

## **Development of an Arctic Indigenous Marine Use Survey Process**

### ***A Scoping Paper to Assess Possible Joint Efforts of PAME & Other Arctic Council Working Groups Addressing AMSA Recommendations***

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#### **Summary**

Identifying areas of significance for subsistence and local economies is crucial for preventing possible future conflicts between coastal communities and marine-based industries, which are expected to increase activities in the Arctic. The Arctic Marine Shipping Assessment 2009 Report identifies a critical need for an important resource in the protection of Arctic people and the environment, a survey of Arctic indigenous marine use (AIMU, or AIMUS). In assessing AMSA recommendations to Arctic states, PAME concluded that the states should survey Arctic marine use by indigenous communities where gaps are identified to collect information and establish up-to-date baseline data for the purpose of assessing impacts from Arctic shipping activities. However, this work is recognized as a national responsibility to be undertaken by national government. This scoping paper presents an argument for the need of developing of an AIMU survey process through joint efforts of PAME and other working groups of Arctic Council (AC) within the framework of Arctic Council's mandate. By placing the development of an AIMU survey process into PAME's work plan, PAME will be able to address the AMSA's recommendation, as directed by the Ministers, leading to a greater protection of Arctic peoples and the environment. In doing so, PAME will also address policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine and coastal environment from land and sea-based activities, which are in the PAME mandate. Additionally, results of these efforts could be used to inform risk and vulnerability assessments that are likely to be required in many areas prior to the beginning of industrial-scale shipping and resource exploration. Arctic Council working groups are able to pool existing data and expand, analyze, and summarize it more effectively, thereby clearly delineating and characterizing activities and potential conflicts in different areas of the circumpolar region.

## **Introduction to AIMUS – Why is it Needed?**

Shipping activities in the Arctic are low in comparison to lower latitude regions, comprising only 2% of the world's registered fleet. The activities of these vessels in the Arctic include re-supplying Northern communities, exporting raw goods, tourism, and others. Vessel activity in the Arctic is currently increasing, especially with regard to cruise ships and oil tankers. The Northern environment is vulnerable to impacts of vessel activity because it lacks infrastructure and sufficient emergency response teams in many regions (AMSA Report 2009:89). Impacts of vessel activity can be positive or negative, and they can vary in degree. However, there is at present, insufficient data to precisely identify or predict the most probable effects of marine shipping on most Arctic coastal communities.

The Arctic Marine Shipping Assessment (AMSA) 2009 Report notes that Arctic peoples travel long distances over sea ice, open water out to sea, and along coastlines. Yet, a comprehensive catalogue of indigenous marine use of the Arctic does not exist, thereby making it impossible to present an overall map or description of the entire Arctic (AMSA 2009 Report:125). The AMSA 2009 Report concluded that there is a current and pressing need for a comprehensive database describing indigenous use in local Arctic waterways that could be used to develop multiple management measures and potential mitigation strategies (AMSA Report 2009:133).

Conflict between indigenous and commercial use has been identified as a key uncertainty that will influence the future of Arctic navigation (AMSA 2009:93). For coastal communities, identifying areas of significance for subsistence and local economies is crucial for prevention of possible conflicts between these communities and marine-based industries, activities of which are expected to increase.

“Future Arctic marine activity will include many non-Arctic stakeholders, multiple users in Arctic waterways and potential overlap of new operations with indigenous uses. Arctic voyages through 2020 will be overwhelmingly destinational, not trans-Arctic. A lack of major ports, except for those in northern Norway and northwest Russia, and other critical infrastructure will be significant limitations for future Arctic marine operations. The Bering Strait region, ringed with indigenous communities and a highly productive ecosystem with many species of marine mammals, fish and seabirds, may require formally established vessel routing measures. Offshore hydrocarbon developments may lead to increased marine traffic in the Bering Strait region. For the Canadian Arctic, the Northwest Passage is not expected to become a viable trans-Arctic route through 2020, but destinational shipping is anticipated to increase. Marine transportation of oil from the Pechora Sea to Europe is considered technically and economically feasible; the volume

of oil and gas may be as high as 40 million tons per year by 2020 on the western Northern Sea Route.”<sup>1</sup>

### **AMSA Recommendations Follow-Up**

The AMSA 2009 Report recommended an array of actions to be considered by Member States and Permanent Participant organizations. Senior Arctic Officials and representatives of the Permanent Participants tasked the Arctic Council’s working groups with the development and implementation of follow-up activities in response to the AMSA recommendations. As an AMSA leading working group, PAME developed a matrix identifying which follow-up activities fall under specific Arctic Council working groups, require collaborative efforts or fall under the national jurisdictions.

