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Issues Scan of Selected Coastal and Ocean Areas of Newfoundland and Labrador

East and Northeast Coast of Newfoundland and Coastal Labrador

Department of Fisheries and Aquaculture

July 2008

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Department of Fisheries and Aquaculture

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Most importantly, acknowledgement and appreciation are given to the many residents and groups within the study area who took the time to meet and discuss what they consider to be the coastal and ocean issues in their particular region. Efforts such as theirs play a significant role in attaining the goal of community-driven coastal and ocean management in this province.

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EXECUTIVE SUMMARY

The Department of Fisheries and Aquaculture (DFA – Lead) and the Department of Environment and Conservation (DEC) are in the process of developing a coastal and oceans management strategy and policy framework for the province of Newfoundland and Labrador. Once completed, the framework will assist governments and non-government agencies as well as the public, address coastal and ocean issues with a co-ordinated approach that promotes healthy coastal environments and sustainable communities.

The identification of the coastal and oceans issues facing Newfoundland and Labrador is considered essential input into the development of this strategy. In 2007, a first 'issues scan' was undertaken on the south and west coasts of the Island of Newfoundland to collect information from communities, regulatory agencies, interest groups and individuals as to what they identified as coastal and ocean management issues. The report on the first issues scan was released publicly by DFA in February 2008. The current scan, completed in the first three months of 2008, extended the identification of issues, as well as opportunities, for coastal and ocean management to the east and northeast coasts of the Island and Coastal Labrador.

These issues, once identified, were grouped under the following eight challenges to coastal and ocean management in this province: Coastal land use planning; Climate change; Competing needs and interests; Coastal and marine infrastructure; Social, cultural and economic sustainability; Healthy marine environment; Public education and awareness; and Jurisdiction, regulatory and policy frameworks.

Following analysis of results, the following recommendations and needs have been suggested to DFA:

- *A Coastal Vision,*
- *A Coastal Land Use Plan,*
- *A Marine Infrastructure Strategy,*
- *Public Education and Awareness,*
- *Integrated Management,*
- *Engage the Public.*

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1 INTRODUCTION/PROJECT OVERVIEW

The Department of Fisheries and Aquaculture (DFA – Lead) and the Department of Environment and Conservation (DEC), Government of Newfoundland and Labrador, are in the process of developing a coastal and ocean management strategy and policy framework for the province. Once completed, the framework will assist governments, and non-government agencies, as well as the public, address coastal and ocean issues from a co-ordinated approach that promotes healthy coastal environments and sustainable communities.

An important early input to the development of the framework is the identification of the issues facing Newfoundland and Labrador's coastal regions. In 2007, a first 'issues scan' was undertaken on the south and west coasts of the Island to collect information from communities, regulatory agencies, interest groups and individuals as to what they identified as coastal and ocean management issues. The report on the first issues scan was released by DFA in February 2008. The current scan, completed in the first three months of 2008, extends the identification of issues as well as opportunities for coastal and ocean management to the east and northeast coasts of the Island and Coastal Labrador.

This report outlines the methodology used to undertake the issues scan including the collection of data to identify the coastal and ocean management issues and opportunities followed by a description of the seven geographic coastal zones (Avalon Peninsula, Trinity Bay - Bonavista Bay, Notre Dame Bay, White Bay - Eastern Northern Peninsula, Southern Labrador, Central Labrador, and Northern Labrador).

Issues and opportunities have been identified through consultation with individuals, community organizations, non-governmental organizations, industry associations and aboriginal and municipal governments as well as provincial and federal government officials. The report endeavours to prioritize the issues regionally and provincially, and concludes with a series of recommendations to guide DFA and DEC

as they move forward in the development of the provincial policy framework and strategy.

The report includes the results of a literature and document review specifically related to coastal and ocean management in the study area. A list of all organizations and individuals contacted is provided.

2 METHODOLOGY

The task was to ensure that the coastal and ocean management issues were identified, analyzed and prioritized, through consultations with key informants and a literature review.

The use of several data collection mechanisms and analyses tools ensures that the issues scan has provided a thorough identification and prioritization of the issues and opportunities associated with coastal and ocean management in the study area.

The issues scan was completed using the following steps. Each of these steps is described in the following sections.

1. Identification of key informants
2. Preparation of an interview guide
3. Individual interviews
4. Community roundtable consultations
5. Meeting with government and non-government organizations
6. Survey of municipalities
7. Literature and document review
8. Analysis of the data
9. Preparation of findings
10. Drafting of a final report

1 Identification of key informants

The consultant team, in consultation with DFA, prepared a preliminary list of government agencies, and non-government entities, as well as individuals, to consult and seek input for the issues scan. On the Island, Regional Economic Development Boards (REDBs) within the study area were identified as primary contacts for each coastal region (see Figure 2-1). In Labrador, the Nunatsiavut Government, the Innu Nation, the Labrador Metis Nation, three REDBs (Central, Southeast and Labrador Straits) and the Atlantic Coastal Action Programs were identified as the significant organizations to make initial contact. With their input, an expanded list of names of individuals representing various organizations was compiled.

In addition, a number of representatives of organizations and government agencies were identified and interviews or roundtable discussions held to solicit their views on the issues and opportunities for coastal and oceans management in the province.

A list of all organizations and/or their representatives who were invited to contribute to the issues scan is included in Appendix A. In some cases the organizations did not respond to the consultant team's interview request or invitation to participate in the community consultations.

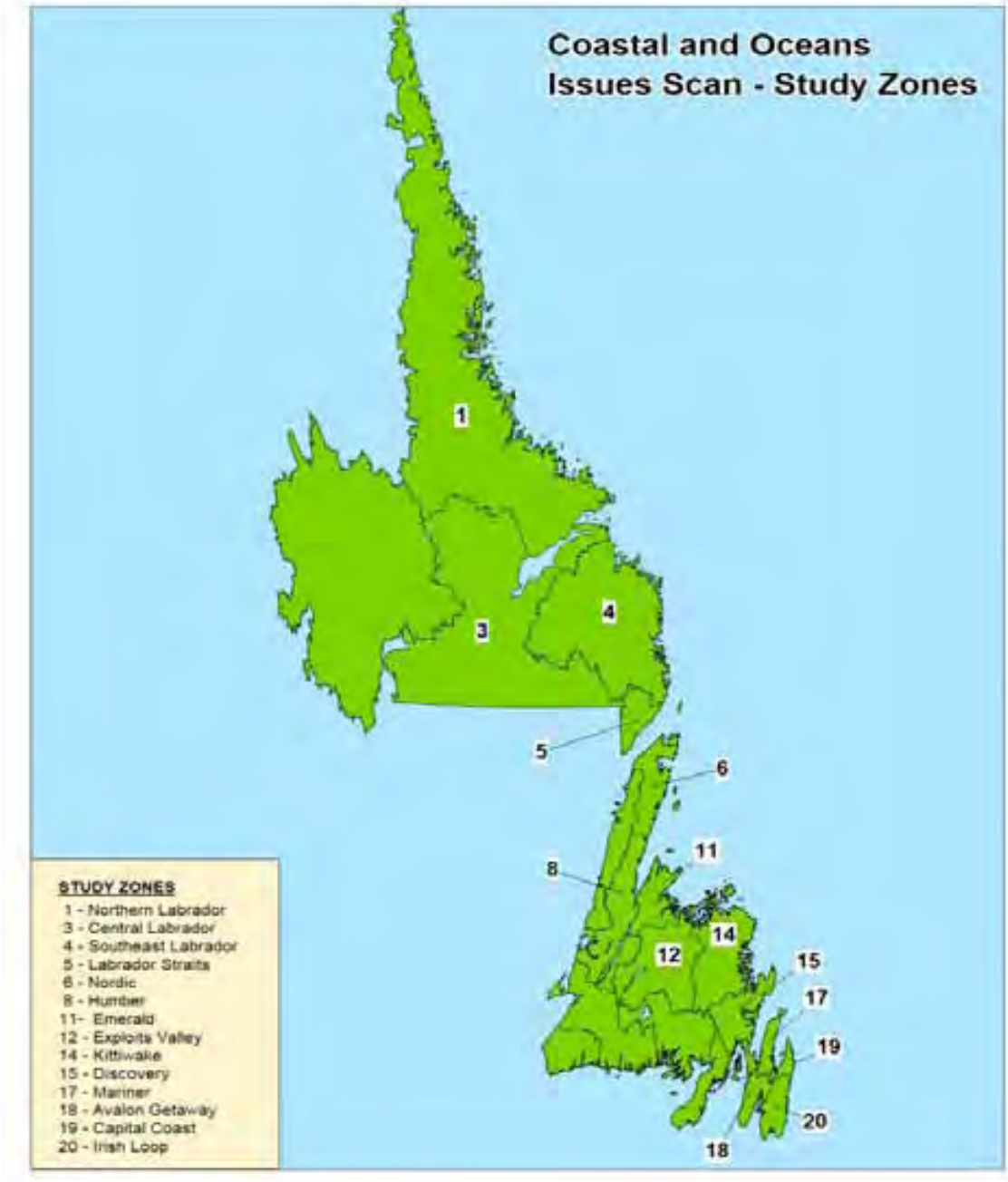


Figure 2-1 Regional Economic Development Boards with Coastal Components within the Study Area

2. Preparation of an interview guide

To ensure that the data collection from the interviews and community roundtable consultations was consistent and could be related to the first issues scan for the west and south coasts of the Island, the consultant team developed an interview guide. Refer to Appendix B for the interview guide. The guide was designed to ask each person or roundtable to reflect on the issues previously identified and to suggest others that could be identified for this study area. This process had the advantage of prompting individuals to consider the broad range of issues and not just the ones of immediate concern or those previously identified. Individuals were encouraged to prioritize their issues for the consultant.

The interview guide was e-mailed to most individuals identified in order for them to prepare for their participation in an interview or in the regional community roundtable consultations.

The interview guide was also used as the basis of the survey instrument for the survey of municipalities.

3. Individual interviews

The consultant held one-on-one interviews either in person or by phone. In a few cases, individuals completed the interview guide and returned it to the consultant by mail or fax. One notable observation during this phase was the limited comment that most individuals had on the potential range of coastal and ocean management issues and opportunities. The majority of individuals spoke to a limited number of these. Often they had to be prompted by the consultant by means of the interview guide to expand on their comments and observations.

4. Community roundtable consultations

On the Island, the REDBs were invited to facilitate the holding of regional community roundtable consultations. These meetings were held in:

- Salmonier,
- Carbonear,
- Clarenville,
- Bonavista,
- Gander,
- Grand Falls-Windsor, and
- Springdale.

Turnout for these meetings was generally small; but each community meeting did allow for discussion of coastal and oceans management issues and opportunities. At the end of each meeting, participants were asked to prioritize the issues as most important to them (from one to five). The information, including the prioritization information, was captured on flip charts by the consultant and typed as a record of the meeting. The typed version of the flip charts was provided to roundtable participants for additional comment and edit.

In Labrador, difficulty was encountered in organizing community roundtable consultations similar to those held on the Island. Instead, the consultant held individual or group interviews with representatives of community and aboriginal organizations, the Nunatsiavut Government, the Labrador Institute, the Atlantic Coastal Action Programs (ACAP), the Gilbert Bay Marine Protected Area (MPA) Committee and others. The consultant also met with several federal and provincial government officials in the region to ascertain their views of the issues and opportunities for coastal and ocean management.

5. Meeting with government and non-government organizations

In order to gain a broader provincial perspective on the issues and opportunities for coastal and ocean management, the consultant held a number of meetings with government and non-government organizations based in St. John's. Representatives of these organizations were asked for their views on the issues and to comment on their priority in the future development of a provincial coastal and ocean management policy framework.

6. Survey of municipalities

Municipalities Newfoundland and Labrador (MNL) agreed to e-mail a survey to each municipality in the study area with the request to return the completed survey to the consultant. Though this approach proved to be an efficient means to raise the profile of the project and gather input across the regions, the actual response rate was low (only 12 municipalities responded). The results of the survey have been incorporated into the regional analyses.

7. Literature and document review

A review of available primary and secondary information on coastal and ocean management issues facing areas within the study area was conducted. The review served to highlight coastal issues already identified, including any actions recommended and/or taken. Information from this review provided guidance to the consultant as to additional topics to discuss in the community consultations and interviews. The review's findings were also used in the regional analyses and discussion of the issues. All literature reviewed has been listed with the key points from the document summarized in point form and is provided in Appendix C. This material will allow the information to be made accessible for future use by interested agencies, organizations, researchers and individuals.

8. Analysis of the data

Through the issues identification phase of the project, the consultant captured a significant amount of data. The data in the form of identification of issues was recorded, assessed for prevalence and organized into themes. The consultant team cross-referenced the themes to eight 'challenges' for coastal and ocean management prepared in consultation with DFA using information from the first issues scan. Table 2-1 presents this framework of analysis.

For each region, the issues were prioritized based on a combination of inputs. First, priority was assigned by the participants involved in the community roundtables consultations. Second, the priority of issues assigned through the community consultations in a region was reviewed and confirmed or modified by the consultant

team based on the results of any additional consultations in the region, the survey results and individual interviews, and by reference to the available literature and document review findings.

