

**THE BENEFITS OF INTEGRATED MARINE PLANNING:
PERCEPTIONS, PRECEDENTS AND
THE CASE OF THE PACIFIC NORTH COAST
INTEGRATED MANAGEMENT AREA**

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ABSTRACT

In response to concerns over marine ecological health and conflict among competing uses, new integrated approaches to the management of oceans and coastal areas are evolving in many settings. This study begins with an analysis of international cases to determine common benefits of integrated marine planning, and to identify factors that contribute to a successful integrated marine planning process. The study then describes a survey that was carried out to investigate perceptions of the benefits of marine planning for key stakeholder groups on the Pacific coast of Canada. The results of the survey show strong support for creating a marine plan in this region. Next, a set of best practices criteria for integrated marine planning is developed and used to evaluate and make recommendations to improve the Canadian marine planning framework as it has been applied on the Pacific coast.

Keywords: Marine; Integrated; Planning; Survey; Canada; British Columbia

Subject Terms: marine planning – British Columbia; Natural resources – British Columbia – Management; Coastal zone management – Canada; Coastal zone management – British Columbia; Pacific North Coast Integrated Management Area

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ACRONYMS

CWSS	Common Wadden Sea Secretariat
DFO	Fisheries and Oceans Canada
ESSIM	Eastern Scotian Shelf Integrated Ocean Management Plan
FKNMS	Florida Keys National Marine Sanctuary
GBRMPA	Great Barrier Reef Marine Park Authority
LOMA	Large Ocean Management Area
MPA	Marine Protected Area
NOAA	National Oceanic and Atmospheric Administration
PNCIMA	Pacific North Coast Integrated Management Area
MOU	Memorandum of Understanding
MPA	Marine Protected Area
UN	United Nations

CHAPTER 1: INTRODUCTION

“There is growing awareness that the escalating crisis in marine ecosystems - from biodiversity losses and transformed food webs to marine pollution and warming waters - is in large part a failure of governance” (Young, 2007, p.1).

1.1 Problem setting

Canada’s *Oceans Act* came into force in 1997, making Canada one of the first countries to adopt comprehensive oceans management legislation. The *Oceans Act* and its supporting policy documents - Canada’s *Oceans Strategy* (2002), and *Oceans Action Plan* (2004) - place Fisheries and Oceans Canada (DFO) as the lead federal authority for oceans management in Canada. Canada’s new ocean management framework is centred on themes of integrated and adaptive management, as well as the precautionary principle (DFO, 2006). The framework recognises that people are a critical component of the marine landscape and that development must be balanced with the maintenance of ecological integrity (NRTEE, 2003). Integrated marine planning represents a shift in the way that oceans are managed and provides a mechanism to meet the goals that the government of Canada has set for implementing integrated management in Canada’s oceans.

Five Large Ocean Management Area (LOMA) initiatives have been designated in Canada in order to concentrate marine planning efforts within regional boundaries (DFO, 2006). The management focus for each LOMA is region specific and boundaries take into account both ecological and administrative considerations. The Eastern Scotian Shelf Integrated Management (ESSIM) initiative is the priority LOMA established on the Atlantic coast of Canada. ESSIM was adopted as the pilot project for integrated management and is, therefore, the furthest along of the LOMA initiatives. It has recently been

formally recognised as Canada's first integrated ocean management plan under the *Oceans Act* and has entered the action-planning phase. Planning has recently begun in the Pacific North Coast Integrated Management Area (PNCIMA), the priority LOMA on the Pacific coast (DFO, 2008c).

Around the globe, integrated marine planning is being adopted and tailored to the politics and natural systems unique to each region or nation. Though modern oceans management is still evolving, an increasing number of marine planning initiatives are being created and implemented (Cicin-Sain, 2003).

Canada has been lagging behind its international counterparts in the implementation of its oceans legislation. Much of the criticism of Canada's oceans management stems, not from the federal legislation itself, but rather from the slow progress towards implementation of the legislation. This slow progress may be the result of a combination of factors. Critics complain that there appears to be an absence of higher-level advocacy and commitment for marine planning at the federal level, and subsequently inadequate capacity and funding has been designated for regional planning initiatives (Auditor General of Canada, 2005; Gardner, 2008). Additionally, Canada's oceans management is carried out through a complex and often overlapping mixture of laws, legislation, and authority (DFO, 2008a). This overlap of jurisdiction and authority has made designing a national framework for integrated and coastal zone management difficult (Ricketts, 2007).

1.2 Research objectives

The overarching objectives of this research project are to:

1. Investigate international experience with integrated marine planning processes and document common benefits,
2. Examine stakeholder perceptions of integrated marine planning on the Pacific coast,

3. Determine best practices criteria for integrated marine planning,
4. Use the best practices criteria to evaluate the federal institutional marine planning framework as it applies to the PNCIMA.

1.3 Methodology

The study consists of four main research components. These components are linked as shown in figure 1:

1. International case study analysis

An international case study analysis was undertaken in order to determine common benefits of marine planning, and to identify factors that contribute to a successful planning process.

2. Stakeholder Survey

A stakeholder survey was carried out in order to investigate perceptions of marine planning for key stakeholder groups on the Pacific coast. The key objectives of the survey were to:

- Examine perceptions of the potential benefits of integrated marine planning as identified in the case study analysis,
- Determine if stakeholders believe the benefits can actually be achieved through integrated planning in BC,
- Determine the level of support for the PNCIMA initiative,
- Assess how industry has been impacted by the uncertainty arising from the lack of a marine plan on the Pacific coast.

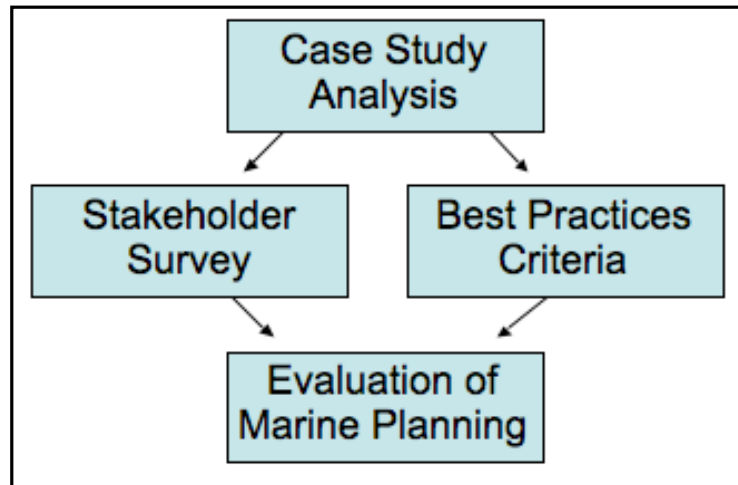
3. Best practices criteria

A set of best practices criteria was developed in order to determine factors that contribute to a successful management plan. Context was drawn from the international case study analysis and from existing best practices frameworks for planning.

4. Evaluation of marine planning

The best practices criteria were then used to evaluate the Canadian marine planning framework as it has been applied on the Pacific coast. The evaluation was informed, in part, by the results of the stakeholder survey.

Figure 1: Methodology flow chart showing connection of research components.



1.4 Report organisation

This report is organised into the following chapters:

Chapter 1 describes the project problem setting, and outlines the research objectives and methodology. It also provides context by introducing the topic of integrated marine planning.

Chapter 2 explores Canada's oceans legislation and policy, international obligations, and unique components of marine planning in British Columbia.

Chapter 3 reviews and compares marine planning case studies from around the globe in order to provide an overview of international initiatives and approaches. This detailed analysis identifies potential benefits of integrated marine planning as well as factors that contribute to a successful planning process or management plan.

Chapter 4 summarises the results of an online survey of stakeholder perceptions of marine planning. The survey investigates perceptions of a number of aspects of integrated marine planning on the Pacific coast and was available online to targeted representatives of key organisations, associations and government bodies with an interest in marine planning in the PNCIMA.

Chapter 5 builds upon the international case study analysis by establishing a framework of best practices for creating a successful planning process and marine plan. It then uses the best practices criteria to evaluate the Canadian marine planning framework as it has been applied to the Pacific coast.

Chapter 6 provides a summary of key findings of this research project.

1.5 Project context and background

This section provides some project context by examining the concept of integrated marine planning and investigating the importance of utilising an integrated approach to management in the marine environment.

1.5.1 Integrated marine planning

The escalating crisis in marine ecosystem stability is, in part, a result of the inadequacies of management frameworks and governance structures (Young, 2007). Management of marine space requires management of human activities and behaviour, and there is growing realisation that one type of human activity, in one part of the marine space, should not be managed in isolation from the rest. Integrated marine planning manages the marine environment holistically, taking into consideration economic, environmental, social, and cultural concerns (Crowder, 2008). It often utilises a governance structure that is capable of incorporating the needs of multiple uses and sectors, along with multiple authorities, organizations and users.

Management frameworks for marine resources or regions have, historically, tended to centre on a single issue, such as fisheries management or protection of an ecologically sensitive area. Management objectives were often limited in scope with little consideration for the wide ranging issues and linkages that affect marine space (Crowder, 2008). Within this kind of single objective planning framework, multiple management plans may be developed at relatively small spatial scales for different species or uses, resulting in overlaps and conflicts.

The earliest integrated marine planning initiatives were organized around limited objectives. For example, the Florida Keys National Marine Sanctuary (USA) and the Great Barrier Reef Marine Park (Australia) were two of the earliest integrated marine planning processes and both were established primarily to address conservation concerns (Douvere, 2007a). Though the catalyst for initiation of the projects was environmental concern, these initiatives grew with time to incorporate the needs of numerous stakeholders and to balance multiple use of marine space with ecological health (Borthwick, 2006).

Modern marine planning processes are more often initiated due to conflict over marine resources and increased pressure to develop marine space, as well as conservation concerns. Integrated marine management represents a shift in priorities, from managing for a single objective, to examining the system as a whole and looking at the cumulative effects of all human activities on the marine environment. Most initiatives also integrate an adaptive management approach that recognises the ever-changing nature of marine ecosystems and economies and the need for management plans to keep up with this change (Day, 2008).

Integrated marine planning initiatives range from large-scale regional management programs to small scale localised planning initiatives; an example can be seen in Canada, where, on a large scale, the federal government is developing a number of LOMAs and, on a local scale, the British Columbia provincial government is creating coastal management areas. Plans also differ in their approach to plan boundaries, utilising different mixes of landward and seaward areas. Often, management plans take into consideration planning on the landward side of the low water mark, in order to address the impacts of terrestrially based stressors. Alternately, others, such as the ESSIM initiative in Atlantic Canada, focus exclusively on offshore areas (DFO, 2008b).

1.5.2 The need for integrated marine planning

Integrated marine planning is a logical step forward in the management of the marine environment (Tyldesley, 2004). Evidence continues to emerge about

the limitations of the traditional approach to planning and permitting on a case-by-case, or sector-by-sector basis (Guenette, 2007; Douvère, 2007a). Globally, marine regions are rife with conflict between user groups, competition between proponents for use versus non-use of sensitive ecosystems, as well as discord between government bodies who share jurisdiction over marine spaces (Day, 2008).

The majority of the world's largest cities are located in coastal areas, and more than half of the world's population lives on or near the coast (Cicin-Sain, 2003). Coastal populations are growing and are expected to reach 6 billion by 2025. It is estimated that 80% of ocean pollution originates on land (UNEP, 2007), and population growth has the potential to increase the amount of terrestrial pollution reaching the world's oceans. Sources of terrestrially based pollution include municipal, industrial and agricultural run-off, as well as purposeful disposal of waste and sewage. Despite these links, marine systems are almost always managed in isolation from terrestrial stressors.

Dead zones, caused in part by agricultural and industrial runoff from terrestrial sources, are an emerging example of how dramatically the marine environment is being impacted by land-based activities. Concentration of nutrients in specific regions of the world's oceans results in large scale algae blooms that consume oxygen from the water and cause areas of the ocean to have low levels of dissolved oxygen (UNEP, 2007). These areas are called dead zones because fish and other marine organisms have difficulty surviving in such an oxygen poor environment (UNEP, 2007). Dead zones occur around the world and are often massive in size. A reoccurring example in the Gulf of Mexico reached 7,903 square miles in 2007 (NOAA, 2008).

Proliferation of these dead zones has potentially catastrophic implications for marine ecosystem health and will, consequently, have a detrimental impact on marine activities such as tourism and fishing (UNEP, 2007). The number of dead zones is speculated to be on the increase due to the influence of factors associated with climate change. Climate change also has the potential to affect

such things as ocean salinity, sea levels, circulatory patterns, acidification, and extreme weather events (UNEP, 2007), all of which will impact human use and management of marine space.

At the close of the 1982 Third United Nations Conference on the Law of the Sea, the common belief was that fish stocks found in the exclusive economic zone and the high seas were relatively safe from exploitation and were of minor importance (FAO, 2007). This belief has been proven tragically wrong, as case after case has shown that increased skill and improved technology for industrial harvesting has led to the exploitation of species and regions that were previously off limits due to their depth or distance. According to a recent publication from the Food and Agriculture Organization of the United Nations, three quarters of marine fish stocks are fully exploited, overexploited, depleted, or recovering from depletion (FAO, 2007). Total marine catches are only being sustained by moving fishing effort further offshore and by fishing further down the food chain (UNEP, 2007). The high level of exploitation of marine species indicates the need “for more cautious and effective fisheries management to rebuild depleted stocks and prevent the decline of those being exploited at or close to their maximum potential” (FAO, 2007, p.7). Population decline in a species that is culturally or economically important greatly impacts the lives and livelihoods of coastal people.

The above discussion exemplifies why integrated marine planning is necessary. Marine ecosystems are complex and linkages are poorly understood. The failure of traditional management strategies to recognise interactions and linkages in the marine environment has led to historic mismanagement of marine resources. It is becoming increasingly clear that one industry’s use of marine space can negatively impact another’s use of the same marine space. Conflicts between uses emerge due to the nature of the marine environment; marine uses often operate and overlap spatially. This can be seen, for example, in the case of fisheries and marine transportation, where there is an immediate spatial overlap. Because of this overlap, and the ocean’s ability to rapidly transport and distribute

material, occurrences such as oil spills can quickly impact a number of user groups, nations, and the broader environment.

CHAPTER 2: CANADA'S OCEANS MANAGEMENT

Management of Canada's oceans has historically taken place in an ad hoc fashion, identifying issues one by one, as they arise. It was hoped by some that the *Oceans Act* and subsequent legislation and national policy would move Canada away from a reactive mode of oceans management, and into a more proactive one (Lien, 2003; Auditor General of Canada, 2005). The lead agency for the implementation of the *Oceans Act* is DFO, and the *Oceans Strategy's Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada* provides guidance for the development of integrated ocean management and planning processes (DFO, 2008a). Though the lead agency for implementing integrated management in Canada's oceans is DFO, responsibility for marine resources is shared among multiple government bodies and authorities. This section provides a brief description of Canadian ocean legislation, Canada's international obligations, and management arrangements shared with British Columbia. It also explores unique components of marine planning in British Columbia. An evaluation of Canada's policy and legislation, as it applies to the Pacific coast, is provided in section 5.2.

2.1 Federal legislation and strategy

The *Oceans Act* came into force in 1997. Since then, supporting policies and strategies have been brought into effect that build on the founding principles of the *Oceans Act*, including: Canada's *Oceans Strategy* (2002), Canada's *Oceans Action Plan* (2005), and the Health of the Oceans Initiatives (2007). Each of these is discussed briefly below.

2.1.1 Canada's *Oceans Act*

The founding principles set out in the *Oceans Act* (1997) are sustainable development, integrated management, and the precautionary approach.

The *Oceans Act*:

- legally defines Canada's ocean boundaries,
- promotes an integrated oceans management approach (i.e., a collaborative process that brings together interested parties),
- encourages government-wide collaboration, coordination, and respect for jurisdictional authorities,
- engages all Canadians interested in making decisions that affect them and their ocean environment, and
- assigns federal responsibility to the Minister of Fisheries and Oceans Canada for new and emerging ocean-related activities not previously assigned by Parliament (Department of Justice Canada, 1996).

With respect to integrated management plans, the *Oceans Act* states:

The Minister (of Fisheries and Oceans Canada), 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 (Department of Justice Canada, 1996, ¶31).

Fisheries and Oceans Canada defines integrated management as “an ongoing and collaborative planning process that brings together interested stakeholders and regulators to reach general agreement on the best mix of conservation, sustainable use and economic development of marine areas for the benefit of all Canadians” (DFO, 2006, ¶ 1).

The *Oceans Act* is Canada's primary oceans legislation, on which Canada's *Oceans Strategy* and *Ocean Action Plan* are based.

2.1.2 Canada's Oceans Strategy

Canada's *Oceans Strategy* (2002) is the national policy statement that defines the vision and policy objectives for implementing the *Oceans Act* and applying integrated oceans management to the management of estuarine, coastal and marine ecosystems. As with the *Oceans Act*, it is based on the three principles of sustainable development, integrated management, and the precautionary approach. More specifically, it supports policy and programs aimed at: supporting sustainable economic opportunities; understanding and protecting the marine environment; and providing international leadership.

The *Oceans Strategy* is designed to advance oceans governance in three main ways, as stated in the Strategy:

1. The federal government will develop, support and promote activities to establish institutional governance mechanisms to enhance coordinated, collaborative oceans management across the federal government and with other levels of government.
2. The Strategy seeks to implement a program of integrated management planning to engage partners in the planning and managing of ocean activities.
3. The Strategy responds to the desire of Canadians to become engaged in ocean management activities by promoting stewardship and public awareness. Oceans stewardship means acting responsibly to conserve the oceans and their resources for present and future generations.

The *Oceans Strategy* asserts support for both LOMA planning processes, and for coastal and watershed planning initiatives. The Minister of Fisheries and Oceans is authorised to lead and facilitate the development and implementation of the national Strategy, though there is recognition that oceans governance "is a collective responsibility shared by all" (Government of Canada, 2002a).

The *Oceans Strategy* is accompanied by a Policy and Operational Framework entitled *the Policy and Operational Framework for Integrated*

Management of Estuarine, Coastal and Marine Environments in Canada. This document is “intended as a working document for Canada’s oceans community. It is intended to foster discussion about integrated management approaches by setting out policy in the legislative context, along with concepts and principles. The document also proposes an Operational Framework with governance, management by areas, design for management bodies and the type of planning processes that could be involved” (Government of Canada, 2002b, p.i).

2.1.3 Canada’s *Oceans Action Plan*

In May 2005, Canada announced its *Oceans Action Plan*. This plan acts as a framework for an integrated federal oceans agenda and is a companion document to Canada’s *Oceans Strategy*, helping to guide implementation of the Strategy. It is a government-wide action plan to develop Canada’s ocean resources for the benefit of coastal communities, while protecting fragile marine ecosystems. The February 2005 federal budget announced funding of \$28 million over two years for the first phase of the *Oceans Action Plan*. The *Oceans Action Plan* is based on four interconnected pillars:

- International Leadership, Sovereignty and Security,
- Integrated Oceans Management for Sustainable Development,
- Health of the Oceans, and
- Ocean Science and Technology (Government of Canada, 2005).

As can be seen in table 1, the plan uses strong language in its description of the way forward for oceans management in Canada. Phase I of the *Oceans Action Plan* occurred over a two-year period that ended in 2007 (Parks Canada, 2007).

Table 1: Excerpt from Canada's Oceans Action Plan

Excerpt from the <i>Oceans Action Plan</i>
Currently, oceans governance arrangements are not designed to deal with the challenges of modern oceans management. The approach is fragmented, exceedingly complex, lacks transparency, and is focused on solving problems after they appear.
The current approach has resulted in: <ul style="list-style-type: none">• failing oceans health, including some declining fish stocks and increasing fluctuations of stocks, increasing numbers of marine species at risk and invasive species, marine habitat loss, and declining biodiversity;• growing oceans user conflicts and administrative, jurisdictional and regulatory complexities, and lost or delayed investments; and• an oceans industry sector that is significantly weaker than its potential.
<i>Source: Canada's Oceans Action Plan (Government of Canada, 2005, p.4)</i>

2.1.4 Health of the Oceans Initiatives

In 2007, Canada's federal government dedicated five-year funding for the 'Health of the Oceans Initiatives' (a pillar of the *Oceans Action Plan*) as part of its new *National Water Strategy*. Initiatives include funding to protect fragile marine environments, counter pollution and strengthen preventive measures for such issues as declining biodiversity and invasive species (DFO, 2008a). The funds for the various initiatives went to Fisheries and Oceans Canada, Transport Canada, Environment Canada, the Parks Canada Agency, and Indian and Northern Affairs Canada.

2.2 Canada - BC arrangements

The province of British Columbia has stewardship responsibility and authority for coastal regions within its jurisdiction. It has also shown long-term interest in such things as marine transportation, fisheries, aquaculture, and offshore mineral and petroleum development, many of which are primarily under the jurisdiction of the federal government. Such an overlap of interests and departmental mandates makes for a challenging management scenario. A well recognised need, therefore, exists for coordination within and between government bodies with interests in the Pacific coast. Historically, this coordination has been poor, and key resource management challenges have

involved administrative, jurisdictional and regulatory complexities (Government of Canada, 2005).

Canada and British Columbia began to actively collaborate on aspects of marine management in the 1990's, and the level of collaboration on management initiatives has been increasing with time. There are now a number of completed sub-regional scale marine plans that have successfully incorporated both federal and provincial management objectives (Alley, 2007).

Despite the aforementioned overlap of interests and the growing understanding of the need for interagency coordination, when the *Oceans Strategy* was drafted there was no federal consultation with the provincial government (Alley, 2007). In response to the province's concerns over lack of consultation, a Memorandum of Understanding (MOU) was created in 2004 to aid the implementation of Canada's *Oceans Strategy* on the Pacific coast. The purpose of the federal/BC MOU was to "provide for further collaboration among the parties to advance the implementation of specific activities and objectives identified in Canada's *Oceans Strategy* aimed at 'Understanding and Protecting the Marine Environment' and 'Supporting Sustainable Economic Opportunities' on the Pacific coast of Canada" (DFO, 2004, ¶ 1.0).

The MOU was signed by federal and provincial Ministers and was endorsed by Deputy Ministers of multiple federal and provincial agencies (DFO, 2004). Within the agreement, there is a commitment by the parties to develop other memoranda of understanding or agreements on the following:

- A marine protected areas framework for the Pacific coast,
- The roles and responsibilities of the parties in coastal planning and integrated oceans management planning and a method by which they will collaborate in undertaking their respective responsibilities,
- The cooperative development of an integrated ocean information management system to support science based decision-making and sustainable development,
- The cooperative development of indicators for oceans management, state of the environment and sustainability reports,

- The establishment of a process to facilitate gathering and sharing of information, including scientific or technical information, related to offshore oil and gas resources, and
- The streamlining and harmonisation of federal and provincial regulatory decision-making processes for shellfish and finfish aquaculture (from DFO, 2004. ¶ 2.1).

In order to address the sub-agreements indicated in the MOU, a Canada-BC Oceans Coordinating Committee has been established (Alley, 2007). The Oceans Coordinating Committee is co-chaired by DFO and the BC Ministry of Environment, with representatives from Canada and BC government agencies.

A more recent MOU on collaborative oceans governance in the PNCIMA was signed in December of 2008 between DFO and First Nations of the Pacific north coast. Although, at this time the governance model proposed in this MOU does not include formal participation by the Province of British Columbia, the MOU states that “the process will remain open to the Province of BC to participate in this initiative and that efforts be made to include BC in a governance model in the future” (DFO, 2008d).

Another aspect of the federal-provincial relationship is that the federal government may delegate some of its marine related federal responsibilities into provincial hands. For example, under the management arrangement for finfish aquaculture in British Columbia, DFO allowed the BC Ministry of Agriculture, Food and Fisheries and the BC Ministry of the Environment to assume responsibilities associated with the finfish aquaculture industry. Despite the assertion that this is an example of a cooperative management approach, some argue that this institutional arrangement represents a breakdown of the inter-agency management of a marine resource. The December 2000 *Report of the Auditor General of Canada* (2000, ¶ 30.1) states that Fisheries and Oceans Canada “is managing the salmon farming industry on the basis that it poses an overall low risk to wild salmon and habitat. However, the Department is not fully meeting its legislative obligations under the *Fisheries Act* to protect wild Pacific salmon stocks and habitat from the effects of salmon farming.”

Though this statement was made in 2000, it does not appear that this fundamental contradiction in management priorities was effectively resolved. A court case commenced in 2008 by non-governmental organisations and resource users challenged the federal government's authority to delegate its duties to the province, given that aquaculture affects federally managed ocean waters and fisheries (Morton, 2008). The February 2009 ruling of B.C. Supreme Court Justice Christopher Hinkson concluded that finfish aquaculture is indeed a fishery, and given that management of fisheries is a matter of exclusive federal jurisdiction, should be regulated under the *Fisheries Act*. This case, which is under appeal, demonstrates the complicated jurisdictional scenarios that can occur within marine space.

Provincial and federal authorities have been moving along the management continuum away from segregated management approaches and towards collaboration. Both the province and the federal government have committed to establishing cooperative working arrangements, in order to fulfil responsibilities for oceans management. For this purpose, they have established a number of working groups and management arrangements. DFO has also committed support to initiatives that help to meet the mandate of the department, even if they occur outside of federal jurisdiction (DFO, 2008a).

2.3 Marine protected area designation and authority

The federal *Marine Protected Area Strategy*, released in 2005 and created under the Health of the Oceans pillar of the *Oceans Action Plan*, confirms the federal government's commitment to implementing a network of MPAs. The Strategy focuses on the establishment and maintenance of an ecologically sound network of federal MPAs through a collaborative process, and indicates that integrated management processes, such as the LOMA initiatives, will be the primary vehicle for planning MPA networks regionally (Government of Canada, 2005). Previous designation processes established federal MPAs on a case-by-

case basis, according to a process set out in the *National Framework for Establishing and Managing Marine Protected Areas*.

Federally established MPAs can be designated by three separate federal agencies: DFO, Parks Canada, and Environment Canada. Each is able to designate MPAs for different purposes, discussed briefly below, and the three agencies are meant to work together to establish and manage the network of MPAs.

DFO has the authority to establish MPAs within the integrated management framework, “to protect and conserve important fish and marine mammal habitats, endangered marine species, unique features and areas of high biological productivity or biodiversity” (Government of Canada, 2005).

Parks Canada can designate National Marine Conservation Areas, “marine areas managed for sustainable use and containing smaller zones of high protection. They include the seabed, the water column above it and they may also take in wetlands, estuaries, islands and other coastal lands” (Parks Canada, 2008, ¶ 3). The goal is to represent each of Canada’s marine regions, though at this time there are only three National Marine Conservation Areas: two in Ontario, and one in Quebec (Parks Canada, 2008).

Environment Canada also has some authority for establishing MPAs, primarily for the protection of migratory bird species and species at risk. The protected areas it can designate are National Wildlife Areas, Marine Wildlife Areas, and Migratory Bird Sanctuaries (Gardner, 2008).

The federal *Marine Protected Areas Strategy* (Phase I of the *Oceans Action Plan*) is meant to guide the coordination of the above agencies in the establishment of a network of MPAs. Under this strategy, funding was made available for such objectives as “establishing a more systematic approach to MPA planning... and ... enhancing collaboration for management and monitoring of MPAs” (Parks Canada, 2007, p.10). Such strategies, within which government

agencies will coordinate their programs of MPA designation, are critical. A 2007 Parks Canada evaluation of Phase 1 of the *Oceans Action Plan* notes “the interdepartmental committees on Oceans have been, and continue to be seen, as a good forum for information sharing and dealing with horizontal issues” (Parks Canada, 2007, p.14).

The complementary nature of the mandates of the three MPA authorities, as well as the increasing level of collaboration, greatly increases the likelihood of establishing a network of MPAs. It is unlikely, however, that the agencies will be able to achieve the *Convention on Biological Diversity’s* ambitious goal of the establishment of a network of marine protected areas by 2012.

2.3.1 The place for marine protected areas

Marine protected areas (MPAs) are a critical tool that can be utilised to address declines in ecosystem health and marine biodiversity. They are, generally, areas of marine space that are zoned for some level of protection. MPAs may offer varying degrees of protection, depending on the management focus and ecosystem considerations of the region within which they are located (IUCN-WCPA, 2008). Areas can be managed spatially, by zoning a geographic area of marine space, or temporally, by allowing specified uses at different times of the year or in different years. In marine areas, as on land, ‘real estate’ values vary greatly and different marine spaces have different ecological value (Crowder, 2008). Some ecosystems, and species within them, are more sensitive to anthropogenic disturbances. It is often these areas that are set aside for conservation of certain species, ecosystems or processes.

The integrated planning framework provides a rational process within which to designate MPAs. Managing MPAs in isolation makes them vulnerable to development, resource extraction, and pollution occurring or originating outside their boundaries. Embedding MPAs into LOMA planning processes, and designating a wider network of MPAs, can help to meet conservation and ecosystem objectives (Guenette, 2007; Cicin-Sain, 2003; Day, 2002).