This scoping paper will specifically address the AMSA recommendation, known as Recommendation II A: *Protecting Arctic People and the Environment; Survey of Arctic Indigenous Marine Use* (AMSA 2009:6). The recommendation states 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 impacts from Arctic shipping activities.” These data could also inform risk and vulnerability assessments that are likely to be required in many areas prior to beginning any industrial scale shipping and resource exploration. The Arctic Council, as a preeminent body shaping arctic policies, should consider how it can contribute to this important but sensitive issue through the development of an AIMU survey process and/or tools that could be devised by PAME and other Arctic Council working groups.

PAME determined that the follow-up activities that include 1.) Consideration for conducting surveys on AIMU; and 2.) Collection of information for establishing up-to-date baseline data, should be implemented at global, regional, and national levels. However, it was recognized that national governments and not the Arctic Council working groups should undertake this work. A recent workshop in Fairbanks, Alaska in October 2009 that was related to the AMSA 2009 Report also reported that “up-to-date baseline data on regional and local patterns of indigenous use of Arctic waters is necessary to assess the impacts from increasing Arctic marine operations” (Brigham and Sfraga 2010:14). During the workshop, it was agreed that surveys are the responsibility of governments and that they could not be conducted as a unified circumpolar effort. Rather, surveys can be conducted on national and regional scales, and acquired baseline data could later be merged to construct a unified picture. It was also discussed that public appropriations from national and regional governments are key since these surveys relate to “subsistence living, marine safety, environmental protection and multiple use management of Arctic marine waterways” (*ibid.*).

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<sup>1</sup> *Arctic Marine Shipping Assessment 2009 Report*. Arctic Council, April 2009, second printing, page 5.

Indigenous marine use has the potential to be impacted by Arctic shipping (both in a positive and a negative manner), and there are potential conflicts that could result from indigenous use and vessel activities. An Arctic Indigenous Marine Use Survey would help to resolve or alleviate conflicts through, first, collection and summary of existing information and, second, addressing knowledge gaps in order to make further surveys and data collection feasible.

The Aleut International Associations and Saami Council believe that the Arctic Council working groups possess valuable expertise that could be used to advance this work, and there are ways of bringing this expertise to facilitating circum-arctic implementation of Recommendation IIA.

### Relevant Arctic Council Work

While surveying indigenous marine use does not lend itself easily to international collaborative activities, many Arctic Council projects and initiatives have explored, at least indirectly, selected questions related to the indigenous use of marine environment. It is, therefore, reasonable to review how past and present Arctic Council initiatives and implemented projects have addressed similar issues, *e.g.*, community-based monitoring (CBM). Since CBM activities are also implemented mostly nationally, approaches used by these projects could be helpful in shaping ideas for possible AIMUS projects.

The Conservation of Arctic Flora and Fauna (CAFF) working group has been working on community-based monitoring issues for almost ten years. While none of the CAFF initiated projects are involved in hands on CBM, their products have helped to develop and implement projects that employ CBM. Table 1 shows which CAFF's projects could serve as potential models for similar activities for AIMUS process.