Table 2-1 Eight Overall Challenges to Coastal and Ocean Management in NL

Coastal Issues Themes (not all inclusive)	Challenges
• Access to shore line impeded • Aquaculture traditional fisheries and recreational user conflicts • New industrial development impacts • User conflicts (policies, regulations, initiatives and stakeholders)	Competing needs and interests
• Land use planning • User conflict resolution mechanism	Coastal land use planning
• Need for improved marine and shore-based infrastructure, coastal mapping, navigational aids, etc.	Coastal and marine infrastructure
• Commercial and industrial development impacts • Protection of marine ecosystems, marine protected areas and natural areas • Sewage outfall impacts	Healthy marine environment
• Opportunities for new business activity • Research gap	Climate change
• Aquaculture opportunities • Commercial fisheries and fish processing challenges • Community sustainability • Culture, heritage and traditional knowledge impacts • Tourism opportunities	Social, cultural and economic sustainability
• Public awareness of issues and impacts • Role of community stakeholders	Public education and awareness
• Integrated management opportunities • Multiple jurisdictions involved • Role clarification	Jurisdiction, regulatory and policy frameworks

9. Preparation of findings

The combined findings from the data collection, literature and document review and the data analysis are presented for each of the regions. Each region's priority issues and opportunities are listed in relation to the challenges for coastal and ocean management and presented in tabular format. Where gaps in data exist, these are identified. The results of the analysis of the data collected from the provincial organizations are presented separately. To conclude the issues scan, the consultant combined the regional and provincial organizations' findings into a series of conclusions, recommendations and priorities.

10. Drafting of a final report

A draft report describing the project's methodology, findings and recommendations was prepared and submitted to DFA. Following review of the draft report, feedback was provided to the consultant and this final report was prepared.

2.1 LIMITATIONS OF THE METHODOLOGY

The methodology to develop this issues scan relied heavily on participation by individuals representing a vast number of organizations in the province. The list of organizations contacted provides evidence of the potential input for the issues scan. The consultant was dependent on an individual's availability and interest to participate in an interview, the regional community roundtables or to complete and return the interview guide or survey. The consultant team made considerable effort through phone calls and emails to contact and encourage participation (see Appendix A); though in some cases individuals did not or were unavailable to participate.

The issues scan represents those issues identified at a point in time. The priority attached to them by individuals may be considered subjective. The consultant team made every reasonable effort to prioritize them on a more objective basis both regionally and provincially based on a number of factors (as described above).

3 AVALON PENINSULA

3.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES ON THE AVALON PENINSULA

The Avalon Peninsula, for the purposes of this report, encompasses the coastline from Point Lance, along St. Mary's Bay and the Southern Shore, the St. John's area, and Conception Bay (ending in Grates Cove) (Figure 3.1).

Figure 3-1 Study Area for Avalon Region

This region falls within 4 regional economic development zones: 1) Mariner Resource Opportunities Network Inc. (M-RON Inc.), 2) Avalon Gateway Regional Economic Development Inc., 3) the Capital Coast Economic Development Alliance, and 4) the Irish Loop Development Board.

St. Mary's Bay was a traditional French fishing ground, and commercial fishing remains the primary occupation. The Southern Shore economy relies on fishing and tourism (Irish Loop Development Board, 2008). St. John's is the province's capital city and this metropolitan area is the government, institutional, transportation, shipping and business centre of the province. Conception Bay contains several business generators, including port/transshipment facilities, provincial government offices and services, federal government infrastructure, and has a large population and business base (Capital Coast Development Alliance, 2008). The Bay de Verde Peninsula is primarily a rural area and supports commercial fishing and local business communities.

The Avalon Peninsula offers a variety of coastal tourism activities including hiking trails, provincial parks, ecological reserves, kayaking and a number of boat tours that showcase seabirds, whales and icebergs. Museums, galleries and theatres highlight the province's marine and coastal heritage.

The coastal and ocean management issues and opportunities in the Avalon region are discussed in Section 3.2 through 3.14 and summarized in Section 3.15. Issues vary throughout the Avalon region; some are not raised in every zone while some are relevant to the entire region. For issues unique to a specific zone, these are indicated separately.

3.2 AQUACULTURE

This region, with its generally exposed coast, is not geographically suitable for aquaculture. An unused facility in Bay Roberts could potentially be used to produce cod stock/fry. Some infrastructure is in place, however, there has been no action or progress on this potential development.

There is a perception that fish farming may have possible negative impacts on local sea birds, adjacent rivers and the possibility for conflicts with other users exists.

3.3 COMMERCIAL FISHERIES AND FISH PROCESSING

The fishers within St. Mary's Bay are concerned about personal safety at sea with increased tanker traffic associated with Placentia Bay and the Great Circle route. There is concern regarding possible increases in the numbers of vessels that will "jog" near St. Mary's Bay during unfavourable weather, as well as in the number of vessels that may "hug" the Cape while travelling into Placentia Bay, thereby reducing sea time. Others stated there is a lack of marine infrastructure to support fish harvesters in St. Mary's Bay.

Sewage outfalls in St. John's Harbour are making it difficult for harvesters to maintain their fishing vessels. Concern exists regarding sewage outfalls in prime lobster harvesting grounds within Conception Bay, as possible impacts are unknown.

The fishery in the Conception Bay area is truly multi-species and has the potential to increase its "value-added" contribution to the area.

Currently, when a fish processing company decides to leave a community, facilities are abandoned. This can be devastating to the residents that depend on the employment income. There should be better regulations in place to avoid this, for example licenses should be maintained within a community. As well, it was suggested that research be completed to increase opportunities for secondary processing to prolong the life of a facility (and the community).

There is a shortage of fish processing workers and the current work force is aging. There are difficulties in attracting and retaining labour force in this industry.

Courtesy Newfoundland and Labrador Tourism

There are waste management issues currently associated with fish processing. For example, excessive seafood packaging of products such as shrimp leads to increased waste.

3.4 NEW INDUSTRIAL DEVELOPMENT

There are potential conflicts between new developments and current/traditional use of the coastline. This will have implications on coastal management especially in the areas of St. John's Harbour, Quidi Vidi and on the Southern Shore.

Overall, there is an opportunity for the development of technologies to harness ocean energy as a cheaper and more environmentally friendly form of energy.

All new industrial developments are being reviewed by the provincial and/or the federal environmental assessment processes.

3.5 MARINE INFRASTRUCTURE

The marine infrastructure in St. Mary's Bay is lacking, for example there are no wharves in Admirals Beach or St. Mary's and few launching facilities. It was

suggested that the lack of marine infrastructure is holding back tourism opportunities for the region.

The Admirals Beach Marine Centre needs an upgrade. The Atlantic Canada Opportunities Agency (ACOA) has completed a study on marinas but has not since released the report. Government will not consider applications for new marine infrastructure until the results of the ACOA study are known. The lack of marine infrastructure is affecting commercial fishers and the area may be missing business opportunities in the tourism sector.

Some fish harvesters raised the issue of search and rescue response times for the area and state that having a Canadian Coast Guard vessel stationed closer to the headlands of Placentia Bay and St. Mary's Bay would improve response times.

Fishing vessel congestion is a problem in Conception Bay as there is simply not enough marina space available. The Harbour Grace Marina was originally intended for recreational vessels but is largely populated by fishing vessels. There is a need for improved management and regulation. The lack of space is leading to congestion and confusion.

In many communities, but particularly in Old Perlican and Bay de Verde, there is considerable pressure for berth space. The number of vessels (commercial and recreational) has outgrown wharf space. The tendency for old, often large vessels, to be abandoned and left by foreign owners in ports such as Bay Roberts and Carbonear adds to the competition for berthage space demands. It was suggested that a long-range plan for marine infrastructure is needed for this region.

Concerns were raised regarding the lack of a vessel traffic management system for Conception Bay. There are a large number of recreational users in the bay, as well as shuttle tankers, tankers delivering to NL Hydro's Holyrood Thermal Generating Station, and fishing vessels.

Courtesy Newfoundland and Labrador Tourism

3.6 LAND-USE PLANNING

There is limited land available for development around the perimeter of St. John's Harbour due to geography and its proximity to downtown St. John's. Planning for future berth availability/use is a priority for the St. John's Port Authority.

In some regards, urban sprawl is affecting nearby rural areas and communities negatively. Overall, concern was voiced that much of the province's coastline is being bought up faster than even realized. This is creating a lack of public access to the coast and should be regulated before it is too late.

Land use planning should identify existing green spaces and trails as well as spaces that may be candidate green spaces for the future. Government has to ensure that buffer zones are respected along the coastline.

Regional planning should reflect evolving land use, noise pollution, waste management and coastal management issues. Access reflecting historic use must be maintained to foreshore/coast for residents, recreation, and tourists.

Infrastructure located on or near the coast may be at risk due to the impacts of tidal action and flooding. There is a need to be innovative and bring a risk management approach to planning especially in coastal areas.

3.7 CLIMATE CHANGE

Coastal erosion in St Mary's Bay is resulting in increased risk to nearby roads. Information should be made available to the public regarding areas that are most at risk of erosion.

The effects of rising sea levels on municipal infrastructure in this region are unknown. More research into the local effects and modelling should be completed to determine these impacts. All levels of government should take a responsibility in this area.

There are concerns that NL Hydro's Holyrood Thermal Generating Station is not operating as efficiently as possible and it is producing excessive greenhouse gases. Energy efficient buildings and efficient consumer behaviours need to be promoted.

3.8 TOURISM

During consultations for the St. Mary's Bay/Southern Shore region, it was indicated that infrastructure to support or attract tourism is lacking, e.g. signage, road surface, wharves or launching facilities.

There was recognition that some tourist and rural activities can be environmentally harmful, such as ATVs on beaches and seabird tourism.

Concern was expressed regarding the impacts of expanding land development affecting long-term access to and viability of the East Coast Trail system.

Steps should be taken to ensure the cruise ship industry has the least possible impact on the coastal environment in this area.

Courtesy Parks and Natural Areas

Tourists are drawn to coastal and marine-based tourism activities, such as the status of historic lighthouses, icebergs, seabirds and whales. Even small-scale oil spills can adversely affect the tourism market. While there are considerable marine recreation opportunities, there is little infrastructure available in some communities – in particular there is a lack of marinas.

Untreated sewage being released (often very obviously) creates a negative impression of our marine environment for tourists.

3.9 INTEGRATED MANAGEMENT

St. Mary's Bay has observed the benefits of integrated management by knowledge of the Placentia Bay Integrated Management Planning Committee activities. This committee's main value is as a mechanism for information sharing and raising awareness about the various activities, issues and concerns within the various sectors and levels of government. For example, with the current ad hoc relationship between all three levels of government respecting port/harbour management, it is not clear as to who has control regarding resolution of marine issues/ development issues.

Northeast Avalon Atlantic Coastal Action Program (ACAP) currently works with many sectors of the community, including all three levels of government, to protect and enhance the aquatic environmental quality of watersheds and coastline on the northeast Avalon. Considering the mandate of this group, there is potential for

Northeast Avalon ACAP to become further involved in integrated coastal and ocean management initiatives in this region in the future.

Within the general public, local awareness of integrated management needs to increase. One means would be to introduce the concept to the younger generation through the school curriculum.

3.10 COMMUNITY SUSTAINABILITY

It was indicated that roads in the St. Mary's Bay/Southern Shore region need to be upgraded to facilitate movement of goods and people for residents and to build upon the tourism industry.

The number of remaining young people in these communities is declining and very few are being attracted into the fishing industry. Community sustainability requires continuation of the fishing industry. There is a need for more research by government into under-utilized species and development of new products.

3.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

Overall, the decrease in the number of young people in rural communities results in the missed opportunity to pass on heritage and traditional culture.

It is becoming increasingly difficult to maintain a rural way of life, in part due to lack of land and marine infrastructure.

Individuals stressed that municipalities should ensure spaces that are important for culture, heritage and traditional uses are not lost. For example, access to public beaches needs to be maintained and there could be concerted efforts to retain/redevelop traditional wharves for heritage purposes.

Community identity and heritage may be at risk of being lost due to so many new non-native residents. Several participants suggested that controls be placed on the advertisement of land for sale by municipalities.

Newfoundlanders tend to take our way of life for granted, and efforts should be made to ensure we 'appreciate what we have.'

3.12 NATURAL AREAS

Natural areas are being threatened by a number of activities, such as illegal marine dumping (because designated pick-up times are too infrequent), illegal travel by ATVs and a lack of regulatory enforcement. The high levels of population in many areas on the Avalon peninsula also has implications for the protection of natural areas.

There is a lack of transfer stations for waste in the province. People generally don't want to wait long periods of time to have specific items picked up, which therefore leads to improper disposal. As well, communities may not have a particular regulatory body appointed to deal with waste management.

3.13 MARINE ENVIRONMENTAL QUALITY

The introduction of invasive aquatic species, such as the green crab in Placentia Bay, is a concern to both fish harvesters and aquaculture operators in St. Mary's Bay.

