

An Approach to the Establishment and Management of Marine Protected Areas Under the *Oceans Act*: A Discussion Paper

The purpose of this Discussion Paper is to seek input and comment on the Department of Fisheries and Oceans' proposed approach to establishing Marine Protected Areas under the *Oceans Act*.

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Executive Summary

An Approach to the Establishment and Management of Marine Protected Areas under the *Oceans Act*

Rationale

Canada's marine resources form an essential part of our economic and cultural heritage, and conserving these resources is a responsibility shared by all Canadians. To help meet this national obligation, the Department of Fisheries and Oceans (DFO), under the authority of the *Oceans Act*, has begun work on a Marine Protected Areas (MPAs) Program. We believe that this paper, by serving as a basis for preliminary discussion and comment, will help to secure the public consensus and cooperation required to make this program an effective means of sustaining the rich diversity of marine life in Canada.

Description: the Marine Protected Area

According to Canada's *Oceans Act* , a marine protected area is:

"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 [35.(1)] for special protection..."

Possible examples of MPAs include:

- Genetic "seed banks"
- "Rare species" habitats
- Polynyas
- Estuary zones
- Tidal flats
- Kelp forests
- Offshore banks
- Deep-sea vents
- Sea mounts
- Salt marshes
- Marine mammal habitat
- Permanent or seasonal upwelling or mixing areas
- Spawning and nursery areas

Scope of Authority

The *Oceans Act* authorizes the Government of Canada to establish a "national system of marine protected areas", and to make regulations that allow MPAs to be designated, zoned, and closed to certain activities.

Focus of Protection

Under the *Oceans Act* , an area can be designated as an MPA to conserve and protect one or more of the following:

- Commercial and non-commercial fishery resources, including marine mammals, and their habitats
- Endangered or threatened marine species and their habitats
- Unique habitats
- Marine areas of high biodiversity or biological productivity
- Any other marine resource or habitat as is necessary to fulfill the mandate of the Minister

Program Development

The process for developing an MPA Program and individual MPAs will include the steps of area identification, area evaluation and selection, area establishment, and area management.

DFO recognizes that a successful MPA Program will require flexibility enough to allow each MPA to be managed according to its particular needs, as well as coordination of human activities and marine conservation objectives.

Need for Public Action

DFO is now committed to resolving two crucial questions:

- 1) How to go about establishing a workable MPA Program?
- 2) How to manage MPAs so as to achieve the goals set forth in the *Oceans Act*?

DFO is well equipped to provide the science required for a thorough and intelligent consideration of these questions. Science alone, however, cannot produce complete answers. To mount a program that serves both our environment and our citizens, DFO needs the cooperation and practical experience of the Canadian public. In this partnering initiative lies the future of one of our most vital resources. We encourage you to make your ideas available to us without delay.

For more information contact:

Written Comments/ Questions/ Ideas:

Please write to: Marine Protected Areas, Department of Fisheries and Oceans, 200 Kent Street, Ottawa, Ontario K1A 0E6

Or you may look to the inside of the back cover on the Discussion Paper to find the Marine Protected Areas contact closest to you or e-mail DFO at mpa@dfo-mpo.gc.ca.

1. What is a Marine Protected Area?

Marine Protected Area (MPA) is a term used, in slightly different senses, throughout the world. The International Union for the Conservation of Nature (IUCN), for example, defines an MPA as:

"Any area of intertidal or subtidal 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."¹

More to our purpose, Canada's *Oceans Act* (Section 35: see Appendix A) states:

Section 35

(1) A marine protected area is an area of 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 purposes:

(a) conservation and protection of commercial and non-commercial fisheries resources, including marine mammals and their habitats; (b) conservation and protection of endangered or threatened marine species, and their habitats; (c) conservation and protection of unique habitats; (d) conservation and protection of marine areas of high biodiversity or biological productivity; (e) conservation and protection of any other marine resource or habitat as is necessary to fulfill the mandate of the Minister of Fisheries and Oceans.

(2) For the purposes of integrated management plans, referred to in sections 31 and 32, the Minister of Fisheries and Oceans will lead and coordinate the development and implementation of a national system of Marine Protected Areas on behalf of the Government of Canada.

(3) The Governor in Council, on the recommendation of the Minister of Fisheries and Oceans, may make regulations:

(a) establishing marine protected areas, subject to paragraph 35(1); and (b) prescribing measures which may include but not be limited to:

(i) the zoning of marine protected areas; (ii) the prohibition of classes of activities within marine protected areas; (iii) any other matter consistent with the purpose of the designation.

The diversity of the Canadian ocean environment suggests that each MPA will be unique. Some examples of areas that might be protected as an MPA include: breeding areas, spawning areas, nursery areas, genetic 'seed banks', 'rare species' habitats, polynyas, estuary zones, tidal flats, kelp forests, offshore banks, permanent or seasonal upwelling or mixing areas, deep sea vents, sea mounts, salt marshes, or marine mammal habitat.

The *Oceans Act* allows for the establishment of zones within MPAs and for the prohibition of classes of activities. The level of human activities allowed will vary with the area, will depend

on the purpose of the MPA in question, and will be decided in consultation with local resource users. Levels of protection can vary from a strict 'no take' area, where access is severely limited, to areas where controlled use or resource harvesting is allowed. Zoning could also be temporal; that is, seasonal restrictions could apply. The zoning approach allows for flexibility in planning for an MPA, and recognizes the need to coordinate human activities and marine conservation objectives.

The *Oceans Act* authorizes the Minister of Fisheries and Oceans to work collaboratively with interested Canadians to develop and pursue a national strategy for the management of estuary, coastal and marine ecosystems. Therefore, DFO has been made responsible for untangling the overlapping and complex jurisdictional arrangements; establishing coordination among inland, coastal and marine management regimes; and establishing roles and processes for public and stakeholder involvement in marine and coastal management. The concepts of 'leading' and 'facilitating' mean a process of convening all interested persons, organizations, and agencies in a cooperative process.

The Oceans Management Strategy (OMS), Part II of the *Oceans Act*, identifies three complementary initiatives that will be part of a national strategy for managing Canada's oceans. These legislated initiatives include Marine Protected Areas, Integrated Management of activities in estuaries, coastal waters and marine waters, and Marine Environmental Quality. The OMS will provide the basis for incorporating MPAs into a broader national planning framework for the coastal zone. At the same time, stakeholders will participate in developing the overall vision of MPAs for Canada.

The *Oceans Act* states that the national strategy will be based on the principles of sustainable development, integrated management, and precautionary approaches. Consequently the application of these principles will be an integral part of developing and implementing the MPA Program. Appendix B provides a more detailed discussion of these principles, and others as they apply to ocean management in general, and MPAs in particular.

2. Why are MPAs important for Canada?

Marine protected areas are an important tool for conserving Canada's oceanic heritage. Our coastline stretches 244,000 km along the Atlantic, Pacific and Arctic Oceans, making it the longest coastline of any country in the world. Eight of Canada's provinces and territories are coastal. The oceans have influenced our history, our culture and our nation's identity, and have been important to aboriginal people for thousands of years.

The richness of Canada's ocean has enormous potential to benefit both present and future generations. Marine and coastal areas are important for fishing, recreation and tourism, transportation, subsistence, and mineral production. Canada's continental shelf, covering 3,700,000 km², is the second largest in the world, and represents approximately one percent of the surface area of the world's oceans. Coastal and marine ecosystems extend from Arctic waters to temperate estuaries to large offshore marine ecosystems. These ecosystems are host to a remarkable diversity of species, from commercial fish to marine mammals to a variety of invertebrate species and plants.

In the past, Canada did not have adequate long-term protection for its ocean environment and resources. Commercial fish stocks have seriously declined in some areas, greatly affecting coastal communities and regional economies. Sensitive habitats are being modified by a wide variety of activities, both inshore and offshore. Ocean waters in some areas are seriously polluted, and persistent organic pollutants are accumulating in pristine environments. As a result, the biodiversity and ecological integrity of the marine system is being threatened. Canada is facing decisions it has not had to face in the past. The nation needs action now - an MPA program is a decisive step in the right direction.

2.1 International and Canadian Experience with MPAs

MPAs are not a new concept. The first MPAs were established approximately sixty years ago, and currently there are almost 1,300 marine protected areas around the world. MPAs have been established by a growing number of countries and have been actively promoted by a variety of organizations such as the United Nations Environment Program, IUCN, World Wildlife Fund, and UNESCO. The world leader in establishing marine protected areas is Australia with 303 MPAs, including the Great Barrier Reef Marine Park, the largest MPA in the world.

MPAs have been established for a wide variety of purposes: for helping to preserve important fisheries, for protecting historical and cultural resources, for conducting scientific research, for preserving natural communities and freeing them from exploitation, and for establishing parks for diving. By learning from the experiences of the international community, Canada can facilitate the implementation of its own MPA program, in terms of both the management of MPAs and the process of working alongside affected stakeholders.

Canada is gaining experience in protecting the marine environment. Some examples of current formal marine protection initiatives are: the ratification and implementation of the Convention on Biological Diversity, the Federal Policy on Wetland Conservation, implementation of the Ramsar Convention, the Pacific Coast Joint Venture, the Fraser River Estuary Management Program, the Atlantic Coastal Action Program, the Community-Based Coastal Management Project, the Gulf of Maine Council, and policy development in the Canadian Arctic Environmental Strategy. Canada also participates with seven other Arctic nations in the implementation of the International Arctic Environmental Protection Strategy. Moreover, Canada is signatory to a range of international conventions concerning the protection of the marine environment.

Federal and provincial agencies have developed, or are developing, MPA programs to provide additional conservation measures of important coastal and ocean areas and resources. These efforts are discussed below.

2.2 Federal Government Initiatives

Currently, the Federal government has two formal marine protected area programs. These are administered by Canadian Heritage (Parks Canada) and by Environment Canada. The protected areas designated by each agency serve somewhat different purposes, but each has conservation of the marine environment as a central focus. Appendix C describes the programs in greater detail.

Canadian Heritage is developing a system of protected areas that represent each of Canada's 29 marine natural regions.² The Canadian Heritage National Marine Conservation Areas (NMCA) Program is in the process of establishing a number of NMCAs including Gwaii Haanas (3050 km²) on the Pacific Coast and Saguenay - St. Lawrence (1138 km²) located at the confluence of the Saguenay River and the St. Lawrence Estuary.

Environment Canada has three designations available for protecting ocean and land areas to conserve significant habitats and wildlife resources.³ All three designations have a focus on habitat for migratory birds. These protected areas include National Wildlife Areas, Migratory Bird Sanctuaries and, more recently, the development of Marine Wildlife Areas. All told, they protect over 2.9 million hectares of critical wildlife habitat in coastal, estuary, and marine areas.

The *Oceans Act* will establish a third federal program for marine protected areas. These will be administered by DFO, which already has experience in establishing protected areas, including the recent designation of three Whale Sanctuaries off Nova Scotia. In addition, a number of area closures to fishing activity have been established in order to protect spawning and juvenile concentrations of commercial fish species.

The three federal programs have distinct but complementary purposes. It is incumbent on the federal agencies to coordinate their approach and to take advantage of shared objectives and resources, despite the fact that the three programs are in different stages of development. This coordination will ensure efficiency in establishing protected areas that are complementary, and will also maximize protection of our oceans.