**Table 1. Past and Present CAFF Community-Based Monitoring Projects**

Project	Description	Relevance to AIMU survey
Community-Based Monitoring Discussion Paper (CAFF 2004)	A compilation of papers written by representatives of six Permanent Participants sharing thoughts on what CBM is, how it is used on the community level, and what the future needs may be.	A possible example of involving various parties in the initial discussion.
Circumpolar Biodiversity Monitoring Program Framework	The document provides a conceptual base for further	An example of scientific program that enshrined CBM, an

Document (CAFF 2004)	development of CBMP.	important yet not universally accepted component, in the body of their work.
A Strategy for Facilitating and Developing Community-based Monitoring Approaches in Arctic Biodiversity Monitoring (CAFF)	This planning tool guided CBMP management in their decisions on selection of specific steps in the development of CBM component in CBMP	Some of the strategies and approaches can be applied to the development of AIMU surveys
Community-based Monitoring Handbook: Lessons from the Arctic and beyond (CAFF 2010)	The Handbook reviewed a number of CBM projects mostly around the Arctic; attempted to systematize terminology, methods, and approaches; and devised recommendations for practical implementation of CBM.	This format could be used for a similar document on AIMU. Some of the approaches and concepts discussed in the Handbook could be directly applied to the development of AIMU surveys
Sacred Sites (CAFF)	The project documented, including mapping, areas of particular importance for indigenous cultural traditions in several areas in Russia.	This report could inform the discussion about the definition of AIMU areas. It is also relevant to AMSA recommendation II C: Protecting Arctic People and the Environment: Areas of Heightened Ecological and Cultural Significance.
BSSN (CAFF current)	Gathering of local indigenous observations in the Russian and US Bering Sea coastal communities on the environment and selected subsistent species utilizing populations survey and GIS mapping.	One of the project products is AIMU mapping. These high quality density maps are already available for planning, research and other purposes. This project could be examined as a model for setting up similar efforts in other areas of the Arctic. It is also an example of how a national or Permanent Participant led project can bring an implementation component to the Arctic Council.
ECORA (CAFF)	A complex project in the Russian Federation aimed at introducing ecosystem-based management approach to conserve biodiversity and minimize habitat fragmentation in model areas. One of the components of this program is CBM.	This project developed a good infrastructure for possible future mapping.

Thus, the following common areas can be identified: communication and outreach, a need to be integrated within a larger program, building strategies, developing reference and education tools, devising and advancing theory, to name a few.

Precedents of Arctic Council projects focused on the areas under national purview do exist. For instance, the Bering Sea Sub-Network<sup>2</sup> (BSSN) is a community-based monitoring project (i.e. an implementing project) that gathers and summarizes local personal observations (Gofman and Smith, 2010). It also has a GIS mapping component documenting AIMU areas in the project communities creating a precedent for an Arctic Council project performing AIMUS.

Reviewing these initiatives and extrapolating commonalities could lead to a feasible plan of possible activities for follow-up on Recommendation IIA. It is also beneficial to explore possible synergies with ongoing Arctic Council projects, especially the ones that are developed or that are being developed as AMSA follow-up.

