

Marine Protected Areas on the Eastern Scotian Shelf: MAP's perspective on selecting the next Area of Interest

In the autumn of 2009, Fisheries and Oceans Canada (DFO) launched a public consultation on the next Area of Interest (AOI) for a Marine Protected Area (MPA) to be established under the *Oceans Act* on the Eastern Scotian Shelf. The public consultation was extended into 2010 and concluded on 14 May. This edition of the Marine Affairs Policy Forum provides some background on MPAs, MPA networks, the DFO consultation, and the Marine Affairs Program's response to it.

Introduction: MPAs and networks of MPAs

The Marine Affairs Program strongly supports Canada's efforts to establish MPAs in fulfilment of its commitment to international targets set by the World Summit on Sustainable Development, the Convention on Biological Diversity and other fora. At the same time, we recognize that global targets for establishing MPAs can have the adverse effect of leading to decisions favouring quantity over quality. With regard to the *Oceans Act's* mandate to establish MPAs for conservation purposes, we are supportive of the designation and establishment of a network of MPAs throughout Canadian waters. We also recognize the importance of building socioeconomic considerations into the decision process and are therefore very supportive of the consultation process currently underway and appreciate having the opportunity to comment.

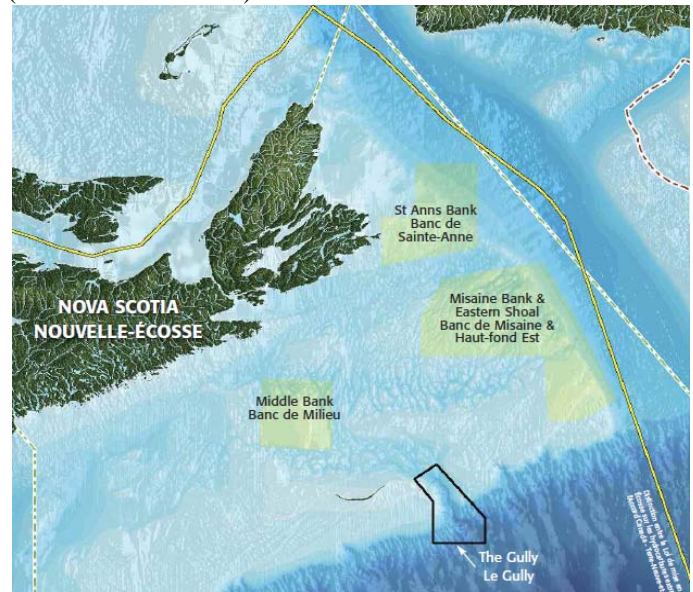
The *Oceans Act* defines an MPA as "an area of the sea that forms part of the internal waters of Canada, the territorial sea of Canada or the exclusive economic zone of Canada and has been designated under this section for special protection for one or more of the following reasons: (a) the conservation and protection of commercial and non-commercial fishery resources, including marine mammals, and their habitats; (b) the conservation and protection of endangered or threatened marine species, and their habitats; (c) the conservation and protection of unique habitats; (d) the conservation and protection of marine areas of high biodiversity or biological productivity; and (e) the conservation and protection of any other marine resource or habitat as is necessary to fulfill the mandate of the Minister." (Oceans Act 35(1)).

Seven *Oceans Act* MPAs have been designated across Canada to date, including the Bowie Seamount off British Columbia, the Musquash Estuary in New Brunswick, and the Gully off of Nova Scotia. There are several AOIs in the process of eventually becoming MPAs.

It is important to make a distinction between MPAs and marine reserves (*i.e.* no-take areas) in order to avoid public misunderstanding. What DFO is proposing is a multiple-use

MPA that may include a no-take area closed to human use. We feel this distinction should be made clearer in the consultation booklets for future AOIs, which may help build public support for MPAs. The three currently proposed AOIs are: Middle Bank; Misaine Bank & Eastern Shoal; and St Anns Bank. The locations of these sites are shown in Figure 1.

Figure 1. The candidate AOIs on the Eastern Scotian Shelf (Source: DFO 2009:8).



According to the IUCN World Commission on Protected Areas guidelines on establishing MPA networks (IUCN WCPA, 2008:12), an MPA network "can be defined as a collection of individual MPAs or reserves operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve". The Consultation Booklet on selecting the next AOI (DFO, 2009:16) defines an MPA network as "a set of complementary and ecologically linked marine protected areas, consisting of a broad spectrum of marine protected areas, established and managed within a sustainable ocean management planning framework and linked to transboundary, global and terrestrial protected area networks".