2.3 Provincial Government Initiatives

Provincial governments have established a number of coastal and marine protected areas under legislation designed to create provincial parks, ecological areas, and wildlife management areas. In the Canadian context, British Columbia has been the most active in the establishment of MPAs. British Columbia has two pieces of legislation that are used to create MPAs—either the Park Act (designating provincial parks) or the Ecological Reserves Act (designating ecological reserves), both of which are primarily for recreation purposes. The first marine protected areas established by British Columbia, dates back to 1957. Today, British Columbia manages 53 provincial parks and recreation areas and 11 ecological reserves with marine components, totaling about 1,400 km². This program in British Columbia will be a valuable contribution to the development of a national system of marine protected areas. Furthermore, British Columbia recently established the Marine Protected Areas Strategy, a joint federal-provincial initiative that addresses the need to develop a range of MPAs with multi-stakeholder involvement.

On the east coast, the Province of Prince Edward Island is developing an interagency Marine Conservation Areas Strategy that will also be a valuable addition to the protection of marine resources.

3.0 MPAS under the *Oceans Act*

3.1 Overall Goals and Strategies

The *Oceans Act* designates DFO to lead and facilitate the development of a planning framework for the oceans. The process of development will include goals and strategies to guide the management of ocean resources. At present, goals and strategies relate primarily to individual sectors such as fisheries, transportation, mineral resources, wildlife, and other resources. Without coordination and consistency among these goals, conflicts are inevitable. The development of this planning framework will guide the MPA Program and will consequently assist in the conservation of ocean resources and habitats.

The *Oceans Act* states a number of conservation goals that bear on the development of an MPA Program. A key goal in DFO's approach to MPAs is to establish a network of unique MPAs that will reflect the diversity of our oceans. Another key and related goal is to develop an MPA program complementary to those established by Canadian Heritage and by Environment Canada. The work of creating and assessing MPAs and MPA Programs has already begun in some areas. The implementation of the *Oceans Act* will help to strengthen and focus DFO's commitment.

Some of the proposed work that DFO will conduct to meet its commitment includes the following (see Sections 5.0 and 6.0):

- Conduct consultations and develop partnering arrangements with interested stakeholders
- Coordinate amongst all federal MPA programs
- Establish procedures for accepting nominations for proposed MPAs
- Identify possible priority sites
- Conduct regional overviews of resources and develop criteria for the selection of candidate sites and the MPA network
- Establish "pilot" MPAs for further assessment
- Develop national guidelines and strategies which further develop criteria and provides direction for the development of MPA management plans
- Establish a public information and education program

3.2 Overall Purposes for MPAs

The broad purposes for MPAs are presented in the text of the *Oceans Act*, section 35(1). These purposes are discussed in more detail in the following pages.

3.2.1 Purpose A - Conservation of Commercial and Non-Commercial Fisheries Resources

The relationship between fisheries and MPAs is of prime importance. Canada, as a coastal nation, depends heavily on the oceans and their resources, both for commercial commodities and

for cultural reasons. In 1994, 165,000 people were employed in the fishing industry in Canada. Families depend on these workers for food, shelter, and income. Healthy communities depend on the families. It is no small tragedy, then, when a fishery is closed because of depleted stocks. Aboriginal communities also have strong cultural ties to the marine resources, and their commercial interest is expanding as a result of land claim agreements and the Aboriginal Fisheries Strategy. Recreational fishers and tourists (eco-tourism industry) also enjoy the fisheries resources and make a contribution to the economy of coastal communities. MPAs can help preserve and restore the marine environment while ensuring that these activities will continue.

The relationship of DFO, fisheries, and MPAs is one that deserves much attention. Fisheries regulation and management were traditionally the primary focus and expertise of DFO. With MPAs, fisheries science, management, and regulation have a new focus—one that will require working cooperatively with coastal communities to help in the future management and understanding of our valuable and dynamic fisheries. Consequently, the *Oceans Act* identifies as one of its purposes the need to conserve commercial and non-commercial fisheries. How the MPA Program affects the current fisheries management regime is of critical importance, but, it should be stressed, this does not limit or minimize the value of the other four purposes for MPAs that are listed in the *Oceans Act*.

The Role of MPAs as a Fisheries Management Tool

There is growing experience, internationally, in the use of MPAs to protect and sustain fisheries resources. Protected areas, or "marine refuges", may be used in combination with existing management techniques to accomplish a variety of fisheries management objectives. Currently, the regulation of fishing activity can be related to the level of harvest, closures, or gear use. As some major stocks decline and fisheries management becomes more complex, it is important to employ new and innovative approaches, and to continually ask ourselves if there are more effective means available.

MPAs are an effective way of incorporating precautionary and ecosystem approaches into fisheries management. Reduced fishing pressure, in an MPA with fisheries closures, may result in the increased abundance, size, weight and diversity of fisheries resources. Such closures could also be an effective means of protecting fisheries resources for future use. Moreover, MPAs can protect critical habitats from disturbances that would otherwise affect fish production. History shows that many traditional fisheries have enjoyed natural refuges in offshore locations that prevented overfishing. However, new technologies, increased market value, lack of effective restrictions, and expansion of the offshore fishery has led to the exploitation of these natural refuges. The restoration of some of these refuges through use of MPAs could help contribute to the sustainability of these fisheries.

Protected areas for fisheries management can vary in many ways, depending on the purpose and type of MPA created. The size, location, and activities permitted within a fisheries-oriented MPA will be jointly determined, taking into account the management objectives, current fishing activities, the health of the stock, and input from the area stakeholders. In cases where an MPA involves a fishing closure, fishers may have to forgo access to some of their original fishing territory. Such closures may ultimately result in an increase in harvestable fish in waters outside

the MPA. The input from, and partnering arrangements with, fishing stakeholders and coastal communities will be critical in establishing such areas.

Some of the more prominent uses and goals of fisheries-oriented MPAs are listed below.

Adult Recruitment

An MPA could operate as a haven or 'feeder area', producing adult fish and large juveniles that will naturally migrate into unprotected areas, thereby replenishing fishery stocks.⁴ Moreover, it has been demonstrated that MPAs are better at supporting more dense populations of larger individuals.⁵ Therefore, MPAs may help maintain the number of adult spawners in an area.⁶

Recovery of Depleted Stocks

The same principles and goals as above apply to the recovery of depleted fish stocks. An MPA can also provide protection of these stocks and habitats during the rebuilding phase of certain fisheries. Key, in this scenario, is establishing an MPA early enough to be of value. If the target population is too small at the time of establishing the MPA, the goal of being a 'feeder area' will not be met.

Life Stage Protection

MPAs can be designated to protect fish and their habitats during sensitive or vulnerable life stages, such as critical spawning or nursery areas. Spawning concentrations of fish are particularly vulnerable to over-harvest and need to be protected from over-fishing and other pressures. As well, an MPA would allow more plentiful and often larger and older fish to produce a greater number of eggs with a better survival rate. Protection of relatively sedentary species, such as scallops or lobsters, has a strong potential to enhance the production of populations outside the refuge area, through the increased export of larval recruits.

Critical nursery areas need to be protected from pressures that affect the survival of juvenile populations. Again, this helps replenish fisheries outside the refuge, by increasing the populations through the export of juveniles.

Spawning and juvenile habitat closures, many of which are seasonal, are currently used for managing select fisheries in Atlantic Canada. For example, off Nova Scotia, a harvest closure on Browns Bank protects concentrations of berried female lobsters and contributes significantly to regional egg production.⁷ An MPA may enhance the capabilities of such sites through broader protection during the specified season. For example, it can regulate not only 'no take' during the closed season but it can restrict other activities that may be detrimental to the berried females and young.

Genetic Diversity

Well-designed MPAs can protect critical breeding stocks, maintain the genetic diversity of stocks, and can help preserve the population and age structures of target species. Consequently, MPAs can act as 'genetic reservoirs' for conserving the genetic diversity of adjacent stocks. MPAs can be useful in protecting smaller and unique sub-populations, which are particularly vulnerable to fishing and habitat alteration pressures.

Hedge Against Uncertainty

One of the most important uses of an MPA as a tool for fisheries management is to provide a hedge or "insurance" against unexpected events or activities such as climate change. In essence, it provides a direct means of applying principles and objectives common to the precautionary approach and to sustainable development. This is of great need today, for in many cases our understanding of the dynamics of fisheries resources and the marine ecosystem is limited.

3.2.2 Purpose B - Conservation of Endangered or Threatened Species

MPAs can be an important tool for preserving endangered and threatened species and their associated habitats.

The MPAs for threatened or endangered species are different from those established for the conservation and protection of commercial and non-commercial species. They target the protection of an endangered species or the community that supports the endangered species, and do not have the central goal of enhancing harvests elsewhere. MPAs designed for endangered species protection must provide enough suitable habitat and space to maintain the ecosystems and the genetic pools that support viable populations of threatened species. The success of these MPAs is dependent upon the appropriate and complementary use of adjacent lands and water.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) identifies the following as endangered, threatened, or vulnerable in the marine environment:

17 fish species, 15 marine mammal populations, and one species of turtle. Four species of fish are extinct or extirpated (locally extinct), as well as two marine mammal populations. In addition, endangered and threatened species in need of protection can include those considered key to ecosystem functioning and valuable from an economic or ethical perspective.

The role of MPAs in protecting these species is described below.

Loss of a Key Species

MPAs can assist in maintaining or re-establishing key species by protecting them from activities that affect their populations. Current understanding of marine and coastal ecosystems often makes it difficult to anticipate the effects of the loss of a single species on the functioning of an ecosystem.

The disappearance of a 'keystone species' can alter and disrupt the functioning of an entire ecosystem. The history of the sea otter is a good example. As the populations of sea otters declined because of trapping, their prey, the sea urchin, exploded in numbers. Sea urchin food—kelp—disappeared, leaving 'sea urchin' barrens, a dramatically diminished habitat. In recent decades, re-introduction of the sea otter by conservation agencies to these 'sea urchin' barrens has brought about a reversing of the ecological processes and a return of the kelp. With them came other algal species, crustaceans, squid, fish, and other organisms.⁸

In this case, the blind exploitation of sea otters drastically changed ecosystems along the Pacific Coast. The damage was done before scientists and fur managers were aware of the key role of the sea otter. Remote natural 'refuges' offered protection that

ensured the survival of the sea otter and the opportunity to re-introduce them to their former ranges.

Loss of Valuable Species

MPAs can help protect species that have an economic value. The loss of certain species could lead to serious economic losses in the future. There are a number of activities that could adversely effect the gene pool in the flora and fauna of the oceans. Oceans contain the raw material that could provide new sources of food, fibre and medicines, and that could contribute to scientific and industrial innovations. In pharmaceuticals, for example, species that were relatively unknown or thought to be weeds have emerged as potential sources of miracle drugs. The ecological adaptability of this genetic 'raw material' also depends on the genetic capability, contained within species, to respond and adapt to changing conditions. If a fish species declines due to global environmental changes, will another be able to replace it? We cannot know in advance which species are likely to be important. For example, species such as sea urchins, sea cucumbers, rock crabs and Jonah crabs were once thought to be of no commercial value, but have developed into locally significant fisheries. MPAs provide the opportunity to address this issue and protect valued resources.

Loss of Intangible Values

The loss of species and the destruction of biodiversity is ethically unacceptable to many people. Some concerned citizens believe that many species are 'priceless' and have intrinsic value because of their very existence. Studies show that, in considering habitat restoration, people place a higher value on the existence of a species than on its potential for use.⁹ MPAs provide the opportunity to protect species and habitats that are considered valuable from these perspectives.

Marine Mammals

Marine mammals and their habitats are specifically identified in the *Oceans Act* as being worthy of special protection through the establishment of an MPA.

