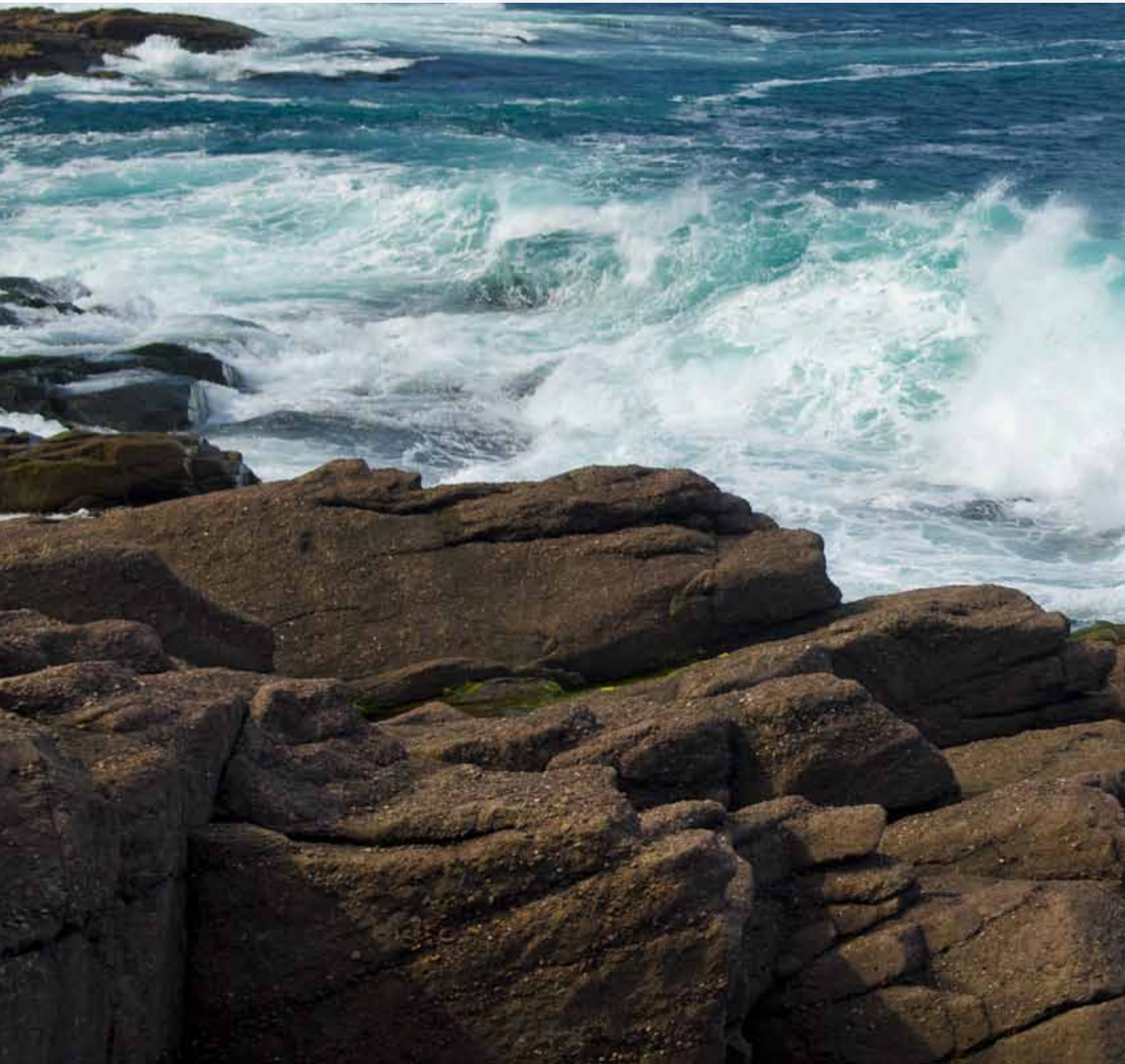
Fisheries and Oceans Canada | Pêches et Océans Canada

Placentia Bay/Grand Banks

LARGE OCEAN MANAGEMENT AREA

Integrated Management Plan (2012-2017)

Canada



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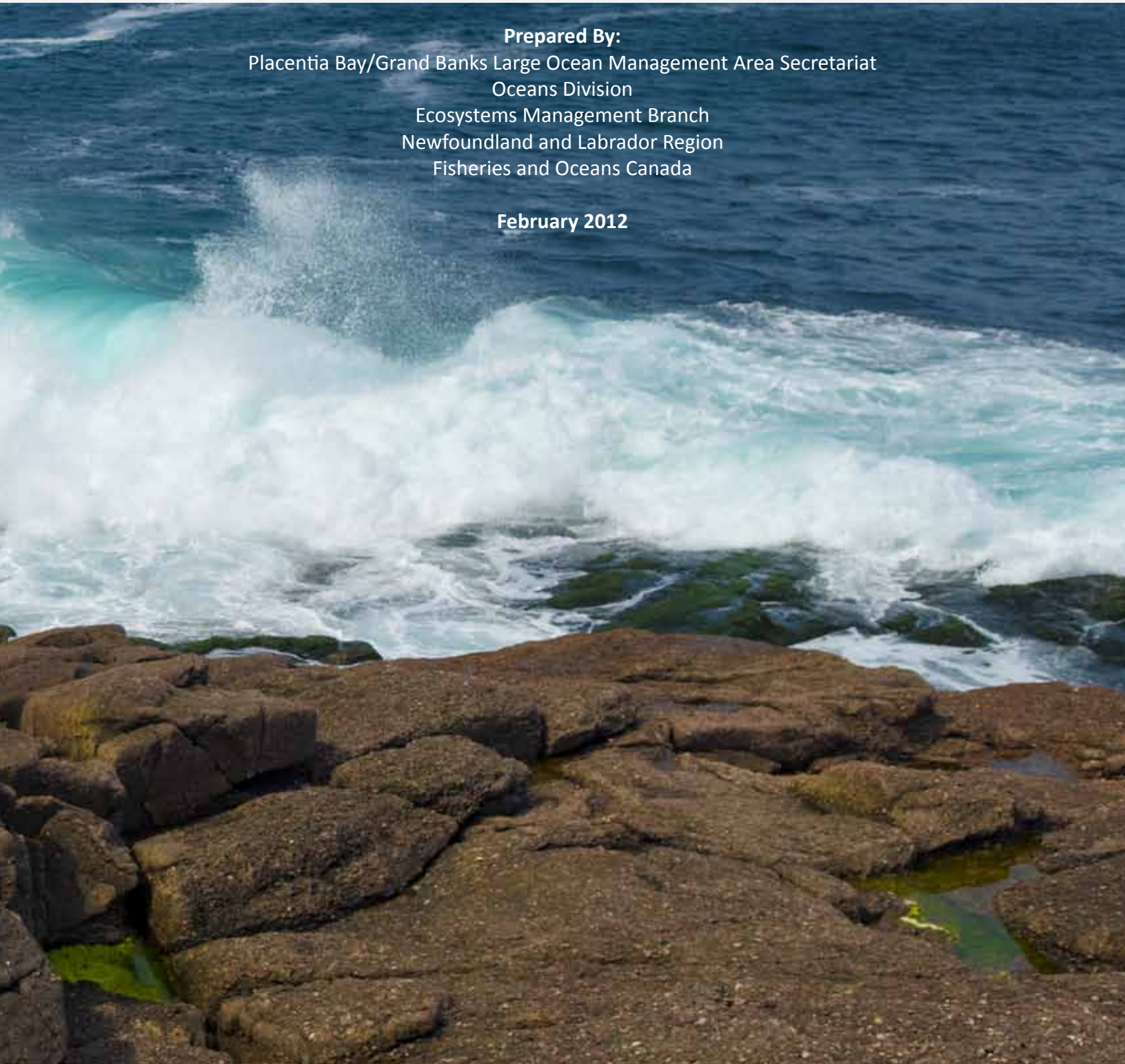

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February 2012

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FOREWORD

Under the *Oceans Act*, Fisheries and Oceans Canada leads and facilitates integrated management in the Placentia Bay/Grand Banks Large Ocean Management Area (PB/GB LOMA). This productive large marine area has supported significant commercial fisheries and coastal communities within the province over time. More recently, the LOMA has experienced an increase in the variety of human activities occurring within it (shipping, oil and gas development, aquaculture, recreation and tourism) as well as environmental and ecosystem changes. While all ocean industries occurring within the LOMA contribute to the national economy as well as the economies of coastal communities, sustaining healthy ecosystems, associated human benefits and managing human activities will continue to be challenging and complex.

Integrated management moves beyond single species/single sector management in order to look at the entire ecosystem and suite of human activities. This coordinated, collaborative and inclusive planning process provides a mechanism to address conflict between different ocean users as well as between human use and the environment.

The PB/GB LOMA Integrated Management Plan is the product of this collaborative process involving communication and engagement between a wide variety of government regulators and stakeholders represented on the PB/GB LOMA Committee. It strives to integrate objectives and prioritize actions across ecological, social, cultural, economic and institutional disciplines in support of the sustainable use of oceans resources. The Plan and the integrated management process can help to transform the way that decision-makers consider the societal tradeoffs between human use and conservation while enhancing levels of mutual trust, cooperation and stewardship among all ocean users.

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EXECUTIVE SUMMARY

The Government of Canada brought the *Oceans Act* into force on January 31, 1997. This made Canada the first country in the world to have comprehensive oceans management legislation. Canada's Oceans Strategy was subsequently released in 2002 and this policy document defined the vision, principles and objectives for the management of Canada's estuarine, coastal and marine ecosystems.

Funding needed to apply Canada's oceans management legislation and policy first became available in 2006 under the Federal initiative known as the Oceans Action Plan and continues to date under the Health of the Oceans initiative. Within the Newfoundland and Labrador Region, the Placentia Bay/Grand Banks Large Ocean Management Area (PB/GB LOMA), was one of five LOMAs identified across the country to undertake Integrated Management (IM) activities in support of Canada's oceans related legislation and policy.

The Placentia Bay/Grand Banks LOMA encompasses an area of over 500,000 km2 near and offshore of what is largely the Grand Banks portion of the Newfoundland and Labrador continental shelf. The PB/GB area was named a priority LOMA because it possesses important living and non-living marine resources, areas of high biological diversity and productivity, and increasing development and competition for ocean space and resources. Although its broad range of ecosystem components and human activities are often characteristic of localized environments, needs, and interests within the planning area, many of these may also be considered representative of broader Regional conditions and considerations.

The management of coastal and ocean use in and adjacent to the PB/GB LOMA involves a large number of federal and provincial government departments and agencies through policies, programs, services and legislation. Building on the solid foundation provided by these in the NL Region, the governance model for the LOMA includes an executive-level oversight committee (Regional Oversight Committee on Oceans Management), a director-level management committee (Canada Newfoundland and Labrador Committee on Oceans Management), a stakeholder advisory committee (PB/GB LOMA Committee) and a technical working group (Integrated Management Plan Working Group), representative of the LOMA Committee. In this, provincial, federal and aboriginal governments, as well as coastal communities, stakeholders, and other interested parties are represented at the IM table and agree to work together for the development of an Integrated Management Plan that will guide managing activities in or affecting the PB/GB LOMA.

The vision statement for the PB/GB LOMA is - ***Safe and sustainable use of healthy oceans through collaborative and effective governance***. This vision is supported by three overarching goals: 1) Collaborative and Effective Governance; 2) Sustainable Use; and 3) Healthy Ecosystems. The planning process for the PB/GB LOMA follows an objectives-based approach that progresses from conceptual goals to specific actions in order to achieve a desired outcome based on commonly set objectives and strategies.

In practical terms, the approach taken was to first describe, including status and trends where available, the ecological, social, cultural, economic and human use components of the PB/GB LOMA. Additional ecological considerations included the identification of Ecologically and Biologically Significant Areas, Ecologically Significant Species, and Depleted and Rare Species. An extensive threat assessment was also provided for the 94 associated conservation objectives resulting from this process. Additional social, cultural and economic considerations included those presented by the provincial Department of Fisheries and Aquaculture (DFA) "Issues Scan of Coastal and Ocean Areas of Newfoundland and Labrador" reports (DFA 2007; DFA 2008).

Making use of the available information, the Integrated Management Plan Working Group undertook multiple sessions over the course of two years to identify a total of 32 strategic objectives and 107 related management strategies under the three goals. As a result, the total of the Plan ultimately responds to the interests and concerns of local citizens, Aboriginal, Federal and Territorial government bodies, industry and other interested parties.

The IM Plan for the PB/GB LOMA highlights 14 priorities (Table 1) for action in the short- to medium-term (2012-2017). While these include 4 from Collaborative and Effective Governance, 5 from Sustainable Use, and 5 from Healthy Ecosystems, it is nonetheless recognized that many components of these are interconnected. For example, a key element of this plan is the coordinated dissemination of information and knowledge needed to effectively manage the use of coastal and marine areas and applies across all activities.

This IM Plan provides the general strategic direction that will be realized through development and implementation of detailed action/work plans. These will be developed cooperatively under the leadership of the organizations identified for specific action planning teams. The applicable governance bodies will continue to provide leadership and direction, and to serve as a forum to ensure that initiatives are known to all members and coordinated with other ongoing industry or sector-specific initiatives. Implementation will also require an effective and comprehensive program for performance evaluation and reporting.

Anticipated outcomes of working together on the implementation of the IM Plan for the PB/GB LOMA include identification of and greater accountability for issues of shared responsibility; increased cooperation across departments, governments and other organizations; better integrated responses to cross-cutting issues; more timely collection of information on key risks and their relationship to programs and values; and ongoing measurement of the actual effects of policies, programs and operations.

COLLABORATIVE AND EFFECTIVE GOVERNANCE	
1.	Conduct a Legislative and Regulatory Gap Analysis
2.	Enhance Communication and Awareness
3.	Identify and Address Data Needs/Gaps
4.	Mitigate and/or Prevent Conflict
SUSTAINABLE USE	
5.	Improve Coastal and Marine Infrastructure
6.	Prevent Pollution
7.	Assess Linkages, Opportunities and Values to Guide Sustainable Economic Development
8.	Foster Community Engagement
9.	Promote Education and Stewardship
HEALTHY ECOSYSTEMS	
10.	Rebuild Atlantic Cod
11.	Prevent Introduction and Distribution of Aquatic Invasive Species (AIS)
12.	Manage Habitat for Marine Species
13.	Conserve Cold-Water Corals and Sponge Reefs
14.	Conserve and Protect At Risk Species and Vulnerable Marine Habitats

Table 1. Placentia Bay/Grand Banks LOMA Integrated Management Plan Priorities

INTRODUCTION

Integrated Management (IM) is a comprehensive and collaborative approach to planning and managing human activities directed towards the achievement of conservation, sustainable development and use of coastal and marine resources. This approach strives to maintain the integrity or health of marine ecosystems while addressing user conflicts and managing potential cumulative impacts of activities within a given ocean area. Integrated management planning in the PB/GB LOMA is led and facilitated by Fisheries and Oceans Canada (DFO) under Canada's *Oceans Act*. The primary aim of this initiative is to develop and implement an Integrated Management Plan for this large marine area through a collaborative coastal and ocean planning process.

The Placentia Bay/Grand Banks Large Ocean Management Area IM Plan (hereinafter "the Plan"), is presented as a multi-year, strategic level plan for the integration of policies, programs, plans, measures and activities in or affecting the PB/GB LOMA. The Plan also provides the long-term direction for the development and implementation of action plans based upon the priorities identified for environmental, social, cultural and economic sustainability.

The Plan follows an objectives-based management framework. Starting with a clear vision for "safe and sustainable use of healthy oceans through collaborative and effective governance", the Plan aims to achieve three long-term, over-arching goals: collaborative and effective governance; sustainable use; and healthy ecosystems. These three goals provide the direction for developing underlying objectives, management strategies and corresponding actions.

The Plan represents a shift from single species or single industry management to a broader, more inclusive method of ecosystem-based management for coastal and ocean activities. Management on an ecosystem scale acknowledges that the marine environment is a dynamic and evolving system composed of interdependent species and habitats and recognizes that human activities may have cumulative impacts on the environment. The Plan focuses on the overall management of the PB/GB LOMA to maintain integral aspects of ecosystem structure and function.

The Plan has been developed through a collaborative and inclusive process involving government regulators and interested and affected stakeholders. The Oceans Governance model for the PB/GB LOMA is designed to create cohesive policies based on a common vision and a common set of principles. DFO leads the development and implementation of the Plan and acts as the facilitator for aspects of the process requiring the engagement of federal and provincial governments and stakeholders.

This collaborative IM process has allowed for the development of a Plan by the very individuals and sectors it directly impacts. The end result is a Plan that was developed through significant stakeholder input and is endorsed by legislative and regulatory authorities.

LEGISLATIVE, POLICY AND MANAGEMENT CONTEXT

LEGISLATIVE BASIS

The *Oceans Act*, adopted in 1996, illustrates the government of Canada's commitment to a comprehensive approach to the protection and development of oceans and coastal waters. The Act provides a framework for modern ocean management and calls for the Minister of Fisheries and Oceans Canada to lead and facilitate the development of a national ocean management strategy. The underlying values guiding Canada's Oceans Strategy (DFO 2002a) are set out in the Preamble to the *Oceans Act*, as follows:

> Canada holds that conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment;

> Canada promotes the understanding of oceans, ocean processes, marine resources and marine ecosystems to foster the sustainable development of the oceans and their resources;

> Canada promotes the wide application of the precautionary approach to the conservation, management and exploitation of marine resources in order to protect these resources and preserve the marine environment;

> Canada recognizes that the oceans and their resources offer significant opportunities for economic diversification and the generation of wealth for the benefit of all Canadians, and in particular for coastal communities;

> Canada promotes the integrated management of oceans and marine resources; and

> The Minister of Fisheries and Oceans, 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, is encouraging the development and implementation of a national strategy for the management of estuarine, coastal and marine ecosystems.

The legislative basis for the plan is the Oceans Act in accordance with the provisions contained within Sections 31 and 32 of Part II, Oceans Management Strategy:

Section 31, Integrated Management Plans

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

Section 32, Implementation of Integrated Management Plans

For the purposes of implementation of integrated management plans, the Minister

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

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

- may, on his or her own or jointly with another person or body or with another minister, board or agency of the Government of Canada, and taking into consideration the views of other ministers, boards and agencies of the Government of Canada, provincial and territorial governments and affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements;
  - establish advisory or management bodies and appoint or designate, as appropriate, members of those bodies;
  - recognize established advisory or management bodies; and

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

POLICY AND MANAGEMENT CONTEXT

The *Oceans Act* and Canada's Oceans Strategy affirm Fisheries and Oceans Canada's mandate as the lead federal authority for oceans management and provide the national policy context for IM. Canada's Oceans Strategy: Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada (2002b) (the Policy and Operational Framework) provides national structure and guidance for the development of regional IM and planning processes such as the PB/GB LOMA IM Plan. Provincially, the Department of Fisheries and Aquaculture's recent Coastal and Ocean Management Strategy and Policy Framework (2011) also provide long-term strategic direction on sustainable use of coastal and ocean resources in Newfoundland and Labrador.

The PB/GB LOMA IM Plan is consistent with Canada's international governance commitments, responsibilities and rights, and provides an important mechanism to respond to these on a regional basis. It also supports the national policy and governance objectives of Canada's Oceans Strategy and the Policy and Operational Framework. Further, the Plan has a role in moving forward with Canada's broader agenda for ocean prosperity and sustainability. The PB/GB LOMA has been identified as one of five priority ocean planning areas in Canada.

The management of ocean use in the PB/GB LOMA involves a large number of federal and provincial government departments and agencies through policies, programs, services and legislation. The Plan operates within this multi-jurisdictional context and respects existing responsibilities and jurisdictions within the federal, provincial and territorial governments and their agencies as well as local authorities. The Plan follows a strategic management framework that involves all levels of government and interests with the aim of achieving common objectives in the stewardship and management of estuarine, coastal and marine environments. The Plan also provides overall coordination of governmental policies, regulatory approaches, management actions, and recognizes the fundamental importance of intergovernmental cooperation in achieving successful ocean management on an ecosystem level.

This collaborative management approach enables existing regulatory authorities to remain responsible and accountable for implementing IM policies and actions within their respective jurisdictions and government departments using their respective legislative and regulatory mechanisms. While the area covered by the Plan does not necessarily coincide with established administrative or jurisdictional units, flexibility within existing organizations will be encouraged to achieve Plan implementation.

Oceans governance for the Plan provides opportunities for meaningful participation and input by all stakeholders, including federal, provincial, territorial and municipal governments, Aboriginal organizations and communities, industry and resource users, non-governmental organizations, interested community groups, research and academic communities and the general public.

IM and its planning process seeks to achieve a sustainable and practical balance of human uses, based on agreed-upon conservation and human use objectives. One of the main purposes of the Plan is to provide guidance on management needs, such as conflict avoidance and resolution resulting from interactions between and among ocean sectors and activity types, competition for ocean space and access to marine resources as well as the cumulative effects of human use in a given area and time.

Within this context of multiple ocean uses, the Plan is intended to ensure the health, integrity and sustainability of the PB/GB LOMA ecosystem. The Plan contains a number of objectives and management strategies for addressing conservation, institutional and human use needs. These objectives are aimed primarily at issues related to marine biodiversity, productivity and environmental quality. However, the Plan also focuses on the need to increase our knowledge and understanding of marine ecosystems, reduce scientific uncertainty and address cumulative, additive and synergistic effects often resulting from temporal and spatial overlaps.

