addressed this problem in most, but not all cases (ABA 2013). At the same time, new harvest ventures. At the same time, new harvest ventures may bring new risks of overharvest and other challenges. Such challenges can be met through

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13) better scientific understanding of ecosystems through scientific studies and traditional and local knowledge, along with effective regulation and enforcement.

Climatic conditions, population density and access to infrastructure vary substantially throughout the Arctic region. In some parts, climatic conditions such as icing, floating sea ice, and high waves, in addition to darkness and lack of infrastructure and hydrographic data, pose increased operational challenge and risks for activities such as marine shipping, offshore oil and gas development, and mining. It is therefore a need for cooperation on sharing of information, propagating best practices and technologies, and leveraging response resources in the case of an emergency. Addressing these challenges through efforts such as accurate nautical charts, improved weather forecasting, and sea ice prediction can reduce the risks associated with impacts from human activities in the Arctic Region.

Arctic states agreements on Cooperation on Marine Oil Pollution, Preparedness and Response (2013), and Search and Rescue (2011), have strengthened cooperation among their signatories. Given the challenges of managing major spills of oil or other toxic substances in ice-infested and remote Arctic waters, and the potential serious impacts on the Arctic marine environment, prevention of spills and measures to minimize risks, in particular to in Areas of Heightened Ecological and Cultural Significance, should remain a top priority.

**Strategic actions:**

- 7.3.1 Advance EBM as an overarching framework for conservation and sustainable use of living and non-living resources in the Arctic marine environment, taking into account cumulative impacts on the Arctic and the need for adaptation to climate change.
- 7.3.2 Improve the understanding of risks and risk reducing measures related to Arctic shipping and oil and gas exploration and development activities, including gap analysis and sharing of best practices related to oil spill prevention, preparedness and response to emergencies in the Arctic.
- 7.3.3 Explore whether there are substances in addition to oil that would benefit from additional pollution preparedness and response cooperation among the Arctic states.
- 7.3.4 Support the research, development, and implementation of oil spill detection, mitigation measures, and response technologies in ice-covered and ice-infested waters.
- 7.3.5 Develop recommendations for consideration by Arctic states to promote maritime safety and environmental protection with the objective of reducing risks related to international shipping activities in Arctic waters.
- 7.3.6 Advance continuous improvement of safety and environment protection performance and the use of best and most appropriate practices and technology for all marine activities.

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13)

- 7.3.7 Support and enhance international efforts and cooperation to continue to identify, assess and reduce existing and emerging harmful contaminants.
- 7.3.8 Promote the management of human activities in the circumpolar Arctic in accordance with Ecosystem Based Management and international law to ensure long term sustainability of stocks and ecosystems.
- 7.3.9 Strengthen the development of a common Arctic protocol for ecotoxicological assessment and screening of chemicals used in resource extraction activities in the Arctic.
- 7.3.10 Support ongoing work to examine and recommend actions to reduce black carbon emissions from activities in Arctic waters. Encourage research that advances technical definitions, measurement standards, and mitigation options with respect to the impact on the Arctic from black carbon.
- 7.3.11 Promote cooperation to improve and expand a) hydrographic and bathymetric data collection and b) Safety of Navigation services and products (including nautical chart and publication production) to support safe and efficient marine shipping in the Arctic.
- 7.3.12 Strengthen the dialogue with relevant business, industry and environmental stakeholders and Arctic inhabitants in order to foster conservation and sustainable use of the Arctic marine environment.
- 7.3.13 [~~Establish a dialogue with Develop~~the Arctic Economic ~~Council~~forum ~~in order as a vehicle~~to foster sustainable -development ~~in the Arctic~~]

## 7.4 Strengthen Capacity to adapt to changes

**Goal 4: Enhance the economic, social and cultural well-being of Arctic inhabitants, including Arctic Indigenous Peoples and strengthen their capacity to adapt to changes in the Arctic marine environment.**

The changes taking place in the Arctic marine environment are resulting in both challenges and opportunities in the Arctic region and it is important to meet these challenges and make use of the opportunities to secure the well-being of present and future Arctic inhabitants.

