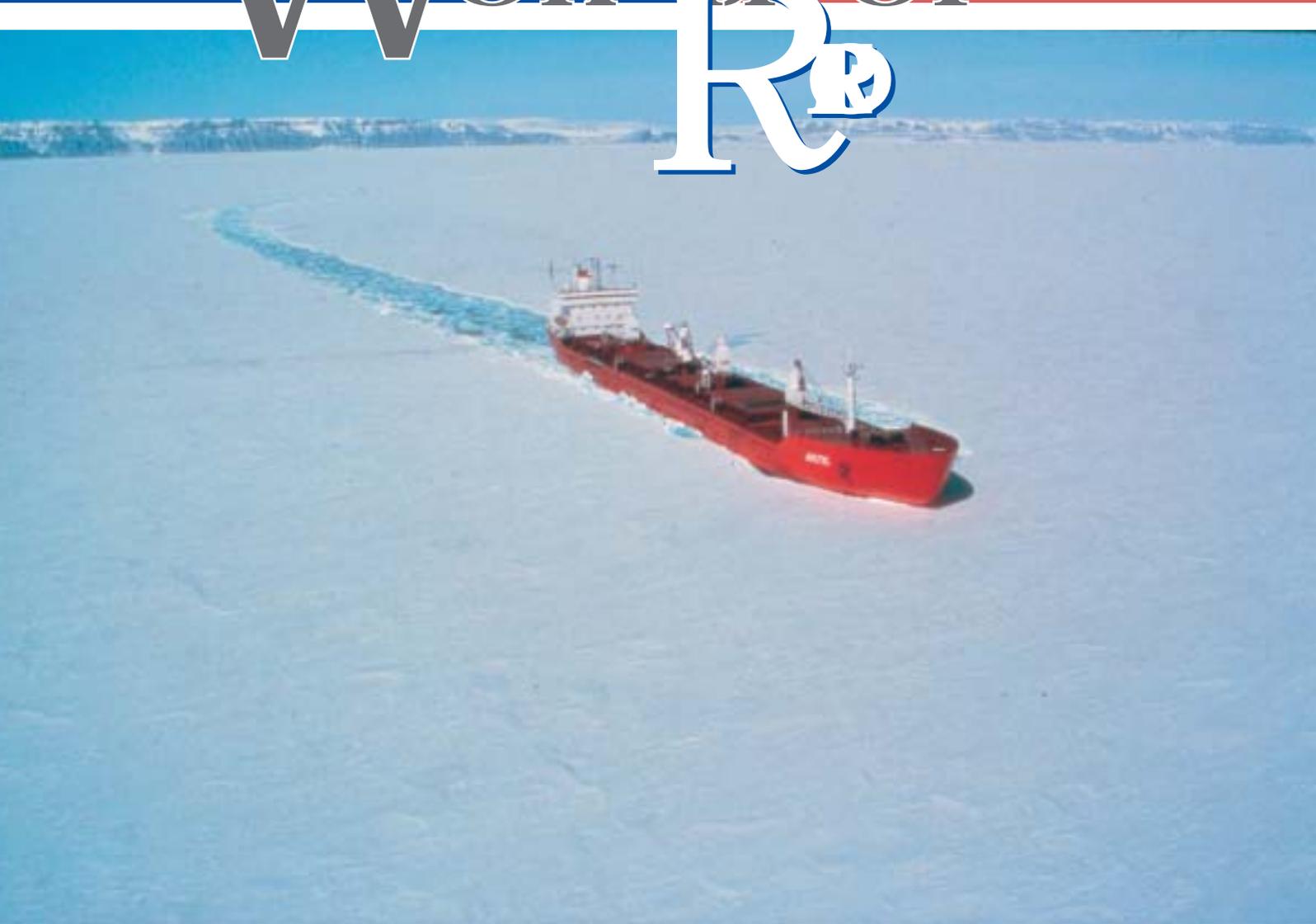


In support of the **Arctic Marine Strategic Plan**
20 - 22 October **2003** Reykjavik, Iceland

2003

WORKSHOP

Report



The PAME Programme

The programme for the Protection of the Arctic Marine Environment (PAME) was established by the Arctic Council Ministers in Nuuk, Greenland, September 1993 with the mandate to address policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from both land and sea-based activities. These include coordinated action programmes and guidelines complementing existing legal arrangements.

PAME members include National Representatives of the 8 Arctic Council States: Canada, Denmark (including Faroe Islands and Greenland), Finland, Iceland, Norway, Russian Federation, Sweden and United States. Indigenous groups organizations, termed "Permanent Participants" also participate in PAME, as well as representatives from several observer countries and organizations. Thus, PAME provides a unique forum for collaboration on a wide range of activities directed towards protection of the Arctic marine environment.

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TABLE OF CONTENTS

FOREWARD

INTRODUCTION	1
WELCOME AND OPENING ADDRESS.....	1
OVERVIEW OF THE ARCTIC MARINE ENVIRONMENT	2
SESSION 1: DRIVERS OF CHANGE FOR THE ARCTIC MARINE ENVIRONMENT	3
STATE OF THE MARINE ENVIRONMENT.....	3
ECOSYSTEM APPROACHES FOR CONSERVING ARCTIC BIODIVERSITY	4
CLIMATE CHANGE AND THE ARCTIC	4
EMERGING ISSUES: HUMAN AND ECONOMIC.....	5
WHAT ARE THE ECONOMIC DRIVERS AND HOW WILL THEY INFLUENCE THE ARCTIC MARINE ENVIRONMENT?	6
LUNCH SEMINAR: THOUGHTS ABOUT STRATEGY AND STRATEGY MAKING IN INTERMEDIATE ORGANIZATIONS.....	7
SESSION 2: TRENDS IN OCEAN MANAGEMENT.....	9
REGIONAL APPROACHES	9
i) <i>REGIONAL SEAS OVERVIEW</i>	9
ii) <i>THE CASPIAN ENVIRONMENTAL PROGRAM: CHALLENGES AND LESSONS LEARNT</i>	9
iii) <i>IMPLEMENTING ECOSYSTEM-BASED MANAGEMENT</i>	10
THE EUROPEAN UNION MARINE STRATEGY.....	11
WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT AND THE ARCTIC	11
NATIONAL OCEAN STRATEGIES AND PROGRAMS	12
iv) <i>CANADA'S OCEANS STRATEGY</i>	12
v) <i>WHITE PAPER FROM NORWAY</i>	13
vi) <i>THE ROLE OF RUSSIAN NPA -ARCTIC IN THE MARINE STRATEGY</i>	13
STRATEGIES BY REGIONAL/INTERNATIONAL ORGANIZATIONS	14
vii) <i>THE ADVISORY COMMITTEE ON THE PROTECTION OF THE SEA (ACOPS)</i>	14
viii) <i>THE WORLD WILDLIFE FUND ARCTIC PROGRAM</i>	15
PLENARY DISCUSSION.....	16
DISCUSSION.....	17
SESSION 3: PANEL DISCUSSION.....	19
ARCTIC COUNCIL WORKING GROUPS AND PERMANENT PARTICIPANTS.....	19
DISCUSSION.....	21
SESSION 4: THE CIRCUMPOLAR RESPONSE.....	23
BREAKOUT TOPIC I: WHAT ARE THE KEY ELEMENTS OF A STRATEGIC PLAN?	23
BREAKOUT TOPIC II: WHAT ARE THE OPPORTUNITIES, CHALLENGES AND KEY CONSIDERATIONS OFFERED BY A STRATEGIC PLAN?	24
SESSION 5: A ROADMAP FOR THE ARCTIC MARINE ENVIRONMENT	27
PANEL DISCUSSION	27
DISCUSSIONS.....	29
CLOSURE.....	29
ANNEX I - WORKSHOP AGENDA	
ANNEX II - LIST OF PARTICIPANTS	
ANNEX III - PRESENTATION TO SENIOR ARCTIC OFFICIALS	

Foreword

The two Co-Chairs are pleased to introduce this summary report of a very successful and informative session. The summary report has tried to capture the salient points of the statements and discussion from the Workshop. In addition, the site and timing of the workshop had deliberately been arranged to coincide with a meeting of Senior Arctic Officials (SAOs) and thereby allowed a timely sharing of the workshop results.

In 2002 at the Arctic Council Ministerial in Inari, Finland, Ministers recognized that existing and emerging activities in the Arctic warrant a more coordinated and integrated strategic approach to address the challenges of the Arctic coastal and marine environment. They agreed to develop a strategic plan for the protection of the Arctic marine environment under the leadership of PAME and the two lead countries of Iceland and Canada.

The Workshop was planned to gather a broad-based contribution and to facilitate the development of the Arctic Marine Strategic Plan. Participation at the workshop was by invitation and a balanced range of contributions was sought. Throughout the Workshop, the invited presentations, panel and plenary discussions and workshop discussions all showed a broad agreement on directions to be followed and the key elements for the development of a successful Arctic Marine Strategic Plan. The Workshop therefore fulfilled its principle objective of providing a forum for exchanging information and ideas on drivers of change, trends in oceans management, opportunities and challenges and circumpolar responses to Arctic Ocean issues.

The two Co-Chairs were pleased to recognize the emphasis placed by participants on an ecosystem approach, integrated regional seas management and partnerships as key goals and objectives to ensure a better coordinated and integrated strategic approach to the management of the Arctic coastal and marine environment. It was also clear that climate change and increased economic activity are two of the major drivers of change affecting sustainable development in the Arctic. They suggested that scenarios featuring the main drivers would be created for near to long-term periods to guide the future implementation actions of the Arctic Marine Strategic Plan.

From the Workshop discussion it was evident that an Arctic Marine Strategic Plan would assist Arctic countries to deal with emerging issues, such as increased shipping, oil and gas developments, climate change and environmental change. An Arctic Marine Strategy would furthermore also assist the Arctic States in promoting better understanding of Arctic marine issues at the international level and thus help to build a global consensus on wider measures necessary to protect the Arctic Region. A strategy would need to include coordination and reporting mechanisms and apply an integrated approach that would include partnerships amongst the Arctic Council Working Groups as well as with national agencies, international organizations and all interested partners.