Dumping of waste is occurring at sea and many beaches are littered with debris. Some fish harvesters are responsible for dumping garbage at sea, however they are by no means solely responsible for this issue. There needs to be a better system in place to handle garbage from fishing vessels at wharves to prevent dumping at sea. This will require awareness and education.

There may be increased risk of an oil spill in this region with the increase in vessel traffic anticipated for Placentia Bay. If an oil spill did occur, there is potential for the fishing industry and natural resources in St. Mary's Bay to be affected. This could potentially result in impacts on the livelihoods of fish harvesters, the tourism industry and areas of ecological importance. Communities are concerned about the availability of oil spill response equipment. Residents of Conception Bay are also

concerned about the level of oil spill response contingency measures in place for the Bay.

Untreated sewage entering the sea creates a negative impression of our marine environment for both residents and tourists. In some cases, the outfall pipes are visible. Sewage outfalls can prevent expansion of recreational use of areas. Better regulations need to be put in place and programs implemented that would make improper waste disposal/pollution socially unacceptable.

3.14 DATA GAPS AND INFORMATION NEEDS

Land use planning, particularly for coastal areas is needed urgently in order to address many of the issues identified, such as increasing loss of coastal access for residents, loss of historical resources, and missed tourism opportunities. Additional issues include risk management associated with erosion and climate change effects.

Land based pollution is a challenge throughout the area, in particular lack of sewage treatment may affect environmental quality, aesthetics and tourism. Participants suggest that there is a need for regulations on the location of sewage outlets as well as public education and awareness on stewardship.

Discussions identified several areas where additional information or research is needed in aquaculture and commercial fisheries and processing, including research into under-utilized species, value-added processing, and opportunities for cod hatcheries.

Participants are aware that the Atlantic Canada Opportunities Agency (ACOA) has completed a study of the feasibility of marinas. Information from this unreleased report is needed for planning and funding for this type of marine infrastructure and development.

There is no formal vessel traffic management in Conception Bay. An assessment of the need for vessel traffic management in response to the increasing level and types of vessel traffic would help address this concern.

3.15 SUMMARY

While the Avalon region is home to a large portion of the province's population and industry activity, communities outside the St. John's Metropolitan Area have issues comparable to other areas of the province. These issues include deteriorating and/or inadequate marine infrastructure, insufficient or no land use planning and concerns regarding marine and coastal environmental quality (e.g. marine debris, garbage, waste management). All economic zones in the region believe there is untapped tourism potential.

4 TRINITY – BONAVISTA BAYS

4.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES IN TRINITY – BONAVISTA BAYS

The Trinity and Bonavista region, for the purposes of this report, encompasses the entire coastline from Grates Cove to Musgrave Harbour (Figure 3.1).

Figure 4-1 Study Area for Trinity – Bonavista Bays

Trinity Bay is flanked by the Bonavista Peninsula to the north-west and the Bay de Verde Peninsula to the southeast. This region falls within three REDBs: 1) the western region of Mariner Resource Opportunities Network (which encompasses the Bay de Verde Peninsula), 2) Discovery Regional Development Zone (which extends from Chapel Arm, Swift Current and to Port Blandford and encompasses the entire Bonavista Peninsula), and 3) the Kittiwake Economic Development Zone (which begins at Charlottetown in Terra Nova National Park and continues west to Lewisporte on Notre Dame Bay).

Trinity Bay is home to the Bull Arm Fabrication Site, consisting of three major components: a drydock construction and fabrication site, a topsides fabrication and assembly area, and the back cove industrial area with a deepwater site. To date, the Bull Arm site has focussed on offshore oil and gas related fabrication with both the Hibernia and Terra Nova production facilities built and/or assembled in Bull Arm (Bull Arm Corporation, 2008).

The Trinity Bay region of the study area relies heavily on the fishing industry, the agriculture industry, tourism, and the business/manufacturing/services industry (such as the Bull Arm Fabrication Site) (Discovery Regional Development Zone, 2005).

Bonavista Bay is a large bay situated on the northeast coast of the island of Newfoundland. The central region of the bay is comprised of many islands and channels that provide protection to inner waters. This region is rich in natural resources, which has supported prehistoric people and European settlers for over 5,000 years (Parks Canada, 2008), as well as currently existing communities. Terra Nova National Park, founded in 1957, is located within this region of the study area.

The communities of Bonavista Bay support a fishing industry, as well as lumber and transportation industries (The Canadian Encyclopedia, 2008). Boat building and repair has also been a key industry within Bonavista Bay, particularly in the Glovertown region (Town of Glovertown, 2008). Tourism is a fast-growing industry within this region, with attractions such as the Seasons in the Bight Theatre Festival in Trinity (Government of Newfoundland and Labrador, Dept. of Tourism, Culture, and Recreation, 2008).

Several species are currently being utilized in hatcheries and aquaculture farm-raising operations in this region; for example, blue mussels and Atlantic cod are grown (AquaGIS, 2008).

Within this study area is a federally designated Marine Protected Area (MPA), the Eastport MPA. This MPA was designated "to maintain a population of lobster through the conservation, protection, and sustainable use of resources and habitats" (Fisheries and Oceans Canada, 2007a).

The coastal and ocean management issues and opportunities in the Trinity-Bonavista region are discussed in Section 4.2 through 4.14 and summarized in Section 4.15. Issues vary throughout the Trinity-Bonavista region; some are not raised in every economic zone while some are relevant to the entire region. For issues unique to a specific zone, these are indicated separately.

4.2 AQUACULTURE

The Discovery Regional Development Board has identified aquaculture as an industry of missed opportunity for the Trinity Bay region, and specified that the industry has been 'largely overlooked' in the past. Lack of information and cost of overhead to enter the industry have been identified among the top reasons many people do not pursue aquaculture enterprises in this region (Discovery Regional Development Board, 2005).

The point was made that greater efforts are needed in educating the public in this region concerning the value of aquaculture – including both potential environmental impacts as well as economic opportunities. Construction and operation of an aquaculture interpretation centre was suggested as a possible combined educational and tourism attraction. The potential conflicts between aquaculture operations, cabin owners and fish harvesters was also identified as an issue.

Several people, including aquaculture operators, indicated that much of the aquaculture industry focus in the province is placed on the Bay D'Espoir region, consequently overlooking smaller ventures in other regions.

Courtesy Newfoundland and Labrador Tourism

A major issue in the Kittiwake zone is marine-user conflicts, such as between cabin owners, fish harvesters, recreational boaters and existing/proposed aquaculture operations, especially in the channels approaching Glovertown. The Town of Glovertown hopes to develop a 120 yacht marina that will attract large and small vessels traversing the province. Representatives from the Town felt placement of proposed aquaculture operations should take other marine activities into greater consideration.

It was also commented that there is a lack of communication between the aquaculture proponents and parties that wish to voice opposition to these ventures. A possible solution to this problem that was suggested would be to increase the public consultation requirements of aquaculture proponents within the environmental assessment process.

4.3 COMMERCIAL FISHERIES AND FISH PROCESSING

Commercial fishing is significant to the economy of this region and several concerns were raised regarding the management of this industry.

First and foremost, it was indicated by community leaders and fish harvesters that their opinions and observations regarding fish stocks and fish behaviour are not being heard by policymakers. They feel that the observations of harvesters should be more seriously considered when managing the fisheries and determining quotas. Specifically, fish harvesters feel that there may be an opportunity for increased cod quotas in the Bonavista Bay area.

Concerns were expressed regarding offshore over-fishing practises by foreign vessels. Greater levels of monitoring and stricter enforcement should be implemented to control foreign over-fishing.

It was felt that greater consideration should also be given to the impacts of fishing activities on the sea floor, specifically trawling. This is particularly important for areas in and around spawning grounds.

Residents of Bonavista felt that changes to by-catch regulations are required to ensure a reduction in the amount of overall fish wastage in the fishing industry.

A suggestion was made that consideration be given to develop a fund for fish harvesters when uncontrollable factors (such as ice conditions) prevent them from participating in usual fishing activities that results in a loss of income.

Several people in Bonavista Bay indicated that addressing the public image of the seal fishery should be considered a priority for the province. The public image of the seal fishery and high profile bans on seal pelts by several countries have reduced the value of the product. It was suggested that education initiatives may help to dispel misconceptions regarding the seal fishery.

Representatives of the fish processing sector in this region stated that new regulations governing effluent treatment/fish plant discharges will lead to higher operating costs. The fish processing sector is also having difficulties in recruiting and maintaining their labour force.

It was also commented that both the fishing harvesting and fish processing sectors in the region are suffering due to lack of access to skilled workers.

4.4 NEW INDUSTRIAL DEVELOPMENT

During consultations in this region, individuals indicated that they were supportive of new industrial development initiatives. While supportive, they did stress the need for large-scale developments to be well planned to ensure avoidance of multi-user conflicts.

The Bonavista region has been encouraging regional investigations into developing alternate energy sources, such as wind and tidal energy. Proposals have been put forward to develop wind farms on the Bonavista Peninsula, but little progress has been made to date.

Industrial development within Trinity Bay, such as the Bull Arm Fabrication Site, has led to marine multi-user conflicts in the past, particularly regarding recreational boaters and industrial traffic.

4.5 MARINE INFRASTRUCTURE

Residents in Bonavista expressed concern regarding inadequate wharf space for fishing vessels to berth and safely complete work-related activities. A need was also stated for the development of an improved breakwater.

4.6 LAND-USE PLANNING

Land-use planning was a significant issue raised repeatedly in consultations with individuals in this region. There is a general concern regarding loss of public access to coastal areas. Residents are weary of private ‘buy-ups’ of coastal land as has occurred in other Atlantic provinces, such as Prince Edward Island.

There was a call for the development of more effective coastal land-use planning. It was stressed that these plans be proactive and become a provincial government initiative. These plans could include provisions allowing protection of a ‘coastal buffer’ with respect to forestry, residential and industrial activities.

Concerns were expressed regarding the current land registry system, indicating that the current system is inadequate in ensuring proper record of land ownership.

Several people consulted in this region favoured the 'county' approach to governance (as is seen in Nova Scotia), stating this method would allow more effective governing of rural and coastal lands throughout the province.

Coastal land-use conflicts include forestry clear cut operations being permitted near the waters edge in local cabin areas. In the opinion of participants, this is being done without due consideration of all consequences – both economic and aesthetic. This conflict includes the construction of forest access roads in traditionally used areas.

4.7 CLIMATE CHANGE

Fish harvesters in the study area are concerned about possible changes in oceanography due to climate change, resulting in changes in fish stocks. It is feared that changing ocean conditions, sea surface temperatures, and increased ice flow via the Labrador Current could impact fishing activities in the region.

Concerns were raised regarding potential impacts of coastal flooding, coastal erosion and storm surges on coastal areas in the region. The need for communities to adapt to a changing environment was stressed.

4.8 TOURISM

According to study participants, there has long been a strong link in the region between the fishery and tourism. The fact that tourists can no longer 'jig a cod' and now see virtually nothing of the traditional inshore fishery does not seem to be dampening tourism visitation in this region. It was noted that the inability of fish harvesters to sell fish products directly to tourists (a desired experience for visitors) is a missed opportunity.

Courtesy Newfoundland and Labrador Tourism

Individuals involved in the tourism industry in this region stated that they felt capable of drawing tourists into the region, however there were few activities developed for them to participate in once they arrive on the Bonavista Peninsula. They felt that further work should be done to ensure both summer and winter activity options for tourists, including marine-related eco-tourism and adventure-tourism activities.

4.9 INTEGRATED MANAGEMENT

There is an identified need for groups involved in various aspects of coastal and ocean management to develop on-going cooperation and not work in isolation. It was stressed that better integration amongst provincial government departments was needed to develop a comprehensive coastal and ocean management strategy. The role of education in integrated management and coastal and ocean management must not be over-looked.

Concern was expressed regarding marine multi-user conflicts associated with industrial marine traffic and recreational boaters in the region.

One recommendation of participants in the community roundtable discussions stated that action must be taken to respond to the results of coastal and ocean research,

such as this issues scan report. The issues raised are considered of vital importance by participants, and they look to government to devise an effective and meaningful strategy that will protect the province's coastal areas and Canada's oceans.

4.10 COMMUNITY SUSTAINABILITY

The point was made that residents of the province need to realise 'what we have'. It was acknowledged that not all communities have a strong youth base. It is necessary to have young leadership to bring forward new and innovative policies and programs, including in areas such as conservation. The younger generation should be more involved in planning for their communities. Resources are needed to enforce new policies and regulations.

The return of former residents who are buying property is already an economic driver in the region. The benefits and costs of re-population of communities when retired people return must be considered.

Finally, it was commented that it is a tremendous challenge to ensure viable, rural, coastal communities. Winter tourism and new types of business are needed as well as improved infrastructure, such as alternate energy sources and better waste management.

4.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

Participants indicated that knowledge regarding abandoned communities on the Bonavista Peninsula is being lost. This will likely persist as the number of living and/or former residents of these fishing communities continues to decrease. It was suggested that initiatives could be put in place to gather information from past residents of these abandoned communities.

