

High Arctic Conservation, Use & Development Challenges: Summary Paper for the Last Ice Area (LIA) WWF June 2013 Workshop



High Arctic Sea/Ice Conservation and Related Use & Development Issues

Introduction

WWF is keenly interested in high Arctic conservation, use & developmental issues in the arctic. WWF is one of the organizations trying to work out what environmental, socio-economic, cultural risks and opportunities climate change, specifically sea ice loss poses for the future of ice dependent life.

Arctic sea (water and ice) is the basis for a unique, intricate and multifaceted complex ecosystem that is compromised of algae and micro-organisms, fish, seabirds, marine mammals and indigenous peoples. Many Arctic species depend on sea and ice for different reasons that are unique to their individual biological needs.

Climate change is being dramatically felt in the Arctic, with temperatures warming at roughly twice the global average rate, resulting in changing habitat for plants, wildlife and people. Arctic sea ice has changed over the last 30 years and has decreased in extent and thickness, particularly in the summer. Furthermore, reductions of sea ice are occurring faster than climate models project with some predicting an ice-free summer arctic within this century, possibly even by mid-century.

It is unclear what the effects of climate change will have on lower life forms and/or on higher life forms including Arctic indigenous peoples who rely on sea, sea ice and associated species – mostly due to incomplete information about sea ice and species interdependence.

At the same time, rising fuel costs and other global market trends have increased demand for new, shorter sea routes through the north. The Arctic is rich with valuable resources, and with increased shipping, resource exploration/extraction and tourism opportunities will create new economic opportunities along with environmental hazards and social impacts.

Increased development activity brings with it the potential for environmental, socio-economic, and cultural impacts – both positive opportunities and negative impacts. Resilience, adaptation and safety are extremely important to both northerners and southerners. The Arctic's remoteness and conditions pose real challenges and with the lack of infrastructure, capacity issues and potential risks to the environment requires collaboration and cooperation to address planning, research, management and appropriate responses to ensure that uses and development minimizes negative impacts, whilst providing arctic residents the ability to participate in decision-making and benefit from activities.

WWF's primary goal is to help key stakeholders to have the best and necessary information to make the best management decisions about use and development, balancing

conservation and benefits, in an increasingly difficult to predict climate change reality and future.

Climate Change Causes, Predictions and Perspectives

There are different views on climate change; most scientists who specialize in this field believe its anthropogenic emissions of greenhouse gases and aerosols that have modified the chemical composition of the atmosphere. As snow and ice decrease, the earth's surface reflects less energy back to space, which is also contributing to warming and more sea ice melt.

Climatologists have developed and used climate models to simulate the climate to better understand and predict future climate changes and effects. These models produce simplified representations of nature and cannot produce exact futuristic weather predictions – such as what the weather will be at a particular time and/or place. The models may be able to predict mean properties over long time scales. The climate change models do predict a steady increase in temperature and that sea ice retreat will continue but actual timing is unknown.

Arctic indigenous peoples and northerners acknowledge climate change is happening in their region, however, less attention is given to causes and greater focus is given to paying attention to actual changes and how to adapt to them. Inuit are highly adaptive and have always found ways to cope with changes while maintaining their culture. Inuit hunters primary concern is the environmental conditions and wildlife, in particular, how it affects their ability to safely travel and successfully hunt. Inuit are confident they and the Arctic animals they rely upon will succeed but unsure what the future will bring.

Many Inuit say that the Arctic sea ice freezes later, breaks up earlier, that the ice is thinner in some areas, is less safe to be on, that the ice and snow consistency is changing, and people who rely on GPS have more problems, and therefore the need to use traditional knowledge is greater and more relevant than ever. There's also concern about the disruption in the natural order of things occurring, including changes in the wind directions, more storms, greater waves, changes in wildlife behaviours (migration routes, calving areas, invasive species, etc.) plus the erosion of shorelines and melting permafrost, and the effects on human built environment.

Some scientists would like to know the cause, with the belief that if it is known, it may be possible to assess and address the activities that are triggering or contributing to climate change, whilst others focus on attempting to predict future climate changes to allow for planning and responses. For Inuit and other northerners climate change is literally experienced on the ground in real time and that the future is always unknown and therefore uncertain but having the necessary knowledge and skills to increase resilience is key for successful adaptation.