Challenges included; partnerships for financial resources, a sufficient knowledge base, the importance of monitoring and information management, implementing the ecosystem approach, the design of an effective communication strategy, and initiating and maintaining political will.

The Co-Chairs would like to thank all the participants for the valuable contribution of their time and ideas.

John Karau

Magnus Johannesson

Introduction

The Workshop was held as part of the development of an Arctic Marine Strategic Plan for the Arctic Council under the Protection of the Arctic Marine Environment (PAME) Working Group and the co-leadership of Iceland and Canada. The principal objective for the Workshop was to provide a forum for exchanging information and ideas on the drivers of change, trends in ocean management and possible circumpolar responses to Arctic Ocean issues. The meeting was co-chaired by Mr. John Karau (Canada) and Mr. Magnus Johannesson (Iceland) and attended by a large number of representatives from government and northern organizations.

The agenda for the Workshop is attached as Annex 1 and the list of participants is in Annex 2. A series of background papers was prepared in advance of the Workshop and was presented to participants in a separate document. These papers are available on the PAME website (www.pame.is).

Welcome and Opening Address

Ambassador Gunnar Pálsson, Chairman of the Senior Arctic Officials opened the meeting. He recalled that international attention to ocean issues is relatively new and has only moved to the center stage during the past twenty five years, following the Stockholm Conference in 1972 and crowned by the entry into force of the UN Convention on the Law of the Sea in 1994. Still, the ocean environment did not receive the attention it deserved until the UN Conference on Environment and Development in Rio in 1992. We are still following the plan of implementation, Agenda 21, from that meeting and attempting to come to grips with the complex marine issues it identified. This recent attention to the ocean in international affairs has brought a change of attitude. The ocean is now being recognized as an important source of food and a basis for economic development. The ocean plays a vital role in climate change, biodiversity and atmospheric processes in many areas. However, it is a resource that can no longer be treated as a limitless source of bounty or a dump for the world's wastes.

The Arctic itself is predominantly a marine area with important fisheries and rich in mineral and hydrocarbon reserves. The processes that take place in the Arctic Ocean and its surrounding waters drive the deep-water circulation around the globe.

Inevitably, the Arctic Council has been, and will remain, seized with the marine environment. The PAME Working Group was specifically established to deal with marine issues. The recent Johannesburg Summit confirmed the importance of the marine environment and recognized the contribution of regional fora. As an independent partner to UNEP's Regional Seas Programme, the Arctic Council has contributed to the protection of the marine environment. The time has now come for the Council to examine its marine role in a wider context, hence its decision to develop a strategic plan for the protection of the Arctic marine environment.

The Ambassador thanked the Icelandic and Canadian organizers of the Workshop and wished the meeting success in its mission.

Overview of the Arctic Marine Environment

Dr. Kenneth Sherman, Director, National Marine Fisheries Service, Narragansett Laboratory gave an overview of the Arctic marine environment and noted that the concept of Large Marine Ecosystems (LMEs) was receiving increasing attention. He showed the distribution of LMEs in the North Polar Region and in his opinion several of these would fit the qualification criteria for funding to support ecosystem-based resource assessment and management projects of the Global Environment Facility (GEF). The Arctic Ocean is undergoing rapid environmental change, temperatures are rising, ice cover is being reduced at a fast and measurable rate and at the same time contaminant sources through river, ocean and atmospheric sources must be dealt with.

Dr. Sherman advised the Workshop to link the strategy to the targets agreed by over 100 countries at the 2002 World Summit of Sustainable Development (WSSD). For example, the need to strengthen regional cooperation, adopt an ecosystem approach by 2010, which he thought would be possible, and the goal of restoring and sustaining fish stocks, which he thought was important but optimistic.

Returning to the LME approach, Dr. Sherman elaborated on the importance of the LME program and the potential of using existing international funding sources for the Arctic. LME's are global centers of effort to reduce coastal pollution, restore damaged habitat and recover depleted fish stocks. He described one successful case study where indicators were being used to assess the performance of coastal management regimes.

Other funding opportunities existed for projects linking environmental protection to resource development and sustainability and for categories in climate change, biodiversity and the protection of the ozone layer - All these have relevance to the Arctic.

Session 1: Drivers of Change for the Arctic Marine Environment

This session concentrated on the factors that were seen to be driving the rapid environmental, social and economic changes that were being observed in the north. Five presentations on key threats and challenges were given in this session:

State of the Marine Environment

Mr. Helgi Jensson, Chair of the Arctic Monitoring and Assessment Program (AMAP) introduced his presentation with a discussion of the four main classes of arctic contaminants: Persistent Organic Pollutants (POPs), heavy metals, artificial radionuclides and Polycyclic Aromatic Hydrocarbons (PAHs). The status of these contaminants is influenced by the sources, pathways and processes governing their behavior within the environment, but their impact on human health is the ultimate concern.

Many of these contaminant sources are non-arctic in origin. Fossil fuel combustion, waste incineration and industrial processes are the major pollutant sources, many originating from outside the region. For some POPs, there is evidence that levels in arctic mammals are remaining constant or even falling, but new threats, such as those from the use of brominated flame retardants (BFRs), were appearing.

Point sources of pollutants within the Arctic come mainly from abandoned and existing industrial sites, mines and exploration sites, disposal facilities, military installations and commercial harbors. The main pathways for input of contaminants to the Arctic marine environment include inflowing ocean currents, atmospheric deposition, river input, land run-off and direct discharge or disposal.

Mr. Jensson continued with a look at trends. The network of stations measuring the atmospheric POPs showed that levels of HCHs, low chlorinated PCBs and chloradanes are slowly decreasing, but some new POPs are being identified. There is also evidence of reductions in legacy POPs in animals and marine mammals with some regional variations, but again with increases in BFRs.

Concentrations of mercury in sediments have increased two to three fold from pre-industrial times. There are also indications that the river input may have increased, possibly due to climatic effects, such as permafrost degradation and increased biological activity. Recent studies have shown that deposition of mercury to Arctic surfaces is enhanced during the period of polar sunrise and may lead to increasing concentration of mercury in the marine food web. Regional increases of mercury in marine biota have been noted in the Canadian Arctic and West Greenland. Further assessments are needed to determine whether current controls on mercury are effective. The concentration of several heavy metals used in catalytic converters, the technology used to remove lead from gasoline, have increased in Greenland snow and ice over several decades.

For radionuclides, there continues to be uncertainty about amounts and the number and location of waste sites throughout the Arctic. The potential of cesium-137 and plutonium remobilization from sediments is an issue.

Potential pollution from activities associated with the exploration and development of Arctic oil and gas reserves need to be addressed. The human health issues associated with the relatively high level of contaminants in traditional arctic foods are of concern. Evidence

suggests that the greatest risk is for fetal and neonatal development. Finally the pathways, processes and sources that move contaminants through the Arctic are susceptible to the influences of climate variability and need continuous scientific attention.

Ecosystem Approaches for Conserving Arctic Biodiversity

Ms. Magdalena Muir, Executive Secretary of the Conservation of Arctic Flora and Fauna (CAFF) spoke about the ecosystem approaches for conservation in the Arctic. She used the definition given by WSSD for an Ecosystem Approach "*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 the ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity*". It was explained that the important issues included species flexibility and vulnerability, genetic diversity within species, habitat diversity and fragmentation, ecosystem structure and function and the impact of climate change. Climate change and many associated environmental changes pose a serious threat to arctic biodiversity as does contamination and the introduction of alien species. Increased development of resources, shipping, tourism and aquaculture also need to be taken into consideration. Several examples were given of case studies where ecosystem approaches are being successfully used.

Amongst many recommendations to the Workshop several points were stressed; the need to promote the principle of an ecosystem approach to management, the importance of identifying and protecting ecologically important areas and the need to assess interactions between local, national and regional development activities in relation to potential impacts on the ecosystem. Monitoring programs were essential to evaluate progress and the success of management strategies. The active participation of indigenous peoples in the conservation and outreach programs and the use of traditional knowledge were strongly advocated. The migration of arctic species into and out of the region will demand cooperation with responsible organizations and countries outside the Arctic. Ms. Muir concluded with the question: Is there a need for an Arctic Council mechanism to coordinate the Arctic Marine Strategy?

Climate Change and the Arctic

Dr. Robert Corell, Chair of the ACIA Assessment Steering Committee started by informing the Workshop that the Arctic Climate Impact Assessment (ACIA) team would submit final science reports and policy recommendations to the Arctic Council in the fall of 2004. Its mission is to evaluate, synthesize and transform knowledge into information for policy and decision-making. Dr. Corell, brought the collective knowledge of 250 scientists to address the objectives of the Workshop from the perspective of the impact of climate on, and as a driver of change in, the Arctic marine environment. Preliminary results indicate many observed changes in the Arctic, including warming of marine waters, increased winter temperatures, reduction in ice thickness and extent, increased precipitation and river flows, loss of permafrost, changes in migration routes and higher UV radiation.

The ACIA does include traditional knowledge in its assessment and has found considerable concern amongst the indigenous peoples regarding the changes to their environment.

Confidence in the projections from computer models of the Arctic environment is increasing, although there are larger differences for the polar projections than for the rest of the globe. Annual mean temperatures are estimated to increase by 2.5 °C by the mid-century. Even greater increases may be expected within the central Arctic region and extreme events will be more frequent. For the 21st. century, ACIA predicts a decrease of over 50% of the sea ice during the summer months, 5-25% increases in river run-off and 10-20% permafrost

reduction. Associated changes in the flora and fauna due to the warming trends are expected to be visible in habitats, migration routes and the northern movement of southern species. He noted that many species are affected by the ice cover changes.