4.12 NATURAL AREAS

Members of the Steering Committee for the Eastport MPA brought forward several coastal and ocean concerns specific to the MPA, including the limitations of the MPA in protecting marine-based resources from land-based activities, the capacity for

enforcement within the MPA, and the need to promote the Eastport MPA as a tourist-attraction. It was suggested that marine protected areas should offer some level of protection for surrounding coastal areas. A buffer zone surrounding MPAs would ensure the protection of the MPA from potentially harming land-based activities.

There is a need for greater feedback mechanisms within the Eastport MPA to ensure there is understanding and awareness of the success of the efforts within the protected area.

Courtesy Newfoundland and Labrador Tourism

4.13 MARINE ENVIRONMENTAL QUALITY

The release of untreated sewage and wastewater was indicated to be a concern of high priority within the Trinity-Bonavista Bay region. Individuals are concerned with the long-term effects of these practices, such as potential impacts on fish species that are commercially harvested. The high cost associated with installing infrastructure to aid in solving this problem is an area of concern. It was observed that most communities in the province do not have adequate funding available to address this situation. Alarm was raised by the lack of a future plan to address this province-wide issue.

The lack of sewage treatment and the presence of effluent outfalls into the ocean pose many problems, including contamination of coastal waters and potential detrimental impacts to economic endeavours, such as aquaculture and marine tourism. Research is needed into cheaper, sustainable sewage treatment alternatives and communities need an incentive.

Landfill sites close to the sea can pose problems in terms of leachate and unsightly coastal viewscapes. There are hopes that the provincial government's new waste management strategy and the phasing out of many landfills may alleviate some of these problems. It was brought forward several times that as smaller landfill sites are phased out, increased ocean dumping is predicted. This would be due to anticipated increases in distance and effort required to reach collector sites.

Fish plant effluent and ocean-dumping in the fish processing industry is seen as a marine environmental quality concern in this region.

Overall, a concern that was echoed throughout many parts of the region related to capacity and capability of emergency preparedness and response at a community and provincial level. Residents are not satisfied with local systems in place to respond to both natural hazards (such as coastal flooding) and industrial accidental events (such as an oil spill).

4.14 DATA GAPS AND INFORMATION NEEDS

The need for effective land use planning and a new land registry system in the province to ensure adequate controls and management of coastal lands are key data gaps identified by roundtable participants. There is a real concern regarding loss of access to the coast (as has happened in other provinces and is starting to occur in this province).

There is an apparent lack of effective mechanisms for communication among the various stakeholders (residents, recreational boaters and cabin owners, fish harvesters, aquaculture operators, etc.) regarding the siting and operation of aquaculture facilities.

Smaller aquaculture initiatives may be disadvantaged by current funding and application procedures.

A mechanism(s) is needed to facilitate communication and integration among the various parties involved with coasts and oceans in order to implement the principles of integrated management.

A healthy marine environment is necessary for both fish harvesting and tourism. Communities need research, information and support for affordable and practical means to improve the management of sewage and other effluents that enter the sea.

There was concern expressed regarding the level of emergency preparedness in and for the region.

4.15 SUMMARY

The need for a comprehensive land-use plan and land registry system was identified consistently and vigorously to counteract the potential for loss of access to the coast, non-resident coastal land acquisition and the loss of opportunity to attract tourism (through maintaining historical attractions).

The people of this region are highly aware of the benefits of conservation and environmental protection, both as it affects the traditional fishery (lobster) and new industry such as eco-tourism.

Discussions pointed out the benefits of more integration and sharing of information among user groups. There is support for the provincial government to take aggressive action on coastal (and ocean) issues by moving forward with a coastal and ocean management strategy.

5 NOTRE DAME BAY

5.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES IN NOTRE DAME BAY

Notre Dame Bay is located on the central northeast coast of the island of Newfoundland. For the purposes of this report, the region referred to as Notre Dame Bay includes the entire coastline between Musgrave Harbour and Fleur-de-Lys. New World Island, Change Islands and Fogo Island are also included (Figure 5.1).

Figure 5-1 Study Area for Notre Dame Bay

Notre Dame Bay is associated with three different regional economic development zones: 1) the Kittiwake Zone, which begins at Charlottetown in Terra Nova National Park and continues west to Lewisporte, encompassing over one hundred communities; 2) the Exploits Valley Zone, which has only a small coastal component; and 3) the Emerald Zone, whose main portion encompasses the Baie Verte peninsula. The regions discussed in this report are based on geography and not economic boundaries. Therefore, this section does not include the entire coastline of both the Kittiwake and Emerald economic zones.

Notre Dame Bay, in particular the Bay of Exploits, experiences substantial shipping, with a predicted rise in vessel traffic due to future industrial expansion. Many small islands, inlets and embayments characterize this area. Fish harvesting is an important activity, with the main commercial species being cod, lobster and capelin.

This area has been well known to attract visitors partaking in whale and iceberg watching activities. The area also hosts a variety of other coastal tourism enterprises to accommodate visitors. These include hiking trails, diving, kayaking and a range of boat tours that showcase resources such as marine mammals and seabird colonies.

Communities on New World, Change and Fogo Islands face sustainability concerns because of out-migration and limited economic opportunities. These islands are accessible only by boat, and a ferry system operates out of Farewell that provides surface transportation for residents.

Fogo Island relies heavily on the crab fishery, particularly since the decline of the cod fishery. A fishermen's co-op between Fogo and Change Islands operates three processing facilities for shrimp, crab and groundfish, as well as a buying station, a marine centre and a modern product development facility. Other Fogo Island attractions include museums, hiking trails to abandoned settlements, icebergs, whales and the outport way of life.

The Emerald Zone has typically relied upon primary base resources for economic stability, such as forestry, mining and fisheries, but today economic developers and entrepreneurs are looking at new ways to create wealth (Emerald Zone Corporation,

2004), in particular through tourism, aquaculture and information technology initiatives.

The coastal and ocean management issues and opportunities in the Notre Dame Bay region are discussed in Sections 5.2 through 5.14 and summarized in Section 5.15. Issues vary throughout the Notre Dame Bay region; some are not raised in every zone while some are relevant to the entire region. For issues unique to a specific zone, these are indicated separately.

Courtesy Newfoundland and Labrador Tourism

5.2 AQUACULTURE

Notre Dame Bay's unique geography supports numerous successful aquaculture initiatives. The many tidal inlets and sheltered bays make it an excellent region for both shellfish and groundfish sites. The suitability of this region for aquaculture does have its drawbacks; multi-user conflicts and competition for space exists on a regular basis.

Aquaculture, in particular of the blue mussel, is an important economic driver in the Emerald region. The zone representatives are aware of the various concerns

associated with aquaculture, such as the spread of disease through aquaculture operations and the potential for escaping smolts to intermingle with wild fish stocks.

Potential conflicts with other land and sea users can inhibit new aquaculture operations. The zone commonly sees conflicts between aquaculture operators and local cabin owners and fish harvesters, e.g. aquaculture gear can often be seen as a hazard to navigation and may interfere with fisheries for other species, such as lobster.

Marine pollution from solid and liquid wastes poses a considerable threat to aquaculture. According to Lien (1999), aquaculture sites on the northeast coast of Newfoundland may suffer from water quality problems due to community sewage discharges. It was suggested that the Emerald zone should focus attention on the identification of suitable areas for aquaculture operations in terms of (a) environmental conditions and (b) potential conflicts with other users of the land and / or sea. Further education on the limitations and benefits of aquaculture operations could help to resolve these conflict problems.

Overall, there is misinformation about the aquaculture industry and it is critical to communicate objectively on issues raised (Woodrow & Gallagher, 2006). More integration and understanding between aquaculture operators and fish harvesters should be a priority – to overcome conflicts, find areas for compromise and develop mutual respect for two important marine-based industries.

Education about the benefits and costs of aquaculture would allow all potential coastal users to better understand each other's needs. Information on proposed operations and their limitations and benefits must be disseminated widely to the public.

It was pointed out that the market potential for Newfoundland farmed seafood products exists. However, marketing costs are high and sometimes difficult to maximize.

According to Fisheries and Oceans Canada (2007c), aquaculture may be close to capacity in Notre Dame Bay. However, there is room for expansion in other areas of

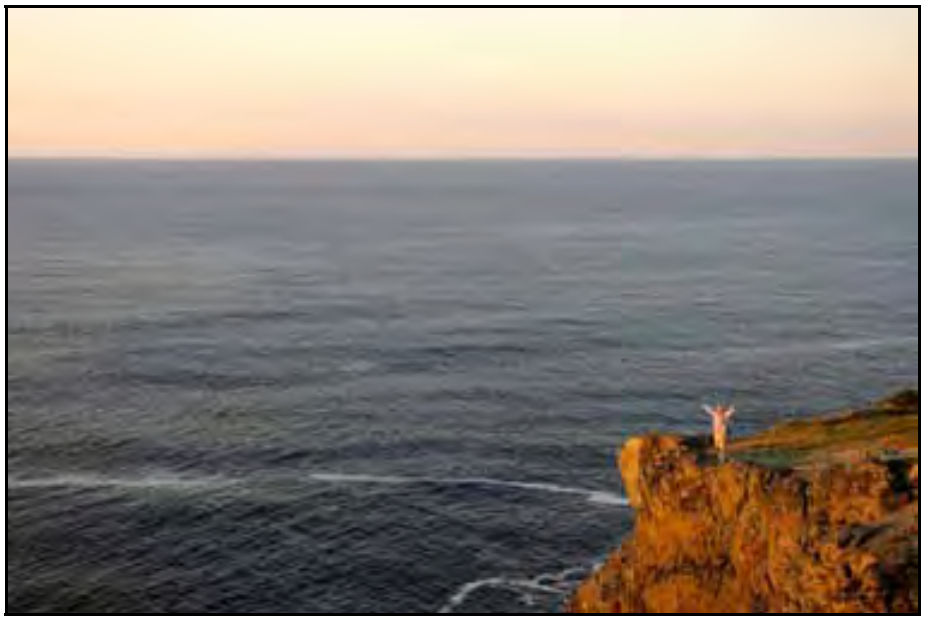
Newfoundland. It is suggested that availability of mussel seed supply may be an issue.

5.3 COMMERCIAL FISHERIES AND FISH PROCESSING

Overall: Lien (1999) points out that since the collapse of the cod fishery in 1992, fisheries along the northeast coast of Newfoundland have moved towards invertebrates, specifically crab and shrimp. The distribution of these resources and the pattern of fishing are such that some communities do not benefit from on-shore fishery jobs and their sustainability is threatened. As well, individual quotas (IQs) and individual-transferable quotas (ITQs) may be depleting fishery resources. Concerns exist over IQ's leading to ITQs, that in turn lead to corporate ownership of quotas, resulting in an economic loss for communities (Woodrow & Gallagher, 2006).

The issue of the capelin fishery was raised several times. It was suggested by one participant that the harvesting of capelin is the principal reason for the devastation of offshore groundfish stocks, and it is thought that the capelin fishery should be better protected. While it is difficult to quantify traditional knowledge, more effort may be needed into incorporating this important source of information into fisheries management frameworks.

Participants at the Springdale meeting suggested that the increased number of seals account for decline in commercial fish stocks. Further research in this public view is required. Participants also suggested that further research be initiated to find ways to utilize as much of the seal carcass as possible for additional products.



Courtesy Newfoundland and Labrador Tourism

5.4 NEW INDUSTRIAL DEVELOPMENT

There is considerable interest in expanding port operations in Botwood to enable the region to capitalize on providing services to the oil and gas, shipping, and mining industries. Several participants noted that the Exploits Valley Port Corporation is currently missing out on potential opportunities and partnerships.

To ensure successful incorporation of new industries into the regions economy, conflict resolution mechanisms should be established. This will allow necessary communications among the various “for” and “against” groups.

5.5 MARINE INFRASTRUCTURE

There is considerable mention of degraded marine infrastructure and lack of marine docking space throughout the entire coastline of Notre Dame Bay, in addition to great difficulties securing funding to support projects.

As previously mentioned, there is interest in expanding the port of Botwood for commercial purposes, however there is also interest in establishing a central Newfoundland marina. Established formally in 1977, Botwood has 22 floating berths but requires an improved breakwater. There is a lack of private wharves along the

Exploits Valley estuary / bar, and council has been encouraged to put in a slipway for boat launching.

It was suggested that a designated vessel traffic route may be needed for the Bay of Exploits as the amount of shipping in the area continues to increase.

In many communities, where harbours and facilities were administered previously by DFO's Small Craft Harbours Division, those harbours have been transferred to community-based harbour authorities. Harbours that were not managed by the Department of Fisheries and Oceans (DFO) are not eligible for federal funds; resulting in marine infrastructure falling into disrepair.

DFO provides guidance and resources to keep these harbours in running order, but they are now run by community-elected authorities. Only former federal harbours can be administered by these harbour authorities. There are some harbours that are not under the auspices of DFO. For example, the Town of Fortune Harbour has no public wharf, which is resulting in loss of tourism potential, as pleasure craft coming into the community have nowhere to dock.