VISION, GOALS AND GUIDING PRINCIPLES

VISION STATEMENT

The Plan provides a common basis for commitment and action for sustainable use, conservation and integrated management of the PB/GB LOMA. This translates to a vision statement for the LOMA as follows:

"Safe and sustainable use of healthy oceans through collaborative and effective governance"

GOALS

The vision for the PB/GB LOMA is supported by three overarching goals: Collaborative and Effective Governance, Sustainable Use, and Healthy Ecosystems. These goals provide the context and direction for the objectives, supporting management strategies and priorities for action planning within the PB/GB LOMA.

Collaborative and Effective Governance

Institutional, Policy and Legal Arrangements
Integrated Management Processes and Implementation
Information and Knowledge
Capacity Among Stakeholders

Sustainable Use

Social Well-being
Economic Well-being
Cultural Well-being
Public Health and Safety

Healthy Ecosystems

Biodiversity
Productivity
Marine Environmental Quality

Figure 1: PB/GB LOMA Integrated Management Goals

GUIDING PRINCIPLES

The guiding principles for IM in the PB/GB LOMA are the same as those outlined in the Policy and Operational Framework.

Ecosystem-based Management: Ecosystem sustainability and function is of primary importance. The identification of ecosystem-based management objectives and reference levels will guide the development and implementation of management to achieve sustainable development.

Precautionary Approach: The Oceans Act defines the precautionary approach as, "erring on the side of caution." It is ultimately guided by judgement based on values and priorities. Guidance and assurance are particularly needed when there is risk of irreversible harm, the scientific uncertainty is significant and a decision must be made.

Sustainable Development: Environmental, economic, social and cultural values are taken into account - with the aim of meeting the needs of the present without compromising the ability of future generations to meet their needs.

Conservation: The protection, maintenance and rehabilitation of living marine resources, their habitats and supporting ecosystems are important.

Duty in Shared Responsibility: Government, Aboriginal groups, coastal communities, industries and other persons and bodies affected by or affecting marine resources have a duty and shared responsibility for supporting sustainable development of marine resources while respecting existing responsibilities and jurisdictions.

Flexibility: The implementation and monitoring efforts of many different authorities, organizations and interests are brought together and focused on a jointly defined set of issues and objectives. A suite of legislative and regulatory processes and voluntary measures are relied on and coordinated.

Inclusiveness: Coastal communities, and other persons and interests affected by marine resource or activity management should have an opportunity to participate in the formulation and implementation of IM decisions because the objective is achievement of common goals.

THE PLANNING AREA

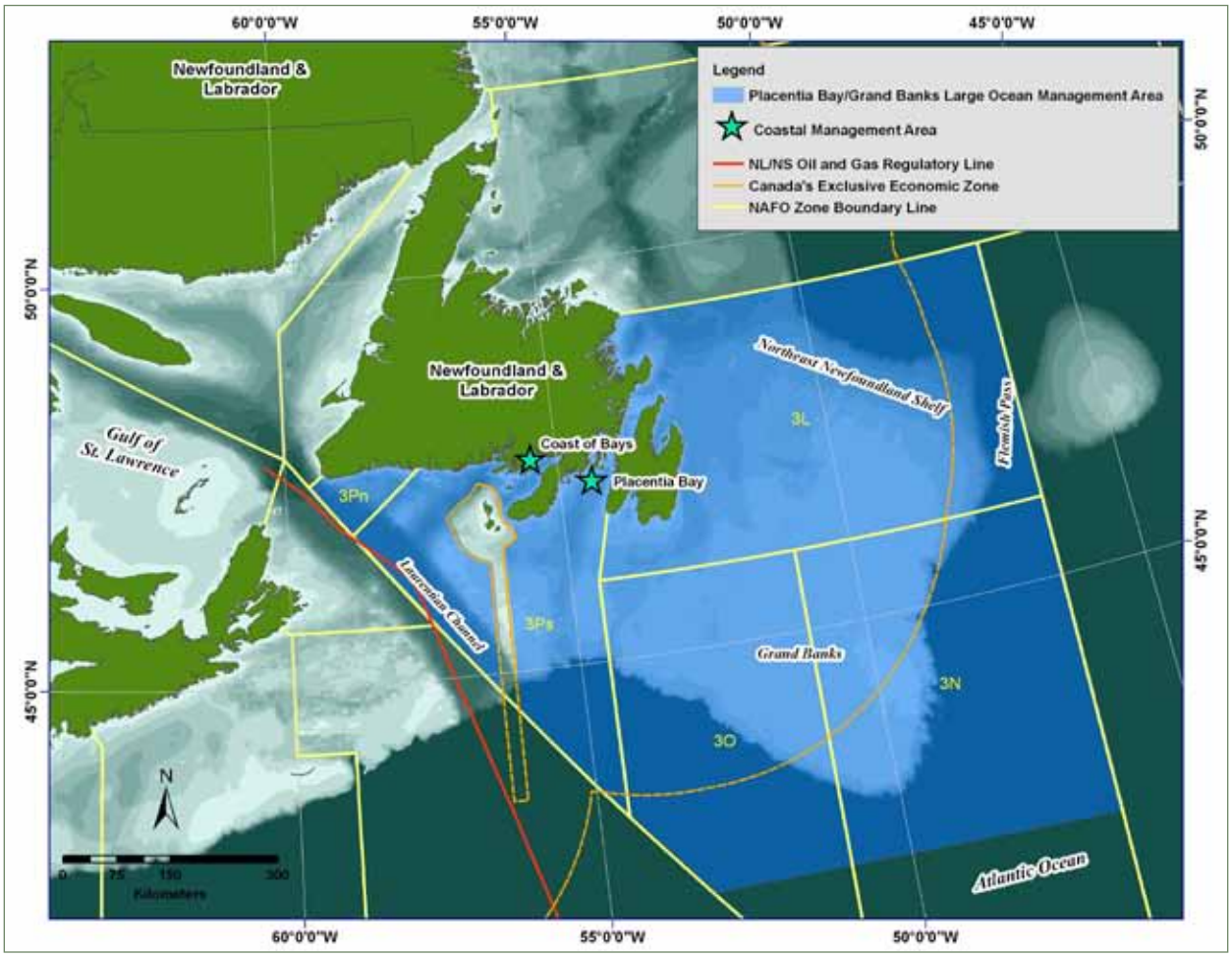


Figure 2: Placentia Bay/Grand Banks Large Ocean Management Area

PLANNING AND MANAGEMENT AREA

Canada's Oceans Action Plan (2005) identified five Large Ocean Management Areas (LOMAs) as priorities for IM planning. The PB/GB area was named a priority LOMA because it possesses important living and non-living marine resources, areas of high biological diversity and productivity, and increasing development and competition for ocean space and resources. IM will be implemented in the PB/GB LOMA at various scales, including coastal management areas and within the larger offshore areas.

Initial efforts to identify a LOMA within the Newfoundland and Labrador (NL) Region were undertaken in 2000 by a national cross-sectoral Working Group on Ecosystem Objectives. NAFO areas were adopted as the starting point for the definition of LOMAs as they are commonly recognized by users of the marine areas and because their utility as fish management areas is largely based on ecosystem considerations such as fish stock distribution and physiographic features. Within NL, proposed LOMAs included: North Labrador Sea (2GH); Northern Grand Banks (2J, 3KL); Southern Grand Banks (3NO); South Coast (3P); West Coast (4R); and Flemish Cap (3M). Regional working groups (2001-2002) responsible for the establishment of supporting rationale and ecosystem objectives for the six proposed LOMA

boundaries based on ecosystem criteria subsequently agreed that the Grand Banks should be represented as a single LOMA (3LNO).

Based on further assessments, the Grand Banks (3LNO) was determined to be a priority for consideration as a LOMA by the LOMA WG. Additional factors highlighted the benefits of including the adjacent area of 3P in this proposal, including: the significant progress of IM in Placentia Bay to date – with the potential to extend those efforts to a larger scale across the Grand Banks, as well as the fact that much of the combined area of 3LNOP area was previously recognized as a single marine ecoregion during a DFO Canadian Marine Ecoregion Workshop in 2004 (Powles et al. 2004). As such, the resulting area proposed for IM initiatives in the NL Region was the Placentia Bay/Grand Banks (PB/GB) LOMA.

The boundary for the PB/GB LOMA incorporates the area encompassed by NAFO Divisions 3LNO and subdivisions 3Ps and 3Pn. The southern boundary in 3NO extends only to latitude 42°N since the portion of Divisions 3NO south of that position does not encompass any of the continental shelf comprising the Grand Banks. The proposed boundary includes areas of the Grand Banks both within and beyond Canada's Exclusive Economic Zone (EEZ). This is in keeping with the Oceans Action Plan (2005a) that states, "On the Grand Banks, the focus is on ecosystem-based management within and beyond Canada's Exclusive Economic Zone".

The boundary for the PB/GB LOMA is based on a mix of ecological characteristics and administrative considerations. It encompasses an area of over 550,000 km2, starting at Cape Ray on the island portion of Newfoundland and Labrador's south coast (near Port aux Basques), continuing eastward along the south coast and extending northward along the east coast, as far north as Cape Freels at the tip of Bonavista Bay (Figure 2). The southern boundary of the LOMA extends beyond the 200 nm limit of Canada's exclusive economic zone to the edge of the continental shelf, defined as 42°N latitude.

It should be noted that a jurisdictional boundary is located in the offshore that separates the areas of oil and gas development for the purpose of the Canada-Newfoundland and Labrador and Canada-Nova Scotia Offshore Petroleum Boards. The boundary line was established by an Arbitration Tribunal in 2002 to assist in the administration of each province's offshore oil and gas developments under their respective Accord Acts. As with previously noted administrative and jurisdictional boundaries, the Plan does not supersede or replace this boundary's associated management structures and processes.

MARINE ENVIRONMENT

An ecosystem approach to oceans management recognizes the complexity of marine ecosystems, including the inter-relationships between organisms, their habitats and the physical environment. Ecological overviews and assessments can be useful tools to supplement existing knowledge of a region's sensitive areas and range of ecosystem types and can assist in the development of ecosystem-based objectives, reference points, indicators and management actions. In recognition of this, Fisheries and Oceans Canada completed an Ecosystem Overview and Assessment Report (EOAR) for the PB/GB LOMA in 2007. The EOAR provided managers and stakeholders with a summary of all relevant aspects of the PB/GB LOMA ecosystem by considering its marine geology, geomorphology, sedimentology, atmospheric and ocean exchange, physical oceanography, physical-chemical properties, flora and fauna, habitat use and functional areas, ecosystem relationships, areas of concern, and impacting activities and stressors.

Foggy Coast of Newfoundland

In general, the PB/GB LOMA is characterized by a diversity of marine life and habitats. The seabed topography off the south and south eastern shores of the island of Newfoundland is dominated by a vast apron of shelf comprising an area larger than the island and representing one of the largest portions of the Continental Shelf anywhere in the world. Comprised of a series of shallow banks that are separated from one another and the island of Newfoundland by deeper channels or enclosed basins, the Grand Banks are separated from the Scotian Shelf by the 97 km wide and up to 4575 m deep Laurentian Channel in the west, extend to the Flemish Pass in the east, and are bordered on the northeast by the Northeast Newfoundland Shelf. The topography and ocean currents on the Grand Banks interact to form a highly productive environment. The cold Labrador Current and warm Gulf Stream meet in the northwest Atlantic and due to this interaction, the physical and biological gradients are extremely pronounced in this region and distinct features typical to different geographical zones occur over relatively small areas.

The Grand Banks are one of the most productive marine areas in the world. At the base of this highly productive food chain are an intense spring phytoplankton bloom and a smaller fall bloom. Zooplankton are also abundant and support a wide range of species in the area.

Dramatic ecological changes to the Newfoundland Shelf system over the last 30 years are well known and documented. They include the collapse of several groundfish stocks (e.g., Atlantic cod, American plaice), increases of shellfish populations (e.g., Northern shrimp and Snow crab), recovery of harp seals, changes in capelin biology, and changes in the distribution of many species. While the reasons for these changes are unclear, overfishing, climate changes and associated modifications to trophic structure are some of the hypotheses used to explain them.


Snow Crabs

Key species groups in the PB/GB LOMA include:

- **Benthic and pelagic invertebrates** – *e.g. scallops, Northern shrimp, Short-finned squid, Snow crab and lobster.*
- **Demersal fish** – *e.g. American plaice, Atlantic cod, Greenland halibut, haddock, lumpfish, monkfish, and various species of flounder, grenadier, redfish, skate and wolffish.*
- **Pelagic fish** – *e.g. Atlantic herring and capelin.*
- **Diadromous fish** – *e.g. American eel, Atlantic salmon and brook, steelhead and brown trout.*
- **Marine mammals** – *e.g. various species of whales, dolphins, porpoises and seals.*
- **Marine associated birds** – *e.g. Dovekie, Northern Gannett, Thick Billed Murre and Common Eider.*
- **Marine turtles** – *e.g. leatherback, loggerhead, and Kemp's (Atlantic) Ridley turtles.*

The EOAR also identified activities and stressors that may impact the PB/GB area. In addition to potential impacts resulting from human activities such as commercial fishing, oil and gas exploration and development, aquaculture and shipping, impacts to the ecosystem may also result as a consequence of environmental changes such as global warming, ozone depletion, and the emergence of aquatic invasive species. At the same time, it was recognized that changes in the ecosystem may be amplified when impacts of human activities and stressors are combined.

HUMAN USE

An integral part of IM involves identifying, describing and understanding existing activities that occur within coastal, ocean and estuarine areas as well as those which rely on the resources present within these areas.

Key activities in the PB/GB LOMA include:

- *Commercial, Aboriginal, recreational and foreign fisheries*
- *Oil and gas exploration, development, production and delivery (e.g. pipelines, power cables and seismic activity)*
- *Marine transportation*
- *Submarine communication cables*
- *Aquaculture*
- *Coastal and ocean tourism*
- *Government marine operations (e.g. Coast Guard and Marine Forces)*
- *Land-based activities (e.g. municipal sewage/ effluent, fish processing, mining, forestry and agriculture*
- *Marine recreation*
- *Disposal at sea*
- *Scientific research and monitoring*
- *Technology development*

There is a diversity of human and/or industrial activities with potential to interact with each other as well as the physical and biological components of the marine environment of the PB/GB LOMA. These activities also have the potential to impact or interact with each other. The activities can be described as being extractive, such as fishing and oil and gas exploration, or non-extractive, such as tourism and shipping.

In recent years the focus for commercial fisheries has shifted from groundfish, such as Atlantic cod and flounder species to shellfish, such as Northern shrimp and Snow crab. Increases in offshore oil and gas exploration and development as well as marine transportation, aquaculture and ocean/coastal-based tourism, have also been evident.

According to the 2006 census, the total population in the four census divisions adjacent to the PB/GB LOMA was 323,903, representing approximately 64.1% of the total population of Newfoundland and Labrador and approximately 1% of the total Canadian population. While the majority of settlements adjacent to the PB/GB LOMA are small rural fishing communities, the greatest population is concentrated on the northeast Avalon Peninsula of the island portion of the province.

Fisheries and Oceans Canada completed a detailed analysis of the social, economic, cultural and governance conditions in each of the census divisions in order to help identify priorities for the LOMA. The analysis was published in 2007 in a Social, Economic, Cultural Overview and Assessment Report (SECOA).

The social variables of population, education and income levels highlight similar trends and key differences that could be characterized by the rural/urban split found within the region. People are migrating away from rural areas to the Avalon Region to seek out improved access to, and variety of services in the education, health care and retail sector as well as increasing employment opportunities. Another common trend in the areas adjacent to the PB/GB LOMA is the migration of people to other provinces of Canada, particularly to Alberta.

EMPLOYMENT AND ECONOMICS

The total labour force, according to the 2006 census, was 163,100 or 65.6% of the total labour force of Newfoundland and Labrador. The provincial participation rate (labour force/total population) was 49.2% compared to a national participation rate of 54.2%. Of the 163,100 individuals in the labour force, 5,605 are involved in the primary resource sectors such as fishing, agriculture, forestry and hunting, and 3,170 in mining and oil and gas extraction.

Economic growth in the Avalon area adjacent to the PB/GB LOMA can be attributed to the increase in offshore oil and gas activity in the region. Oil production on the Grand Banks has been positive for the Newfoundland and Labrador economy. According to the Human Systems and Socio-Economic Components document, the direct economic value of oil produced from the LOMA between 2000 and 2008 was $57 billion.

The majority of the census area is comprised of small fishing communities along the coast. The top industries there include the manufacturing (seafood product preparation and packaging) and the primary resource (fishing) sectors.

Although these industries have decreased drastically over the past 10-15 years due to the closure and/or downsizing of various fisheries which are often seasonal in nature, they are still a very important source of income for these areas. According to the Human Systems and Socio-Economic Components document, the economic value of fishery landings derived from the LOMA between 1998 and 2008 was $2.35 billion.

Smaller communities are also developing other types of economies (tourism, heritage, and aquaculture) but it is difficult to offset the impact of the declining fishery and to resist opportunities for work in western provinces. The sustainable development of rural areas adjacent to the PB/GB LOMA region will likely continue to be a challenge.

FUTURE OF THE PLANNING AREA

The PB/GB LOMA is adjacent to two other areas undergoing integrated management processes: the Eastern Scotian Shelf Integrated Management (ESSIM) LOMA and the Gulf of St. Lawrence Integrated Management (GOSLIM) LOMA. As such, it is important that a coordinated approach to management of these marine areas be fostered to avoid duplication in efforts across IM initiatives.

To this end, regional collaboration will continue to be promoted across jurisdictional boundaries. Administrative responsibilities already in place will remain intact and existing methods of coordination will continue throughout implementation of the Plan.

In the future, coastal areas within Canada will continue to pursue healthy and sustainable ecosystems. The development of coastal area IM poses distinct challenges, primarily owing to the heavy jurisdictional overlap between federal, provincial and municipal governments in nearshore areas. Overcoming these challenges requires both inter- and intra-governmental coordination and cooperation. As with offshore areas, IM processes in coastal areas should focus on collaboration between various levels of government, members of coastal communities, aboriginal groups,

industry sectors and other stakeholders, with a focus on the input from those individuals and groups with the greatest knowledge of the local areas and associated activities. In the long term,

IM plans for select coastal areas will complement existing IM plans for adjacent offshore areas and will contribute to similar broad objectives, while maintaining a focus on local conditions, communities, issues and priorities.

Coastal management initiatives existing within the PB/GB LOMA include the Placentia Bay and the Coast of Bays Coastal Management Areas (CMAs). In both areas, communities, industry sectors and stakeholders, with support from all levels of government, have developed integrated coastal management plans and representatives of these coastal management initiatives are actively participating in the IM process for the PB/GB LOMA.

Entrance to St. John's Harbour

THE PLANNING PROCESS

As noted in the Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada, the IM planning process involves six inter-related stages (Figure 3).

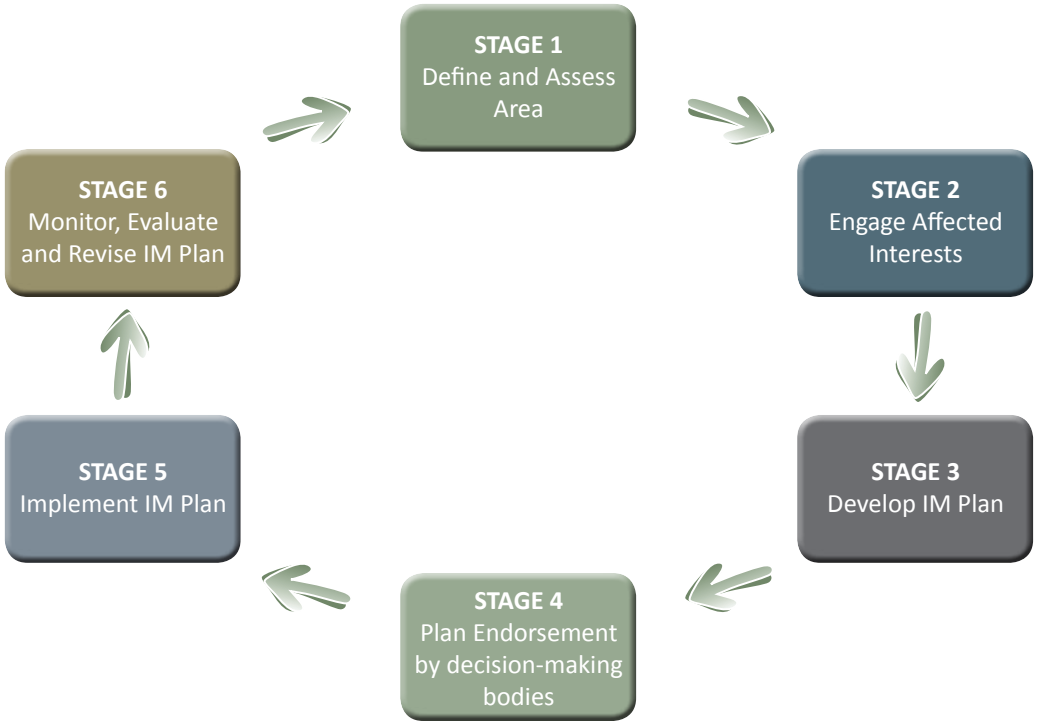


Figure 3: Stages of the IM Process

The following activities describe the first three stages of the IM process for the PB/GB LOMA.

DEFINE AND ASSESS THE MANAGEMENT/PLANNING AREA

The PB/GB LOMA boundary was identified in recognition of ecological and administrative considerations. To determine the current status and trends of the ecosystem and the human activities of the PB/GB LOMA DFO collected and referenced existing relevant ecological, social, cultural, economic and human use data for the area that provides a basis for setting corresponding objectives for the LOMA.