These changes will mean the opening up of shipping routes, problems of coastal erosion, land subsidence, impacts on indigenous life-styles, and the northward advance of agriculture crops.

The Arctic is seen as a preview of what climate change can mean for the rest of the world and also makes a strong contribution to the global picture including sea-level rise from melting glaciers, the driving of deep ocean circulation patterns and the absorption and generation of CO₂ in Arctic soils.

The ACIA has completed the first phase of its assessment of the consequences of climate change in the Arctic and the current chapters are being peer reviewed. The policy document is currently being prepared. Climate change is likely to affect every aspect of life in the Arctic and the situation must be kept under continuous review. There are likely to be surprises, not anticipated in present model projections. More data is needed and models are still to be refined but the results should make planning and adaptation more manageable.

Emerging Issues: Human and Economic

Ambassador Mary Simon of Canada gave a presentation on the human and health aspects of the Arctic environment from the perspective of the indigenous peoples. She reflected on her own experiences and meetings with residents throughout the region, highlighting the important stages in the development of a cooperative agenda among Arctic states and indigenous peoples. The Arctic Council had shown foresight in embarking on an Arctic Marine Strategic Plan, building on the strong foundation laid by the eight Arctic States and indigenous peoples when they concluded the 1991 Arctic Environment Protection Strategy.

She went on to explain the intimate relationship Inuit have with the marine environment on which they depend for food and cultural identity. Now the environment is changing, and these changes are becoming very obvious. She was able to cite many examples of differences she had observed during her own lifetime. She noted the results of several substantive research projects conducted with indigenous peoples in Canada's north documenting changes to the environment, drawing particular attention to the concern indigenous peoples now have that they can no longer rely on their past knowledge to safely predict environmental events. She acknowledged the important contribution that ACIA will make working directly with traditional knowledge.

She closed with a quote from a colleague - sadly recently deceased - who had long championed the value of involving indigenous peoples in international fora. *"A balance must be struck between taking time for careful thought and responding to urgent need. Management decisions cannot be removed from the direct influence of communities - to do so would be to the serious detriment of their traditional knowledge, cultural traditions and socio-economic needs - these are not just indigenous rights, these are human rights."*

What are the Economic Drivers and How Will They Influence the Arctic Marine Environment?

Professor Ragnar Arnason, University of Iceland recognized two approaches to the issue of economic drivers, one for resources under national jurisdiction and another for co-utilized resources. He defined the basic economic driver as the people's search for a better life. This drive leads to economic expansion, increased resource use and population growth, all of which can be a threat to the Arctic environment, as we know it. This threat is not caused by the economic system itself, but by its attempts to meet the popular demand for a better life. More importantly it is difficult to see how any other economic system could meet that particular demand differently. However, our economic system, the so-called market system, is not infallible. The system fails when it does not manage to meet the demand for a better life as fully as possible given the existing physical, natural and social constraints. Common reasons for economic failures are imperfect information and poor or missing property rights, both of which play a major role in environmental misuse.

When it comes to the Arctic environment, it appears that the absence of sufficiently strong private property rights and the prevalent institution of common property rights is the paramount problem. In his view, virtually all the most pressing environmental problems in the region e.g. overfishing; excessive air, water and ground pollution; habitat deterioration due to mining; global warming; and thinning of the ozone layer can be traced to the lack of good defensible property rights of the environmental goods involved. As a result, much of the Arctic environment is currently subject to economic mistakes appearing as overexploitation of many resources, loss of economic benefits and, in some cases, the threat of irreversible changes.

Professor Arnason went on to describe the threats to the Arctic marine environment from overfishing, increased mining activities, increased traffic, tourism and pollution. For sustainable use of natural resources, attention needs to be paid to optimum social use, including market and non-market benefits. He noted that optimality in this sense is crucial as anything else implies social waste, i.e. loss of opportunities to increase welfare. National managers have many tools at their disposal. However, economic theory and experience strongly indicate that corrective taxes/subsidies and, in particular, property rights generally work best whenever they can be applied. He used a simple model to compare benefits and costs and to show how these are affected by property rights, environmental uses, wealth, population growth and controls.

For the international cases, where Arctic resources may be used directly and indirectly by distant nations, there is an international property problem similar to the domestic case. Examples of use were cited as water and airborne emissions, fishing from common high seas stocks, mining, competing uses of resources (e.g. transport, military activities and tourism) and global warming. The management of shared resources is more difficult in the international case, because of the lack of a management authority. To deal with the problem, national rights may be extended, which has many difficulties, or the nations involved – in many cases all nations of the globe - can put a super-national authority in place that unifies the management of globally common natural resources.

Lunch Seminar: Thoughts about Strategy and Strategy Making in Intermediate Organizations

Dr. Runolfur Smari Steinthorsson, Associate Professor in Management and Planning, University of Iceland started by noting that the Arctic Council could fit the definition of an Intermediate Organization (IO). These IOs often lack a clear mandate, a sound resource base and a unique domain. They operate under multi-contextual conditions, exist between different societal sectors and have to cope with many paradigms. They tend to concentrate on strategy and tactical levels of management and are relatively weak in terms of policy and operations. It was noted that a strategy could be defined as a pattern, or a plan, that integrates an organization's major goals, policies and actions into a cohesive whole. A well-formulated strategy therefore helps marshal and allocates resources according to changes in its environment. A strategy and its dimensions also covers the questions of what, how, where, who, with what, for whom, when and why. Strategy development incorporates the vision, mission, core concepts and strategic scenarios then translates them into activities that can take place (action plans).

Dr. Steinthorsson concluded with observations on how to decide on a vision and the criteria to be used for judging the mission of the organization in the development of a strategy.

Session 2: Trends in Ocean Management

Examples of various international, regional and national approaches were presented within this session, including a regional seas overview, the Caspian Sea, ecosystem-based management, the European Union Marine Strategy, Arctic implications of the World Summit on Sustainable Development (WSSD) outcomes, national ocean strategies from Canada and Norway, the role of the Russian NPA (Arctic) and presentations by the World Wildlife Fund and the Advisory Committee on the Protection of the Sea.

Regional Approaches

i) **Regional Seas Overview**

Dr. Veerle Vandeweerd, Coordinator of the UNEP/GPA¹ Coordination Office gave a presentation on global trends, in particular as they relate to the outcomes of WSSD, and regional approaches within the framework of the GPA and UNEP Regional Seas Programme. She noted that the UN Commission on Sustainable Development (CSD) would follow the goals from Johannesburg and the issues of Water, Sanitation and Human settlements that will be addressed next year at CSD 12 and 13. Water is not only fresh and water supply and sanitation are not only "taps and toilets"; hence holistic integrated approaches and initiatives are of importance in addressing the pollution of the marine environment. Examples are recent initiatives such as Hilltops-2-Oceans (H2O) and White Water-2-Blue Water (WW2BW). Relevant meetings coming up shortly are the Global Conference on Oceans, Coasts and Islands (Paris, November, 2003); WW2BW (Miami, March, 2004); H2O (Australia, May, 2004) and the UNEP-GMEF (Korea, March, 2004). The EU has several related initiatives such as the Water Initiative, the Marine Strategy and the Water Framework Directive. There has been a coordinated input to these three initiatives from the Regional Seas organizations in Europe.

Dr. Vandeweerd went on to explain the GPA and its accomplishments from its inception in 1995. The implementation of the GPA occurs mainly through the actions of governments and the exercise of National Programs of Action (NPA). The NPA is a dynamic and interactive agenda for marine protection, involving strategic planning and concrete projects. An important NPA is the Russian NPA-Arctic project which is supported by the GEF. There is also the Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-Based Activities (1998). She concluded by describing the UNEP Regional Seas Programme, its key priorities and concerns, its role as an important implementation mechanism for GPA priority activities at the regional and national level, and the new strategy for Global Regional Seas that includes sustainable development and monitoring goals.

ii) **The Caspian Environmental Program: Challenges and Lessons Learnt**

Mr. Tim Turner, Project Manager, ACOPS described the Caspian Sea program, which commenced operation in 1998; four years after the Caspian States signed the Almay Declaration. In five years the program has achieved an enhanced dialogue, established a solid management structure, a strong planning framework, a Strategic Action Plan (underpinned by national action plans) and agreed on the text of a draft Framework on the Protection of the

¹ Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

Caspian Sea, due to be signed next month. An improved understanding of the oceanographic, chemical and biological processes has been developed together with economic, social and political constraints. There are also draft regional agreements on data, fisheries and emergency response.

The future development of the region is the responsibility of the involved states. Donor countries can provide seed money to assist in the development of the various Caspian Sea programs. Its coordination will continue through the management structure, which is now funded by the participating states. Long-term legal commitments will need to be made by governments. The main challenges faced so far have been lack of funding, lack of transparency and conflicting national agendas. The Ministries of Environment have been relatively weak with a low level of capability in enforcement and compliance.

The lessons learnt include the recognition of full inter-ministerial and sectoral coordination which is critical to the development of national and regional plans. Process is also important, as is national and regional ownership of the program. Well-crafted documents by outside consultants are no substitute for the local and regional ownership. Plans should be realistic and based on national resources and capacity. Data and knowledge should be shared. Communication with private industry is difficult but important. Program momentum is precious and, once achieved, must be maintained by donors and recipients alike.

iii) **Implementing Ecosystem-Based Management**

Mr. David Egilson, Chair of PAME summarized the experience of the OSPAR Commission in implementing ecosystem-based management. He noted that five of the fifteen States parties to the OSPAR Convention are Arctic States. The Convention area covers the North East Atlantic and extends northward to the Pole. The history of the Commission dates from the establishment of the OSLO Convention (dumping) in 1972, the Paris Convention (land-based pollution) in 1974 and the subsequent combining of these into the single Commission in 1992. In 1998, Annex V was adopted, which covers biodiversity and human activities but excludes fisheries and defers to the International Maritime Authority (IMO) on shipping matters. OSPAR has five strategies covering hazardous substances, radioactive substances, eutrophication, offshore oil and gas, protection of marine biodiversity and habitats, and a joint environmental and assessment programme. An obligation exists to apply the precautionary principle, best available technology and best environmental practices.