Given the ecological emphasis of both the Canadian and internationally-recognized definitions for MPA networks, we are concerned that the MPA network to eventually be designated under the *Oceans Act* is somewhat undermined by the fact that only one MPA is up for consideration on the Eastern Scotian Shelf at the present time. A truly ecological network would consider the distance between MPAs as a key prerequisite, for larval transport and other ecological linkages within the three-dimensional marine environment.

That is to say, establishing one new MPA per DFO region over the next couple of years will indeed lead to a “network”, but its significance would be of a more political than ecological nature. While the *Oceans Act* ecological objectives for MPAs (outlined in Table 1) provide standards that would ensure similar rationales for designation between different regions, the current piecemeal approach does not address integrated ecological networks “linked to transboundary and terrestrial protected area networks” as set out in the Federal MPA strategy cited above (DFO, 2009:16). We recognize that eventually *Oceans Act* MPAs will be combined with Marine Wildlife Areas and National Marine Conservation Areas to form the federal network of MPAs, but we want to emphasize the importance of considering the ecological requirements of building networks, an emphasis clearly outlined in the IUCN World Commission on Protected Areas guidelines and the DFO Consultation Booklet.

MAP’s perspective on the future establishment of an MPA under the Oceans Act in the different candidate AOIs

While we strongly support the establishment of MPAs in all three areas outlined in the Consultation Booklet, we recognize that only one site will go forward at present as an AOI. Given the information outlined in the following table (based on *Oceans Act* MPA criteria and socioeconomic data provided by DFO (2010)), it is apparent that all three sites have ecological value, but **St Anns Bank** has the lowest socioeconomic impact and is therefore the “best” candidate AOI. It is also “*the only major bank on the inner Scotian shelf*” (DFO, 2009:14). However the other two sites also have ecological merits worth conserving, discussed below. Ecological and socioeconomic data for the three AOIs are outlined in Table 1.

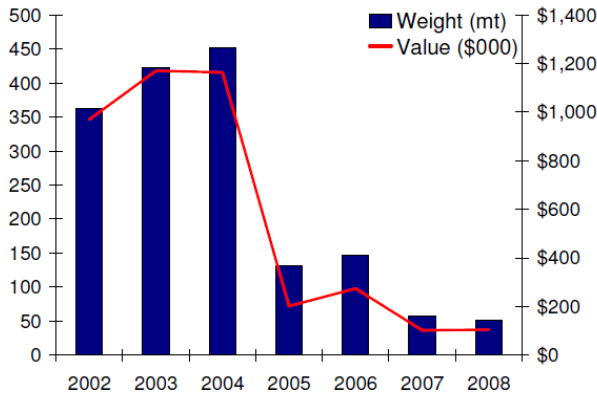
Table 1. Candidate AOIs and ecological criteria for MPA designations set out in the *Oceans Act* (adapted from information provided in the AOI consultation booklet (DFO, 2009) and socioeconomic profiles (DFO, 2010))

Candidate AOI	Oceans Act MPA criteria				Socioeconomic data		
	Commercial and non-commercial fisheries resources, including marine mammals, and their habitats	Endangered or threatened marine species and their habitats	Unique habitats	Areas of high biodiversity or biological productivity	Commercial fisheries	Fisheries related employment	First Nation involvement
St. Anns Bank 5,100km ²	Important habitat for 4 fish species, 4 invertebrate species	4 species total	Only major bank on the inner Scotian shelf and has the highest annual sea surface temperature range on the Scotian shelf	Area of high fish and invertebrate species diversity	\$105,000 total revenue in 2008, 51,500 kg landed (mostly groundfish and snow crab)	14 vessels, 51 crew, \$42,000 crew income	None
Misaine Bank & Eastern Shoal 11,800km ²	Important habitat for 11 fish species, 8 invertebrate species	4 species total	The area is made up of a unique and complex seabed structure that provides a wide range of habitats, including benthic areas believed to be especially sensitive	Area of high fish and invertebrate species diversity	\$12 million total revenue in 2008, 6.7 million kg landed (mostly clam and snow crab)	30 vessels, 288 crew, \$4.8 million crew income	3 licenses, 5 vessels, \$242,000 revenue in 2008
Middle Bank 3,700km ²	Important habitat for 4 fish species, 2 invertebrate species	3 species total	None identified	Area of high fish species diversity and habitat diversity	\$4.8 million total revenue in 2008, 1.6 million kg landed (mostly snow crab and shrimp)	45 vessels, 195 crew, \$1.9 million crew income	6 licenses, 13 vessels, \$1.1 million revenue in 2008

The following graphs (from DFO, 2010) show the trends for commercial fishery landings from 2002-2008 in the three candidate AOIs.

