



Workshop Backgrounders

2003 OMRN National Conference



Marine Protected Areas

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Background

Marine protected areas (MPAs) are an important tool for the conservation of marine habitat and species. An MPA can be broadly defined as:

Any area of inter-tidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment (Kelleher 1999, p. xviii).

Larger MPAs can have several zones that have different levels of protection, separate incompatible activities, or test different management regimes for the same resource. The term **no-take zone** (a zone) or **marine reserve** (an entire MPA) refers to an area where no resource extraction is permitted.

The concept of MPAs is not new in Canada, as similar motivations underlie the creation of National Wildlife Areas (*Wildlife Act*) and Migratory Bird Sanctuaries (*Migratory Birds Convention Act*). However, the passing of the [Oceans Act](#) (1997) and the [Canada National Marine Conservation Areas Act](#) (2002) provides new tools and a fresh impetus to build a national system of MPAs. The Acts also provide more specific definitions for MPAs; for example, the [Oceans Act](#) defines a **Marine Protected Area** (capitalized) as an area of the sea that is designated for special protection for the conservation and protection of:

- commercial and non-commercial fishery resources, including marine mammals, and their habitats;
- endangered or threatened marine species, and their habitats;
- unique habitats; or
- marine areas of high biodiversity or biological productivity ([Oceans Act](#), s. 35).

In contrast, **National Marine Conservation Areas** are established:

...for the purpose of protecting and conserving representative marine areas for the benefit, education and enjoyment of the people of Canada and the world ([Canada National Marine Conservation Areas Act](#), s. 4).

For further reading, a useful introductory survey of the status of MPAs in Canada is provided by [Jamieson and Levings' \(2001\) *Marine protected areas in Canada: implications for both conservation and management*](#). More recently, the [National Round Table on the Environment and the Economy \(NRTEE 2003\)](#) has released *Securing Canada's Natural Capital: A Vision for Nature Conservation in the 21st Century*, which includes a chapter dedicated to the *Conservation of Marine Ecosystems*.

Current research

Research on MPAs encompasses a wide range of topics, but tends to focus on the **selection and design of MPAs**. The [North American Commission on Environmental Cooperation](#) (NACEC) is exploring how a network or set of networks of MPAs could be used to conserve important marine habitat and species through trilateral co-operation among Canada, Mexico and the United States ([Agardy and Wilkinson 2003](#)). In the US, the [Pew Oceans Commission](#) has released a report on the role of marine reserves in protecting oceans ecosystems ([Palumbi 2003](#)).

In developing its MPA program, [Fisheries and Oceans Canada](#) produced reports on the status of MPAs on the east coast of Canada ([Nicholls 1998](#)), as well as the country as a whole ([Jamieson & Levings 2001](#)). [Fisheries and Oceans](#) continues to develop a national network of marine protected areas, including areas of interest at Basin Head (PEI), Bowie Seamount (BC), Eastport (NL), Gabriola Passage (BC), Gilbert Bay (NL), Leading Tickles (NL), Musquash Estuary (NB), Race Rocks (BC), The Gully (NS), Manicouagan (QC), and for beluga whales in the Beaufort Sea. The first of these to achieve final designation was [Endeavour Hot Vents](#) (BC).

At the same time, [Parks Canada](#) is expanding its [National Marine Conservation Areas](#) (NMCAs) program, building on its existing marine parks at [Fathom Five](#) (ON) and [Saguenay-St. Lawrence](#) (QC). New NMCAs are proposed for several sites, including Gwaii Haanas (BC), the Southern Strait of Georgia (BC) ([Henwood 2003](#)) and Lake Superior (ON). [McCallum and Rollins \(2003\)](#) have studied public perceptions of environmental conditions in the Southern Strait of Georgia proposed NMCA.

In addition, the [Canadian Wildlife Service](#) (CWS) has a [Shorebird Conservation Plan](#) that includes the establishment of [National Wildlife Areas and Migratory Bird Sanctuaries](#). Most recently, the CWS has developed a proposal for the creation of a Marine Wildlife Area at the Scott Islands (BC) ([Dunn et al. 2003](#)).

Notable initiatives among non-governmental organizations include the joint proposal of the [Georgia Strait Alliance](#) and [People for Puget Sound](#) (WA) for the creation of an international MPA for Killer whales (*Orcinus orca*) in Boundary Pass ("[Orca Pass](#)") (BC/WA). [Barsh \(2003\)](#) has provided a critique of this proposal from an aboriginal perspective.

Members of the [Linking Science and Local Knowledge Node](#) of the OMRN have examined challenges, opportunities, and ecosystem-based approaches for designating MPAs ([Baker 2002](#); [Jessen & Ban 2002](#)), as well as information requirements for designating the proposed Musquash MPA ([Ng'ang'a 2002](#)) and possibilities for linking marine and terrestrial conservation initiatives on Haida Gwaii ([Rigg 2002](#)). The [Fisheries Centre](#) at the [University of British Columbia](#) has studied the design of MPAs and developed an [MPA evaluation model](#). [Salomon et al. \(2002\)](#) developed a modelling tool to compare the ecological consequences of alternative MPA zoning policies within the proposed Gwaii Haanas NMCA (BC). [Hooker et al. \(1999\)](#) also studied MPA design, but for cetaceans in Sable Gully (NS). More recently, [Beazley et al. \(2003\)](#) have examined systems planning and transboundary MPA management in Nova Scotia. Similarly, members of the [Whale Research Group](#) at the [Memorial University of Newfoundland](#) have studied MPA design for fish and mammals off Newfoundland and Labrador.