There is much to be gained from considering various and differing viewpoints and approaches. Armed with more information, it should be possible to increase resilience, allow for better planning, better management and better responses to these changes.

Arctic Sea and Ice Use & Development

Marine transportation, whether by shipping or boating on the open ocean or by snowmobile or dog team on sea ice, is crucial to the safe transit and transport of persons and goods in the arctic. Arctic indigenous peoples are primary coastal people relying on the marine environment year round to migrate or move throughout the region, primarily for hunting. Fish, coastal birds, shellfish, and marine mammals are an extremely important part of many northerners' diet.

During the short open water season, several ships sail up and through the arctic region, primarily to deliver construction materials, household items and non-perishable foods into the northern communities. Shipping is cost effective and an essential part of any economy. Direct economic benefits of maritime transportation to future growth in safe and environmentally responsible shipping in the Arctic will require further supporting infrastructure, services and resources which are currently scarce or non-existent in places. Other shipping includes naval exercises, cruise ships and in the near future to transport natural resources to southern markets. As the shipping season extends with expected less sea ice, there is an expected increase in shipping in the Arctic.

Sustenance and commercial fishing provide important food and economic opportunities both for northerners and their nation states. While the majority of commercial fishing occurs during the open water season, some winter ice fishing occurs is done by local communities. Commercial fishing is expected to expand both by season with the longer open water season and increasing further north as these areas become increasingly ice free.

It is estimated that the Arctic holds about 30% of the world's undiscovered gas and 13% of the world's undiscovered oil. Some oil and gas exploration and exploitation is already occurring in parts of the arctic. Depending on the environmental conditions and market prices, oil and gas exploration/exploitation may occur in other parts of the arctic region. There are concerns about the negative environmental, socio-cultural impacts of the oil and gas industry, in particular seismic testing and its immediate and long-term effects on the marine ecosystem. Additional concerns are related to the placement of oil and gas installations that may also have effect on marine mammals, such as displaced whale migration routes as experienced in Alaska. There's also potential for oil spills from blowouts during exploration phase. Additionally, the produce water (if not re-injected) that contains oil residues (toxic or radioactive) may bio-accumulate with unknown long-term effects. And there is the aesthetic impact of oil and gas platforms on the landscapes that can impact on arctic tourism. Also with increased helicopter activity related to resource development can displace seabirds, animals and marine mammals from critical habitats.

Shipping of oil and gas from the Arctic can result in grounding, stranding, along with the discharge of ballast, along with the lack of adequate response methods in ice covered waters, remoteness and lack of appropriate infrastructure to adequately deal with severe oil spills, with potential of spill spread can vastly beyond initial spill area and last for decades. Environmental impacts of shipping include disruption of marine mammals, other wildlife, whale strikes, repeated transport through ice, constant plying of ships through sea ice may prevent adequate refreezing so as to allow safe transit over it.

With climate change and the increase of developmental activities in the Arctic, there are both opportunities to bring positive and much needed benefits and there are also potential for negative impacts and harms, both to the environment and to the northern peoples. Ultimately it will be up to the arctic states as to when, where, why and how natural resources are used and developed – and what conservation or mitigation measures are taken to reduce and respond to the risks and associated harms.

Current and Proposed Conservation Measures or Initiatives

Not surprisingly with so many different stakeholders and interests in the arctic region, related to the different kinds of uses and activities, there's a myriad of different bodies involved in environmental and resource use and management, including current and proposed conservation measures or initiatives. There are too many conservation initiatives to cite in this summary report, however, a few will be highlighted as examples of conservation measures currently underway or proposed, as it relates to climate change and the use and development as ways to protect the arctic region.