A wide variety of marine mammals are found in Canadian waters. These include whales (gray, bowhead, beluga, narwhal, minke, humpback, and killer whales as well as sperm, northern bottlenose, blue and right whales further offshore), porpoises, dolphins, seals, walrus, sea lions, and sea otters. Some of these species are listed as endangered, such as the beluga, bowhead, and right whale. Threatened species include the harbour porpoise, sea otter, humpback whale, and beluga (Hudson Bay population). Some species have been affected by past whaling or fur hunters, as well as present-day pollution, shipping collisions, fishing practices, and other human activities. Some marine mammal populations that were once exploited commercially and some that are traditionally used by aboriginal people are experiencing difficulty in recovering to viable or manageable levels.

Many marine mammals and their critical habitats can benefit from an MPA in order to limit the impact of detrimental activities. MPA design must focus on temporal and other special considerations related to calving and feeding grounds, which can change over time. Highly migratory species such as whales require national or even international networks of MPAs to protect them throughout their ranges.

3.2.3 Purpose C - Conservation of Unique Habitats

MPAs designated to protect unique habitats have several benefits. Unique habitats can be defined as 'centres of endemism', in which rare species are endemic to a single habitat area. In this case, protection of the area is a means of preventing the extinction of a species. However, endemism is generally believed to be rare because of the potential for long-range recruitment of many species, particularly free-swimming marine species.

Unique habitats can also be seen as having intrinsic or existence values—that is, they are especially valuable because they are unique. Many offshore benthic (bottom-dwelling) organisms, for example, are relatively restricted in their ranges. Some benthic communities are associated with specialized environments such as hydrothermal vents, isolated seamounts, and oceanic trenches or canyons. These unusual and isolated habitats result in confined ecological communities. The species endemic to these habitats may be at risk because of their limited means of dispersing to recolonize other areas.

3.2.4 Purpose D - Conservation of Productive Ecosystems and Biodiversity

MPAs can provide an important tool for protecting productive marine ecosystems and biodiversity. Many marine areas have a range of biota (the plant or animal life of a region) rivaling or exceeding that of tropical forests. The term "biodiversity" includes genetic, species, and ecological diversity, as well as the variety of responses to environmental change. Several scientists believe that coastal and marine zones are being rapidly depleted of their resources and diversity. Marine biodiversity can be adversely affected in several ways. Serious problems such as the introduction of exotic organisms, habitat alterations, overfishing, or increasing contamination can reduce the diversity and impair the operation of marine ecosystems. Consequently, the ability of the marine environment to support commercial activities is threatened.

A number of highly productive ecosystems can be identified as being in need of protection as an MPA. For example, many estuaries are highly productive, providing critical habitats for the life stages of a variety of fish and other species. Estuaries are under considerable stress throughout Canada, requiring greater levels of protection from both ocean and land-based activities. Similarly, upwelling and mixing areas typically have high productivity and support the life stages of a variety of fish, mammal, and other species. Upwelling occurs under specific conditions in coastal locations, such as the west coast of Vancouver Island, in the St. Lawrence Estuary (at the mouth of the Saguenay River), and on the Atlantic offshore. Other highly productive and diverse ecosystems include offshore banks, kelp forests, and deep sea features such as sea vents.

In order to protect highly productive ecosystems and areas of high biodiversity, an MPA typically needs to be large—encompassing a variety of critical ecosystem components. This presents a unique management challenge, since it is necessary to coordinate protection objectives with a variety of human activities. A wide variety of factors and influences affecting productivity and biodiversity need to be considered in the development of MPAs for this purpose. Often 'no take' areas or zones are required in order to ensure that critical ecosystem functions and key species and communities are maintained.

3.2.5 Purpose E - Conservation of Other Marine Resources and Habitats to Fulfill The Mandate of the Minister of Fisheries and Oceans

The establishment of MPAs will provide a unique opportunity to help fulfill other mandates given to the Minister, including that of scientific research. The *Oceans Act* (sections 35 and 42) supports this by providing for MPAs to be established to protect marine resources or habitat necessary to fulfill the mandate of the Minister, including the area of marine science.

MPAs can provide a number of opportunities for scientific research because they can range from pristine areas to heavily utilized areas to recovering areas. They can provide opportunities for testing management approaches including those of conservation, restoration ecology, and monitoring. However, of utmost importance is the opportunity to study and compare relatively 'untouched' ecosystems with others that have been subject to human contact.

Scientific research within MPAs can further our understanding of how ecosystems function and how conservation strategies contribute to the recovery of marine species and ecosystems. Researchers can assess the effectiveness of MPAs and provide guidance in developing an MPA Program. This is particularly important because of the lack of information on different designs for MPAs (size, boundaries, use restrictions, types of biota, proximity to human activities).

Improved scientific knowledge will aid in coastal management, including fisheries management. It can address major gaps in our current understanding, reduce uncertainty, and provide a basis for adaptive management and future planning. There are a number of researchers within government, universities, and other institutions who have identified potential areas, and who can serve as important players in developing research-oriented MPAs.

4.0 How Will MPAs Be Identified & Established?

Establishing the Department of Fisheries and Oceans' MPA Program will be a complex process of public consultation, information gathering, and building of collaborative arrangements with stakeholders. The process will take many years and will require a 'learn-by-doing' approach to program development—an approach that recognizes the need to act quickly on priority sites and issues, while at the same time developing and adjusting the overall MPA Program based on this experience.

At the national level, the overall MPA Program framework and strategy will be developed, defining its goals and standards for operation, creating collaborative arrangements, and the linking of global, national, and regional concerns. The MPA Program will be implemented at the regional level through activities such as the identification of candidate sites, consultation and creating collaborative arrangements with local user groups, governmental and non-government interests, and the establishment and management of individual MPAs.

DFO's MPA Program will consider the following in its development:

- that MPAs must be seen as an important means of marine conservation—a means suitable to a national strategy for ocean management and fisheries management as well as provincial and community-based conservation strategies;

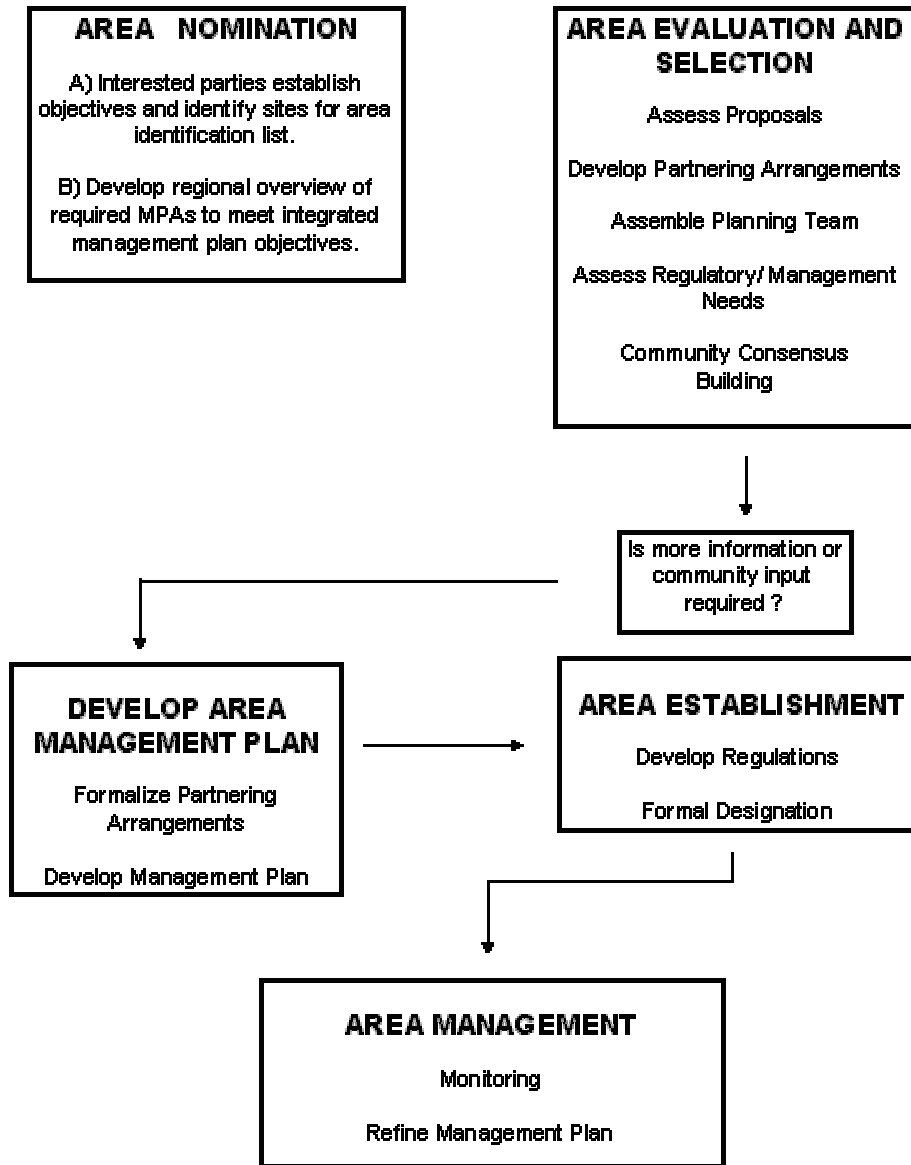
- that the MPA program must be adaptable to and determined by regional and local circumstances and issues;
- that the process of completing a system of MPAs, as well as establishing individual candidate sites, may require many years; and,
- that monitoring will need to be established to determine if the program is meeting its goals, and to take advantage of the lessons learned.

A number of principles of conservation, singularly or in combination, will guide the development of the MPA Program. Discussed further in Appendix B, these include the following: ecosystem based approach, sustainable development, precautionary approach, adaptive management, integrated management, regional flexibility, consultation, and partnering.

4.1 The Process for Establishing an MPA Program

The development of marine protected area programs around the world, and in Canada, indicates that there are a number of relatively standard stages in a typical process. Potential marine protected areas are identified, evaluated, selected, established, and managed. The process suggested below, and represented in Figure 1, is based on that experience.¹⁰ The process for the MPA Program is not necessarily linear. Each

Figure 1: Proposed MPA Establishment Process



stage may be conducted on a continuous basis, and stages are often carried out simultaneously.

4.2 Area Nomination

There is a balance to be sought between the need to act on critical areas immediately and the need to be systematic in looking at an overall MPA network. The judgment of government staff and users in discussions has been that we do not need to wait for full network systems plans to identify some of the known high priority areas. Indeed, waiting for such plans can delay overdue action. Typically, certain important areas are designated in advance of a systems plan. The best approach is to begin consideration of priority areas while at the same time proceeding on a systematic basis, conducting overviews of marine regions to identify candidate MPAs.

Two complementary processes are being proposed to nominate areas in need of protection as an MPA: i) Nomination by Interested Groups, and ii) Regional Overviews.

Nomination by Interested Groups

The MPA program will accept nominations of areas for designation as MPAs. This route provides a unique opportunity for interested groups to nominate areas for consideration, including those from local resource users, government agencies, industry, non-government organizations (NGOs), research institutions, and private sector organizations. If, for example, a local lobster fisher committee wishes to pursue establishment of an MPA for protection of a lobster nursery area, the nomination process would provide a channel for this purpose. Based on survey and workshop information, various interested groups in Canada have already identified potential MPAs. As well, candidate areas currently under some form of special protection could be identified in this process. As considerable support exists for some of these potential sites, a built-in constituency and potential collaborators exist in many areas.