Additionally, the critical process components for a successful MPA designation or marine planning process are similar. These similarities include endorsement from interested or affected parties, incorporation of principles of adaptive management, and making use of the best available science (Pomeroy, 2004). MPAs and integrated marine plans, designed concurrently, can share stakeholder engagement and governance processes, thereby reducing process overlap.

Integration of MPA designation into large-scale marine planning processes is occurring around the globe. However, despite the obvious potential benefits, concern has been expressed about the designation of MPAs within the larger integrated management framework in Canada. The Canadian planning framework may not, at this point, be well suited to integrated MPA designation. LOMAs have a large-scale focus. Within such a large-scale planning framework, it may be possible to lose the details specific to a particular area or bioregion. MPAs must be tailored to regional circumstances and designated because of their ecological significance. The sheer scale of LOMAs may make this difficult. Additionally, the designated LOMA planning areas do not fully cover the Canadian coastline. This may result in inadequate attention to those ecologically sensitive areas that occur outside of LOMA boundaries (Gardner, 2008).

Other concerns stem from the lack of long-term commitment and inconsistent funding for integrated planning initiatives. MPAs require a certain commitment of funds and capacity for data gathering and monitoring, and should ideally be designated in a timely fashion. However, in the uncertainty surrounding the implementation of federal oceans legislation and policy, it is unclear if adequate funds and capacity will be available within the integrated marine management structure.

Final concerns are of a more theoretical nature. If the designation of MPAs is to take place within the larger LOMA planning framework, will it be necessary to get endorsement by all stakeholders for the designation of each MPA? In some instances this may not be a realistic expectation, given the fundamentally

conflicting realities of MPA designation (Gardner, 2008). As noted above, MPAs are generally established to protect ecosystems and preserve biodiversity. This often involves some level of resource access control and immediately sets MPAs at odds with some of the user groups who will be involved in LOMA planning processes. Additionally, DFO's shift in focus, away from its fisheries mandate and towards broader conservation, has not been an easy transition. It is still to be seen whether DFO will be able to abandon its close ties to fisheries and grow to actively work towards multiparty, oceans based integrated management (Guenette, 2007; Gardner, 2008).

To address some of the above concerns, Gardner (2008) suggests that, while the details of integrated management are being worked through at the regional level, MPA designation on a case-by-case basis should occur. Integrated management can then work to build on these MPA processes once capacity is achieved.

2.4 International obligations

Canada is party to a number of international oceans management related treaties, conventions and agreements. Customary international law also provides guidelines with respect to Canada's obligations to use and manage its marine space sustainably. Such international agreements and customs function to set standards and provide a moral benchmark against which Canada can measure its progress.

Canada's *Oceans Act* was established, in part, as a response to Canada's participation in the United Nations Third Convention on the Law of the Sea, and the subsequent need to define Canada's maritime zones in accordance with the Convention. The 1982 Convention on the Law of the Sea covers issues governing all aspects of ocean space and resources, including: delimitation, environmental control, marine scientific research, economic and commercial activities, transfer of technology, and the settlement of disputes relating to ocean

matters (UN, 2008). The convention takes a holistic view of ocean space, noting that all problems occurring in ocean space are interrelated and should be addressed together (UN, 2008).

The outcomes of other international fora have also been highly influential for Canada's oceans policy. This includes the outcomes of the 1992 United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro. At this summit, world leaders agreed in principle on a strategy for sustainable development (the Rio Declaration) and many countries, including Canada, ratified the Convention on Biological Diversity. As a party to the Convention, Canada was obligated to develop a national biodiversity strategy. The Canadian *Biodiversity Strategy* was established as a guide for implementing the Biodiversity Convention in Canada. The Strategy addresses such marine related issues as loss of biodiversity and the promotion of intergovernmental cooperation to advance ecological management (UNEP, 2008). It also provides strategic direction to "make every effort to complete Canada's networks of protected areas representative of land-based natural regions, ... and accelerate the protection of areas that are representative of marine natural regions" (Environment Canada, 1995, ¶1.13).

A variety of other international conventions and declarations contain provisions concerning marine planning and management. For example, the implementation document from the 2002 World Summit on Sustainable Development (World Summit) in Johannesburg includes several relevant statements regarding marine space. Section 31(c) mentions the need for conservation and management of the oceans and the need for "the use of diverse approaches and tools, including the ecosystem approach," and "proper coastal land use; and watershed planning and the integration of marine and coastal areas management into key sectors" (UN, 2002). Such statements help to set the context for approaching national ocean development efforts (Soussan, 2007). Canada has used fora such as the 2002 World Summit to showcase its oceans expertise; Canada's *Oceans Strategy* was timed for release one month prior to the commencement of the Summit (Chircop, 2006).

At the 2002 World Summit, the *Global Forum on Oceans, Coasts, and Islands* was also created. This forum brings together leaders from a wide range of sectors, including: governments, intergovernmental and international organisations, non-governmental organisations, the private sector, ocean donors, and scientific institutions. The forum aims to “move forward implementation of commitments made at the World Summit, mobilize public awareness on global issues related to oceans, and promote information sharing in order to achieve the sustainable development of oceans, coasts, and islands” (UN, 2007, ¶1).

Many international development policy frameworks contain references to environmental issues and acknowledge that governments and stakeholders need to take responsibility for the protection of the natural resource base (Soussan, 2007). Legal principles that have emerged through international fora and declarations include the precautionary principle, ecosystem management, sustainable development, and integration. Symbolic expressions, such as ‘sustainable development’, are open for interpretation and may have meanings slanted to meet the needs of different parties (Rothwell, 2006). Nonetheless, international conventions supply frameworks within which Canada can work towards such goals as integrated management and governance of coastal and marine regions. It is up to the governing authorities to demonstrate the extent to which they will translate these frameworks into tangible policy actions (Soussan, 2007).

2.5 British Columbia and marine planning

British Columbia’s environmental, economic, and social well being is tied to the ocean and its resources. The province has many marine related interests, including matters that are under the constitutional jurisdiction of the federal government. This has historically been cause for some conflict between the federal and BC governments (refer to section 2.2 for more on Canada- BC marine arrangements). Marine planning in British Columbia occurs on multiple spatial scales. These include the large-scale federally initiated LOMAs discussed in chapter 1, as well as smaller scale provincially initiated coastal planning

initiatives. Both planning scales are discussed below, as is the responsibility and entitlement of First Nations in marine planning in British Columbia.

2.5.1 Coastal management areas

Coastal management plans are provincially led planning processes in British Columbia that take place in foreshore and inland waters, within areas of provincial jurisdiction. Coastal planning is coordinated and led by the provincial Integrated Land Management Bureau and plans are created using a consultative process, within which a variety of organisations (including federal agencies) can have input.

A number of coastal management plans have been created within the PNCIMA planning region, including the Quatsino Sound Coastal Plan and the Johnstone-Bute Coastal Plan (ILMB, 2007). The province engages in several types and scales of coastal planning processes. For example:

- **Strategic scale** (e.g. 1:250,000 scale, provincial coastal planning): stakeholder driven, consensus-based regional planning processes. These processes address designation and management issues and act as a forum for other government initiatives (ILMB, 2007).
- **Local scale** (e.g. 1:50,000 scale, local coastal planning): local scale planning initiatives that allow local governments and the province to work together to provide management direction for smaller areas (ILMB, 2007).

Nesting coastal management areas within the larger scale LOMA structure is an effective way to address the individual needs of coastal communities and coastal resource use, within the larger LOMA framework (Guenette, 2007; DFO, 2008d).

2.5.2 First Nations and marine planning

First Nations are a critical component of governance for integrated marine management on the Pacific coast, and involvement of First Nations is critical to establishing a successful planning process and inclusive management plan. It is also a legal obligation of the provincial and federal governments to carry out meaningful consultation with First Nations in good faith. A full discussion of First Nations involvement in marine planning on the Pacific coast is beyond the scope of this report, though a general overview is presented below.

It is increasingly recognised that First Nations have a unique understanding of marine ecosystems, and the role that this knowledge should play in marine planning is acknowledged in Canada's *Oceans Act* (Turning Point, 2008). There is a strong imperative for First Nations to be involved in management of marine resources; as the Haida Council states in a 2007 publication, "it is up to this generation to take action so that the marine area around Haida Gwaii will sustain families, economies and cultures for generations to come" (Council of the Haida Nation, 2007, p.3).

Each First Nation may have different priorities and perspectives with respect to marine planning and protected area designation, though Hamilton (2005) suggests that some key interests with respect to protected areas could include:

- ensuring protected areas do not affect First Nation ability to access resources for food, social, ceremonial use, or for potential commercial use,
- that the creation of protected areas will not prejudice future treaty negotiations,
- to be involved as partners in the management of protected areas, not as stakeholders, and
- the ability to benefit economically from the resources in protected areas and from public use of protected areas (p.5).

In 2002, after the release of the federal *Oceans Strategy*, Coastal First Nations (an alliance of First Nations on British Columbia's North and Central

Coast and Haida Gwaii) signed an Interim Measures Agreement with the federal government to develop a marine use planning process in accordance with the *National Oceans Strategy*. The Interim Measures Agreement focused on such things as economic initiatives and co-management (CFN, 2008; Turning Point, 2008). In 2005 a marine-use planning framework was agreed upon, in principle, which outlines marine planning and governance arrangements (Turning Point, 2008). In 2004/2005 the Coastal First Nations and DFO entered into an Aboriginal Aquatic Resource and Oceans Management Agreement which supports increased collaboration among First Nations in the PNCIMA with respect to integrated management and marine use planning (CFN, 2008). The proposed governance structure for PNCIMA is laid out in the 2008 MOU on collaborative oceans governance between the Fisheries and Oceans Canada and First Nations of the Pacific North Coast (DFO, 2008d). Refer to section 2.5.3 for more on the proposed governance structure for the PNCIMA.

Increased collaboration has resulted in enhanced marine planning capacity, and a number of First Nations have established planning offices and have begun the planning process within their traditional territories. First Nations planning within the PNCIMA is coordinated through three area technical teams established on the Central Coast, North Coast, and Haida Gwaii. These regional teams provide technical support and community linkages to the higher-level PNCIMA processes (Turning Point, 2008).

2.5.3 The Pacific North Coast Integrated Management Area

The Pacific North Coast Integrated Management Area is the LOMA that has been designated for the Pacific coast. The boundaries are delineated as follows,

The northern boundary is Canada's jurisdictional limit. The western boundary is the base of the shelf slope where upwelling increases the amount of food available. On the mainland and east coast of Vancouver Island, the boundary is established near Campbell River at the point where the marine waters of Johnstone Strait separate from the Strait of Georgia. The west coast of Vancouver Island

boundary is located at Brooks Peninsula to the base of the shelf slope where the summer northern buoyancy current heads outwards (DFO, 2008d, p. 4).

Comprehensive preparatory research and data collection has been carried out by DFO and other organisations. Foundational research undertaken includes: an ecosystem overview report; a marine use analysis report; the mapping of ecologically and biologically sensitive areas; and a social, economic, and cultural overview and assessment.

DFO has been working with First Nations and the Province of British Columbia to develop a tripartite governance model for the PNCIMA. Ideally, any governance arrangement would involve federal, provincial and First Nations governments (Francis, 2008, Pers. comm.). However, British Columbia has indicated that it is unable at this time to commit to participation in the governance process. There is some speculation that the province is waiting for a provincial strategy on oceans management to be approved to receive direction on the role it should play in the PNCIMA process. Although the proposed governance model for the PNCIMA does not include formal participation by the Province of British Columbia at this time, the process will remain open to its future participation (DFO, 2008d).

In December of 2008 a Memorandum of Understanding (MOU) was signed between the Department of Fisheries and Oceans and First Nations of the Pacific North Coast (as represented by Coastal First Nations and the North Coast – Skeena First Nations Stewardship Society) (DFO, 2008d). The MOU outlines the proposed bilateral collaborative oceans governance model for the PNCIMA, which is composed of a Steering Committee and the PNCIMA Secretariat. The Steering Committee “will serve as a high level platform for coordination on PNCIMA structure, process, and development among the Federal government and First Nations” (DFO, 2008d p.9). The PNCIMA Secretariat will “carry out activities as directed by the Steering Committee. It will provide support to the direction and mandate provided by the Steering Committee, and will serve as a forum for ongoing dialogue, consensus-building,

and to facilitate planning, completion of work, and evaluation in a coordinated manner among the Federal and First Nations governments” (DFO, 2008d p.9). Governance will be based on the operating principles shown in table 2.

Table 2: PNCIMA collaborative governance model operating principles

Proposed PNCIMA Operating Principles	
Authorities	The Parties recognize that they each bring authorities and mandates to the PNCIMA initiative and they will respect, and will together benefit from, those authorities and mandates in the PNCIMA process.
First Nations	Federal and provincial governments have fiduciary relationships with aboriginal people. The PNCIMA initiative reflects a relationship between the federal and First Nations governments that is of a different character than that between governments and stakeholders.
Inclusion	A diversity of stakeholder interests will be included and engaged in a meaningful way in PNCIMA initiatives.
Consensus	The Parties will seek to develop recommendations through consensus.
Accountability	In the PNCIMA initiative, the Parties are committed to being accountable to their constituents and to each other.
Adaptive Management	The process is designed to permit and support evolution and will be monitored and evaluated to support shared learning and adaptation.
Transparency	Recommendations are made openly, with information and results shared with all participants.
Efficiency	Issues are addressed in a timely manner.
Knowledge-based	Recommendations are based on best available information and will include both science based and traditional ecological/ local ecological knowledge, information and data.
<i>Source: DFO, 2008d</i>	

CHAPTER 3: PLANNING REVIEW AND COMMON BENEFITS

This chapter of the report is divided into two sections. The first section (3.1) provides a brief description of a series of leading international marine planning initiatives. These international cases were analysed in order to determine common benefits of marine planning, to be used in the stakeholder survey (chapter 4), and to identify factors that contribute to a successful planning process, to be used in developing best practices criteria to evaluate the framework for integrated marine planning in Canada (chapter 5). The detailed analysis of the international cases is provided in appendix A. The second section of this chapter (3.2) discusses the common benefits that emerged through the analysis of the international case studies.

3.1 International planning review

Integrated marine planning is being adopted in many regions around the globe. A component of this project is to identify potential benefits of marine planning by comparative analysis of eight case studies. The case studies examined in this analysis are:

- USA: Florida Keys National Marine Sanctuary
- Australia: Great Barrier Reef Marine Park
- Australia: South-east Regional Marine Plan
- Netherlands, Germany and Denmark: Wadden Sea Project (Trilateral Wadden Sea Cooperation Area)
- Canada: The Eastern Scotian Shelf Integrated Management Initiative
- Belgium: Master Plan for the Belgian Part of the North Sea
- Ecuador: Galapagos Islands Marine Sanctuary
- New Zealand: Regional Coastal Plans
- Fiji: Locally Managed Marine Areas

The following criteria were used to select the case studies:

- The case studies should focus on multiple objective management of marine space,
- The case studies should involve multiple user groups and authorities in the plan development,
- Information available about the case studies should be reasonably current and accessible,
- The case studies should have moved past planning into the implementation stage of management, and
- The case studies should be relevant to the planning regime of Canada's Pacific coast.

The analysis begins with a look at two of the earliest examples of marine planning, the Florida Keys National Marine Sanctuary and the Great Barrier Reef Marine Park. Despite their initial focus on single objective planning for the protection of sensitive marine ecosystems, both plans have evolved with time to incorporate the needs of numerous stakeholders and to balance multiple uses of marine space with ecological health (Borthwick, 2006). Next, more recently initiated case studies are examined. These planning initiatives are mostly driven by user conflict, or by concerns over pressures on marine resources. The planning areas are economically diversified and these case studies tend to have more direct relevance to the British Columbia marine planning environment.

For each case, the analysis includes the following components:

- Size/scale
- Administration and legislation
- Plan production
- Timeframe
- Goals/objectives
- Adaptive management
- Interests and uses
- Community and stakeholder involvement
- Science and information
- Zoning and MPAs
- Monitoring and enforcement
- Benefits of the plan

To give an indication of the variety of cases included in the analysis, table 3 summarises key descriptive characteristics of five of the most important marine planning initiatives. The detailed review of all eight planning initiatives is provided in appendix A.

Table 3: Descriptive characteristics of five marine planning initiatives included in the international case study analysis (see appendix A for more detail).

	Size/scale	Timeframe	Goals/objectives
Florida Keys National Marine Sanctuary	9,500 square kilometres of coastal and oceanic waters.	In 1960 the underwater marine park was created. -The management plan was completed in 1996, implemented in 1997, and revised and replaced in 2007.	The plan centres on the following themes: -Sanctuary science, -Education outreach and stewardship, -Enforcement and resource protection, -Resource threat reduction, -Administration, community relations and policy coordination.
Great Barrier Reef Marine Park (GBRMP)	344,400 square km in size, covering 2,300 km of the Queensland coastline.	The <i>GBRMP Act</i> was established in 1975. The current Zoning Plan came into effect in 2004 and is the main planning and management document for the GBRMP	The zoning plan aims to: -Protect and conserve the biodiversity of the Great Barrier Reef ecosystem, -Provide opportunities for the ecologically sustainable use of, and access to, the Great Barrier Reef Region, -Balance the needs of fisheries, conservation, tourism/recreation and traditional users.
South-east Australia Regional Marine Plan	Two million square km of water off Victoria, Tasmania, southern New South Wales, and eastern South Australia	The South-east Regional Marine Plan was finalised in 2004.	The regional objectives are to: -Maintain ecologically sustainable use, -Protect, conserve and restore the region's marine biodiversity and marine heritage, -Increase long-term security of access, and promote development and job creation, -Integrate management for fairness and accountability to community and users, -Enhance stewardship, and involve Indigenous communities in management, -Take into account the needs, values and contributions of the community and industry.
Trilateral Wadden Sea Cooperation Area	10,000 square km along the coasts of the Netherlands, Germany and Denmark.	Since 1978 The Netherlands, Denmark, and Germany have been working together on the protection and conservation of the Wadden Sea. The management plan was adopted in 1997.	The Plan focus is: -Healthy environment with diversity of habitats and species, -Maintenance and enhancement ecological, economic, historic-cultural, social and coastal protection values, -Sustainable use, integrated management, coastal protection, -Informing and involving the local population.
The Eastern Scotian Shelf Integrated Management Initiative	325,000 square km of ocean. Initial focus restricted to the offshore area.	The management plan was endorsed in 2007-2008 by regional stakeholders and relevant authorities.	The overarching goals of the ESSIM Initiative are: -Collaborative governance, -Integrated management, -Sustainable human use, and -Healthy ecosystems.

3.2 Summary of key benefits

The majority of the marine plans examined in this study are only a few years into implementation, so there is little published literature quantitatively demonstrating benefits of individual plans. Below is a discussion of anticipated, implied and measured benefits, based on the international case study analysis presented in appendix A. Where plans have been in place long enough to demonstrate benefits, the benefits are noted. For the more recent plans, commonalities are discussed, and benefits are shown to emerge from the act of undertaking an integrated approach to planning. Table 4 lists the key benefits, drawn from the international case study analysis, that will be discussed in this section of the report.

Table 4: Key benefits of integrated marine planning.

Key benefits summary table
Benefit 1: Reduced conflict and improved stakeholder relations
Benefit 2: Creation of economic opportunities
Benefit 3: Better protection of environmental resources
Benefit 4: Development of effective governance
Benefit 5: Recognition of indigenous rights in the marine environment
Benefit 6: Information gathering

3.2.1 Benefit 1: Reduced conflict and improved stakeholder relations

One benefit of integrated marine planning is the potential for conflict resolution and improved stakeholder relations. Integrated marine management processes will often provide a forum within which interested groups can make their concerns heard. Stakeholder engagement processes, when well designed, work to educate user groups about the interests of their colleagues, building local capacity, relationships and a joint vision for marine space (National Oceans Office, 2004).

Engagement can take place in a number of different ways; for example, the Wadden Sea project regularly holds official conferences or symposiums. The South-east Australia regional marine planning process, on the other hand, uses more informal methods, such as working groups, workshops and targeted meetings. Such approaches can have the effect of reducing conflict between user groups, as collaboration helps to create trust and ownership of the process

(Ehler, 2007). Many of the case studies incorporate goals of community building, community relations, or fairness; such goals are often addressed through education and public outreach. A focus on education and increased familiarity with the interests of other user groups appears to have also helped to reduce conflict between user groups in the plan areas.

In the Florida Keys National Marine Sanctuary, the majority of reef users (78%) and recreational fishers (76%) supported the management plan and no-take zones. Endorsement of the management plans by the majority of user groups has occurred in all of the case studies, and it is likely that the inclusive stakeholder consultation processes that were undertaken contributed to this support. For example, within the Canadian ESSIM planning process, an independent study found that sufficient engagement mechanisms were provided in which stakeholders could participate to influence process outcomes (Hedley, 2006).

Many resource users and Indigenous groups have a mistrust of top down management approaches. However, when interested parties are adequately involved in the planning process and the setting of management objectives they may be more willing to acknowledge the legitimacy of outcomes and, therefore, may be more willing to comply with the provisions of the plan (Young, 2007). Ownership of the process and the final planning document goes a long way towards achieving compliance. Increased compliance and buy-in can have many lasting benefits, including the potential for a long term reduction in overall management costs (Thompson, 2005).

3.2.2 Benefit 2: Creation of economic opportunities

The potential for economic growth and the creation of economic opportunities can be increased through the use of integrated marine planning. In the creation of the SE Australia Regional Marine Plan, industry groups were among the last stakeholder groups to decide to participate in the planning process. This may have been due to the commonly held perception that marine

planning will act to restrict development opportunities. This is not necessarily the case; integrated marine planning aims to designate appropriate activities for regions of marine space and coordinate activities in a way that is jointly beneficial. Each international planning process has set different management objectives specific to the region within which it operates, based on the needs of various stakeholder groups and unique regional ecological circumstances. However, common to all marine planning initiatives examined in this study is a focus on regional economic wellbeing.

The integrated marine planning framework provides an avenue through which sustainable economic opportunities can be explored. Clearly, one industry's use of marine space can negatively impact another's use of the same marine space. Conflict between uses emerges because of the nature of the marine environment and the spatial and temporal overlap of activities. Integrated marine planning can help to reduce negative impacts of development on other economic sectors, streamlining management. The SE Australia marine plan explicitly states that industry should be able to actively participate in the management strategy and planning for future growth. This is facilitated by access to better information and advice about management requirements. Industry will also have the opportunity to check that their current and future needs are being considered in the development of management actions in the region (National Oceans Office, 2004).

In areas with a focus on tourism, the expansion of protected areas is seen as a way to increase tourist numbers and broaden local economic options. Increase in protected areas enhances the 'aesthetic and spiritual' experiences of visitors and creates a greater draw for tourism (GBRMPA, 2003); this can have the effect of increasing economic security and growth.

Zoning or allocating space for designated use or non-use functions can increase certainty, reduce delays for approval, and lower the probability of cancellation of investment projects, thereby increasing the benefits of economic development for the region. In addition, involvement of key industry groups in the

development of the plan can enhance industry stewardship and understanding of the values of the marine region, creating stronger economic ties to the region.

3.2.3 Benefit 3: Better protection of environmental resources

Concern over the deteriorating state of the world's marine environment is one of the driving forces for initiating integrated marine planning. Incorporating conservation measures into a marine plan can help to protect ecologically sensitive regions from overexploitation and deterioration. Ecosystem health is a key management objective common to Australia's Great Barrier Reef, the Florida Keys, and the Wadden Sea, the three longest-lived of the case studies. Due to the increase in conservation measures, these planning areas have all shown measurable increases in aspects of ecosystem health (CWSS, undated; Robbins, 2006; Ayling, 2008; Keller, 2006; Commonwealth of Australia, 2003).

Actions to meet conservation objectives vary from simple regulations to the designation of MPAs. Most of the initiatives examined in the case study analysis aim to meet their conservation objectives, at least in part, through the use of some form of MPA. Potential benefits of MPAs include support for stock management, improved socio-economic outcomes for local communities, support for fishery stability, and ecological offsets (Commonwealth of Australia, 2003). In the Florida Keys, the designation for shipping traffic of 'areas to be avoided' has resulted in a significant decrease in the number of ship groundings on the coral reefs, and a mooring buoy program has considerably reduced anchor damage to coral reefs and sea-grass beds. Additionally, a number of MPA abundance surveys in the GBRMP and the FKNMS have found fish stocks to be significantly more abundant in protected areas than in fished reference areas (Robbins, 2006; Ayling, 2008; Keller, 2006). A greater number of larger fish occurring in the protected areas offers greater potential for increases in survivorship and abundance of young, both inside and outside the protected areas (Commonwealth of Australia, 2003).

Almost the entire Wadden Sea inshore area is comprehensively zoned, temporally and spatially, for the protection of sea life. One component of the Wadden Sea conservation strategy is a seal management plan, which aims to protect and manage the local seal population. Through careful management, there has been measurable improvement in the stability of seal populations, and the seal count for 2008 was the highest recorded to date (CWSS, undated).

Community outreach and education are often built into integrated planning frameworks (also see section 3.2.1). Local outreach is critical to meeting the conservation goals of integrated planning, as a greater level of understanding is thought to increase stewardship. This is demonstrated in the Florida Keys, where the use of an array of educational tools has worked to actively engage and inform residents and tourists about the importance of the sanctuary and of collective participation in management.

Many of the case studies utilise the integrated planning framework within which to designate MPAs. MPAs and integrated marine plans, designed concurrently, can share engagement and governance processes. An example of the integration of MPAs into a larger planning structure can be seen in Australia's South-east Marine Region. A key component of the overall planning strategy for the region was the development of a representative network of MPAs. This has resulted in 13 marine protected areas, within the plan area, covering 226,000 square kilometres. In Canada, integrated management processes are intended to be the primary vehicle for planning MPA networks regionally (DFO, 2008b).

3.2.4 Benefit 4: Development of effective governance

Developing effective governance has positive implications for all aspects of marine space, from increased compliance and conflict resolution, to better management of marine resources. A whole-of-government approach to marine planning and management is the most effective way to coordinate conflicting uses and priorities (Day, 2008) and "it is only by working together—as governments, industries, communities, Aboriginal peoples and others—that we

can secure our natural capital for our own and the world's benefit" (NRTEE, 2003).

A key component of effective governance is the coordination of agencies in areas of jurisdictional overlap. Lack of coordination of all parties by a central agency can limit the effectiveness or success of a planning process. The Galapagos case study demonstrates this point. Ongoing attempts by various agencies to implement a marine plan failed. However, once governance issues were adequately addressed, implementation of a planning initiative was possible.

Other case studies deal with the jurisdictional concerns up front, building the responsibilities of various governments and stakeholders directly into the process structure. Australia provides a good example of a nation that is effectively undertaking marine planning in a complex jurisdictional setting. Within the Great Barrier Reef, jurisdictional boundaries and areas of responsibility are complicated and, in many cases, overlapping. In order to deal with the complexity, collaborative management of the Great Barrier Reef by the Australian and Queensland governments was proposed from the start. Also in Australia, the South-east Australian Regional Marine Plan used existing and new arrangements in order to address outstanding jurisdictional issues and share information and experiences about the marine environment. Agencies maintain previous responsibilities, but form partnerships in order to work more closely with other agencies and stakeholders (National Oceans Office, 2004).

The Trilateral Wadden Sea Cooperation Area is probably the best example of a planning process within which multiple nations and tiers of government are working together on the management and conservation of marine space. The Trilateral Wadden Sea Plan allows the three national governments to develop common principles, targets and work programs, and provides a strategic focus for the management of the planning area. Implementation is both a trilateral and national responsibility, which has resulted in parallel development and joint impact on conservation (Enemark, 2005). When

one country takes a weaker approach than another, moral pressure works as an incentive to improve performance.

The case studies demonstrate that marine planning can be used as a tool to identify ways in which governments, both internationally and domestically, can manage their marine spaces in a mutually beneficial fashion. It is generally understood that integrated forms of governance for marine management are needed as “there is growing awareness that the escalating crisis in marine ecosystems - from biodiversity losses and transformed food webs to marine pollution and warming waters - is in large part a failure of governance” (Young, 2007, p.1).

3.2.5 Benefit 5: Recognition of Indigenous rights in the marine environment

Historically, there has been a tendency to exclude Indigenous people from the management of marine space and the resources to which they have an inherent right. Integrated marine planning can provide a vehicle through which Indigenous people can assert their traditional rights and title to marine space. Indigenous communities have a central role to play in governance or management of marine space and resources within their traditional territories. It is increasingly being recognised in Canada, and abroad, that Aboriginal peoples have a role that should be considered significantly different than the role that is held by stakeholders.

The Great Barrier Reef Marine Park Authority (GBRMPA) has established an Indigenous Partnerships Liaison Unit to provide guidance to the GBRMPA on Indigenous issues and cooperative arrangements in the Marine Park (GBRMPA, undated). The zoning plan “expressly acknowledges the rights and interests of Indigenous Australians in the Marine Park by providing for the management of the traditional use of marine resources, including traditional hunting, in accordance with Aboriginal and Torres Strait Islander custom and tradition” (GBRMPA, 2004, p.1). Further to this, Aboriginal title-holders may undertake traditional use of marine resources in the Great Barrier Reef Marine Park without

a permit (GBRMPA, undated). South-east Australia is rich in cultural sites, including archaeological sites and natural sites, such as headlands and river mouths. These sites have significance beyond their immediate location and indicate the wider connection of Indigenous people with the land, sea and resources over time (National Oceans Office, 2002). This connection was recognised during the creation of the marine plan. The final planning document explicitly states that a key guiding objective in the implementation of the plan is to “involve Indigenous communities in management of the Region in a manner that recognises and respects their rights, custodial responsibilities, contributions and knowledge” (National Oceans Office, 2004 p.x).