Kittiwake Economic Development Corporation (2007a) makes reference to the existing ferry service system to New World Island, Change Islands and Fogo Island. While this service is provided primarily for residential transportation, interest has been expressed in making this service more attractive to visitors, promoting it as tourism support. In order to maximize this capability, serious consideration would have to be given to expanding upon amenities and services offered both on board and on the dock, including washrooms, food provision and wheelchair accessibility. In addition, a proposed provincial vessel replacement strategy leaves residents wondering how they will be affected.

5.6 LAND-USE PLANNING

Overall, concern was expressed on several occasions over the privatization of coastal land being purchased often by people from outside the province. However, some people in the region encourage this as a means to sustain the community. Strict policies are required to protect the public interest and minimize conflicts in land

use and accessibility. In several cases, property owners are blocking coastal land and access by other users. Infilling any water body is illegal without a permit. Implementing a coastal land use plan would serve to avoid conflicts, promote appropriate development and ensure regulations are applied evenly.

A new causeway is planned for Long Island, however not all residents are in favour of this link. Linking islands to mainland Newfoundland by road has been experienced by several communities and while the construction does not always go smoothly, the road link usually ends up being an overall benefit (e.g. causeway to Greenspond).

5.7 CLIMATE CHANGE

In the past several years, it has been noticed that trends in ice conditions are changing with ice occurring in areas that have historically been open water. Consideration should be given to adjustments in the traditional use of the ocean areas for shipping and fishing to accommodate effects of climate change.

5.8 TOURISM

The basis for tourism in the region is the beauty and pristine nature of the coastal lands, beaches and the sea. Activities that are encouraged include such things as sea kayaking, canoeing, hiking, etc., which use the area's local resources.

The majority of tourists that visit Newfoundland and Labrador do so because of the coast, ocean, whale watching and iceberg viewing. This makes the coastal zone the main tourist attraction for the province, around which other aspects of tourism marketing and product development are built (Emerald Zone Corporation, 2001). For example, the Emerald Zone is using the concept of 'The Great Whale Coast' to create a unified tourism strategy for the entire zone, focusing on interpretation of the natural history of whales and icebergs, in addition to aboriginal history.

Courtesy Parks and Natural Areas

The excellent tourism potential can only be captured if there is adequate information/advertising and sufficient support services to offer tourists. Communities have invested much resources into preserving their history, but it is not well-communicated (Woodrow & Gallaugher, 2006). Signage needs to be improved in rural communities to reflect this effort. At present, the infrastructure, supplies and services are not sufficient in this region to support new development of tourism initiatives, such as ocean yachts and sailboats.

The condition of the road leading to Twillingate is poor, potentially discouraging visitors (Kittiwake Economic Development Corporation, 2007a). On the Baie Verte Peninsula, poor quality roads are a deterrent for visitors, especially those with rental cars, luxury or recreational vehicles (James Floyd Associates, 2003). Efforts should be made in the region to promote 'looped routes', as tourists prefer looped routes as opposed to retracing their steps.

Several of the islands in the region are reached by ferry. The tourism potential of the ferries has not been fully identified or developed in the region (Kittiwake Economic Development Corporation, 2007a).

The main problem for tourism in this region seems to be quality and quantity of products and services, such as high-quality dining establishments and quality accommodations (James Floyd Associates Ltd., 2003). Private investment in this area must complement the marketing effort. More coordination among events such as festivals could provide the basis for extended visits in the region.

5.9 INTEGRATED MANAGEMENT

The primary purpose of integrated coastal management is to plan and manage coastal resources and environments in a way that reflects their physical, biological, socio-economic and political interconnections (Emerald Zone Corporation, 2001), and also to resolve conflicts. Integrated management highlights the need for all levels to work together.

Participants suggested that the region should host a roundtable meeting to allow all parties to discuss the issues in a format that will enable government regulators to obtain a full appreciation of the differences of views. An improved “process” for handling conflicting issues and associated communications between proponents and opponents should be put in place. In particular, it is essential that residents and municipal councils have greater input into coastal land decisions and processes, as they wish to be recognised in the process.

It is important to ensure community residents are involved in coastal management initiatives from the beginning. Capacity building needs to be emphasized, such as identifying long-term goals, and the modification of people’s behaviour (Woodrow & Gallaugher, 2006). Initiatives should keep the concept of governance in mind, versus the concept of just management – goals need to be clearly defined, as do the indicators that will be used to measure success.

5.10 COMMUNITY SUSTAINABILITY

Out-migration may continue, resulting in insufficient upkeep of industrial and community infrastructure. This may also result in rural fish processing plants and aquaculture operations having difficulties finding employees and attracting investment.

According to Emerald Zone Corporation (2004), most employment in the zone does not require post-secondary education; therefore there is little impetus for young people to strive for academic excellence. Educated and trained individuals experience increased pressure to leave the area for employment. It has been suggested that a labour market analysis be performed to show where skills are lacking within this zone.

Woodrow & Gallaugher (2006) have identified the loss of young people from Fogo Island and Change Islands as a key issue for the region – fewer individuals remain to continue existing businesses and industries or to provide community leadership. This results in a lack of capacity in management, planning and decision-making at the community-level. Communities in this area must strive to work together on economic and social strategies for sustainability.

5.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

There was considerable discussion on rural/coastal regions losing many skills and heritage, especially as young people are not obtaining the knowledge of their ancestors in aspects such as fishing, woodwork, boat building, home construction. Modern lifestyles centering on computers, television and electronic games are displacing more practical traditional activities.

The important outcome and principle of this situation is that if one cannot work together within the coastal environment it becomes harder to effectively manage it. Rural areas may therefore be losing many of its unique characteristics and traditional activities may not be sustainable.

Effort should be put into ensuring that traditional knowledge becomes integrated into governance activities, as science alone will not solve problems (Woodrow & Gallaugher, 2006).

The community of Tilting on Fogo Island has been designated a provincial heritage community, and was done so specifically through efforts made by the local community. This is an example of how initiatives driven at a local level can help to

secure an area's traditional culture, and should be used as an example for others who wish to preserve their heritage.

5.12 NATURAL AREAS

There has been a history of poaching and over-hunting in the area, primarily in the islands off the coast. There are several areas of recognized ecological interest, such as Funk Island, on which there is a Common Murre colony. Funk Island supported a breeding population of Great Auk in the past, but the species has since been hunted to extinction. Although Funk Island is an Ecological Reserve protected from human activity, unauthorized visits are said to be common.

The community of Leading Tickles is located within this region. Having been considered for marine protected area (MPA) establishment in the past, this area remains designated as an 'area of interest' by Fisheries and Oceans Canada (Fisheries and Oceans Canada, 2008).

There is an extensive network of trails in the region, but there is still a significant interest in building up park/natural areas/walking/hiking trails. There has supposedly been some level of unauthorized harvesting of birch along these trails; it was suggested that a conservation awareness and education effort could address this misuse of the land.

5.13 MARINE ENVIRONMENTAL QUALITY

The issue of raw sewage being dumped by municipalities directly into harbours is of considerable concern. Under present conditions – principally the financial struggle of many municipal councils and the reluctance of residents to pay the costs involved (through tax increases) – it is not expected that this situation will change in the foreseeable future. As well, some communities of Notre Dame Bay have serious concerns over the quality of their potable water supply, especially with recent warnings of contaminated chlorine.

The dumping of offal and other organic material from fish plants into the oceans is viewed as wasteful. Much of this material could be used as it has been in the past;

by drying and grounding it into fishmeal. Research should be commissioned to examine the technical and financial aspects of using fish wastes for commercial products. As well, in many instances, such material is not dumped far enough out to sea; disposal takes place close to shore, which in many cases in contrary to regulations.

The amount of waste being dumped in the ocean is a key issue. Raw sewage, effluents, fish guts and all sorts of man-made rubbish is being dumped. Awareness and education programs would facilitate development of a personal sense of pride in how we manage and treat coastal areas and the sea.

There is also concern over the possibility of oil spills and safety at sea as evidenced from long-liners that became stuck in ice along the northeast coast of Newfoundland in 2007. A major oil spill would likely damage fishery operations and interfere with tourism.

Concern was expressed that suction mining occurring in the Baie Verte area for gold and copper may be having effects on the surrounding ecosystem. Work should be done to look into what potential damage may be incurred by this practice.

5.14 DATA GAPS AND INFORMATION NEEDS

Concern was expressed over the privatization of coastal lands. A land use plan for the coastal areas of the province is needed and necessary in order to control and manage coastal lands.

There is not widespread understanding and/or acceptance of aquaculture in the Emerald Zone area and, as a result, there are conflicts with other coastal and marine users. Participants suggest that effort should focus on identification of suitable locations for aquaculture which are acceptable to other marine users.

Increased research (by government) into new seafood and seal products, as well as products from fish offal, is needed in order to diversify the fishery and reduce wastage.

New seed sources for aquaculture should be identified. More research is needed into the oceanographic factors that induce spawning in order to maximize the harvesting of seed.

Improved communication among all coastal and marine interests and users, including all levels of government, is needed, especially as new developments are considered for the region.

The implications of the provincial ferry vessel replacement strategy for residents, businesses and the tourism industry in the region are unknown.

There is potential for tourism in the area to increase. Information on key factors is unavailable for planning, such as the results of the ACOA study into marinas and the ferry replacement program.

There are several traditionally significant deep-water ports in the region however access to information on funding, repairs and new business is inconsistent among them.

5.15 SUMMARY

The roundtable participants suggested the region should host a workshop involving the various sectors and governments in order to emphasize to government the interactions, conflicts, and overlaps among the various user groups. Needed communication and conflict resolution mechanisms could result. Communities (councils) and community residents should be involved in coastal management initiatives from the start.

The loss of young people from communities is a concern. As well, there is concern that young people are losing the skills associated with their heritage, e.g. boat building, fishing, using the outdoors, woodworking and will lose the capability to work and effectively manage with the coastal environment.

6 WHITE BAY – EASTERN GREAT NORTHERN PENINSULA

6.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES IN WHITE BAY – EASTERN GREAT NORTHERN PENINSULA

White Bay is nestled between the lower eastern portion of the Great Northern Peninsula and the western portion of the Baie Verte Peninsula (Figure 6.1). Few communities are located along this coast, with Hampden being the largest in the region. The eastern portion of the Great Northern Peninsula is primarily uninhabited wilderness, with towns such as St. Anthony and Roddickton in the north providing the majority of services to surrounding communities.

Figure 6-1 Study Area for White Bay – Eastern Great Northern Peninsula Region

For the purposes of this report, the boundaries of this region include the entire coastline from Fleur-de-Lys on the Baie Verte Peninsula to Raleigh on the Great Northern Peninsula. Much of this coastline is uninhabited and accessible only by boat, thus supports a smaller population than the other regions covered in this issues scan.

This region falls within three different economic zones; 1) The Nordic Economic Zone, 2) a portion of the Humber Economic Development Zone; and 3) the western portion of the Emerald Zone. This region primarily relies on the fishing and lumber industries, with a renewed interest in tourism since the close of the cod fishery. Overall, the theme of community sustainability dominates in this area, with main issues being associated with ways to increase economic development and new opportunities.

It is very important to the residents in this region that they have a role in assisting in with the management of coastal activities and resources in their area. People take great pride in their rural heritage and do not want to see it lost.

The coastal and ocean management issues and opportunities in the White Bay – Eastern Great Northern Peninsula region are discussed in Section 6.2 through 6.14 and summarized in Section 6.15.

6.2 AQUACULTURE

The geography and regional climate of the Great Northern Peninsula are not conducive to aquaculture. There may be some potential for cod grow-out operations.

There are hatcheries on the west side of the Nordic Regional Economic Zone, although these are outside the scope of this project area.

6.3 COMMERCIAL FISHERIES AND FISH PROCESSING

The fishery supports the majority of working people in this region. Commercial harvesting for shellfish, groundfish and pelagics occurs and fish processing takes place seasonally (and may be the only source of employment for many residents).

The communities would like more input into the management of fish stocks. For example there is concern over the low abundance of capelin. As well, there is concern surrounding the catch and release policy for recreational salmon fishing. While the majority of resident and non-resident anglers are abiding, some may be leaving fish in poor condition, which affects future recruitment.

Established in 2004, The Great Northern Peninsula Fisheries Task Force was implemented for the specific task of addressing regional concern over the challenges facing the fishery on the Great Northern Peninsula. It has been identified that there is a need for stakeholders on the Great Northern Peninsula to be proactive and unite to find solutions to problems that continue to plague the local fishery (Great Northern Peninsula Fisheries Task Force, 2006).

There is strong market potential for shrimp products exported from the Great Northern Peninsula (e.g. to Europe). In order to capitalize upon this, there is a need for improved infrastructure.

The community of Conche is seeking a crab processing plant license. This initiative may enhance economic development in this region.