Regional Overviews

Over the longer term, there is also a need for a systematic approach to identifying a network of MPAs that reflects all the purposes identified in the *Oceans Act*. The systematic development of an MPA network will be accomplished through regional overviews conducted by an interdisciplinary team. This is complementary to the nomination-by-interested-parties process, with selected sites added to the area identification list (see below). Moreover, the regional overview would identify knowledge gaps that require further research and inventory. Consultation with affected organizations and interested parties will be conducted to identify issues and concerns and to gather information on the valued components of marine systems. The regional overview will cumulate into a working database of MPA-related information, providing a centralized and organized means of assessing candidate sites.

The MPA Proposal

The nomination of an MPA should be accompanied by a stated purpose, objectives, and a proposed plan for management of the area, possibly termed the "preliminary MPA proposal". The proposal will be prepared through a cooperative process involving coastal communities, organizations, and government agencies. This proposal should be based on existing information and can provide the core elements of a draft management plan, should the site be selected. Appendix D provides an example of the typical information that might be expected for an MPA proposal.

Area Identification List

Nominated areas are placed on an area identification list (AIL), a working list of potential MPAs from which candidates are selected for further evaluation. Inclusion on the AIL is based on an evaluation of preliminary selection criteria, which will need to be defined.

An MPA Program will establish an AIL early on in the process. Those areas on the list will be considered for early establishment. There is already enough information to identify and justify certain priority areas for protection. In the case of unique habitats, offshore sea vents are an

obvious example. The spawning areas of many important species are known and may already be identified in existing studies as requiring protection. Appropriate research and monitoring can be carried out within areas that are established early, and the knowledge gained can assist in planning for a full network of MPAs. As well, the public visibility of early MPA initiatives will provide a basis for greater public understanding and input into regional level activities.

Candidate MPAs that have been added to the AIL for a region will need to be monitored to ensure that the potential of the area is not lost while awaiting final decision. Protection can be provided, as necessary, within other regulatory authorities assigned to DFO. This will allow areas and plans to be evaluated during the decision process.

4.3 Area Evaluation and Selection

Each MPA proposal will be evaluated on the basis of extensive criteria. One set of criteria are the purposes stated for MPAs in section 35 of the *Oceans Act*. Areas may rate high on several of these criteria. For example, the area could support rare species within a zone that is high in biological diversity and that supports commercially important species. Other sites not within the scope of the *Oceans Act* and mandate of DFO would be forwarded to relevant federal and provincial agencies for their consideration.

Other types of evaluation criteria are also important in selecting a site. These include social and economic values, the immediacy of need, practicality, opportunities of partnering arrangements, community support, adequacy of existing regulatory regimes, potential human activity threats to the area, ecological fragility, feasibility of enforcement, scientific importance, educational value, fiscal constraints, and regional, national, or international significance. Provided the candidate area is consistent with the purposes identified in the *Oceans Act*, these criteria add to the importance of the site. Discussions on specific sites will take place with resource users, governments, affected interests, and the public at large.

It is possible that consideration of the proposals and input from consultation may delay implementation of an important proposal. While a delay may be of concern, establishing inappropriate MPAs or 'paper' MPAs without feasibility for implementation would add little in value to marine conservation. A form of interim protection of an area may be necessary for some candidates at this stage.

4.4 Development of an Area Management Plan

The management plan for each MPA will be based on the proposal that was developed in the Area Nomination stage, and on additional information from the Area Evaluation and Selection stage. These elements will have to be expanded in the management plan so that all players, particularly if there is a some form of partnering arrangement involved, will clearly understand their roles and responsibilities.

Since each MPA is different, the management plan of each will be unique. Each plan will attempt to reflect the issues and concerns of the stakeholders. An interdisciplinary and cross-sectoral planning team will be assembled to develop the management plan. It will clearly define the purpose of the MPA, its goals and objectives, how the goals and objectives are to be reached, and how the success of the MPA will be measured. Input from a variety of interested parties will

be required at this stage in order to identify key management issues and constraints.

In many candidate MPA areas there will be existing and proposed activities and interests, some of which may conflict with the conservation objectives of the MPA. A key component of the management plan will be the development of regulatory actions, including the zoning of activities to be prohibited or limited. The *Oceans Act* (section 35) allows for the establishment of zones within MPAs and the prohibition of classes of activities. Levels of protection defined in the management plan can vary from a strict 'no take' area, where access is severely limited, to areas where controlled use, resource harvesting, and various socio-economic activities are allowed. Buffer areas may be defined around MPAs to ensure that nearby human activities are managed in a manner that conserves the marine resources in the MPA core areas.

4.5 Area Establishment

The *Oceans Act* allows for the establishment and management of MPAs through regulations created under section 35 (3). The form that these regulations will take has not been determined. It has been suggested that each MPA would have its own set of regulations specifying boundaries and the measures that have to be taken to protect the area. Another alternative would be to establish a set of general regulations that would authorize, first, the creation of MPAs on a regional level in support of formal management plans; and second, the permitting of activities within the MPA that do not conflict with the plan. Formal designation of an MPA would in any case define geographic boundaries and all the elements described in the management plan. These regulations would be enforceable by persons appointed under section 39 of the Act and subject to fines specified in section 37.

The *Oceans Act*(section 36) permits the Minister to designate an MPA on an emergency basis. This power could be used if resources or habitats are at particular risk and require protection on an interim basis.

4.6 Area Management

MPAs will typically be managed on a site-by-site basis. This means that each MPA will have its own management plan, tailored to the type of site, and the purposes for which it was established. MPAs will be managed in close cooperation with other agencies and interested parties. Guidance for management will be contained in a management plan and based on the proposal prepared and on the regulations adopted. The key management issues that need to be addressed are discussed below in Section 5.

5.0 How will MPAs be managed?

Management challenges for a successful MPA Program include: establishing effective partnering arrangements, providing jurisdictional coordination, developing information, providing management resources, providing an enforcement capability, and developing awareness and education for MPAs. These are discussed below, with possible solutions proposed.

5.1 Need for Effective Partnering

The concept of partnering is a driving force in the MPA Program. Stakeholder information, cooperation, and ongoing support is key in creating and managing MPAs. Cooperation and coordination between interested parties and DFO is required to ensure efficiency and to avoid duplication of effort. It has been said that "environmental management is most effective when implemented by those who have the most to lose and the most to gain from the management of the environment".¹¹ This is particularly true for marine users. By considering their interests early in the process, areas of constraint and potential conflict can be identified and negotiated where appropriate.

The number of interested parties, like the diversity of interests and uses, will vary with sites, regional needs and attitudes and valued resources. The degree of involvement and responsibility of interested parties will depend on the purpose of the MPA and its geographical location. For example, with offshore MPAs such as seamounts, DFO may be solely responsible. However, the MPA will likely involve shipping, mineral resource extraction, and fishing interests. One advantage of establishing effective partnering arrangements with the fishing and shipping community is improved compliance with MPA regulations.

Partnering arrangements in an MPA Program will often involve 'different' groups and interests. Some of these groups could include coastal communities, the fishing industry, aquaculturalists, aboriginal organizations, conservationists, ocean industries, and federal, provincial and municipal governments.

5.2 Coastal Communities and Non-Government Conservation Organizations

The MPA Program provides an opportunity for communities as well as local, regional and national conservation groups, to be involved in conservation activities in the marine environment. For coastal MPA management, local organizations and communities play a prominent role, ranging from nomination and co-management of sites to consultation activities and public awareness programs. Organizations nominating an MPA could become a 'sponsor' for the site. A sponsor is an organization prepared to take a long term partnering arrangement in managing the MPA.

Partnering arrangements with provincial and federal departments are being formed. For many years, conservation organizations have been actively acquiring coastal lands. This practice allows them to preserve the lands, while promoting marine conservation and protected areas. Some MPAs such as the Whytecliff Marine Sanctuary in West Vancouver lend themselves to local management. In Atlantic Canada, several types of community/government partnering arrangements have been formed to study the local resources and economy with an eye to sustainable management and development. Such arrangements would have value in the management of MPAs.

5.3 Fishing Interests

Fishing interests have an important investment in MPAs. It is essential to all involved parties that fishing groups, including commercial and aboriginal fish harvesters, recreational fishers, businesses, processing companies, and the fishing-dependent communities, play an active role in the MPA process.

Fish harvesters have been strong proponents for conserving the marine resources upon which they depend. They have much knowledge to add to the scientific information that shapes the management approach. Experience suggests that MPAs need strong support from fishing interests, particularly if the MPAs will remove territory from their traditional fishing areas or affect their application of fishing rights in the area. Support for MPAs grows when harvesters see the results of a successful MPA, or when they become involved in the many stages of the MPA establishment process.¹²

Currently, the development of the Canadian Code of Conduct for Responsible Fishing Operations in Atlantic Canada complements the MPA process and encourages

collaborative approaches to management of the fisheries resources

5.4 Aboriginal Organizations

Aboriginal organizations have a strong interest in conserving marine resources for cultural, subsistence, and economic reasons. MPAs will be managed in collaboration with aboriginal people in accordance with mutual interests in marine conservation. MPAs will be identified and designated in a manner consistent with Aboriginal land claims and rights.

Co-management provides a means of marine conservation and protection, pending the resolution of aboriginal claims. It provides opportunities for better resource management and for mutual learning among scientific and aboriginal experts. Aboriginal people have extensive traditional knowledge about marine resources and apply customary management practices in maintaining marine resource productivity. Currently, a number of co-management institutions exist in the North, under the Nunavut Final Land Claim Agreement and the Inuvialuit Final Agreement. Similar land claim agreements are being negotiated between the province of Quebec and the Inuit of Northern Quebec.

5.5 Ocean Industries

There are a number of ocean industries that have a direct interest in the development of an MPA Program, particularly in the management of individual MPAs. These industries and interests could include oil and gas companies, marine mining interests, tourism operators, shoreline developers, and shipping agencies. It is important that these interests be included early on in the development of management plans to ensure that conflict with both current and future uses of oceans is avoided where possible. Many of these industries may wish to assume a long-term collaborative role in managing an MPA, assisting in activities such as enforcement and monitoring.

5.6 Provinces and Municipal Governments

Effective partnering arrangements between DFO, its federal counterparts, and the provinces are crucial to the success of an MPA Program. This has been clearly demonstrated elsewhere in the world (Australia, the United States, and Spain, to name a few). In Canada, coastal provinces have varying degrees of jurisdiction over the seabed in inshore waters. Moreover, the provinces and municipalities are responsible for managing most of the land-based activities that affect the marine environment and potential MPAs: run-off (pollution), tourism, and shoreline development .

At present, many coastal provinces have specific initiatives that show their interest in MPAs. These initiatives are: considering and/or developing a number of terrestrial protected areas adjacent to potential MPA sites; and establishing coastal zone management initiatives that complement the MPA Program (e.g., Coastal 2000 in Nova Scotia, or 'conservation easements' for marine protected areas in British Columbia). In addition, both British Columbia and Prince Edward Island are establishing MPA programs through collaborative arrangements with a variety of government departments, non-government organizations, and the fishing industry.

5.7 Federal Departments

With the passage of the *Oceans Act* , DFO will join two other federal departments—Canadian Heritage and Environment Canada—in having direct responsibility for the identification, designation and management of protected areas in the marine environment (Appendix C). The partnering process has been initiated at the federal level, where a steering committee on MPAs has been created: the Marine Protected Areas Interdepartmental Committee. The aims of this committee are to develop a comprehensive and complementary system of MPAs and to ensure that individual MPAs have a full range of support, expert advice, and protection. This level of partnering will be reflected at the regional level and at individual MPA sites. Other federal agencies such as the Department of Transport, Natural Resources Canada, and the Department of Defence will be approached in addressing specific issues and in considering particular sites

5.8 International

Cooperative agreements and joint planning exercises between Canada and its neighbours will be necessary in order to meet common conservation objectives. Some potential marine protected area sites are shared with, or are in close proximity to, the United States. A similar situation exists in the Arctic, where Canada and Greenland have a common marine environment that requires protection. Finally, Canada and France (Saint Pierre and Miquelon) share valuable resources on the east coast. Highly migratory species such as whales have critical habitats located thousands of kilometres from Canadian waters, requiring a network of protected areas throughout their range. Existing management structures such as the Gulf of Maine Council may provide the basis for an international collaborative arrangement on MPAs to be developed.