Mr. Egilson described the threefold approach of the related biodiversity actions, namely to tackle the threatened or declining species and habitats, impacts of human activities and marine protected areas. The ecosystem approach covers the critical processes for maintaining the structure and functioning of ecosystems, the interactions within food webs (“multi-species approach”) and the physical, chemical and biological processes within the surrounding environment. In applying an ecosystem approach, action needs to be sectoral and the machinery exists under UN Convention on the Law of the Sea (UNCLOS). National structures are sectoral, as is the management of human activities, but the sea is a single environment. Thus the question is how do we integrate? The tools available include a strategy built on vision, an action plan to fulfill the strategy and an evaluation mechanism. OSPAR has realized the need for integration and possesses the strategic guidance, vision and the implementation tools to move towards an ecosystem approach. But the commitments of individual OSPAR parties are paramount in the paradigm shift that is needed to move from a sectoral approach to full integration.

In 2003 a Joint Ministerial Meeting of HELCOM and OSPAR made an overarching statement on the ecosystem approach. More information can be found on the website www.ospar.org

The European Union Marine Strategy

Mr. Olle Hagström from the European Commission gave a status report on the development of the EU-Marine Strategy. The aim of the strategy is to promote sustainable use of the seas and the conservation of the marine ecosystem. The target is to bring forward as soon as possible, before May 2005, a thematic strategy to protect and conserve the marine environment based on an integrated approach, complete with actions for implementation, impact assessments of new major initiatives and an engagement of stakeholders. He noted the similarities between the present workshop and development of the European Strategy, now in its second phase. The specific operational tasks for the EU Marine Strategy is to guide the development and implementation of an ecosystem approach to the management of human activities, coordinate and streamline monitoring and assessment activities, enhance and facilitate coordination with and between Regional Seas Conventions, promote coordinated actions by the relevant national and international parties, and invite neighbouring countries to participate in the process and develop partnerships. An important part of the process was the Bremen Declaration in June 2002.

Mr. Hagström explained that three working groups focusing on the ecosystem approach, monitoring and assessment, and hazardous substances are addressing the basic elements for the EU Strategy. In addition there was the task of developing regional plans for implementation. Main elements of the ecosystem approach as identified at a Conference held in Køge, Denmark in December 2002 included the following:

- Vision
- Principles
- Strategic Goals
- The properties (environmental, social and economic) sought through the implementation of the ecosystem approach
- Operational regionally based objectives (including environmental quality objectives)
- Limits, targets, indicators
- Actions and delivery tools (i.e. Ecosystem Approach Management, Integrated Coastal Zone Management)
- Assessment, monitoring and scientific research
- Pre-agreed risk management actions

In closing he noted that the timetable to finalize the EU-Marine Strategy concludes with the presentation of the Commission's proposal in the spring of 2005.

World Summit on Sustainable Development and the Arctic

Mr. Thomas Laughlin, Deputy Director, Office of International Affairs, NOAA presented the Arctic implications of the WSSD outcomes. He stated that the overarching global policy context within which we develop the Arctic Marine Strategic Plan was set by the WSSD in Johannesburg in 2002. Two themes guided the process namely the need for implementing existing commitments and partnerships. Thus the major outcome of the Summit was a plan of implementation (the Johannesburg Plan of Implementation, JPOI). Paragraphs 30-36 of the JPOI deal with ocean related topics and each paragraph and its numerous subparagraphs focus on a specific set of issues.

In setting the tone for the oceans text, paragraph 30 has three inter-related ideas of direct significance to this Workshop. First, there is a call to apply an ecosystem approach by 2010. This call is linked to fisheries and to biological diversity. Inherent in the ecosystems approach is a second key idea - that we must rely on science to provide the knowledge to understand how marine ecosystems function. Third, it is recognized that ecosystems management requires integration and a high level of intra-regional cooperation. The implications are clear, first science must work out for us how to define marine ecosystem units and then we must

review how we are organized to address the human activities in these units on the basis of the scientific information.

Paragraph 31 deals with fisheries, which is a big topic. As fisheries are not within the purview of the Arctic Council, it will require coordination, communication and partnership to address these issues, as they are an integral part of the environmental picture. Similar considerations apply for the biodiversity issues covered in paragraph 32 which among others calls for the development of regional programs for halting the loss of marine biodiversity. An Arctic regional approach could be developed as part of the AMSP. Such an approach could build on CAFF's marine protected area work. The activities likely to be included in a regional program would most probably require actions both within and beyond the limits of national jurisdiction.

Paragraph 33 addressed the effects of land-based activities on the marine environment, which the Arctic Council has already addressed through the development of the RPA in 1998. The Russian NPA-Arctic project, although not under the direct authority of the Arctic Council, is an excellent example of partnership in the region.

Perhaps the most relevant part of the maritime safety text is that which calls for ratification, accession and implementation of relevant instruments of the International Maritime Organization (IMO). Arctic States have already cooperated in the development and adoption of Guidelines for Ships Operating in Arctic Ice-covered Waters, but the AMSP will need to address the possible implications of expanded Northern Sea Route activities, especially in light of the effects of climate change on the seasonal sea ice extent.

Finally, paragraph 36 calls for the monitoring and assessment of the marine environment and the AMAP program has, and continues to provide, an excellent scientific basis for our work.

National Ocean Strategies and Programs

iv) Canada's Oceans Strategy

Ms. Renee Sauve, Department of Fisheries and Oceans, gave a summary of the main elements of the Canadian Oceans Strategy. It is based on the three core principles of sustainable development, integrated management and a precautionary approach. It has the following three main objectives:

- To increase the understanding and protection of the marine environment
- To support sustainable economic opportunities
- To demonstrate international leadership in oceans management

Ms. Sauve elaborated on the elements under these three main objectives. Partnerships are an important element of the Strategy and specific activities will involve actions taken individually by the federal, provincial and regional governments and also coordinated actions amongst governments and with other partners in industry, academic and public sectors.

To implement the Strategy, Canada will promote modern governance and build on practical experience using integrated management planning to reduce conflicts and ensure sustainable resource use. It will use existing and new institutional mechanisms for coordination and cooperation and it will encourage ocean stewardship activities. Canada is committed to integrated management which is a collaborative and on-going process and to a network of marine protected areas.

v) **White paper from Norway**

Mr. Per W. Schive, Ministry for the Environment gave a presentation on ecosystem management in Norwegian waters, as covered in the White paper "Protecting the Riches of the Sea" which was approved by the Parliament in the Spring of 2003. The vision for the initiative is "rich and clean oceans" and covers the need for an overall integrated and comprehensive policy on the marine environment using an ecosystem approach. A sectoral approach can lead to overload and overexploitation. Integration is therefore a key, both amongst sectors and with science.

All of the Norwegian Seas are covered by the policy. As a first step the Norwegian part of the Barents Sea was chosen as a pilot area for the concrete implementation of the policy and the application of an ecosystem approach. The Barents Sea today is in general "rich and clean", while at the same time it is under pressure. The Norwegian Government is now preparing an integrated management plan for the Norwegian part of the Barents Sea as the major follow-up of the White Paper. The key principles of this work are stated as:

- The knowledge base is central to the policy in order to identify what is known and what is not known. For the Barents Sea this included the preparation of an environmental quality status report, the identification of valuable areas, an overview of knowledge gaps, a description of socio-economic factors and environmental impact assessments for all economic sectors.
- Both management objectives and environmental quality objectives will be developed, based on science and expert advice.
- An integrated management plan will be developed on the basis of the knowledge base as the principal tool to maintain a balance and consensus between different interests under the framework of an ecosystem approach.
- The necessary management measures will be introduced and the responsible authorities accountable for follow-up.
- Monitoring and research and the establishment of performance indicators are necessary for adaptive management.
- The implementation requires the involvement of all relevant sectors of society and an interdisciplinary approach for research.
- The process must be transparent and open.

Mr. Schive gave a list of management actions already taken or under preparation by Norwegian authorities on the basis of the White Paper. For increased safety of marine transport along the Norwegian coast this included; an extension of Norwegian territorial waters from 4 to 12 nautical miles, mandatory shipping lanes, a strengthening of emergency preparedness including increased towing capacity, designation of beaching localities and introduction of an automatic identification system for ships. Management actions were likely underway in other sectors, such as:

- Zero discharges of oil and hazardous substances from offshore oil and gas platforms
- Sustainable fisheries management
- Adapting aquaculture to environmental needs
- Protection of marine areas (including coldwater coral reefs)

Finally, proposals for key elements of the Arctic marine strategy were identified. These incorporated: a clear vision, approval at the highest possible political level, the inclusion of all sectors, possession of necessary tools of knowledge, strategic milestones, management measures and the ability to monitor and conduct research.

vi) **The Role of Russian NPA -Arctic in the Marine Strategy**

Mr. Boris Morgunov, Ministry of Economic Development and Trade, introduced the National Plan of Action for the Protection of the Arctic Marine Environment from

Anthropogenic Pollution in the Russian Federation (Russian NPA-Arctic). He explained how this plan was related to Russian marine strategy. The Russian Federation has a Marine Doctrine approved by the President of the Russian Federation in 2001 and includes a target-orientated program on "The World Ocean" which extends until the year 2012. The NPA-Arctic is based mainly on one of ten sub-programs dealing with "Arctic Development and Use". Preservation of the marine environment is one of the Russian priorities in their World Ocean program.

Russia is concerned about the pollution of the Arctic both through Russian and international pathways. The NPA-Arctic has participants from Russian Ministries and Agencies, from Russian Federation regional administrations, from private companies and from partners and donors. The objective is "to develop and implement efficient measures of human and biosphere protection from anthropogenic pollution in the marine, shelf and coastal zones of the Arctic and contiguous territories". The program will be implemented through the development of a system of monitoring and pollution assessment, the improvement of legislative and regulatory measures, the development of investment projects and support measures (training, health protection, establishing marine protected areas) and through international cooperation.

