



Commentary

ARCTIC FISHERIES: GOVERNANCE CHALLENGES AND OPPORTUNITIES

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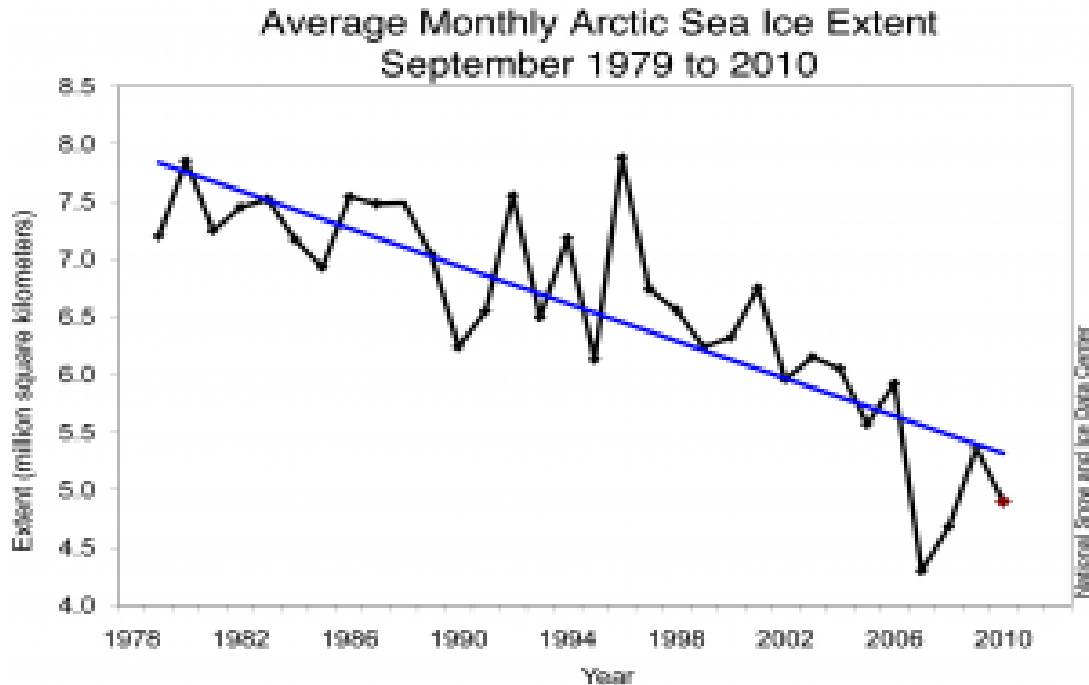
Arctic Fisheries: Governance Challenges and Opportunities

The Arctic is becoming increasingly accessible with climate change. With this growing interest in the Arctic we are challenged not only to understand and determine the influence of climate change but also to develop the governance and management structures to properly and effectively accommodate these impacts. The climate of the Arctic resulted in limited access and interest in the past but now the warming of the Arctic has brought increasing attention to the region.

The impacts of climate change in the Arctic are a shrinking of the permanently frozen ice cover, a decrease in sea ice, a melting of permafrost (releasing methane, a potent greenhouse gas), and a thinning of the ozone layer around the North Pole (increasing the intensity of the sun and rate of evaporation). The Arctic is also subject to the world-wide impacts of climate change: sea level rise with the potential flooding of coastal communities, more frequent extreme weather events, and ocean acidification.

The decline in sea ice is illustrated on the graph below, indicating a decline in sea ice of thirty percent since 1979, when satellite data were first collected. The Arctic is warming faster than the global average. The decline in polar ice is believed to be the main reason for this. With less ice, less heat is reflected and more solar radiation is absorbed at the surface, amplifying the warming effect.¹ Changes in atmospheric and ocean circulations also bring more heat to the poles.

¹ See Screen and Simmonds (2010)



Source: National Snow and Ice Data Center

One possible consequence of climate change in the Arctic is the expansion and development of commercial fisheries. Although there is considerable uncertainty in any forecast of changes in Arctic fisheries, a comprehensive assessment suggests that some southerly species (Atlantic cod, herring, pollock) will move north, expanding their range and increasing in abundance; some sub-Arctic or low Arctic anadromous species may extend their distribution to the Arctic; and the southern limit of some colder water species (capelin, polar cod, Greenland halibut) will move north, reducing their range and abundance. Many species will experience changes in the timing and location of spawning, feeding, and migration patterns. Also, the reduced sea ice cover will lead to a longer growing season.²

An expansion of commercial fishing brings the need to develop governance and regulatory structures and, ideally, a management regime which provides sustainable yields and

² See Arctic Climate Impact Assessment (2004)

avoids the dissipation of economic rent. Currently, governance and management structures to promote sustainable and economically efficient fisheries are either inadequate or lacking.