6.4 NEW INDUSTRIAL DEVELOPMENT

The population in this region is generally supportive of new industrial development; as such endeavours usually mean a solid source of employment and can be a contribution to community sustainability. Though supportive, people are not willing to see the environment suffer as a result.

There have been plans discussed for a seasonal luxury hotel to be built in the Conche area. Conche residents are generally in favour of this development, as it will provide employment and new opportunities for tourism and business. This development has been hampered by problems obtaining necessary regulatory documents.

6.5 MARINE INFRASTRUCTURE

Some communities in the eastern Great Northern Peninsula/White Bay area have or are in the process of receiving funds to rebuild and repair marine infrastructure (i.e. Conche), while others are unable to obtain funding. Some infrastructure is in such bad repair that they are a safety risk and are fenced off to be non-accessible (e.g. Roddickton).

In St. Anthony, the largest service centre for this region, it is felt that potential business opportunities have been lost due to the lack of available space in the harbour. Other communities believe that without a dependable wharf, they are losing opportunities as well. According to participants, some cruise ship operators have indicated an interest in stopping at Conche but the lack of marine facilities prevents these visits.

6.6 LAND-USE PLANNING

As in almost every other area of Newfoundland and Labrador, stakeholders in this region would like to see some kind of land-use plan implemented, in order to protect their coast from both physical and social pressure. People are supportive of developments that may bring new residents to the area, but want to ensure that buildings are being constructed in appropriate areas. Consideration should be given to coastal accessibility for residents, the landscape and effects of weather on structural integrity.

Courtesy Newfoundland and Labrador Tourism

6.7 CLIMATE CHANGE

Coastal sensitivities to climate change range from low to moderate in the eastern Northern Peninsula/White Bay area (Dawson, 2004). The exact mechanisms and effects of occurrences such as global warming and sea-level rise are not well understood.

Storm surges are becoming more of a risk, with wharves having been washed out in recent years.

Residents in this area are concerned about how changing ice conditions will affect marine transportation and the provision of products and services. It has been noted that ice patterns are very inconsistent and unpredictable; this year's ice arrived early and is staying for extended periods.

6.8 TOURISM

The eastern Great Northern Peninsula and White Bay areas possess an array of natural resources. These resources support a variety of tourism and recreational activities, including iceberg and whale watching, white water rafting, kayaking, salmon fishing, snowmobiling, wildlife and scenery. In addition, there is a 7,000 year-old old growth forest in the Soufletts River area, a Canadian Heritage River and

Provincial Waterway Park (Main River), and communities and artifacts relating to historic use of the area by France.

This area is also home to L'Anse aux Meadows, one of the earliest known Viking settlement sites and a UNESCO World Heritage Site. The establishment of this National Historic Park in the late 1970's was an important impetus to tourism, which has become an important supplement to the regional economy.

Courtesy Newfoundland and Labrador Tourism

Tourism in this region is limited by the services available and condition of supporting infrastructure, in particular the roads. There are no services (such as customs and immigration) that would allow for international tourism. However, there is an identified interest in understanding the pressures and negative effects of 'too much' tourism. There is a general lack of suitable access areas to the water for recreational boaters such as kayakers.

The resettled community of Harbour Deep still supports fish harvesting in the summer. There is potential in this community to attract travelers who want to enjoy wilderness activities. The provincial ferry service to this area has been completely discontinued and there is no regular means of access to Harbour Deep.

6.9 INTEGRATED MANAGEMENT

People are interested in integrated management but there is little funding available to implement projects. Although the primary objective of The Nordic Economic Development board is not solely integrated coastal management, much of the board's work functions to integrate activities to maximize economic potential for residents and companies in the area.

6.10 COMMUNITY SUSTAINABILITY

Community sustainability is a major concern in much of the area. Many residents are leaving the region, and it is vital for rural residents that new economic opportunities are identified.

6.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

Participants felt that as out-migration continues and resident populations age, there seems to be a loss of traditional activities and events, such as regular 'boil ups'. Traditional knowledge and skills are being lost, severely compromising the cultural history of the coastal communities in this region.

6.12 NATURAL AREAS

River systems and large ponds in this region provide suitable places to paddle and there are many isolated areas that truly display a genuine wilderness environment. There are very few sites that have formal protection, or designation as parks or green space.

Sop's Arm River or Main River was awarded Canadian Heritage River Status in 2002, and has become a very popular tourist destination for paddling, rafting and fishing. Other identified natural areas in the region include Pistolet Bay Provincial Park, Sheppard Island Migratory Bird Sanctuary, Isle aux Canes Migratory Bird Sanctuary, and Hare Bay Islands Ecological Reserve. No issues were identified specific to these natural areas.

Courtesy Parks and Natural Areas

6.13 MARINE ENVIRONMENTAL QUALITY

Communities such as Jackson's Arm in White Bay South have concerns regarding discharges into the marine environment, such as untreated greywater from shrimp plants and freshwater discharge from hydroelectrical production that may be having an effect on the temperature of waters in the area.

Participants indicated that communities in White Bay and the eastern Great Northern Peninsula are experiencing problems with marine debris. Although clean-ups occur often, debris continues to wash ashore on a regular basis. Empty 1-litre bottles of oil used in smaller vessels stand out in particular.

6.14 DATA GAPS AND INFORMATION NEEDS

More research is needed into the sustainability of fish stocks in this area. Residents would like to have more of a role in the management of stocks. Alcock, Ings & Schneider (n.d.) suggest that local ecological knowledge can be particularly useful in identifying aspects of stock structure including movement patterns, spawning grounds, juvenile habitat and spatial patterns in fish morphology. It is also very

useful in providing information on catch rates, non-commercial and under-utilized species.

Public awareness and education around marine stewardship will ensure that users of the marine environment are fully aware of the damaging effects of marine littering.

A tourism feasibility study should consider ways to increase access to the coast by both recreational boaters and the international cruising market.

Research is needed to examine how sea-level rise and storm surges will affect specific communities and coastal infrastructure in the region.

6.15 SUMMARY

The theme of community sustainability is evident throughout discussions of many of the issues in the White Bay and eastern Great Northern Peninsula region. It is crucial for all communities and enterprises that sufficient information and physical capacity be available in order to capitalize upon new opportunities.

Local ecological knowledge regarding fish stocks and other marine resources is an important source of information that should not be overlooked. It is the residents of these rural communities that depend on the sea for their livelihoods, thus their input into coastal management should be a priority.

7 COASTAL MANAGEMENT – SOUTHERN LABRADOR

7.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES IN SOUTHERN LABRADOR

For the purposes of this issues scan, the southern coast of Labrador runs from the Quebec-Labrador border (Straits Area) to Cartwright (Southeastern Labrador) (Figure 7.1) and includes 19 communities. The coastline is rugged and faces the Labrador Sea. For four to six months of the year, the coastline is either frozen or prone to heavy ice. Fishing, coastal trading and tourism are the major marine-based economic activities on this portion of the Labrador coast.

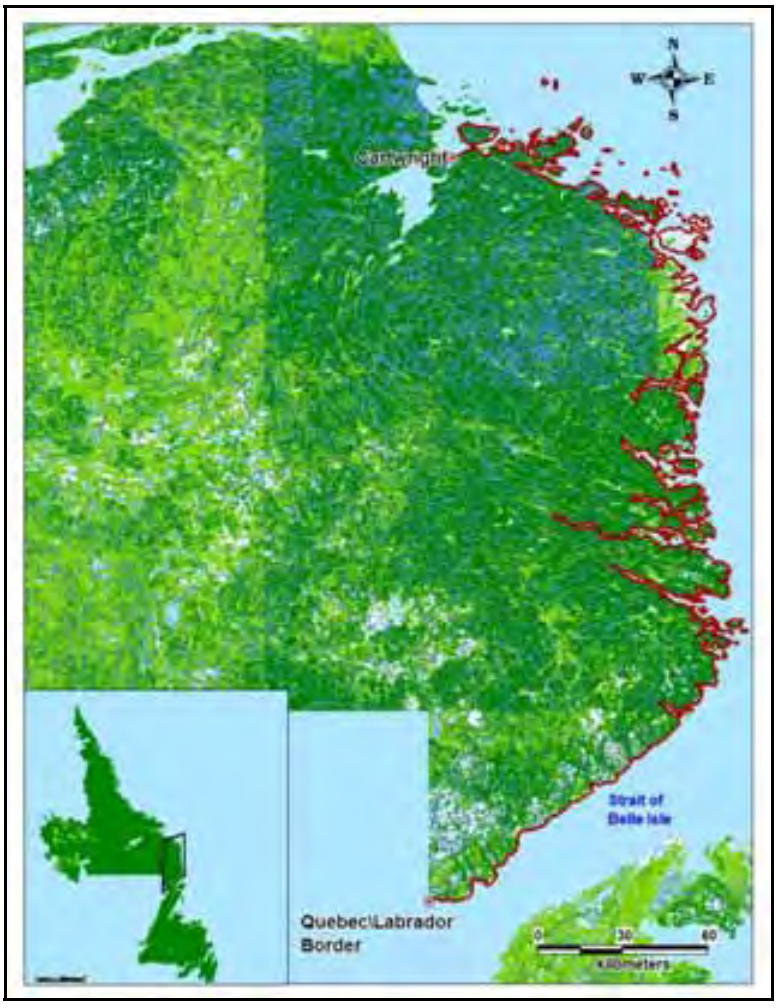


Figure 7-1 Study Area for Southern Labrador

This portion of the Labrador coast has two economic development zones: the Labrador Straits Development Corporation (consisting of eight communities from L'Anse au Clair to Red Bay), and the Southeast Aurora Development Corporation (consisting of the eleven communities from Lodge Bay to Cartwright). The Trans Labrador Highway connects most of these communities. A provincial ferry service connects the Southern Labrador area to the Island of Newfoundland via Blanc Sablon in Quebec.

The region has several marine wharfs. Cartwright is the service center for the provincial Labrador coastal service that connects Lewisporte on the Island to Nain in northern Labrador. A smaller provincial ferry service connects several adjacent island communities to the southern Labrador mainland. During winter, a winter trail system connects the communities of Black Tickle, Norman Bay and William's Harbour. Near William's Harbour is the Gilbert Bay Marine Protected Area.

The Innu Nation and the Labrador Metis Nation have claimed aboriginal rights to use of the resources in the area.

The coastal and ocean management issues and opportunities in the Southern Labrador region are discussed in Section 7.2 through 7.14 and summarized in Section 7.15.

7.2 AQUACULTURE

Aquaculture is not a priority issue for the southern coast of Labrador.

Currently, there is no aquaculture activity or development in the region. It is suggested that a major impediment to future aquaculture development is the weather and coastal ice conditions. There may be some learning gained from the Gilbert Bay cod project undertaken in the early 1990's. There may be some potential to develop the natural mussel bed in the same area.

In the opinion of some participants, fishery policy and government funding favour aquaculture development over traditional fish harvesting. If aquaculture could be

developed and in an environmentally friendly way, it would help sustain coastal communities as well as fish processing operations.

7.3 COMMERCIAL FISHERIES AND FISH PROCESSING

Overall, the current state and future direction of fisheries development is seen as the priority issue for this region.

At present, there are some ongoing commercial fisheries and fish processing in the region. In the Labrador Straits zone, the ground fish processing in L'Anse au Loup is operated by the Labrador Fishermen's Union Shrimp Company and processes mostly cod and turbot. In the Southeast zone, there are fish processing operations at Cartwright, Charlottetown and Mary's Harbour that process mainly shrimp and crab. Some participants suggest that that there are too many crab plants, and that a new shrimp plant in Mary's Harbour is a possibility.

There is an ongoing conflict between shrimp and crab harvesters using the same fishing grounds in the Hawke Channel area (Coasts Under Stress, Feedback Report, 2006). The area has been closed to shrimp trawling due to the impact on crab. Vessels fishing in the area have to carry a 'black box' to help identify illegal fishing activity. A crab-fishery working group has been established and is working from an integrated management model to address the issues.

Some of the key issues identified during the community consultations that affect the fisheries are:

- Access to sufficient quotas to ensure sustainable fishing operations
- Assessing the commercial viability of under-utilized species
- Impact of fuel costs on harvesting and shipments to markets
- Impact of high electrical power costs for processing
- Access to new technology and equipment for harvesting, especially for exploratory fisheries
- Restrictive as well as multi-governmental policies (federal and provincial) impacting harvesting as well as processing
- Lack of research, and a lack of at-sea observers to aid in data collection

Courtesy Newfoundland and Labrador Tourism

7.3.1 Recreation and Aboriginal Fisheries

The primary concern about these fisheries is a low salmon count in the Southeast river system that may not be prevalent on the coast. Rivers and adjacent coastal water temperatures and water levels have a major impact on the salmon fishery.

The region benefits from having a recreational (salmon) fishery, an aboriginal food fishery as well as a seal fishery. There are different harvesting rules depending on aboriginal status as well as resident and non-resident status.

On a local level, there is the need to inform recreational users, including tourism operators, of local management efforts to sustain ecosystems, protect traditional access and use of resources, and to minimize conflicts.

7.4 NEW INDUSTRIAL DEVELOPMENT

There is no specific issue or immediate development opportunity impacting this region.