Ecological Considerations

To help identify and prioritize PB/GB LOMA conservation issues, significant areas were evaluated against a set of scientific criteria leading to the identification and ranking of eleven Ecologically and Biologically Significant Areas (EBSAs) (Figure 4). Additional information regarding the EBSA identification process is contained within the document *Placentia Bay/Grand Banks Large Ocean Management Area Ecologically and Biologically Significant Areas.*

Following a detailed analysis, a list of 94 LOMA–specific Conservation Objectives (COs) related to ecologically significant species (ESSs), and depleted species (DSs) or associated with significant features of the eleven EBSAs was identified. Additional information regarding the CO

identification process, is contained within the document *Placentia Bay/Grand Banks Large Ocean Management Area: Science-Based Conservation Objectives.*

COs for the PB/GB LOMA were ranked high, medium or low priority based on the ecological significance of those ecosystem components and properties, without reference to the associated level of risk resulting from human activities. In order to facilitate effective IM planning, further prioritization of the 94 COs was required with the highest priority given to significant species and features which are at greatest risk of immediate and/or irreversible harm. Consequently, the ecosystem components associated with 70 high and medium priority COs were ranked based on an extensive assessment of the level of risk from human activities and is described in *Characterization and Analysis of Risks to Key Ecosystem Components and Properties.*

Social, Cultural and Economic Considerations

To investigate the human components present within the management area, a Social, Economic, Cultural Overview and Assessment Report (SECOA) was completed in 2007. The SECOA informed the development of a complementary Human Systems and Socio-Economic Components document, which provided further detail of human activities within the PB/GB LOMA.

The provincial Department of Fisheries and Aquaculture (DFA) has also contributed towards the assessment of activities within the LOMA. In 2007 and 2008, DFA commissioned the production of two "Issues Scan of Coastal and Ocean Areas of Newfoundland and Labrador" reports (DFA 2007; DFA 2008). The issues scans involved the collection of information from communities, regulatory agencies, interest groups and individuals on coastal and ocean management issues.

These documents provide insight into the social, economic and cultural dynamics of the coast adjacent to the LOMA, showing very distinct rural/urban differences. A summary of social, cultural and economic trends for the LOMA can be found in Appendix B.

ENGAGE AFFECTED INTERESTS

From the outset, the PB/GB LOMA IM process has focused on identifying issues and facilitating information exchange between stakeholders. Several meetings have been held with participation from Fisheries and Oceans Canada, other federal departments, provincial government departments, non-governmental organizations, Aboriginal, academia, fisheries industry and union representatives, as well as other interested

Key: EBSAs in order of Significance			
1.	The Southeast Shoal and Tail of the Banks	7.	Eastern Avalon
2.	Placentia Bay Extension	8.	Lilly Canyon-Carson Canyon
3.	The Southwest Shelf Edge and Slope	9.	Northeast Shelf and Slope
4.	St. Pierre Bank	10.	Burgeo Bank
5.	Laurentian Channel and Slope	11.	Virgin Rocks
6.	Smith Sound		

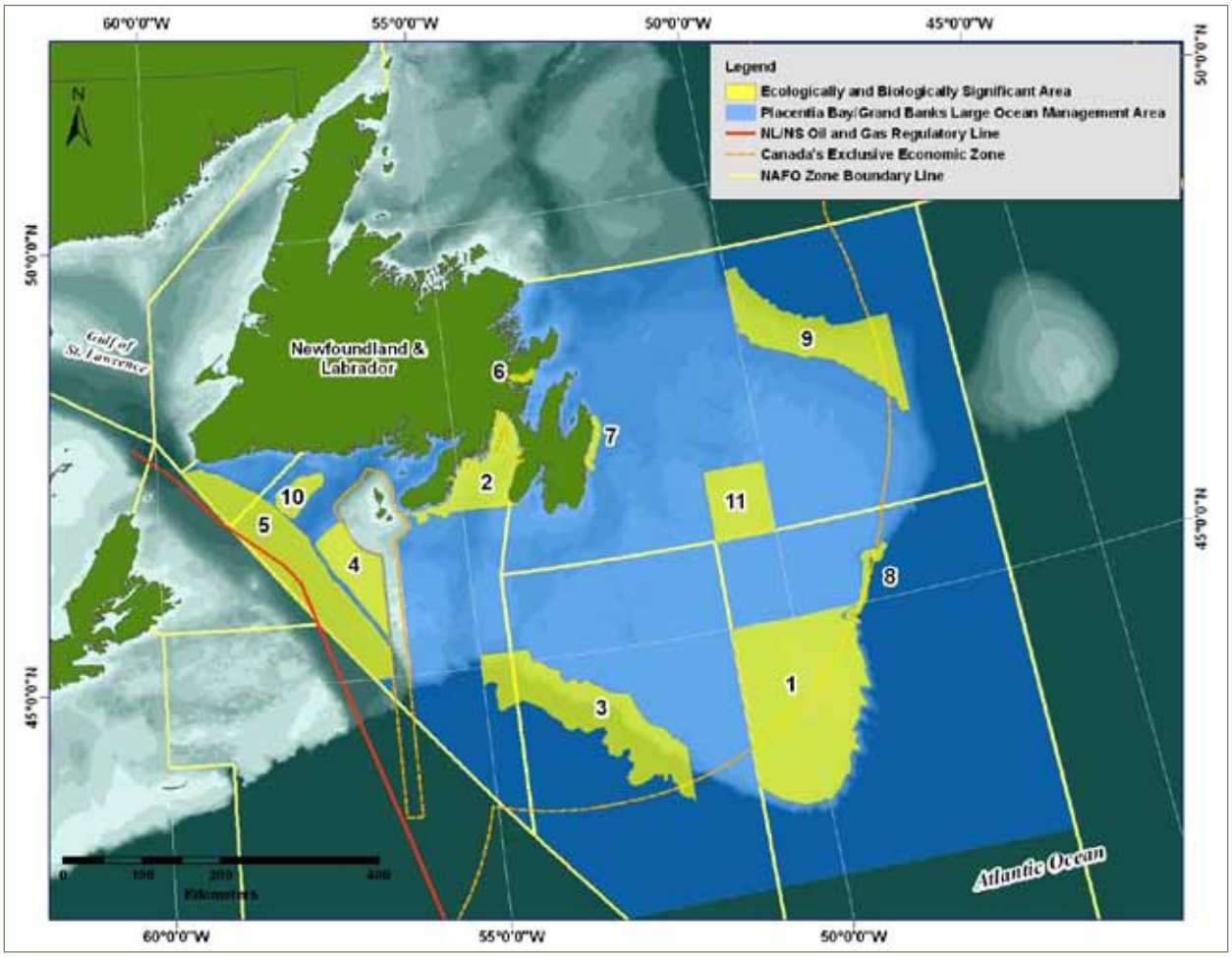


Figure 4: Placentia Bay/Grand Banks Large Ocean Management Area: prioritized Ecologically and Biologically Significant Areas (EBSAs) (DFO 2007).

stakeholders. The PB/GB LOMA Committee, which is government and stakeholder based, was established in 2007 and has been building a collaborative planning approach using shared understanding and dialogue surrounding the issues, objectives and options for development of the Plan. The implementation phase of the Plan will see continued engagement of affected interests in the context of action planning, information exchange and adaptive management.

DEVELOPING THE INTEGRATED MANAGEMENT PLAN

An outline for the Plan was created by the PB/GB LOMA Committee during a Strategic Objectives Session in 2008. The outline initiated the process of setting priorities, assigning roles and achieving consensus on the strategy for Plan development. Following this direction, a series of workshops were conducted to develop the vision, goals, strategic objectives, management strategies and priorities of the PB/GB LOMA for the IM Plan.

OCEANS GOVERNANCE

Integrated management of the PB/GB LOMA follows a collaborative planning approach. All interested and affected parties are included throughout the planning process – from the identification of priorities and goals, to the endorsement, implementation and evaluation of the Plan. Collaborative planning ensures that a wide range of interests are respected which makes support of the Plan a more likely outcome.

The Policy and Operational Framework for Integrated Management describes a number of benefits of using a collaborative management approach while also recognizing that the process "will not infringe on the legal authority of the participating decision-makers, administrative and legal jurisdictions will be respected, and existing regulatory authorities will remain responsible and politically accountable for implementation in their jurisdictions." Therefore, the involvement of all authorities accountable for the management of coastal and ocean-related resources or activities is necessary in order for IM to operate on an ecosystem level. A management approach that enables decision-makers to collaborate without infringing upon existing administrative and jurisdictional responsibilities is essential for the Plan's success.

The Policy and Operational Framework for Integrated Management also supports the notion that management and planning for sustainable development should be based on collaborative processes involving IM bodies whose functions include balancing coastal and ocean uses in a manner that maximizes protection, maintains conservation efforts and rehabilitates marine ecosystems and their resources while providing opportunities for social, cultural and economic benefits.

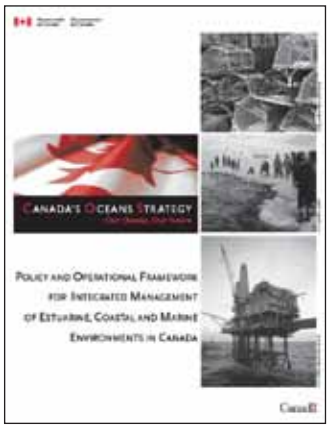


Figure 5 depicts the Oceans Governance model in Newfoundland and Labrador that has been designed to support IM of the PB/GB LOMA. A description of those bodies involved is provided in Appendix C.

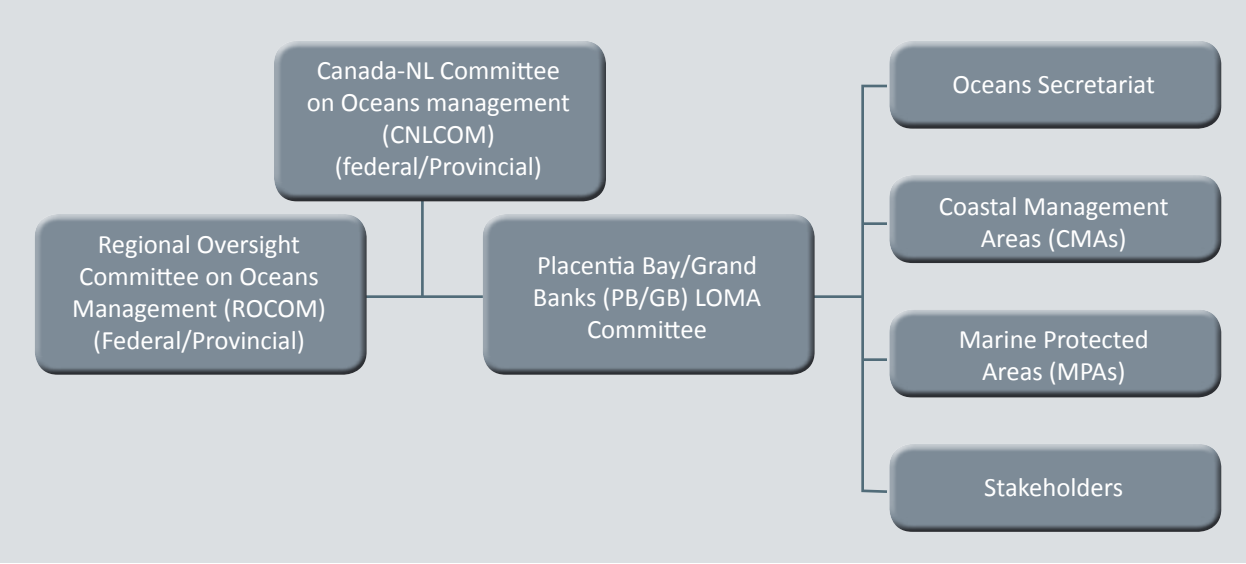


Figure 5: Oceans Governance in Newfoundland and Labrador

OBJECTIVES-BASED MANAGEMENT FRAMEWORK

The PB/GB LOMA planning process follows an objectives-based approach that progresses from conceptual goals to specific actions to achieve a desired outcome based on commonly set objectives and strategies (Figure 6). The hierarchy of objectives, management strategies and actions provides a roadmap for what needs to be done to reach the Plan's goals: collaborative and effective governance, sustainable use and healthy ecosystems.

The objectives-based management framework consists of a three-tiered interdependent sequence of steps, allowing for an iterative planning process. Tier 1 produces a set of results which are evaluated in Tier 2 to ensure that management strategies and actions are achieving the desired outcome. Tier 3 allows for adaptive management - adjustments to the planning process to achieve the desired outcome more effectively and efficiently.

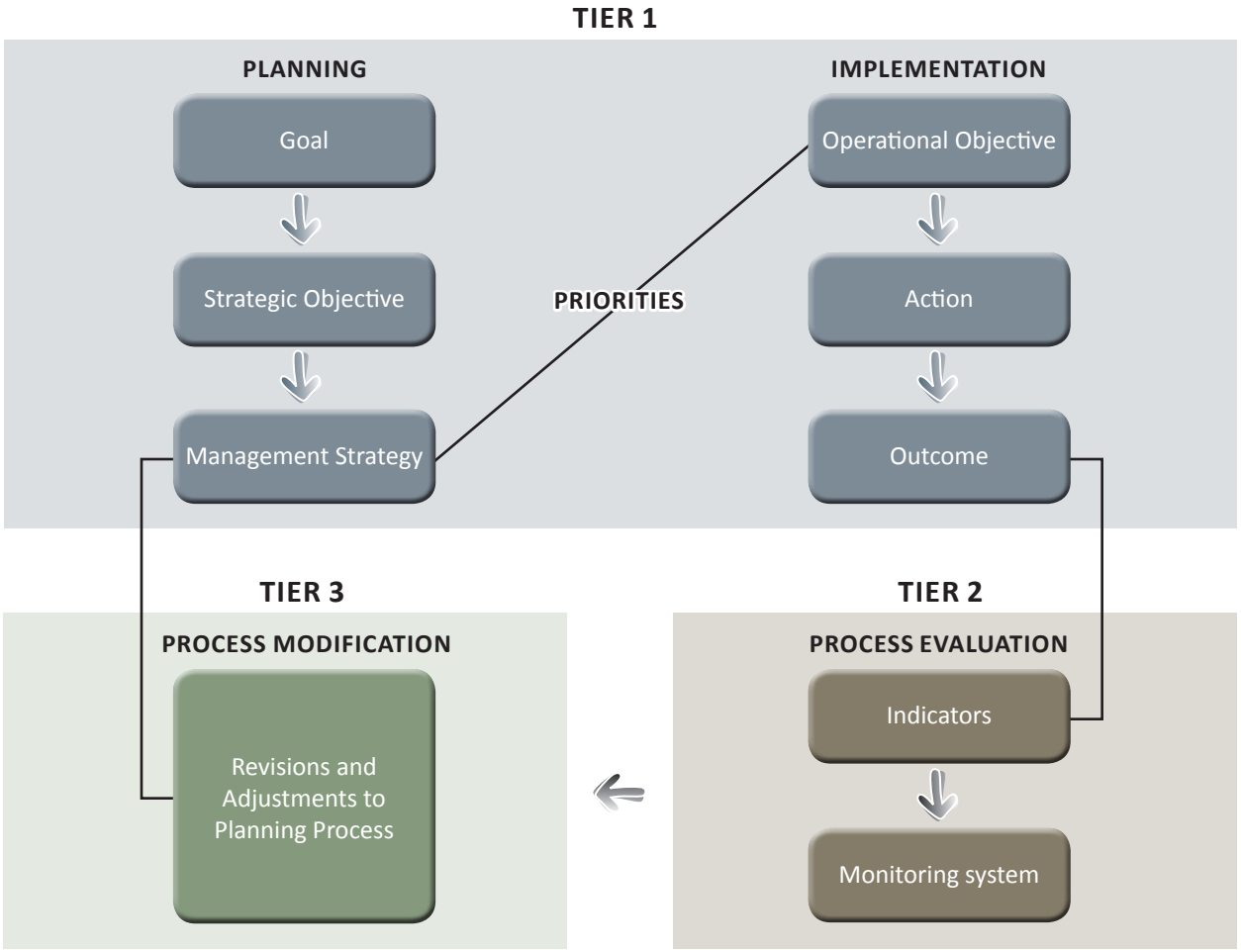


Figure 6: Objectives-based Management Framework

TIER 1: PLANNING PROCESS

Planning and Implementation Components:

Goals:

Broad statements of the overarching long-term desired outcomes identified through strategic collaborative planning and based on existing or emerging issues and concerns. The Plan's three goals: collaborative and effective governance, sustainable use and healthy ecosystems, provide an overall sense of direction for developing underlying objectives, strategies and actions. Elements represent themes or sub-categories within the goals and provide the basis for direction of the development of the objectives and strategies.

Strategic Objectives:

More specific statements of what must be accomplished to attain a desired goal.

Strategies:

Guide the development of operational objectives and action plans and represent a general course of action for reaching one or more objectives. The Plan sets out a series of management strategies to achieve the strategic objectives identified under each goal.

Operational Objectives:

Connects conceptual management with tangible actions, thereby assisting in the achievement of strategic objectives. Operational objectives are measurable and typically consist of a verb, an indicator and a reference point and can be developed through sector management processes.

Actions:

Guided by *Action Plans*. Action plans provide the pertinent information required to achieve the operational objectives and identify the responsible authorities, specific management actions, how they will proceed, and assist in directing the achievement of the desired goals and objectives. Each action is usually linked with an implementation timeframe.

Outcomes:

Results of the management process.

TIER 2: PROCESS EVALUATION

Tier 2 of the framework involves evaluating the outcomes against specific objectives and determining the adequacy of the planning structure and processes. Effective evaluations can be done through the use of indicators. Furthermore, continuous evaluation throughout Tier 1 can readily identify process shortcomings, steer corrective action if necessary and permit changes as priorities and objectives shift.

Outcome/Evaluation Tools:

Indicators:

Provide insight on the success of the Plan and associated action plans. They measure whether or not outcomes have achieved their objective(s). Indicators are key components related directly or indirectly to the goals of the Plan. When measured in time and analysed, they provide information on progress against the set of objectives and strategies and on the trends in meeting the desired outcomes.

Monitoring System:

Measure for the implementation of the Plan's management strategies and associated action plans to allow for an assessment of the effectiveness of the planning process.

TIER 3: PROCESS MODIFICATION

Based on feedback and lessons learned, revisions and/or adjustments to one or more Plan components may be necessary. If the management actions are not successful, this Tier will allow for revisions in the planning process targeting identified goals and objectives. As this adaptive management approach is based on a learning process, it improves long-term management outcomes.

Progression through the objectives-based management framework ensures that the Plan is as current, coherent and efficient as possible with respect to the changing dynamic of the PB/GB LOMA.

GOALS, STRATEGIC OBJECTIVES AND MANAGEMENT STRATEGIES

Goals, strategic objectives and management strategies have been identified collectively and provide the long-term direction for IM in the PB/GB LOMA. The Plan is comprehensive in that it recognizes connections between the many ecosystem, social, economic, cultural and governance considerations associated with coastal and ocean areas. However, over the course of a five-year planning cycle, action planning, implementation and monitoring in the LOMA focuses on priorities identified through IM. As the process evolves, objectives and strategies can be re-examined in the context of progress made and new requirements as they arise.

Each of the Plan's three goals, Collaborative and Effective Governance, Sustainable Use, and Healthy Ecosystems, are presented as an outcome statement with additional elements associated with each. Objectives and management strategies for each goal are presented in the tables found in this section.

The Plan and IM process offers a unique opportunity to identify and document cross-cutting, common goals and objectives, as well as provide a forum to strengthen efforts and collectively manage issues and report progress that is being made collaboratively within the vision of the LOMA.

For a full listing of goals, objectives and strategies see Appendix D.

Suspension Bridge at La Manche

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE

The collaborative and effective governance goal is an overarching aspect of the Plan providing the framework within which to meet the goals of sustainable use and healthy ecosystems. This goal is broken down into four elements: institutional, policy and legal arrangements, IM processes and implementation, information and knowledge and capacity among stakeholders.

INSTITUTIONAL, POLICY AND LEGAL ARRANGEMENTS

A key component of the IM process is to provide a mechanism for enhanced coordination and collaboration between the regulatory authorities who have jurisdictional responsibilities related to coastal and ocean management. Examining existing institutional, policy and legislative arrangements could allow for a more effective and efficient planning process. In some cases, the need for new polices and/or legislation may be apparent, while in other duplication in efforts may also be identified. Benefits to this might include the identification of shared objectives or the opportunity to streamline policies or ensure they are coherent.

A large number of institutions and related legislation, policy, plans and programs are associated with the management of the PB/GB LOMA. In order to achieve the goal of collaborative and effective governance, it is important to overcome historical approaches to single sector management. In keeping with the oceans governance model, government departments and agencies maintain their jurisdiction while contributing to meeting the goals and objectives outlined in the Plan through regulatory means. In addition, the Plan encourages collaborative planning in order to provide opportunities for coordination of sector specific regulations and the development of approaches to address multiple-use and jurisdictional considerations.

It is evident that collaborative approaches to management are becoming more common within the PB/GB LOMA. Examples include improved coordination between the oil and gas and commercial fishing sectors as well as between the aquaculture and commercial fishing sectors. From a governmental perspective, coordinating approaches to marine protected area network planning and environmental assessment are also being implemented.

Meeting an array of federal and provincial legal obligations is an essential requirement for management of the LOMA. Furthermore, Canada as a contracting party to agreements such as the Convention on

Biological Diversity, the United Nations Convention on the Law of the Sea, the UN Fish Stocks Agreement, the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (NAFO Convention), has international obligations to meet. In addition, Canada has committed to a number of international policy instruments, such as the Rio Declaration on Environment and Development, Agenda 21, and the Johannesburg Plan of Implementation.