ESSIM, in Atlantic Canada, promises a strong commitment to collaboration with all affected Aboriginal organizations, including bodies established under land claims and other relevant agreements (DFO, 2008b). In the ESSIM planning area, First Nations and Aboriginal communities are currently involved in the governance and stewardship of ocean resources.

In most cases, collaborative planning with Indigenous groups is not intended to supersede the authority of central departments or agencies. Generally, central agencies retain their authority but work with aboriginal groups to develop and pursue shared goals and objectives (DFO, 2008a). However, in some cases, the central authority does give up some or all of its authority over the management of a resource. An example of this can be seen in the Fiji Locally Managed Marine Areas, where the Fijian government has transferred ownership of some traditional fishing areas to the traditional holders of the fishing rights. On Canada’s Pacific coast, the governance arrangement that is being developed for integrated marine planning in the PNCIMA is a bilateral governance arrangement, within which First Nations groups will share management authority with the federal government. A similar system is being explored in New Zealand.

The case studies demonstrate that integrated marine planning can provide a forum that can be used to work towards an equitable management scenario,

and potentially the recognition and accommodation of Indigenous traditional rights to marine space.

3.2.6 Benefit 6: Information gathering

A wealth of scientific studies and information has been commissioned and collected as a result of integrated planning processes. Often, the lead authority will begin to collect baseline data before the commencement of the planning process. Most initiatives also make use of an independent science team or panel with the aim of sharing information among agencies and fostering coordination and synchronization of data collection.

Having a socioeconomic component to research and monitoring is critical to effectively understanding the planning area. The Florida Keys initiative created a socioeconomic research and monitoring program to detect and document changes in sanctuary resource utilisation patterns and their impact on economic values of sanctuary resources (NOAA, 2007). In SE Australia, a social, economic and cultural steering committee was established and given the task of identifying social impacts of the zoning process, in order to find ways to minimise the impact on existing uses and users (Thompson, 2005).

Data collection is also an important part of the Fiji Locally Managed Marine Areas approach and is used to validate the effects of traditional resource management practices. Villagers collect data on resources, habitat recovery and the associated social and economic improvements in living conditions. The success of community-based conservation in different parts of Fiji, as documented through data collection, has resulted in long-term support from local communities and government (Veitayaki, 2003).

Making use of adaptive management, along with the monitoring and collection of data over time, allows the management strategy to evolve with the shifting requirements of the environment and users. The case studies show that it is entirely possible to utilise adaptive management strategies in marine planning. The Great Barrier Reef, Florida Keys, and the Wadden Sea examples have all

evolved to incorporate the changing needs of both the environment and multiple user groups. Each management plan has undergone periodic assessment and has been modified as a result.

More recently implemented marine planning processes have also incorporated a form of adaptive management into their planning framework. For example, a review of Australia's South-east Regional Marine Plan will occur over a 10-year cycle, and Canada's ESSIM Plan will undergo a comprehensive review every five years. Building adaptability into management plans shows an understanding of the importance of flexibility and recognition of the ever-changing nature of marine and human linkages.

The large quantity of data emerging through integrated planning initiatives helps to create a greater understanding of various aspects of each planning area and, therefore, allows more effective management decisions to be made. Increased coherence and common ownership of information can increase confidence in, and recognition of, the reasons behind management decisions.

CHAPTER 4: STAKEHOLDER SURVEY

4.1 Survey introduction

This chapter of the report summarises the results of a questionnaire distributed online to targeted representatives of key organisations, associations, and government bodies with an interest in marine planning in the PNCIMA. The survey builds directly on the results of the international case study analysis by analysing perceptions of the common benefits identified in chapter 3.

4.1.1 Purpose

The purpose of the stakeholder analysis is to identify the perceptions, priorities and expectations of parties who have an interest in marine planning in the PNCIMA.

Specific objectives of the study are to:

- identify perceptions of potential benefits of marine planning,
- determine whether respondents believe that these potential benefits of marine planning will actually be achieved by undertaking integrated marine planning in British Columbia,
- explore experiences with marine protected area (MPA) designation processes and determine the level of support for the creation of MPAs within the integrated management framework for the PNCIMA,
- determine the level of support for the PNCIMA initiative,
- explore how industry has been impacted by the uncertainty arising from the lack of a marine plan on the Pacific coast and by the current planning and management regime, and
- raise awareness amongst all affected parties regarding the PNCIMA initiative.

4.1.2 Survey description

This study uses stakeholder analysis methodology, “an approach and procedure for gaining understanding of a system by means of identifying the key

actors and stakeholders in the system and assessing their respective interests in that system” (Pomeroy, 2008, p. 818). The first component of a stakeholder analysis is to identify key interested or affected parties. Second, interests and concerns of the parties are investigated, in this case through the use of an online questionnaire. Determining perceptions helps identify how stakeholders are positioned towards marine planning in the PNCIMA and can provide a better understanding of concerns and priorities. Interests vary between stakeholder groups and are influenced by such factors as history of use, values and perceptions, and pattern or type of use (Pomeroy, 2008).

4.1.3 Participants

The individuals who were contacted by the researchers and requested to participate in the survey are representatives from industry associations, First Nations planning representatives, ENGOs, federal government, provincial government, and local government. Individuals were chosen who had some interest in marine planning, or who felt they were able to speak as a representative of their organisation, association, or government body on the topic of marine planning on the Pacific coast. These are stakeholders in the broadest sense of the word, being simply representatives of groups with an interest in marine planning within the PNCIMA boundary.

The questionnaire asks respondents to speak as representatives of the organisation, association, or government body with which they are affiliated. Participants indicate their affiliation by checking the appropriate box (table 5). In this report, responses are not attributed to individuals but are analysed and reported in the aggregate by the categories shown in table 5.

Table 5: Participant category selection box

This table shows the participant category selection box as it appears in the questionnaire.		
Please indicate your affiliation (below).		
<input checked="" type="checkbox"/>	Local government (Municipal or regional district)	
<input checked="" type="checkbox"/>	Industry association (fisheries, aquaculture, tourism, energy, transport, marine use, recreation)	
<input checked="" type="checkbox"/>	First Nations (planning representative)	
<input checked="" type="checkbox"/>	Environmental NGO	
<input checked="" type="checkbox"/>	Federal government	
<input checked="" type="checkbox"/>	Provincial government	
<input checked="" type="checkbox"/>	Other	Please indicate your affiliation

4.1.4 Structure of questionnaire

The first page of the questionnaire provides a consent statement explaining the project and describing the precautions taken to ensure the confidentiality of respondents' identities. The second and third pages provide a brief introduction and background to the PNCIMA and marine planning. This introductory section also includes three questions exploring the respondent's knowledge of marine planning.

The main body of the questionnaire consists of 4 sections. They include:

- Section 1: Benefit statements
- Section 2: Marine protected area questions
- Section 3: Plan development questions
- Section 4: Industry association questions

Below is a brief description of each of these sections. The complete questionnaire is included as appendix B.

Section 1: Benefit statements

Survey section 1 consists of 39 structured benefit statements. These statements are adapted from international marine planning literature and include the potential benefits of marine planning summarised in chapter 3.

The benefit statements use two Likert-type scales for the responses, and respondents are asked to:

1. indicate on a four point scale (important, somewhat important, somewhat unimportant, unimportant) how important the potential benefit would be to their organisation, association, or government body, in comparison with the current approach to marine management in British Columbia, and
2. indicate on a five point scale (agree, somewhat agree, neither agree nor disagree, somewhat disagree, disagree) their level of agreement that marine planning would actually provide the potential benefit described in the statement.

The benefit statements can be divided into four subject areas: environment, social/cultural, planning/management, and industry/economic. The statements are randomly ordered within the questionnaire to avoid bias.

Section 2: Marine protected area questions

Section 2 consists of structured and open-ended questions exploring respondent experience with MPA designation processes. It also investigates views on the integration of MPA designation into the integrated management framework.

Section 3: Plan development questions

Section 3 is the shortest of the sections and consists of three structured questions investigating the level of support for the development of a marine plan in the PNCIMA.

Section 4: Industry association questions

Section 4 is open only to representatives of industry associations. It examines how industry has been impacted by the lack of large-scale marine

planning on the Pacific coast and explores whether and how industry may be affected by an integrated marine planning process. The questions are adapted from a Price Waterhouse report entitled *Economic Value of Uncertainty Associated with Native Land Claims in BC* (Price Waterhouse, 1990), which evaluates the cost of uncertainty related to the absence of treaties in British Columbia.

4.2 Methods

The survey was designed with input from a wide range of sources, including an extensive review of Canadian and international marine planning literature, the comparative analysis of international marine planning case studies described in chapter 3, and communication with individuals from both governmental and non-governmental sectors.

4.2.1 Participant communication

A list was compiled of all organisations, associations, and government bodies with an interest in marine planning in the PNCIMA. This compilation was created through feedback from key informants as well as literature and online searches. The list of stakeholder groups contacted is provided in appendix C.

Once the organisations, associations and government bodies were identified and contacted, a suitable respondent for each organization was determined through further email and telephone contact.

Participant communication was carried out as follows:

- participants were initially contacted via email, which was followed up with a phone call when necessary,
- if an individual agreed in principle to participate, or agreed to view the questionnaire, an email was sent with a link to the online questionnaire, together with a PDF copy of the questionnaire for review if requested, and
- respondents were then given three weeks to complete the questionnaire, with a reminder e-mail or phone call after two weeks.

Due to difficulty acquiring responses from certain participant groups, the questionnaire was left active for several weeks longer than originally anticipated in order to enable participants to have more time within which to respond.

4.2.2 Ethics

This project received approval from the Office of Research Ethics at Simon Fraser University. The approved consent statement was included on the first page of the online questionnaire (see appendix B). After reading the consent statement, if respondents consented to the terms of the study, they pressed a 'button' to continue on to the questionnaire.

4.2.3 Testing

After the questionnaire was developed and programmed, it underwent pre-testing for context and structure. In response to the input of testers, some aspects of the questionnaire were modified.

4.2.4 Limitations

The first limitations of the study involve extrapolation. Respondents who chose to participate are likely to have had some interest in marine planning; this suggests that the results cannot be extrapolated widely beyond the respondent groups. Additionally, despite respondents being asked to speak on behalf of their organisation, association or government body, some respondents may have stepped into a more personal response role, thereby representing the views of one person, not the larger organisation. There is some evidence of this in specific comments left in the comment boxes of the questionnaire. A second limitation is that some perspectives may be missing from the study due to non-response or under-representation of certain groups. Additionally, it should be noted that this study discusses the perceptions of specific stakeholder groups, and should not be extrapolated to the broader population.

4.2.5 Analysis

The questionnaire includes both structured and unstructured questions. Most results, shown below, are presented as percentages, and are displayed with visual tools such as tables and graphs. Some comparative analysis between selected questions is also provided. A coding system is utilised to summarise participant responses to unstructured questions. Section 4.3 summarises the key survey results, and the full results are provided in appendix D. The survey discussion (section 4.4) presents some common themes that emerge from the results of the structured and unstructured questions, and examines comments logged in the questionnaire comment boxes.

4.3 Summary of results

This section provides response rate values and some key questionnaire results. For more detailed results please refer to appendix D.

4.3.1 Response values

In total, 65 questionnaires were accessed online, though not all of these questionnaires contained responses or were usable. Fifteen of the questionnaires that were started had no responses logged; such questionnaires were not included in the totals used to calculate the response rate. Additionally, if a single organisation or individual contributed more than one questionnaire, duplicate responses were discarded and were not included in the final results. Of the 65 initiated questionnaires, 47 questionnaires were usable. Forty-three of these questionnaires were fully completed, with 4 being only partially completed. Partially completed questionnaires were included in the analysis. Table 6 displays the number of respondents who contributed usable questionnaires for each participant category. A more detailed description of the participant groups is given in appendix C.

Table 6 also shows the response rate for each affiliation group. The response rate is excellent for those individuals affiliated with industry associations, environmental NGOs, the federal government, and the provincial government, (85% overall). A response rate cannot be calculated for First Nations planning representatives because the initial contacts were not made by the researchers directly. Marine planning coordination for many First Nations is

Table 6: Response rates and number of responses by affiliation

Affiliation	Number of responses	Response rate
Local government	10	20%
Industry association	18	75%
Federal government	6	100%
Environmental NGO	5	100%
First Nations planning representative	4	Not available
Provincial government	4	100%

organised through three area technical teams. Staff from each of the area technical teams were contacted, and these staff members further distributed the questionnaire. For this reason the researchers do not have an exact figure for the number of First Nations planning representatives initially contacted. The response rate for local government is low (20%). One reason for this may be a lack of familiarity with the PNCIMA initiative. When responding to the background questions, only 10% of local government representatives that did respond rated their knowledge of the current planning process in the PNCIMA as good or excellent.

As noted in table 6, the response rate for industry associations is 75%. When the results for industry are looked at more closely it can be seen that the marine fisheries response rate is the lowest of the industry association sectors (56%). It was not possible to make contact with a number of fisheries associations, and a number, when contacted, declined participation. This may have occurred for several reasons. First, the timing of the survey was not ideal for this sector. Some associations, when contacted, stated that it was their busy season for fisheries and, therefore, they were unable to participate. Second, a number of fishing industry advisory boards are currently operating in the PNCIMA and many fisheries associations have linked themselves with these larger initiatives. There was some attempt to access the individual associations through

the larger advisory board platform. Though due to research time constraints this was deemed unfeasible.

4.3.2 Results

This section of the report presents a summary of the overall results; detailed results are provided in appendix D. First, results are presented for the background questions. Next, key results are provided for each of the four main survey sections:

- Section 1-marine planning benefit statements,
- Section 2-marine protected area questions,
- Section 3-plan development questions, and
- Section 4-industry association questions.

Background questions

Four background questions are included in the questionnaire in order to determine how familiar respondents are with marine planning in Canada and in the PNCIMA, as well as to assess knowledge of the current state of the PNCIMA process. When answering these questions, respondents are asked to rate their knowledge as: *excellent, good, fair, or poor*.

Results: Thirty-eight percent of respondents rate their knowledge of the current state of the planning process in the PNCIMA as good or excellent. If this is broken down by participant group, industry associations and local government respondents have relatively less familiarity with the planning process. Only 21% of industry association respondents and 10% of local government respondents rate their knowledge as good or excellent. See table 7 for the breakdown of responses by affiliation.

Table 7: Questionnaire response, knowledge of the current state of the planning process in the PNCIMA.

Question: How would you rate your knowledge of the current state of the planning process in the PNCIMA? Rate answer as: <i>excellent, good, fair, or poor.</i>	
Respondents rating knowledge as <i>good or excellent</i>	Affiliation
10%	Local government
21%	Industry association
25%	Provincial government
67%	Federal government
75%	First Nations representatives
100%	Environmental NGO

Section 1: Benefit statements

Section 1 of the questionnaire consists of a series of 39 benefit statements adapted from international marine planning literature, as discussed in chapter 3. For each benefit statement, respondents are asked to rate the statement on two separate scales:

1. Level of importance, indicating how important the potential benefit would be to their organisation, association, or government body, based on a four point scale (important, somewhat important, somewhat unimportant, unimportant).
2. Degree of agreement, indicating whether they agree or disagree that marine planning would actually provide the potential benefit described in the statement, based on a five point scale (agree, somewhat agree, neither agree nor disagree, somewhat disagree, disagree).

Section 1 results are displayed below in two forms.

- First, each statement is shown in table form, displaying the percent of respondents who indicate the benefit described in the statement is important or somewhat important (table 8) and showing the percent of respondents who agree or somewhat agree that undertaking marine planning in BC will achieve this benefit (table 9). Tables 8 and 9 also indicate the type of benefit (subject area) that each benefit statement has been grouped under.

- Second, results are displayed in an aggregated form, organised according to the four types of benefits (environment, social/cultural, planning/management, and industry/economic – table 10).

Section 1: Unaggregated results

Table 8 shows how the benefit statements are rated by respondents on the scale of importance (*important* → *not important*). The statements have been sorted from highest to lowest percentage. As can be seen in table 8, all of the benefits of integrated marine planning identified in the statements are rated with a high level of importance. Six of the benefit statements are rated as important or somewhat important by 100% of respondents and 35 are rated as important or somewhat important by over 90% of respondents. The remaining four benefit statements are rated as important or somewhat important by between 76% and 90% of respondents. Across all statements, the mean average of respondents who rate the benefits as important or somewhat important is 94%.

Table 8: Questionnaire responses, benefit statements (importance rating scale)

The value shown is the percentage of respondents who indicated that the benefit statement is important or somewhat important.		%
The table also displays the subject area that each benefit statement is grouped under: E = environment P = planning/management S = social/cultural I = industry/economic		
P	Marine planning will help create better coordination among federal and provincial policies and management objectives	100
P	Marine planning will help ensure that management decisions are based on sound science	100
S	Marine planning will help promote trust among user groups	100
E	Marine planning will improve the environmental health of marine ecosystems	100
I	Marine planning will increase transparency of the decision making criteria for allocating marine space	100
E	Marine planning will increase user groups' knowledge about the marine environment	100
I	Marine planning will provide industry with clearer compliance requirements	98
E	Marine planning will allow for early identification of potential conflicts between development and protection of important ecological areas	98
E	Marine planning will develop better understanding of the marine environment	98
P	Marine planning will improve affected parties' understanding of the interests of other parties	98
P	Marine planning will help ensure that all interested or affected parties have input into management decisions	98
P	Marine planning will lead to improved service delivery of government ocean-related programs	97
P	Marine planning will provide interested parties with opportunities to participate in developing the recommendations that will come out of the planning process	97
S	Marine planning will help reduce conflicts among user groups	97
E	Marine planning will increase understanding of the cumulative impacts of human activities on the marine environment	97

P	Marine planning will link with the planning processes being established by First Nations within the PNCIMA boundary, thereby creating a more integrated marine planning process	97
S	Marine planning will recognize First Nations Rights and Title in the marine environment	97
P	Marine planning will help create a common knowledge base by ensuring equal access to data for all interested parties	97
S	Marine planning will help protect First Nations cultural and traditional uses in all relevant marine areas	97
S	Marine planning will help create conditions that will enable the sustainable generation of wealth for coastal communities	95
P	Marine planning will utilize a planning process that is more transparent to all interested or affected groups and the public	95
I	Marine planning will enable potential conflicts to be identified by industry at the planning stage of development before considerable investment has been made	95
I	Marine planning will help plan for predicted increases in the number and scale of developments and users of the marine environment	95
P	Marine planning will assist in setting management priorities	95
P	Marine planning will increase information flow by requiring interaction among a wide range of interested parties	95
I	Marine planning will help to ensure that activities take place where they do not negatively impact other activities	95
P	Marine planning will help fulfil national objectives for integrated management as set out in the <i>Federal Oceans Act</i>	95
P	Marine planning will help to provide a framework that facilitates delivery of sustainable development objectives in the marine environment	93
P	Marine planning will increase the public's understanding of government roles and responsibilities	93
I	Marine planning will help create a level playing field for all resource users	92
S	Marine planning will help promote long-term sustainable employment within coastal communities	92
I	Marine planning will reduce uncertainty for industry by identifying appropriate development and marine-use sites	92
E	Marine planning will help identify inappropriate uses of sensitive marine spaces	90
E	Marine planning will help identify sites for marine protected areas	90
I	Marine planning will increase the predictability of operational risks for industry	90
I	Marine planning will increase transparency of decision making criteria for issuing licenses	89
I	Marine planning will help provide a framework that facilitates delivery of ecosystem-based management objectives as set out in the federal <i>Oceans Strategy</i>	85
I	Marine planning will increase user groups' knowledge about the marine economy	84
I	Marine planning will increase the predictability of operational costs for industry	76

Table 9 displays the percentage of respondents who indicate that undertaking marine planning in BC will achieve the benefit described in the statement. The statements are sorted from highest to lowest percent agreement. As can be seen in table 9, the percentage of respondents who agree or somewhat agree that marine planning will achieve the stated benefit varies from a high of 93% for the statement “*Marine planning will allow for early identification of potential conflicts between development and protection of important ecological areas*” to a low of 43% for the statement “*Marine planning will provide industry with clearer compliance requirements*”. Across all statements, the mean average

of respondents who agree or somewhat agree that marine planning will achieve the stated benefits is 70%

Table 9: Questionnaire responses, benefit statements (agreement rating scale)

The value shown is the percentage of respondents who indicated that they agree or somewhat agree that marine planning in British Columbia would provide the stated benefit.		
The table also displays the subject area that each benefit statement is grouped under: E = environment P = planning/management S = social/cultural I = industry/economic		
E	Marine planning will allow for early identification of potential conflicts between development and protection of important ecological areas	93
E	Marine planning will help identify sites for marine protected areas	90
E	Marine planning will develop better understanding of the marine environment	85
E	Marine planning will increase user groups' knowledge about the marine environment	83
S	Marine planning will help promote trust among user groups	83
P	Marine planning will improve affected parties' understanding of the interests of other parties	83
P	Marine planning will provide interested parties with opportunities to participate in developing the recommendations that will come out of the planning process	82
E	Marine planning will help identify inappropriate uses of sensitive marine spaces.	81
P	Marine planning will increase information flow by requiring interaction among a wide range of interested parties	80
P	Marine planning will help fulfil national objectives for integrated management as set out in the <i>Federal Oceans Act</i>	79
P	Marine planning will help provide a framework that facilitates delivery of ecosystem-based management objectives as set out in the <i>Federal Oceans Strategy</i>	78
I	Marine planning will enable potential conflicts to be identified by industry at the planning stage of development before considerable investment has been made	78
I	Marine planning will increase the predictability of operational risks for industry	78
P	Marine planning will assist in setting management priorities	77
I	Marine planning will help to provide a framework that facilitates delivery of sustainable development objectives in the marine environment	76
E	Marine planning will increase understanding of the cumulative impacts of human activities on the marine environment	74
I	Marine planning will increase transparency of the decision making criteria for allocating marine space	73
I	Marine planning will reduce uncertainty for industry by identifying appropriate development and marine-use sites	73
S	Marine planning will recognize First Nations Rights and Title in the marine environment	72
I	Marine planning will increase user groups' knowledge about the marine economy	71
S	Marine planning will help protect First Nations cultural and traditional uses in all relevant marine areas	70
I	Marine planning will help to ensure that activities take place where they do not negatively impact other activities	69
P	Marine planning will link with the planning processes being established by First Nations within the PNCIMA boundary, thereby creating a more integrated marine planning process	68
P	Marine planning will help create better coordination among federal and provincial policies and management objectives	68
S	Marine planning will help reduce conflicts among user groups	67
I	Marine planning will help plan for predicted increases in the number and scale of developments and users of the marine environment	67
P	Marine planning will help ensure that all interested or affected parties have input into management decisions	66
P	Marine planning will help create a common knowledge base by ensuring equal access to data for all interested parties	66
S	Marine planning will help create conditions that will enable the sustainable generation of wealth for coastal communities	64
P	Marine planning will help ensure that management decisions are based on sound science	63

E	Marine planning will improve the environmental health of marine ecosystems	61
P	Marine planning will utilize a planning process that is more transparent to all interested or affected groups and the public	61
I	Marine planning will increase the predictability of operational costs for industry	58
I	Marine planning will help create a level playing field for all resource users	55
S	Marine planning will help promote long-term sustainable employment within coastal communities	51
P	Marine planning will lead to improved service delivery of government ocean-related programs	50
P	Marine planning will increase the public's understanding of government roles and responsibilities	50
I	Marine planning will increase transparency of decision making criteria for issuing licenses	47
I	Marine planning will provide industry with clearer compliance requirements	43

Section 1: Aggregated results

The results for survey section 1 are displayed below in an aggregated form, grouped by type of benefit into four main subject areas: *environment*, *social/cultural*, *planning/management*, and *industry/economic*. The responses for all statements that fall within each subject area are averaged to show the mean percent of respondents who rate the statements as important or somewhat important, or agree or somewhat agree, for the overall category. The aggregated responses are shown in table 10.

Table 10: Questionnaire responses, aggregated responses for section 1.

This table shows the benefit statement responses grouped within four subject areas. The percentages displayed in this table were aggregated as discussed above, within the report text.			
Importance rating The values listed below are the mean averages for the combined response percentages for all statements that fall within each subject area.		Agreement rating The values listed below are the mean averages for the combined response percentages for statements that fall within each subject area.	
Environment statements: Percent of responses that indicate the potential environment benefits are important or somewhat important.	96%	Environment statements: Percent of responses that agree or somewhat agree that marine planning in British Columbia would provide the environmental benefits.	81%
Social/cultural statements: Percent of responses that indicate the potential social/cultural benefits are important or somewhat important.	97%	Social/cultural statements: Percent of responses that agree or somewhat agree that marine planning in British Columbia would provide the social/cultural benefits.	68%
Planning/management statements: Percent of responses that indicate the potential planning and management benefits are important or somewhat important.	96%	Planning/management statements: Percent of responses that agree or somewhat agree that marine planning in British Columbia would provide the planning/management benefits.	69%
Industry/economic statements: Percent of responses that indicate the industry and economic benefits are important or somewhat important.	91%	Industry/economic statements: Percent of responses that agree or somewhat agree that marine planning in British Columbia would provide the industry and economic benefits.	66%

Environmental benefit statements focus on themes of conservation, education, and environmental health. This section consists of 7 questions. The mean averages show that 96% of respondents rate the potential environmental benefits as being important or somewhat important to their organisation, and 81% indicate that they agree or somewhat agree that marine planning would provide these environmental benefits.

Social/cultural benefit statements explore both social and cultural issues. The statements focus on themes of conflict reduction, sustainable employment and, First Nations marine planning. This section consists of 6 questions. The mean averages show that 97% of respondents indicate that the potential social/cultural statements are important or somewhat important, and 68% of respondents indicate that they agree or somewhat agree that marine planning would provide these social/cultural benefits.

The planning/management benefit statements focus on transparency, information flow, improved stakeholder relations, and better coordination among government bodies. This section consists of 14 questions. The mean averages show that 96% of respondents indicate that the potential planning benefits are important or somewhat important to their organisation, and 69% indicate that they agree or somewhat agree that marine planning would provide these planning and management benefits.

The industry/economic benefit statements focus on themes of transparency, operational costs, industry certainty, and defining appropriate marine-use sites. This section consists of 12 questions. The mean averages show that 91% of respondents indicate that the potential economic benefits are important or somewhat important to their organisation, and 66% agree or somewhat agree that marine planning would provide these economic benefits.

Section 2: Marine protected area questions

Section 2 consists of structured and open-ended questions exploring respondent experience with marine protected area (MPA) designation processes.

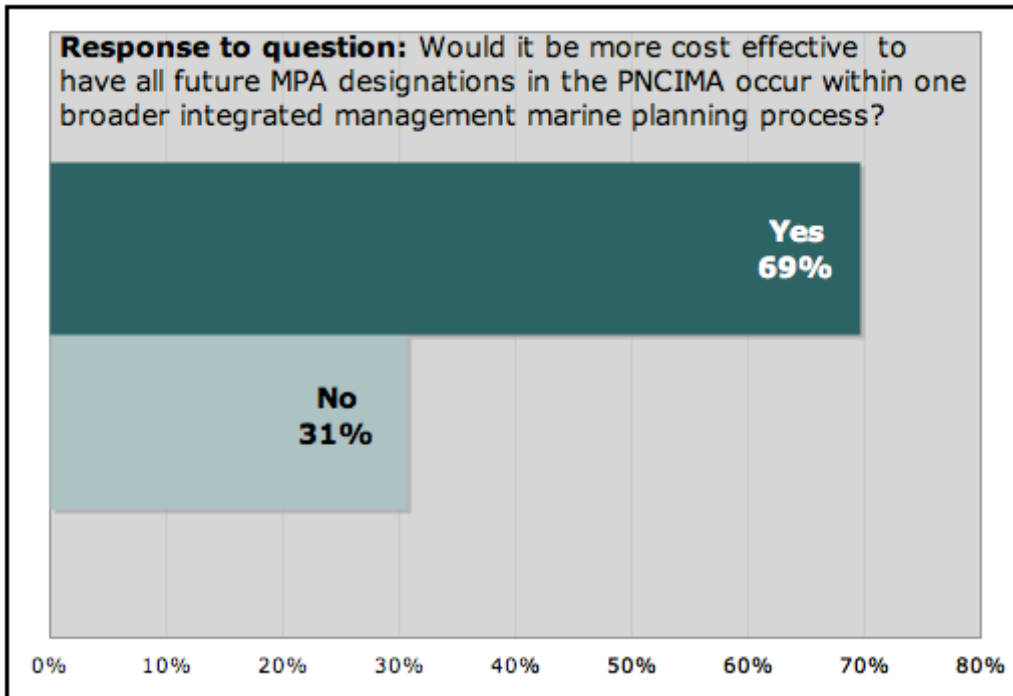
The first question in section 2 asks respondents to indicate whether their organisation has been involved in British Columbia as a member of an MPA advisory team or involved in an MPA stakeholder consultation. Sixty percent of respondents report that they, or their organisation, have been involved in one of these capacities. The primary nature of the involvement of this 60% is specified below (note that some respondents are included in more than one category):

- 52% identify their organisation as participating as a member of an MPA advisory team,
- 30% have been consulted at some level, and
- 9% indicate that they have participated by providing data or mapping capabilities.
- In addition, 17% note that, though their organisation has had involvement in such processes, the respondent is not aware of the level of participation of their organisation.