The opening of the Trans Labrador Highway has resulted in increased commercial trucking along with increased residential and tourist vehicular traffic in the area. This

is due in large part from increased intra-provincial shipment of goods and people between the Island and Labrador coastal communities.

Cartwright is growing in importance as the main north-south terminal in Labrador for the provincial Labrador coastal marine service. This traffic will increase over time as the Trans Labrador Highway is expanded to connect Happy Valley-Goose Bay and Labrador West.

The Labrador Straits Development Corporation is actively considering the potential use of tidal waters for energy generation (Government of Newfoundland and Labrador, Dept. of Natural Resources, 2007). It recognizes that any such development may have an impact on local fish harvesting. The Corporation is also considering the possibility of a fixed link such as a tunnel to the Island. Such a development would expect to impact coastal use.

It is generally believed that future development in and around this region of Coastal Labrador will assist the economic stability of communities; however, environmental and other impacts have to be considered.

7.5 MARINE INFRASTRUCTURE

There is general consensus that the wharf infrastructure needs to be developed along this region of Labrador. Improved wharves will aid economic development, new tourism development (e.g. cruise ship friendly docking and support facilities) which in turn will enhance the sustainability of the communities.

Cartwright is emerging as the largest marine service center on the coast due in large part to the expanded role as the north-south terminal for the provincial Labrador coastal marine service.

There is limited presence of harbour authorities and/or small craft harbour designation, as well as navigational aids, in the region. These entities assist in attracting funding as well as in bringing together users to better manage use of local facilities, address conflicts and advocate for improvements. Navigational aids support better movement of marine traffic along the coast.

There is minimal land-based infrastructure in any of the coastal communities. Each of the six southern communities has an airstrip maintained by the Department of Transportation and Works. For the region, a highway connects the larger communities. In winter, many of these communities are connected by winter trails. One observation is that more bridges as opposed to causeways should be built to preserve river flow rates and to better accommodate heavy rains and spring run-off.

Water is supplied in the coastal communities through a mix of municipal water systems and private wells. Most communities have a sewer outfall with minimal to no sewage treatment facilities available.

7.6 LAND USE PLANNING

Land use planning was not raised as a pressing issue in the region, however it was acknowledged as being a possible emerging issue with implications for the region's communities.

Most of the communities in the region have incorporated municipal governments with approved municipal plans that address land use planning matters, with a focus on development control. The status and quality of these plans varies by community. These plans do not cover coastal waters or adjacent lands.

It is recognized that future planning needs to consider and protect wildlife, sensitive habitat and still allow development to proceed. It is also the view that land use plans could better support future commercial and industrial development activity in the region.

7.7 CLIMATE CHANGE

Overall, climate change and its impacts are not well documented in this region.

The issue of climate change is gaining understanding and prominence in the region. The availability of and access to research on climate change that is relevant to the region is minimal. As such, other than through casual observations and

conversations, there was no significant evidence or concerns identified through the consultations about climate change and its potential impact on the region.

The Canadian Climate Impacts and Adaptation Research Network (C-CIARN) has developed some preliminary assessment of coastal climate change impacts for the Atlantic Region including Labrador (C-CIARN, 2002). The Network has suggested that there will be a sea-level decline in some areas of Labrador (as opposed to a sea-level rise elsewhere) as well as changing weather and sea ice conditions, and a potential change in human use. They identified the need for planning to consider climate change. They also recognize that local and traditional knowledge can provide input into an impact analysis of climate change. One suggestion they made is to incorporate indicators of climate change in the development of marine protected area plans (C-CIARN, 2003).

Courtesy Newfoundland and Labrador Tourism

It was suggested that as part of any new exploratory fisheries, data can be captured to inform research on climate change. The view expressed was that fish harvesters can capture data on different fish stocks as well as marine conditions that could be used in any future studies on climate change.

It was suggested that one significant factor to consider in measuring climate change in the region is changing ice conditions. Ice conditions affect fisheries as well as

coastal animal habitat. While observers are noting changing ice conditions and a loss of sea ice in recent time, they consider conditions normal for this winter.

Another comment expressed is that reduced ice conditions as a result of climate change offer an opportunity for increased commercial shipping and tourism via cruise ships.

7.8 TOURISM

Tourism is generally viewed as an economic catalyst for the region that needs to be supported by government(s) on a number of different fronts. Activities in the region that promote local stewardship of coastal resources and include local residents are recognized as potential products that tourism operators can market.

Tourism is a growing economic activity for the region. Tourist visits during the summer and fall seasons are supported by the Trans Labrador Highway and by the intra-provincial marine service running between Lewisporte and Cartwright. There is potential to increase this activity with the expansion of the highway to Happy Valley-Goose Bay.

The Northern Strategic Plan for Labrador (Government of Newfoundland and Labrador, Dept. of Labrador and Aboriginal Affairs, 2007) addresses the increasing potential for Labrador tourism as a year–round opportunity. It also relates tourism to cultural preservation. The plan identifies various initiatives that will be undertaken to stimulate growth. For this region, it involves investments in winter trail grooming, improvements in the coastal marine ferry services and the ongoing development of the Trans Labrador Highway.

The Battle Harbour Historic Properties is cited as a good example where traditional use of a community is celebrated so as to attract tourists. In addition, the Gilbert Bay Marine Protected Area is being promoted to support ecotourism and adventure tourism, and to offer education opportunities.

Cruise ships are a growing market generally for Labrador. However, expansion of this market is limited by the lack of marine charting, navigational aids, port infrastructure, tourism products and services on the coast.

7.9 INTEGRATED MANAGEMENT

The importance of the issue of integrated management of coastal issues in the region is beginning to resonate with community leaders.

Labrador Southeast Coastal Action Program Incorporated (LSCAP) is currently undertaking a community environmental profile of a large portion of the region from Cartwright - Lodge Bay. A survey is being completed that will record information on aspects such as the locations of businesses, sewage outfalls, dumps and major woodcutting operations. The information gathered from this work will be used over the next several years to develop a Comprehensive Environmental Management Plan (CEMP) of the project area. This plan will look at the most pressing environmental problems in the region and will outline the most effective ways of dealing with those problems so that people can enjoy a sustained or enhanced quality of life (LSCAP website, March 2008).

The federal *Oceans Act* provides for the development and implementation of plans for the integrated management of all activities in coastal waters. Fisheries and Oceans Canada currently spearheads integrated management (IM) practices in Labrador and uses it as a model for fisheries management in other regions of the province. According to DFO, the concept of IM is generally understood and embraced by community leaders from a wide range of sectors. Finding the balance between government's interests and those of the Aboriginal organizations such as the Labrador Metis Nation is the ongoing challenge.

The Gilbert Bay Marine Protected Area is illustrative of how the concept of integrated management can work in practice. Its steering committee consists of local residents, government officials and researchers. It has defined for itself conservation objectives and management actions needed to sustain the marine protected area

(Fisheries and Oceans Canada, 2007b). It is seen by those involved as a mechanism to support integrated management in the region.

For each region of Labrador it was observed that there is a need for more research as part of any future integrated management activity that will need to involve governments and non-government organizations. The research agenda needs to be developed co-operatively to ensure all interests in the results are incorporated at the outset.

The Labrador Institute identified one significant theme that needs to be researched is an understanding of the terrestrial-marine interface especially under ice conditions. Integrated management plans also need to take a broader approach in their design and not be limited to any artificial geographical, administrative or individual resource boundary.

It is suggested that future provincial coastal management plans need to address both marine impacts as well as implications for coastal habitat.

All stakeholders including aboriginal organizations, local communities, interested parties and government officials expect to be included in any discussion before new policies, plans or developments are enacted. This will ensure that their perspectives are aired as part of an integrated management approach for the region. In addition, by working in an integrated management model, government regulators are seen by the community as being able to work cooperatively on solutions.

As a final observation, there is a great need for government(s) to communicate with community leaders and the general public on their objectives for integrated management of coastal issues and for any development activity in the region.

7.10 COMMUNITY SUSTAINABILITY

The sustainability of communities in the region is a significant issue. Out migration, particularly of youth and young families in the region, is having its toll. Many appreciate that the fishery in itself cannot sustain them economically though they see a continuing role for it in their communities.

The communities are open to exploring viable alternatives to the dependence on the fishery through research and discussion with government(s) and stakeholders. Governments are expected by participants to assist communities by investing in infrastructure and by reducing input costs (e.g. electricity and transportation) for fish plants and other businesses.

Courtesy Newfoundland and Labrador Tourism

Expanded intra-community transportation is also seen as a means to contribute to the sustainability of coastal communities and the region in general.

It was suggested governmental policies that are designed to assist communities need to better reflect the needs and requirements of the region if the communities are to be sustainable.

Long-term planning is needed to find a means of diversifying the economy and maintain community sustainability in the region.

7.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

The Northern Strategic Plan specifically outlines a goal to maintain and strengthen cultural integrity in Labrador.

There is a general view that local knowledge can help government officials in their work in the region in such areas as resource management and integrated management of coastal issues. Local knowledge is widely available to be gathered and used to inform ongoing research on climate change but to date this is not widely happening. Some informants in the region suggested that people are at times reticent to share their knowledge with government officials.

Comments indicate that it is important to realize that the local diet is influenced by the fish and animals harvested along the coast and around the rivers that flow into the Labrador Sea. Local knowledge can be better used by officials to help sustain these harvests and their contribution to the way of life of local residents.

For the Labrador Metis Nation, there is recognition that traditional knowledge and scientific knowledge may have to be balanced in managing resource development in Labrador (Labrador Metis Nation, Comments on the Lower Churchill EIS Guidelines, February 2008).

7.12 NATURAL AREAS

The protection of natural areas is an issue for the region as is the need to more widely use the knowledge gained from the Gilbert Bay Marine Protected Area.

The south coast of Labrador presents a vast area of natural beauty and undeveloped coastline. The Gilbert Bay Management Protected Area is an example of formal recognition of the region's potential to manage natural areas.

The Southeast Labrador Aurora Development Corporation has identified protection of natural resources for use by future generations as a strategic priority for their zone (Southeast Aurora Development Corporation, 2007). They see the need to create an awareness of the public's responsibility to ensure the future of the region's resources. This can be accomplished through a public campaign and provision of information on stewardship programs. They also want to examine the effectiveness of the Gilbert Bay Marine Protected Area (MPA) and determine if the establishment of further MPAs are warranted.

It is believed that more research and collaboration among stakeholders on protection and enhancement of the region's natural areas is warranted. The knowledge already gained from marine protected area development at Gilbert Bay can help inform this research activity.

7.13 MARINE ENVIRONMENTAL QUALITY

There was no specific issue raised in the region respecting marine environmental quality.

The quality of the marine environment in the region is generally assessed as good. Due to low and dispersed populations there are minimal human waste impacts on the coast from sewage outfalls and leaching of landfills (Memorial University, Fisheries and Marine Institute, 1998).

However, with the lack of research and comprehensive data collection there is no certainty as to the current quality of the marine environment. Baseline data would have to be collected after which future developments and natural environmental changes could be assessed for their impacts.

The movement of barges and oil tankers along the coast are impacting coastal waters. Their impact on the local coastal environment including fish and animal habitat and migratory sea birds is not fully known. Oil spill and emergency response capability is seen as inadequate.

7.14 DATA GAPS AND INFORMATION NEEDS

In this region concern about the future of the fisheries was paramount. Concerns were expressed regarding the need for more data and information on fishstocks, the sustainability of fish processing operations and the need to reduce input costs.

Communities would benefit from more knowledge transfer concerning climate change. While all informants noted the importance of climate change when asked about its impact on coastal management, generally there was little knowledge offered by them other than casual comment based on personal observations.

Interest in integrated management and learning from the Gilbert Bay MPA was expressed but more data needs to be collected and shared with other communities on the coast on the experience of managing a MPA.

Overall, more education and awareness-raising at the community level on coastal management would be of benefit. The current work of the Gilbert Bay MPA and the Labrador Southeast ACAP are significant moves in this direction.

Finally, additional input on the issues for the region from the REDBs and local community leaders would add to the findings presented herein.

7.15 SUMMARY

Based on the consultations and literature review it appears that coastal and oceans management issues are an emerging area of public interest in the region. Ongoing challenges with community sustainability for these coastal communities support the need to have a provincial coastal management strategy. In this region, for the strategy to be seen as effective it would have to be supportive of the region's development priority - the fishing industry- and improvements in marine infrastructure.

The work of the Gilbert Bay Marine Protected Area and the Labrador Southeast Coastal Action Program can encourage and inform integrated management of coastal issues in this region of Labrador.

8 COASTAL MANAGEMENT – CENTRAL LABRADOR

8.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES IN CENTRAL LABRADOR

For this issues scan, the Central Labrador coast is defined as the coast from north of Cartwright to west of Rigolet and all of Lake Melville and adjacent coastal lands. The area includes the marine boundaries of the Town of Happy Valley-Goose Bay and those of the adjacent communities of Mud Lake, North West River and Sheshatshiu. For four to six months of the year, the lake, rivers and coastline are either frozen or heavily ice infested. Fishing, coastal trading, industrial marine transport and tourism are the major marine-based economic activities in this region.