The NPA-Arctic is being supported by a GEF project, which has components for developing a Strategic Plan of Action to protect the Arctic from land-based sources of pollution, pre-investment studies and the development of measures to enhance the environmental protection system. A series of pilot projects are planned. The implementation of the NPA-Arctic will provide an arena for the interaction of government, industry and society, promote sustainable development, reduce environmental risks and provide both economic and environmental benefits.

Mr. Morgunov concluded by noting that the program had received the highest political support and will be part of the State Arctic Policy for Russia.

Strategies by Regional/International Organizations

vii) The Advisory Committee on the Protection of the Sea (ACOPS)

Lord Julian Hunt of Chesterton, Chairman of ACOPS, introduced himself as a climate scientist and a parliamentarian and brought both of those interests to the workshop. ACOPS is involved in the development of the Russian NPA-Arctic, which is an excellent example of partnership and collaboration at national and international levels. This collaboration includes ACOPS and the Russian Federation's Department of Economic Development and Trade, the Global Environment Facility, UNEP, UNEP GPA, IOC of UNESCO, RAIPON, NEFCO, NDEP, EBRD and bilateral donor countries (Canada, Iceland, Italy, the USA and the European Commission). The aims of the program will be to observe and analyze all the most serious aspects, locations and hotspots of environmental degradation against the background of environmental change, and how these changes affect the ecosystems of the Russian Arctic. A very ambitious part of the program is to integrate these measures into the total strategy of sustainable economic and environmental development. The planning as well as investment and implementation aspects of the program will certainly involve the national and international private sector working with governmental agencies. His colleague, Mr. Morgunov, had already described much of the organizational details.

The international significance of the Russian NPA-Arctic stems from the fact that the Arctic environment, like that of every ecosystem, is a vital component of the global ecosystem. In addition, the Arctic has a huge influence on the global environment and global climate that is disproportionate to its size. Equally significant, as the WWF and the Inuit Circumpolar Conference have emphasized, is that the Arctic environment, including its fisheries, is

strongly influenced by pollutants transported from lower latitudes by ocean currents and in the atmosphere, especially industrial chemicals and aerosols. As the global climate changes, atmospheric and ocean measurements have shown some of the largest variations in the Arctic and Antarctic coastal regions and an accelerated retreat of the permafrost, the latter resulting in great releases of methane to the atmosphere. Since methane is a more potent form of greenhouse gas these emissions may lead to even greater global warming than has been predicted so far. The scientific aspects of this potential critical process are now the subject of intense study and discussion.

He noted the encouraging and exciting collegial approach to the Arctic environmental issues and that the national marine strategies in each country were a matter of interest to all. There is a need to consider economic, social and environmental issues together using practical measures at local regional and international levels. Sustainable development will be a key policy. There will be an increasing emphasis on indigenous populations. International conventions may provide guidance, but it is the local people that supply the driving force for implementation.

In conclusion, he highlighted the necessary ingredients/challenges for a strong partnership approach between the Russian Federation and the Arctic Council. First, over the next two years to satisfy the financial, governance and capacity needs for effective public - private partnerships established through roundtables and partnership conferences. Second, to establish a strong science base for credible priority setting, rigorous business cases and risk-benefit analysis for ensuring cost-effective investments, together with a strong management model/team for project implementation, reporting and evaluation. The latter requirement will involve teams of experts mainly coming from Russia.

viii) The World Wildlife Fund Arctic Program

Mr. Stefan Norris. WWF Arctic Program described the workshop participants as "Caretakers of the Sea", working on the development of a strategy that will actually make a difference. He found it inspiring to see that so many different interests share the common goal that our children, and their children, can have an equal chance to enjoy the same ocean in the future.

The WWF believes that the Arctic Council is an important forum to address this issue. The WWF has an agenda that emphasizes conservation rather than utilization. The WWF Marine Program is one of six thematic global priorities. However, the toxics, climate change and species themes are also relevant to the marine area. The WWF focuses on eco-regions and in the Arctic there is a special interest in the Barents and Bering Seas. The Arctic marine environment faces challenges of insensitive development, overfishing, climate change, pollution and the introduction of alien species.

Under the WWF Marine Program the first target is the establishment of Marine Protected Areas (MPA) with a goal of doubling the present area coverage, now less than 1% of the marine area, by 2006. Management guidelines for assessing MPA management effectiveness, agreement with industry on MPA compliance measures and legislation against illegal activities are also targets. The second target is sustainable fisheries where market incentives are important, as are the elimination of the worst subsidies contributing to overfishing, the reduction of bad practices and illegal activities, and addressing access issues for distant water fleets.

Mr. Norris went on to describe the program in the Barents Sea where most of the WWF Arctic work has been done. It is one of the most productive marine areas in the world and is still relatively clean. He concluded with recommendations for an ecosystem-based approach to management that included the need for strategic environmental assessments, a conservation first policy, the importance of marine protected areas, the need for adaptation strategies for

climate change and to have a strategy that was action oriented with clear deliverables, milestones and deadlines.

Plenary Discussion

The plenary discussion commenced with two brief presentations.

Ms. Kate Anderson, special advisor in the Foreign Service Department, Faroe Islands reported on the Shetland Island Conference held in October 2003. The Shetland Island Conference is a part of a process that was started by the Nordic Council of Ministers in 1999. The First North Atlantic conference was held in 2001 in the Faroe Islands and marked the starting point of this forum. Two elements of the conference process are important - vertical and horizontal integration. Horizontal integration between fisheries and environment ministers and vertical integration - gives voice not only to the States, but also to representatives from regional organizations and community level governments. The idea is not to add another institution, but to provide a forum that can inspire and help generate more action. The third conference will be held in 2005 in Norway. Below are some of the issues raised in the Shetland Island Conference:

- A greater focus on the implementation of ecosystem approaches
- A strong emphasis on the need to reduce fishing capacity and importance of consultation was stressed
- Marine protected areas
- Business partnerships
- The importance of education and cultural exchange in the region

Mr. Alexei Limanzo, regional representative of RAIPON noted that during the Soviet era his people were relocated away from the ocean to inland locations. Children were taken away from their parents and their traditional lands. Now oil developments are in their land. Due to the lack of enforcement of environmental legislations these traditional lands are now experiencing an environmental disaster, for example, the death of 100,000 tons of herring, due to the mismanagement of oil development by a specific company. Today there are compensation measures for the degradation of the land, but this compensation is minimal (about 10 US dollars per capita annually). In conclusion, he stated that his people are not against economic development, even in their land, but not without adequate controls. The need for conservation and environmental protection can not be over-emphasized. We are here to study implementation of international projects in this area to help solve these problems.

Discussion

The co-chair, explained that the objective of this plenary session was to discuss the various approaches towards marine management. He recalled that several approaches had been mentioned, for example the ecosystem approach, environmental quality control, integrated management, traditional knowledge, marine protected areas and global marine assessment. He invited questions and comments from the participants. In the ensuing discussion the following points were made

Abrupt climate change has been considered in the ACIA project, but it is difficult to study. It was one of the issues that must not be neglected. In any strategic planning effort there are assumptions about the future, and these assumptions are nested in scenarios. However we need to be very clear about what those assumptions are.

Another challenge that needed discussion was the conflict between different ideas of security, for example, environmental security. What do you do when a broad understanding of security comes into conflict with more traditional security (national or military oriented)? How do you reconcile environmental security with more traditional security? There may be three options: You do not discuss it, you try to address both (as in UNCLOS), or you try to work with the traditional security perspective and adapt it to environmental security needs. The first option is the easiest, the second is more fruitful but difficult, the third is the ultimate goal.

The meeting was reminded that we couldn't manage our environment, only our activities. Should a marine strategy focus on individual sector activities or rather look at broader horizontal questions, such as environmental indicators or the monitoring of environmental conditions?

The importance of local decision-making was apparent, for example in the previous presentation by the Russian speaker. Local involvement addresses some of the property rights issues that had been discussed. There is an obvious need for better science to understand ocean ecosystems. He disagreed with the WWF concept of conservation first, even though conservation is important, because the first priority is to address concerns.

Other issues raised in the plenary included:

- *The need for monitoring* - Can we give people regular data about how the environment is changing? Policy change must be predicated on an assessment of what is happening and only regular scientific data can provide help.
- *Integration* - Is it just another meaningless term? If we integrate too much we could lose focus. There must be the right balance. Integration is not only discussion involving a wide array of issues, but also the involvement of all interested stakeholders and the sharing of information.
- *The future of the planet* - Important questions are: How to take knowledge to action? How do we document what is going on? How are the systems working? What are the assessments telling us? We must take the knowledge and transform it into information that policy makers and politicians can understand.

Session 3: Panel Discussion

Arctic Council Working Groups and Permanent Participants

Representatives from Working Groups and Permanent Participants of the Arctic Council formed a Panel to address the following question:

“Which key Arctic marine issues and concerns within respective areas of interest should be considered in developing the strategic plan over the next decade and how could the strategic plan be used to better coordinate and integrate activities among Arctic Council partners?”

In general, the panel participants were positive about an Arctic marine strategy plan (AMSP) and viewed it as an opportunity to improve coordination between the various activities of the working groups. They were each invited to give a brief statement of their views.

Ms. Laura Johnston, Chairperson of the Emergency Prevention, Preparedness and Response Working Group (EPPR) explained the role of EPPR and how it tied into the purpose of an Arctic marine strategy. The EPPR deals with emergencies and unexpected events. Ten years ago a risk assessment was conducted that showed pollution from transport and storage of oil as the greatest threat to the Arctic. This study also found that the probability of an emergency related to a nuclear site was less, but could impact larger areas. Ms. Johnston listed the transportation and storage of oil, radioactive hazards, transportation and potentially natural disasters as the main issues of the EPPR Working Group.