Other researchers are interested in **the role of communities in marine protected areas**. For example, [LeRoy \(2002\)](#) studied the multi-stakeholder process associated with the proposed Race Rocks MPA (BC), while [Octeau \(1999\)](#) examined local community participation in the creation of the Saguenay-St. Lawrence Marine Park (QC). [Parks Canada](#) has conducted a study evaluating management effectiveness at the Saguenay-St. Lawrence Marine Park ([Archambault and Boisvert 2003](#)), while [DFO](#) has reviewed lessons learned from the Race Rocks Area of Interest ([Francis et al. 2003](#)). The Saguenay-St. Lawrence study was undertaken as one of several international pilot studies leading to the imminent

publication of an IUCN guidebook for evaluating the MPA management effectiveness ([Pomeroy et al. 2003](#)).

Members of the [Linking Science and Local Knowledge Node](#) of the OMRN have examined the role of local, aboriginal and western knowledge in the proposed designation of the Gwaii Haanas NMCA ([Sloan 2002](#)), as well as the [need for science in the planning of networks of MPAs](#) (Guénette and Alder 2003). Members of the [Integrated Management Node](#) of the OMRN have reviewed the development of participatory environmental research and management in the Arctic ([Berkes et al. 2001](#)). In addition, members of the [Whale Research Lab](#) in the [Department of Geography](#) at the [University of Victoria](#) are studying the [role of education in the management of whale watching in BC](#). Shifting to Haida Gwaii, [Jones and Sloan \(2003\)](#) have developed a stewardship approach to abalone conservation.

Future research

There are many unanswered questions surrounding the implementation of MPAs. Future research might build upon several lines of current inquiry, including:

- Identifying the degree to which no-take MPAs (marine reserves) in Canada would have a **spill-over effect**, meaning a benefit to surrounding fisheries, including economic terms that would foster sustainable coastal communities. This would test the [American Association for the Advancement of the Sciences' \(2001\)](#) recent declaration that:
 - The size and abundance of exploited species increase in areas adjacent to marine reserves, and
 - Marine reserves replenish populations regionally via larval export.

To what degree does the spill-over effect occur in Canada, and with which species? Can such spill-over effects be translated into quantifiable economic benefits and, if not, what work must be done to enable doing so?

- Examining the **impact of ecotourism** on coastal and marine resources in MPAs, or potential MPAs and in the communities near them. Ecotourism is generally thought of as providing a net benefit to marine ecosystems, but what if demand for wildlife viewing leads to the deterioration of the resource? For example, what is the impact of whale watching on cetaceans, some of which are threatened or endangered? Similarly, ecotourism is generally considered as providing net economic and other benefits to coastal communities, but is this perception accurate in the Canadian context where tourism opportunities are often seasonally limited?
- Assessing options for **public involvement** in the establishment and management of MPAs. This is both a question of traditional public consultation (en route to a decision) and the building of a marine stewardship ethic in coastal communities.
- Public involvement merges into questions of **governance**. To what extent can terrestrial protected area governance models be applied to nearshore and offshore MPAs? What particular governance challenges do MPAs pose? How can cross-jurisdictional mandates inherent in MPA governance best be accommodated?
- Understanding community and individual **attitudes and beliefs** about oceans and the state of ocean resources, and about government agencies, with a view to fostering acceptance of MPAs as an appropriate and locally supportable tool for the conservation of marine species and habitat.
- Planning, establishing and managing MPAs that respect **aboriginal rights and treaties** and have the support of

impacted First Nations. How is this to be accomplished, particularly in marine areas subject to treaty negotiations? What models are available to advance MPAs in the absence of treaties?

- How should the design and management of MPAs be integrated with broader **ocean and coastal management** objectives and processes?
- What **indicators** should be used to quantify the social, cultural and economic benefits of MPAs?

Questions for workshop discussion

Worldwide, there is growing recognition that marine protected areas (MPAs) are among the best available mechanisms to reverse the decline in the health of oceans and to ensure some measure of ecological resiliency, yet protection of marine spaces and species lags far behind that afforded terrestrial environments (<1% versus >10%, respectively, in terms of area under protected area legislation). There are many reasons for this, but it may be contended that a common element is that humankind has simply failed to date to acknowledge that its practices and policies respecting the use of oceans and ocean species have placed them in peril. What must change, particularly in a Canadian context, to reverse this, and what contribution can the social sciences make to achieving these necessary changes?

The following questions will be considered during the MPA workshop:

1. What are the fundamental issues that Canadians must address if meaningful marine protected areas are to be successfully established and managed?
2. Which among these issues would benefit from research by social scientists?
3. Which among the latter list of issues should have priority attention?
4. Within the OMRN, would it be most appropriate to focus study of such issues within a dedicated MPAs Node, or would it be preferable to approach research topics in a cross-cut fashion involving existing nodes?

Results of the workshop should help shape future social science research agendas within the OMRN and federal marine protected area agencies.

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