The majority of those respondents who have been involved in the MPA process (80%) report that they have been involved with two or more designation processes, with provincial and federal representatives indicating involvement in numerous designation processes, and several government respondents noting that MPA work makes up a considerable portion of their workload.

When asked about the designation of MPAs within the integrated management framework, 69% of respondents indicate that it would be more effective to have future MPA designations occur within one broader integrated marine planning process (see figure 2).

Figure 2: Questionnaire section 2 response, MPA designation



Section 3: Plan development questions

The plan development section asks respondents to rate three statements regarding the development of a marine plan in the PNCIMA (on a scale of agreement). Ninety-two percent of respondents agree or somewhat agree that developing a marine plan for the PNCIMA is in the interests of their organisation. Ninety-five percent of respondents agree or somewhat agree that developing a marine plan for the PNCIMA is in the public interest. Ninety percent show support for developing a marine plan for the PNCIMA (table 11).

Table 11: Questionnaire responses, marine plan development.

The given value is the percentage of respondents who agree or somewhat agree with the statements listed below.	
Developing a marine plan for the PNCIMA is in the interests of my organisation, association or government body.	92%
Developing a marine plan for the Pacific North Coast Integrated Management Area is in the public interest.	95%
I support developing a marine plan for the Pacific North Coast Integrated Management Area.	90%

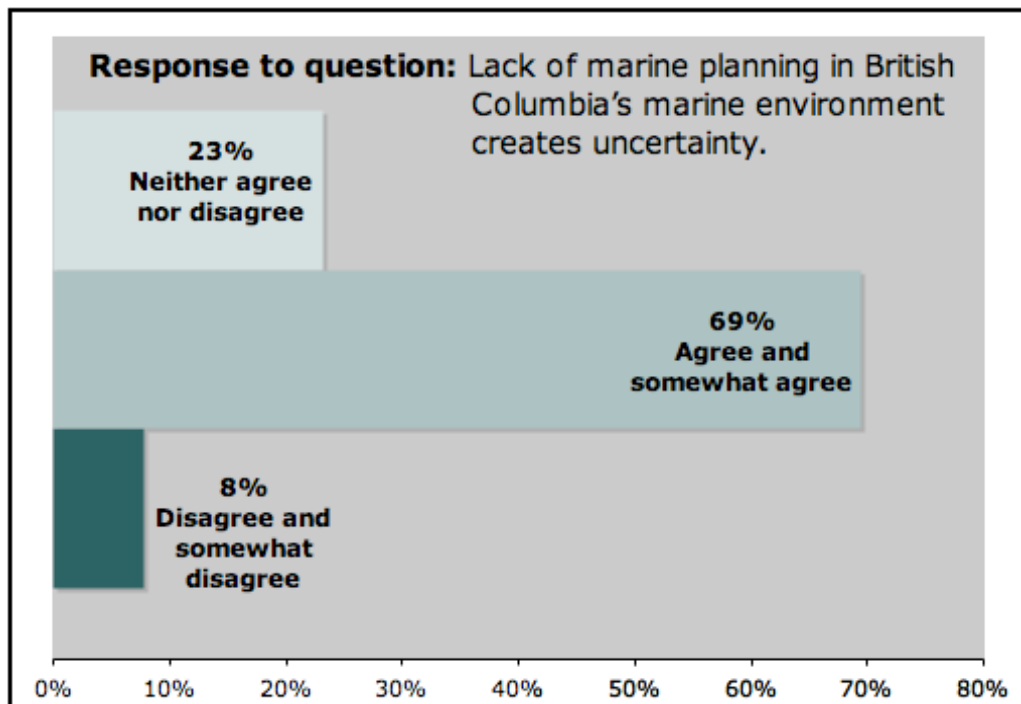
Section 4: Industry association questions

Section 4 of the questionnaire is open only to representatives of industry associations. The purpose of this section is to identify how industry has been impacted by the uncertainty arising from the lack of a marine plan on the Pacific coast and to explore how industry is impacted generally by the current planning and management regime on BC's coast.

A series of **marine planning questions** ask respondents to indicate their degree of agreement with a series of statements about marine planning in the PNCIMA.

- 69% of industry respondents agree or somewhat agree that the lack of marine planning in British Columbia's marine environment creates uncertainty (figure 3), and
- 62% of industry respondents agree or somewhat agree that the creation of a marine plan will reduce uncertainty.

Figure 3: Questionnaire section 4 response, industry uncertainty



Industry respondents who agree or somewhat agree that the lack of marine planning in British Columbia's marine environment creates uncertainty are then asked to specify which factors contribute to the uncertainty. The highest rated factors are:

- unresolved conflict between marine use and conservation advocates,
- lack of clarity about zoning,
- lack of clarity about regulations on use and development, and
- competition from increasing use and number of users in the marine environment.

Each of these factors is rated as important by at least 75% of responses.

Industry impact questions investigate how the lack of a marine plan in British Columbia has affected industry. Thirty-six percent of industry respondents indicate that the lack of a marine plan in British Columbia has affected their industry in the past 10 years.

Of the 36% noted above, elements that are indicated to have been most important in affecting industry are:

- area closures
- project delays
- legal proceedings/appeals

Each of these elements are rated as being important or somewhat important by 100% of respondents.

Additionally, 80% of industry respondents who indicate that the lack of a marine plan has affected their industry note that they are aware of association members delaying or cancelling projects or activities as a result of a lack of marine planning.

Lastly, industry respondents are asked to indicate what sector ultimately bears the cost of the absence of a marine plan in British Columbia. The highest rated sectors are:

- investment community

- customers/users of industry products or services

Additionally, two sectors were added by respondents in the “other” category as ultimately paying the cost of the absence of a marine plan in British Columbia; they are:

- First Nations
- the environment

4.4 Survey discussion

“Planning is but one part of an appropriate ecosystem management framework; it will not accomplish all things. Though a good planning process will usually produce a good plan, and a good plan is helpful in resource management, it is only as good as the commitment to follow it, the resources to empower it and the commitment to regularly review and revisit it as new information becomes available.” - respondent comment.

The questionnaire covers a range of material, and along with the specific questions about economic, social, and environmental issues, comment boxes are provided within which respondents are given the option to leave a comment or observation. Comment boxes allow issues to emerge that are more specific to marine planning on the Pacific coast, and also allow respondents to articulate concerns that are not explicitly covered in other parts of the questionnaire. The discussion below focuses on both administrative and functional themes that are apparent from an examination of results, as well as from comments logged by respondents in the comment boxes.

Benefit statements:

A large majority of respondents rate all the potential benefits of marine planning as important or somewhat important. All four categories (environment, social/cultural, planning/management, and industry/economic) are rated as somewhat important to important by over 90% of respondents. Additionally, the overall mean average for all of the benefit statements shows that 70% of respondents agree or somewhat agree that marine planning could provide the

overall benefits listed. This seems to indicate a level of optimism amongst respondents regarding the potential outcomes for marine planning on the Pacific coast.

There is some disparity, however, between the results for environmental benefits and industry/economic benefits. An average of 81% of respondents agree or somewhat agree that marine planning in British Columbia would provide environmental benefits, whereas 66% of respondents agree or somewhat agree that marine planning would provide industry and economic benefits. This is a fairly clear division, and the responses of industry associations tend to show even less optimism with respect to the ability of marine planning to provide the listed economic benefits. For example, though the majority (93%) of industry associations indicate that the listed industry and economic benefits are important to their association, only 56% agree or somewhat agree that marine planning would provide these benefits.

This shows an important difference in perceptions that should be addressed in the development of a marine plan for the PNCIMA. Unless the benefits for marine industry groups are clearly articulated, industry may have little incentive to be involved in the planning process. Without involvement in the process there may be little buy-in to the final planning document, creating potential for lasting compliance issues. The majority of industry association respondents (69%) agree or somewhat agree that the lack of marine planning in British Columbia's marine environment creates uncertainty. This seems to indicate that industry associations do have a level of interest in the exploration of new management and planning scenarios.

One of the objectives of this study is to raise awareness amongst affected parties regarding the PNCIMA initiative. Industry is a critical sector within which awareness, both of the PNCIMA initiative and the potential for economic benefits, should be raised. The results for questionnaire section 1 clearly show that, though the potential benefits are important to industry, there is some concern that the process may not fully achieve these benefits. This is a critical factor that

should be managed and kept in mind when designing the PNCIMA planning process.

Issues identified by respondents

Though there appears to be general support for the PNCIMA process (90% of respondents express support), several issues were noted in the comment boxes provided throughout the questionnaire. The issues raised by respondents go beyond the general scope of the survey, and shift the focus away from the potential benefits of marine planning, towards practical concerns about aspects of large scale marine planning. Issues and concerns identified by respondents include:

- the massive scale of the PNCIMA process and the logistical difficulties and expense required in order for it to be an effective process,
- the need for some form of sub-plans at a smaller scale in order to respond in a meaningful way to the interests of local communities,
- past experience with planning processes that were not implemented,
- the need to understand or integrate the realities of such things as aboriginal rights, tenure holder rights, and other legally mandated entitlements,
- the need to develop the plans with local involvement and to balance science with local knowledge,
- the importance of post planning management commitment, in order to follow through with sufficient resources and regular plan review,
- polarisation and mistrust among present user groups and stakeholders,
- the need for adequate resources to be in place to monitor and enforce the final management plan,
- the need for one or more exceptional people to be at the head of the planning process (to facilitate and mediate),
- concerns about the potential bias of the process, either against industry development and in favour of marine tourism and wilderness values, or alternately towards industry and development due to their potential power and influence,
- concern that First Nations voices will be marginalised in the planning process,
- recognition of the importance of the dissemination of information to a range of user groups (primarily industry) who would not normally be involved in issues such as marine planning,

- the need for unbiased science/information committees and better information sharing,
- the difficulty in balancing the objectives of resource use with ecosystem health, and
- concern that input does not ensure influence.

4.5 Survey conclusions

The survey is designed to assess perceptions of the potential benefits of preparing an integrated marine use plan on the Pacific coast and examine priorities of interested or affected parties. Most respondents indicate that the potential benefits listed in the questionnaire are important or somewhat important to their organisation, association, or government body. This indicates a level of consensus across traditionally opposing groups and suggests that respondents, whatever their background, share an interest in economic, social, and environmental wellbeing on the Pacific coast, and support the use of more effective and inclusive planning and management strategies.

When respondents are asked to indicate if they agree that marine planning would actually provide the benefits listed in the questionnaire, the overall mean average for all of the benefit statements shows that 70% of respondents agree or somewhat agree that marine planning could provide the overall benefits. This suggests a level of optimism among respondents regarding marine planning. A trend that emerges through the analysis of the benefit statement responses is an indication by respondents that marine planning is more likely to provide environmental benefits, rather than economic benefits. This is a misconception that should be addressed in the PNCIMA planning process.

It is important to note that only 38% of survey respondents rate their knowledge of the current state of the planning process in the PNCIMA as good or excellent. The respondent groups rated as being least familiar with the PNCIMA initiative are industry associations and local government representatives. These are key groups that will be directly affected by marine planning and who, if adequately engaged, can take a leadership role in the promotion of integrated

management. Despite a general lack of knowledge about the PNCIMA initiative, 90% of respondents support the development of a marine plan for the PNCIMA and 95% agree that developing a marine plan is in the public interest, indicating fairly broad support for completing a marine plan.

One of the objectives of this study is to raise awareness among affected parties regarding the PNCIMA initiative. The results of the survey show that there is further work to be done on this front. It is critical to inform all interested or affected parties about the planning process. Broad-based inclusion into the planning structure is a key feature of effective integrated planning and management.

CHAPTER 5: BEST MANAGEMENT CRITERIA AND EVALUATION OF THE PNCIMA

A number of factors are generally understood to contribute to a successful planning process and management plan. These factors are similar whether they are geared towards terrestrial or marine planning, and many concepts discussed below are drawn from the successful marine planning initiatives reviewed in chapter 3 of this report. This chapter describes best management criteria that should be employed to increase the probability of creating and implementing a successful plan (section 5.1), and then uses these criteria to evaluate Canada's marine planning framework as it has been applied to the Pacific coast (section 5.2). It concludes with a table that summarises the weaknesses identified in the evaluation, and provides recommendations to overcome these weaknesses (section 5.3).

5.1 Best management criteria

The discussion below draws on the international review of marine planning presented in this report (appendix A, summarised in chapter 3) and best management planning frameworks developed by Ellis (2007), Gunton (2006), and IUCN-WCPA (2008). Table 12 presents a summary of the best management practices for integrated marine management covered in this section.

Table 12: Best management practices for integrated marine management.

Best management practices summary table	
Inclusive participation	Development, implementation, and monitoring of integrated marine planning should be collaboratively managed through permanent and institutionalized multi-party processes.
Leadership and accountability	Leadership for developing integrated marine planning should reside at the most senior levels of government and responsibility for implementation must be clearly delineated.
Legal framework	A legislative and/or policy framework should exist at the national level to guide planning and provide strategic direction.
Comprehensive goals with measurable targets	Goals should be developed early in the planning process with contributions from a wide range of user groups. Expected outcomes must be clearly outlined in the form of measurable targets with timelines and there should be mechanisms in place with which to monitor progress.
Effective strategy	An effective strategy must be in place to outline how goals and targets will be met and to specify what will be achieved, how, and in what time frame.
Progress monitoring and reporting	There should be regular, independent public reporting to assess progress in implementing plans and achieving targets. Deficiencies in progress should be clearly delineated.
Adaptive management	Planning strategies should be designed to be flexible and refined over time to incorporate both research findings and the results of monitoring. Strategies should also require adjustments to address new information about ecosystem conditions and other management concerns.
Adequate information	There should be a good understanding of the planning area, its resources and people, prior to initiating any planning process. Research capacity should be built into the management arrangement.
Adapted to context	Management and planning in marine space should be tailored to the environmental, social, cultural, and legislative circumstances within which they will be applied.
Integration	Integrated marine planning requires integration of socio-cultural, economic, and ecological values and necessitates both behavioural and institutional change.

5.1.1 Inclusive participation

The level of involvement of interested parties in a planning process can vary widely. Involvement ranges from simple communication, where there is little meaningful input, to collaborative planning, where some level of decision-making power is shared amongst participants (Pomeroy, 2008). Collaborative planning delegates a level of responsibility for planning and plan implementation to involved government bodies and stakeholder groups. Such shared decision making models are critical for a number of reasons, including the need to:

- better understand the complexities of marine and socio-economic systems,
- achieve greater understanding of the human influence on the marine ecosystem and its management,

- examine the compatibility and/or (potential) conflicts of multiple use objectives,
- identify, predict and resolve areas of conflict, and
- discover existing patterns of interaction (adapted from Pomeroy, 2008).

Table 13 shows the operating principles for collaborative planning that have been incorporated into the ESSIM planning process and which are reported in the ESSIM management plan. As can be seen in table 13, the ESSIM planning process sought to achieve a high level of collaboration with participant groups.

Table 13: ESSIM collaborative planning operating principles.

ESSIM Management Plan.	
Collaborative planning is founded upon the following operating principles	
Jurisdiction	Management authorities and jurisdiction of government departments and agencies is acknowledged and affirmed.
Inclusion	All stakeholders are included.
Consensus	Decisions are made by consensus and the process includes mechanisms for dispute resolution.
Accountability	Accountability is expected of and demonstrated by all parties.
Evolution	The process is designed to permit and support evolution and will be monitored and evaluated to support shared learning and adaptation.
Networking	The process will continue to work through a network of stakeholders.
Transparency	Decisions are made transparently, with information and results shared openly.
Efficiency	Issues are addressed in a timely manner.
Knowledge-based	Decisions are based on the best available information.
<i>Source: DFO (2008b)</i>	

A key difference between integrated marine management and traditional marine management is the focus within integrated management on a governance system that is capable of managing multiple uses and economic sectors, along with the integration of multiple authorities, organisations and users. In this context, governance is a process that is carried out by authorities, individuals, and civil society. This allows a range of players to influence policy and decision-making (Cicin-Sain, 2003). It is the governance structure that determines how authority is organised and to what extent user groups are empowered to

contribute. Within integrated marine planning, governance refers to “the structures and processes used to govern behaviour, both public and private, in coastal and ocean areas under the jurisdiction of a particular country, and the resources and activities they contain” (Cicin-Sain, 2003, p. 2).

Inclusion of an array of interested or affected parties into the governance structure, through the use of representative governance, is emerging as a key factor in effective planning. Generally, the central authority retains authority but works with other parties to develop and pursue shared goals and objectives (DFO, 2008a). The outcome of collaborative planning processes is usually subject to final government approvals consistent with legislative requirements.

5.1.2 Leadership and accountability

Unless support exists at the highest political levels, there is little chance that a planning initiative will be successful. National governments need to show support for marine planning with long-term commitment of both funds and capacity (Kelleher, 1999). Top-down support is important due to the jurisdictional authority and responsibility of government bodies. However, marine planning initiatives should balance this essential top-down authority with a bottom-up collaborative planning model (Cicin-Sain, 2003), where stakeholders are also given a leadership role.

Well-designed institutional arrangements are essential for an effective integrated marine management framework. Key institutional arrangements include:

- Interdepartmental coordination through formal committees, boards or councils, comprised of relevant ministries and agencies, presided over by the minister in charge of the lead marine planning agency,
- A national planning office with responsibility for the national ocean policy and parallel structures at the regional or local planning level,
- Existing government offices charged with the implementation of plans, with an extended mandate for integration of policy objectives,
- Adequate support in the form of technical forums or executive committees, possibly assisted by a technical advisory body, and

- Commitment of adequate staffing and funding (Adapted from Cicin-Sain, 2003).

Creation of the above institutional arrangements requires that:

- Marine affairs are elevated in the public policy agenda, allowing for the formulation of national policy goals and priorities,
- Goals and priorities are integrated into a national development planning framework, and
- All authorities and interested or affected parties are represented in the formulation and implementation of the marine policy (adapted from Cicin-Sain, 2003).

Depending on the scale of the planning area, a variety of management options can be explored. For example, within a small regional management area, an alternative to a nationally based planning authority is the devolution of management authority to a separate body or institution. This 'other' management authority could include Indigenous groups, NGOs, or community-based partnerships (Kelleher, 1999).

5.1.3 Legal framework

It is useful to have a legislative and policy framework at the national level that can guide planning, provide strategic direction, and ensure effective implementation. Explicit legislative and policy frameworks provide certainty and transparency for the planning and management process. Though there are similarities in the challenges faced in many marine planning jurisdictions, the balance between legislative and policy instruments varies among countries. Australia, for example, relies on a non-legislated, policy approach under the *Commonwealth Oceans Policy*. Canada, on the other hand, has relied more on a legislative approach under Canada's *Oceans Act* (Rothwell, 2006).

5.1.4 Comprehensive goals with measurable targets

Goals should be developed early in the planning process with contribution from a wide range of user groups. Expected outcomes and formal commitments must be clearly outlined (Auditor General of Canada, 2005). Priority goals and

objectives should be set, in part, by interested parties at the planning table. However, objectives for any management plan must be in line with national level policies. Disconnects between mandates, goals, or objectives, can undermine the entire planning process (Peterson, 2005).

Measurable targets with timelines should be developed to accompany goals. Measurement of progress towards achieving the management goals and targets can be achieved by incorporating evaluative techniques through which progress can be determined. This is a component of adaptive management (refer to section 5.1.7). Without measurable targets and timelines it is difficult to assess planning progress.

5.1.5 Effective strategy

In addition to comprehensive goals and targets, an effective strategy must be in place that demonstrates how the goals and targets will be met. Any finalised planning document needs to focus on what will be achieved, how, and in what time frame. This can be written into the management plan as a series of targets, each associated with a strategy designed to help managers to meet the targets.

An effective strategy should also clearly delineate roles and responsibilities for development and implementation of marine plans. The level of involvement and authority of the different interested parties should be specified when the governance arrangement is organised, and the finalised management plan should clearly outline the roles and responsibilities for carrying out strategies. Australia's South-east Regional Marine Plan does a good job of clearly outlining responsibilities, management objectives, and actions. Within its Action Plan it has issue areas, such as *Managing uses*, and under each of these issue areas it sets out a series of objectives. Under each objective is then listed a series of actions that will be used to help reach the objective. For each action, the lead agency, timing, and status are specified (see table 14).

Table 14: Excerpt from South East Australia Marine Plan: Action Plan.

Action Plan structure showing organisation and clarity of actions		
Issue: Managing uses		
Objectives		
<ul style="list-style-type: none"> •Increase long-term security of access and certainty of process for existing and future marine-based industries. •Promote economic development and job creation in the Region consistent with ecologically sustainable development. 		
Action		
Increase understanding of the economic pressures and operational issues facing marine-based industry in the Region		
	Lead Agency	Timing
Investigate community and stakeholder perceptions of the aquaculture industry through the project <i>Understanding community and stakeholder perceptions of aquaculture.</i>	DAFF, BRS (States)	Short term
<i>Source: National Oceans Office, 2004, p. 46</i>		

5.1.6 Progress monitoring and reporting

In order to assess progress, regular monitoring and reporting should take place. Elements of progress that should be evaluated include implementation progress, in order to evaluate success in implementing the management plan, and outcome progress, to assess progress in achieving specified targets.

The results of regular monitoring should be subject to independent public reporting, and deficiencies in progress should be clearly delineated.

5.1.7 Adaptive management

Adaptive management is critical for ensuring that a management plan is able to meet its goals and objectives. It takes a cyclical approach, whereby management objectives and outcomes are monitored and evaluated systematically, following a process of trial, monitoring, evaluation, and modification. Adaptive management, therefore, allows for quick responses to new information about ecosystem conditions and other management concerns (IUCN-WCPA, 2008).

Within integrated marine planning, regular evaluation often takes the form of a formal review, the timing of which can be written into the main planning document. Adaptive management empowers managers to assess the success of their efforts and it can be viewed as a kind of experiment, whereby the best available science is used to create effective monitoring and evaluation systems in order to test the effectiveness of management methods.

Marine regions are complex and unpredictable; adaptive management recognises the ever-changing nature of marine ecosystems and economies, and acknowledges the need for management plans to keep up with this change (Day, 2008). Planning strategies are designed to be flexible and to be refined over time to incorporate new research findings (WCPA/IUCN, 2007). If a management plan is to be socially or ecologically sustainable, it must incorporate some level of adaptive management through monitoring and regular evaluation (Kelleher, 1999).

5.1.8 Adequate information

It is critical to have a good understanding of the planning area, its resources and people, prior to initiating any planning process. All forms of knowledge, including traditional knowledge, should be incorporated into management. It is important to utilise the natural sciences, in order to understand ecosystem complexities, as well as the social sciences, in order to understand socioeconomic and cultural linkages with the marine environment.

Research capacity should be incorporated into the management arrangement for the planning area. An effective way to build research capacity can involve the creation of an independent scientific panel with the explicit mandate to undertake and coordinate geographically specific data collection. This can result in better coordination and harmonisation of data collection, distribution, and management. Data and information are, too often, scattered across governments, agencies, and other organisations. These bodies require similar information but collect data separately (Claus, 2004). As the cost of data

gathering can be high, it is important to undertake research strategically, focusing on projects that help to answer well defined objectives. An independent scientific panel can aid in the coordination of research bodies and strategic data collection.

It is unrealistic for planners to expect to achieve a level of certainty that would enable them to initiate planning with a complete understanding of the marine environment. Marine environments are complex systems, especially when they are examined in conjunction with socio-economic components and the influence of external stressors (Crowder, 2008). At some point it is necessary to move forward with the planning process, prepared to fill in the knowledge gaps as the process moves along. This is a critical component of adaptive management, discussed in section 5.1.7.

5.1.9 Adapted to context

Management and planning in marine space should be tailored to the environmental, social, cultural, and legislative circumstances under which they will be applied. International initiatives, such as UNESCO's *Ecosystem-based Marine Spatial Management Initiative*, provide an abundance of information about marine planning that can inform planning initiatives around the globe. Additionally, many national marine planning initiatives have similarities, therefore, components can be transferred and adapted between nations. Though it makes sense to gain knowledge from international initiatives and to build upon lessons learned, it is critical that a planning process be both country and regionally driven. Details should be agreed upon by those who will be most impacted by the management plan, and plan development should consider the needs of all interested or affected parties.

5.1.10 Integration

An integrated management framework allows managers and authorities to manage ocean resources in a manner that builds upon a common knowledge base, while recognising interactions that occur in the marine environment. Integrated management also takes into consideration the cumulative effects of

human activities, the diversity of use, and user conflicts that occur within a defined ocean space (DFO, 2006). Integration is of special importance when examining planning in the marine environment, due to the nature and complexities of socioeconomic and ecological interactions in marine space.

The inherently complex nature of oceans management and the mobility of marine resources requires integration on the following levels:

- **Intersectoral integration**- bringing together user groups and sectoral organisations,
- **Intergovernmental integration**- bringing together government bodies that have an interest in, or authority over, marine areas,
- **Spatial integration**- examining marine ecosystem holistically, taking into consideration all factors that impact marine space (eg terrestrial-based pollution),
- **Science-management integration**- utilising natural, spatial, and social sciences to enable better decision-making,
- **International integration**- taking into consideration the transboundary nature of the marine environment, its resources and pollution, and
- **Sustainable development integration**- incorporating environmental, social, and economic dimensions in marine planning (adapted from Cicin-Sain, 2003).

In effect, integrated management can be seen as the culmination of the previously discussed best management practices. It requires effective integration of socio-cultural, economic, and ecological values and it necessitates both behavioural and institutional change (WCPA/IUCN, 2007).

5.2 Evaluation of marine planning

This section utilises the best practices criteria, discussed in section 5.1, to frame an evaluation of the federal institutional marine planning framework as it has been applied to the Pacific coast. This evaluation relies, in part, on the results of the stakeholder survey which helped to bring to light factors of concern with respect to marine planning on the Pacific coast.

The evaluation touches on relevant federal level issues and also narrows to focus on relevant regional issues. The evaluation also identifies factors that

may be hindering progress towards the implementation of federal legislation on the Pacific coast.

5.2.1 Inclusive participation

“Development, implementation, and monitoring of integrated marine planning should be collaboratively managed through permanent and institutionalized multi-party processes.”

Inclusion of a range of parties into the planning and management process is considered an essential component of effective planning. The *Oceans Strategy* proposes a collaborative framework for governance within the regional integrated marine planning initiatives. The model proposed by the Strategy incorporates stakeholders in more than an advisory role. It suggests that participants should be delegated a role in developing, implementing and monitoring the management plan and be given a level of power and responsibility (Chircop, 2006). While the specific outcomes of each LOMA initiative will be unique, each is meant to utilise principles of “open and collaborative oceans governance and management arrangements” (Government of Canada, 2005, p.15). Currently, there exists a lack of engagement with marine planning among many parties that have interests in the PNCIMA, though DFO has been gaining experience with collaborative marine planning processes both nationally and regionally.

Collaborative governance

Canada’s approach to management is changing, with time, to embrace the more integrated governance approach that has been mandated under the *Oceans Act*. As Alley, (2007) notes, “Oceans governance in Canada is moving away from the traditional approach whereby a single authority is empowered to make decisions, towards a shared governance system whereby decision-making responsibility, power, and accountability is shared by partnering agencies” (p.2). Any successful planning process will require commitment of formal cooperation amongst all involved government bodies and significant coordination to avoid overlapping agendas (Ricketts, 2007).

Lack of engagement

Marine planning on the Pacific coast will impact and involve a number of government bodies and stakeholder groups. However, despite the best efforts of certain proactive organisations, the broader public does not, at this point, appear engaged in the marine planning dialogue. Engagement of British Columbians with the process is critical, as “taking ownership of the oceans policy and the need to inspire stewardship by communities, citizens, and stakeholders is paramount to its success” (Auditor General of Canada, 2005, p.32). Public knowledge of marine planning, and pressure from a wide range of groups, may be the best way to push the marine planning agenda and gain stronger interest at the federal level.

Lack of engagement with the concept of integrated planning at the federal level is evident in the lack of funding and capacity designated for planning on the Pacific coast (see section 5.2.2). DFO has a directive to actively engage using collaborative processes and there does appear to be growing institutional recognition of the importance of meaningful stakeholder engagement. The governance structure proposed for the PNCIMA shows great potential, but to this point, large-scale stakeholder engagement is lacking on the Pacific coast.