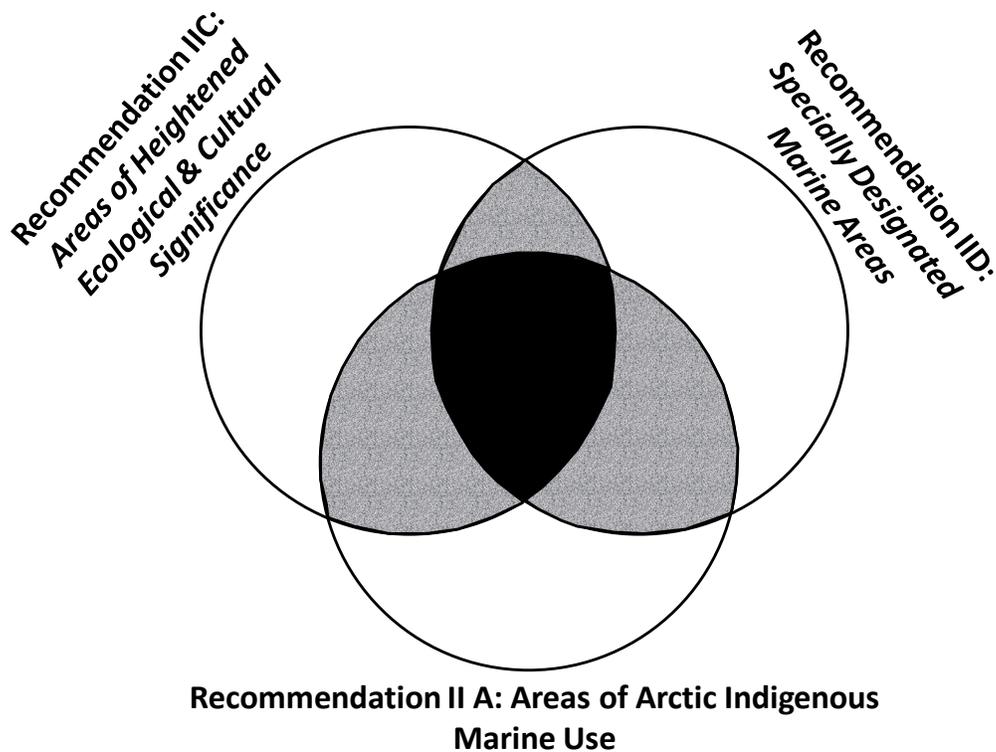
### **Possible Synergies**

Recommendations IIA, IIC, and IID address the necessity for identifying and protecting possible negative impacts of marine activities of certain areas that are important for sustainability of ecosystems and human societies in the Arctic. The follow-up work for AMSA Recommendation IIC: *Areas of Heightened Ecological and Cultural Significance* and for Recommendation IID: *Specially Designated Arctic Marine Areas* is of particular importance (AMSA, 2009:6). While these areas have distinctive features and parameters, many overlap and some areas could be rated under more than one category (Figure 1). Rather than treating these recommendations as isolated processes, they should be cross examined through a synergetic approach that would be likely to lead to more efficient, policy-relevant outcomes.

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<sup>2</sup> The Bering Sea Sub-Network (BSSN) is a regional initiative of community-based organizations in Western Alaska and Northeast Russia for the collection and local management of a part of regional research and monitoring data required for a pan-arctic perspective on environmental and biological changes. The overall goal of BSSN is to improve the scientific knowledge of the environmental changes in the BSSN region that have significance for understanding of pan-arctic processes, enabling scientists, arctic communities and governments to predict, plan and respond to these changes. BSSN addresses questions of: 1) historical and present distribution and properties of economic and subsistence important species as derived from collective indigenous and traditional knowledge; 2) types of major variables and indicators that could be correlated with western science to develop predictable models based on indigenous and traditional knowledge; and 3) spatial and temporal convergence and divergence of community-derived and western science data.