5.9 Addressing Information Requirements

MPAs will be managed using present information, ongoing research, and traditional ecological information from a variety of stakeholders. Accurate information on the marine environment, its resources, and uses will be critical in identifying, evaluating, and managing MPAs. A broad information base will be developed in order to evaluate individual MPA proposals and to support regional overviews (Section 5 of the discussion paper).

The database will consist of such information categories as:

- existing and proposed protected areas (federal, provincial, private)
- existing and planned uses (fishery activities, resource extraction, recreation)
- environmental data (oceanographic processes)
- ecological information (key species distribution, critical habitats, ecological systems)

A common database, developed through tools such as a geographic information systems (GIS) will be used for storing, interpreting, and displaying the information. An agency and team of information specialists will be identified and charged with coordinating the development of the data.

Information Constraints and Sources

A major constraint in planning for MPAs is the limited understanding of the dynamics of our marine ecosystems. Even in the foreseeable future, management decisions will be made with limited knowledge. The MPA Program will address information deficits by:

- exercising the sustainable development, integrated management, and precautionary principles
- using MPAs as a learning opportunity by applying the adaptive management principle
- establishing a monitoring component as part of some MPAs, and
- using MPAs as natural laboratories to conduct environmental research.

Information to ensure sound management of MPAs will continue to be gathered. The *Oceans Act* (section 42) defines DFO's marine sciences role. This includes collecting data for understanding oceans and their living resources, as well as hydrographic, oceanographic, fisheries, and other marine systems. Provincial agencies are developing a number of coastal databases that will be useful for decision-making. Federal and provincial agencies are also cooperating in the assembly of coastal zone information management systems. For example, federal and provincial agencies in the Atlantic region are cooperating in an Atlantic Coastal Zone Information Management Committee (ACZIMC) established to improve and standardize information infrastructure related to the coastal zone.

Community groups have information that an MPA Program can put to use in decision-making. Conservation groups involved in activities such as the Atlantic Coastal Action Program (ACAP) also have, on a site-specific basis, important information for use in an MPA Program.

Monitoring programs will be established to determine whether the goals of individual MPAs have been effectively realized. Environmental parameters will be monitored to detect natural and artificial changes in environmental systems. These data are essential for demonstrating management success. If success is demonstrated, compliance with regulations and public support for additional MPAs would be expected to increase.

5.10 Awareness and Education

Education and awareness of DFO's MPA Program is of the utmost importance. If partnering arrangements are to be a key method for delivering this MPA Program, the parties must be well informed and knowledgeable. Also, as the approach will be an evolving one, the aims of the program must be clearly defined and understood.

The awareness-and-education component of the program will develop different types of materials for different audiences, including: schools, resource users, DFO and other government agencies, communities, and various non-government agencies. A wide range of educational tools can be used, e.g., public meetings, brochures, booklets, and educational videos. A coordinated awareness and education program between Canadian Heritage, Environment Canada, and DFO will be needed. This should clarify each agency's role in establishing protected areas, and provide information on the collaboration between agencies.

Effective education and stakeholder support can reduce enforcement requirements in three important ways:

- by encouraging participation by all interested parties in enforcement efforts;
- by creating an understanding that leads to better compliance; and
- by providing a forum, through the partnering arrangements, to address enforcement concerns.

Existing fisheries management enforcement tools can provide a basis for enforcement approaches within many of the MPAs. However, given the types of MPAs that are envisaged under the *Oceans Act*, the enforcement challenges presented may be equally diverse. Many of the issues related to enforcement capabilities and alternatives will be addressed on a site-by-site basis and will be identified in the management plan.

The *Oceans Act* contains enforcement provisions, that are included in Appendix A.

6.0 The next step - your comments

MPAs provide a powerful and proven tool for achieving conservation objectives in the marine environment. Through MPAs we can begin to protect important ecosystems and species, thereby protecting the marine environment and resources upon which our coastal communities depend.

The *Oceans Act* and the development of an MPA Program presents an exciting new challenge for DFO and for Canada. Over the next few years, DFO, together with various partnering organizations and stakeholders, will build an MPA Program encompassing a broad network of protected areas. The MPA Program will evolve over time, adopting a learn-by-doing approach and will be developed in close coordination with existing protection initiatives undertaken by other organizations. This will take commitment, active involvement, and consensus-building among a wide range of stakeholders.

A number of complementary tasks have been identified as critical for developing the MPA Program. The MPA Program framework needs to be structured, pilot MPAs in priority sites need to be established, and extensive partnering arrangements and consultation exercises are required. The discussion paper represents a starting point for addressing the issues surrounding MPAs in Canada. It also provides a general set of principles and approaches DFO can adopt. The approach to the MPA Program provided in this discussion paper is not a prescriptive one. On the contrary: the needs and design of the MPA Program will be developed in cooperation with a range of stakeholders.

Your comments on this discussion paper will provide an initial step in this process, helping to develop an innovative, effective, and coordinated approach to conserving our marine heritage.

For further information, and to provide your comments, please contact your regional DFO office—addresses are provided at the back of this paper. We look forward to hearing from you.

Appendix A-

Oceans Act

Part II - Oceans Management Strategy

Part does not apply to inland waters

28.For greater certainty, this Part does not apply in respect of rivers and lakes.

Development and implementation of strategy

29.The Minister, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, shall lead and facilitate the development and implementation of a national strategy for the management of estuarine, coastal and marine ecosystems in waters that form part of Canada or in which Canada has sovereign rights under international law.

Principles of strategy

30.The national strategy will be based on the principles of

(a)sustainable development, that is, development that meets the needs of the present without compromising the ability of future generations to meet their own needs;

(b)the integrated management of activities in estuaries, coastal waters and marine waters that form part of Canada or in which Canada has sovereign rights under international law; and

(c)the precautionary approach, that is, erring on the side of caution.

Integrated management plans

31.The Minister, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, shall lead and facilitate the development and implementation of plans for the integrated management of all activities or measures in or affecting estuaries, coastal waters and marine waters that form part of Canada or in which Canada has sovereign rights under international law.

Implementation of integrated management plans

32.For the purpose of the implementation of integrated management plans, the Minister

(a)shall develop and implement policies and programs with respect to matters assigned by law to the Minister;

(b)shall coordinate with other ministers, boards and agencies of the Government of Canada the implementation of policies and programs of the Government with respect to all activities or measures in or affecting coastal waters and marine waters;

(c) may, on his or her own or jointly with another person or body or with another minister, board or agency of the Government of Canada, and taking into consideration the views of other ministers, boards and agencies of the Government of Canada, provincial and territorial governments and affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements,

(i) establish advisory or management bodies and appoint or designate, as appropriate, members of those bodies, and

(ii) recognize established advisory or management bodies; and\

(d) may, in consultation with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, establish marine environmental quality guidelines, objectives and criteria respecting estuaries, coastal waters and marine waters.

Cooperation and agreements

33.(1) In exercising the powers and performing the duties and functions assigned to the Minister by this Act, the Minister

(a) shall cooperate with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements;

(b) may enter into agreements with any person or body or with another minister, board or agency of the Government of Canada;

(c) shall gather, compile, analyse, coordinate and disseminate information;

(d) may make grants and contributions on terms and conditions approved by the Treasury Board; and

(e) may make recoverable expenditures on behalf of and at the request of any other minister, board or agency of the Government of Canada or of a province or any person or body.

Consultation

(2) In exercising the powers and performing the duties and functions mentioned in this Part, the Minister may consult with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements.

Logistics support, etc.

34. The Minister may coordinate logistics support and provide related assistance for the purposes

of advancing scientific knowledge of estuarine, coastal and marine ecosystems.

Marine protected areas

35.(1) A marine protected area is 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 fulfil the mandate of the Minister.

Marine protected areas

(2) For the purposes of integrated management plans referred to in sections 31 and 32, the Minister will lead and coordinate the development and implementation of a national system of marine protected areas on behalf of the Government of Canada.

Regulations

(3) The Governor in Council, on the recommendation of the Minister, may make regulations

(a) designating marine protected areas; and

(b) prescribing measures that may include but not be limited to

(i) the zoning of marine protected areas,

(ii) the prohibition of classes of activities within marine protected areas, and

(iii) any other matter consistent with the purpose of the designation.

Interim marine protected areas in emergency situations

36.(1) The Governor in Council, on the recommendation of the Minister, may make orders exercising any power under section 35 on an emergency basis, where the Minister is of the opinion that a marine resource or habitat is or is likely to be at risk to the extent that such orders are not inconsistent with a land claims agreement that has been given effect and has been ratified or approved by an Act of Parliament.

Exemption from Statutory Instruments Act

(2) An order made under this section is exempt from the application of sections 3, 5 and 11 of the *Statutory Instruments Act*.

Temporary effect

(3) An order made under this section that is not repealed ceases to have effect 90 days after it is made.

Offence and punishment

37. Every person who contravenes a regulation made under paragraph 35(3)(b) or an order made under subsection 36(1) in the exercise of a power under that paragraph

(a) is guilty of an offence punishable on summary conviction and liable to a fine not exceeding \$100,000; or

(b) is guilty of an indictable offence and liable to a fine not exceeding \$500,000.

Contravention of unpublished order

38. No person may be convicted of an offence consisting of a contravention of an order made under subsection 36(1) in the exercise of a power under paragraph 35(3)(b) that, at the time of the alleged contravention, had not been published in the *Canada Gazette* in both official languages unless it is proved that reasonable steps had been taken before that time to bring the purport of the order to the attention of those persons likely to be affected by it.

Enforcement officers

39.(1) The Minister may designate any person or class of persons to act as enforcement officers for the purposes of this Act and the regulations.

Designation of provincial government employees

(2) The Minister may not designate any person or class of persons employed by the government of a province unless that government agrees.

Certificate of designation

(3) Every enforcement officer must be provided with a certificate of designation as an enforcement officer in a form approved by the Minister and, on entering any place under this Act, the officer shall, if so requested, show the certificate to the occupant or person in charge of the place.

Powers of peace officers

(4) For the purposes of this Act and the regulations, enforcement officers have all the powers of a peace officer, but the Minister may specify limits on those powers when designating any person or class of persons.

Exemptions for law enforcement activities

(5) For the purpose of investigations and other law enforcement activities under this Act, the Minister may, on any terms and conditions the Minister considers necessary, exempt enforcement officers who are carrying out duties or functions under this Act, and persons acting under their direction and control, from the application of any provision of this Act or the regulations.

Obstruction

(6) When an enforcement officer is carrying out duties or functions under this Act or the regulations, no person shall

(a) knowingly make any false or misleading statement either orally or in writing to the enforcement officer; or

(b) otherwise wilfully obstruct the enforcement officer.