Ms. Johnston saw the AMSP as an opportunity to integrate the work of EPPR with the programs of the other Working Groups and also with players outside the Arctic Council. The marine strategy could help to collectively evaluate the risks and explore the links between chronic pollution and emergency events.

Mr. Hugi Olafsson, Chairman of the Sustainable Development Working Group (SDWG) reminded the Workshop that sustainable development was an overarching theme of the Arctic Council, not only for SDWG, although that group carries the specific responsibility to implement sustainable development policy. He also mentioned that the SDWG was overseeing the work of creating a sustainable development strategic plan, which would need input from other Arctic Council Working Groups. The SDWG is the youngest of the Working Groups and, unlike the other groups that are more focused on environmental issues, deals mainly with economic, social and cultural aspects of sustainable development. We often say "We are putting a human face on the Arctic Council". He stressed that a marine strategy would have to deal with the sustainable use of marine resources and also the sustainable livelihoods of communities.

He mentioned four key elements that the SDWG believed should be included in the strategic plan:

1. Inclusive decision-making processes
2. Arctic transportation and infrastructure
3. Ecological and cultural tourism

4. The mapping of economic, social and cultural features of the Arctic

Mr. Helgi Jensson, Chairman of the Arctic Monitoring and Assessment Working Group (AMAP) stressed the importance of monitoring. He said it was important that a marine strategy be flexible enough to respond to the unexpected and adapt quickly to new situations. Also, the AMSP would need to take a holistic approach, looking at the various elements of the Arctic ecosystem such as pollution, conservation, health of fish stocks and human conditions. He emphasized food safety as an important issue in this respect. In addition, he suggested the marine strategy should look at the interface between marine and terrestrial ecosystems. Finally, he pointed out that, for the strategy to be successful, it would need to take into account the activities of all Working Groups and help to create a stronger link amongst them.

Mr. Kenton Whol, Chairman of the Conservation of Arctic Flora and Fauna Working Group (CAFF) briefly listed what he believed CAFF could bring to the table when forming a marine strategy. He strongly advised that an ecosystem approach be central to the strategy and gave an example of four CAFF related projects that could contribute to AMSP. The first project deals with marine protected areas (CAFF recently hosted a workshop on this issue). The second is the Circumpolar Biodiversity and Monitoring Program that has a strong marine component for species and habitat. The third is the work of a group on circumpolar seabirds and the fourth a project on the conservation of migratory birds outside the Arctic.

CAFF would like to see the following themes in the AMSP:

- Conserving ecosystems and habitats (applying the ecosystem approach)
- Conserving species (best management practices)
- Assessing and monitoring arctic biodiversity
- Circumpolar and global issues (how the Arctic is central to broader issues)
- Engaging society in conservation (participation of stakeholders)

Mr. Per Dövlé, Chairman of the Arctic Council Action Plan (ACAP) considered food safety as the top priority for ACAP in terms of the key issues for the strategy. He cited several cases where contaminants had been detected in seafood and said these examples should serve as a warning. His suggestions for achieving safe foods included the establishment of regulations for new activities, e.g. through strategic environmental assessments. Other options included the implementation of cost-effective national programs for the reduction of Arctic priority pollutants. Arctic States could join forces to push for relevant actions to be undertaken on a global scale and finally the option of implementing a circumpolar plan for the reduction of priority pollutants.

He mentioned economic ability, knowledge, willingness and government priority as necessary ingredients for a successful marine strategy and emphasized that the AMSP should be an Arctic Council strategy made in cooperation with all Working Groups. The strategy needs not only long-term goals, but also short-term goals, that can be used to measure progress in the near term. Some of the ACAP projects could help in this regard, although many are aimed at reducing specific pollutants.

Mr. David Egilson, Chairman of the Protection of the Arctic Marine Environment Working Group (PAME) started by referring to the results from the Montreal Circumpolar Marine workshop held in 1999. From the issues highlighted in that workshop, most of the threats relate to sustainable harvesting of living resources. These threats include pollutants, invasive species and by-catch. Global market conditions, such as subsidies in fisheries, and climate change are also important issues. He stressed the need for a long-term perspective based on an ecosystem approach, a solid legal base, the best available scientific understanding and integrated management.

He called upon all Working Groups to join forces and work together on the marine strategy. It is an Arctic Council strategy not a PAME strategy. After the AMSP has been politically

approved, it will be possible to work on detailed action plans for specific aspects of the strategy.

Peggy Osterback, represented the Aleut International Association (AIA), which is a chain of more than 200 islands in the Arctic, located from Alaska to Russia. She said that in spite of the influence of the modern world the Aleuts have managed to keep a strong connection to their culture and to the ocean. She highlighted the deep commitment of the Aleuts for sustainable use of marine living resources. Their livelihoods are dependent on fisheries and they want resources available both now and for future generations. Because of the proximity, nuclear underground test sites are of great concern to the Aleuts, but other threats are also important. They include pollution in the Bering Sea, the impact of climate change and invasive species. All of us are humans and we all have to live together in this world. We should all be concerned about the health of our ecosystem and therefore work together on an Arctic marine strategy. She closed by stressing the willingness of indigenous peoples to contribute, to share their knowledge and to assist with the collection of data.

Carl Christian Olson represented Inuit Circumpolar Conference (ICC). He stressed the fact that environmental protection was seen as the basis for survival for all indigenous populations who are trying to adapt to climate change. They have often been forced to adapt to new circumstances in the past and know that the key is to resist assimilation. Cultural sensitivity is important. If indigenous peoples manage to adapt to climate change successfully then perhaps the rest of the globe can profit from it.

Discussion

The major issues raised in the plenary discussion include the following:

Importance of Communication

Communication was the first issue raised. It was pointed out that often, important scientific results are not communicated adequately to affected local communities. Many instances were given where indigenous peoples were the subject of scientific studies, but heard nothing of the outcome of the research. If science shows a link between health issues and contaminants in diets, then the information needs to be communicated as soon as possible, and in a culturally sensitive manner, to those that eat traditional foods.

The chairman of AMAP agreed that it was very important for scientific information to be reported to communities, but that this was best done through local health workers. Generally, communication with local communities has been the responsibility of the nations, and it is the nations that should ensure a flow of knowledge from the communities back to the Working Groups. Communication of bad news can be difficult and the need to be cautious and to avoid unnecessary worries was raised. In many cases the benefits from a diet of traditional food will outweigh the negative effects of contaminants. One panelist noted that, in his experience, information was sometimes held back for commercial or cultural reasons, and this also reduces or slows communication flow.

The discussion highlighted the need for a communications plan as an integral part of the marine strategy.

Priority Issues

Finding ways to finance relevant programs requires setting priorities and having a plan for which issues to tackle first. Emissions of carbon dioxide were mentioned as a very clear contribution to the threat of global warming that States could deal with by implementing known actions. Those actions often have other environmental benefits, such as reducing local pollution. Other issues identified in the discussion as priority issues included elimination of major pollutants, sustainable resource management and cleaner production technology.

Cleaner production technology is one example of a tool that can be used to address many environmental problems simultaneously and therefore could be categorized as an action that has several goals.

Climate change will generate many related issues ranging from increased shipping traffic to coastal erosion and related impacts on ecosystems. Mitigation measures have been the responsibility of individual states and the opinion was aired that they should not be a part of the strategy. It was pointed out that mitigation issues could be reviewed later, once policy recommendations were available from the ACIA project.

The potential of an increased military maritime presence in the Arctic had received little prominence in the discussion but some participants pointed out that it should be included in the strategy. In this connection a reference was made to two separate incidents involving the sinking of military submarines.

A view was expressed that it was wise to start with non-controversial issues where common ground was easier to achieve. Controversial issues should not be neglected, but explored and brought forward when the political climate was ready to deal with them.

The Global Connection

The many interventions revealed a strong willingness to work together. The question on how this willingness could be transferred into action remained to be answered. There was also a broad consensus on the need to apply an ecosystem approach.

The strategy will need to be forward looking and adaptable, taking into account different scenarios. A suggestion was to build the strategy around three components: one dealing with the environment, another focusing on sustainable use and the third looking at social issues and sustainable livelihoods.

The strategy will need to take complex issues and transfer them into clear actions for decision-makers. The strategy and its implementation must be relevant to the highest levels of government and also to local communities. Furthermore, the strategy should also be used to bring a clear message from the Arctic to the global level and give the Arctic a stronger voice in the international community.

Session 4: The Circumpolar Response

The participants were divided into four smaller groups to promote increased discussion and the sharing of ideas on the content, opportunities and challenges of the Strategy and its circumpolar response. Each group was given a chairperson and a moderator to regulate and record their respective discussions, which were then reported in plenary. The main results arising from the breakout sessions are summarized below.

Breakout Topic I: What are the key elements of a strategic plan?

There was a broad consensus that an **ecosystem approach** should be central in the proposed marine strategy. Some raised the issue that, given the wide acceptance of this concept, it was important to speed up the work of further definition of what an ecosystem approach really means and how it could be applied. It was also noted that the Arctic Council could take a global leadership role in this respect.

The opinion was voiced that if an ecosystem approach were to be used then it would be necessary to include fisheries, which are currently not part of the Arctic Council's mandate. An alternative view recognized that the Arctic Council did not need to incorporate fisheries related activities directly into the marine strategy, but rather identify fisheries as one of the issues that needed to be dealt with by the appropriate authorities in a partnership arrangement.

In addition to the ecosystem approach, the precautionary approach and the polluter pays principle were mentioned as important elements to maintain.

With respect to **geographical coverage**, the strategy should not only deal with the open seas but also with coastal zones, river catchments and other areas that are connected to the ocean ecosystem. The overall **time scale** should extend over a long period (in decades), but should identify both short term and long-term goals.