Experience with stakeholder engagement processes

DFO has been gaining some experience with stakeholder engagement on the Pacific coast through smaller scale collaborative governance arrangements. The West Coast Vancouver Island Aquatic Management Board provides an example of a forum within which government bodies can directly engage communities and representatives from a wide range of groups in the governance of a management area and aquatic resources. It utilises an integrated management framework and provides “a new approach to managing aquatic and ocean resources based on transparency, coordination, accountability, and a broader ecosystem perspective” (Alley, 2007, p.7). Given that the Aquatic Management Board has been functioning since 2002, it can potentially provide

lessons in active engagement that can be incorporated into the PNCIMA governance arrangement.

At the national level, DFO has been gaining experience through the other LOMA initiatives, all of which are at some stage of development. In the ESSIM planning area, there appears to have been a high level of commitment to designing a process based on collaborative principles. As the ESSIM management plan states:

The need for collaboration does not end with government. Indeed, the foundation for the Plan is involvement and inclusion of all interested and affected parties in the integrated management process. The collaborative planning model for the Plan...provides opportunities for meaningful participation and input by all stakeholders, including government, industry sectors, community and Aboriginal organizations, conservation interests, the research community, and the general public (DFO, 2008b, p.8).

ESSIM governance arrangements focus on building relationships and connections between a wide range of stakeholders and government departments (Guenette, 2007); this may be a reason that the process has managed to progress to the implementation stage with such a high level of stakeholder and government endorsement.

Marine planning literature shows strong consensus that effective and meaningful stakeholder engagement is critical to ensuring the success of the planning process (NRTEE, 2003; Lien, 2003). Lessons can be taken from cases that have successfully engaged an array of players, such as ESSIM and the Aquatic Management Board. Further to this, many of the governance structures that are being organised for the PNCIMA process, identified in section 2.5.3, are similar to strategies that were successfully utilised in the ESSIM process.

5.2.2 Leadership and accountability

“Leadership for developing integrated marine planning should reside at the most senior levels of government and responsibility for implementation must be clearly delineated.”

The discussion below identifies the need for leadership and higher-level advocacy, explores DFO's changing mandate, and identifies concerns around the lack of funding available for implementation of Canada's oceans mandate.

Higher-level advocacy

Without higher-level advocacy there is little opportunity for implementing Canada's oceans legislation. As the Auditor General of Canada notes, "significant progress in oceans management can potentially be achieved under the leadership of committed and influential political leaders" (Auditor General of Canada, 2005). Higher-level commitment is also needed because the hard work of employees can only go so far without political support and the dedication of funds and capacity (Gardner, 2008). Weak leadership has contributed to the slow progress in initiating the planning process in the PNCIMA.

DFO's changing mandate

International oceans management is shifting from single sector, top-down management to collaborative and multi-sectoral processes. Canada's *Oceans Act* and its subsequent legislation have brought Canada in line with this changing international focus. This has meant a fundamental change in the way that DFO, as well as other federal and provincial agencies, are meant to view oceans management. Integrated management arrangements between agencies should work towards solutions whereby each agency is able to meet its overarching mandate. Often this is a difficult task, given that mandates may conflict. For example, one agency may be focused on conservation and another may have more of a focus on development (Peterson, 2005). The reconciliation of these kinds of conflicting mandates is something that is being addressed through interagency collaborative management programs.

Conflicting mandates may exist within agencies as well as between agencies. When DFO was assigned the role of lead authority for oceans management in Canada, the responsibilities that fell to the agency were new territory and there was little explicit direction on the way forward. DFO had to expand its mandate from a focus on fisheries, towards an integrated oceans

management approach. This may have created a situation that can be perceived as a conflict in DFO's internal mandate. An example of DFO's internal conflict can be seen in its aquaculture responsibility. As Peterson (2005) notes, "DFO has responsibility for conservation of the wild salmon resource and also serves as promoter of aquaculture. These conflicting roles, together with a tendency to defer to the Province, may have rendered DFO incapable of acting to conserve the wild salmon resource in this instance" (Peterson, 2005, p.85).

Within DFO, a result of this management paradigm shift is "often confusion and inconsistency or paralysis, inability or unwillingness to take decisive action in either the old or the new direction" (Peterson, 2005, p.58). It takes time for institutional recognition of such a shift in priorities and for the necessary harmonisation of sectoral regulations and mandates to occur (Guenette, 2007). Additionally, DFO was expected to assume the leadership role in coordinating other federal departments (Lien, 2003). There was a lack of clarity about the practicalities of implementing this new management strategy and, as the Auditor General suggests, DFO has had "great difficulty moving from this conceptual definition (of integrated management) to practical implementation" (Auditor General of Canada, 2005, ¶ 1.18).

DFO's shift in focus, away from its fisheries mandate and towards broader conservation, has not been easy and there is some scepticism that a department that has historically been dedicated to management of fisheries is capable of reinventing itself to meet a wider directive (Gardner, 2008). As Peterson (2005) notes "the *Oceans Act* can be regarded as a program that simultaneously favours both resource extraction and conservation, leaving it to implementing agencies like DFO to strike the appropriate balance" (p.57).

Budget issues

Despite the magnitude of the obligations that have been passed down to DFO under the *Oceans Act*, there has been a lack of funding available for implementation of the oceans mandate. Without adequate funding it is difficult for DFO, the federal lead agency, to meet its management and conservation

obligations (NRTEE, 2003). Scarcity of funding has made it difficult to develop the momentum necessary for the implementation of Canada's oceans policies.

Initially, funding to implement oceans initiatives in Canada was limited, and what was made available was often reallocated from other DFO programs (Lien, 2003; Auditor General of Canada, 2005). In 2005, it was estimated that DFO had redirected about \$100 million from programs and operations, towards activities to support the *Oceans Act* and the *Oceans Strategy* (Auditor General of Canada, 2005). Redirecting funding away from other branches of DFO may have had the effect of making oceans initiatives unpopular among branches that had their funding cut (Lien 2003) and may have resulted in decreasing momentum for implementation. The National Round Table on the Environment and the Economy also recognised the critical lack of funding and in 2003 recommended that the federal government should make it a priority to allocate \$500 million to implement the principles of integrated management and Canada's *Oceans Strategy* (NRTEE, 2003).

The *Oceans Action Plan* (2005) provided a much needed injection of funding, which resulted in more progress being made towards achieving Canada's oceans mandate (Ricketts, 2007). Funding of \$28 million over two years was made available in the February 2005 Budget for implementing Phase I of the *Oceans Action Plan* (Auditor General of Canada, 2005). This injection of funding provided new energy towards agency collaboration (Guenette, 2007). The 2007 Federal Government Budget took a different approach and provided funding for the Health of the Oceans under the *National Water Strategy*. Health of the Oceans, however, is only one of the four interconnected pillars of the *Oceans Action Plan* – International Leadership; Integrated Oceans Management for Sustainable Development; *Health of the Oceans*; and Ocean Science and Technology (Government of Canada, 2005). None of the other pillars received additional funding (Gardner, 2008).

Though these injections of funding are needed, surges of short-term funding can sometimes have a negative impact. Short term funding may have

conditions placed on it regarding how it should be spent and may require shifting focus in the short term, which can compromise day-to-day operations (Peterson, 2005). More beneficial in the long-term is continuing dedication of core funding.

5.2.3 Legal framework

“A legislative and/or policy framework should exist at the national level to guide planning and provide strategic direction.”

When Canada announced the *Oceans Act* in 1997, it was considered a progressive leader in oceans management. Since then, supporting policies and strategies have been brought into effect that build on the founding principles of the *Oceans Act*, including: Canada’s *Oceans Strategy*, Canada’s *Oceans Action Plan*, and the Health of the Oceans Initiative (refer to section 2.1 for more on Canada’s oceans legislation).

Canada has progressive legislation and policy concerning oceans management, but there has been limited progress towards regional implementation of this policy. The majority of the criticism surrounding Canada’s oceans management stems, not from the legislation itself, but rather from this lack of progress. This criticism is emphasised in the Standing Committee On Fisheries and Oceans, *Report On the Oceans Act*, which states;

The Committee has concluded from its review that the *Oceans Act* is fundamentally sound and does not recommend any major amendments to the Act at this time. Nevertheless, the Committee has some concerns over the administration of certain aspects of the Act. Certain principles and programs that were key elements of the Act do not appear to have been as fully implemented as they could or should have been (House of Commons, 2001, p.1).

Though the review of the standing committee was carried out in 2001, it does not appear that concern over the slow course of implementation has been resolved.

5.2.4 Comprehensive goals with measurable targets

“Goals should be developed early in the planning process with contributions from a wide range of user groups. Expected outcomes must be clearly outlined in the form of measurable targets with timelines and there should be mechanisms in place with which to monitor progress.”

Canada’s marine planning policy and legislation contains a suite of goals. Both the *Oceans Act* and *Oceans Strategy* are based on the three principles of sustainable development, integrated management, and the precautionary approach. More specifically, the Strategy supports policy and programs aimed at supporting sustainable economic opportunities, understanding and protecting the marine environment, and providing international leadership. Unfortunately, there is a lack of measurable targets against which to measure progress towards achieving these goals.

Federally established goals provide the framework within which the PNCIMA initiative can be structured. As the planning process in the PNCIMA moves forward, more specific goals should be developed early in the planning process with contribution from a wide range of user groups. Expected outcomes and formal commitments must be clearly outlined (Auditor General of Canada, 2005) and measurable targets with timelines should be developed at the federal and the regional levels. Additionally, evaluative techniques should be utilised for measurement of progress towards achieving management goals and targets in order to assess the success of federal marine policy or regional planning processes.

5.2.5 Effective strategy

“An effective strategy must be in place to outline how goals and targets will be met and to specify what will be achieved, how, and in what time frame.”

Canada’s *Oceans Strategy* is the national policy statement that defines the vision and policy objectives for implementing the *Oceans Act* and applying integrated management to the management of marine space. It is considered a

“rolling strategy”, intended to be updated to incorporate knowledge gained from experience with integrated management (Chircop, 2006).

Due to its national-level focus, the Strategy does not set out specific objectives or baselines, and though it stresses the importance of utilising tools with which to measure progress, it does not provide an evaluation process (Chircop, 2006). An effective strategy should clearly delineate roles and responsibilities of all involved agencies and set out management details. Because this is difficult to do at the national level, these issues may need to be specified within the development and implementation of marine plans regionally. Regional plans should specify what will be achieved, how, and in what time frame. This can be written into the management plan as a series of targets, each associated with a strategy designed to help managers to meet the targets.

A lull was seen in oceans management momentum in the period of time after the passage of the *Oceans Act*. The 2005 Report of the Commissioner of the Environment and Sustainable Development noted, “Implementing the *Oceans Act* and subsequent oceans strategy has not been a government priority. After eight years, the promise of the *Oceans Act* is unfulfilled” (Auditor General of Canada, 2005, p.2). There has been much criticism of Canada’s lack of progress towards achieving its oceans mandate, and much of this lack of progress may stem from the lack of detailed and effective strategies through which to achieve national policy objectives.

5.2.6 Progress monitoring and reporting

“There should be regular, independent public reporting to assess progress in implementing plans and achieving targets. Deficiencies in progress should be clearly delineated.”

At the national level, there is a fundamental lack of monitoring and reporting of progress towards implementing the integrated management framework in Canada’s marine areas. The dearth of reporting at the federal level needs to be addressed and regional progress monitoring and reporting is another

component that should be incorporated into the PNCIMA final management document. Due to the early stage of planning, it is yet to be seen how the monitoring and reporting framework for the PNCIMA will evolve.

Monitoring and reporting requires an effective communications strategy to disseminate information about the progress and context of the planning process. Time and effort for data gathering, consultation, and consensus are often underestimated (Guenette, 2007) and collaborative planning processes are inherently time consuming. An effective communications strategy accompanied by detailed reporting can help keep all interested parties well-informed about progress and timelines.

5.2.7 Adaptive management

“Planning strategies should be designed to be flexible and refined over time to incorporate both research findings and the results of monitoring. Strategies should also require adjustments to plans to address new information about ecosystem conditions and other management concerns.”

Adaptive management is an important component of the Canadian oceans management framework. Management plans must be able to keep up with the ever-changing nature of marine ecosystems and the socioeconomic components of the region.

The PNCIMA region is a complex combination of environmental and socio-economic systems. In order to deal with this complexity, an adaptive management strategy for the PNCIMA initiative will have to be designed during the planning process. Integrated marine planning often incorporates a regular evaluation or a formal review, the timing of which can be written into the planning document. For example, Canada’s ESSIM Plan is meant to undergo a comprehensive review every five years (DFO, 2008b). Building capacity for adaptive management and assessment into management plans shows an understanding of the importance of adaptability and recognition of the unpredictable nature of marine and human linkages. Because of the inherent complexity of planning in marine space, planning strategies need to be designed

to be flexible and to be refined over time to incorporate new research findings (WCPA/IUCN, 2007).

5.2.8 Adequate information

“There should be a good understanding of the planning area, its resources and people, prior to initiating any planning process. Research capacity should be built into the management arrangement.”

The importance of incorporating good information and comprehensive research into the management strategy is recognised at both the national and regional level. Collaboration between, and among, research and government bodies is increasing, as is integration of knowledge types, though institutional change is slow.

The national *Oceans Strategy* has a strong focus on knowledge, with an emphasis on marine science, user group knowledge, and the traditional ecological knowledge of Aboriginal communities (Chircop, 2006). The Strategy also commits to increased access to information and dissemination of knowledge to parties involved in marine planning processes (Chircop, 2006). An omission, however, can be seen in the lack of focus on the contribution that can be made by non-governmental academic and research institutions, suggesting that “the traditional uneasiness of civil servants with the academic establishment continues and defeats the expressed intent on integrating knowledge” (Chircop, 2006, p. 39).

Prior to the initiation of the PNCIMA process, DFO focused on collecting baseline and background ecological and socio-economic data about the planning area. Other bodies have also collected background data on various aspects of the Pacific coast. Coordination to harmonise data collection and management, as well as strategies for data sharing, can be streamlined within the integrated planning process.

Changes in attitudes with respect to data ownership, as well as improved technology for dissemination, are allowing a greater level of coordination and

data sharing on the Pacific coast. The British Columbia Marine Conservation Analysis is an example of a collaborative project that brings together the expertise of representatives from the federal government, British Columbia government, First Nations, academia, and environmental organizations (BCMCA, 2008). The goal of the project is to detect regions of high conservation value and human use on Canada's Pacific coast, in order to provide the opportunity for cross-sectoral discussion about the marine environment and enable streamlined access to information.

First Nations are developing the capacity needed to engage in large scale marine planning and, on the Pacific coast, have taken the lead with respect to promoting and progressing marine planning. Cooperative information sharing initiatives, such as the Aboriginal Mapping Network, have been critical to this capacity growth. The Aboriginal Mapping Network provides online geographic information, resources and tools to help Indigenous peoples manage and share knowledge. The network uses tools such as traditional use studies, GIS mapping and other information systems, to enable dissemination of information for natural resource management, planning, and economic development (AMN, 2008). This kind of inclusive collaboration and integration of knowledge types is critical for broadening understanding of the marine environment and making better use of research effort.

Despite this increased coordination of data collection and dissemination, marine ecosystems are still poorly understood. The intricacies of the linkages between and among ecological and socio-economic components of the marine ecosystem, as well as the influence of external stressors, such as pollution, make marine systems inordinately complex. Lack of certainty, however, should not be a reason to postpone planning. A theme that emerged from the Coastal Zone Canada 2008 Conference in Vancouver BC, was the phrase 'just do it' referring to the perception that sufficient background documentation has been gathered for initiation of the PNCIMA process, and it is time to commence active planning.

Managing in an information poor environment is, of course, not ideal. For this reason it is critical to utilise a robust management strategy. The precautionary approach is a key component of a robust management strategy and is utilised, in part, to enable the ecosystem to maintain structure and function when put under stress. Incorporating the precautionary approach into a management plan is important, as “prevention is a far more robust management strategy than seeking a cure for degraded systems” (Crowder, 2008, p.1). The precautionary principle is one of the founding principles upon which Canada’s *Oceans Act* is built, though it is yet to be seen to what extent, or in what capacity, it will be incorporated into the PNCIMA management plan. Another critical component, when operating with limited information, is adaptive management, discussed in section 5.2.7.

5.2.9 Adapted to context

“Management and planning in marine space should be tailored to the environmental, social, cultural, and legislative circumstances within which they will be applied.”

The overarching legislation and policy for marine planning and integrated management at the national level provides a framework within which to regionally design the LOMA planning processes. Though general concepts will help to guide planning, it is recognised that the specific outcomes for each LOMA should be unique and tailored to regional circumstances. A number of factors create a complex planning environment on the Pacific coast of Canada. The discussion below examines elements that can inform marine planning on the Pacific coast and provides insight into unique features that must be taken into consideration when undertaking marine planning in the PNCIMA.

Jurisdictional complexities

The federal government and the province of British Columbia have a long history of wrangling over ownership of ocean and seabed resources, and ownership of certain areas of the Pacific marine region still remain unresolved

(Graham, 2007). The Supreme Court of Canada has ruled that the province of British Columbia has ownership over the seabed of the Strait of Georgia, located between mainland British Columbia and Vancouver Island. Some legal uncertainty still exists regarding the water and sea floor between Haida Gwaii and Vancouver Island (Peterson, 2005; Graham, 2007; Strong, 2002). For waters that are not within provincial territory it is generally recognised that the seabed and its resources, from the low water mark to the outer limit of the Territorial Sea (12 nautical miles), is within the exclusive jurisdiction of the federal government, as are the ocean and fisheries up to 200 nautical miles from the shore.

Historic tensions still exist, though federal, provincial, and First Nations governments are increasingly working together towards management of marine areas where jurisdiction is overlapping or unresolved.

Operating in a non-treaty environment

Related to jurisdictional complexities and ownership of marine space, is the presence of unsettled land claims in the PNCIMA. First Nations will, clearly, be a critical component of the governance body for marine planning on the Pacific coast. Uncertainty arises, however, with respect to the impact that Aboriginal rights and title claims and future treaty settlements will have on any PNCIMA planning decisions.

Much of Canada's Pacific coast is currently tied up in land claims negotiations, and the entirety of the coast is traditional territory of overlapping First Nations. "Constitutionally-recognised Aboriginal rights over land, ocean space and particularly regarding fisheries, the full extent of which are still subject to negotiation and litigation, are a critical component of the Canadian west coast picture respecting legal and political authority over and responsibility for ocean use management" (Bailet, 2005, p.103).

When creating a planning process in an area that has unsettled land claims, there is typically an understanding that any planning decisions will be subject to future land claims settlements and will not prejudice the outcomes of future treaty negotiations. This creates a level of uncertainty regarding the finality

of any planning outcomes in the PNCIMA. Other regions of Canada undertaking marine planning are covered by comprehensive land claim agreements. This allows more certainty with respect to the authority of the final planning and management framework. For example, the coastal areas in the Canadian north, from the western Arctic to Labrador, have completed land claims agreements. This has made the integrated management process easier to implement, and the treaties have helped to facilitate the establishment of governance regimes and participatory decision-making processes (Berkes, 2007).

Provincial and federal governments have the responsibility for meaningful consultation with First Nations in their traditional territories. In British Columbia, it is also understood, as noted in section 2.5, that First Nations will be involved as partners in management of the PNCIMA region and planning decisions should not affect the rights of First Nations to the use of marine resources. Of the various government bodies in the PNCIMA planning area, many First Nations appear to have the capacity and drive to move forward with a large scale integrated management planning process, despite the abundance of unsettled rights and title claims.

Division of authority

Canada's oceans management is carried out through a complex and often overlapping mixture of laws, legislation, and authority (DFO, 2008a). Responsibility for managing marine-related activities in Canada falls to a number of federal departments and agencies. In addition, the province of British Columbia and local governments also have a level of management authority and responsibility for activities that directly, or indirectly, affect marine space (DFO, 2008a). This overlap of jurisdiction and authority has led to "confusion, duplication of effort and protracted delays in making decisions that affect ocean users" (NRTEE, 2003, p. 83) and has made designing a national framework for integrated and coastal zone management difficult (Ricketts, 2007). Effort has been made to transcend this confusion of 'duplication and delay' through the

development of working groups and interagency bodies, meant to build collaborative relationships between and within governments.

5.2.10 Integration

“Integrated marine planning requires integration of socio-cultural, economic, and ecological values and necessitates both behavioural and institutional change.”

Integrated management is a primary objective of Canada’s ocean legislation and DFO has made strides towards integration on a number of levels. Integrated management requires effective integration of socio-cultural, economic, and ecological values and it necessitates both behavioural and institutional change (WCPA/IUCN, 2007).

A type of integration that deserves to be explored in more depth is that of intergovernmental integration (also discussed in section 5.2.9). The Pacific coast of Canada has a complex jurisdictional framework and a high level of conflict over geographic space and resources. Intergovernmental integration, the bringing together of government bodies that have an interest in, or authority over, marine areas (Cicin-Sain, 2003), is, therefore, of particular importance on the Pacific coast. Lack of coordination between governing agencies is seen by some as one of the most significant barriers to advancing marine conservation and implementing Canada’s *Oceans Act* (NRTEE, 2003). Traditionally, agencies have operated in relatively independent silos, with limited cross-organisational coordination. More recently, there has been a shift towards the creation of new institutional arrangements and integration of actions between and within governments. Though progress is being made, such integration is complicated by the conflicting priorities of federal, provincial, and First Nations governments, as well as by the sheer number of government agencies with an interest in oceans management.

5.3 Weaknesses of marine planning in the PNCIMA and recommendations for improvement

Table 15 summarises the weaknesses identified in this evaluation of the marine planning environment on the Pacific coast, and makes recommendations to overcome these deficiencies.

Table 15: Weaknesses of marine planning in the PNCIMA and recommendations for improvement.

Criterion	Weaknesses	Recommendations
Inclusive participation	There exists a lack of engagement with marine planning among many parties that have interests in the management area.	Initiate meaningful stakeholder participation in the development, implementation and monitoring of the PNCIMA initiative.
Leadership and accountability	The federal government has shown a lack of support for marine planning on the Pacific coast, evident in lack of capacity and funding.	Provide long-term commitment of both funds and capacity for the PNCIMA initiative.
Legal framework	Canada has progressive oceans legislation and policy, but implementation progress has been slow.	Allocate adequate resources in order to effectively implement legislation.
Comprehensive goals with measurable targets	Comprehensive goals exist at the national level, though specific goals and targets have yet to be developed at the regional level. Measurable targets do not exist regionally or nationally.	Create measurable and realistic targets with which to meet goals at the national policy level. Work towards regionally specific goals and measurable targets.
Effective strategy	The national <i>Oceans Strategy</i> does not provide a detailed approach for meeting goals. It is not clear how a regional strategy will evolve.	An effective strategy at the regional level must outline how goals and targets will be met and specify what will be achieved, how, and in what time frame.
Progress monitoring and reporting	Progress monitoring and reporting at the federal level is lacking. It is not clear how the regional strategy will evolve.	There should be regular, independent public reporting of progress in implementing plans and assessment for achieving targets. Deficiencies in progress should be clearly delineated.
Adaptive management	Adaptive management is specified in Canada's <i>Oceans Strategy</i> , though there is no concise directive for how it should be applied. It is not clear how adaptive management will be put into operation regionally.	Regional planning strategies should be designed to be flexible and refined over time to incorporate research findings and the results of monitoring. Plans should require adjustments to address new information about ecosystem conditions and other management concerns.
Adequate information	DFO has been actively collecting baseline and background ecological and socio-economic data about the planning area. Data harmonisation among agencies is lacking.	A robust management strategy must be utilised that incorporates knowledge from a range of sources and that allows open access to information.
Adapted to context	The national guidelines for marine planning recognise that the specific outcomes for each LOMA should be unique and tailored to regional circumstances. At this time a specific framework has yet to be developed at the regional level	International and national marine planning initiatives should inform the management strategy, though the PNCIMA process should be tailored to the unique regional circumstances of the Pacific coast.
Integration	Though the <i>Oceans Act</i> provides the explicit mandate to implement an integrated approach to oceans management in Canada's marine regions, progress towards achieving this integrated framework has been slow.	Create effective strategies that enable better integration of socio-cultural, economic, and ecological values into the management framework being developed on the Pacific coast. Special attention should be given to the integration of involved government agencies.

CHAPTER 6: CONCLUSIONS

Nations and communities around the globe have been struggling with how to integrate sustainable human use and environmental concerns into the management of marine space. Ultimately, marine management is the management of human behaviour, and any management framework must take into account the full array of human activities and impacts that occur in the marine environment. The concept of integrated marine planning is a response to the increasing complexity of the management of marine space. Integrated marine planning manages the marine environment holistically, and has the potential to provide significant long-term benefits for both the private and public sectors.

Canada's *Oceans Act* came into force in 1997, with the explicit mandate to implement an integrated approach to oceans management in Canada's marine regions. Since then, other legislation and strategies have come into effect that reiterate the intent to manage Canada's oceans in a more proactive, integrated, and sustainable fashion. However, there has been a lack of action towards the implementation of key legislation on the Pacific coast. The PNCIMA initiative is still in its infancy and activities that damage sensitive areas of the Pacific region continue to occur.

6.1 Benefits of integrated marine planning

The international case study analysis revealed a number of common benefits of integrated marine planning. Some of these benefits can emerge simply through the undertaking of an integrated approach to planning; these benefits include reduced conflict and improved stakeholder relations, development of effective governance structures, and information streamlining.

The potential for economic growth and the creation of economic opportunities may be increased through the use of integrated marine planning. Economic well being is a key goal of most marine planning initiatives and industry is usually encouraged to actively participate in the management strategy and planning for future growth. Clearly, one industry's use of marine space can negatively impact another's use of the same marine space. Integrated marine planning can help to reduce negative impacts of development on other economic sectors, streamlining management. It may also work to increase certainty and clarity about zoning for development, potentially lowering the probability of project cancellations.

Within the marine plans examined in this project, actions to meet conservation objectives vary from simple regulations to the designation of MPAs. Most case studies examined in the analysis use some form of marine protected area in order to focus management attention onto specific sensitive marine regions. Benefits that may emerge through the use of MPAs include support for stock management, improved socio-economic outcomes for local communities, support for fishery stability, and ecological offsets (Commonwealth of Australia, 2003).

6.2 Survey implications

The stakeholder survey was designed to assess perceptions of the benefits of preparing an integrated marine use plan on the Pacific coast and examine priorities of interested or affected parties. Within the online questionnaire, respondents were asked to rate a series of benefit statements on two Likert scales (importance and agreement). Survey results show that a high percent (94%) of respondents rated the potential benefits overall as being important or somewhat important to their organisation. A fairly high number (70%) also indicated that they agree or somewhat agree that marine planning would actually provide the potential benefits.

When respondents were asked to rate their knowledge of the current state of the planning process in the PNCIMA, only 38% of survey respondents rated their knowledge as good or excellent. The stakeholder survey may have helped to increase the level of general knowledge of the PNCIMA initiative among certain respondent groups. The survey may, therefore, have helped to prepare certain stakeholder groups for participation in the planning process.

Despite the general lack of knowledge about planning in the PNCIMA, 90% of respondents expressed support for the development of a marine plan in the PNCIMA and 95% agreed that developing a marine plan is in the public interest. This indicates a high level of support for completing a marine plan on the Pacific coast.

6.3 Perceptions of marine planning

A commonly held belief about integrated marine planning is that the ultimate management outcome will be biased towards the environment and against economic development. This perception was seen in the analysis of the international marine planning case studies, and also emerged through the results of the stakeholder survey. The foundation for this belief is unclear. It may be partly related to environmental organisations acting as advocates for integrated marine planning internationally, and could also stem from concern that marine planning will act to restrict development opportunities. Despite some initial misgivings among participants, the case studies show a high level of buy-in from parties involved in the planning processes. This indicates a level of satisfaction with the management arrangements.

The stakeholder survey explored perceptions of the benefits of marine planning. Survey respondents tended to agree or somewhat agree (81%) that marine planning in British Columbia could provide environmental benefits, whereas fewer respondents (66%) tended to agree or somewhat agree that marine planning could provide industry and economic benefits. This shows a

disparity of results between subject areas and indicates a critical education gap that should be dealt with when undertaking marine planning on the Pacific coast.

Effective industry involvement in the planning process is essential to the success of the PNCIMA initiative. Unless the potential benefits of marine planning for marine industry groups are clearly articulated, industry may have little incentive to be involved in the planning process. This could create lasting compliance issues, and could also undermine the potential for the success of the PNCIMA process.

6.4 PNCIMA

The best practices criteria for integrated marine planning provide a framework for establishing a successful planning process. Several of the criteria are particularly relevant for planning on the Pacific coast. Firstly, it is critical to establish effective and inclusive governance structures. On the Pacific coast, evolving governance arrangements are allowing a greater level of co-ordination and collaboration. Government bodies are learning to work in partnership and there is growing institutional recognition of the importance of stakeholder inclusion in resource management decisions. A multi-sector governance approach to marine planning and management can help to coordinate the many conflicting uses and priorities that occur on the Pacific coast. Additionally, though it is important to build on international experience with integrated management, it is also important for the PNCIMA process to be adaptable and tailored to the scale of the planning area and jurisdictional framework within which it will operate. Interested parties and stakeholder groups should have the opportunity to contribute to the formation of management objectives.