Inspections

39.1(1) For the purpose of ensuring compliance with this Act and the regulations, an enforcement officer may, subject to subsection (3), at any reasonable time enter and inspect any place in which the enforcement officer believes, on reasonable grounds, there is any thing to which this Act or the regulations apply or any document relating to the administration of this Act or the regulations, and the enforcement officer may

(a) open or cause to be opened any container that the enforcement officer believes, on reasonable grounds, contains any such thing or document;

(b) inspect the thing and take samples free of charge;

(c) require any person to produce the document for inspection or copying, in whole or in part; and

(d) seize any thing by means of or in relation to which the enforcement officer believes, on reasonable grounds, this Act or the regulations have been contravened or that the enforcement officer believes, on reasonable grounds, will provide evidence of a contravention.

Conveyance

(2) For the purposes of carrying out the inspection, the enforcement officer may stop a conveyance or direct that it be moved to a place where the inspection can be carried out.

Dwelling-place

(3) The enforcement officer may not enter a dwelling-place except with the consent of the occupant or person in charge of the dwelling-place or under the authority of a warrant.

Warrant

(4) Where on ex parte application a justice, as defined in section 2 of the Criminal Code, is

satisfied by information on oath that

(a) the conditions for entry described in subsection (1) exist in relation to a dwelling-place,

(b) entry to the dwelling-place is necessary in relation to the administration of this Act or the regulations, and

(c) entry to the dwelling-place has been refused or there are reasonable grounds for believing that entry will be refused,

the justice may issue a warrant authorizing the enforcement officer to enter the dwelling-place subject to any conditions that may be specified in the warrant.

Search and seizure without warrant

39.2 For the purpose of ensuring compliance with this Act and the regulations, an enforcement officer may exercise the powers of search and seizure provided in section 487 of the *Criminal Code* without a warrant, if the conditions for obtaining a warrant exist but by reason of exigent circumstances it would not be feasible to obtain the warrant.

Custody of things seized

39.3(1) Subject to subsections (2) and (3), where an enforcement officer seizes a thing under this Act or under a warrant issued under the *Criminal Code*,

(a) sections 489.1 and 490 of the *Criminal Code* apply; and

(b) the enforcement officer, or any person that the officer may designate, shall retain custody of the thing, subject to any order made under section 490 of the *Criminal Code*.

Forfeiture where ownership not ascertainable

(2) Where the lawful ownership of or entitlement to the seized thing cannot be ascertained within thirty days after its seizure, the thing or any proceeds of its disposition are forfeited to

(a) Her Majesty in right of Canada, if the thing was seized by an enforcement officer employed in the public service of Canada; or

(b) Her Majesty in right of a province, if the thing was seized by an enforcement officer employed by the government of that province.

Perishable things

(3) Where the seized thing is perishable, the enforcement officer may dispose of it or destroy it, and any proceeds of its disposition must be

(a) paid to the lawful owner or person lawfully entitled to possession of the thing, unless proceedings under this Act are commenced within ninety days after its seizure; or

(b) retained by the enforcement officer pending the outcome of the proceedings.

Abandonment

(4)The owner of the seized thing may abandon it to Her Majesty in right of Canada or a province.

Disposition by Minister

39.4Any thing that has been forfeited or abandoned under this Act must be dealt with and disposed of as the Minister may direct.

Liability for costs

39.5The lawful owner and any person lawfully entitled to possession of any thing seized, abandoned or forfeited under this Act are jointly and severally liable for all the costs of inspection, seizure, abandonment, forfeiture or disposition incurred by Her Majesty in right of Canada in excess of any proceeds of disposition of the thing that have been forfeited to Her Majesty under this Act.

Contravention of Act or regulations

39.6(1) Every person who contravenes subsection 39(6) or any regulation made under section 52.1

(a)is guilty of an offence punishable on summary conviction and is liable to a fine not exceeding \$100,000; or

(b)is guilty of an indictable offence and is liable to a fine not exceeding \$500,000.

Subsequent offence

(2)Where a person is convicted of an offence under this Act a second or subsequent time, the amount of the fine for the subsequent offence may, notwithstanding subsection (1), be double the amount set out in that subsection.

Continuing offence

(3)A person who commits or continues an offence on more than one day is liable to be convicted for a separate offence for each day on which the offence is committed or continued.

Fines cumulative

(4)A fine imposed for an offence involving more than one animal, plant or other organism may be calculated in respect of each one as though it had been the subject of a separate information and the fine then imposed is the total of that calculation.

Additional fine

(5)Where a person has been convicted of an offence and the court is satisfied that monetary benefits accrued to the person as a result of the commission of the offence,

(a)the court may order the person to pay an additional fine in an amount equal to the court's estimation of the amount of the monetary benefits; and

(b)the additional fine may exceed the maximum amount of any fine that may otherwise be imposed under this Act.

Forfeiture

39.7(1) Where a person is convicted of an offence, the convicting court may, in addition to any punishment imposed, order that any seized thing by means of or in relation to which the offence was committed, or any proceeds of its disposition, be forfeited to Her Majesty in right of Canada.

Return where no forfeiture ordered

(2) Where the convicting court does not order the forfeiture, the seized thing, or the proceeds of its disposition, must be returned to its lawful owner or the person lawfully entitled to it.

Retention or sale

39.8Where a fine is imposed on a person convicted of an offence, any seized thing, or any proceeds of its disposition, may be retained until the fine is paid, or the thing may be sold in satisfaction of the fine and the proceeds applied, in whole or in part, in payment of the fine.

Orders of court

39.9Where a person is convicted of an offence, the court may, in addition to any punishment imposed and having regard to the nature of the offence and the circumstances surrounding its commission, make an order containing one or more of the following prohibitions, directions or requirements:

(a)prohibiting the person from doing any act or engaging in any activity that could, in the opinion of the court, result in the continuation or repetition of the offence;

(b)directing the person to take any action that the court considers appropriate to remedy or avoid any harm to estuarine, coastal or ocean waters, or their resources that resulted or may result from the commission of the offence;

(c)directing the person to publish, in any manner that the court considers appropriate, the facts relating to the commission of the offence;

(d)directing the person to pay the Minister or the government of a province compensation, in whole or in part, for the cost of any remedial or preventive action taken by or on behalf of the Minister or that government as a result of the commission of the offence;

(e)directing the person to perform community service in accordance with any reasonable conditions that may be specified in the order;

(f)directing the person to submit to the Minister, on application to the court by the Minister

within three years after the conviction, any information respecting the activities of the person that the court considers appropriate in the circumstances;

(g)requiring the person to comply with any other conditions that the court considers appropriate for securing the person's good conduct and for preventing the person from repeating the offence or committing other offences; and

(h)directing the person to post a bond or pay into court an amount of money that the court considers appropriate for the purpose of ensuring compliance with any prohibition, direction or requirement under this section.

Suspended sentence

39.10(1) Where a person is convicted of an offence and the court suspends the passing of sentence pursuant to the *Criminal Code*, the court may, in addition to any probation order made on suspending the passing of that sentence, make an order containing one or more of the prohibitions, directions or requirements mentioned in section 39.9.

Imposition of sentence

(2) Where the person does not comply with the order or is convicted of another offence, within three years after the order was made, the court may, on the application of the prosecution, impose any sentence that could have been imposed if the passing of sentence had not been suspended.

Limitation period

39.11(1) Proceedings by way of summary conviction in respect of an offence may be commenced at any time within, but not later than, two years after the day on which the subject-matter of the proceedings became known to the Minister.

Minister's certificate

(2) A document appearing to have been issued by the Minister, certifying the day on which the subject-matter of any proceedings became known to the Minister, is admissible in evidence without proof of the signature or official character of the person appearing to have signed the document and is proof of the matter asserted in it.

Procedure

39.12(1) In addition to the procedures set out in the *Criminal Code* for commencing a proceeding, proceedings in respect of any offence prescribed by the regulations may be commenced by an enforcement officer

(a)completing a ticket that consists of a summons portion and an information portion;

(b)delivering the summons portion to the accused or mailing it to the accused at the accused's latest known address; and

(c)filing the information portion with a court of competent jurisdiction before the summons portion has been delivered or mailed or as soon as is practicable afterward.

Content of ticket

(2) The summons and information portions of the ticket must

(a) set out a description of the offence and the time and place of its alleged commission;

(b) include a statement, signed by the enforcement officer who completes the ticket, that the officer has reasonable grounds to believe that the accused committed the offence;

(c) set out the amount of the fine prescribed by the regulations for the offence and the manner in which and period within which it may be paid;

(d) include a statement that if the accused pays the fine within the period set out in the ticket, a conviction will be entered and recorded against the accused; and

(e) include a statement that if the accused wishes to plead not guilty or for any other reason fails to pay the fine within the period set out in the ticket, the accused must appear in the court on the day and at the time set out in the ticket.

Notice of forfeiture

(3) Where a thing is seized under this Act and proceedings relating to it are commenced by way of the ticketing procedure, the enforcement officer who completes the ticket shall give written notice to the accused that, if the accused pays the fine prescribed by the regulations within the period set out in the ticket, the thing, or any proceeds of its disposition, will be immediately forfeited to Her Majesty.

Consequences of payment

(4) Where an accused to whom the summons portion of a ticket is delivered or mailed pays the prescribed fine within the period set out in the ticket,

(a) the payment constitutes a plea of guilty to the offence and a conviction must be entered against the accused and no further action may be taken against the accused in respect of that offence; and

(b) notwithstanding section 39.3, any thing seized from the accused under this Act that relates to the offence, or any proceeds of its disposition, are forfeited to

(i) Her Majesty in right of Canada, if the thing was seized by an enforcement officer employed in the public service of Canada, or

(ii) Her Majesty in right of a province, if the thing was seized by an enforcement officer employed by the government of that province.

Regulations

(5) The Governor in Council may make regulations prescribing (a) offences in respect of which this section applies and the manner in which the offences are to be described in tickets; and, (b) the amount of the fine for a prescribed offence, but the amount may not exceed \$2,000.

Appendix B - Guiding Principles for an MPA Program

The following provides a description of management principles to be used to guide the development and implementation of the MPA Program.

Sustainability Principle

Sustainable development is defined in the *Oceans Act*, Section 30, as:

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Sustainability has become a well-accepted principle in resource management. It says that our activities today should not diminish the opportunities of future generations. Our approach is to put emphasis on conserving ecosystem functions and services on which economic and social values depend. As such, MPAs provide an anchor for marine conservation, and consequently, assist in meeting sustainability objectives.

Precautionary Principle

The precautionary approach is defined in the *Act* as "erring on the side of caution". For example, lack of scientific certainty about where to put MPAs, or how big they should be, or how many are needed, should not be used as a reason not to establish MPAs. Similarly a lack of scientific certainty about the need for and efficacy of MPAs, especially as related to fisheries management, does not mean MPAs are unnecessary or ineffective. Indeed a precautionary approach to fisheries management suggests that establishment of MPAs is imperative.

The precautionary principle puts the 'burden of proof' on activities, including those of both individuals and the government, that may cause damage to ecological resources, as opposed to the current approach that permits activities until harm is demonstrated.

Consultation Principle

The consultation principle provides that interested persons, and those who would in any way be affected by the designation of MPAs, should be consulted in making decisions. The *Oceans Act* includes provision for broad consultation and collaboration with interested persons and agencies in exercising the powers and duties within Part II of the Act, including the designation of MPAs. The benefits of consultation are well documented, including equity and fairness, better information for decisions (especially local and traditional knowledge), broader public understanding of decisions, stronger commitment to decisions, cooperation, and ultimately, better decisions.

Integrated Management Principle

The *Oceans Act* also states that the national oceans strategy should be based on the following principle (Section 30):

"the integrated management of activities in estuaries, coastal waters and marine waters that form

part of Canada or in which Canada has sovereign rights under international law".