All groups recognized the importance of a **clear vision** and overarching goals, followed by more detailed objectives that in some cases could include specific targets.

When discussing **major issues** that should be dealt within the strategy, some groups offered a matrix demonstrating how these issues could be dealt with at different levels. The following table shows one way of listing the major issues in relation to how they could be tackled at the local/national, regional and global level.

	National Actions	Working Groups and the Arctic Council	The Arctic Council in the global arena
1. Pollutants			
2. Healthy environment and sustainable use			
3. Climate change and ozone			
4. Emerging issues (Arctic transport, oil and gas, tourism etc.)			

In other words, implementation will have to take place on three levels. Some actions will have to take place nationally within individual States, in some cases States will use the Arctic Council and the Working Groups to implement actions and, in some instances, the Arctic States can act as a group in the international arena to push for actions globally.

Climate change was an issue that was mentioned repeatedly in all discussions, as well as many of the associated impacts such as changes in sea routes due to the reduction in sea ice. Safe food was another issue identified as important for the strategy.

The length of the strategy and to what degree it should include actions was the subject of discussion. It was commonly agreed that it would not be realistic to come up with a strategy that included a detailed action plan in the time given, since the strategy should be ready in the fall of 2004. At the same time, the strategy could not be separated from actions and needed to include at least some short-term actions and a reference to a more detailed plan of implementation. It was also pointed out that the Arctic Council Working Groups were already involved in a variety of actions and one goal of the strategy should be to put the actions already underway in the AC into a strategic framework. This can help us estimate how well we are covering the most important issues, identify what is missing and then use this information to decide on the next steps. Thus, the strategy needs to address both current actions and possible additional actions.

The importance of **communication** and the **participation of all stakeholders** were themes woven into all discussions at the workshop. The need to communicate both to high level politicians and to communities at the local level was highlighted, as well as the need to communicate with the world outside the Arctic. In this respect, it is important to have a clear idea about who are the beneficiaries of the marine strategy. This would for instance include Ministers, Senior Arctic Officials, Permanent Participants of the Arctic Council, other international organizations, national and local governments, industries, affected communities and the general public.

Breakout Topic II: What are the opportunities, challenges and key considerations offered by a strategic plan?

All of the groups approached this question by creating three lists, one identifying opportunities, another pointing out challenges and the third listing key considerations. The lists below draw from the results of all the four discussion groups. The issues on top of each list are those that were identified by more than one group and could be considered as some of the common opinions from the workshop.

Opportunities

1. The Arctic Council can demonstrate global leadership in applying an ecosystem approach
2. There can be proactive planning for emerging problems e.g. those related to shipping and tourism
3. Different forms of knowledge can be integrated and better synergy amongst Working Groups created
4. Greater involvement of stakeholders, including indigenous peoples
5. Collective goals and priorities can be set and a strong global voice maintained
6. Implementation priorities can correspond to WSSD targets
7. Current partnerships can be enhanced and new ones established
8. The AMSP can serve as a platform for communication
9. Integrated actions will increase efficiency through better coordination
10. The AMSP can assist in the setting of priorities and the identification of the most effective actions
11. The application of new technologies and sciences will be encouraged

12. The AMSP will assist in the resolution of maritime disputes and in consensus building

Challenges

1. Finding adequate resources, including financial resources
2. Securing high level political support
3. Lack of baseline information and scientific knowledge
4. Use of new concepts (such as ecosystem approach)
5. How to involve indigenous governments in decision-making processes
6. The design of effective communication mechanisms
7. Making the AMSP useful both for residents of the Arctic and global institutions
8. Defining the scope of the Strategy to cover both long term and short term goals and both Arctic and global issues
9. Overcoming issues related to ownership of land and/or resources
10. Reconciling an ecosystem approach across differing jurisdictions
11. Acceptance by non-Arctic states
12. Development of plausible scenarios

Key considerations

1. Definition of an ecosystem approach
2. Integration and the adoption of a holistic approach
3. Long-term stewardship
4. Decide what action to take (short term and long term)
5. Clearly define who is responsible for implementation
6. Reporting and assessment of implementation (including enforcement if needed?)
7. Provide several scenarios of climate change
8. Application of adaptive management
9. Aim for data integrity and transparency
10. Partnership concept for data collection and analysis
11. Management of resources based on science and best available knowledge
12. Sustainable resource use and linkage to global food security
13. Food safety
14. Melting of tundra and how it effects coastal and marine areas
15. Regional demands for Arctic oil and gas reserves
16. Trans-arctic shipping (cargo, tourism, oil)
17. Be clear on who the strategy is for (target audience)
18. Develop a communications strategy
19. Involve indigenous peoples in all aspects
20. Use of traditional knowledge
21. Increased opportunity for local decision making
22. Capacity building and local training

23. Shared decision-making and sharing of power
24. Compatibility with other national and international policies and laws (not excluding land claims settlements, indigenous rights etc.)
25. The involvement of non-Arctic countries and observer countries
26. Partnership arrangements with global funding agencies dealing with environmental issues
27. Collaboration with the Russian Federation (e.g. because of pressures on indigenous land)
28. Infrastructure development

Session 5: A Roadmap for the Arctic Marine Environment

John Karau, co-chair, opened the session with a summary of the message of the Workshop thus far. Drawing from the presentations and discussions of the two previous days, he offered some analysis of what could be the main goals and objectives for a marine strategy, and what were the important opportunities, challenges and key considerations. He listed an ecosystem approach, regional seas and partnerships as key elements under goals and objectives and proposed that currently the main drivers of change in the Arctic were climate change and increased economic activity. Mr. Karau suggested that scenarios would be created for two, five, ten and twenty years in the strategy and those scenarios would be based on current activities, climate change and economic development scenarios. They should also take WSSD timelines into account. The strategy would need to include coordination and reporting mechanisms.

Mr. Karau presented the idea that rather than inventing new principles of its own, the strategy should adopt the most appropriate principles from existing AC strategies. From the Workshop discussion it was evident that an Arctic marine strategy could offer many opportunities and he mentioned three of these; the ability to deal with emerging issues (e.g. shipping, climate change and oil & gas developments), the opportunity to apply an integrated approach that would include partnerships amongst Arctic Council Working Groups as well as with external partners, and finally the potential to link the strategy with other international initiatives such as the UNEP Regional Seas Program, the EU Marine Strategy and the London Convention.

Adequate resources were on top of the list of challenges, followed by such issues as the need to ensure that the Strategy was built on a sufficient knowledge base, the problem of information management and the design of an effective communication strategy, initiating and maintaining political will and finally how to clarify the definition of an ecosystem approach.

An amended version of this summary is presented as Annex 3 to this summary report. The summary is particularly relevant as it was used to present the progress on the development of the Arctic Marine Strategic Plan to the meeting of Senior Arctic Officials on October 23, 2003.

Panel discussion

A panel discussion followed the summary by the Co-chair. The objective of this final session was to hear some new ideas and to discuss how an Arctic Marine Strategic Plan could help reach the desired future state of the Arctic marine environment. Panel members possessed a broad range of interests and a wide representation.

Mr. Craig Fleener, GCI, started by stating the importance of a long-term stewardship of the environment. He also used the opportunity to explain the importance of combining traditional knowledge and science. He shared with the audience his own experience as a wildlife scientist, who has integrated traditional knowledge into his work during the last 12 years. "We do not want to be seen as a library book that researchers can refer to when they need specific information, but otherwise forgotten. We want our knowledge to be woven into modern science".

Ms. Samatha Smith, WWF observed that workshop participants seemed to have a general agreement about applying an ecosystem approach and that the strategy should be broad in

scope. She found those findings very positive and stated that WWF attaches great importance to the development of an Arctic marine strategy. The organization would like to see the strategy focus on long-term environmental goals and a performance-based approach in reaching those goals. Ms. Smith also pointed out the need for harmonious standards for global industries, e.g. with regard to shipping, to avoid the creation of pollution havens. She encouraged the Arctic Council to propose a network of circumpolar marine protected areas and then listed three sets of issues that the WWF would like to see included in the strategy, namely climate and other global changes, international issues (e.g. fisheries and oil and gas development) and the improvement of collective management of shared ecosystems.

Mr. Dennis K. Thurston, MMS began by responding to the question posed to panel members about the desired state of the Arctic marine environment. The obvious answer would be that we would like to keep the Arctic pure without any limitations on activities, but since this was not realistic we must instead strive to minimize and mitigate negative impacts. He said that a marine strategy was necessary and long overdue and believed any industry person would agree with this. He brought attention to a potential problem because, although the strategy would address the Arctic as a whole, rather than looking at specific sectors, national legislation does not necessarily have such a holistic approach. This means that national governments would need to show political support to the strategy and possibly review their legislative systems in order to support implementation. Another issue he raised was the absence of representatives from industry at the Workshop and asked why this had occurred.

Mr. Geoffrey Holland, international expert on ocean science affairs. He put himself in the shoes of a Minister and tried to envision what would be an optimum outcome from the political perspective. How would the empowerment of an Arctic Minister be increased? How would the visibility and influence of the Arctic region and its peoples be improved? He proposed that a Minister would take sustainable resource development to be the basis of the Strategy with the adoption of the necessary environmental standards and regulatory measures having been prepared with the full participation and support of all stakeholders. The principle of an ecosystem approach would also be applied. Mr. Holland believed that the adoption of common goals, as stated in a strategy that applied an ecosystem approach, would provide Arctic ministers with a strong regional lobby in international negotiations. The integration of the programs of the Arctic Council would be focused and therefore more efficient and effective under a common Strategy. The Strategy would need to be kept alive at the political level and a mechanism established to do this. Regular reports to the Council and perhaps regular but less frequent Arctic Summit meetings at the highest level would be needed.