In some cases, lack of clarity surrounding jurisdictional relationships can lead to uncertainty for both coastal and ocean user groups and regulators. For example, DFO and 29 other federal government departments, agencies and other organizations are involved in the oceans sector through policies, programs, services, regulations and/or procurement responsibilities. Therefore, maintaining clarity concerning jurisdictional and constitutional considerations would assist in alleviating any uncertainties.

The IM process is unique in that it enables an examination of the legislative, regulatory and policy context surrounding management of specific issues relevant to the PB/GB LOMA. Traditionally, regulators and sectors have mainly focused on legislative and policy considerations directly applicable to their jurisdiction or operations. Since many issues associated with coastal and oceans management are complex, broad in scope and cross jurisdictions, it is necessary to examine them from a holistic perspective. For example, the cross cutting issue of aquatic invasive species requires management considerations for a diversity of sectors, including coastal recreation, aquaculture, commercial fisheries and international shipping. Building upon an assessment of legislation, policy, plans and programs, a comprehensive analysis of issues and current measures to address them can provide the basis for the development of guidance and recommendations on how implementation can be improved, including the development of new regulations and policies as required.

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE	
Element: Institutional, Policy and Legal Arrangements	
Strategic Objective	**Management Strategy**
Institutional arrangements are coordinated to facilitate a smooth interface between appropriate policies, plans, programs and projects and to identify and mitigate potential conflict.	• Assess effectiveness and efficiency of current legislation, policies, plans and programs. • Initiate policies, plans and programs and identify the need for new legislation or amendments to existing legislation as required. • Develop/utilize mechanisms for evaluating proposed legislation, policies, plans and programs. • Assess international obligations and commitments to ensure that they are fulfilled. • Clarify jurisdictional relationships and fulfill constitutional obligations. • Promote dedication of adequate resources for integrated management across jurisdictions.
Legal obligations and commitments are fulfilled.	
The IM process is responsive to applicable legislation and regulations and provides guidance and recommendations for the development and implementation of regulations and policies.	• Develop Oceans Management guidance and recommendations which can be reasonably implemented and are justified on the basis of a comprehensive analysis.

Table 2: Objectives and Strategies related to Institutional Policy and Legal Arrangements Element of Collaborative and Effective Governance Goal

INTEGRATED MANAGEMENT PROCESSES AND IMPLEMENTATION

The PB/GB LOMA IM process includes collaborative structures that bring together regulators and stakeholders from a number of sectors for IM Plan development and implementation. Success depends upon continued commitment from all parties in all stages of the process. In addition, IM serves to reduce, mitigate or prevent conflicts between the ever increasing suite of users of coastal and ocean areas. IM provides a mechanism for stakeholders and regulators to improve communications and better understand management requirements associated with the collective use of coastal and ocean space.

By incorporating IM Plan objectives into sector management decisions, participants can demonstrate their commitment to the Plan and the IM process. In addition to legislative considerations, an examination of existing guidelines and best practices within the context of the Plan's goals and objectives can help participants identify potential improvements/ adaptations or the need for new guidelines and management practices.

Since IM is also an adaptive process that requires ongoing evaluation participants have a role to play in monitoring and reporting their activities and results in order to enable a review of management effectiveness via Plan implementation.

The IM process provides opportunities for regulators and stakeholders to share information and collectively address issues. Active involvement requires commitment from participants to share information from the groups/departments/agencies they represent. Strong communication and awareness-raising approaches will assist the public, communities, interest groups, sectors and regulators in becoming more aware of, and effectively engaged in, the IM process and oceans management and can assist in conflict avoidance and/or lead to the identification of collaborative opportunities.

Mitigation and/or prevention of conflict is one of the key aspects of the IM process. Canada's Oceans Strategy: Policy and Operation Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada states: "…the objective in the first place of IM is to proactively plan for ocean space use so that conflict is avoided and ecosystem integrity is ensured."

Historically, commercial fisheries and shipping were the main human activities occurring within the PB/GB LOMA. However, there has been development and growth in sectors such as oil and gas, aquaculture, submarine cables and coastal tourism and recreation. Diversification is a positive development for strengthening economic conditions, however, with increased activity, potential conflict over ocean space use and cumulative effects on ecosystem components also increases. The IM process offers a mechanism for ocean users to address or prevent conflicts. This includes opportunities to compile and share information as well as multi-sector/multi-departmental venues in which ocean space use discussions can occur.

St. John's Fishing Fleet

A better understanding of the ecological significance of areas, existing and potential use patterns, interactions and cumulative effects is important to conflict avoidance. This enables identification and characterization of where and when conflicts may occur. The Grand Banks of Newfoundland: Atlas of Human Activities published by DFO Oceans is an example of a means to document the spatial distribution of various human activities. This atlas has an offshore focus and depicts the location of various fisheries by gear type and species targeted as well as the location of oil and gas, research, marine traffic, submarine cables and ocean disposal activities over a defined period of time. The atlas and similar products can be utilized for conflict avoidance applications.

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE	
Element: Integrated Management Processes and Implementation	
Strategic Objective	**Management Strategy**
Participants are committed to the implementation, evaluation and adjustment of the IM Plan.	• Incorporate integrated management plan objectives into sector management plans. • Review existing guidelines and best practices and improve/adapt/develop new guidelines and best practices as necessary. • Evaluate usefulness of monitoring and reporting progress and review management as necessary.
Participants are committed to active involvement on IM committees and working groups.	• Timely reporting of new activities, knowledge and initiatives. • Improve oceans awareness through communications and public awareness.
Conflicts are mitigated or prevented via the IM Process.	• Understand existing and potential use patterns, interactions and cumulative effects. • Identify and characterize spatial and temporal conflicts. • Develop procedures and tools for addressing conflicts.

Table 3: Objectives and Strategies related to Integrated Management Processes and Implementation Element of Collaborative and Effective Governance Goal

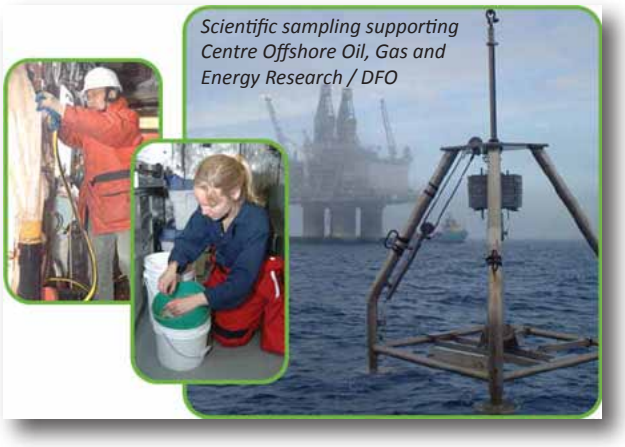
Lobster Pots in Bonavista

INFORMATION AND KNOWLEDGE

IM is an inclusive, collaborative process. To ensure effective engagement, it is important that all regulatory authorities and affected parties with an interest in oceans management have a solid understanding and awareness of oceans management issues and approaches. Communications must be operative to ensure information is shared between those involved in the process, the groups and departments they represent as well as the public at large. Numerous sources of scientific as well as traditional and aboriginal knowledge are available and there's a need to identify, access and manage oceans related information.

Since IM is a comprehensive approach to management involving many participants and wide ranging issues, access to and management of information is required in order to make balanced decisions that factor in environmental, social, economic and cultural implications.

All components of the IM process require identifying information needed for a particular purpose and determining what is available from the variety of potential sources including government departments and agencies, industry, academic and research institutions, non-governmental organizations, community and Aboriginal groups etc. The use of both natural and social science research enables a broader examination of issues. However, the results of such studies are often not readily accessible or presented in an easily understood manner. The IM process aims to assist in identifying relevant research findings and developing the means to present them in formats that are useful for a broad audience.



Scientific sampling supporting Centre Offshore Oil, Gas and Energy Research / DFO

SPOTLIGHT ON DFO SCIENCE CENTRES OF EXPERTISE

DFO Science Centres of Expertise (COEs) focus on areas where it is more effective to partner both internally and externally with academia, other departments and other governments to gain information and to achieve results.

COEs of particular interest to the PB/GB LOMA include:

- Centre for Aquatic Animal Health Research and Diagnostics (CAAHRD)
- Centre for Aquatic Habitat Research (CAHR)
- Centre of Expertise for Aquatic Risk Assessment (CEARA)
- Centre of Expertise on Marine Mammals (CEMAM)
- Centre for Integrated Aquaculture Science (CIAS)
- Centre for Ocean Model Development for Applications (COMBDA)
- Centre for Offshore Oil, Gas and Energy Research (COOGER)

Examples:

COOGER has enabled the development of long-range forecasting of the iceberg population on the Grand Banks - needed by offshore operators to enhance the safety and efficiency of oil and gas exploration, operations and transportation.

Canada-Newfoundland Operational Ocean Forecasting System (C-NOOFS) operates under COMBDA for the development of a demo ocean forecasting capability for the Northwest Atlantic - including larger-scale ocean and atmospheric forcing and ocean data assimilation.

In addition to presenting existing information, the IM process can be used to promote research to address data gaps to help increase the body of available knowledge. Bringing together researchers from a variety of disciplines through the IM process can also facilitate the identification of collaborative research opportunities.

Research efforts to collect traditional knowledge, can also provide information to be integrated with findings from other disciplines of research. Traditional knowledge holders can make valuable contributions regarding social, cultural and environmental components of the Plan.

It is necessary to coordinate existing and new information so participants have access to what's current. This will require the development of mechanisms for information management, sharing and feedback. Traditional mechanisms such as hard copy newsletters, fact sheets, brochures, reports, topical papers, meetings and workshops can all serve to promote awareness and keep participants and interested parties informed about the IM Process. The PB/GB LOMA website offers a web-based means to compile, share and receive feedback on information.

Since determining the success of Plan implementation includes monitoring environmental and socio-economic conditions/indicators associated with the PB/GB LOMA, there is the requirement for the identification of those specific attributes that need to be monitored and the determination whether existing programs are meeting requirements. In this, monitoring results must also be coordinated and communicated in a manner that will enable participants and decision-makers to review if management approaches are having their desired effect.

Monitoring programs have been ongoing within the PB/GB LOMA for a number of years. The Atlantic Zone Monitoring Program (AZMP) collects data on a number of ecosystem conditions such as plankton abundance, climate, hydrography, sea level etc. Other established ecosystem monitoring programs include those for fish

SPOTLIGHT ON THE OCEAN TECHNOLOGY SECTOR

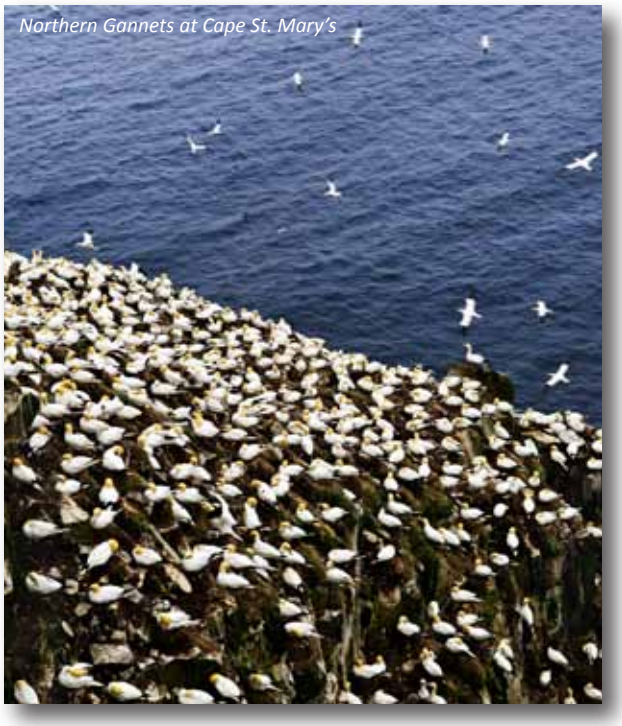
The ocean technology sector is well established in Newfoundland and Labrador. The OceansAdvance website indicates "St. John's is a thriving Centre of Oceans Excellence delivering innovative ocean technologies to markets around the world."

Collaboration with the ocean technology sector in the IM process facilitates the testing or groundtruthing of technologies where the information gathered can benefit ocean users and regulators. The SmartBay project in Placentia Bay where ocean technology applications are contributing to marine safety and environmental monitoring in the bay is an example of this.

Visit the SmartBay website at:
http://www.smartbay.ca/

stocks (e.g., annual DFO research vessel surveys), marine associated birds and marine mammals. One aspect of marine related bird monitoring is an example of a collaborative research approach whereby researchers from Environment Canada - Canadian Wildlife Service conduct monitoring activities aboard vessels during cruises along AZMP transects. Through combining research efforts in this manner, it has been possible to identify correlations between some species of plankton and seabirds.

Socio-economic products such as the Social, Economic and Cultural Overview and Assessment and the Human Systems and Socio-Economic Components document provide baseline information regarding social, economic and cultural conditions within the LOMA. A number of indicators can be identified as part of monitoring efforts to identify trends and determine how conditions change over time with implementation of the Plan.



Northern Gannets at Cape St. Mary's

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE	
Element: Information and Knowledge	
Strategic Objective	**Management Strategy**
Information and knowledge gathering and sharing are effective.	• Identify information and data needs/ gaps. • Promote research initiatives to fill in data gaps. • Co-ordinate information/data so it is current and readily available. • Develop mechanisms for information management, sharing, and feedback. • Utilize appropriate methods, including technology, to enable and support the IM process. • Utilize language and mechanisms that are audience appropriate. • Promote the training of individuals in how to utilize technologies. • Explore interactive communication with a broad audience. • Facilitate the use of science and social science research. • Promote collaboration with local ocean technology cluster. • Improve ocean awareness through education and communication with local media. • Promote awareness of the PB/GB LOMA initiative and ensure the information about the initiative is accessible to the public. • Integrate the use of and access to traditional knowledge, including Aboriginal/indigenous knowledge, as appropriate.
Monitoring and reporting are effective and timely.	• Identify monitoring needs. • Evaluate usefulness of monitoring and reporting programs and review management as necessary. • Ensure monitoring mechanisms are utilized throughout the process to the greatest extent possible.

Table 4: Objectives and Strategies related to the Information and Knowledge Element of Collaborative and Effective Governance Goal

CAPACITY AMONG STAKEHOLDERS

Stakeholder engagement is an important component within integrated oceans management. The connection of stakeholders to coastal and ocean areas and activities contributes a great deal of knowledge and information that can facilitate management decisions.

The collaborative oceans governance model for the PB/GB LOMA includes a number of established mechanisms through which stakeholders are engaged as a means of contributing towards planning and management. The PB/GB LOMA Committee is comprised of both government and stakeholder representation and provides a forum for collaboration and coordination to address large scale, multiple sector issues within the LOMA. Intergovernmental committees, including the CNLCOM and the ROCOM, bring together regulators from a number of departments and agencies to facilitate policy, management, operations and regulatory coordination.

In addition to the committees comprising the collaborative oceans governance model, a number of other multi-sectoral and intergovernmental coordinating mechanisms offer opportunities to enhance linkages with stakeholders and regulators. For example, the Government of Newfoundland and Labrador has established a Provincial Coastal and Ocean Network of departments with mandates related to coastal and/or ocean management while federally, the Federal Council facilitates coordination between Departments and in the Regions. Organizations such as Regional Economic Development Boards and provincial Rural Secretariat regional councils have established extensive networks at regional levels to facilitate input into policy and planning processes. Issue specific committees, such as the Placentia Bay Traffic Committee, bring together multiple stakeholders and regulators on issues of significant concern that require collaborative action. Identifying and linking the various existing coordinating mechanisms can strengthen networks and serve to facilitate stakeholder engagement into the IM process.

Placentia Bay Marine Protected Area Management Planning Committee meeting

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE	
Element: Capacity Among Stakeholders	
Strategic Objective	**Management Strategy**
Management decisions are better informed by the IM process.	• Effectively implement the collaborative oceans governance model for the PB/GB LOMA. • Identify and utilize multi-sectoral and intergovernmental coordinating mechanisms and establish new mechanisms where required. • Facilitate stakeholder involvement and capacity
Stakeholders are fully engaged.	
Administrative support structures are sustained.	

Table 5: Objectives and Strategies related to the Capacity among Stakeholders Element of Collaborative and Effective Governance Goal

GOAL: SUSTAINABLE USE

The intent of the sustainable use goal is for current and future generations to derive social, economic and cultural benefits from the safe use of coastal and ocean areas and resources. This goal is comprised of interconnected social well-being, economic well-being, cultural well-being, and public health and safety elements.

SOCIAL WELL-BEING

The objective of this element is to better comprehend how the use of coastal and ocean areas/resources contribute to regional sustainability adjacent to the LOMA. This includes understanding regional connections to the coast and ocean, maintenance of sustainable livelihoods and access to the coasts, as well as support for required services and infrastructure.

Regional sustainability includes taking a long-term perspective to safeguard the interests of future generations so that social, cultural, economic and environmental assets create positive outcomes for all. Given this broad definition, many objectives and strategies outlined within other elements of the Plan will contribute to regional sustainability. This section focuses specifically on those strategies necessary for social sustainability.

To understand the societal connectivity between coastal and ocean areas within the PB/GB LOMA, regional linkages and economic or cultural values should be identified and characterized. Identifying community assets helps clarify opportunities for sustainable development that can include physical, social and cultural elements such as knowledge, skills and networks. As the IM process for the PB/GB LOMA evolves, individuals will gain a greater perspective on the importance of the ocean to others, as the intrinsic values that link people, communities and the environment are considered.

In addition to understanding the "people values" and preferred way of life in coastal areas, promoting and maintaining access to sustainable livelihoods is essential for creating sustainable regions. Sustainable livelihoods provide more than economic benefits; they also contribute to social, cultural and individual well-being.

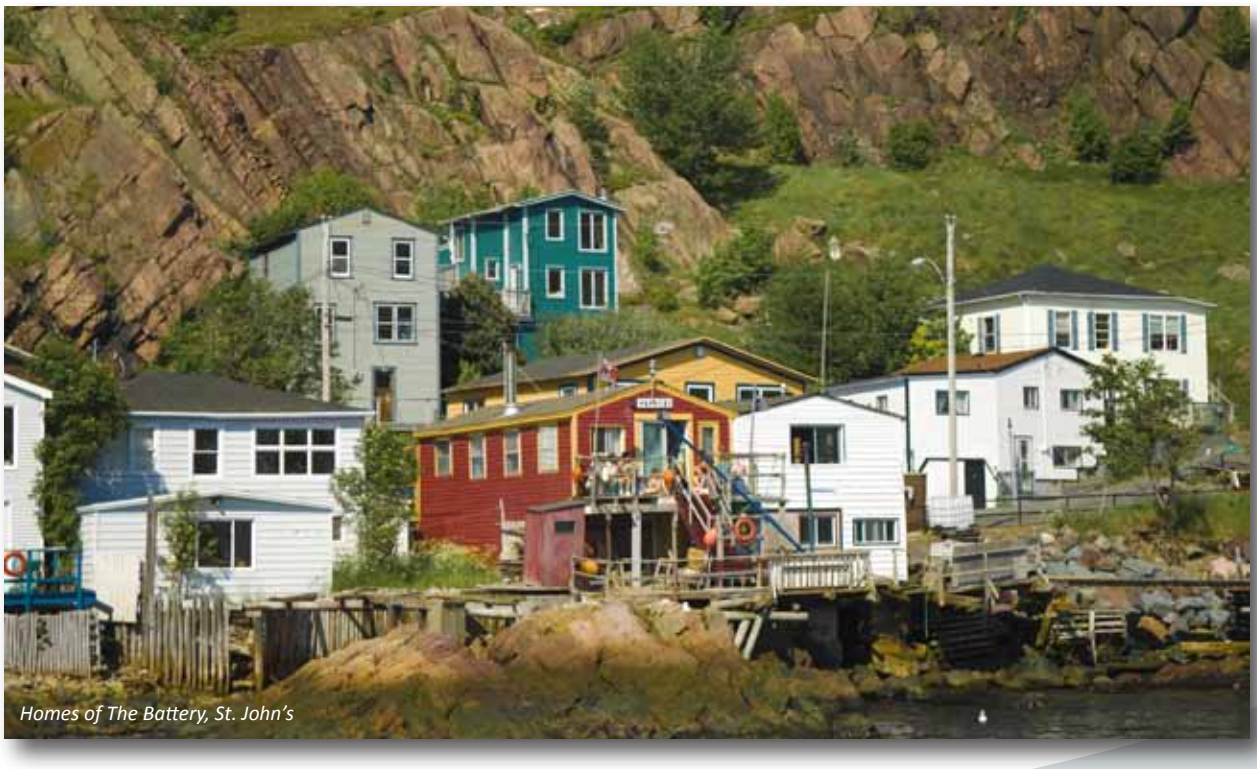
Increasingly, education and awareness can improve access to sustainable livelihoods, by encouraging individuals to take advantage of the assets and opportunities available to them and encouraging

ocean stewardship. For example, the Fish Food and Allied Workers (FFAW) Union increased fish harvester awareness of stewardship and conservation issues through the delivery of its Fisheries Stewardship Program. Increased stewardship and application of conservation measures in local fisheries can assist in gaining access to markets that now have an ever-increasing demand for sustainable seafood.

Governments play a key role in providing infrastructure and services that coastal communities rely upon. Ocean-related infrastructure and services such as breakwaters, public wharves, boat launches and marinas are important in providing access to the ocean for commercial and recreational purposes. Supporting these services and infrastructure will help people to avail of ocean assets and opportunities and maintain ocean-based livelihoods.