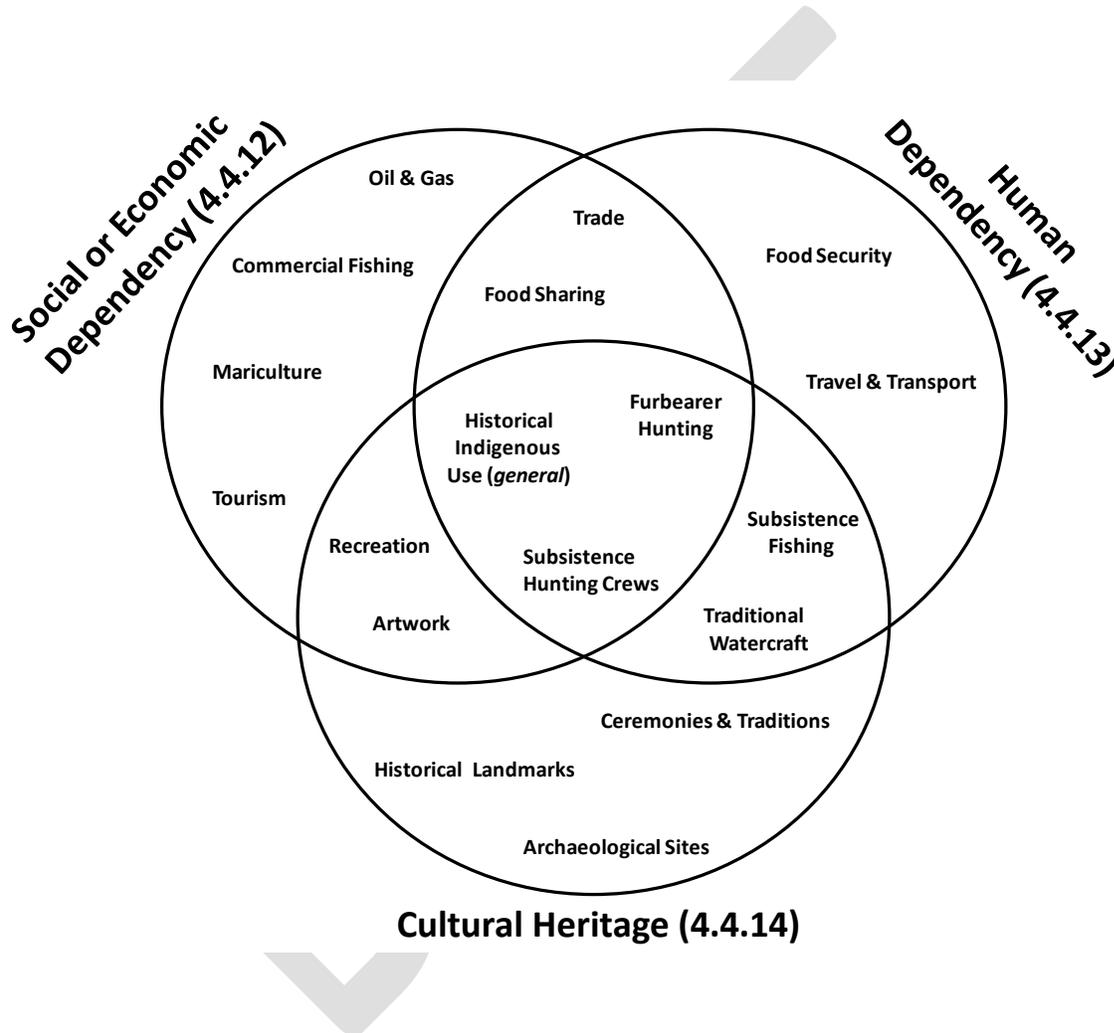
**Figure 1. Relationship between special Areas identifies in Recommend IIA, IIC, and IID in the Arctic Marine Shipping Assessment 2009 Report.**



A current cooperative work on Recommendation IIC performed by the Arctic Monitoring and Assessment Programme (AMAP), CAFF, and the Sustainable Development Working Group (SDWG) contains a number of references to AIMU activities and compiles a list of areas that could be recommended for protection based upon current recommendations and on the application of Particularly Sensitive Sea Areas (PSSA) criteria developed by the International Maritime Organization (IMO). The IMO is quite relevant for this discussion since an AIMU would meet all three of the PSSA's "Social, cultural and economic criteria", which are 1.) *Social or economic dependency* (4.4.12) - an area where the environmental quality and use of living marine resources are of particular social or economic importance, including fishing, recreation, tourism, and the livelihoods of people who depend on access to the area, 2.) *Human dependency* (4.4.13) - an area that is of particular importance for the support of traditional subsistence and protection of cultural resources, and 3.) *Cultural heritage* (4.4.14) - an area

concerned with historical and archeological importance. The relationships between the AIMU activities among these three areas are described in Figure 2.

**Figure 2. Delineation of Arctic Indigenous Marine Use Activities via Relationship of Social, Cultural and Economic Criteria of Particularly Sensitive Sea Areas (PSSAs), as defined by the International Maritime Organization (IMO).**



### Understanding Arctic Indigenous Marine Use

A common misperception is that the term ‘indigenous use’ refers only to a traditional use of the marine environment (*e.g.*, subsistence activities, transportation via traditional watercraft, etc.). It actually refers to the culmination of traditional and commercial uses of the

marine ecosystem by indigenous people and can, therefore, also refer to indigenous peoples involved in oil and gas, commercial fishing, mariculture, tourism, or other activities.