Integrated management is a decision-making process used to coordinate the management of human activities that affect marine resources. It requires attention to environmental, social and economic values. Integrated management brings affected interests, sectors and government agencies with differing goals together in a process for agreeing on common goals, plans and policies. Integrated management also implies an evolving consistency among government and non-government objectives and programs.

Adaptive Management Principle

The principle of adaptive management assumes that we do not have all of the information that we would prefer for identification and management of an MPA. Plans and regulations need to be flexibly designed to adapt to changes in information about effectiveness in achieving an area's objectives, to changes in the environment or to changes of circumstances outside the MPA.

Ecosystem Principle

The ecosystem principle requires that we consider the entire ecosystem when establishing an MPA, including the maintenance of the integrity of the ecosystem and key ecosystem components, functions and services. This may not require that the entire ecosystem be included within the MPA. In a marine system, this will usually not be possible. However, MPAs should also not focus on a single species or stock but rather on the ecosystem or fragment of the ecosystem to which they belong.

Regional Flexibility Principle

Standardized national policies for MPAs would be difficult to establish, given the diversity of Canada's ocean environments which range from high Arctic to temperate west coast marine to the Atlantic. Canada has a mosaic of ecosystems, socioeconomic and cultural systems, and management systems. To be relevant and effective locally, programs need to recognize local circumstances and history.

Partnering Principle

Partnering means working together on mutual interests. MPAs will benefit many interests, including coastal communities, coastal provinces and territories, aboriginal organizations, commercial fishers, environmental groups, wildlife groups, tourism enterprises, and others. Partnering will optimize the use of scarce government, non-profit, and private resources for marine conservation. Wherever possible, the marine protected areas program will need to seek opportunities to work closely with interested parties in all phases of the program.

Appendix C - Marine Conservation Programs of Canadian Heritage and Environment Canada

Canadian Heritage - National Marine Conservation Areas (NMCA)

Purpose

In 1986, Parks Canada initiated the national marine park program. It has since been renamed the national marine conservation area (NMCA) program recognizing that conservation through shared stewardship would be the main focus in the planning and management of these areas.

The purpose of the NMCA program is to protect and conserve for all time a system of marine protected areas representative of Canada's oceans and Great Lakes and to provide opportunities for public understanding, appreciation and enjoyment of the country's natural and cultural marine heritage. To do this, Canada's oceans and Great Lakes have been divided into 29 marine natural regions based on their natural features. Canadian Heritage (Parks Canada) is working to establish NMCAs that represent each of these marine natural regions.

Concept

NMCAs contain one or more highly protected zones buffered by cooperatively managed multiple-use areas. They include the sea bed, its subsoil and the overlying water column. In coastal areas, NMCAs may include wetlands, river estuaries, islands and other coastal lands. They may also, however, be established wholly offshore.

In contrast to national parks where the primary goal is to protect ecosystems in a state essentially unaltered by human activity, within NMCAs only activities such as ocean disposal, seabed mining and oil and gas extraction would be totally prohibited. Outside of highly protected zones, activities such as commercial shipping, commercial and recreational fishing and hunting would be permitted provided that these uses will not seriously degrade the essential structure and function of the area's ecosystems.

Flexibility is required in the planning and management of these areas. Traditions and socioeconomic values concerning the protection and use of the marine environment vary from region to region in Canada. While NMCAs must make a meaningful contribution to the protection of the country's marine heritage, they must also respect the life styles of local people. In fact, it is unlikely that NMCAs will succeed without the continuing cooperation and good will of those most directly affected by their establishment.

Each NMCA will be managed in accordance with a management plan. These plans will reflect the decisions taken during the feasibility study for a proposed NMCA. They set out management objectives and a zoning plan for the area and provide guidelines for day-to-day management and use. Management advisory committees are established in each NMCA to ensure that local people are directly involved in the preparation, review and implementation of management plans.

Legislation

In 1988, minor amendments were made to the *National Parks Act* to allow for the establishment of NMCAs. This was intended as an interim measure only since the Act was not developed to respond to the legislative requirements of protected areas in marine environments. Work is now under way to develop new legislation to establish and manage NMCAs.

The Saguenay - St. Lawrence Marine Park is a special partnership initiative with the province of Quebec. The 1990 federal - provincial agreement calling for the establishment of this park recognizes that seabed and subsoil will remain under provincial jurisdiction while the management of the super-adjacent waters will be a federal responsibility. The agreement requires each government to develop complementary legislation. In December 1996, federal and provincial governments each tabled parallel legislation to establish and administer the Park.

Status of the NMCA Program

The NMCA program is relatively young. To date, only four of the 29 marine regions are represented by three sites (one NMCA represents two regions).

Fathom Five, in Georgian Bay was established as the country's first NMCA in 1987. This was followed, in 1988, by an agreement to establish Gwaii Haanas National Marine Conservation Reserve off the Queen Charlotte Islands of British Columbia. This one site represents both Hecate Strait and the Queen Charlotte Island Natural regions. In 1990, an agreement was signed with Quebec calling for the establishment of the Saguenay - St. Lawrence marine park at the confluence of the Saguenay fjord and the St. Lawrence Estuary.

Work is now under way to examine the feasibility of establishing new NMCAs in other regions. Consultations recently began with provincial officials and local people on the possibility of establishing an NMCA in the Bonavista - Funk Island areas adjacent to Terra Nova National Park. The proposed area would represent the Newfoundland Shelf Marine Region.

In July 1995, the federal and provincial governments launched the Pacific Marine Heritage Legacy, a five-year program to create an expanded and integrated network of coastal and marine parks on Canada's Pacific Coast. As part of the Legacy, the feasibility of establishing two new NMCAs on the Pacific Coast will be studied. The first of these studies will examine the possibility of an NMCA representing the Strait of Georgia Marine Region.

Environment Canada - National Wildlife Areas, Protected Marine Areas, and Migratory Bird Sanctuaries

Purpose

Environment Canada has three mechanisms available for protecting ocean and land areas to conserve significant habitats and wildlife resources, especially migratory birds. These mechanisms include National Wildlife Areas, protected marine areas, and Migratory Bird Sanctuaries.

National Wildlife Areas (NWAs), established under the *Canada Wildlife Act*, protect nationally

significant habitats—especially for migratory birds but also for all wildlife—for the purpose of wildlife research, conservation and interpretation. Protected marine areas - which will likely be called "Marine Wildlife Areas" - extend the NWA concept beyond the territorial sea out to the 200 nautical mile limit (with the passage of the *Oceans Act* within the EEZ) They are also provided for in the *Canada Wildlife Act* but require a different regulatory regime. Migratory bird sanctuaries, established under the *Migratory Birds Convention Act*, seek to conserve the diversity of migratory birds by controlling human activities within important areas that are managed for the protection of birds.

This suite of mechanisms provides Canada with the opportunity to protect important coastal and offshore marine areas having significant seasonal concentrations of marine birds and other wildlife. These include areas where marine birds congregate for nesting, feeding, molting, wintering and migration stopover.

Concept

These designations aim to protect wildlife by prohibiting human activities that would be harmful to the wildlife (migratory bird sanctuaries) and to the environment (national wildlife areas, protected marine areas). Through a flexible permitting system, specific activities such as ecotourism can be allowed provided that they are compatible with wildlife conservation. The permit system allows the management regime to be tailored to the specific conditions of a given location or for a given period of time. Co-operation in wildlife management is the basis of the *Canada Wildlife Act*. Partnering agreements can be developed with all levels of government, communities (including aboriginal groups), and individuals both for the establishment of a protected area and for its subsequent co-operative management.

Legislation

Authority rests under the *Canada Wildlife Act* for the establishment of NWAs on Canada's lands, internal waters and territorial sea. In 1994, regulation-making authority was added to the Act to allow for the establishment of protected marine areas within any fishing zone prescribed under Section 4 of the *Territorial Sea and Fishing Zones Act* (with the passage of the *Canada Oceans Act*, the *Canada Wildlife Act* will be amended to refer to the EEZ). A regulation has not yet been developed for protected marine areas.

In the *Canada Wildlife Act*, wildlife includes any animal, plant or other organism belonging to a wild species and also the habitat of any wild animal, plant or other organism. Owing to federal and international responsibilities for migratory birds, the focus of protected areas has been primarily on migratory birds, although sites are managed for the benefit of all wildlife occurring in the area.

Under the *Migratory Birds Convention Act*, the Governor in Council may make regulations prescribing protection areas for migratory birds and nests, and for the control and management of those areas. These areas may be established on Canada's lands, internal waters and territorial sea.

Status of the Marine Component of Wildlife Marine Protected Areas

A number of migratory bird sanctuaries have marine components, usually in coastal situations. A

number of NWAs are coastal wetlands. The first primarily marine national wildlife area was designated in 1995 in the Northwest Territories. A second marine national wildlife area—a joint proposal between EC, DFO, Inuit agencies and others—is nearing designation in 1996. Other areas are under consideration.

Appendix D - The MPA Proposal

The preliminary proposal would provide information necessary to describe the proposed MPA and evaluate its potential. It would include the following information:

- a statement of significance that justifies the area as a potential MPA including information related to the purposes defined for MPAs in the *Oceans Act*
- the suggested location and proposed boundaries of the area
- environmental and ecological information such as important natural processes, species present, habitat characteristics, and special features, *e.g.*, upwellings, nutrient rich areas
- social and economic characteristics within and near the area, including potential human activity impacts on the area and present and historical known uses
- clearly document past and present commercial fishing activities and opportunities and have an analysis of impact on the commercial fishery and options to reduce this impact
- suggestions as to how the proposed MPA would be managed, including assessment of management capabilities and proposals for enforcement
- description and listing of interested groups or individuals in the development of an MPA
- an outline of proposed zones including restrictions and prohibited activities within each zone
- research needs including suggested approaches for monitoring and assessing the success of the MPA in meeting its objectives, and for evaluating the environmental and socioeconomic effects and benefits of the MPA
- estimate of costs and possible funding opportunities for management of the MPA

End notes from text:

- ¹ Kelleher, G. and Kenchington, R.A. 1992. *Guidelines for Establishing Marine Protected Areas*. A Marine Conservation and Development Report. Gland, Switzerland: IUCN.
- ² A full description of the National Marine Conservation Area Program developed under Canadian Heritage is documented in Parks Canada (1995) "*Sea to Sea to Sea: Canada's National Marine Conservation System Plan*". Parks Canada: Hull.
- ³ A full description of the marine conservation programs developed under Environment Canada is documented in Zurbrigg, E. (1996). *Towards an Environment Canada Strategy for Coastal and Marine Protected Areas*. Canadian Wildlife Service: Hull.
- ⁴ Clark, C.W., Lauck, T. and Munro, G.R. (In Press) Managing uncertain fishery resources: The case for fully protected marine reserves. and Rowley, R.J. (1994). Marine Reserves in Fisheries Management. *Aquatic Conservation: Marine and Freshwater Ecosystems*. Vol. 4, pp. 233-254.
- ⁵ Rowley, R.J. (1994). Marine Reserves in Fisheries Management. *Aquatic Conservation: Marine and Freshwater Ecosystems*. Vol. 4, pp. 233-254.
- ⁶ Shackel, N. and Lien, J. (1995). An Under-Utilized Conservation Option for fisheries managers: Marine Protected Areas in the Northwest Atlantic. In *Marine Protected Areas and Sustainable Fisheries*. Proceedings of the Symposium on Marine Protected Areas and Sustainable Fisheries conducted at the Second International Conference on Science and the Management of Protected Areas held at Dalhousie, Halifax, Nova Scotia, May 16-20, 1994. Science and Management of Protected Areas Association, Wolfville, pp. 21-31.
- ⁷ Campbell, A. and Pezzack, D.S. (1986). Relative egg production and abundance of berried lobsters, *Homarus americanus*, in the Bay of Fundy and off southwestern Nova Scotia. *Canadian Journal of Fisheries and Aquatic Sciences* 43:2190-2196.
- ⁸ Wilson, E.O. (1993). The creation of ecosystems. *The Diversity of Life*. New York: W.W. Norton & Company.
- ⁹ Vatn, A. and Bromley, D.W. (1994). Choices without prices without apologies. *Journal of Environmental Economics and Management*. 26, pp. 129-148.
- ¹⁰ The steps in this process are further detailed in Salm, R.V. and Clark, J.R. (1989). *Marine and Coastal Protected Areas: A Guide for Planners and Managers*. Gland, Switzerland: IUCN and Kelleher, G. and Kenchington, R.A. (1992). *Guidelines for Establishing Marine Protected Areas*. A Marine Conservation and Development Report. Gland, Switzerland: IUCN.
- ¹¹ Barchard, W.W. and Hildebrand, L.P. (1993). Canada's Atlantic Coastal Action Program: A community-based approach to coastal management. In *Coastlines of Canada* (Ed. Hildebrand, L.P.). American Society of Civil Engineers: New York.
- ¹² Somerton, D.A. and Jones, J. (1984). A cost-benefit method of determining optimal closed fishing areas to reduce trawl catch of prohibited species. *Canadian Journal of Fisheries and Aquatic Sciences*. 41, pp. 93-98.