GOAL: SUSTAINABLE USE	
Element: Social Well-Being	
Strategic Objective	**Management Strategy**
Use and understanding of coastal and ocean areas/ resources contributes to the social aspects of regional sustainability.	• Identify and characterize regional linkages to coastal and ocean activities. • Promote and maintain access to sustainable livelihoods from coastal and ocean related activities/resources. • Enhance coastal and ocean related education, training and awareness. • Support coastal and ocean related services and infrastructure. • Promote social impact assessment to inform decision-making. • Ensure community inclusion in decision-making. • Assess issues regarding coastal access. • Improve government capacity (including fiscal) to implement social programs. • Identify community assets related to the PB/GB LOMA IM initiative. • Promote stewardship of coastal and ocean areas/resources • Increase understanding of values and preferred way of life as they relate to coastal and ocean areas/resources.

Table 6: Objectives and Strategies related to the Social Well-being Element of the Sustainable Use Goal



Homes of The Battery, St. John's

ECONOMIC WELL-BEING

A number of economic benefits are derived from the use of coastal and ocean areas. The diversification of economic activity is recognized as a positive development in the province as the historical dependence on the fishing industry has been complemented by new opportunities derived from sectors such as oil and gas, aquaculture, ocean technology and coastal/cultural tourism.

The objectives and strategies under this element recognize the need for economic diversification and economic competitiveness. However, optimizing economic opportunities must be balanced with resource sustainability and improved retention of wealth in coastal and Aboriginal communities.

Activities, opportunities and issues surrounding economic development should be assessed to provide a baseline understanding of the role that coastal and ocean industries play within the PB/GB LOMA. Coastal communities adjacent to the PB/GB LOMA are well placed to derive opportunities from coastal and ocean activities. Therefore, innovation and competitiveness in coastal and ocean-related industries should be at the forefront of economic development.

Sustainable human use of the coast and ocean requires that we meet the needs of current generations without compromising the needs of the future. Sustainable development balances industrial capacity with resource availability and the carrying capacity of the ecosystem, supporting the conservation of both renewable and non-renewable resources.

Sustainable development is part of the mandate of many government departments, research institutions, non-profit organizations and businesses. Sustainability should be built into the planning process for new activities and can be considered through various mechanisms such as environmental assessments (including project, regional, and/or strategic environmental assessments), policies for new activities, implementation of best practices and multiple use planning.

Since many economic opportunities depend on a healthy marine environment, the conservation of natural capital can be supported by recognizing the importance of biodiversity, productivity and marine environmental quality. Linking and working with the Plan's objectives regarding these elements can help clarify what is required to keep the resource base and environment healthy and how to derive maximum sustainable benefits from natural capital.

A key component to economic success is investing in research and innovation within the PB/GB LOMA. Through projects such as cold-water engineering, marine communications, offshore systems evaluation, sensor technology and marine simulation, Newfoundland and Labrador has innovative ocean technology products and services for niche markets around the world.

GOAL: SUSTAINABLE USE	
Element: Economic Well-Being	
Strategic Objective	**Management Strategy**
A diversity of economic opportunities are derived from renewable and non-renewable coastal and ocean resources.	• Support initiatives to optimize or improve provincial economic competitiveness. • Assess current and potential economic opportunities, issues and activities. • Support existing activities and opportunities, and future economic diversification and employment. • Support a positive investment environment for coastal and ocean-related activities. • Identify and implement measures to improve retention of wealth and benefits within coastal and Aboriginal communities. • Support innovation and research that may contribute to economic well-being.
A diversity of economic opportunities are derived from coastal and ocean infrastructure and coastal and ocean-related activities.	
Employment dynamics are sustainable (labour force, incomes).	
Optimize economic opportunities within the bounds of resource sustainability.	• Balance industrial capacity with resource sustainability. • Support the conservation of natural capital by recognizing, linking to and working with related ecosystem objectives and strategies. • Examine cost and benefits for the best use of resources. • Identify and link to existing policies, plans and initiatives for sustainable economic development.

Table 7: Objectives and Strategies related to the Economic Well-being Element of the Sustainable Use Goal

CULTURAL WELL-BEING

Social and cultural connections to the coast and ocean are also an iconic aspect of the Newfoundland and Labrador identity, expressed through its architecture, music, and art. Objectives under this element address valuing Aboriginal, traditional and local knowledge and practices, preserving cultural identity, preserving heritage resources and understanding cultural values.

Cultural well-being refers to participation in creative and cultural activities, as well as the ability to retain, interpret and express arts, history, heritage and traditions. Understanding of cultural values is important in determining what people want conserved for future generations.

The distribution and status of heritage resources should be identified to gain a better understanding of how to preserve the cultural identity of coastal communities. Heritage resources can be tangible and include resources such as built heritage and traditional crafts, or they can be intangible and include skills such as boat building and craft making.

Residents of coastal communities are the most knowledgeable about their cultural well-being and how it is tied to the ocean. Therefore, decision makers should collaborate with them on the decisions that affect them. This can be achieved by ensuring that public meetings and workshops are held in accessible locations and fostering decision-making processes that are open, transparent, and responsive to the concerns of communities of interest.

The preservation of traditional cultural identities, livelihoods, skills and heritage resources are important for the development of cultural tourism within the PB/GB LOMA. Opportunities for cultural tourism should be assessed to optimize the level of cultural tourism and the benefits for coastal communities.

Newfoundland Fisherman Filleting Cod

Newfoundland Fishing Stage

GOAL: SUSTAINABLE USE	
Element: Cultural Well-Being	
Strategic Objective	**Management Strategy**
Aboriginal, traditional and local knowledge and practices are valued.	• Foster cultural tourism opportunities. • Document, interpret and express Aboriginal/traditional/local knowledge and practices. • Recognize the social and cultural importance of traditional and aboriginal livelihoods. • Assess the distribution and status of tangible and intangible heritage resources. • Recognize and map the cultural values and skills held by residents of coastal communities. • Recognize and celebrate coastal communities and their connection to the ocean. • Assess cultural tourism opportunities. • Collaborate with residents of coastal communities regarding cultural well-being issues. • Involve Aboriginal peoples in planning and development processes.
Heritage resources are preserved and understood.	
Cultural identity is preserved.	
Understanding of cultural values is increased.	

Table 8: Objectives and Strategies related to the Cultural Well-being Element of the Sustainable Use Goal

PUBLIC HEALTH AND SAFETY

Health and safety issues in the fishing and oil and gas sectors have highlighted the need to examine and reduce risks to human life associated with working in coastal and ocean areas. In addition, storms surges resulting from increasingly severe weather have demonstrated there are risks to lives and property along the coast. Accordingly, the objectives under this element relate to the protection of human life/health and property by reducing risk.

In order to achieve the goal of sustainable use, it is necessary to ensure that coastal and ocean areas are safe, healthy and secure. Federal, provincial and municipal governments can contribute to providing safe, healthy and secure coastal and ocean areas. It is therefore essential that response programs are integrated and departmental roles are clarified. The Plan supports the continued development of programs and capabilities for marine security, safety and health promotion that involve government and non-government stakeholders.

GOAL: SUSTAINABLE USE	
Element: Public Health and Safety	
Strategic Objective	**Management Strategy**
Protection of human life/health through the reduction of threats in coastal and ocean areas	• Document and assess current status and threats and put into action, plans to address them. • Support (including funding) coastal and ocean-related services, training and infrastructure for health, safety and security. • Prevent, monitor and manage chemical or biological contamination that could affect humans. • Maintain and enhance an integrated surveillance, monitoring and response system. • Identify and link to existing policies, plans and initiatives related to health and safety and development processes.
Protection of public and private property through the reduction of threats in coastal and ocean areas	

Table 9: Objectives and Strategies related to the Public Health and Safety Element of the Sustainable Use Goal

GOAL: HEALTHY ECOSYSTEMS

In keeping with the ecosystem-based management principle, the healthy ecosystems goal is to ensure the structure, function and environmental quality of Placentia Bay/Grand Banks ecosystems are not compromised by management and use. This goal is organized into three interconnected elements of biodiversity, productivity and marine environmental quality. It is recognized that the healthy ecosystems goal can be achieved through an integrated approach to meeting ecosystem and sustainable use objectives in the Plan.

BIODIVERSITY

Biodiversity objectives relate to the conservation of communities, assemblages, species and populations that contribute to the biological diversity of the PB/GB LOMA. Therefore, human activities should not result in the loss of these ecosystem components. Objectives target conserving the diversity of benthic, pelagic and demersal communities and assemblages, the management of incidental mortality, the protection and recovery of species noted in the *Species at Risk Act* (SARA), and the prevention and/or reduction of distribution of invasive species.

Diversity of benthic, demersal and pelagic community types is conserved.

Conservation at the community level provides the potential to leverage resources to benefit larger numbers of species. The identification of community types/assemblages provides a way to associate numerous species through common habitat requirements and where benthic, demersal and pelagic communities often face similar conservation concerns that can be addressed simultaneously.

Communities/assemblages and their associated environments have not been defined in a comprehensive manner for the LOMA. Therefore, future efforts to provide complete classifications of communities in the area will be critical for addressing this objective and monitoring conservation success. It is recognized that such activities should be of a collaborative nature with full involvement of government departments, non-government organizations, stakeholders, and other interested parties. It is also expected the current shift towards ecosystem-based science will contribute significantly to the identification of community/assemblage types existing in the LOMA.

Various geographic areas (e.g., EBSAs and coral and sponge concentrations) have already been identified in the LOMA that offer existing potential to conserve some of the community types and species in greatest need of conservation. In the meantime, the 94 specific science-based conservation objectives (COs) related to ecologically significant species, depleted species and EBSAs, and four priority conservation themes (Atlantic Cod, aquatic invasive species, corals and sponges, and

File clam (Acesta sp.) found on rock walls and over hangs.

marine habitat) should guide and focus current efforts for the conservation of biodiversity within the LOMA.

Incidental mortality of all species is within acceptable levels.

A variety of human activities across many different ocean sectors can result in the unintentional mortality of marine species. One of the objectives of the Plan is to keep incidental mortality of all species within acceptable levels. Numerous programs are underway to quantify and assess incidental mortality in the marine environment yet more research validated through appropriate mechanisms with enhanced collaboration with stakeholders is needed.

Through collaboration with the fishing industry, DFO is implementing the Sustainable Fisheries Framework for ecosystem-based fisheries management where one of the key priorities will be management of incidental mortality or by-catch in accordance with the precautionary approach. This framework aims to take IM level objectives and make them operational for management of fisheries through the application of various conservation and sustainable use policies, and planning and monitoring tools.

There are a variety of management measures that can be promoted to keep incidental mortality within acceptable levels. For example, innovations in fishing gear and methods (e.g., best practices), technology improvements that minimize incidental by-catch and habitat damage are options to control mortality while allowing ocean activities to continue. In addition to preventing non-target species from being captured, these measures also have the potential to minimize habitat damage and improve quality, price and eco-rating of fisheries. Alternatively, managing activities so that they occur at times or places when and where non-targeted species are least likely to be present can reduce the risk that these species will be affected. Another cause of incidental morality is lost or derelict fishing gear (nets and pots) that continues to catch fish.

At risk species are protected and/or recovered.

Ensuring the protection and recovery of species at risk of extinction or extirpation is a national and international priority. To this end, Canada established the Species at Risk Act (SARA) to promote the recovery and protection of at-risk species.

Aquatic species at risk that currently occur in the LOMA include: the 'Endangered' Ivory Gull, Piping Plover, and Eskimo Curlew, the 'Threatened' Northern wolffish, spotted wolffish, and beluga whale (St. Lawrence Estuary Population), and the 'Endangered' blue whale, North Atlantic right whale, and leatherback turtle. Fin whale, Atlantic (striped) wolffish, Harlequin Duck, Barrow's Goldeneye, and banded killifish, have also been identified as 'Special Concern'.

The SARA (with certain exceptions) prohibits the harming, killing, harassing, taking, collecting, selling or trading of species listed as extirpated, endangered or threatened, and damaging the residence or critical habitat of these species is also prohibited. The Act also requires that recovery plans and action plans be

Leatherback Sea Turtle/DFO

developed for threatened, endangered and extirpated species.

The Plan will not replace or duplicate existing mechanisms for the protection, recovery and management of species at risk under SARA. Therefore, the intention of the objective and strategies for at-risk species contained in the Plan is to ensure that the IM process supports and complements SARA programs. As such, the Plan may provide a useful mechanism for contributing to the implementation of recovery plans, action and management plans and facilitate consultation processes. For example, identifying EBSAs within the PB/GB LOMA may contribute to the identification of critical habitat for species at risk.

Harmful species introductions are prevented and distribution of AIS already present within the area is reduced.

Invasive species (exotic species that displace native species or disrupt ecosystems) are becoming an increasing threat to marine ecosystem health and to ocean industries. A variety of aquatic invasive species (AIS) are already present in the planning area, including green crab, that can out-compete local crab species and damage vegetation; several species of tunicates which cover hard surfaces displacing or smothering other species; as well as the lacy crusting bryozoan. Newly introduced AIS could have a significant impact on biodiversity and habitat in the planning area. For example, green crabs primarily feed on native shellfish and other crustaceans, but have also been observed eating small and juvenile finfish.

The risk of additional invasive species entering the waters of the planning area is probable given other AIS currently exist in the adjacent Maritime provinces, changes in ocean climate, and increased marine transportation in the area. Based on the potential impacts to native diversity and fisheries and aquaculture operations, a key objective of the Plan is to prevent the introduction of invasive species and to limit the distribution of those already existing within the LOMA.

Improving our understanding of the sources, vectors, extent and risks of invasive species is fundamental to the development of effective strategies for the prevention, mitigation and management of these species.

Aquatic Invasive Species - Violet Tunicate/DFO

SPOTLIGHT ON STEWARDSHIP IN AQUATIC INVASIVE SPECIES (AIS) RESEARCH AND MITIGATION

Fisheries and Oceans Canada, through collaboration with fish harvesters, the FFAW Union, Memorial University of Newfoundland and the Department of Fisheries and Aquaculture have tested various mitigation methods specifically for green crab, including trapping and removal, which have proven positive results to date in the reduction of the species.

The Plan supports continued stewardship through the coordination of project activities and communications with industry stakeholders, other government agencies, academia and the public in programs to address this and other AIS through testing various mitigation methods, research, monitoring, and through education and public awareness.

GOAL: HEALTHY ECOSYSTEMS	
Element: Biodiversity	
Strategic Objective	**Management Strategy**
Diversity of benthic, demersal and pelagic community types is conserved.	• Identify benthic, demersal, and pelagic (including marine associated birds) communities/ assemblages, their associated environments and establish quantifiable overall baselines. • Cooperate with Fed/Prov/ENGOs/stakeholders and interested parties to conserve benthic, demersal, and pelagic (including marine associated birds) communities/ assemblages and their associated environments. • Use the Conservation Priorities (CPs) and associated themes (cod, corals and sponges, AIS and Habitat) developed by the LOMA committee to guide and focus conservation efforts within the PB/GB LOMA.
Incidental mortality of all species is within acceptable levels.	• Keep incidental fishing mortality of all species within acceptable levels in accordance with the precautionary approach. • Promote the continued development of a national policy to manage by-catch following a regional inventory and analysis of by-catch data. • Contribute to the design and implementation of a comprehensive program to reduce impacts of derelict fishing gear to an acceptable level. • Focus increased effort on the development of fishing gear technology to increase selectivity and reduce collateral damage. • Promote use of fishing gear and methods that minimize incidental by-catch, habitat damage and improve quality, price and eco-rating. • Improve monitoring and reporting of by-catch where required. • Continue efforts to minimize wastage/discard of harvested fish through improved management, enforcement, and marketing of undervalued species and other discards
At risk species protected and/or recovered.	• Continue to develop and implement recovery strategies, action and management plans under the Species at Risk Act and coordinate multi-species recovery planning where appropriate. • Ensure that sectoral management plans and ocean activities are consistent with SARA.
Harmful species introductions are prevented and distribution is reduced.	• Support the NL AIS Advisory Committee, an integrated and coordinated network of experts, regulators and stakeholders, and coordinate with the National AIS Committee (NAISC). • Continue development of a regional AIS Strategy, seeking advice from the NL AIS Advisory Committee. • Continue to support research, monitoring, rapid response initiatives and options to control the spread and introduction of AIS, focusing on species of concern such as green crab and tunicates. • Continue to support stewardship and awareness activities that contribute to the regional AIS strategy. • Promote pollution prevention, remediation and restoration of shellfish growing areas and other coastal habitats, to control introduction and growth of harmful species. • Identify management options to control incidents and severity of toxic algal blooms. • Continue to protect public health from consumption of contaminated shellfish through the Canadian Shellfish Sanitation Program, a coordinated program of monitoring, action and enforcement.

Table 10: Objectives and Strategies related to the Biodiversity Element of the Healthy Ecosystems Goal

PRODUCTIVITY

Strategic objectives under the productivity element relate to achieving healthy primary and secondary productivity, trophic structure and biomass and productivity of species within the PB/GB LOMA. Under these objectives, impacts to primary and secondary productivity caused by climate change and physical/chemical changes would be examined. It is recognized that these changes can result from both natural processes and those that are human induced. Since there's a need to improve our understanding of trophic structure within the PB/GB LOMA, there is a focus on research and monitoring as well as the key role of forage species. The species biomass and productivity objective includes strategies associated with protecting spawning and juvenile aggregations, keeping fishing mortality within acceptable levels and supporting recovery plans for depleted species (not listed under SARA). Fisheries management has traditionally had a focus on maintaining healthy biomass and productivity of harvested species and IM will complement these efforts by also considering impacts from activities other than fishing.

Primary productivity and secondary productivity are healthy.

Enhancing our knowledge of factors that affect primary and secondary productivity in the LOMA requires research. Improving monitoring programs is one strategy that can contribute to a better understanding of the status of, and changes in, productivity in the near and offshore. Additionally, supporting research on the impacts of climate change and physical and chemical oceanographic changes on primary and secondary productivity within the LOMA will support further examination of the potential impacts of changing regional phytoplankton, zooplankton and macrophyte (aquatic plant) productivity on other higher level species in the area.

Harp Seals - Gary Stenson/DFO

The identification of any negative factors influencing productivity in the LOMA may eventually allow the development of management measures to address some factors, especially those that are human-induced. Nevertheless, for many factors affecting productivity, such as climate variability and upwelling patterns, monitoring may be the only realistic management action available.

Trophic structure is healthy.

Trophic structure is a term used to describe the food web hierarchy through which organisms derive their nutrients. The functioning of food webs is complex, involving interactions between multiple trophic levels (primary producers, secondary producers, higher level predators, decomposers, etc.).

It has been recognized that activities affecting a species at one level can have impacts that reverberate to other levels throughout the food web. Ongoing research in the Region (including the LOMA) shows that marine ecosystems are changing, and may be facing significant stresses. Some of these changes have yet to be understood, so management will benefit from any information that aids our understanding of these events based on an approach which considers the linkages among all species and the environment.

Biomass and productivity of harvested and other species are healthy.

Biomass is a measure of the mass of all living hings within a community, species, population or habitat. Productivity is a measure of the amount of biological material produced per unit area per unit time. In essence, these measures are the core biological indicators of the health of marine ecosystems.

In general, population productivity objectives are intended to ensure that human activities do not cause unacceptable impacts, as it is recognized that any

human activity may have some lesser, acceptable effect on population productivity. Management measures should therefore include establishing specific biomass and productivity objectives for harvested and other important species and/or species groups, where compliance with established management measures and limits will contribute towards the desired goal.

Live Lobsters

Life history activities such as spawning and nursing/rearing, overwintering, feeding and migrating can be critical to the survival success of species or populations. As such, the protection of such activities is even more critical when these activities occur in aggregations, such as when most individuals use an area for some important function in their life history or when these processes occur with exceptionally high density.

Fisheries and Oceans Canada has afforded protection to aggregations of life history activities in the past through the application of temporal and spatial fisheries variation orders under the *Fisheries Act*. In addition to this, EBSAs have been identified within the PB/GB LOMA where protective measures may be implemented as part of a suite of potential management options.

The implementation of ecosystem-based approaches through fisheries management processes and related plans will be the primary mechanism through which this objective is achieved.

GOAL: HEALTHY ECOSYSTEMS	
Element: Productivity	
Strategic Objective	**Management Strategy**
Primary productivity and secondary productivity are healthy.	• Support research on the impacts of climate change on phytoplankton and zooplankton within the LOMA, and on migratory species which spend part of their life cycle in the LOMA and are potentially impacted by changing global phytoplankton and zooplankton productivity. • Strengthen regional monitoring of phytoplankton productivity, diversity and health, and linkages with physical/chemical properties of surface waters, and secondary productivity. • Support research and additional regional monitoring of macrophyte productivity & linkages to physical/chemical impacts.
Trophic structure is healthy	• Define healthy trophic structure and develop indicators. • Strengthen monitoring of predator species ecology, particularly seals. • Promote research related to multi-species interactions (including the role of predators) in maintaining ecosystem productivity. • Improve efforts to protect forage species
Biomass and productivity of harvested and other species are healthy.	• Continue to implement (and develop) management actions to protect significant aggregations associated with spawning and juveniles. • Implement the Precautionary Approach Framework for Total Allowable Catch (TAC) setting and keep fishing mortality of all species within acceptable levels. • Support implementation of recovery plans for depleted species.

Table 11: Objectives and Strategies related to the Productivity Element of the Healthy Ecosystems Goal

MARINE ENVIRONMENTAL QUALITY

Marine environmental quality objectives address physical, chemical and habitat components of the PB/GB LOMA ecosystems including the bottom and the water column. The overall intent of the strategic objectives under this element is to ensure the quality of the marine environment is able to support healthy and productive marine organisms.