The lead agency for integrated marine management in Canada is DFO. This introduces an added complication on the Pacific coast. DFO has historically had a fisheries mandate, and over the years many groups have questioned DFO's management techniques and priorities on the Pacific coast. Institutional distrust among user groups on the Pacific coast is another hurdle that DFO will

have to manoeuvre as it moves into broader integrated oceans management. If DFO can embody its new mandate and move from a fisheries focus to one of integrated management, and if jurisdictional complications can be overcome, the PNCIMA process may be able to achieve a shift in management towards a sustainable balance of economy and conservation on the Pacific coast. However, in order to move forward with integrated oceans management, there must be higher-level advocacy and dedication of long-term funding and capacity for marine planning.

Work towards a marine plan for the PNCIMA is currently underway with critical foundational research already having been undertaken by DFO. A MOU on oceans governance for the Pacific coast was recently signed and it lays out the proposed bilateral collaborative oceans governance model for Federal and First Nations governments. The model provides mechanisms for ongoing dialogue and consensus building between a wide range of government bodies and stakeholder groups (DFO, 2008d). In addition, the stakeholder survey undertaken in this research project indicates that optimism exists among stakeholders regarding the PNCIMA initiative, and that there is support for the establishment of a marine plan in the PNCIMA. The foundation for the PNCIMA initiative is being assembled at this time, and many are waiting in anticipation to see how the planning process will unfold.

APPENDICES

Appendix A: Detailed planning review

Integrated marine planning is being adopted in many regions around the globe. In order to identify the potential benefits of marine planning, we conducted a cross-sectional comparative analysis of eight leading international examples of integrated marine planning:

- USA: Florida Keys National Marine Sanctuary
- Australia: Great Barrier Reef Marine Park
- Australia: South-east Regional Marine Plan
- Netherlands, Germany and Denmark: Wadden Sea Project (Trilateral Wadden Sea Cooperation Area)
- Canada: The Eastern Scotian Shelf Integrated Management Initiative
- Belgium: Master Plan for the Belgian Part of the North Sea
- Ecuador: Galapagos Islands Marine Sanctuary
- New Zealand: Regional Coastal Plans
- Fiji: Locally Managed Marine Areas

The following criteria were used to select these case studies:

- The case studies should focus on multiple objective management of marine space,
- The case studies should involve multiple user groups and authorities in the plan development,
- Information available about the case studies should be reasonably current and accessible,
- The case studies should have moved past planning into the implementation stage of management, and
- The case studies should be relevant to the planning regime of Canada's Pacific coast.

The analysis begins with a look at two of the earliest examples of marine planning, the Florida Keys National Marine Sanctuary and the Great Barrier Reef Marine Park.

Despite their initial focus on single objective planning for the protection of sensitive marine ecosystems, both plans have evolved with time to incorporate the needs of numerous stakeholders and to balance multiple uses of marine space with ecological health (Borthwick, 2006). Next, contemporary case studies are examined. These planning initiatives are mostly driven by user conflict, or by concerns over pressures on marine resources. The planning areas are economically diversified and these

contemporary case studies tend to have more direct relevance to the British Columbia marine planning environment.

For each case, the comparative analysis includes the following components:

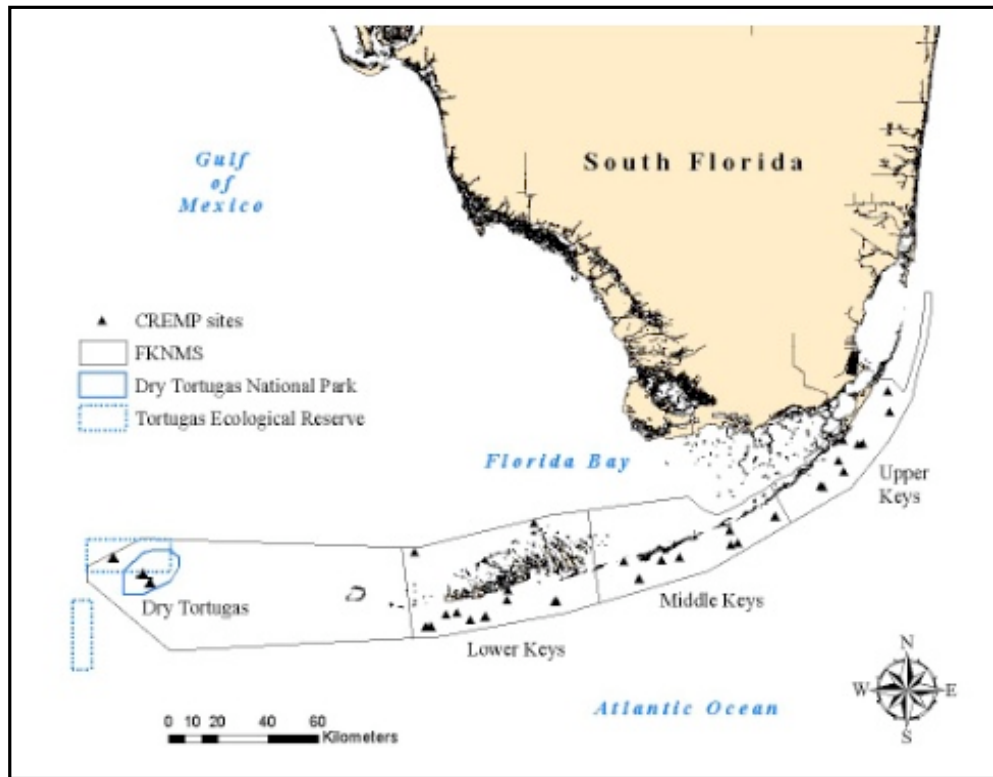
- Size/scale
- Administration and legislation
- Plan production
- Timeframe
- Goals/objectives
- Adaptive management
- Interests and uses
- Community and stakeholder involvement
- Science and information
- Zoning and MPAs
- Monitoring and enforcement
- Benefits of the plan

1. USA - Florida Keys National Marine Sanctuary

The Florida Keys National Marine Sanctuary (FKNMS) was established as a response to the deterioration of the region's coral reefs. Concerns about impacts on the marine ecosystem were brought to the public's attention as early as 1957, and in 1960 the world's first underwater marine park was created.

[Unless otherwise noted the following is adapted from *The Revised Management Plan* (NOAA, 2007), or Florida Keys National Marine Sanctuary online resources (FKNMS, 2007).]

Map A1: Florida Keys National Marine Sanctuary area map. Source: FKNMS (2007).



- **Size/scale**

2,800 square nautical miles (9,500 square kilometers) of coastal and oceanic waters.

- **Administration and legislation**

The FKNMS was created under U.S. Federal law and is recognized by the State of Florida. It is administered by the National Oceanic and Atmospheric Administration (NOAA) jointly with the state of Florida. More than 25 local, state and federal agencies are operating in the Florida Keys and, therefore, successful management of the sanctuary requires collaboration and effective interagency communication.

Administrative frameworks integrate the policies of the federal and state governments through a set of standard operating procedures. Standard operating procedures include a communications network and strategies for better coordination of routine procedures. A professional administration team that provides comprehensive services such as human resources and financial administration carries out day-to-day operations. A citizen Sanctuary Advisory Council was a key component in the development of the sanctuary management plan. The Council includes representatives of commercial and recreational user groups (i.e. commercial and recreational fishermen, the dive industry, and the boating industry), conservation and other public interest organizations, scientific and educational organizations, and other stakeholders interested in the protection and management of sanctuary resources.

- **Plan production**

FKNMS staff and the Sanctuary Advisory Council created the management plan. State and federal partners and stakeholders provided input.

- **Timeframe**

The creation of the initial management plan was a six-year process. The management plan was completed in 1996 and was implemented beginning in July 1997. In 2007 a revised management plan replaced the original plan.

- **Goals/objectives**

The plan centres on the following themes:

- Sanctuary science,
- Education outreach and stewardship,
- Enforcement and resource protection,
- Resource threat reduction,
- Administration community relations and policy coordination.

Fourteen action plans guide sanctuary management.

- **Adaptive management**

The management plan is reviewed every 5 years. The plan review is done with participation from state management partners, staff, general public, several NOAA divisions, and the FKNMS Advisory Council. The process involves scoping meetings, action plan working groups, public meetings and a formal comment period. The review allows for an examination of the plan and its goals, objectives, management techniques, strategies, and actions.

- **Interests and uses**

Planning in the FKNMS was initiated due to ecological concerns, however the current planning documents recognize the importance of environmental, social, and economic values in the planning area. Interest groups in the FKNMS include:

- Commercial fishermen,
- Recreational fishermen,
- The dive industry,
- The boating industry,
- Conservation organizations,
- Other public interest organizations,
- Scientific and educational organizations, and
- Members of the public interested in the protection and multiple use management of sanctuary resources.

- **Community and stakeholder involvement**

A citizen Sanctuary Advisory Council was a key component in the development of the sanctuary management plan. The Council includes representatives of industry, public interest organizations, scientific and educational organizations, and members of the public. Community relations are considered to be a major component of sanctuary management. Due to the highly transient nature of the Keys' tourists and residents, media, primarily television and radio, is used to communicate activities and threats to the sanctuary.

- **Science and information**

The Science Management Division for the sanctuary consists of two action plans: Science Management and Administration and Research and Monitoring.

A large number of governmental, academic, and non-governmental scientists participate in the science and research activities. Research and monitoring activities are used to:

- Provide the public with a means to evaluate the effectiveness of the sanctuary,
- Provide a means to distinguish between the effects of human activities and natural variability,
- Develop hypotheses about causal relationships which can then be investigated;
- Evaluate management actions, and
- Verify and validate quantitative predictive models used to evaluate and select management actions.

Research and monitoring also includes a socioeconomic research and monitoring program. The primary goal of socioeconomic monitoring is to detect and document changes in sanctuary resource utilization patterns and their impact on market and non-market economic values of sanctuary resources.

- **Zoning and MPAs**

A key component of the management plan is the Zoning Action Plan, which designates five individual zone types where certain activities are permitted or restricted. The five zones are briefly described below:

- **Wildlife Management Areas:** These areas are established to minimize disturbance to especially sensitive wildlife populations and their habitats,
- **Ecological Reserves:** These areas are designed to encompass large, contiguous diverse habitats in order to protect an ecosystem. The Sambos Ecological Reserve is the only ecological reserve within the boundary,
- **Sanctuary Preservation Areas:** There are 22 of these within the sanctuary boundary. They focus on the protection of shallow, heavily used reefs where conflicts occur between user groups,
- **Existing Management Areas:** This zone simply identifies areas that are managed by other agencies where restrictions already exist, and
- **Special-use Areas.** These zones set aside areas for different uses. Uses include scientific research and educational purposes, as well as restoration and monitoring or to establish geographic areas that confine or restrict activities .

The zones are marked with yellow buoys for easy identification.

- **Monitoring and enforcement**

Monitoring and research is being done on an ongoing basis by trained volunteers, government, scientists and academics. The regulations and laws are enforced with a mixture of on-site patrols and public education to achieve compliance.

- **Benefits of the plan**

The 2007 management plan lists a number of accomplishments in the sanctuary. A selection of these successes follows:

- The designation of 'area to be avoided' has resulted in a significant decrease in the number of ship groundings on the coral reefs,
- The mooring buoy program has considerably reduced anchor damage to coral reefs and sea grass beds, and
- The creation and execution of an array of educational tools has worked to actively engage and inform the residents and tourists about the importance of the sanctuary. Education is critical to meeting the conservation goals of the sanctuary as greater understanding leads to greater support and compliance.

The Sanctuary Science Report produced by the National Oceanic and Atmospheric Administration, Florida Keys National Marine Sanctuary, U.S. Environmental Protection Agency, and the State of Florida gives a summary of how the ecosystem, as well as human uses and perceptions, have responded to management actions.

Some key highlights from the 2002-03 sanctuary science report follow:

- Since no-take protection was initiated in 1997, significant density increases have been observed for several exploited reef fish species in Fully Protected Marine Zones (FPMZs) compared to fished reference areas,
- Surveys show that since sites were protected in 1997, black grouper have been seen with higher frequency in FPMZs than in reference areas,
- After five years of protection there were almost twice as many lobsters inside three Lower Keys FPMZs as outside, and
- Surveys show that an overwhelming majority of all reef users (78%) and recreational fishers (76%) support the currently designed no-take zones (adapted from Keller, 2006).

2. Australia - Great Barrier Reef Marine Park

Due to concerns over human use and deterioration of the reef ecosystem the *Great Barrier Reef Marine Park Act* was established in 1975. The Great Barrier Reef Marine Park (GBRMP) lies within both Commonwealth and Queensland coastal waters. The GBRMP Zoning Plan was completed in 2003 and came into effect in 2004. This is the main planning and management document for the GBRMP.

[Unless otherwise noted the following information is adapted from the 2006 Review of the *Great Barrier Reef Marine Park Act* of 1975 (Borthwick, 2006).]

Map A2: Great Barrier Reef Marine Park area map. Source: GBRMPA (2004).



- **Size/scale**

The GBRMP is approximately 344,400 square kilometres in size and covers over 2,300 kilometres along the Queensland coastline.

- **Administration and legislation**

The government of Australia manages the reef through the Great Barrier Reef Marine Park Authority (GBRMPA) in partnership with the government of Queensland. They use a cooperative and integrated approach to management. The federal government, through the GBRMPA, is responsible for both the GBR World Heritage Area and the GBRMP. The GBR World Heritage Area is mostly comprised of the GBRMP, though parts of the Heritage Area extend beyond the Marine Park.

By agreement under the Offshore Constitutional Settlement, the Commonwealth of Australia has jurisdiction from three to 200 nautical miles, and the state has jurisdiction from three nautical miles to the low water mark, and inland from that point (Sakell, 2006).

The GBRMPA administers an integrated management system for the GBR and has established a number of consultative committees, including four Reef Advisory Committees and 11 Local Marine Advisory Committees.

- **Plan production**

The GBRMP Zoning Plan produced by the GBRMPA (2004) is the main planning document for the GBRMP, although there is also a 25 year strategic plan (1994-2019) which was released in 1994.

A range of management tools have been used in the GBRMP to influence and control access. These include zoning plans, permits, education, and more recently a comprehensive management plan (Day, 2002).

- **Time frame**

In 1975 the Australian government introduced legislation to establish the Marine Park and established the GBRMPA.

The GBRMP Zoning Plan was completed in 2003 and came into effect in 2004(refer to *Zoning and MPAs*)

In 2004 the Australian government undertook a review of the *Great Barrier Reef Marine Park Act* of 1975. This comprehensive review was released in 2006. The review did not re-examine the zoning plan of 2003, but did consider the functions of the Great Barrier Reef Marine Park Authority, the role of its office holders, accountability frameworks and consultation mechanisms. The recommendations that came out of the review are being implemented through legislative and administrative changes.

- **Goals/objectives**

The 2004 zoning plan states that “the zoning plan aims, in conjunction with other management mechanisms, to protect and conserve the biodiversity of the Great Barrier Reef ecosystem within a network of highly protected zones, while providing opportunities for the ecologically sustainable use of, and access to, the Great Barrier Reef Region by current and future generations” (GBRMPA, 2004, p. 1).

- **Adaptive management**

It is specified within the 2004 review of the *Great Barrier Reef Marine Park Act* of 1975 that information should be drawn together and published as the ‘Great Barrier Reef Marine Park Outlook Report’ every five years in order to better inform the public and re-evaluate decisions on management.

- **Interests and uses**

Though the planning process was initiated due to ecological concerns, the completed plan recognizes the importance of environmental, social, economic and cultural values in the planning area. Four major user groups are identified: fisheries, conservation, tourism/recreation and traditional users.

There are more than 70 traditional owner groups within the zoning plan area, both Aboriginal and Torres Strait Islander. The GBRMPA established an Indigenous Partnerships Liaison Unit in 1995 to provide guidance to the GBRMPA and to stakeholders on Indigenous issues and cooperative arrangements in the marine park (GBRMPA, undated). The GBRMP Zoning Plan “expressly acknowledges the rights and

interests of indigenous Australians in the Marine Park by providing for the management of the traditional use of marine resources, including traditional hunting, in accordance with Aboriginal and Torres Strait Islander custom and tradition” (GBRMPA, 2004, p.1). Further to this, native title-holders may undertake traditional use of marine resources in the GBRMP without a permit (GBRMPA, undated).

- **Community and stakeholder involvement**

In the development of the zoning plan there was an understanding that all stakeholders should be actively involved in the process, and there was extensive community consultation in the preparation of the zoning plan.

The first phase of consultation was designed to canvas public views on the proposal to create a zoning plan. It included:

- Over 1,500 televised community service announcements,
- Over 200 community meetings involving over 5,000 individuals,
- Distribution of over 33,000 brochures,
- Newspaper articles and advertisements,
- Radio and TV spots, and
- A website and a free call number (Commonwealth of Australia, 2003).

Similar extensive consultation took place at each stage of the planning process.

- **Science and information**

A scientific committee was established for the rezoning of the GBRMP to provide scientific recommendations to the GBRMPA. The committee recommended eleven biophysical principals, including specific levels of protection for important habitat types, and size and configuration of no take areas (Thompson, 2005).

A social economic and cultural steering committee was also established. It was given the task of identifying social impacts of the zoning process and asked to provide ways to minimize the impacts on existing uses and users (Thompson, 2005).

- **Zoning and MPAs**

The GBRMP Zoning Plan is the primary planning instrument for the conservation and management of the park (GBRMPA, 2004).

The first GBR zoning plan was prepared in 1980. Over the course of 17 years, various zoning plans were put in place for different parts of the park. However, it was

increasingly recognized that this use of isolated zoning and protected areas was not wholly successful in meeting the goals of the park and, therefore, the GBRMPA undertook the development of a single zoning plan for the entire marine park. This new zoning plan was brought into effect in 2003 (Thompson, 2005).

The park has a number of zoning types. For each zone, there is a clear objective and a list of what activities can be done with and without a permit. The zones are:

- General Use Zone – allows for all reasonable uses,
- Habitat Protection Zone- prohibits trawling,
- Conservation Park Zone- allows for limited fishing and collecting, and
- Marine National Park Zone – is a no take zone prohibiting all fishing and collecting.

Other types of zones making up less than 5% of the park are:

- Buffer Zone,
- Scientific Research Zone,
- Preservation Zones (from GBRMPA, 2004),

In total, 33% of the GBRMP is zoned for no-take, 33% is zoned for habitat protection and 34% is zoned for general use (Doherty, 2005).

- **Monitoring and enforcement**

Managers rely, to a certain extent, on voluntary compliance with the zoning plan. Because of stakeholder support there is some success with this strategy (Thompson, 2005). Monitoring and enforcement are also critical components of management in the park. Enforcement strategies are carried out by a network of authorities and agencies (GBRMPA, 2002).

- **Benefits of the plan**

The expansion of protected areas is seen as a way to increase tourist numbers and broaden local economic options. According to the GBRMPA (2003), the increase in protected areas enhances the 'aesthetic and spiritual' experiences of visitors and creates a greater draw, in effect creating greater security and growth of the tourism industry.

Though management costs can be high, since mid-1993 the Australian government has offset part of the management costs for the GBRMP through an environmental

management charge (Commonwealth of Australia, 2003). This kind of revenue collection is useful in a marine park or protected area, such as the GBRMP, with a high number of visitors.

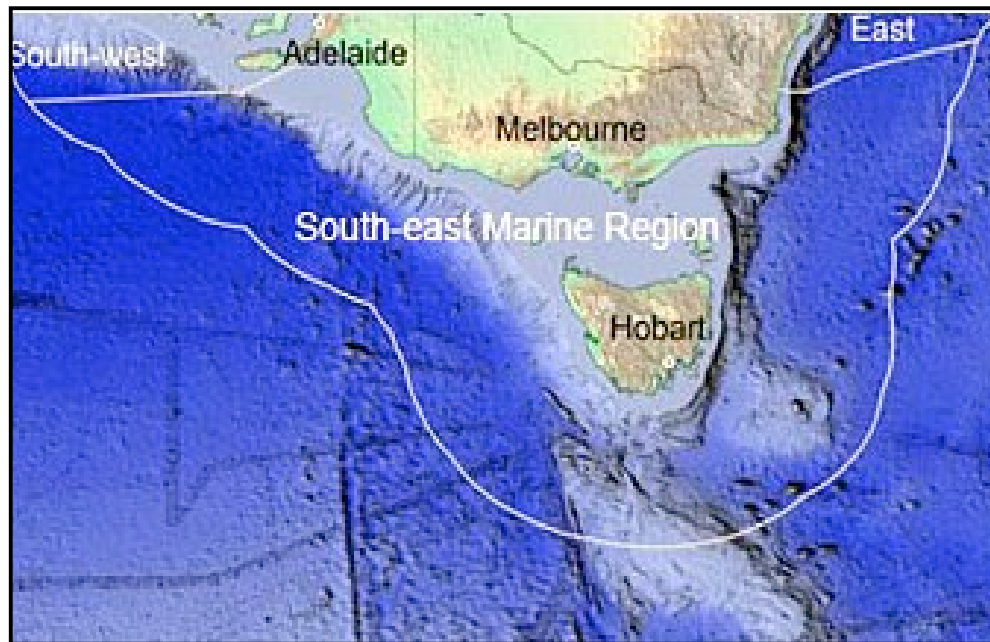
MPAs in the GBRMP are considered to provide a number of benefits with respect to fisheries. These benefits include support for stock management, improved socio-economic outcomes for local communities, support for fishery stability, and ecological offsets (Commonwealth of Australia, 2003). More specifically, a survey of sharks in different GBRMP zones found sharks to be 5 to 40 times more abundant in no-go Preservation Zone reefs compared with nearby fished Habitat Protection Zone reefs (Robbins, 2006). In a similar study, coral trout abundance was significantly higher on protected reefs than on fished Habitat Protection zone reefs (Ayling, 2008). A greater number of larger fish occurring in the protected areas offers greater potential for increases in survivorship and abundance of young (Commonwealth of Australia, 2003).

3. Australia – South-east Australia Regional Marine Plan

Australia's *Ocean Policy* is being implemented through regional marine plans for Australia's entire marine jurisdiction (approximately 14 million square kilometres). The South-east Regional Marine Plan is the first of these initiatives to be implemented and represents the culmination of four years of intensive research, coordination and consultation with stakeholders, scientists and other experts. It is a large-scale, ecosystem-based plan for management of development and use in the marine environment.

[Unless otherwise noted the following information is adapted from the South-east Regional Marine Plan (National Oceans Office, 2004).]

Map A3: South-east Australia Regional Marine Plan Area map. Source: Government of Australia (2008)



- **Size/scale**

The South-east Marine Region covers more than two million square kilometres of water off Victoria, Tasmania, southern New South Wales, and eastern South Australia.

It includes inshore (state) waters and Commonwealth waters, as well as that portion of the continental shelf beyond the Exclusive Economic Zone that is claimable by Australia (National Oceans Office, 2002).

- **Administration and legislation**

By agreement under the Offshore Constitutional Settlement, the Commonwealth of Australia has jurisdiction from three to 200 nautical miles, and the state has jurisdiction from three nautical miles to the low water mark and inland from that point (Sakell, 2006).

Plan implementation is managed through the Intergovernmental Coastal Advisory Group, comprised of representatives from the Australian government, each state government, the Northern Territory government and the Australian Local Government Association. The Australian Local Government Association is a federation of state and territory local government associations. The Intergovernmental Coastal Advisory Group meets several times a year (National Oceans Office, 2002)

Overall responsibility for management falls on the Australian government, with cooperation between different partners, including states, industry representatives, Indigenous groups, marine communities and others with an interest in the marine planning environment. The main planning document contains a series of detailed tables that assign the lead agency, partners and the timing for each action.

- **Plan production**

The South-east Marine Regional Marine Plan was produced by the National Oceans Office with extensive cooperation and in consultation with South-east state governments, industry representatives, Indigenous groups, marine communities and others with an interest in the future of the marine environment. The development of the plan also relied on expert advice from a number of working groups and steering committees including: the National Oceans Advisory Group (non-government stakeholders), the Multiple Use Working Group (representatives from South-east States and Australian Government agencies), and the South-east Regional Marine Plan Steering Committee (an expert-

based group appointed to provide advice on the planning process).

- **Timeframe**

Australia's Oceans Policy was announced in 1998. Following this were a number of years of scoping and assessment. Recommendations and objectives were developed with feedback from a number of stakeholder groups and government Agencies. The draft South-east Regional Marine Plan was publicly released in July 2003, it was then finalised in 2004.

- **Goals/objectives**

There are nine regional objectives that have guided the development of the South-east Regional Marine Plan. The objectives are to:

- Ensure that all ocean uses are ecologically sustainable,
- Protect, conserve and restore the region's marine biodiversity, ecological processes, and natural and cultural marine heritage,
- Increase long-term security of access and certainty of process for existing and future marine-based industries,
- Promote economic development and job creation in the region consistent with ecologically sustainable development,
- Integrate management of access, allocation, conservation and use of marine resources to ensure fairness and accountability to the community and all users,
- Increase knowledge and understanding of the region to improve capacity to pursue ecologically sustainable development,
- Enhance community and industry stewardship and understanding of the values and benefits of the region and involve them in its management,
- Involve Indigenous communities in management of the region in a manner that recognises and respects their rights, custodial responsibilities, contributions and knowledge, and
- Take into account in decision making the needs, values and contributions of the community and industry, the national interest and international obligations relevant to the region.

- **Adaptive management**

Review of the South-east Regional Marine Plan will occur over a 10-year cycle.

Stakeholder and expert advice and input will be sought at key stages throughout the cycle. The review will focus primarily on a review of the Action Plan and the regional objectives.

The concept of adaptive management is written into *Australia's Oceans Policy*, which notes the importance of rapid response because of the uncertainty inherent in

management of ocean space. The marine plan is, therefore, designed to be able to incorporate emerging information and the improved understanding of management and conservation of ocean resources.

- **Interests and uses**

Representatives from recreational and commercial fishing, aquaculture, petroleum, conservation, tourism, shipping and ports, and community and Indigenous groups have been key players in the process.

South-east Australia is rich in cultural sites, including archaeological sites and natural sites, such as headlands and river mouths. These sites have significance beyond their immediate location and indicate the wider connection of Indigenous people with the land, sea and resources over time (National Oceans Office, 2002). This connection was recognized during the creation of the marine plan and the marine planning document explicitly states that a key guiding objective in the development of the plan is to “involve Indigenous communities in management of the Region in a manner that recognises and respects their rights, custodial responsibilities, contributions and knowledge” (p. x).

Building on this objective, there are a number of initiatives in place to assist Indigenous communities to be involved in natural resource management and regional marine planning.

- **Community and stakeholder involvement**

Input and advice from state governments, ocean resource users, and other stakeholders as well as technical experts was critical to the development of the South-east Regional Marine Plan. Input and advice was sought through working groups, workshops and targeted meetings. Though there was initial distrust of the process by some industry stakeholders, with time they engaged in the process. These consultation arrangements brought together all stakeholders with an interest in oceans management and encouraged the exchange of needs and concerns across sectors.

- **Science and information**

The planning process produced extensive information on marine planning and the ecology, economics and management structure of the South-east Marine Region (NRMMC, 2006).

Marine science and research is undertaken across many government agencies and non-government institutions in the region. The Oceans Policy Science Advisory Group helps to coordinate these research bodies and is the main source of scientific advice on implementation and the integrated approach to marine science. It works to provide a coordinated and integrated approach to marine science and marine planning across all of Australia (NRMMC, 2006).

- **Zoning and MPAs**

A key component of the planning process was the development of a network of marine protected areas within the region. The South-east Commonwealth Marine Reserve Network was 'completed' in May 2006, with the launch of 13 marine protected areas covering 226 000 square kilometres. The protected areas aim to represent examples of the diverse seafloor features and associated habitats found in the South-east Marine Region (Government of Australia, 2008).

The South-east Commonwealth Marine Reserve Network is based on a system of five zones that permit and restrict certain activities. Below is listed the different zones and permitted activities (though most activities require registration or approval).

- **Sanctuary Zone** - No commercial or recreational fishing or mining activities are permitted. Area used for scientific research and passive recreational activities. Vessel transit is allowed.
- **Benthic Sanctuary Zone** - Some commercial and recreational fishing is permitted. However no fishing or other extractive use in the area from 500 metres below sea level to 100 metres beneath the seabed is allowed.
- **Recreational Use Zone**- This zone allows for recreational and charter fishing. Commercial fishing and mining activities are prohibited.
- **Special Purpose Zone**- Recreational fishing and mining activities are permitted. No commercial fishing is allowed in this zone.
- **Multiple Use Zone**- Recreational fishing and mining activities are allowed. Some forms of commercial fishing are allowed (adapted from, Government of Australia, 2008).

These zones can be grouped into three main categories:

- Scientific research, monitoring and passive uses (highest protection): 42%,

- Special purpose zone (closed to commercial fishing): 36%, and
- Multiple-use, allowing low-impact fishing methods and other limited activities: 21% (Government of Australia, 2008).

The remaining area is made up of two specialized zoning categories, the benthic sanctuary zone and the recreational use zone (Government of Australia, 2008).