An issue of central concern and a strong reason to assemble an overview of indigenous marine use is the degree to which indigenous cultures could be impacted by developing shipping activities in the Arctic. This is a concern not only for the various Arctic states, but also for those concerned with human rights and international law<sup>3</sup>. The AMSA 2009 report mentions, in general, three kinds of conflicts, impacts or effects: **direct spatial conflict** with indigenous hunters or fishers, **environmental impacts** through accidents or destruction of habitats, and **cultural effects**, such as economic and social effects through immigration and increasing economic activity. The consequences of these impacts on indigenous marine use can be measured either directly or indirectly. The AMSA 2009 Report also noted the difference between an impact being positive or neutral vs. negative can often be directly related to planning and preparation. Furthermore, directing shipping activities to make positive impacts require local involvement in the planning process, and careful attention to good communication and collaborative approaches to management (AMSA Report 2009:132). Examples of various uses of the Arctic marine environment and resulting interactions with marine shipping activities were also presented in the *Human Dimensions* section of the AMSA 2009 Report (pg. 5), in which concern for the cultural and economic importance of use in different areas was presented.

This concern for the environment and continued use of traditional foods is a general trait in indigenous communities throughout the Arctic. During town hall meetings conducted for the AMSA report, shipping is not perceived by Arctic residents to be a cause of great hope or fear, but mostly as a potential disruption to marine species where oil spills and impacts of ships on animals and hunting practices are of greatest concern (AMSA Report 2009:133). For Inuit, Saami, Aleut and other indigenous communities - as well as for communities around the Arctic in general - all activities that negatively impact the most valued marine resources (*e.g.*, fish stocks), are of strongest importance. This includes seismic activities during exploration, overfishing and spills from oil and gas activities. Due to the variety and increasing amount of activities in the Arctic today, the risk of accidents and negative impacts on environments and local communities is growing, especially as activities move nearer to settlements (*ibid.*).

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<sup>3</sup> See AHDR page 105 and following pages for an overview of international and national instruments that apply to indigenous peoples in the Arctic. Since the AHRD, the Declaration on the Rights of Indigenous Peoples was adopted by the UN General Assembly in 2007 and has since been universally endorsed. The Declaration is, in this sense, the standard instrument for indigenous rights in the Arctic, in addition to the different approaches taken by the states in the different national contexts. For the purposes of this paper, rights pertaining to land and resource rights are the most relevant for indigenous marine use in the Arctic.

Huntington (2009) identifies areas in which a combination of factors occur simultaneously as the most worrisome (*e.g.*, oil and gas activities and cargo ship transports in the Chukchi Sea and the Barents Sea region). Furthermore, indigenous peoples' use in the Arctic also extends over relatively large areas so that even small impacts may make a difference:

“New activities that appear to be distant from existing settlements may still affect residents of those settlements... Direct effects include obstacles to boat travel, such as causeways, and hindrances to hunting and fishing methods. Fishing nets can snag on industrial equipment... While interference with indigenous harvest activities may be unintended, that nonetheless can be the result if harvests are forced into smaller areas or hunters and fishermen must travel farther”.<sup>4</sup>

It would appear that environmental effects stemming from oil and gas activities have the strongest potential to increase contaminant levels in the food that indigenous peoples eat, thereby extending indirect effects, such as loss of markets and decreased food security (*ibid.*). It should be noted that there is a distinction between direct effects on *indigenous marine use areas* and more indirect effects on *indigenous settlements*, which not necessarily share the same extent. *Areas of indigenous marine use*, therefore, not only include the immediate areas around indigenous settlements, but also refer to larger use areas for community inhabitants where direct or indirect effects of shipping activities can be felt.

It is difficult to isolate one specific form of shipping that should not occur in all AIMU areas. Increased shipping is not necessarily detrimental to indigenous people; it can provide welcome economic opportunities for communities otherwise threatened by outmigration and the pressures of modernisation. However, many industries do draw resources out of Arctic communities and export them in a manner that does not always retain the full economic benefit for that community. Increased industrial activities can also lead to ecological changes in marine ecosystems, resulting in dwindling resource bases for indigenous communities.