Monitoring and research are required to determine the state of physical and chemical environmental characteristics and management measures can reduce inputs and negative impacts, including cumulative impacts, associated with physical and chemical contamination of sediments and the water column.

The conservation of habitat integrity requires measures such as seabed and habitat mapping, monitoring and the development and implementation of additional policies and management measures to reduce potential impacts on habitat.

Physical and chemical characteristics of ocean bottom and water column support resident biota.

The physical and chemical characteristics of the water column and ocean bottom play an important role in determining the communities that are found in a given area. Both natural and human induced factors can change these characteristics, with the subsequent potential for either positive or negative impacts on biological communities. The Plan recognizes the need for a more integrative approach to assessing marine environmental quality.

Marine ecosystems in the LOMA are undergoing a variety of physical and chemical changes. Strengthening monitoring of important physical and chemical indicators at strategic locations throughout the LOMA will support many of the variables required to better understand and predict the impacts of changes (i.e., climate) on local marine resources and sectors.

Marine ecosystems in the LOMA are also subject to threats from pollution. Major ports and adjacent coastal waters tend to be the most heavily contaminated areas. Although currently pollution is relatively less significant in the offshore, local sources of contaminants still exist, including accidental and illegal discharges from ships, and incidental wastes from hydrocarbon drilling and production activities. A failure to monitor and address the effects of marine pollution (e.g. sewage, fish plant effluent, marine debris, ghost nets, oil, drill cuttings, etc.), including cumulative impacts, can result in negative impacts at all levels of economic activity, from subsistence uses of marine resources to commercial fisheries, fish processing, aquaculture operations and tourism. Additional research on the level of

contamination occurring near and offshore, sources of contaminants, impacts on biota, and threshold effect levels would inform current and emerging practices targeting the management of marine environmental quality in the planning area.

Where human influences have been identified as causing negative impacts on the physical and chemical properties of the environment, management measures may be needed. These may include promoting the adoption of lower-impact technologies, changing the spatial or temporal extent of activities, development of best practices, and compliance/enforcement, education, and raising awareness.

Habitat integrity is conserved.

Since communities are intrinsically linked to the habitat they occupy, marine habitat conservation should be incorporated into frameworks for conserving benthic, demersal and pelagic communities and assemblages. Once unique, important and representative habitats have been identified, it is necessary to assess potential impacts to those habitats (e.g. physical disturbance, pollution and climate change) and develop management measures around them.

It is recognized that there is environmental and economic value in habitat identification and mapping in support of spatial planning to achieve sustainable marine resource management in the LOMA. The development of mechanisms to share local information on ecologically significant and/or sensitive marine habitats with the appropriate Federal, Provincial and Municipal agencies with regulatory jurisdiction in the LOMA is important to improve management of potentially harmful human activities across various scales within the planning area.

Habitat mapping can provide information on the spatial distribution of habitats relevant to issues such as marine protected area (MPA) planning, environmental impact assessment, habitat monitoring, pollution and oil spill response and fisheries assessments.

Eelgrass©Corey Morris/DFO

GOAL: HEALTHY ECOSYSTEMS	
Element: Marine Environmental Quality	
Strategic Objective	**Management Strategy**
Physical characteristics of ocean bottom and water column support resident biota.	• Strengthen monitoring of important physical indicators of climate change at strategic locations in the LOMA. • Promote research on impacts of changing physical characteristics of the ocean on key ecosystem components and properties • Monitor impacts of pollution on physical characteristics of the water column and ocean bottom, and develop management options to reduce harmful impacts.
Chemical characteristics of ocean bottom and water column support resident biota.	• Develop a marine environmental quality program. • Strengthen monitoring of important chemical indicators of climate change at strategic locations in the LOMA. • Promote research on impacts of changing ocean chemistry on key ecosystem components. • Continue to monitor impacts of marine pollution on chemical characteristics of the water column and ocean bottom, and develop management options to reduce harmful impacts.
Habitat integrity is conserved.	• Enhance the protection of vulnerable marine habitats by contributing to the establishment of a network of marine protected areas through the development of new marine protected areas and the continued commitment to conservation within existing marine protected areas. • Encourage the continued development of a regional coral and sponge conservation strategy through an integrated and coordinated framework of experts to speak to and inform coral and sponge conservation. • Strengthen and promote the regional coral and sponge research program, including the development of science-based criteria to identify/define significant concentrations of corals, and sponge dominated communities, and the development of a coral and sponge atlas. • Support the continued implementation of the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas using measures such as encounter protocols, closed areas, risk analysis and gear restrictions; encourage use of science-based criteria and the precautionary approach. • Strengthen and support seabed and marine habitat mapping initiatives and spatial planning within the LOMA. • Develop mechanisms to share information on ecologically significant and/or sensitive marine habitats with appropriate Federal, Provincial and Municipal agencies to improve management of potentially harmful human activities. • Monitor the health of coastal and marine habitats and associated marine communities. Characterize and quantify coastal marine habitat in relation to life history requirements of marine species. • Enhance conservation measures for sensitive and vulnerable marine habitats by establishing protection and management measures for EBSAs and Vulnerable Marine Ecosystems (VMEs).

Table 12: Objectives and Strategies related to the Marine Environmental Quality Element of the Healthy Ecosystems Goal

PRIORITY SETTING FOR ACTION

The Government of Canada's Oceans Strategy, based on commitments outlined in the Oceans Act, recognizes the fact that many federal and provincial government departments play a role in managing our coasts and oceans. As such, the coordination of policies and programs within and across governments, and respect for jurisdictional authorities will be essential to share responsibility for achieving common objectives.

The overall intent of the IM Plan is to promote the conservation and sustainable use of coastal and ocean resources within the PB/GB LOMA. Through the collaborative planning process, provincial and federal governments, industry, non-government organizations, Aboriginal groups and other interested stakeholders have worked together to establish a vision and goals that support sustainable use as well as move coastal and ocean planning forward within the LOMA.

Through the identification of strategic objectives and management strategies for all three goals, the PB/GB IM Planning WG was able to outline all of the fundamental components necessary to support the overall vision for the LOMA. Nevertheless, given the scale and complexities associated with implementing all aspects of each goal as well as the constraints facing governments and stakeholders within the IM process (i.e, resources, capacity, legislative, five year time frame of the plan, etc.), the working group identified the key priorities for action within the LOMA by 2017 in consideration of all the supporting information. While priorities for the governance and sustainable use goals were identified exclusively by the IM Plan WG, priority setting under the healthy ecosystems goal was also influenced by the risk assessment of the science-based conservation objectives for the PB/GB LOMA (DFO 2007).

A total of 14 priorities (Table 13) were identified and constitute a blend of issues-based or more fundamental principle components of IM. Throughout the planning process, it has been recognized that many initiatives have been undertaken or are currently underway to address several of the issues prioritized within this plan. Through the action planning phase, there will be a need to identify all activities that relate to and support the priorities of this Plan and to align specific actions that strengthen existing initiatives as well as identify where new activities need to be undertaken.

COLLABORATIVE AND EFFECTIVE GOVERNANCE	
1.	Conduct a Legislative and Regulatory Gap Analysis
2.	Enhance Communication and Awareness
3.	Identify and Address Data Needs/Gaps
4.	Mitigate and/or Prevent Conflict
SUSTAINABLE USE	
5.	Improve Coastal and Marine Infrastructure
6.	Prevent Pollution
7.	Assess Linkages, Opportunities and Values to Guide Sustainable Economic Development
8.	Foster Community Engagement
9.	Promote Education and Stewardship
HEALTHY ECOSYSTEMS	
10.	Rebuild Atlantic Cod
11.	Prevent Introduction and Distribution of Aquatic Invasive Species (AIS)
12.	Manage Habitat for Marine Species
13.	Conserve Cold-Water Corals and Sponge Reefs
14.	Conserve and Protect At Risk Species and Vulnerable Marine Habitats

Table 13. Placentia Bay/Grand Banks LOMA Integrated Management Plan Priorities

With respect to moving forward on the priorities of the IM Plan, the formation of action teams consistent with the interests of specific priorities will be established to lead the development and implementation of focused action plans. These plans will be primarily sector- or issue-based and collaborative in nature, involving parties from similar communities of interest. The action plans will allow for a higher level of operational detail in the creation of management actions, including clear and concise outlines for roles and responsibilities, timelines, milestones/ targets, and specific activities/deliverables required for successful completion.

COLLABORATIVE AND EFFECTIVE GOVERNANCE PRIORITIES

Effectively implementing the collaborative oceans governance model for the PB/GB LOMA including the ROCOM, CNLCOM, PB/GB LOMA Committee, CMA committees and MPA committees is key to meeting the collaborative and effective governance goal. In addition, identification and utilization of other multi-sectoral and intergovernmental coordinating mechanisms help strengthen governance approaches (i.e., Regional Economic Development Boards, Rural Secretariat, etc.). Additionally, duplication of effort is not required where avenues for coordination already exist.

In order to discuss and identify governance priorities at the March 2011 workshop, four break-out groups were formed each focusing on one of Institutional, Policy and Legal Arrangements, Integrated Management Processes and Implementation, Information and Knowledge and Capacity Among Stakeholders to identify what members felt were priorities.

CONDUCT A LEGISLATIVE AND REGULATORY GAP ANALYSIS

An analysis of the legislative policies, best management practices, etc., related to management of the LOMA is needed. It is important to describe and understand the role of the various government departments and agencies involved within the oceans sector through activities, policies, plans, services and regulatory responsibilities and how they inter-relate to objectives under the effective and collaborative governance goal. Building upon the documents "The Role of the Canadian Government in the Oceans Sector" and "Role of the Provincial and Territorial Governments in the Oceans Sector" (available at http://www.dfo-mpo.gc.ca/oceans/publications/cg-gc/index-eng.htm), a legislative and regulatory gap analysis will identify available regulatory instruments, existing statutes, regulations, policies and best management practices relevant to the PB/GB LOMA.

Operational efficiencies in processes and terminology across jurisdictions can be achieved, and linkages between institutions and programs is necessary, in order to streamline activities between existing legislation, policies, plans and programs. Identifying perceived gaps in regulatory measures will direct enhancing existing management measures where feasible or identifying new measures to improve the management of human activities within the LOMA.

ENHANCE COMMUNICATION AND AWARENESS

Facilitating stakeholder involvement through communication tools and knowledge transfer was considered an important priority for increasing the capacity among all stakeholders involved in IM. Transparent communications among all coastal/marine industries and interests is necessary to effectively and cooperatively share resources and space within the LOMA. Enhanced communications will effectively lead to constructing respectful partnerships between all ocean users, identify and advance collective agendas and also promote awareness of the PB/GB LOMA initiative to the general public.

As a first step to enhancing communications and awareness, information and data about the PB/GB LOMA initiative must be co-ordinated so that it is current

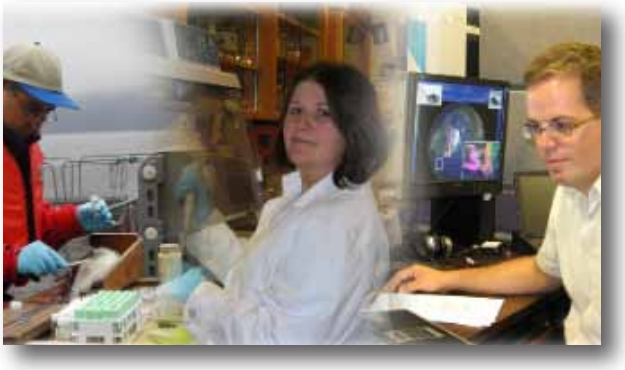



and readily available between groups. Mechanisms such as websites, education and communication tools, as well as improving ocean stewardship and awareness throughout the general public are all necessary for information management.

IDENTIFY AND ADDRESS INFORMATION AND DATA NEEDS/GAPS

The need for improved data management has been identified by various stakeholders. Compiling existing data and research into mapping programs, databases or resource inventories will allow for linkages between various information sources (i.e., scientific information, oceans technology , traditional and local knowledge). This will provide an effective means for observing trends and changes in the economy and environmental conditions and identify subject areas which are lacking information and require more monitoring or research.

Once data needs and gaps are identified, they should be addressed through research in science, ocean technology, social science, or any other applicable disciplines. In particular, ocean technology is an emerging industry sector that contributes to the provinces economy. It is a fundamental tool that can be applied to aid in addressing the priorities that have been identified for the PB/GB LOMA.



Specifically, data gathering was identified as the greatest priority related to public health and safety. Areas such as forecasting marine weather events and predicting risks to infrastructure all rely on having current and accessible data.

MITIGATE AND/OR PREVENT CONFLICT

Considering the array of activities within the LOMA, users will have competing needs and interests for ocean space. Conflict can also result when one activity negatively prevents another from occurring.

Not all conflict can be avoided nor is it always negative. Conflict may assist in bringing important issues to the forefront and ultimately result in positive outcomes that may see a more equitable and sustainable use of resources. It is recognized that conflict is often attributed to a lack of communication – strengthening the identified fundamental requirement for communication and interaction between various users can be provided through IM.

Conflict that cannot be avoided or resolved independently may require a mechanism to enhance communication among stakeholders. The PB/GB LOMA Committee and other coastal integrated management bodies within the LOMA provides the venue for open communication and an integrated approach to discuss issues such as user conflict. Through these bodies, stakeholders can collectively work towards improving the understanding of existing and potential use patterns, interactions and cumulative effects, identifying and characterizing spatial and temporal conflicts and developing procedures and tools for addressing them.

SUSTAINABLE USE PRIORITIES

A number of organizations and processes have been involved in identifying priorities related to these elements via extensive consultation with communities, stakeholders and government representatives. At the March 2011 workshop, the IM Plan Working Group examined priority issues and concerns raised via the Coastal and Ocean Management Strategy and Policy Framework for Newfoundland and Labrador Discussion Paper and the Coastal and Ocean Issues Scans, Regional Economic Development Boards and their Strategic Economic Plans as well as the Rural Secretariat Regional Councils and their Regional Visions. The five priorities identified reflect the consideration of Plan strategic objectives and management strategies and the results of the consultative processes.

IMPROVE COASTAL AND MARINE INFRASTRUCTURE

To increase the ability of coastal communities within the PB/GB LOMA to meet their current and future needs, improvement and maintenance of marine services and infrastructure is important. Such an investment will lead to strengthened economic activity and an improved quality of life.

Issues concerning coastal and marine infrastructure are mainly associated with channel and basin dredging, breakwaters, wharves, shoreline protection, launching facilities and to a lesser extent, roads. Outdated marine infrastructure cannot easily accommodate multiple resource users and creates an increased risk to safety and inefficient operational practices by industry. In addition, the condition of harbor infrastructure and the supporting road systems can have an impact on the productivity of many sectors of the economy including tourism.

PREVENT POLLUTION

Due to the implications that pollution can have on health, the environment, and those who depend on the ocean for their livelihood, pollution prevention has been identified as a priority within the Plan. Potential oil spills in Placentia Bay and lack of wastewater treatment were specifically identified as being important.

A 1990 public review panel on marine safety and marine spills response capability concluded that foggy Placentia Bay, with its 365 islands and reefs, is the most likely place in Canada for a major oil spill (Brander-Smith 1990). The subject has been studied extensively, the most recent being the Assessment of Proposals Related to Oil Risk for the South Coast of Newfoundland (Cape St. Francis to Port aux Basques) (2010). It is important to adequately assess the capabilities and practices in place to prevent oil spills near and offshore as well as the existence and comprehensiveness of response plans.

Many sources of pollution within the LOMA originate from activities on land. The PB/GB LOMA generally possesses pristine coastal environments but localized impacts of effluent discharge contribute to localized degradation. Specifically, a significant number of wastewater systems discharge directly into the ocean with little or no treatment. Upgraded infrastructure and effluent systems are required to reduce the amount of pollutants entering the ocean. Developing a marine environmental quality program, promoting pollution prevention, monitoring and developing management options to reduce impacts are also important management strategies to address marine pollution.

ASSESS LINKAGES, OPPORTUNITIES AND VALUES TO GUIDE SUSTAINABLE ECONOMIC DEVELOPMENT

Several social, economic and cultural issues have been grouped under this heading that directly relate to management strategies identified within the Plan.

An examination of linkages to coastal and ocean activities for areas adjacent to the PB/GB LOMA is recognized as a priority since it will provide a better understanding of regional reliance upon activities and how coastal and oceans management decisions can affect coastal regions. For example, trawlers and fish plants on the Burin Peninsula are linked to fisheries prosecuted on the southern Grand Bank, so decisions related to offshore fisheries in that area can have resulting social and economic impacts on the Burin Peninsula.

In addition to examining economic linkages, those from a cultural well-being perspective are also considered a priority within the Plan. Recognition of coastal community connections to the ocean and the importance of traditional and Aboriginal livelihoods, knowledge, and practices is an important starting point regarding the maintenance of cultural well-being.

Middle Cove NBeach ©N. Templeman

Mapping areas of cultural value and the distribution of tangible and intangible heritage resources is considered important to help decision-makers gain a better understanding of how to preserve the cultural identity of coastal communities.

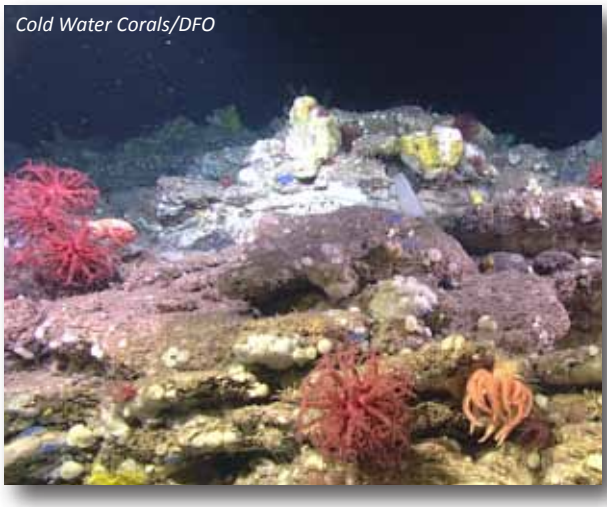
There is a great deal of emphasis placed on promoting tourism opportunities within the province and our culture is an important component of what attracts visitors. Collectively, implementing the Plan's cultural well-being strategies will contribute to maintaining the cultural richness such that assessing cultural tourism opportunities within the LOMA and fostering these opportunities are considered priorities.

Identifying community assets within the PB/GB IM initiative is also considered a priority. Examining linkages, combined with the identification of community assets, will provide a comprehensive knowledge base to be used for management consideration.

From an economic well-being perspective, an assessment of current and potential economic opportunities, issues and activities was identified as a priority. In order to facilitate sustainable and diversified economic activity, an important first step is to examine and assess the current economic context to determine what is working well, what requires improvement and what planning activities are required. This assessment can also consider future potential opportunities for expansion and diversification so that it can be undertaken in an informed manner that maximizes economic potential and reduces conflict and/or highlights linkages with other economic sectors.

Investing in ecosystem services is a priority that will allow for optimization and diversification of economic opportunities within the bounds of resource sustainability. The biological productivity of ecosystems provides a number of opportunities to utilize renewable resources for economic gain. Therefore, it is important to recognize ecosystem services provided and invest in them wisely. These ecosystem services can be considered natural capital that requires careful management to ensure economic returns into the future. For example, fishery restructuring is important given the fisheries


Trapping Green Crab - North Hr., NL


Cold Water Corals/DFO

significant contribution to rural economies and the need for recovery of fish stocks. From a fisheries perspective, a roadmap should be developed that examines future resource availability and connections to economic opportunities that will support new enterprises and wealth generation. This reflects integration between socio-economic and ecosystem goals and positive incentives for change could prove beneficial.

FOSTER COMMUNITY ENGAGEMENT

Fostering community engagement recognizes the importance of coastal communities and the need to collaborate with them about what is important to them. Therefore, this priority should follow that communities are included in the planning and development process regarding issues surrounding their social, economic and cultural well-being.

Governments can implement social programs through a variety of mechanisms, including aligning government priorities with community needs. Ensuring community inclusion in decision-making by improving government support for community capacity building as well as including social impact assessments for developments to inform decision-making, are both means to effectively engage communities and to acknowledge their interests.

PROMOTE EDUCATION AND STEWARDSHIP

To ensure the successful implementation of IM, stakeholders at the community level must recognize the value and long-term benefits of acting responsibly to conserve the ocean and its resources for present and future generations. By promoting the stewardship of coastal and ocean areas, communities are encouraged to actively participate in the conservation and protection of the ocean.

Stewardship will only be successful if stakeholders work together and feel a shared responsibility for the conservation of coastal and ocean areas. Through education and awareness, there is potential to increase the awareness of stakeholders that is critical to the realization of change.

HEALTHY ECOSYSTEMS PRIORITIES

Priorities related to the healthy ecosystems goal were identified in several phases, based largely on the risk analysis of key ecosystem components within the PB/GB LOMA (see http://www.dfo-mpo.gc.ca/libraries-bibliotheques/toc-tdm/342998-eng.htm) and also the IM Plan WG objectives based approach for setting objectives.

Initially, DFO Science identified 94 Conservation Objectives (COs) for the LOMA which were associated with Ecologically Significant Species (ESSs), Depleted Species (DS) or significant features which were considered to be conservation priorities (CPs). Ecosystem components were ranked based on an assessment of their relative risk of harm from human activities and associated stressors (http://www.dfo-mpo.gc.ca/library/340905.pdf).

Based on the results of the above assessment, the IM Plan Working Group identified four conservation subject areas warranting further discussion: Cod, Corals and Sponges, Habitat and AIS. These subject areas were identified through transparent, integrated and inclusive process, with a focus on the components of ecological importance and vulnerability within the LOMA. Protecting at Risk Species and vulnerable marine habitats were also identified as priorities by the IM Plan WG.