Too often the development of a new commercial fishery is characterized by an initial boom followed by a bust. The open access and loose regulation of a new fishery lead to harvests beyond those which are sustainable. This is followed by a decline in stocks and landings and, if the fishery is still economically viable, severe restrictions on effort and landings. Both fish stocks and fishermen's incomes are decimated. For any potential Arctic fisheries it is vital that the appropriate governance and management structures be in place early to avoid the usual boom and bust pattern, deal with scientific uncertainty, and avoid excess fishing effort and the dissipation of economic rent.

International law and foundations for conservation and management are in place, but specific action for the Arctic is needed. Eight states: Canada, Finland, Denmark (for Greenland), Iceland, Norway, Russia, Sweden, and the United States have territory in the Arctic; each has an exclusive economic zone off its shores in which it has rights over the management and exploitation of fish stocks. The exclusive economic zones are established under the United Nations Convention on the Law of the Sea. The Arctic Ocean, however, is not completely within these exclusive economic zones and other states may have access to areas of the Arctic Ocean. Since many species may migrate between exclusive economic zones or move beyond any zone, agreements between states for the conservation and management of these stocks are necessary. These agreements are encouraged by the UN Fish Stocks Agreement, instituted to ensure the long-term conservation and sustainable use of straddling and highly migratory fish stocks through the establishment of global, regional and sub-regional fisheries management organizations. Individual Arctic states have to establish governance and management structures

within their exclusive economic zones and, as required, enter into arrangements with other Arctic states and others.

One possible vehicle for Arctic co-operation in fisheries is the Arctic Council, created in 1996 by the eight Arctic states. The Council is a forum for discussion of policy issues but, unfortunately, has limited functions and authority. It has no regulatory power or permanent secretariat. Environmental monitoring, however, has been a specialty of the Council. Environmental governance has been strengthened through improved knowledge, guidance on reducing threats to the environment, and support for implementing existing commitments. But the Council does not have a specific structure for the discussion of fishery issues and has not established a regional fisheries management organization for the Arctic. The Council should be encouraged to play an active and leading role in fisheries governance and management, both in advising member states and in providing for the governance and management of straddling stocks and highly migratory species.

With uncertainty about the type, extent, and timing of the impacts of climate change on the Arctic and uncertainty about the response of fish species a precautionary approach to fisheries management is imperative. All actions must be taken with adequate foresight to, as far as possible, reduce or avoid risk to the resource, the environment, and those involved. Decision-making should take into account uncertainties and the potential consequences of being wrong. The absence of sufficient scientific information is not a reason to postpone action or not take action to avoid serious harm to fish stocks or the eco-system

The precautionary approach can be applied by an adaptive management decision process, in which decision-making is flexible, decisions are adjusted as information becomes available, and the outcomes from events and management actions are understood. Adaptive management is

particularly useful with uncertainty about the environment and the consequences of management actions, conditions likely to be found in the Arctic. One goal of adaptive management should be to make fish stocks, ecosystems, and those involved resilient, having the ability to maintain their attributes while responding to change.

Besides managing for sustainability, economic efficiency in management is required. Effort must be limited such that the resource returns the maximum possible economic rent. The fishery must at least be self-supporting with management expenses covered by fees for access to the resource.

Some propose an overall Arctic treaty, providing a framework for discussions on particular issues. Others suggest, more reasonably, that a general Arctic treaty is not politically feasible. Jurisdictional claims and boundary issues need to be stabilized and specific issues, including fisheries, addressed.

Fisheries are not the only concern with climate change and the Arctic. The impacts on the indigenous people of the Arctic may be severe, not permitting them to maintain their traditional way of life and limiting alternatives. Any actions must positively affect the well-being of the inhabitants of the Arctic. There are also boundary disputes, between Canada and the United States over the seaward extension of the border between the Yukon and Alaska and between Canada and Denmark over Hans Island between Greenland and Ellesmere Island. Canada and the US also dispute the status of the Northwest Passage. Canada has adopted straight baselines around the Arctic archipelago, making the area between the islands internal waters while the U.S. position is that the Northwest Passage is an international strait through which foreign states have a rite of transit. With the opening of the Arctic negotiations must be started and these disputes settled.

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