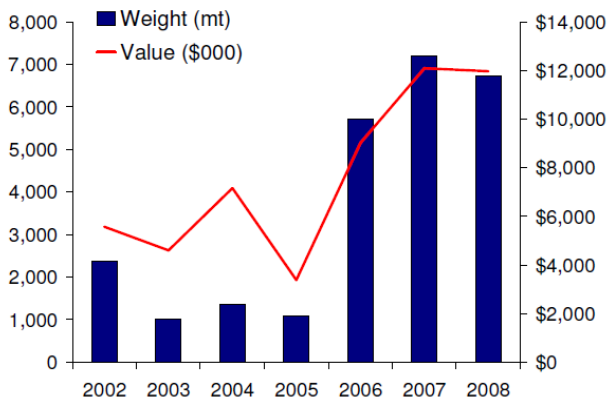
St Anns Bank:

Figure 1 Landings and Landed Value, 2002-2008



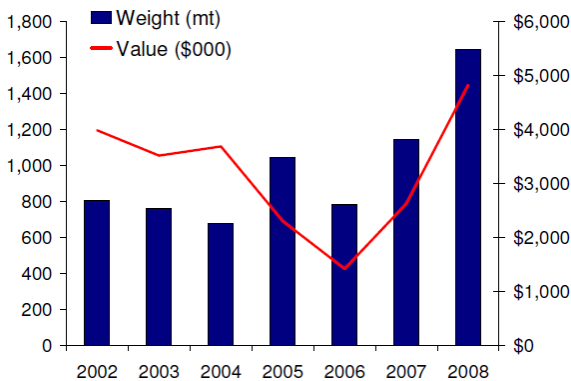
Misaine Bank & Eastern Shoal:

Figure 1 Landings and Landed Value, 2002-2008



Middle Bank

Figure 1 Landings and Landed Value, 2002-2008



It is clear from the catch data illustrated above that establishing an MPA on **St Anns Bank** would affect the least amount of commercial fishing in the three sites, and it may even help promote stock regeneration (if the MPA is designed with this purpose as one of its functions). Unlike the other two candidate sites, trends for commercial fishery landings on

St Anns Bank have declined significantly since 2002. However the other two sites, while more important commercially, also have ecological features in need of conservation. **Middle Bank** represents “one of the most important Atlantic cod habitats on the Eastern Scotian Shelf” (DFO, 2009:11) and should be protected, if not through an MPA then at a minimum via a fisheries closure. Of the three candidate sites, Middle Bank has the highest number of vessels operating in the area (45 versus 30 on Misaine Bank/Eastern Shoal and 14 on St Ann’s Bank (DFO, 2010)) as well as the highest amount of First Nation activity (6 licenses, 13 vessels, \$1.1 million landed in 2008 (DFO, 2010)). The primary catch in this area is snow crab and shrimp, and it is obvious that closing Middle Bank to fishing would be difficult given the high revenue involved, as well as First Nation rights. Since this AOI is described as a key habitat for cod, we would be in favour of conservation measures that could help regenerate cod stocks, and thus would support a fisheries closure in the area if it does not go forward as an MPA at present.

Misaine Bank & Eastern Shoal is an important habitat for several commercial species (DFO, 2009:13) including snow crab, groundfish, shrimp, cockles and surf clam. This area has the highest amount of commercial fishing of the three candidates (totalling 6.7 million kg worth close to \$12 million in 2008 (DFO 2010)). Such a high level of economic activity would be difficult to shut down for conservation objectives unless the area were shown to be truly ecologically unique and at risk from fishing activities. Of the three sites, Misaine Bank & Eastern Shoal is an important habitat for the highest number of species (11 fish and 8 invertebrates, versus 4/4 on Middle Bank and 4/2 on St Anns Bank) and encompasses “a unique and complex seabed structure that provides a wide range of habitats, including benthic areas believed to be especially sensitive” (DFO 2009:13). The complex habitat structure fosters ecological diversity and should merit protection, given the *Oceans Act* MPA criteria regarding unique habitats. In addition, this candidate AOI borders the Laurentian Channel, a known migration and feeding area for whales. If this site cannot go forward as an MPA at the present, we would be in favour of extending the portion of the **St Anns Bank** site that lies in the Laurentian Channel southward towards the **Misaine Bank & Eastern Shoal** area to provide a safe passage area for whale migration.