These themes provide a focus for action planning and represent key components of the ecosystem including coastal and deep sea habitats as well as influential and depleted species from a range of trophic levels. The nature of the themes reflects an ecosystem approach that also reflects the elements of biodiversity, productivity and marine environmental quality on which healthy ecosystems depend.

REBUILD ATLANTIC COD

The cod stocks adjacent to Newfoundland and Labrador have been important to the economy, history and culture of the Province. Cod has a significant influence on the ecosystem of the LOMA, primarily due to their large biomass, broad distribution and role as both predator and prey as they grow and move from one trophic level to another. As fry, cod feed on a variety of small crustaceans and larvae. Crustaceans remain the major food for juvenile cod until they reach adulthood when fish become the dominant prey. Capelin, sand lance, redfish and herring are important prey but a wide variety of other species are also eaten including smaller cod and a range of other groundfish species, as well as mackerel, shellfish, and other invertebrates. Predators also change with cod size and there is considerable interest in the role of seals in regulating cod populations.

During the early 1960s, total cod biomass was estimated to have been about 3 million tonnes. It collapsed in the late 1980s and early 1990s to about 1-2% of that level, leading to a moratorium on all directed fishing of Atlantic cod in 1992. Since the sharp decline in cod biomass, the biomass of invertebrates such as shrimp and crab have

Atlantic Cod

Green Crab, NL - Terri Wells/DFO

expanded to record highs in what has been termed a 'trophic cascade'. These changes have been attributed to over-fishing resulting in perturbations to the predator-prey systems as well as natural changes in the ecosystem. The role of Atlantic cod in the ecosystem is highly significant to its structure and function, and as such has been termed an ecologically significant species.

Even though cod are currently at a fraction of their former biomass, they still represent a significant component of the total groundfish population. To this end, increasing and securing the long-term sustainability of Atlantic cod within the PB/GB LOMA is considered a priority.

PREVENT INTRODUCTION AND DISTRIBUTION OF AQUATIC INVASIVE SPECIES (AIS)

Aquatic invasive species (AIS) are widely recognized as a major threat to marine biodiversity and have transformed marine habitats around the world displacing native species and disrupting ecosystems. Introduced species can have serious effects on marine ecosystems and the coastal and ocean industries that depend on them. In particular, AIS are an emerging risk to Canada's fisheries and aquaculture industry.

Alien species establish themselves and can spread rapidly, altering habitat that can result in reductions or outright extinction of indigenous fish and local fisheries. Invasive species can compete with native fish, invertebrates and plants for food and space or harm them directly by up-rooting or smothering plants such as eelgrass, or preying on important marine species such as shellfish. Impacts on ocean users are equally important. Colonial species grow rapidly on any available substrate in the water including plants, docks, boats, ropes, anchors, nets, traps, aquaculture cages and gear, weighing them down and disrupting their function.

Vessel traffic and climate change have been recognized as contributing to the introduction, growth, establishment and spread of harmful species within the LOMA. Any water that enters a vessel during operation may contain unwanted organisms, while hulls, anchors, ropes and related equipment provide attachment sites for marine species.

To date, four AIS have been detected within the LOMA, including the European Green crab (Carcinus maenas), the lacy crusting bryozoan (Membranipora membranacea), the golden star tunicate (Botryllus schlosseri) and the violet tunicate (Botrylloides violaceus). Detailed information on these species and other AIS of concern can be accessed at (http://www.nfl.dfo-mpo.gc.ca/ais-eae).

MANAGE HABITAT FOR MARINE SPECIES

The marine environment of the LOMA provides a wide range of habitats supporting various marine species from marine related birds, marine mammals and fish to plankton, aquatic plants and benthic invertebrates. Habitat is often thought of as physical features on the sea floor but may also include key migration routes as well as pelagic or demersal locations where species aggregate for spawning, rearing, feeding or refuge.

Humpback Whale

Cold Water Corals and Sponges/DFO

It has long been known that certain areas within the marine environment support a much higher density and diversity of marine life compared to adjacent areas. One of the features that contribute to areas of high productivity and biodiversity is habitat complexity through which the provision of food, shelter, and attachment sites for a wide range of marine organisms, most notably juvenile fish is important.

Soft bottom habitats provide burrowing sites while hard bottoms such as cobble, boulder, canyons or shelf edges and slopes afford valuable structural habitat. Biogenic habitats created by living marine plants and animals are among the most complex and productive marine habitats. Within the LOMA, corals and sponges, kelp, rockweed and eelgrass have been identified as ecologically significant species providing structural habitat. Collectively these habitats are also among the most vulnerable to human activities.

In coastal areas, activities such as dredging, coastal construction, aquatic invasive species, oil pollution, municipal and industrial effluents, eutrophication and climate change contribute to habitat degradation, whereas in deeper waters bottom contact fishing, offshore drilling and cable, ocean acidification and ghost nets are the key activities with potential to impact upon marine habitat. Strengthening and supporting seabed and marine habitat mapping initiatives and spatial planning in the LOMA will be a key aspect in addressing this priority.

CONSERVE COLD-WATER CORALS AND SPONGE REEFS

Corals and sponges create biogenic habitat, forming complex structures with spaces and gaps which enhance species richness and biodiversity. The cold-water corals found in Canadian waters are distinct from warm-water corals as they lack symbiotic algae and do not require sunlight to grow. Since cold-water corals and sponges can form at depths far below the zone to which light penetrates, they are among the few habitat-forming features on the deep sea floor that can provide marine fishes and invertebrates with protection from strong currents, refuge from predators, nurseries for larval and juvenile life stages and areas for feeding, spawning, resting and breeding.

Corals and sponges are vulnerable to a number of activities, most notably bottom contact fishing and offshore drilling and are the subject of growing regional, national and international concern. Collectively they represent some of the most sensitive bottom habitat found outside the coastal zone. Canada has committed both domestically and internationally to conserve vulnerable marine ecosystems (VMEs), including cold-water corals and sponge reefs.

CONSERVE AND PROTECT AT RISK SPECIES AND VULNERABLE MARINE HABITATS

Conserve and Protect At Risk Species

Marine species are assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which identifies those determined to be in danger of disappearing from Canada. The results of this process are reviewed by DFO to determine if they will be listed as species at risk under the Species at Risk Act. Once listed, there exists specific regulatory responsibilities under the Act that remain in effect until the species is considered to be recovered and subsequently de-listed.

A number of 'depleted species' within the LOMA were identified by DFO Science based on the best available information including COSEWIC assessments, stock assessments, NAFO recommendations and regional fishing moratoria. When analyzed in relation to the risk of harm from human activities and associated stressors, several emerged as high priority:

- Atlantic cod
- Capelin
- Groundfish biomass
- Large gorgonian corals.

Due to the risk of harm to these species, fishing mortality and other risks should be managed within a strategy intended to increase the abundance of these species, or in the case of large gorgonians, reduce/avoid impacts on existing concentrations.

Vulnerable Marine Habitats

Marine protected areas (MPAs) and the protection of vulnerable marine ecosystems have become key ocean conservation strategies around the world. The need for establishment of MPAs to protect vulnerable ecosystems was emphasized during the 1992

Convention on Biological Diversity (CBD). This message was repeated in the 1995 Canadian Biodiversity Strategy and commitments were made by many nations to set aside at least 10% of their waters as MPAs by 2012 at the 2002 World Summit on Sustainable Development, the fifth World Parks Congress in 2003 and the eighth Conference of the Parties in 2006. At the Nagoya 2010 Convention on Biological Diversity a commitment was reaffirmed respecting a target to conserve by 2020 "at least 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services."

The important role of MPA networks in protecting marine biodiversity is reflected in a number of national commitments. Fisheries and Oceans Canada, Parks Canada and Environment Canada each have specific, but complementary, mandates for establishing MPAs. Fisheries and Oceans Canada establish MPAs under the *Oceans Act* while Parks Canada's focus is on representative National Marine Conservation Areas. Environment Canada are involved with the establishment of Marine Wildlife Areas and Migratory Bird Sanctuaries. In addition, organizations such as WWF Canada and the Canadian Parks and Wilderness society contribute to MPA planning efforts via research and awareness raising. Those provinces and territories with marine waters are also important partners in marine protected area network planning. Within IM Planning processes for the LOMA, protection of vulnerable marine habitats is supported by contributions to the establishment of a network of MPAs, development of new MPAs such as the one proposed for the Laurentian Channel, and continued commitment to existing MPAs such as the Eastport MPAs.

The establishment of a network of MPAs within the Newfoundland and Labrador Shelves bioregion, will also contribute to achieving a number of the objectives identified in the Plan.

SPOTLIGHT ON COLD-WATER CORAL AND SPONGE REEF CONSERVATION IN CANADA

In 2007, the Government of Canada announced funding for a series of initiatives related to improving the health of Canada's oceans. Among these initiatives was the establishment of four Centres of Expertise (COE) – including the COE in Cold-Water Corals and Sponge Reefs. Established in 2008, the COE is located at Fisheries and Oceans Canada's (DFO) Northwest Atlantic Fisheries Centre in St. John's, Newfoundland and Labrador.

The centre aims to help coordinate the Government of Canada's approach to coral and sponge conservation through:

- provision of strategic advice to senior management;
- support for regional, national, and international efforts in coral and sponge conservation;
- development of tools and approaches to improve coral and sponge conservation in Canada.

More information on the distribution, biology and management strategies for cold water corals and sponges can be accessed at: http://www.dfo-mpo.gc.ca/science/coe-cde/ceccsr-cerceef/index-eng.asp

IMPLEMENTATION AND EVALUATION

The Plan provides an overarching framework for the implementation of integrated management in the PB/GB LOMA through the identification of strategies that contribute to the vision for
"safe and sustainable use of healthy oceans through collaborative and effective governance". These should form the common basis for long-term commitments and actions toward IM within the PB/GB LOMA. The success of the Plan depends on the endorsement by all regulatory bodies and continual support and commitment by all stakeholders to implement it.

Federal/Provincial government departments/agencies, municipal councils and community groups will play an essential role in moving the various strategies forward, in helping to understand the LOMA and its specific issues, in ensuring the planning process and associated actions are relevant to the area, and in providing local expertise and capacity for Plan implementation. This collaborative process will assist to balance coastal and marine uses in a manner that maximizes the protection and conservation of marine resources and habitats while providing opportunities for social, cultural and economic benefits.

GOVERNMENT-LEVEL IMPLEMENTATION

Endorsement and approval of the Plan by various government authorities demonstrates a commitment to Plan implementation through a collaborative approach, in accordance with departmental mandates, priorities and capacities for ocean management. Ongoing participation by government authorities in the IM process will be provided through existing governance structures. At the same time, government authorities will have a notable role to play in their contribution to various action planning teams created to address specific priorities.

Federal and provincial departments can formalize and follow through on their commitments to the Plan by incorporating the Plan and the applicable provisions into their departmental policy, program and operational planning processes.

STAKEHOLDER-LEVEL IMPLEMENTATION

The Oceans Governance model of collaborative management is designed to provide multiple avenues for stakeholder participation and feedback in the planning process. The PB/GB LOMA Committee membership includes stakeholder groups with a responsibility or interest in the management of coastal and oceans activities. The functions and responsibilities of the PB/GB LOMA Committee include fostering multi-stakeholder dialogue as well as collaboratively monitoring, evaluating and revising the Plan. Oceans stakeholders can also input into the planning process through their involvement in nested IM activities such as Coastal Management Areas, Marine Protected Areas and Marine Protected Areas networks.

Participants in the IM planning process will also need to assess their capacity to achieve Plan objectives. Endorsement and implementation of the Plan will require the ongoing involvement and support of stakeholders through continued consultations or other engagement mechanisms with government on the aspects of Plan implementation affecting their activities.

PERFORMANCE EVALUATION AND REPORTING

Monitoring and evaluation of Plan implementation is the joint responsibility of the PB/GB LOMA Committee and all other ocean stakeholders involved in the IM planning process for the PB/GB LOMA. Successful

implementation of the Plan requires an effective and comprehensive program for performance evaluation and reporting. There are two main interrelated components of an effective performance evaluation and reporting program: assessment of the Plan outcomes and evaluation of the IM process as a whole.

Plan Outcomes

A key aspect of the performance evaluation and reporting program is the assessment of outcomes resulting specifically from those priorities identified in the Plan. The PB/GB LOMA Committee is responsible for monitoring and evaluation of the Plan during implementation and providing ongoing feedback as the Plan evolves. Development of the preferred approach for evaluating program outcomes will be achieved through collaboration between the Committee, the various stakeholder groups, the CNLCOM and ROCOM.

Key evaluation mechanisms for the Plan include:

- *A practical set of indicators for measuring and describing progress against objectives and strategies;*
- *Direct stakeholder participation in evaluation and reporting through the PB/GB LOMA Committee;*
- *Regular progress reports by the PB/GB LOMA Committee describing annual progress and achievements; and*
- *Possible use of external specialists or reviewers and the use of interview, audits and questionnaires.*

The Plan requires a practical and transparent reporting system to enable all participating governments, agencies and sector groups to demonstrate adherence to Plan implementation.

IM Process Evaluation

Another key component of performance evaluation and reporting program is focused on the effectiveness of the IM process itself, particularly in terms of value added to those involved. Evaluation of IM effectiveness may include consideration of key aspects of IM such as engagement, endorsement, communication, and conflict prevention/resolution. The evaluation may also include assessments of adherence to principles and objectives, as well as reviewing the effectiveness of the collaborative planning model. In general, the identification of any efficiencies gained through participation in the IM of the PB/GB LOMA will serve as indicators of success of the process.

Plan Revision

The Plan is an evergreen document that will undergo a comprehensive review every 5 years to determine how well it is working and whether any new factors should be incorporated. This time period corresponds to the short and medium term timelines associated with the management strategies contained in the Plan. This review will cover all aspects of the Plan and will draw on information and findings obtained though the ongoing performance evaluation and reporting process, as well as emerging management needs and priorities.

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LIST OF ACRONYMS

CMA	Coastal Management Area
CNLCOM	Canada Newfoundland and Labrador Committee on Oceans Management
C-NLOPB	Canada – Newfoundland and Labrador Offshore Petroleum Board
CD	Census Division
CO	Conservation Objective
CP	Conservation Priority
COBCPC	Coast of Bays Coastal Planning Committee
DFA	Department of Fisheries and Aquaculture
DFO	Fisheries and Oceans Canada
DS	Depleted Species
EBSA	Ecologically and Biologically Significant Area
EOAR	Ecosystem Overview and Assessment Report
ESS	Ecologically Significant Species
ESSIM	Eastern Scotian Shelf Integrate Management
IM	Integrated Management
IMP WG	Integrated Management Plan Working Group
LOMA	Large Ocean Management Area
MPA	Marine Protected Area
NAFO	North Atlantic Fisheries Organization
PB/GB	Placentia Bay/Grand Banks
PBIMPC	Placentia Bay Integrated Management Planning Committee
ROCOM	Regional Oversight Committee on Oceans Management
SECOA	Social, Economic and Cultural Overview and Assessment

APPENDIX A: PLACENTIA BAY/GRAND BANKS LARGE OCEAN MANAGEMENT AREA COMMITTEE MEMBERSHIP

Atlantic Canada Opportunities Agency

Canada – Newfoundland and Labrador Offshore Petroleum Board

Canadian Association of Petroleum Producers

Canadian Parks and Wilderness Society

Coast of Bays Coastal Planning Committee

Conne River, Miawpukek First Nation

Provincial Department of Environment and Conservation

Provincial Department of Fisheries and Aquaculture

Provincial Department of Natural Resources

Eastport Marine Protected Areas Steering Committee

Environment Canada

Fish, Food and Allied Workers Union

Fisheries and Oceans Canada

Groundfish Enterprise Allocation Council / Canadian Association of Prawn Producers

Hospitality Newfoundland and Labrador

Marine Institute / Memorial University of Newfoundland and Labrador

Newfoundland Aquaculture Industry Association

One Ocean Corporation

Parks Canada Agency

Placentia Bay Integrated Management Planning Committee

School of Ocean Technology (SmartBay)

Seafood Producers Association of Newfoundland

Shipping Federation of Canada

Sierra Club of Canada

Transport Canada

World Wildlife Fund - Canada

APPENDIX B: SOCIAL, ECONOMIC AND CULTURAL TRENDS IN THE PLACENTIA BAY/GRAND BANKS LARGE OCEAN MANAGEMENT AREA

A trends analysis was conducted by DFO - Policy and Economics Branch, based on the 2008 Hollet & Sons Inc. Report, "Social, Economic and Cultural Overview and Assessment (SECOA) of the Placentia Bay Grand Banks Large Ocean Management Area". The report provides a basic description of important societal, economic, and to a lesser extent cultural characteristics. The understanding of which is important for the facilitation of integrated management within the PB/GB LOMA. Certainly, the document's baseline data will be useful in the monitoring of social, economic and cultural changes.

The report used Statistics Canada Census Divisions (CDs) as a basis for assessment where the direct relationship between the LOMA and the adjacent CDs was implied. For example, it is recognized that direct or indirect links likely exist between areas beyond the LOMA. CDs that fall adjacent to the PB/GB LOMA boundary include: Avalon Peninsula (CD #1), Burin Peninsula (CD #2), South Coast (CD #3) and the Bonavista Peninsula (CD #7). Features assessed in the report for each CD included:

Social: demographics, migration patterns, educational attainment/infrastructure, and health status/ infrastructure
Economic: income levels, labour market trends, and employment/unemployment levels
Cultural: cultural diversity, heritage, protected sites.

As a general observation, there were very distinct rural/urban differences across CDs. Many of the SEC dynamics evident on the South Coast, Burin and Bonavista Peninsulas were not significant concerns on the Avalon Peninsula and vice versa. Trends are as follows:

SOCIAL TRENDS FOR THE CDS ADJACENT TO THE PB/GB LOMA

- The population within CDs adjacent to the LOMA was stable between 2001 and 2006 but a significant movement is evident within the area. The slight increase in St. John's population is offset by declines in other areas due to inter-provincial and intra-provincial migration.
- The majority of people residing in the area are in the 40-59 age range.
- The ability of rural communities to meet future labor force requirements represents a significant issue as the 40-59 age group retires.
- School enrollment is down due to low birth rate and out-migration – impact on school infrastructure.
- Avalon Peninsula has the highest percentage of 15+ age group completing high school.
- More people have completed trade certification and college programs than university degrees in all areas.
- The Avalon Peninsula has the highest concentration of health care facilities (11 hospitals/health care centers).
- Many individuals in rural areas have to travel to larger centers for medical services.

ECONOMIC TRENDS FOR THE CDS ADJACENT TO THE PB/GB LOMA

- The PB/GB LOMA comprises two distinct economies: rural and urban.

  Urban: St. John's and surrounding area has a relatively diverse economy that is expanding as more workers move there to support growing oil and other services.

  Rural: Many communities remain highly dependent on the fishing industry that is declining due to changes in resource and harvesting/processing activities.
- The Avalon Peninsula has the highest per capita income ($22,700) and level of self-reliance (83%).
- The South Coast recorded the lowest levels for per capita income and self-reliance indicators ($16,250, 67%), while the Burin and Bonavista Peninsulas were similar (approximately $18,000, approximately 71%).
- Coastal communities are still heavily reliant on the fishery. The 2006 value of fish landings in the area was $304.3 million (primarily crab and shrimp).
- Land-based operations of the NL oil and gas industry are concentrated on the Avalon Isthmus and in St. John's. There is a minimal direct impact in most rural areas adjacent to the PB/GB LOMA.
- Some rural communities have diversified economies to include: tourism, aquaculture, fabrication, and oil and gas development.
- While the commercial fishery remains important, new industries have contributed to user conflicts and additional pressure on the marine ecosystem.

CULTURAL TRENDS FOR THE CDS ADJACENT TO THE PB/GB LOMA

- The majority of people residing in the PB/GB LOMA are of English and Irish descent (I.e., cultural homogeneity).
- Settlement patterns primarily influenced by marine activities and resources (fishing, boat building, trade).
- Fishing, boat building and trade are a focus of many tourism initiatives within the PB/GB LOMA.
- Mi'kmaq aboriginal population in the area is less than 5,500 which represents about 1.7% of the total LOMA population, with only one reserve in Conne River, NL.

APPENDIX C: GOVERNANCE IN THE PLACENTIA BAY/GRAND BANKS LARGE OCEAN MANAGEMENT AREA

REGIONAL OVERSIGHT COMMITTEE ON OCEANS MANAGEMENT

The Regional Oversight Committee on Oceans Management (ROCOM) is the senior executive level forum for federal and provincial departments and agencies with ocean-related programs. The ROCOM provides coordination and oversight at the intergovernmental and interdepartmental levels for planning, management and regulatory matters related to integrated coastal and ocean management.

The ROCOM is co-chaired by the Regional Director General, DFO, Newfoundland and Labrador and the Deputy Minister, Department of Fisheries and Aquaculture. There is representation from seven federal departments, seven provincial departments, and the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB). It meets on a semi-annual basis, or as necessary. Decisions are made by consensus and recommendations are non-binding.

Functions and Responsibilities:

- Represent the federal and provincial governments at the executive level in regional integrated coastal and ocean management processes;
- Provide direction to operational level government committees for integrated coastal and ocean management processes, plans and initiatives;
- Serve an advisory role to the federal and provincial Ministerial level through existing government line mechanisms;
- Provide coordination and harmonization of regulatory processes and programs across government regarding regional IM processes;
- Monitor and review planning, policy coordination and program implementation across government; and
- Support and oversee information sharing among departments and agencies to support initiatives led by one or more representatives.