7.0 Contacts On Marine Protected Areas

Internet Access:

You may obtain additional copies of the Discussion Paper on the Department of Fisheries Oceans internet site <http://www.dfo-mpo.gc.ca>

Review of Marine protected areas in Queensland - a draft planning framework Overview

The Australian Marine Conservation Society (AMCS) is a national non-government organisation concerned with the protection and ecological sustainable use of marine, coastal and aquatic environments. AMCS has been operating for over thirty years and has a long term commitment to promoting the sustainable utilisation of resources to ensure that the integrity and health of our ecosystems are not compromised.

AMCS welcomes the opportunity to provide comment on the - Marine Protected Areas in Queensland - Draft Planning Framework. Progress on the identification and declaration of a comprehensive and adequate system of representative marine protected areas (MPAs) within state waters in Queensland has been disappointingly slow. We urge the Queensland government to give a much higher priority to establishing a representative system of MPA's in Queensland.

The IUCN Guidelines for Marine Protected Areas (Kelleher,1999), designed to assist countries establish a system of MPA's states :

There are two ways of establishing MPA systems; either as many relatively small sites, each strictly protected, or as a few large multiple-use areas which contain strictly protected areas within them. To conserve biodiversity, both approaches should occur within an effective programme of ecosystem management covering the marine ecosystem and the land areas that affect it.

The Discussion Paper unfortunately fails on both accounts. Firstly it fails to place MPA's in their wider context. The direct link between land and sea require that MPAs be integrated into management regimes that deal with all human activities that affect marine life (Kelleher,1999). Land based activities have been identified as one of the greatest threats to the health and integrity of our marine ecosystems. Unfortunately existing State legislation dealing with planning and approval processes such as the Integrated Planning Act and the Coastal Protection and Management Act do not deal with the marine environment or the effect that activities controlled by these Acts have on the marine environment. The current inadequacies of the existing legislation should have been addressed in this discussion paper.

Secondly the Queensland government fails to recognise the importance of 'no-take' areas within a large multiple use MPA. The discussion paper states only that 'the inclusion of some smaller highly protected areas might also be an important element of the protection of marine biodiversity.

Any strategic planning process within the marine environment which has as its aim to conserve biodiversity, must include the establishment of a system of 'strictly no-take marine areas'. further any such system must ensure that representative areas

from all habitats are protected within 'no-take' areas. AMCS believes that at least 15% of all habitats should be protected in 'no-take' areas equivalent to IUCN categories I and II Protected areas. Queensland will not adequately conserve its unique marine biodiversity, if it fails recognise the crucial role of 'no-take' areas.

In addition, the paper fails to analyse the successes and failures of the existing approach to marine conservation and MPA planning in Queensland. It is not made apparent in the Discussion Paper how the Queensland Government intends on assessing the effectiveness of current management mechanisms in achieving ESD objectives and conserving marine biodiversity. It is also not made clear how current management regimes may be refined and improved in the future. (Any management process should have a process of review). AMCS considers this to be a major failing of this Discussion Paper.

The discussion paper fails to set any goals, objectives and outcomes for MPA'in QLD.

The IUCN Guidelines for Marine Protected Areas (Kelleher,1999), defines the goal of a global network of MPAs as:

"To provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity through the creation of a global representative system of marine protected areas..."

Further, the report sets out detailed guidelines for the establishment of a MPA system. AMCS recommends that Queensland Parks and Wildlife Service obtains a copy of these guidelines and uses it as a basis for its strategic planning process.

AMCS supports NQCC recommendation to the Minister that a advisory or reference group be established to:

- Assist in coordination of the MPA process with the Commonwealth MPA process.
- Coordinate and integrate with proposed revisions to the State Marine Park Act.
- Coordinate with current coastal planning processes under the Coastal Protection and Management Act.
- Initiate an audit of current Marine Park management and practice, including multiple use
- Initiate a review of current zoning plans and regulations.
- Initiate a review of the Nature Conservation Act.
- Develop conservation objectives for an MPA process.
- Advise on policy direction in relation to the State Marine Park.
- Advise on an MPA process that is participatory, rigorous and dedicated to ESD.
- Review current threats to the Marine Park, both marine and terrestrial.

Specific Comments

1. Introduction

Opening paragraph states that 'Queensland is an acknowledged leader in conserving marine habitats' AMCS is aware that the Commonwealth government has recently intervened to provide greater protection to the Great Barrier Reef Marine Park. The Commonwealth believed the Queensland was not adequately protecting the GBRMP in regards to management arrangements for aquaculture and trawling. AMCS believes this comment is undeserving. Further, less then 5% of the Great Barrier Reef is protected as a 'no-take' area.

Paragraph 5 states that 'marine parks to be declared as large multiple-use areas within which there might be some smaller, highly protected areas'. See comments above.

It is unacceptable that Queensland Parks and Wildlife Service refuses to accept the importance of 'no take' areas as crucial to the conservation of marine biodiversity and protection of fish stocks.

Policy Context

As mentioned above MPAs need to be placed within their wider context. No reference has been made to the Coastal Protection and Management Act and the development of State and Regional Coastal Management Plans. Decisions currently being made under these processes have significant implications and impact on the marine environment and they can not be excluded.

Marine Biodiversity

Paragraph 6
AMCS agrees with the sentences 'The declaration and (effective) management of large multiple-use marine protected areas is a viable strategy for protecting marine biodiversity. In many situations, the main task of management might be to protect the overall health of the system by for example, controlling impacts from development and pollution'. However, what AMCS has not able to detect is any intention of the Queensland government to effectively manage and control the impacts from development and land based sources of pollution. There is no mention of the effects of large scale land-clearing currently occurring in Queensland or how the State and Regional Coastal Management Plans will be integrated Land based sources of impact must be addressed in any MPA planning process.

Paragraph 8 states once again that the inclusion of smaller areas of higher protection... might also be an important element of the protection of marine biodiversity. As mentioned previously 'no take' areas are crucial to the protection of marine biodiversity.

Marine bio-region and regional ecosystem classification

The use of appropriate physical and biogeographical parameters in the classification of marine bio-regions is essential. AMCS is concerned that the classification system developed by Queensland Parks and Wildlife Service is not adequate. It is AMCS understanding that the bioregion maps were produced through the Interim Marine and coastal Regionalisation for Australia (IMCRA), 1998 process. Since that time however, substantial work has been carried out by GBRMPA in collating available information to produce bioregional maps with substantially more information than those that were outlined in IMCRA. AMCS believes it would be more beneficial to utilise this information.

Legislation

The impact of the Environment Protection and Biodiversity Conservation Act (1999) on the management of the marine environment in Queensland has not been addressed.

Existing Marine Protected Areas

Although Queensland may have a large percentage of the marine environment within a designated MPA's it should be recognised that just because it has the status of an MPA does not necessarily afford it the protection it requires. Indeed the majority of the GBRMP is not adequately protected and GBRMPA is currently undergoing a process aimed at ensuring that those marine habitats that have been under represented in the past will soon be protected as 'no take' areas.

Rare and threatened Species

AMCS recognises that the identification of rare and threatened species and their habitat will require time and resources. However, AMCS believes that where there is a lack of adequate information it must be standard practice to implement the precautionary approach where the burden of proof is with the resource user not the resource.

Fisheries Interfaces

Paragraph 3 states that 'Inevitably, increasing community awareness ... will lead to proposals for establishing ...'. This paragraph reads like it will be a regrettable consequence to establish no take MPA's as apposed to the desired outcome. QPWS must be able to effectively articulate the benefits of MPA's in terms of protection of biodiversity and as mechanism for ensuring that the Queensland fishing industry has a sustainable source of fish stocks for the future. MPA's act as an insurance mechanism for the fishing industry. This should be articulated in any planning approach adopted by QPWS.

Paragraph 5 states that a system of 'no take' areas should be established as a scientific reference and monitoring sites. The benefits of 'no take' areas go far beyond scientific reference and monitoring stations, They are fundamental in conserving the biodiversity of the oceans and to maintain productivity.

Paragraph 6. The impact of fishing must be based upon an ecosystem management approach and thus take into consideration the effect the fishery has on the whole ecosystem including non-target species, both direct and indirect.

Paragraph 8 makes incorrect assumptions about community groups opposing moves to establish a comprehensive system of marine protected areas that would close existing recreation or commercial fishing areas. AMCS (as a community group) who categorically supports a comprehensive system of 'no take' areas' and takes offence to the incorrect assumptions made by the paper.

The following sentence in paragraph 8 states that 'A more balanced system ... is likely to result from a strategy that accommodates fishing on a sustainable basis consistent with conservation objectives than one that seeks to exclude fishing. This final statement only further reinforces the obvious bias of the author/s and their belief that 'no take' areas are not a desired option.

Research and Resource Information

Research must also address the impact of terrestrial activity on the marine environment. As well as monitor the effectiveness of management. Provide data re benefits of MPAs etc.

Strategic Approach

Fails to set any goals, objectives and outcomes for marine protected area in QLD.

1. The strategy for MPA's should not only build on elements that have contributed to the success of the existing system but also address the elements that have contributed to the failure of the existing system. We need to be able to learn from our mistakes not only repeat the successes.

3. Avenues available for improving cooperation need to be addressed.

4. If Queensland intends to implement conservation and management measures that have the support of marine park users then it needs to address the lack of awareness, knowledge, skills and motivation in the user groups in order to ensure informed decisions are made.

7. AMCS is not able to support this without further information.

13. 'No-take' areas are essential elements of a multiple use system of MPA's.

17. The habitat requirements of rare and threatened and endemic species must be considered in planning and managing marine parks.

In summary, the contents of this discussion paper provides AMCS with very little faith that the Queensland government goal in establishing a system of marine protected areas is to protect marine conservation and biodiversity. The planning framework has failed on a number of accounts including; placing MPA's in their wider context, analysing the successes and failures of the existing approach to marine conservation and MPA planning and the benefits of 'no take' areas have been grossly understated. The Queensland Parks and Wildlife Service should recognise the significant benefits of a comprehensive, adequate and representative system of MPAs that include substantial 'no take' areas, in maintaining biodiversity and protecting future fish stocks.

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National Coordinator