The health, well-being, and adaptability of Arctic indigenous peoples and local communities are closely linked to the health of the marine ecosystems upon which they rely for food, commerce and cultural needs. Changes to marine ecosystems resulting from global climate change, the introduction of contaminants from outside the region, and other stressors can affect both the access to traditional foods and the quality of that food for indigenous peoples and local communities. It is likely that those living a traditional lifestyle will be most vulnerable to human health impacts from climate change related issues.

Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13) Promoting human development and sustaining traditional culture are high priorities of the Arctic Council. The well-being of Arctic indigenous peoples and local communities' benefits from the capacity to monitor, assess and understand the possible trajectories and consequences of marine ecosystem change, and to develop and implement adaptation strategies. <sup>4</sup> Addressing the changes and adapting to them requires consideration of cumulative impacts and interactions between socio-economic systems and ecosystems.

**Strategic actions:**

- 7.4.1 Improve meaningful engagement of Arctic indigenous peoples and other Arctic inhabitants in relevant decisions, including through the consideration and use of traditional and local knowledge (TLK) in avoiding or mitigating negative environmental, subsistence, and cultural impacts, as well as in maintaining or increasing well-being and socioeconomic opportunities.
- 7.4.2 Facilitate coastal community exchanges between Arctic states to improve sharing of knowledge and experiences and to strengthen the dialog with relevant business and industry in the Arctic in order to foster the conservation and sustainable use of the Arctic marine environment.
- 7.4.3 Assess vulnerabilities and adaptation options of Arctic coastal communities to changes in climate and the marine environment, as well as challenges and opportunities related to these changes and new patterns of activity.
- 7.4.4 In cooperation with the Permanent Participants, encourage engagement, as appropriate, with indigenous peoples organizations and bodies, that have specialized in traditional knowledge and that can inform the work of the Arctic Council in the protection of the marine environment and in enhance the well-being and the capacity of Arctic inhabitants, including Arctic indigenous peoples to deal with a changing Arctic and increased activity.
- 7.4.5 Strengthen efforts on information, education and outreach with Arctic indigenous peoples and other residents regarding the effects of climate change to strengthen resilience and approaches to adaptation.
- 7.4.6 Strengthen the Arctic Council's communication to the public in Arctic and non-Arctic countries pointing out the importance of ongoing changes in the Arctic and their likely impact on non-Arctic areas, and emphasizing the effects on the wellbeing of all Arctic residents.

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<sup>4</sup> Arctic Council (2013). Arctic Resilience Interim Report 2013. Stockholm Environment Institute and Stockholm Resilience Centre, Stockholm.



Outstanding issues to be resolved in brackets (3<sup>rd</sup> para Section 5 and strategic actions 7.2.10 and 7.3.13)

## **8 Implementation**

This Strategic Plan addresses both short-term and long-term challenges and opportunities. Achieving the goals of this Strategic Plan is dependent on cooperation. The Arctic Council working groups will coordinate and cooperate closely, and the Arctic Council will need to look to governments and agencies for support and participation. Working regionally offers an economy of scale, particularly for such joint efforts as research, monitoring, assessment and technical cooperation. It can also improve policy and program coordination, and help to promote compliance. The implementation of this Strategic Plan may also require that the Arctic states cooperate to promote the goals in relevant international and regional fora.

There is also an opportunity for joint action among the Arctic states to promote these strategic actions in relevant international and regional fora.

The Arctic Council provides strong institutional support for the stewardship of the Arctic marine environment. The implementation of this Strategic Plan relies on the existing structures and mechanisms of the Council, i.e., Arctic Council biannual meetings, Senior Arctic Officials (SAOs) meetings and the activities of the Arctic Council working groups. Each working group, under the overall direction of the SAOs, will implement those actions that relate to their mandates and incorporate them into their work plans.

Reports on progress of the implementation of the AMSP will be submitted regularly to the Senior Arctic Officials. Subject to direction from SAOs and Arctic Council Ministers, PAME, in collaboration with all Arctic Council subsidiary bodies, will also lead a review of the Arctic Marine Strategic Plan.

Under the direction of SAOs, PAME will, in consultation with other Arctic Council working groups and permanent participants, develop a communication plan to support understanding and involvement in the implementation of this Strategic Plan.