Arctic Council has and continues to provide new opportunities and leadership in developing international collaborations to understand and respond to arctic change. Arctic Council has a number of working groups (Arctic Monitoring & Assessment Programme, Conservation of Arctic Flora & Fauna, Emergency Prevention, Preparedness & Response, Protection of the Arctic Marine Environment, Sustainable Development Working Group, Arctic Contaminants Action Program) along with some programs and action plans (Arctic Biodiversity Assessment, Circumpolar Biodiversity Monitoring Program, Arctic Climate Impact Assessment, Arctic Human Development Report). The arctic nation member states have signed the Arctic Environment Protection Strategy which provides an agreed framework to take cooperation action on emergency prevention, preparedness and response, mostly through provided information on contact persons, contact points and available resources but is not a response organization. The Arctic Council is also working with the World Conservation Union (IUCN) has worked to identify marine areas of heightened ecological and cultural significance and asked member states how protection of these areas can be designated along with management implementation plans. It should be noted that under Canada's chairmanship, the Arctic Council is unlikely to deal with climate change and leave that issue to other agencies working in this area, except as it relates to adaptation.

Inuit Circumpolar Council-Alaska is building a conceptual framework on how to access food security from an Inuit perspective that can contribute to our understanding of the

pressures on traditional food resources and communities that are resulting from climate changes, increased human presence and development in the Arctic. The project is scheduled to have a conceptual framework by fall 2014 with completion in spring 2015. There is a lack of adequate and reliable science-based information about wildlife populations and habitat, and under-utilized indigenous knowledge in such research.

WWF is engaging with arctic indigenous peoples, other northerners, governments, and NGOs in the region to begin discussion on potential future management of the area in a fashion that will encourage resilience of ice-dependent life. WWF's Last Ice Area (LIA) initiative is promoting the discussion of options for how this area might be best managed to preserve both the natural and cultural values of arctic ice and associated land areas. WWF has identified an area between Canada's high arctic islands and northern Greenland as one of the areas where summer sea ice will likely persist the longest. WWF's Last Ice Area is establishing a baseline of information to assess the current state of relevant knowledge, identify knowledge gaps, create new knowledge and assist in communicating the significance of the project. WWF's Rapid Assessment of Features and Areas for Circumarctic Ecosystem Resilience (RACER) seeks to identify and map significant and persistent elements of socio-ecological resilience and dimensions of human adaptive capacity to changing climatic conditions in the arctic.

Shipping regulators and industry have proposed several initiatives and measures to help protect arctic sea areas from arctic marine shipping, including the need to identify, consolidate and agree which arctic marine areas should be protected and/or measures that can be undertaken to reduce negative impacts. These include mandatory best practices, international system of standardized education and training for ice navigators, specific automation systems, proper certification and training for officers and crews operating in arctic waters. Mitigation measures to avoid damaging interference with marine wildlife, may include marine protected areas, ship speed limits, ships rerouting, diligent on board observation practices, better use of technology to help reduce ship noise, prevention of pollution by oil, prevention of pollution of garbage, e.g. sewage, grey water, shipping companies have arctic environmental management policy and plan how to deal with emergencies in arctic waters.

There are numerous arctic research collections and databases around the world; however, many are not integrated, well known or easily accessible by all stakeholders. Additionally, while there is a dearth of arctic research in some areas, it is widely acknowledged that there are significant gaps in information, in particular as it relates to arctic wildlife populations to determine conservation requirements and sustainable harvest levels or negative impacts from climate change or increased development and activities. Inuit observations and knowledge regarding the arctic environment and wildlife can be extremely useful and important in contributing to the overall knowledge of the arctic ecosystem, including weather changes, animal condition and behaviours.

There is a need for ensuring that the most relevant and best data is accessible and utilized, which includes the incorporation and/or collaboration of indigenous peoples and their knowledge into research and management. The goal must be that there is real, meaningful

and productive cooperation and collaboration between decision-makers and northerners, either through formalizing the roles of the parties to facilitate shared authority for decision-making that affects the arctic.

Conclusion

Climate changes in the Arctic and its corresponding effects and opportunities demands new approaches that involve increased planning and regulatory flexibility, heavier reliance on risk assessment, greater tolerance and care in the application of precautionary approaches and more demand for research related to population and stock assessment. There's a need for greater reliance on indigenous peoples, especially hunters, local communities, regional institutions to monitor and report ecological and sociological changes resulting from altered sea ice conditions. Changes to ice also lead to or contribute to a broad range of additional stressors, including warming, acidification of the ocean, more storm surges, greater open water, fetching and bigger wave heights leading to greater coastal erosion and recessions, new shipping, tourism and hydrocarbon activity and growing human presence in the arctic. As such, we, both northerners and southerners, all need to understand these changes and decide how we wish to respond to them.