- **Monitoring and enforcement**

Enforcement and compliance in the region is undertaken by Australian and South-east state government agencies. The majority of resource management agencies have an enforcement and compliance function, for example: fisheries officers, rangers and permit/licensing officers. Education is a key factor in achieving compliance.

- **Benefits of the plan**

Nine key projected outcomes from the implementation of the plan are identified in the planning document and are summarized below:

- Planning will allow a new way of understanding and measuring the ecosystem as a whole and provides a backdrop for management of resources for individual users.
- A set of representative and important habitats will be protected. This will support marine biodiversity and will minimize the impacts of priority threats to these ecosystems.
- Industries can actively manage and plan for future growth with access to better information and advice about management requirements. They will also have opportunities to check that their current and future needs are being considered in the development of management actions in the region.
- Support will be provided for marine-based industries to capitalize on their investments and further refine their activities to introduce innovative technology and explore new markets.
- A coordinated approach to marine management in the region that is simple, well understood and that recognizes the needs of all users and the community will be followed.
- Better coordinated and an increased amount of scientific research will be conducted in the region, leading to improved evidence-based decision making.
- Communities will be informed about the importance of managing the marine ecosystem to promote responsible and wise use of marine resources. Stewardship will be encouraged through recognition of, and opportunities for, communities and industries that take responsibility for marine management in their area.
- Indigenous communities will be supported to take an active part in marine resource use and management.

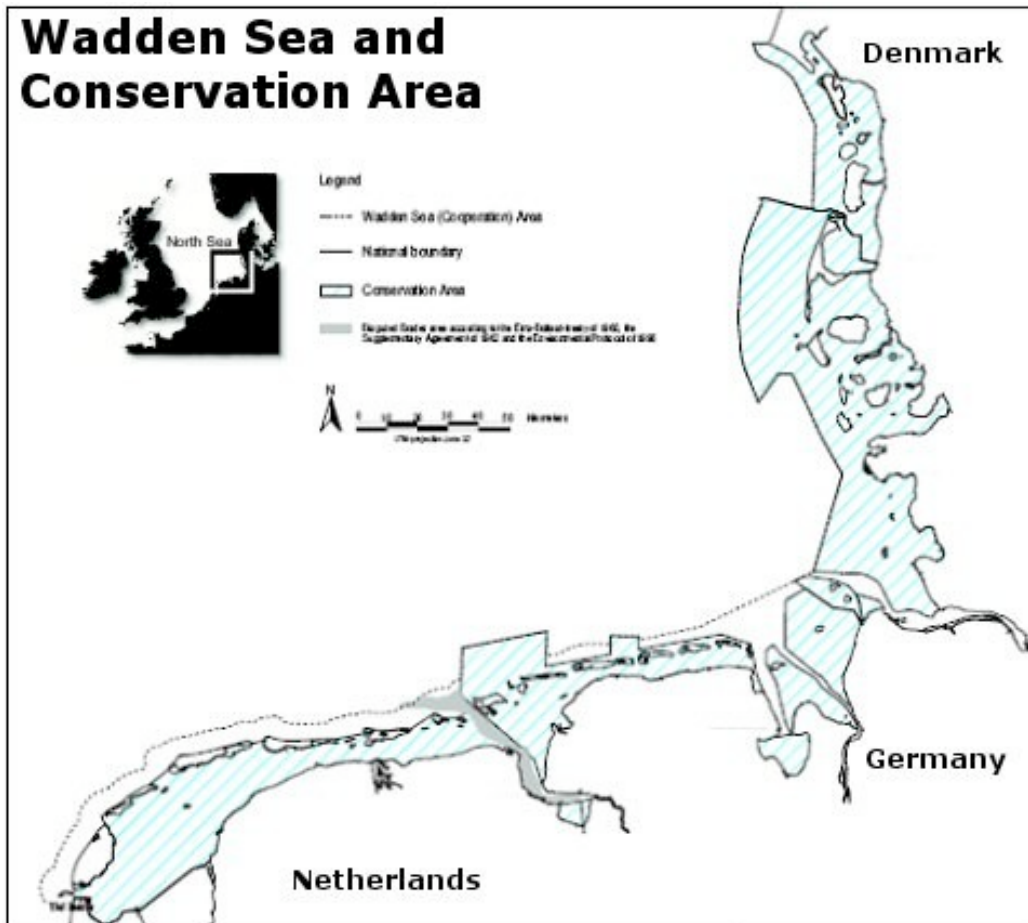
Benefits have already been seen in the increase of the government's capacity to collaborate and engage multiple stakeholders in the process.

4. Trilateral Wadden Sea Cooperation Area

The Trilateral Wadden Sea Cooperation provides a unique example of a complex trans-boundary protected area management arrangement that has stood the test of time. In the Wadden Sea region the governments of the Netherlands, Germany and Denmark are working together towards the protection and conservation of the entire Wadden Sea. This initiative is organized through the Common Wadden Sea Secretariat. The trilateral Wadden Sea Plan, adopted in 1997, focuses on a healthy environment, diversity of habitats and species, sustainable use, integrated management, coastal protection and informing and involving the local population (Enemark, 2005).

[Unless otherwise noted the following is adapted from Wadden Sea Secretariat online resources (CWSS, undated).]

Map A4: Wadden Sea Cooperation area map. Source: Wadden Sea Forum (2008).



- **Size/scale**

Wadden Sea area covers approximately 10,000 square kilometres along the coasts of the Netherlands, Germany and Denmark, and is the largest wetland found in the European Union. The geographical range of the Trilateral Wadden Sea Cooperation Area is:

- the area seaward of the main dike, or where the main dike is absent, the spring-high-tide-water line, and in the rivers, the brackish-water limit,
- an offshore zone 3 nautical miles from the baseline,
- the corresponding inland areas to the designated Ramsar and/or EC Bird Directive areas, and
- the islands.

The trilateral conservation area is situated within the Wadden Sea Area, and consists of:

- in The Netherlands, the areas under the Wadden Sea Memorandum including the Dollard,
- in Germany, the Wadden Sea national parks and protected areas under the existing *Nature Conservation Act* seaward of the main dike and the brackish water limit including the Dollard, and
- in Denmark, the Wildlife and Nature Reserve Wadden Sea (source: Wadden Sea Secretariat, 1997).

- **Administration and legislation**

In 1987, the Common Wadden Sea Secretariat (CWSS) was established as the secretariat for the trilateral management scheme. The supervision of the CWSS is provided jointly by three representatives, one from each of the responsible national ministries. There are five staff members as well as a project staff member.

The duties of the CWSS are:

- To provide assistance with regard to trilateral conferences, standing bodies and working groups,
- To collect and disseminate information on conservation measures,
- To provide assistance with regard to trilateral meetings on practical, management in the field of nature conservation,
- To collect and communicate information on activities that may impact the natural environment of the Wadden Sea,
- To promote and review scientific research projects,
- To support scientific symposia,
- To prepare the annual work programme and budgets and reports, and
- To make suggestions for a coordinated approach by the parties in international forums.

At the regional level the Inter-Regional Wadden Sea Cooperation (representatives of regional authorities of the six Wadden Sea Regions) was established in order to strengthen joint efforts concerning the protection and sustainable use of the International Wadden Sea Area at the regional level.

- **Plan production**

In October 1997 a Trilateral Wadden Sea Plan was adopted. The planning document was developed with the participation of authorities and interest groups, and was prepared with financial support from the European Commission (Wadden Sea Secretariat, 1997).

- **Timeframe**

Since 1978, The Netherlands, Denmark and Germany have been working together on the protection and conservation of the Wadden Sea. Collaboration covers management, monitoring and research, as well as political matters. In 1982, a Joint Declaration on the Protection of the Wadden Sea was agreed upon. Within this document the involved countries declared their intention to coordinate their activities and measures in order to implement a number of international legal instruments for the protection of the Wadden Sea.

In 1997, the Trilateral Wadden Sea Plan was adopted (Merkel, 1997).

- **Goals/objectives**

Common Management Principles:

- Principle of Careful Decision Making
- Principle of Avoidance
- Precautionary Principle
- Principle of Translocation
- Principle of Compensation
- Principle of Restoration
- Principle of Best Available Techniques
- Principle of Best Environmental Practice

The shared vision:

- A healthy environment which maintains the diversity of habitats and species, its ecological integrity and resilience as a global responsibility,
- Sustainable use,

- Maintenance and enhancement of values of ecological, economic, historic-cultural, social and coastal protection character, providing aspirations and enjoyment for the inhabitants and users,
- Integrated management of human activities which takes into account the socio-economic and ecological relationship between the Wadden Sea Area and the adjacent areas, and
- An informed, involved and committed community (source Wadden Sea Secretariat, 1997).

- **Adaptive management**

Wadden Sea Conferences at the ministerial level have been held regularly since 1978. It is at these conferences that much of the decision-making occurs.

During the first decade of the trilateral Wadden Sea Cooperation the emphasis was on the protection of birds and seals. At the 6th Governmental Wadden Sea Conference in 1991, a whole range of human activities in the Wadden Sea was addressed. Three years later, at the Leeuwarden Conference, the regulation of human use was embedded in a system of ecological targets for all typical Wadden Sea habitats. A 2007 independent evaluation report has helped to shape the direction in which the cooperation will be moving in the future.

- **Interests and uses**

Interest groups include a complex array of users from The Netherlands, Denmark and Germany. The dominant human activities are trade, service, industry, harbours, fisheries, agriculture, recreation and tourism (Moser, 2007).

In 2002 an independent platform, the Wadden Sea Forum, was established. It is an independent platform of stakeholders from the Wadden Sea Region. The forum consists of representatives of Agriculture, Energy, Fisheries, Industry and Harbour, Nature Protection, Tourism, as well as local and regional governments. It was established in order to give the Wadden Sea Region stakeholders a better opportunity to present their views on the future of the Region (De Jong, 2005).

- **Community and stakeholder involvement**

Formation of the plan involved comprehensive stakeholder involvement. Stakeholders have participated through the International Wadden Sea Scientific Symposium and the Trilateral Governmental Conferences. The starting point of a new phase of the

Cooperation occurred in 1997 with a focus on integration of nature conservation and human use. The plan states, “the active involvement of all stakeholders in this process is one of the major challenges for the years to come. Our efforts to protect and develop the area in a sustainable way can only succeed if all those who work and live in the area, are committed to this objective” (Wadden Sea Secretariat, 1997).

- **Science and information**

The Cooperation has created an extensive network of scientists who have helped to develop the management plan and create a wealth of background documentation.

- **Zoning and MPAs**

Almost the entire Wadden Sea inshore area is comprehensively zoned and much of it focuses on the protection of sea life. Protection occurs under the European Union’s Natura 2000 network as well as international designations such as Ramsar Site, Particularly Sensitive Sea Areas designations, and the designation of the Wadden Sea area as a UNESCO Biosphere Reserve.

The zoning system involves both temporal (areas closed at certain times of the year, or for different years) and spatial zoning. Due to the inter-jurisdictional nature of the planning area, the zoning regime is different within each country, and details are not readily available to the public.

- **Monitoring and enforcement**

A Trilateral Monitoring and Assessment Program has been established and covers the entire Wadden Sea area. The program takes into consideration everything from population development, to changes in landscape and geomorphology. The Trilateral Monitoring and Assessment Program provides a framework for the scientific assessment of the status and development of the Wadden Sea ecosystem and to assess the status of implementation of the trilateral targets of the Wadden Sea Plan.

Objectives of the Trilateral Monitoring and Assessment Program are:

- To provide a scientific assessment of the status and development of the Wadden Sea ecosystem, and
- To assess the status of implementation of the trilateral Targets of the Wadden Sea Plan.

- **Benefits of the plan**

The Cooperation has pioneered a world-class model for the protection and management of a trans-boundary ecological system of international importance. Benefits include increased education of user groups and collaboration between nations. Documented conservation benefits are also emerging. The harbour seal count in 2008 was the highest number ever counted in the Wadden Sea during the moult, indicating that the population is recovered and growing.

Other benefits include:

- The trilateral Wadden Sea Plan allowed the three national governments to develop common principles, targets and work programs and provided a strategic focus for the management of the area,
- The seal population of the Wadden Sea is protected and managed by the Seal Management Plan; the plan is revised regularly and provides a model for species management and monitoring,
- The Cooperation has created opportunities for each country to build on best practices of the others, and has provided moral pressure when one country takes a weaker approach than the others,
- The Cooperation has created an extensive network of scientists, administrators and stakeholders who have added value by sharing ideas through publications, workshops, and conferences, and
- The Cooperation has enabled common approaches to be followed to deal with unforeseen events related to wildlife population health.

5. The Eastern Scotian Shelf Integrated Management Initiative

The Eastern Scotian Shelf Integrated Management (ESSIM) Initiative is a collaborative ocean management and planning process being led and facilitated by Fisheries and Oceans Canada (DFO) under Canada's *Oceans Act*. It was announced in 1998 by DFO and was the first IM initiative undertaken under the *Ocean's Act*.

[Unless otherwise noted the following is adapted from the Eastern Scotian Shelf Integrated Management Plan (DFO, 2008b).]

Map A5: Eastern Scotian Shelf Integrated Management Plan area. Source: DFO (2006).



- **Size/scale**

The plan area covers approximately 325,000 square kilometres of ocean over the Eastern Scotian Shelf, with the initial focus restricted to the offshore area.

- **Administration and legislation**

There are three main components to the administration of the ESSIM initiative, they are:

- **The ESSIM Forum** provides an inclusive assembly for all all stakeholders and interested individuals to participate in the collaborative planning process. It serves as a network for multi-stakeholder communications, and provides input into the ESSIM Initiative.

- **The Stakeholder Advisory Council** is broadly representative of ocean sectors, communities of interest and stakeholders. It works in partnership with the ESSIM Planning Office and works collaboratively with the various stakeholder groups as well as the intergovernmental Regional Committee on Ocean Management.
- **The Planning Office** is made up of the Oceans and Coastal Management Division of DFO Maritimes Region. The planning office works in cooperation with the Stakeholder Advisory Council and the government sector structure providing coordination for development and implementation of the Plan.

The government sector structure consists of:

- **The Regional Committee on Ocean Management** is the senior executive level forum for federal and provincial departments and agencies with ocean-related programs. It provides coordination at the intergovernmental and interdepartmental levels.
- **The Federal-Provincial ESSIM Working Group** is an intergovernmental forum made up of representatives of over 20 ocean-related federal and provincial departments. It focuses on policy, management, operations and regulatory coordination for the ESSIM Initiative.

- **Plan production**

The Plan was developed through a collaborative process involving all interested and affected government departments and ocean stakeholders. The Stakeholder Advisory Council completed a draft of the management plan, with input from interested parties. This was then publicly distributed for feedback. It then received approval from all levels of government and the various stakeholder associations.

- **Timeframe**

The ESSIM initiative was announced in 1998. Workshops and working groups were established soon thereafter. In 2007-2008 the ESSIM Ocean Management Plan was released as the first integrated management plan under the *Ocean's Act* with the endorsement from regional stakeholders and the federal and provincial government.

- **Goals/objectives**

The three overarching goals of the ESSIM Initiative are:

- Collaborative governance and integrated management,
- Sustainable human use, and
- Healthy ecosystems

- **Adaptive management**

The plan will undergo a comprehensive review every five years. This time period corresponds to the short-to-medium-term timelines for the majority of management strategies contained in the plan. The 5-year review will cover all aspects of the plan and will draw on information and findings obtained through the performance evaluation and reporting process, as well as assessing emerging management needs and priorities.

Key evaluation mechanisms include:

- A biennial progress report describing progress and achievements,
- A practical set of indicators for measuring and describing progress against objectives and strategies,
- Direct stakeholder participation in evaluation and reporting through the Stakeholder Advisory Council, Regional Committee on Ocean Management, and biennial Forum Workshops,
- Use of external specialists or reviewers, and
- Interviews, audits or questionnaires.

- **Interests and uses**

The ESSIM planning process involves a broad range of interests, including government, aboriginal groups, ocean industry and resource users, environmental conservation groups, coastal communities, and university researchers.

First Nations and Aboriginal communities are involved in the governance, stewardship and use of ocean resources, and there is a strong commitment to collaboration with all affected Aboriginal organizations, including bodies established under land claims and other relevant agreements.

- **Community and stakeholder involvement**

The aim of the ESSIM Initiative is to have an effective, collaborative process that provides integrated and adaptive management plans, strategies and actions for ecosystem, social, economic, and institutional sustainability. Ocean management plans and decisions are based on the use of shared information where those with the decision-making authority and those affected by the decision jointly seek outcomes that meet the needs and interests of all parties to the greatest possible degree.

An independent study found that within the ESSIM planning process there are sufficient engagement mechanisms in which stakeholders can participate to influence process

outcomes and that overall the Planning Office coordinated and ran the process well. (Hedley, 2006).

- **Science and information**

A substantial amount of scientific research and assessment work has been undertaken by DFO in support of the Eastern Scotian Shelf integrated management process. The plan also recognizes the complexities involved with ecosystem-based management and the continued need for scientific research and improved understanding.

- **Zoning and MPAs**

The ESSIM area encompasses the Gully marine protected area, which lies about 200 kilometres offshore. In the future, additional MPAs and ecologically and biologically significant areas may be established on the Scotian Shelf. The establishment of a network of marine protected areas is also discussed in the plan.

- **Monitoring and enforcement**

The preferred means of obtaining adherence to the plan is through the use of voluntary compliance approaches. In addition, surveillance, monitoring and enforcement of specific measures contained in the plan can be undertaken by relevant regulatory authorities under their respective legislation and regulations.

- **Benefits of the plan**

A key benefit of this plan is the cohesiveness of the stakeholder bodies that have participated in the planning process, and that have worked together to create a mutually beneficial plan.

Other anticipated benefits of the Plan are:

- The environment will be protected using the precautionary approach,
- Communities, persons, and interests affected by marine resource or activity management will have an opportunity to participate in the formulation of ocean management decisions,
- All interested and affected parties can be engaged in the open, inclusive and transparent planning, advisory and decision-making process,
- Planning processes will respond to changing environmental, social, economic and institutional conditions, and take into account new information and knowledge,
- Ongoing monitoring and regular review of management plans and actions will be used to measure and evaluate progress on management objectives,
- The plan is based on shared information where those with the decision-making authority and those affected by the sustainable use and management of ocean

resources will safeguard ecological processes, biological diversity, living marine resources and their habitats for present and future generations,

- The management of human activities should make every effort to ensure that the integrity of ecosystem components, functions and properties are maintained and/or restored at appropriate temporal and spatial scales,
- Ocean ecosystems and resources will be managed as a natural life-support system to sustain and enhance it for generations to come.

Marine management plans explored in less detail:

6. Master Plan for the Belgian Part of the North Sea.

Belgium's marine plan entitled. Master Plan for the Belgian Part of the North Sea, acts as an overarching framework for a multi-use marine planning system. Belgium is one of the first European countries to implement a multi-use planning system, and phases 1 and 2 of the master plan have been successfully implemented and are now operational (Douvere, 2007c).

Marine protected areas, once established, will cover 7% of the Belgium North Sea as part of the EU Natura Network (Douvere, 2007c).

The scientific support for marine planning in the Belgium part of the North Sea is carried out by the North Sea Research Programme of the Belgian Science Policy. It provides and develops scientific expertise related to the North Sea ecosystems to offer the necessary scientific support for drawing up and carrying out North Sea related policies (Belgium Science Policy, 2007)

The creation of the master plan was driven by the intensely exploited nature of the region's marine space, and the plan incorporates provisions for the sustainable management of human activities at sea. Stakeholder involvement plays a central role in the planning and management measures for human activities, which encourages "buy in" to the overall process.

7. Galapagos Islands

[Unless otherwise noted the following is adapted from UNEP (2003)].

The first management plan for Galapagos was not implemented and went through a series of unsuccessful approvals and revisions. It was initially approved in 1974, was revised in 1984 and approved again in 1992. These initial attempts were a result of top-down management initiatives that did not take into account the full range of users and uses of the region.

In 1997 the plan was revised by the Ecuadorian Institute of Forests and Nature (Instituto Ecuatoriano Forestal y Areas naturales) and staff of the Charles Darwin Research Station. The 1997 plan established participatory and adaptive management mechanisms, defined human uses and responsibilities for reserve management, and set regulations and a system of zoning. This version served as a basis for the final Management Plan for the Marine Resources Reserve.

Six land use-zones were established: Absolutely Protected, Primitive, Special Use, Extensive Visitor, Intensive Visitor and Recreational (Developed). Activities permitted but regulated include fishing, tourism, scientific research, conservation, boating and military manoeuvres. Multiple use zones consist mainly of the area of deep water that is located inside the baseline; the limited use zones comprise the coastal waters that surround each island and other shallow waters.

The Charles Darwin Research Station advises the National Park Service on protective programmes for the biota, tourism policies and environmental education programs. Plan administration is the responsibility of the Galápagos National Park Service, which is given the legal authority to patrol the marine areas against illegal fishing.

A Participatory Management Board is the forum for users and stakeholders to encourage effective participation and responsible management. It is composed of representatives of the artisanal fishing sector, the Galápagos Chamber of Tourism, the Charles Darwin Research Station, and the National Park.

8. New Zealand – Regional Coastal Plans

[Unless otherwise noted the following is adapted from New Zealand Government (2007)].

Regional Coastal Plans are plans prepared by regional councils and unitary authorities for the coastal marine area of a region. The *Resource Management Act* of 1991 specifies that all regional councils are required to prepare a Regional Coastal Plan. To ensure consistency and integration of management of the coastal environment, Regional Coastal Plans must adhere to the New Zealand Coastal Policy Statement. The Department of Conservation assists councils when they are creating Regional Coastal

Plans by providing relevant information before the public process starts. The management plans, and any changes to them, must be approved by the Minister of Conservation.

A public consultation process is required by the *Resource Management Act* of 1991. The Department of Conservation participates in the public process by making submissions, attending pre-hearing meetings and, where necessary, giving evidence at hearings.

Regional Coastal Plans aim to achieve the sustainable management of the coastal environment. The plans include objectives, policies and rules that govern what activities the councils will allow, control or prohibit in the coastal environment. The plans are a tool used to manage effects from the use or development of the coastal marine area.

Restricted Coastal Activities are controlled through the Regional Coastal Plan and may be categorized as discretionary or non-complying. Examples of activities that may give rise to Restricted Coastal Activities are reclamations, impoundment, dredging and dumping, exclusive occupation, introduction of exotic plants and discharges of human sewage to the coastal marine area.

As of April 2007, 14 Regional Coastal Plans had been approved by the Minister of Conservation and were operative. Some councils are revising their plans and are preparing 2nd generation plans.

The Waikato Regional Coastal Plan was adopted by the regional council for the Waikato region in the North Island of New Zealand in July 2004 and modified a number of times before 2007. The regional council for the Waikato Department of the Environment formally recognizes and acknowledges that the physical, spiritual, cultural, social and economic well-being of the indigenous people is dependent upon the well-being of their coastal resources and the areas covered by the coastal plan. The development of the plan requires joint commitment and responsibility by Tangata Whenua (Maori-people of the land), local authorities, and other user groups and also recognises the importance of the involvement of Tangata Whenua in the on-going development of the plan (Environment Waikato, 2007).

9. Fiji Locally Managed Marine Area

[Unless otherwise noted the following is adapted from Veitayaki (2003)].

Locally Managed Marine Areas are utilised in areas of Asia and the Pacific and consist of an area of nearshore waters actively being managed by local communities or resource-owning groups. They are characterized by local ownership and some form of local control over the area and its resources.

Fiji Locally Managed Marine Areas develop community based management plans for fishing areas by enabling local communities to decide on management actions and monitor the effectiveness of the management plan. A goal this type of management area is to enable community members to have ownership of the management plan and plan implementation.

The objectives of ecological and socioeconomic health are consistent with national policies for inshore fisheries development. The Fiji government has devolved some power to local leaders and their communities, which has led to transfer of ownership of traditional fishing areas to the traditional holders of the fishing rights.

Modern science is an important part of the Fiji Locally Managed Marine Areas approach, and is used to demonstrate the effects of traditional resource management practices. Using simple biological, social, and economic monitoring methods, the villagers are collecting data on resources and habitat recovery and the associated social and economic improvements in living conditions. The success of community-based conservation in different parts of Fiji has resulted in long-term support from the communities.

The government has set up a new conservation unit and has formalised its support for the Fiji Locally Managed Marine Areas method of involving local community units in the sustainable use of their marine resources.

Other marine planning initiatives:

Examples of other marine planning initiatives that were not investigated in this report are listed below. This list is by no means exhaustive.

- Bering Sea Ecosystem Program (United States)
- Integrated Management of the Humboldt Current Large Marine Ecosystem (Chile)
- Planning Group on the North Sea Pilot Project (Europe)
- Irish Sea Pilot Project (United Kingdom)
- Strategic Action Plan for the Rehabilitation and Protection of the Black Sea
- Benguela Current Large Marine Ecosystem Program (South Africa)
- South West Indian Ocean Fisheries Project
- National policy for the coastal Fringe (Chile)
- Marine and coastal Environment Management Project (Tanzania)
- Coastal Habitats and resource Management (CHARM) Project (Thailand)
- Bohol Marine Triangle (Philippines)
- Thau Lagoon Integrated Management Project GITHAU (France)
- Integrated Coastal Zone Management Project in the Oder/Odra estuary Project (Germany)
- Xiamen ICM project (China)

Appendix B: Questionnaire

The following is a copy of the online questionnaire

Welcome to Simon Fraser University's survey on marine planning on the Pacific coast.

Thank you for taking the time to complete this questionnaire. Your participation will ensure that your views are included in this aspect of the marine planning discussion in British Columbia. The information you provide will help us to understand how you view marine planning in British Columbia, and to what extent you feel marine planning will be beneficial.

Consent statement

By filling out this questionnaire, you are consenting to participate. Your participation in this survey is voluntary, and you may choose not to respond to any question or to terminate the questionnaire at any time. Your identity will be kept confidential to the extent permitted by law, and information will be collected and stored on a secure website. We have not contacted your employer or agency about your participation in this study.

In any reports or publications arising from this research your responses will be analysed and reported in the aggregate only and your identity will not be disclosed.

For questions or research results, please contact Megan Dickinson, graduate student, School of Resource and Environmental Management (mdickins@sfu.ca), or Murray Rutherford, Assistant Professor, School of Resource and Environmental Management, Simon Fraser University (mbr@sfu.ca or 778-782-4690). If you have any concerns or complaints please contact Dr. Hal Weinberg, Office of Research Ethics at 778-782-3447 or hal_weinberg@sfu.ca.

CONTINUE	WITHDRAW
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Marine Planning in British Columbia

- **Canada's Oceans Act**

Canada's *Oceans Act* was passed in 1997. The *Oceans Act* recognises the importance of sustainable development, the precautionary approach and integrated management. The lead ministry for development and implementation of the *Oceans Act* is Fisheries and Oceans Canada (DFO).

- **The Pacific North Coast Integrated Management Area**

The Pacific North Coast Integrated Management Area (PNCIMA) is one of several Large Ocean Management Areas (LOMA's) created by Fisheries and Oceans Canada. The PNCIMA includes the Pacific coast of British Columbia from the Canada-Alaska border in the north to Brooks Peninsula on NW Vancouver Island and Quadra Island and Bute Inlet in the south; from the outer limit of the continental slope in the west to the coastal watersheds in the east (See PNCIMA map on the following page).

Fisheries and Oceans Canada has started laying the foundation for the PNCIMA process. The planning process to this point has centred on collecting baseline and background data, and there is more work to be done to finalise the governance structure and stakeholder engagement strategy.

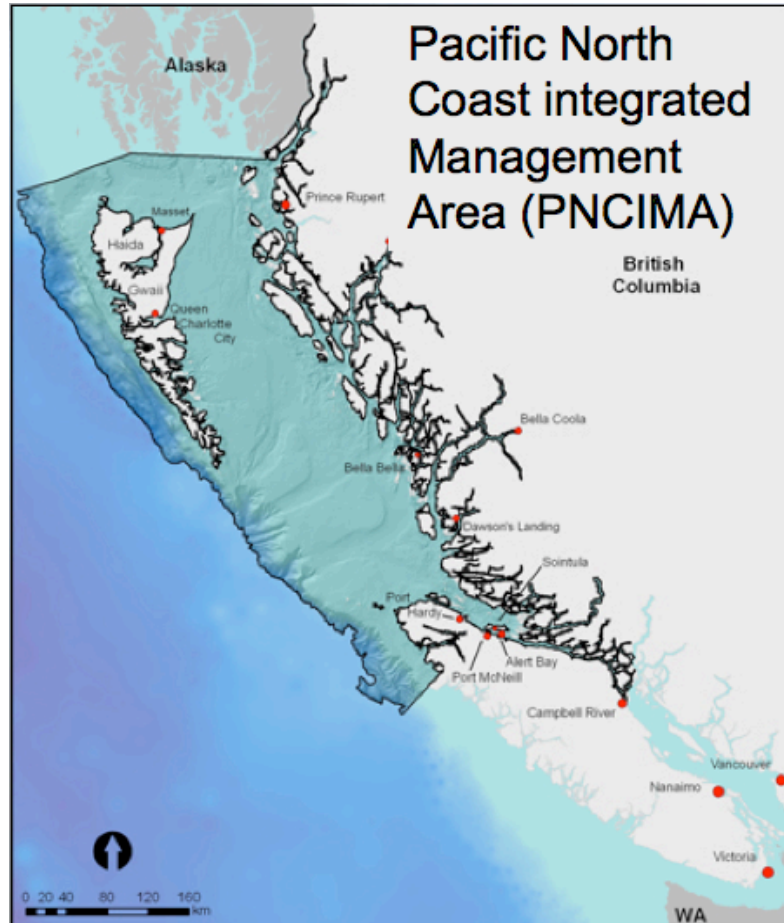
- **Marine Planning**

Our research focuses on marine planning within the PNCIMA boundary. Marine planning is a process of analysing and allocating parts of three-dimensional marine spaces to specific uses, to achieve ecological, economic, and social objectives. Marine planning often produces a broad, comprehensive plan or vision for a marine region (UNESCO definition). Marine planning is being used in a variety of settings around the globe as a component of economic development and environmental planning for marine space.