The most obvious and most easily-defined form of shipping is that which is in *direct spatial conflict* with indigenous marine use, be it traditional or commercial hunting and fishing activities. If an up-to-date database of the spatial extent of AIMU areas is established, this will facilitate communication about possible mitigation measures with local or regional stakeholders. There are several factors to take into account with regard to environmental and cultural impacts of Arctic shipping, including direct and indirect impacts, simultaneous factors vs. isolated factors, proximity to indigenous communities, and the size of areas of indigenous marine use relative to indigenous settlements. Indirect effects of shipping need to be

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<sup>4</sup> From Huntington (2009:14)

considered on local and regional levels and in dialogue with indigenous communities. This, in turn, will aid in establishing databases to best describe the spatial context of each AIMU area.

## **Potential Project Themes within Purview of Arctic Council**

Bellow are several suggestions for project activities that can be developed within the Arctic Council.

### **1. Development of the identification Process of AIMU Areas - Recommendations for Definitions**

Purpose: To address questions over definitions of AIMU and AIMU areas as they are currently applied in national and international resource management, international agreements and industries; identification of current shortcomings and formulation of recommendations for improved definitions.

Expected Outcomes: Improved process of identifying AIMU areas for various uses.

### **2. Assessment of Available Data on AIMU - Compilation of Current Data Bases and Identification of Gaps**

Purpose: To draw data from prior surveys, existing government documents, public databases, or from new surveys, and to assimilate this data to provide a comprehensive description of indigenous marine use in the Arctic. Both national and regional governments, as well as private and industry sources, are possible contributors for survey data and for funding to support new surveys (Brigham and Sfraga 2010:14). Some governments already hold data in compatible formats, which can be assembled together with data on shipping from the similar geographical regions. In short, projects under this theme will center on mining data from existing and available data sources.

Expected Outcomes: Establishment of a useful directory for multiple users; these data could be applied to current synergistic initiatives (*e.g.* BSSN data (maps) can be overlaid with GIS maps in the Draft Report for IIC).

### **3. Comparative Analysis of Protective Areas Identified in AMSA Recommendations**

Purpose: To better understand spatial overlapping, possible contentious issues related to their use and a way to address necessary protective measures. This includes comparative projects addressing overlapping areas of selected criteria (See Figures 1 and 2) and development of GIS products showing overlapping areas.

Expected Outcomes: Improvements of integrated approaches in addressing AMSA recommendations.

### **4. Best practices and methods of AIMU mapping.**

Purpose: To map important points of potential conflict between indigenous marine use and shipping. As a model, some information and data on vessel activity obtained from the Arctic states has been grouped into standardized vessel categories and was mapped into a GIS representing current marine use of the Arctic in 2004. If indigenous marine use data are to be compatible with the existing AMSA shipping database and incorporated as a form of marine use of the Arctic, it must be in a format that can be visualized in the Arctic geography. A first step to identifying possible conflicts and effects is to establish the areas of indigenous marine use where there is a potential spatial conflict with shipping activities, and to manage shipping activities in these areas accordingly. Presumably, conflicts, impacts and effects can best be measured at local scales, with community participation. The data can not be overly qualitative and needs to collect use patterns from data sources covering larger areas rather than focusing on larger amounts of data from only one community or geographical place.

Expected Outcomes: A list will be assembled that comprises main forms of marine use that are essential to indigenous settlement areas and communities in question. This includes formulation of maps from existing and new data from community members.

## Overall Recommendations to PAME

1. **Amend Draft Work Plan to cross reference activities falling under the follow up to recommendations II A, IIC, and IID.**
2. **Ask the writing team for IIC to identify specific sections that have relevance to recommendation IIA.**
3. **Encourage all working groups to provide support and endorsement as appropriate for national and international projects that plan to engage in survey of AIMU. (E.g. ICC project submitted to SDWG)**
4. **Initiate projects responding to the themes identified in the section above under the PAME leadership.**
5. **Create and maintain a registry of Arctic Council activities in the field of AIMU.**

## References

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