From our reading of the information provided in the AOI consultation booklet (DFO, 2009) and socioeconomic profiles (DFO, 2010), it appears that while **St. Anns Bank** and **Misaine Bank & Eastern Shoal** represent the most “unique” habitats, **St Anns Bank** is the only candidate site of importance to an endangered species (the leatherback turtle). However from a biological diversity standpoint, it is clear that overall the **Misaine Bank & Eastern Shoal** candidate area is important to the highest number of commercial and non-commercial fishery resources. On a comparative basis **St. Anns Bank** and the **Misaine Bank & Eastern Shoal** areas are important to an equal number (four) of species identified as being “at risk”, while **Middle Bank** is important to one less.

Policy Implications

As mentioned earlier, there has been an increase in international calls for networks of MPAs in recent years, including through the World Summit on Sustainable Development and the Convention on Biological Diversity. In 2004, Governments agreed “by 2010 terrestrially and by 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is established” (Decision VII/28). 2010 is the International Year of Biodiversity, and it will be revealed at this year’s Conference of Parties to the Convention on Biological Diversity that the international community has fallen behind these targets. According to a 2008 assessment of 236 nations and dependant territories conducted by the United Nations Environment Programme World Conservation Monitoring Centre, the mean protected area coverage of terrestrial areas has reached 12.2%, but only 5.1% of near-shore marine areas (i.e. within 12 nautical miles from shore) are protected (Coad *et al.*, 2009). In addition, there is a large discrepancy in protection, with many nations having coverage below 10%, especially in marine areas. Research conducted by the Seas Around Us group at the University of British Columbia (Wood *et al.*, 2008) has shown that while there are approximately 5,000 MPAs in the world covering approximately 2.6 million square kilometres, this only represents 0.65% of the world’s oceans and 1.6% of the total area within Exclusive Economic Zones (i.e. within 200 nautical miles from shore).

Canada has taken on the objective of establishing a federal network of MPAs, combining DFO *Oceans Act* MPAs with Marine Wildlife Areas established by Environment Canada and National Marine Conservation Areas set up by Parks Canada. This will eventually be further expanded into a national network with the inclusion of provincial designations. As a result, these departments and agencies will need to work together to ensure the creation of a comprehensive, representative and effectively managed protected area system. As a country bordered by three oceans and with one of the longest coastlines in the world, Canada has both a responsibility and an opportunity to manage its marine environment sustainably. This has particular relevance with regard to climate change impacts on coastal areas and in the Arctic.

The joining up of various types of MPAs to form a national network is a laudable goal, and the AOI selection described here is simply one step towards this network, but it is important to set a precedent for future designations by (1) ensuring that socioeconomic criteria is incorporated in the consultation process from the start, (2) allowing for external peer review, and (3) meeting ecological objectives for building a network, including transboundary considerations and linkages to terrestrial protected areas.

Conclusion

In an ideal scenario, all three of these sites should be conserved as part of an ecological network. However if only one site is to go forward at present, it seems likely that **St Anns Bank** would be the most viable candidate AOI. Not

only would it have the smallest socioeconomic impact (and restricting fishing activity could help with stock regeneration), but it is a unique ecological area of importance to an endangered species of turtle. In addition, it is the closest site to the Gulf and Newfoundland regions, both of which are designating AOIs; this group of MPAs could provide a nascent ecological network, depending on connectivity effects between the three regions.

However, given the once rich fishing history of the Eastern Scotian Shelf and the importance that all three candidate AOIs have for recovering fish stocks, we would recommend considering setting up temporary fisheries closures at a minimum in the most productive parts of the proposed sites. This would allow stocks to regenerate while providing limited fishing along the perimeters of the closure (i.e. through spillover effects). Such an interim measure would demonstrate positive management until the next round of Eastern Scotian Shelf MPA designation occurs. In addition, some protective measures for whale migration in the Laurentian Channel should also be considered.

In terms of reducing or mitigating negative impacts and/or costs associated with establishing an MPA in one or more of the candidate AOIs, continued education and outreach would help mitigate the negative perception of socioeconomic effects of establishing MPAs and fishery closures. With regard to the latter, flexibility in terms of location and timing would be essential to gain support, along with continued emphasis on the long-term benefits for both the region’s ecology and stakeholder livelihoods. Increasing transparency in the AOI process and allowing for peer-review in the site selection process would also help build public support for MPAs and ensure the process is meeting ecological objectives.

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