Dr. Lawson Brigham from the US Arctic Research Commission mentioned the lack of data as one issue that had been repeatedly raised at the Workshop. He pointed out that one area where good data was available was for sea ice in the Arctic. From this data it was quite clear that in the last five decades ship access to the Arctic has improved. This applies to all seasons. He saw the marine strategy offer opportunities to integrate Arctic Council activities and the results from the ACIA project. He also thought it positive that the strategy could deal with the intersection of sectors with regard to users. He stressed the need to share information and form partnerships. Environmental protection, marine safety and marine security were the three types of activities he thought the strategy should include. Finally, he brought attention to the absence of maritime regulators in the Workshop and pointed out that they have much to offer.

Discussions

The issue of timing was raised both by panel members and in the discussions that followed. There was some skepticism about how realistic it was to write the strategy in less than a year and some worried this would mean the process would not be comprehensive and inclusive. These questions were referred to an informal PAME meeting that was to take place later in the day to discuss the process, since the topic was not meant to be resolved at the Workshop.

The importance of a clear vision and long term goals was restated in the discussion and the question was asked about the possibility of providing those working on the strategy with additional information at a later date. The co-chairs welcomed this suggestion.

In summing up the session, co-chair John Karau noted the usefulness of some of the additional ideas raised, such as the importance of giving attention to good stewardship and traditional knowledge, the suggestion on how to establish targets and then use a performance based approach to reach those targets, what Ministers would be looking for in a marine strategy and the importance of engaging maritime regulators to assist in the development of shipping priorities.

Closure

The Co-Chairs thanked the presenters and the participants for the successful outcome of the Workshop and called the session to a close.

Annex I – Workshop Agenda

Principal Objective:

To provide a forum for exchanging information and ideas on drivers of change, trends in oceans management and possible circumpolar responses to arctic oceans issues.

Co-Chairs:

Mr. John Karau, Canada
Mr. Magnus Johannesson, Iceland

MONDAY, OCTOBER 20, 2003

0800-0900 hrs	Registration and Refreshments
0900-0910 hrs	Welcome and Opening Address Ambassador Gunnar Pálsson, Chairman of the Senior Arctic Officials
0910-0930 hrs	Overview of the Arctic Marine Environment <i>A general description of the Arctic marine ecosystem and how it functions</i> Dr. Kenneth Sherman, Director, National Marine Fisheries Service
Session 1: Drivers of Change for the Arctic Marine Environment <i>A summary of the key threats and challenges</i>	
0930-0950 hrs	State of the Arctic Marine Environment Mr. Helgi Jensson, Chair of AMAP
0950-1010	Biodiversity and Conservation issues Mr. Kent Wohl, Chair of CAFF
1010-1030 hrs	Climate Change and the Arctic Dr. Robert Corell, Chair of the ACIA Assessment Steering Committee
1030-1050 hrs	Health Break

1050-1120 hrs **Emerging Issues: Human and Economic**
What are the human and human health aspects of the Arctic marine environment from Indigenous Peoples' perspective?
Ambassador Mary Simon, Canada

1120-1140 hrs *What are the economic drivers and how will they influence the Arctic marine environment*
Professor Ragnar Arnason, University of Iceland

1145-1200 hrs **Co-Chairs' Summary**

1200-1300 hrs **Lunch**
Keynote speaker – Runólfur Smári Steinþórsson, Associate Professor in Management and Planning, University of Iceland

Session 2: Trends in Ocean Management
Examples of various international, regional and national approaches

1300-1335 hrs **Regional Approaches**
Regional Seas Overview – Dr. Veerle Vandeweerd, GPA Coordinator
Implementing Ecosystem-based Management - OSPAR/HELCOM

1335-1400 hrs **EU Marine Strategy**
Mr. Ulle Hagstroem, European Commission

1400-1420 hrs **WSSD and the Arctic**
A summary of the implications for the Arctic, including the concept of ecosystem-based approaches
Mr. Tom Laughlin, NOAA

1420-1500 hrs **National Ocean Strategies and Programmes**
Canada's Ocean Strategy – Ms. Renée Sauve
White paper from Norway – Mr. Per W. Schive
Russian NPA-Arctic – Mr. Boris Morgunov

1500-1520 hrs **Health Break**

1520-1600 hrs **Strategies by Regional/International Organizations**
Lord Julian Hunt of Chesterton, Chairman ACOPS
Ms. Samantha Smith, Director WWF Arctic Programme

1600-1700 hrs **Plenary Discussion**
Participants will have an opportunity to discuss various approaches to ocean management and how they might apply to the Arctic marine environment. Co-Chairs will summarize the key elements.

1800-2000 hrs **Reception**

TUESDAY, OCTOBER 21, 2003

Session 3: Panel Discussion <i>Arctic Council Working Groups and Permanent Participants</i>	
0830-1000 hrs	<p><i>A panel of working group chairs/representatives (PAME, AMAP, ACAP, CAFF, EPPR, SDWG) and Permanent Participants of the Arctic Council will address the following question:</i></p> <p><i>“Which key Arctic marine issues and concerns within respective areas of interest should be considered in developing the strategic plan over the next decade <u>and</u> how could the strategic plan be used to better coordinate and integrate activities among Arctic Council partners?”</i></p> <p><i>Co-Chairs will moderate the discussion.</i></p>
1000-1020 hrs	Health Break
1020-1100 hrs	Panel Discussion, continued <i>Co-Chairs will continue to moderate the discussion and summarize key elements.</i>
Session 4: The Circumpolar Response <i>Considering the changes, pressures, approaches and initiatives</i> <i>What should be the circumpolar response?</i>	
1100-1230 hrs	Breakout Group I <i>What are the key elements of a strategic plan?</i> <i>This discussion should reflect on the information thus far presented in the workshop and the experience of participants in identifying key elements that define an effective strategic plan.</i> <i><u>Moderators:</u> Mr. Tom Laughlin, United States and Mr. Per W. Schive, Norway</i>
1230-1330 hrs	Lunch
1330-1415 hrs	Breakout Group Summaries <i>Rapporteurs will present the results of the morning’s discussions</i>
1415 hrs	Session 4: Continued <i>Co-Chairs will introduce the afternoon session with a focus on opportunities</i>
1430-1600 hrs	Breakout Group II <i>What are the opportunities offered by a strategic plan?</i> <i>This discussion should reflect on the possible opportunities and challenges and key considerations that are offered by a marine strategic plan for the Arctic.</i> <i><u>Moderators:</u> Mr. Tom Laughlin, United States and Mr. Per W. Schive, Norway</i>
1600-1620 hrs	Health Break
1620-1700 hrs	Breakout Group Summaries <i>Rapporteurs will present the results of the afternoon discussions</i>
1700-1730 hrs	Plenary Discussion <i>Participants will have an opportunity to discuss the key characteristics of a strategic plan. Co-Chairs will summarize the day’s discussions.</i>
1730-1745 hrs	Wrap-up

WEDNESDAY, OCTOBER 22, 2003

Session 5: A Roadmap for the Arctic Marine Environment

0900-1000 hrs	Panel Discussion <i>A panel of representatives to include government, NGO, industry, indigenous people and intergovernmental organizations. Each panel member will give a brief statement of impressions based on previous sessions and their own experience by addressing the following theme:</i> <i>“The desired state of the Arctic marine environment and how an Arctic marine strategic plan can help to get there.”</i> <i>Co-Chairs will moderate the discussion.</i>
1000-1020 hrs	Health Break
1020-1100 hrs	Plenary Discussion <i>Participants will have an opportunity to discuss future directions. Co-Chairs will summarize discussions.</i>
1100-1130 hrs	Workshop Summary and Next Steps <i>Co-Chairs will summarize the priorities and strategic directions and outline the way forward to facilitate the development of a strategic plan.</i>
1130 hrs	Adjourned

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**Summary of Workshop
in Support of the Arctic Marine
Strategic Plan**

20-22 October 2003

SAO Meeting
23-24 October 2003

Purpose

- Existing and emerging activities in the Arctic warrant a more coordinated and integrated strategic approach to the protection of the Arctic marine environment

Goals and Objectives

- ✓ **Eco-system based approach, e.g. biodiversity**
- ✓ **Regional seas approach, e.g. UNEP/OSPAR**
- ✓ **Partnership approach, e.g. public/private**

Drivers

Climate change and the increased economic activity

Scenarios

- **For 2 years, 5 years, 10 years and 20 years**
- **Based on: current activities, climate change and development scenarios, and WSSD timelines.**

WSSD Objectives/Targets

- **Establish regular process for global reporting and assessment of the state of the marine environment** **2004**
- **Next GPA IGR** **2006**
- **Encourage ecosystem Approach** **2010**
- **Maintain or restore depleted fish stocks to levels that can produce the maximum sustainable yield** **2015**

Mechanisms

- **Adaptive strategy**
- **Need coordinating and reporting mechanisms for strategy**

Principles

- **Summary of existing Arctic Council principles**
- **Others??**

Opportunities

- ☞ **Respond to emerging issues, e.g. shipping, climate change, oil and gas.**
- ☞ **Offer an integrated approach, e.g. partnerships with AC WGs and external partners.**
- ☞ **Promote international linkages, e.g. UNEP regional seas, EU strategy, London Convention.**

Challenges

- ☞ **Adequate resources**
- ☞ **Sufficient knowledge base**
- ☞ **Political will**
- ☞ **Effective communication**
- ☞ **Clarify eco-system based approach**

Key Considerations

- ☞ **Integrated AC strategic plan**
- ☞ **Eco-system based approach**
- ☞ **Integrated management and partnerships**
- ☞ **Integrated monitoring and assessment**
- ☞ **Coordinating and reporting mechanism**
- ☞ **Priority setting for funding**
- ☞ **Inclusive decision making**

Possible actions

- 1. Proactive planning for emerging issues (e.g. shipping and tourism)**
- 2. Integrate information systems between WGs**
- 3. Built upon current partnerships and establish new ones**
- 4. Partnership arrangements with global funding agencies**
- 5. Setting targets, performance measures etc.**
- 6. Develop a communication strategy**
- 7. Capacity building and local training**