Canada

Fisheries and Oceans Canada
Industry Canada
Parks Canada
Atlantic Canada Opportunities Agency
Environment Canada
Natural Resources Canada
Transport Canada

CANADA-NEWFOUNDLAND and LABRADOR OFFSHORE PETROLEUM BOARD

Newfoundland Labrador

Department of Environment and Conservation
Department of Natural Resources
Executive Council
Department of Fisheries and Aquaculture
Department of Innovation, Business and Rural Development
Department of Tourism, Culture and Recreation
Intergovernmental and Aboriginal Affairs Secretariat

OCEANS SECRETARIAT

The Oceans Secretariat, in cooperation with the PB/GB LOMA Committee, the CNLCOM and the ROCOM, provides shared leadership and coordination for development and implementation of the Plan, including capacity building amongst partners. The Oceans Secretariat is housed within the Oceans Division, Ecosystems Management Branch, DFO-NL Region.

Functions and Responsibilities:

- Support Oceans Governance, including coordination functions for the PB/GB LOMA Committee, the CNLCOM and the ROCOM;
- Ensure sectors and stakeholders have input into discussions at the appropriate level; and
- Liaise with other regional, national and international IM processes.

CANADA-NL COMMITTEE ON OCEANS MANAGEMENT

The Canada-NL Committee on Oceans Management (CNLCOM) is an intergovernmental forum to focus on policy, management, operations and regulatory coordination. The CNLCOM builds government support and cohesion for integrated oceans management and provides an opportunity for information sharing and discussion of issues, including recommendations and issues management. It carries out work in support of, and as directed by the ROCOM.

The CNLCOM is comprised of federal and provincial working level representatives and mirrors, to some extent, ROCOM membership. The CNLCOM is co-chaired by the Regional Director, Ecosystems Management Branch, DFO, Newfoundland and Labrador and the Director of Sustainable Fisheries and Oceans Policy Department of Fisheries and Aquaculture. The CNLCOM meets approximately two to three times per year, or more frequently as necessary.

Functions and Responsibilities:

- Provide ongoing support and advice to the ROCOM in carrying out its functions and responsibilities;
- Coordinate government and departmental input to integrated coastal and ocean management processes;
- Provide guidance on the identification, definition and prioritization of ocean management issues and requirements; and
- Support the development and implementation of IM Plans, including the monitoring and evaluation of management strategies and actions.

COASTAL MANAGEMENT AREAS – PLACENTIA BAY AND THE COAST OF BAYS

The Placentia Bay Integrated Management Planning Committee (PBIMPC) and the Coast of Bays Coastal Planning Committee (COBCPC) provide leadership and guidance for meeting the vision for the Coastal Management Areas (CMAs) situated on the South Coast of Newfoundland. These Committees operate by consensus for the development and implementation of their IM plans and undertake monitoring and evaluation functions during the implementation phase.

The Committees are broadly representative of sectors within the CMAs, including key government, stakeholder and non-governmental groups with a responsibility or interest in the management of coastal and oceans activities in Placentia Bay and the Coast of Bays region. The Committees meet four times per year, or more frequently as necessary. Decisions are made by consensus.

Functions and Responsibilities:

- Provide leadership, guidance and stewardship for CMA IM Plan development and implementation;
- Develop and maintain terms of reference and protocols to guide the work of the group;
- Develop working groups/task groups as needed;
- Engage in multi-stakeholder dialogue, conflict resolution and consensus-building;
- Provide input into the planning process and feedback on Secretariat work;
- Participate on the PB/GB LOMA Committee; and
- Carry out ongoing monitoring and evaluation of CMA IM Plans and their implementation.

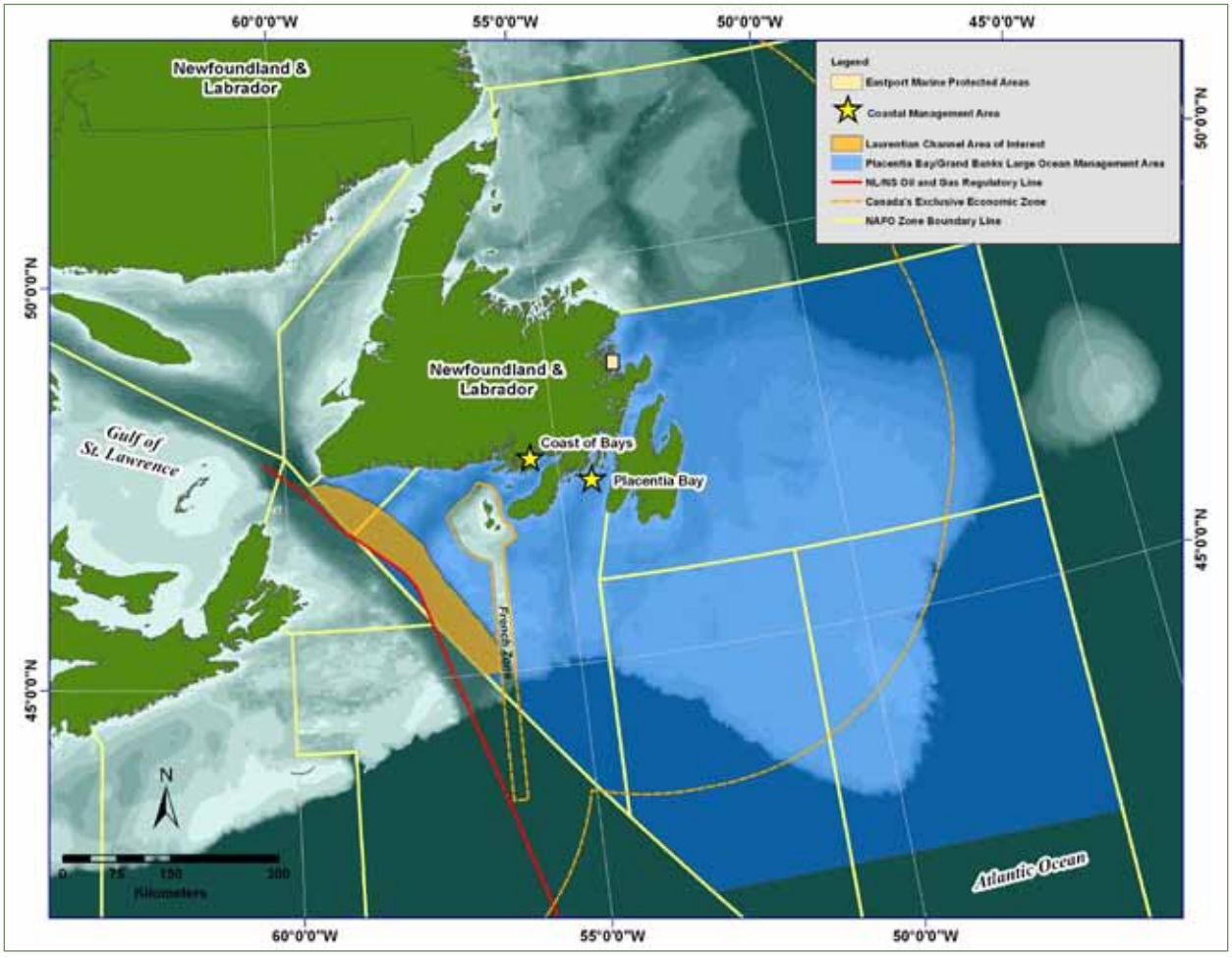

Figure 6: PB/GB LOMA depicting Coastal Management Areas, Marine Protected Area and Laurentian Channel Area of Interest.

MARINE PROTECTED AREAS – LAURENTIAN CHANNEL (PROPOSED) AND EASTPORT

LAURENTIAN CHANNEL AREA OF INTEREST ADVISORY COMMITTEE

The Laurentian Channel MPA Advisory Committee provides advice to the Minister of Fisheries and Oceans Canada on the development, implementation, and monitoring of the proposed Laurentian Channel MPA. The Committee serves as the primary consultative body to facilitate the ongoing and direct involvement of various government, industry and stakeholder representatives. Membership includes federal and provincial governments, First Nations, commercial industries, conservation based organizations and academic institutions.

Functions and Responsibilities:

- Enhance intergovernmental, Aboriginal, industry and stakeholder engagement, collaboration/cooperation with respect to MPA planning and establishment;
- Inform respective sector membership of progress and solicit feedback;
- Advise of development and implementation of the Laurentian Channel MPA, including process issues, plans, policies, protocols, conservation measures, management strategies and boundary delineation; and
- Provide feedback on the accuracy and quality of ecological and socio-economic information used by DFO as part of the MPA establishment process.

EASTPORT MPA STEERING COMMITTEE

The Eastport MPA Steering Committee is an advisory body, established to protect and enhance the sustainability of lobster and other species within the MPA via monitoring, enforcement, public education and awareness and any other ongoing MPA-related initiatives. The Steering Committee monitors the effectiveness of, and adaptively manages, the MPA.

The steering committee is co-chaired by the Eastport Peninsula Lobster Protection Committee and DFO, and includes participation from interested stakeholders, including provincial and federal agencies, recreational users and economic development associations. Meetings are held twice per year, or more frequently as necessary. The Steering Committee strives to promote consensus however, unresolved issues are voted upon by Steering Committee members, provided a quorum is present.

Functions and Responsibilities:

- Review and update the Eastport MPA Management Plan;
- Monitor MPA effectiveness by encouraging/reviewing scientific research in the area;
- Monitor enforcement of the MPA regulations by working with DFO, the general public and other affected stakeholders;
- Inform the public of the MPA designation and solicit ideas and feedback;
- Promote the conservation, protection and sustainable use of marine resources;
- Foster partnerships with other similar interest/stakeholder groups; and
- Identify sources of funding for research, monitoring, education and public awareness.

APPENDIX D: GOALS, STRATEGIC OBJECTIVES AND MANAGEMENT STRATEGIES

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE	
Element: Institutional, Policy and Legal Arrangements	
Strategic Objective	**Management Strategy**
Institutional arrangements are coordinated to facilitate a smooth interface between appropriate policies, plans, programs and projects and to identify and mitigate potential conflict.	• Assess effectiveness and efficiency of current legislation, policies, plans and programs. • Initiate policies, plans and programs and identify the need for new legislation or amendments to existing legislation as required. • Develop/utilize mechanisms for evaluating proposed legislation, policies, plans and programs. • Assess international obligations and commitments to ensure that they are fulfilled. • Clarify jurisdictional relationships and fulfill constitutional obligations. • Promote dedication of adequate resources for integrated management across jurisdictions.
Legal obligations and commitments are fulfilled.	
The IM process is responsive to applicable legislation and regulations and provides guidance and recommendations for the development and implementation of regulations and policies.	• Develop Oceans Management guidance and recommendations which can be reasonably implemented and are justified on the basis of a comprehensive analysis.
Element: Integrated Management Processes and Implementation	
Strategic Objective	**Management Strategy**
Participants are committed to the implementation, evaluation and adjustment of the IM Plan.	• Incorporate integrated management plan objectives into sector management plans. • Review existing guidelines and best practices and improve/adapt/develop new guidelines and best practices as necessary. • Evaluate usefulness of monitoring and reporting progress and review management as necessary.
Participants are committed to active involvement on IM committees and working groups.	• Timely reporting of new activities, knowledge and initiatives. • Improve oceans awareness through communications and public awareness.
Conflicts are mitigated or prevented via the IM Process.	• Understand existing and potential use patterns, interactions and cumulative effects. • Identify and characterize spatial and temporal conflicts. • Develop procedures and tools for addressing conflicts.

GOAL: COLLABORATIVE AND EFFECTIVE GOVERNANCE	
Element: Information and Knowledge	
Strategic Objective	**Management Strategy**
Information and knowledge gathering and sharing are effective.	• Identify information and data needs/ gaps. • Promote research initiatives to fill in data gaps. • Co-ordinate information/data so it is current and readily available. • Develop mechanisms for information management, sharing, and feedback. • Utilize appropriate methods, including technology, to enable and support the IM process. • Utilize language and mechanisms that are audience appropriate. • Promote the training of individuals in how to utilize technologies. • Explore interactive communication with a broad audience. • Facilitate the use of science and social science research. • Promote collaboration with local ocean technology cluster. • Improve ocean awareness through education and communication with local media. • Promote awareness of the PB/GB LOMA initiative and ensure the information about the initiative is accessible to the public. • Integrate the use of and access to traditional knowledge, including Aboriginal/indigenous knowledge, as appropriate.
Monitoring and reporting are effective and timely.	• Identify monitoring needs. • Evaluate usefulness of monitoring and reporting programs and review management as necessary. • Ensure monitoring mechanisms are utilized throughout the process to the greatest extent possible.
Element: Capacity Among Stakeholders	
Strategic Objective	**Management Strategy**
Management decisions are better informed by the IM process.	• Effectively implement the collaborative oceans governance model for the PB/GB LOMA. • Identify and utilize multi-sectoral and intergovernmental coordinating mechanisms and establish new mechanisms where required. • Facilitate stakeholder involvement and capacity
Stakeholders are fully engaged.	
Administrative support structures are sustained.	

GOAL: SUSTAINABLE USE	
Element: Social Well-Being	
Strategic Objective	**Management Strategy**
Use and understanding of coastal and ocean areas/ resources contributes to the social aspects of regional sustainability.	• Identify and characterize regional linkages to coastal and ocean activities. • Promote and maintain access to sustainable livelihoods from coastal and ocean related activities/resources. • Enhance coastal and ocean related education, training and awareness. • Support coastal and ocean related services and infrastructure. • Promote social impact assessment to inform decision-making. • Ensure community inclusion in decision-making. • Assess issues regarding coastal access. • Improve government capacity (including fiscal) to implement social programs. • Identify community assets related to the PB/GB LOMA IM initiative. • Promote stewardship of coastal and ocean areas/resources • Increase understanding of values and preferred way of life as they relate to coastal and ocean areas/resources.
Element: Economic Well-Being	
Strategic Objective	**Management Strategy**
A diversity of economic opportunities are derived from renewable and non-renewable coastal and ocean resources.	• Support initiatives to optimize or improve provincial economic competitiveness. • Assess current and potential economic opportunities, issues and activities. • Support existing activities and opportunities, and future economic diversification and employment. • Support a positive investment environment for coastal and ocean-related activities. • Identify and implement measures to improve retention of wealth and benefits within coastal and Aboriginal communities. • Support innovation and research that may contribute to economic well-being.
A diversity of economic opportunities are derived from coastal and ocean infrastructure and coastal and ocean-related activities.	
Employment dynamics are sustainable (labour force, incomes).	
Optimize economic opportunities within the bounds of resource sustainability.	• Balance industrial capacity with resource sustainability. • Support the conservation of natural capital by recognizing, linking to and working with related ecosystem objectives and strategies. • Examine cost and benefits for the best use of resources. • Identify and link to existing policies, plans and initiatives for sustainable economic development.

GOAL: SUSTAINABLE USE	
Element: Cultural Well-Being	
Strategic Objective	**Management Strategy**
Aboriginal, traditional and local knowledge and practices are valued. Heritage resources are preserved and understood. Cultural identity is preserved. Understanding of cultural values is increased.	• Foster cultural tourism opportunities. • Document, interpret and express Aboriginal/traditional/local knowledge and practices. • Recognize the social and cultural importance of traditional and aboriginal livelihoods. • Assess the distribution and status of tangible and intangible heritage resources. • Recognize and map the cultural values and skills held by residents of coastal communities. • Recognize and celebrate coastal communities and their connection to the ocean. • Assess cultural tourism opportunities. • Collaborate with residents of coastal communities regarding cultural well-being issues. • Involve Aboriginal peoples in planning and development processes.
Element: Public Health and Safety	
Strategic Objective	**Management Strategy**
Protection of human life/health through the reduction of threats in coastal and ocean areas Protection of public and private property through the reduction of threats in coastal and ocean areas	• Document and assess current status and threats and put into action, plans to address them. • Support (including funding) coastal and ocean-related services, training and infrastructure for health, safety and security. • Prevent, monitor and manage chemical or biological contamination that could affect humans. • Maintain and enhance an integrated surveillance, monitoring and response system. • Identify and link to existing policies, plans and initiatives related to health and safety and development processes.

GOAL: HEALTHY ECOSYSTEMS	
Element: Biodiversity	
Strategic Objective	**Management Strategy**
Diversity of benthic, demersal and pelagic community types is conserved.	• Identify benthic, demersal, and pelagic (including marine related birds) communities/ assemblages, their associated environments and establish quantifiable overall baselines. • Cooperate with Fed/Prov/ENGOs/stakeholders and interested parties to conserve benthic, demersal, and pelagic (including marine related birds) communities/ assemblages and their associated environments. • Use the Conservation Priorities (CPs) and associated themes (cod, corals and sponges, AIS and Habitat) developed by the LOMA committee to guide and focus conservation efforts within the PB/GB LOMA.
Incidental mortality of all species is within acceptable levels.	• Keep incidental fishing mortality of all species within acceptable levels in accordance with the precautionary approach. • Promote the continued development of a national policy to manage by-catch following a regional inventory and analysis of by-catch data. • Contribute to the design and implementation of a comprehensive program to reduce impacts of derelict fishing gear to an acceptable level. • Focus increased effort on the development of fishing gear technology to increase selectivity and reduce collateral damage. • Promote use of fishing gear and methods that minimize incidental by-catch, habitat damage and improve quality, price and eco-rating. • Improve monitoring and reporting of by-catch where required. • Continue efforts to minimize wastage/discard of harvested fish through improved management, enforcement, and marketing of undervalued species and other discards
At risk species protected and/or recovered.	• Continue to develop and implement recovery strategies, action and management plans under the Species at Risk Act and coordinate multi-species recovery planning where appropriate. • Ensure that sectoral management plans and ocean activities are consistent with SARA.
Harmful species introductions are prevented and distribution is reduced.	• Support the NL AIS Advisory Committee, an integrated and coordinated network of experts, regulators and stakeholders, and coordinate with the National AIS Committee (NAISC). • Continue development of a regional AIS Strategy, seeking advice from the NL AIS Advisory Committee. • Continue to support research, monitoring, rapid response initiatives and options to control the spread and introduction of AIS, focusing on species of concern such as green crab and tunicates. • Continue to support stewardship and awareness activities that contribute to the regional AIS strategy. • Promote pollution prevention, remediation and restoration of shellfish growing areas and other coastal habitats, to control introduction and growth of harmful species. • Identify management options to control incidents and severity of toxic algal blooms. • Continue to protect public health from consumption of contaminated shellfish through the Canadian Shellfish Sanitation Program, a coordinated program of monitoring, action and enforcement.

GOAL: HEALTHY ECOSYSTEMS	
Element: Productivity	
Strategic Objective	**Management Strategy**
Primary productivity and secondary productivity are healthy.	• Support research on the impacts of climate change on phytoplankton and zooplankton within the LOMA, and on migratory species which spend part of their life cycle in the LOMA and are potentially impacted by changing global phytoplankton and zooplankton productivity. • Strengthen regional monitoring of phytoplankton productivity, diversity and health, and linkages with physical/chemical properties of surface waters, and secondary productivity. • Support research and additional regional monitoring of macrophyte productivity & linkages to physical/chemical impacts.
Trophic structure is healthy	• Define healthy trophic structure and develop indicators. • Strengthen monitoring of predator species ecology, particularly seals. • Promote research related to multi-species interactions (including the role of predators) in maintaining ecosystem productivity. • Improve efforts to protect forage species
Biomass and productivity of harvested and other species are healthy.	• Continue to implement (and develop) management actions to protect significant aggregations associated with spawning and juveniles. • Implement the Precautionary Approach Framework for Total Allowable Catch (TAC) setting and keep fishing mortality of all species within acceptable levels. • Support implementation of recovery plans for depleted species.
Element: Marine Environmental Quality	
Strategic Objective	**Management Strategy**
Physical characteristics of ocean bottom and water column support resident biota.	• Strengthen monitoring of important physical indicators of climate change at strategic locations in the LOMA. • Promote research on impacts of changing physical characteristics of the ocean on key ecosystem components and properties • Monitor impacts of pollution on physical characteristics of the water column and ocean bottom, and develop management options to reduce harmful impacts.
Chemical characteristics of ocean bottom and water column support resident biota.	• Develop a marine environmental quality program. • Strengthen monitoring of important chemical indicators of climate change at strategic locations in the LOMA. • Promote research on impacts of changing ocean chemistry on key ecosystem components. • Continue to monitor impacts of marine pollution on chemical characteristics of the water column and ocean bottom, and develop management options to reduce harmful impacts.
Habitat integrity is conserved.	• Enhance the protection of vulnerable marine habitats by contributing to the establishment of a network of marine protected areas through the development of new marine protected areas and the continued commitment to conservation within existing marine protected areas. • Encourage the continued development of a regional coral and sponge conservation strategy through an integrated and coordinated framework of experts to speak to and inform coral and sponge conservation. • Strengthen and promote the regional coral and sponge research program, including the development of science-based criteria to identify/define significant concentrations of corals, and sponge dominated communities, and the development of a coral and sponge atlas. • Support the continued implementation of the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas using measures such as encounter protocols, closed areas, risk analysis and gear restrictions; encourage use of science-based criteria and the precautionary approach. • Strengthen and support seabed and marine habitat mapping initiatives and spatial planning within the LOMA. • Develop mechanisms to share information on ecologically significant and/or sensitive marine habitats with appropriate Federal, Provincial and Municipal agencies to improve management of potentially harmful human activities. • Monitor the health of coastal and marine habitats and associated marine communities. Characterize and quantify coastal marine habitat in relation to life history requirements of marine species. • Enhance conservation measures for sensitive and vulnerable marine habitats by establishing protection and management measures for EBSAs and Vulnerable Marine Ecosystems (VMEs).