- **Integrated Management**

Under Canada's *Oceans Strategy*, marine planning in British Columbia is to follow an integrated management framework. Integrated management is defined as "a commitment to planning and managing human activities in a comprehensive manner while considering all factors necessary for the conservation and sustainable use of marine resources and the shared use of ocean spaces." Canada's *Oceans Strategy* (2002, p. 11)

Map B1: Map of the Pacific North Coast Integrated Management Area.
Source DFO, (2008d).



Participant information

Personal Information

Information gathered in this section will remain confidential. This information is for use by the researcher for tracking purposes only.

Name	
Job title	
Email	
Phone number	

General information

Please indicate your affiliation (below). This is how you will be referred to in any publication or presentation. Your responses will be analysed in aggregate only (by the categories shown below) and individual responses will not be identifiable in any publication.

	Local government (Municipal or regional district)
	Industry association (fisheries, aquaculture, tourism, energy, transport, marine use, recreation)
	First Nations (planning representative)
	Environmental NGO
	Federal government
	Provincial government
	Other Please indicate your affiliation

Background questions

Please answer the following questions based on your knowledge of marine planning prior to participating in this survey.

How would you rate your knowledge of marine planning in Canada?	Excellent / good / fair / poor
How would you rate your knowledge of planning in the Pacific North Coast Integrated Management Area (PNCIMA)	Excellent / good / fair / poor
How would you rate your knowledge of the current state of the planning process in the PNCIMA?	Excellent / good / fair / poor

Section 1: Benefit Statements

Each of the following statements describes a potential benefit that has been attributed to marine planning. For each statement, please indicate how important the potential benefit described would be to your organisation, association, or government body, in comparison with the current approach to marine management in British Columbia and then indicate whether you agree that marine planning would provide this benefit in BC.

This section will allow us to assess which benefits attributed to marine planning are important to your organisation, association, or government body, and whether you feel that the suggested benefits are likely to be achieved through marine planning in British Columbia.

After each set of responses we have made space available for you to make a comment on the issue, this is completely optional.

Format Example

Marine planning will help identify inappropriate uses of sensitive marine spaces.

How important is this potential benefit to your organisation, association, or government body?				
Important <input type="checkbox"/>	Somewhat important <input type="checkbox"/>	Somewhat unimportant <input type="checkbox"/>	Unimportant <input type="checkbox"/>	Not applicable <input type="checkbox"/>

To what extent do you agree or disagree that marine planning in British Columbia would provide this benefit?					
Agree <input type="checkbox"/>	Somewhat Agree <input type="checkbox"/>	Neither agree nor disagree <input type="checkbox"/>	Somewhat disagree <input type="checkbox"/>	Disagree <input type="checkbox"/>	Not applicable <input type="checkbox"/>

<p>Comments (optional) <i>This is a comment box that appears after each statement.</i></p>

Each of the following statements is organised in the questionnaire as shown above in the format example.

1. Marine planning will help promote trust among user groups.
2. Marine planning will help identify inappropriate uses of sensitive marine spaces.
3. Marine planning will increase the predictability of operational risks for industry.
4. Marine planning will allow for early identification of potential conflicts between development and protection of important ecological areas.
5. Marine planning will help provide a framework that facilitates delivery of ecosystem-based management objectives as set out in the Federal *Oceans Strategy*.
6. Marine planning will increase the predictability of operational costs for industry.
7. Marine planning will help identify sites for Marine Protected Areas.
8. Marine planning will recognise First Nations Rights and Title in the marine environment.
9. Marine planning will help to provide a framework that facilitates delivery of sustainable development objectives in the marine environment.
10. Marine planning will help create conditions that will enable the sustainable generation of wealth for coastal communities.
11. Marine planning will develop better understanding of the marine environment.
12. Marine planning will help create a level playing field for all resource users.
13. Marine planning will link with the planning processes being established by First Nations within the PNCIMA boundary, thereby creating a more integrated marine planning process.

More information

Currently First Nations communities and groups of First Nations within the PNCIMA boundary are in the process of establishing local marine planning processes. This is occurring in three main regions: the Central Coast, North Coast, and Haida Gwaii.

14. Marine planning will help create better coordination among federal and provincial policies and management objectives.
15. Marine planning will provide industry with clearer compliance requirements.
16. Marine planning will help protect First Nations cultural and traditional uses in all relevant marine areas.
17. Marine planning will help plan for predicted increases in the number and scale of developments and users of the marine environment.
18. Marine planning will increase user groups' knowledge about the marine environment.

19. Marine planning will utilise a planning process that is more transparent to all interested or affected groups and the public.
20. Marine planning will help ensure that all interested or affected parties have input into management decisions
21. Marine planning will enable potential conflicts to be identified by industry at the planning stage of development before considerable investment has been made.
22. Marine planning will increase the public's understanding of management roles and responsibilities.
23. Marine planning will improve affected parties' understanding of the interests of other parties.
24. Marine planning will increase transparency of the decision making criteria for allocating marine space.
25. Marine planning will improve the environmental health of marine ecosystems.
26. Marine planning will lead to improved service delivery of government ocean-related programs.
27. Marine planning will increase user groups' knowledge about the marine economy.
28. Marine planning will help reduce conflicts among user groups.
29. Marine planning will help fulfil national objectives for integrated management as set out in the Federal *Oceans Act*.
30. Marine planning will assist in setting management priorities.
31. Marine planning will help to ensure that activities take place where they do not negatively impact other activities.
32. Marine planning will help ensure that management decisions are based on sound science.
33. Marine planning will help promote long-term sustainable employment within coastal communities.
34. Marine planning will provide interested parties with opportunities to participate in developing the recommendations that will come out of the planning process.
35. Marine planning will increase understanding of the cumulative impacts of human activities on the marine environment.
36. Marine planning will increase transparency of decision-making criteria for issuing licenses.
37. Marine planning will help create a common knowledge base by ensuring equal access to data for all interested parties.

- 38. Marine planning will increase information flow by requiring interaction among a wide range of interested parties.
- 39. Marine planning will reduce uncertainty for industry by identifying appropriate development and marine-use sites.

If you have any general comments please note them here:

Section 2: Marine protected area questions

1) Has your organisation, association, or government body been involved in British Columbia as a member of a marine protected area (MPA) advisory team or involved in a MPA stakeholder consultation?

Yes (If yes continue to 2)	No (skip to 5)	Don't know (skip to 5)
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2) What was the nature of the involvement?

3) How many different MPA designation processes on the Pacific coast has your organisation, association, or government body been involved in?

4) What was the approximate time commitment required from the involved party for a single MPA designation? For example: how many times did you meet as a committee and how long was each meeting.

5) At this time federal MPAs are established on a case-by-case basis, according to a process set out in the National Framework for Establishing and Managing Marine Protected Areas. There has been discussion about establishing future MPAs within the marine planning process in the PNCIMA.

Do you feel that it would be more cost effective for your organisation, association, or government body (in terms of time and money) to have all future MPA designations in the PNCIMA occur within one broader integrated management marine planning process?

Yes	No
-----	----

Comments on the issue?

Section 3: Plan development questions

Your views on the development of a marine plan in the Pacific North Coast Integrated Management Area (PNCIMA). Please indicate to what extent you agree or disagree with the following statements regarding the development of a marine plan in the PNCIMA.

1) Developing a marine plan for the PNCIMA is in the interests of my organisation, association or government body.

To what extent do you agree or disagree with this statement?					
Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree	Not applicable

2) Developing a marine plan for the PNCIMA is in the public interest.

To what extent do you agree or disagree with this statement?					
Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree	Not applicable

3) I support developing a marine plan for the PNCIMA.

To what extent do you agree or disagree with this statement?					
Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree	Not applicable

Comments on the issue?

Section 4: Industry association questions

This section of the questionnaire will allow us to understand how/if your industry has been impacted by the current planning and management regime on BC's coast.

Association information

1) In what PNCIMA marine regions are your members currently operating?

Please check the appropriate option below; you may mark more than one.

<input type="checkbox"/>	Central Coast From the northern half of Vancouver Island to the bottom of Haida Gwaii.
<input type="checkbox"/>	North Coast From the Alaskan boundary in the north to Aristazabal and Price Islands in the south.
<input type="checkbox"/>	Haida Gwaii (Queen Charlotte Islands)

Marine planning questions

2) Please indicate the degree to which you agree or disagree with the following statements about marine planning in the PNCIMA.

	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Not applicable
If a marine plan is not in place in the next 10 years, our operations or the operations of our members will be negatively affected.						
Lack of marine planning in British Columbia's marine environment creates uncertainty.						
Creation of a marine plan will reduce uncertainty.						

3) If you agree that the lack of a marine plan creates uncertainty, please indicate the degree of importance of each of the following factors in creating this uncertainty.

	Important	Somewhat important	Somewhat unimportant	Unimportant	Not applicable
Lack of transparency concerning rights of access to resources and marine space.					
Competition from increasing use and number of users in the marine environment.					
Unresolved conflict between marine use and conservation advocates.					
Lack of clarity about zoning.					
Lack of clarity about regulations on use and development.					
Other (please specify)					

Industry impact information

4) Has the lack of a marine plan in British Columbia affected your industry in the past 10 years?

Yes (go to 5)	No (skip to 9)	Not Applicable / don't know (skip to 9)
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5) Please indicate how important the following areas have been in affecting your industry.

	Important	Somewhat important	Somewhat unimportant	Unimportant	Not applicable
Legal proceedings/ appeals					
Project delays					
Area closures					
Cancelled projects					
Lobbying by conservation advocates					
Other (please specify)					

6) Are you aware of any of your members delaying or cancelling projects or activities as a result of lack of marine planning?

Yes (Go to 7)	No (Go to 8)	Not applicable/ don't know (Go to 8)
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7) What type of project or activity was delayed or cancelled, and why?

8) Please indicate whether you agree with the following statements regarding who ultimately pays the cost of the absence of a marine plan in British Columbia.

	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Not applicable
Members of your association (e.g. companies, individuals, license holders) (lower profits)						
Investment community (lower returns)						
Customers/users of industry products or services (higher prices)						
Industry employees (lower wages/ lost jobs)						
Municipal Governments (lower taxes)						
Provincial Government						
Federal Government						
Other (please specify)						

9) If your industry has not been affected by the lack of a marine plan, please explain.

(Only for those who said 'no' or 'don't know' to question 4)

Comments on the issue?

(For both those who said yes and no to question 4)

Appendix C: Questionnaire respondent affiliation list

This table lists the sectors and bodies that were contacted to participate in the survey.		
Please note: not all organisations or sectors listed below participated in the survey.		
Government	Federal	DFO
		Parks Canada
		Environment Canada
		Natural Resources Canada
		Transport Canada
	Provincial	Ministry of the Environment
		Ministry Agriculture and Lands
		Ministry of Energy, Mines and Petroleum Resources
	Regional districts	Central Coast Regional District
		Skeena - Queen Charlotte Regional District
		Regional District of Kitimat-Stikine
		Strathcona Regional district
		Mount Waddington Regional District
	First Nations planning reps	Central Coast
		North Coast
		Haida Gwaii
Environmental NGO		Living Oceans Society
		David Suzuki Foundation
		Sierra club
		The Canadian Parks and Wilderness Society
		World Wildlife Fund
Industry Associations	Energy	Petroleum Producers/services
		Energy pipeline
		Wind energy
		Renewable energies
	Tourism	Cruise ship
		Sport fishing
		General tourism
		Marine trades
	Marine Fisheries	Herring
		Salmon
		Groundfish
		Shellfish
		Crab
		Prawn
	Aquaculture	Finfish
		Shellfish
	Shipping	Carriers
		Transportation

Appendix D: Questionnaire: detailed results

Below are the detailed survey results. The survey is divided into four main sections and the results from each section are shown below. Responses are generally shown as the percentage of respondents who indicated each category.

General information

Responses by affiliation showing number of responses and response rate		
Affiliation	Number of responses	Response rate
Local government	10	20%
Industry association	18	75%
First Nations representative	4	Not available
Environmental NGO	5	100%
Federal government	6	100%
Provincial government	4	100%

Background questions

Please answer the following three questions based on your knowledge of marine planning prior to taking this survey.				
Responses are shown as the percentage of respondents who indicated each category				
	Excellent	Good	Fair	Poor
1) How would you rate your knowledge of marine planning in Canada?	20.8%	33.3%	33.3%	12.5%
2) How would you rate your knowledge of planning in the Pacific North Coast Integrated Management Area (PNCIMA)	12.5%	29.2%	31.3%	27.1%
3) How would you rate your knowledge of the current state of the planning process in PNCIMA?	8.3%	29.2%	29.2%	33.3%

Section 1: Benefit Statements

Importance rating table

This table shows responses for the percentage of respondents who indicated each importance category for each benefit statement.

Importance rating as percent				
	Important	Somewhat important	Somewhat unimportant	Unimportant
	%	%	%	%
Marine planning will develop better understanding of the marine environment	80.5	17.1	0.0	2.4
Marine planning will allow for early identification of potential conflicts between development and protection of important ecological areas	73.8	23.8	0.0	2.4
Marine planning will increase understanding of the cumulative impacts of human activities on the marine environment	78.9	18.4	2.6	0.0
Marine planning will help identify inappropriate uses of sensitive marine spaces	69.0	21.4	7.1	2.4
Marine planning will improve the environmental health of marine ecosystems	87.5	12.5	0.0	0.0
Marine planning will increase user groups' knowledge about the marine environment	63.4	36.6	0.0	0.0
Marine planning will help identify sites for Marine protected areas	63.4	26.8	4.9	4.9
Marine planning will help promote trust among user groups	54.8	45.2	0.0	0.0
Marine planning will help reduce conflicts among user groups	68.4	28.9	2.6	0.0
Marine planning will help create conditions that will enable the sustainable generation of wealth for coastal communities	67.5	27.5	5.0	0.0
Marine planning will help promote long-term sustainable employment within coastal communities	75.0	16.7	8.3	0.0
Marine planning will recognize First Nations Rights and Title in	62.2	35.1	0	2.7

Importance rating as percent				
	Important	Somewhat important	Somewhat unimportant	Unimportant
the marine environment				
Marine planning will link with the planning processes being established by First Nations within the PNCIMA boundary, thereby creating a more integrated marine planning process	55.6	41.7	2.8	0.0
Marine planning will help protect First Nations cultural and traditional uses in all relevant marine areas	60.0	37.1	0.0	2.9
Marine planning will assist in setting management priorities	68.4	26.3	2.6	2.6
Marine planning will help ensure that management decisions are based on sound science	84.2	15.8	0.0	0.0
Marine planning will utilize a planning process that is more transparent to all interested or affected groups and the public	60.0	35.0	2.5	2.5
Marine planning will help create a common knowledge base by ensuring equal access to data for all interested parties	69.4	27.8	2.8	0.0
Marine planning will help ensure that all interested or affected parties have input into management decisions	72.5	25.0	0.0	2.5
Marine planning will provide interested parties with opportunities to participate in developing the recommendations that will come out of the planning process	71.1	26.3	0.0	2.6
Marine planning will improve affected parties' understanding of the interests of other parties	61.9	35.7	2.4	0.0
Marine planning will increase information flow by requiring interaction among a wide range of interested parties	60.5	34.2	5.3	0.0
Marine planning will help create better coordination among federal and provincial policies and management objectives	76.9	23.1	0.0	0.0
Marine planning will lead to improved service delivery of government ocean-related programs	57.9	39.5	2.6	0.0
Marine planning will increase the public's understanding of government roles and responsibilities	56.1	36.6	7.3	0.0
Marine planning will help fulfil national objectives for integrated management as set out in the <i>Federal Oceans Act</i>	66.7	27.8	0.0	5.6

Importance rating as percent				
	Important	Somewhat important	Somewhat unimportant	Unimportant
Marine planning will help provide a framework that facilitates delivery of ecosystem-based management objectives as set out in the federal <i>Oceans Strategy</i>	65.0	20.0	10.0	5.0
Marine planning will increase the predictability of operational costs for industry	39.5	36.8	13.2	10.5
Marine planning will increase user groups' knowledge about the marine economy	48.6	35.1	16.2	0
Marine planning will reduce uncertainty for industry by identifying appropriate development and marine-use sites	77.8	13.9	5.6	2.8
Marine planning will help plan for predicted increases in the number and scale of developments and users of the marine environment	71.1	23.7	2.6	2.6
Marine planning will increase transparency of decision making criteria for issuing licenses	62.9	25.7	8.6	2.9
Marine planning will help create a level playing field for all resource users	63.9	27.8	5.6	2.8
Marine planning will increase transparency of the decision making criteria for allocating marine space	67.5	32.5	0.0	0.0
Marine planning will help to ensure that activities take place where they do not negatively impact other activities	76.3	18.4	5.3	0.0
Marine planning will provide industry with clearer compliance requirements	79.3	18.9	8.1	2.7
Marine planning will enable potential conflicts to be identified by industry at the planning stage of development before considerable investment has been made	76.9	17.9	2.6	2.6
Marine planning will help to provide a framework that facilitates delivery of sustainable development objectives in the marine environment	70.7	22	4.9	2.4
Marine planning will increase the predictability of operational risks for industry	57.5	32.5	5.0	5.0

Agreement Table:

This table displays the percentage of respondents who indicated each agreement category for each benefit statement.

Agreement rating as percentages					
	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree
	%	%	%	%	%
Marine planning will develop better understanding of the marine environment	41.5	43.9	12.2	0.0	2.4
Marine planning will allow for early identification of potential conflicts between development and protection of important ecological areas	58.5	34.1	4.9	0.0	2.4
Marine planning will increase understanding of the cumulative impacts of human activities on the marine environment	34.2	39.5	10.5	10.5	5.3
Marine planning will help identify inappropriate uses of sensitive marine spaces (GHK, 2004).	53.7	26.8	7.3	4.9	7.3
Marine planning will improve the environmental health of marine ecosystems	19.5	41.5	22.0	14.6	2.4
Marine planning will increase user groups' knowledge about the marine environment	35.7	47.6	7.1	4.8	4.8
Marine planning will help identify sites for Marine protected areas	57.5	32.5	5.0	2.5	2.5
Marine planning will help promote trust among user groups	26.2	57.1	7.1	4.8	4.8
Marine planning will help reduce conflicts among user groups	10.3	56.4	15.4	7.7	10.3
Marine planning will help create conditions that will enable the sustainable generation of wealth for coastal communities	23.8	40.5	23.8	4.8	7.1
Marine planning will help promote long-term sustainable employment within coastal communities	13.5	37.8	37.8	8.1	2.7
Marine planning will recognize First Nations Rights and Title in the marine environment	28.2	43.6	20.5	5.1	2.6

Agreement rating as percentages					
	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree
Marine planning will link with the planning processes being established by First Nations within the PNCIMA boundary, thereby creating a more integrated marine planning process	29.7	37.8	27.0	2.7	2.7
Marine planning will help protect First Nations cultural and traditional uses in all relevant marine areas	18.9	51.4	16.2	10.8	2.7
Marine planning will assist in setting management priorities	38.5	38.5	12.8	2.6	7.7
Marine planning will help ensure that management decisions are based on sound science	26.3	36.8	15.8	10.5	10.5
Marine planning will utilize a planning process that is more transparent to all interested or affected groups and the public	26.8	34.1	29.3	0.0	9.8
Marine planning will help create a common knowledge base by ensuring equal access to data for all interested parties	34.2	31.6	10.5	13.2	10.5
Marine planning will help ensure that all interested or affected parties have input into management decisions	17.1	48.8	19.5	12.2	2.4
Marine planning will provide interested parties with opportunities to participate in developing the recommendations that will come out of the planning process	41.0	41.0	7.7	5.1	5.1
Marine planning will improve affected parties' understanding of the interests of other parties	26.2	57.1	14.3	2.4	0.0
Marine planning will increase information flow by requiring interaction among a wide range of interested parties	38.5	41.0	15.4	2.6	2.6
Marine planning will help create better coordination among federal and provincial policies and management objectives	22.5	45.0	22.5	2.5	7.5
Marine planning will lead to improved service delivery of government ocean-related programs	17.5	32.5	37.5	7.5	5.0

Agreement rating as percentages					
	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree
Marine planning will increase the public's understanding of government roles and responsibilities	23.8	26.2	33.3	14.3	2.4
Marine planning will help fulfil national objectives for integrated management as set out in the Federal <i>Oceans Act</i>	34.2	44.7	18.4	2.6	0.0
Marine planning will help provide a framework that facilitates delivery of ecosystem-based management objectives as set out in the Federal <i>Oceans Strategy</i>	31.7	46.3	14.6	4.9	2.4
Marine planning will increase the predictability of operational costs for industry	22.5	35.0	25.0	10.0	7.5
Marine planning will increase user groups' knowledge about the marine economy	21.1	50.0	23.7	2.6	2.6
Marine planning will reduce uncertainty for industry by identifying appropriate development and marine-use sites	35.1	37.8	18.9	5.4	2.7
Marine planning will help plan for predicted increases in the number and scale of developments and users of the marine environment	28.2	38.5	25.6	5.1	2.6
Marine planning will increase transparency of decision making criteria for issuing licenses	19.4	27.8	30.6	11.1	11.1
Marine planning will help create a level playing field for all resource users	21.1	34.2	18.4	10.5	15.8
Marine planning will increase transparency of the decision making criteria for allocating marine space	22.0	51.2	17.1	4.9	4.9
Marine planning will help to ensure that activities take place where they do not negatively impact other activities	17.9	51.3	15.4	10.3	5.1
Marine planning will provide industry with clearer compliance requirements	10.8	32.4	29.7	21.6	5.4
Marine planning will enable potential conflicts to be identified by industry at the planning stage of development before considerable investment has	30.0	47.5	15.0	5.0	2.5

Agreement rating as percentages					
	Agree	Somewhat Agree	Neither agree nor disagree	Somewhat disagree	Disagree
been made					
Marine planning will help to provide a framework that facilitates delivery of sustainable development objectives in the marine environment	28.6	47.6	14.3	2.4	7.1
Marine planning will increase the predictability of operational risks for industry	35.0	42.5	7.5	12.5	2.5

Section 2: Marine protected area questions

1) Has your organisation, association, or government body been involved in British Columbia as a member of a marine protected area (MPA) Advisory Team or involved in a MPA stakeholder consultation?

Yes	No
60%	40%

2) What was the nature of the involvement?

Of the 60% of respondents indicating involvement (for question 1), the nature of the involvement is as specified below:

- *52% of respondents identified their organisation as participating as a member.*
- *30% of respondents had been consulted at some level*
- *9% respondents identified as having participated by providing data mapping capability*
- *17% of respondents noted that, though their organisation has had involvement in such processes, the respondent was not aware of the level of participation of their organisation.*

3) How many different MPA designation processes on the Pacific coast has your organisation, association, or government body been involved in?

The majority of those who responded (80%) indicated that they had been involved with two or more designation processes with both the provincial and federal governments indicating involvement in many designation processes. Several government respondents noted that MPA work makes up a considerable portion of their workload.

4) What was the approximate time commitment required from the involved party for a single MPA designation? For example: how many times did you meet as a committee and how long was each meeting.

The responses for this question were varied, with responses ranging from several hours, to consistent work for an employee over multiple years. By far the provincial and federal governments respondents reported that they have spent much time working on MPA organisation and establishment. Local government also indicated spending time on LRMP MPA designation processes. Additionally, 23% of respondents were unclear about the level of involvement of their organisation. The table below indicates the

general breakdown of responses for this section.

Question 4: how many times did you meet as a committee and how long was each meeting.	
Limited (1-4 meetings over the course of a year)	29%
Extended (extensive review, full time work, >4meetings per year)	24%
Variable (multiple processes with various timeframes)	24%

5) Do you feel that it would be more cost effective for your organisation, association, or government body (in terms of time and money) to have all future MPA designations in the PNCIMA occur within one broader Integrated Management marine planning process?

Yes	No
69.4%	30.6%

Section 3: Plan development questions

To what extent do you agree or disagree with the following three statements?

1) Developing a marine plan for the PNCIMA is in the interests of my organisation, association or government body.	
Disagree	2.6%
Somewhat disagree	0%
Neither agree nor disagree	5.3%
Somewhat Agree	28.9%
Agree	63.2%

2) Developing a marine plan for the Pacific North Coast Integrated Management Area is in the public interest.	
Disagree	0.0%
Somewhat disagree	0.0%
Neither agree nor disagree	5.3%
Somewhat Agree	28.9%
Agree	65.8%

3) I support developing a marine plan for the Pacific North Coast Integrated Management Area.	
Disagree	0.0%
Somewhat disagree	2.6%
Neither agree nor disagree	7.9%
Somewhat Agree	23.7%
Agree	65.8%

Section 4: Industry association questions

Association information

1) In what PNCIMA marine regions are your members currently operating? Please check the appropriate option below; <i>you may mark more than one.</i>	
Central Coast	68.4%
North Coast	31.6%
Haida Gwaii (Queen Charlotte Islands)	42.1%

Marine planning questions

2) Please indicate the degree to which you agree or disagree with the following statements about marine planning in the PNCIMA.					
	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree
If a marine plan is not in place in the next 10 years, our operations or the operations of our members will be negatively affected.	23.1%	0.0%	61.5%	7.7%	7.7%
Lack of marine planning in British Columbia's marine environment creates uncertainty.	23.1%	46.2%	23.1%	7.7%	0.0%
Creation of a marine plan will reduce uncertainty.	23.1%	38.5%	38.5%	0.0%	0.0%

3) If you agree that the lack of a marine plan creates uncertainty, please indicate the degree of importance of each of the following factors in creating this uncertainty.				
	Important	Somewhat important	Somewhat unimportant	Unimportant
Lack of transparency concerning rights of access to resources and marine space.	55.6%	44.4%	0.0%	0.0%
Competition from increasing use and number of users in the marine environment.	75%	25%	0.0%	0.0%
Unresolved conflict between marine use and conservation advocates.	77.8%	22.2%	0.0%	0.0%
Lack of clarity about zoning.	77.8%	22.2%	0.0%	0.0%
Lack of clarity about regulations on use and development.	77.8%	22.2%	0.0%	0.0%
Other	Enforcement			

Industry impact information

4) Has the lack of a marine plan in British Columbia affected your industry in the past 10 years?

Yes	No
35.7%	64.3%

5) Please indicate how important the following areas have been in affecting your industry.				
	Important	Somewhat important	Somewhat unimportant	Unimportant
Legal proceedings/ appeals	50%	50%	0%	0%
Project delays	100%	0%	0%	0%
Area closures	50%	50%	0%	0%
Cancelled projects	33.3%	33.3%	0%	33.3%
Lobbying by conservation advocates	25%	25%	25%	25%
Other (please specify)	Offshore moratorium			

6) Are you aware of any of your members delaying or cancelling projects or activities as a result of lack of marine planning?

Yes	No
80%	20%

7) What type of project or activity was delayed or cancelled, and why?

- *We have refrained from bringing industry to Canada due to poor policy and legislation.*
- *Transfer of farm tenures.*

8) Please indicate whether you agree with the following statements regarding who ultimately pays the cost of the absence of a marine plan in British Columbia.					
	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree
Members of your association (e.g. companies, individuals, license holders) (lower profits)	50%	25%	25%	0%	0%
Investment community (lower returns)	75%	25%	0%	0%	0%
Customers/users of industry products or services (higher prices)	50%	50%	0%	0%	0%
Industry employees (lower wages/ lost jobs)	50%	25%	0%	25%	0%
Municipal governments (lower taxes)	25%	25%	0%	50%	0%
Provincial government	50%	25%	0%	25%	0%
Federal government	25%	50%	0%	25%	0%
Other (please specify)	-Environment -First Nations				

9) If your industry has not been affected by the lack of a marine plan, please explain why.

- *Very few of our members operate in the PNCIMA area.*
- *We have open access at the moment and I see the plan restricting that access.*
- *Our operations are governed by federal regulation and guidelines.*
- *Limited development to date.*
- *Not at the commercial stage of development.*
- *Uncertainty in our industry is due to other factors, mainly political.*
- *Our industry is federally regulated and has a clear understanding of the applicable regulations and legislation.*

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