Figure 8-1 Study Area for Central Labrador

The region has one Regional Economic Development Board (REDB) – the Central Labrador Economic Development Board based in Happy Valley-Goose Bay.

The region is subject to a land claim by the Innu Nation that is under negotiation between the federal and provincial governments and the Innu Nation. There is a federal Indian (Innu) reserve at Sheshatshiu.

Lands and adjacent marine waters in the northeastern part of this area are included in the Labrador Inuit Land Claims Agreement. Under the terms of this agreement, Labrador Inuit own most of the coastline in this area as Labrador Inuit Lands. In this area, Inuit have final authority with regards to all development, as well as other rights. Inuit also have rights and benefits in the adjacent Labrador Inuit Settlement Area. Inuit have priority rights for subsistence hunting and fishing throughout the Labrador Inuit Settlement Area, including Labrador Inuit Lands. The Nunatsiavut Government has the authority to control who may hunt or fish in Labrador Inuit Lands.

The Labrador Metis Nation also has claimed aboriginal rights to the use of these same resources.

The proposed Mealy Mountain National Park falls within this region.

In 2003, the Central Labrador Economic Development Board completed a community-based coastal resource inventory in Lake Melville that covered over 900 kilometres of coastline within the region.

The coastal and ocean management issues and opportunities in the Central Labrador region are discussed in Section 8.2 through 8.14 and summarized in Section 8.15.

8.2 AQUACULTURE

Aquaculture is not a priority issue for the Central coast of Labrador. Currently, there is no aquaculture activity or development in the region. In 1998, the Central Labrador Economic Development Board and the Marine Institute at Memorial

University of Newfoundland undertook an assessment of the potential for aquaculture development of Arctic charr in the Mud Lake/Lake Melville area. Despite having good water conditions, feasibility for this and other species was considered low and no development has taken place.

8.3 COMMERCIAL FISHERIES AND FISH PROCESSING

There were no issues or opportunities raised during the interviews and consultations for this issues scan pertaining to commercial fisheries and fish processing in this region.

8.3.1 Recreation and Aboriginal Fisheries

Lake Melville is used by local fishers as well as those who engage in an aboriginal food fishery. At times, there is concern expressed about different harvesting rules depending on aboriginal status.

8.4 NEW INDUSTRIAL DEVELOPMENT

The most significant potential industrial activity for the region is the development of the hydropower capacity of the Lower Churchill River, at Gull Island and Muskrat Falls. Both directly and indirectly, the Lower Churchill River development could potentially impact coastal activities in Lake Melville and adjacent coastal waters.

The major issue that was identified is the potential environmental impact on the adjacent and downstream ecosystems from the hydroelectric development of the Lower Churchill River.

NL Hydro has advised that the river's flow will not change significantly so they do not expect changes in characteristics such as salinity and tidal effect. It is acknowledged however that there will be changes in the sedimentation pattern. This pattern has already been significantly altered by the bridge/causeway that has been constructed recently as part of the Trans Labrador Highway. The effect expected is not so much erosion of the riverbanks, but a deepening of the river's channel.

NL Hydro indicates that there will be a change in the formation and duration of ice in the river with the formation of ice likely being delayed by two weeks or so, and there will also be a delay in ice out (melt). Both of these changes may affect residents' use of the ice for movement and /transportation and will be considered in the Environmental Impact Statement (EIS) being prepared for the project.

Residents have voiced concerns over the hydro dams that will be constructed as part of this proposed project. During a recent community consultation on the project, Grand Riverkeeper Labrador sought the views of persons knowledgeable in biology, environmental economics and the environmental assessment process. Concerns about potential navigational problems, water levels, impacts on fish populations and habitat, and unintended consequences. As a result of the hydro project are being raised along with potential impact on lifestyle for local residents.

Increased marine shipping resulting from expanded commercial activity in the region as well as other economic development activity on the north coast could also result in observable impacts (Gibson, 2008).

8.5 MARINE INFRASTRUCTURE

The issue identified with respect to marine infrastructure for this region is the absence of a port authority for Happy Valley-Goose Bay.

Happy Valley-Goose Bay has large wharf structures but does not have a port authority. Such an entity would assist in attracting funding as well as in bringing together users to better manage use of local facilities, address conflicts and advocate for improvements.

8.6 LAND USE PLANNING

No specific issues respecting land use planning were raised respecting land use planning for the region.

Lands and adjacent marine waters in the northeastern part of this area will be included in the land use plan required under the Labrador Inuit Land Claims

Agreement. The land use plan is being jointly undertaken by the Nunatsiavut Government and the Government of Newfoundland and Labrador. Both governments have agreed to a completion date of March 31, 2011. The plan is being undertaken under the Province's Urban and Rural Planning Act 2000, thus will include areas within provincial jurisdiction under that Act.

The plan will not be binding on the lands or tidal waters within the jurisdiction of the federal government, however there are provisions for collaboration with the federal government related to Canada's ocean management strategy under part II of the Oceans Act.

The Nunatsiavut Government is also engaged in an internal land use planning process related to its jurisdiction and rights and responsibilities as established under the Labrador Inuit Land Claims Agreement and Nunatsiavut Government legislation.

With regards to issues within federal jurisdiction, under the terms of the Labrador Inuit Land Claims Agreement, the Nunatsiavut Government may make recommendation to the federal government regarding the establishment of customary fishing areas to protect Inuit subsistence fishing.

Both Happy Valley-Goose Bay and Northwest River are incorporated municipal governments with approved municipal plans that address land use planning matters, with a focus on development control. These plans do not cover coastal waters.

In general, land use planning has not been given much attention when coastal and oceans issues are being considered. It is being seen as an emerging issue and one with significant potential implications for the Labrador’s coastal communities. It is recognized that planning needs to consider and protect wildlife, sensitive habitat and still allow properly managed development to proceed. It is recognized that land use plans would better support future commercial and industrial development activity for this region as well as for all of Coastal Labrador.

Courtesy Newfoundland and Labrador Tourism

8.7 CLIMATE CHANGE

Like other coastal regions in Labrador, climate change and its impacts are not well documented in this region. Through the course of this study, few informants identified climate change as a significant issue for the region.

As noted in the previous section on Southern Labrador, the Canadian Climate Impacts and Adaptation Research Network (C-CIARN) has developed some preliminary assessment of coastal climate change impacts for the Atlantic Region including Labrador (C-CIARN, 2002).

Reduced ice conditions as a result of climate change offer an opportunity for increased commercial shipping including Arctic tourism via cruise ships. It also could allow Labrador communities to be the launching harbours for national sovereignty expeditions by Canadian Forces. At the same time, these and other opportunities bring the potential for increased oil contamination through accidents or spillage as well as other marine environmental quality concerns.

Other than through casual observations and conversations, there was no significant evidence or concerns identified through the consultations about climate change and its potential impact on the region.

8.8 TOURISM

Tourism is a growing economic activity for Central Labrador. Tourist visits during the summer and fall seasons are assisted by marine transportation, especially the provincial coastal marine service that runs between Lewisporte and Happy Valley-Goose Bay via Cartwright. Business travel is undertaken largely by air transportation.

As in Southern Labrador, cruise ships are a growing market generally for Labrador. Expansion of this market within this region is limited by the lack of marine charting, port infrastructure and tourism products and services on the coast.

Tourism is generally viewed as an economic driver for the region similar to all of Coastal Labrador that will require government support to be further developed.

8.9 INTEGRATED MANAGEMENT

As noted in the previous section for Southern Labrador, the potential role of integrated management of coastal issues in the region is beginning to be discussed by community leaders.

The Upper Lake Melville Environment Society, an Atlantic Coastal Action Program (ACAP) committee, is active in the Central Labrador region and is currently engaged in advocating at the community level on the potential environmental impact of the proposed hydro generating project for the Lower Churchill River.

As was noted for Southern Labrador, all stakeholders expect to be included in discussions before new policies, plans, or developments are enacted in the region so that their perspectives are aired (ideally as part of an integrated management approach).

8.10 COMMUNITY SUSTAINABILITY

The issue of community sustainability was not expressed as a significant issue for the region.

Both direct and spin-off economic activities from potential new industrial developments in Labrador generally are seen as potential opportunities to help sustain if not grow the communities in the region.

Some informants in the region suggested that government policies have to be more sensitive and supportive of coastal communities and residents living on the coast.

8.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

The use of and respect for cultural and traditional knowledge is a significant issue for this region. Central Labrador is rich in culture, heritage and tradition forged by the presence of Inuit, Innu, Metis, European and other populations and cultures.

The Northern Strategic Plan specifically outlines a goal to maintain and strengthen cultural integrity in Labrador.

Courtesy Newfoundland and Labrador Tourism

It is generally agreed that local knowledge is widely available to be gathered and used to inform ongoing research on climate change and supporting environmental assessments of large industrial projects such as the development of hydroelectric power from the Lower Churchill River.

For example, the Innu Nation believe that Aboriginal and other local knowledge of the existing environment should be an integral part of the EIS for this project and have commented as such on the EIS guidelines produced by NL Hydro.

The Innu have substantial and distinct knowledge, which they believe is essential to the understanding and assessment of the effects of this project and the mitigation of these effects. In their response to the EIS guidelines, the Innu define Aboriginal and local knowledge as the knowledge, understanding and values that Aboriginal and other local populations, including Aboriginal groups, have in relation to the environment. This knowledge is based on personal observation, collective experience and/or oral transmission over generations.

Aboriginal and local knowledge assists in understanding, including the interrelationships, among such matters as: ecosystem function; resource abundance, distribution and quality; social and economic well-being; and use of the land and resources. It informs the development of adequate baseline information, identification of key issues, prediction of effects, and assessment of their significance, all of which are essential to environmental analysis including any EIS undertaken (Innu Nation Response to the EIS Guidelines, 2008).

The Labrador Metis Nation responded to the EIS guidelines and identified traditional knowledge as an important factor to be considered in the assessment of environmental effects of the Lower Churchill River project.

Overall, there is a view that, while the region benefits from having a depth of local knowledge and traditional knowledge about its river and lake systems and coastal waters, this knowledge is dwindling with each passing generation. There are opportunities to sustain this knowledge by focusing attention in a deliberate way on documenting this information and passing it along to school age children, the youth as well as the general public.

8.12 NATURAL AREAS

There was no specific concern raised for this region with respect to the impact on natural areas as a coastal management issue.

The Central region of Labrador benefits from having the proposed Mealy Mountain National Park. It is an example of the region's potential to manage a significant natural area.

There are large forest areas in this region adjacent to the coast. There is some deterioration in the forests due to infestation possibly brought on by climate change. Consistent with Southern Labrador, more research and collaboration among stakeholders on protection and enhancement of the region's natural areas would be beneficial.

8.13 MARINE ENVIRONMENTAL QUALITY

The quality of the marine environment in the region is generally assessed as good. The exception is for Happy Valley-Goose Bay where sewage effluent flows into Lake Melville. A new waste treatment facility is under development for the Town that is expected to minimize sewage impact on the local marine environment.

Local concerned residents have indicated that the current Upper Churchill River and the new bridge/causeway for the Trans Labrador Highway are having an adverse impact on water flows in the Lake and these impacts are not fully appreciated by regulators and others. It was suggested that the presence and maintenance of buffer zones between development sites and adjacent water bodies needs more profile and enforcement by governments.

Courtesy Newfoundland and Labrador Tourism

8.14 DATA GAPS AND INFORMATION NEEDS

As in southern Labrador, more public education and awareness-raising of climate change and integrated management would benefit the community.

Similar to other Labrador regions, for Central Labrador it was agreed that there is a need for more research as part of any future integrated management activities. This in turn would allow community leaders to engage on a broader perspective regarding coastal management issues. The promotion and work that DFO is doing on integrated management in this region, and throughout Labrador, generally can help contribute to this approach.

One significant theme that needs to be researched is an understanding of the terrestrial-marine interface especially under ice conditions.

Finally, additional input on the issues for the region from aboriginal organizations and community leaders would add to the findings presented herein. This is particularly important in reaching a better understanding of the concept(s) of traditional knowledge and the role it can play in coastal management.

8.15 SUMMARY

Based on the consultations and literature review it appears that coastal and oceans management issues, particularly with respect to the potential impact of the proposed hydroelectric generation project on the Lower Churchill River, are an emerging area of public interest in the region.

9 COASTAL MANAGEMENT – NORTHERN LABRADOR

9.1 REGIONAL CONTEXT: COASTAL AND OCEAN ACTIVITIES IN NORTHERN LABRADOR

The Northern coast of Labrador runs from Rigolet in the south to Cape Chidley in the north (generally referred to as Nunatsiavut) (Figure 9.1). Like the remaining Labrador coastline, it is rugged and is buffeted by the Labrador Sea. For four to six months of the year, the coastline is either frozen or prone to heavy ice. Fishing, coastal trading, industrial marine transport and tourism are the major marine-based economic activities on this coast.

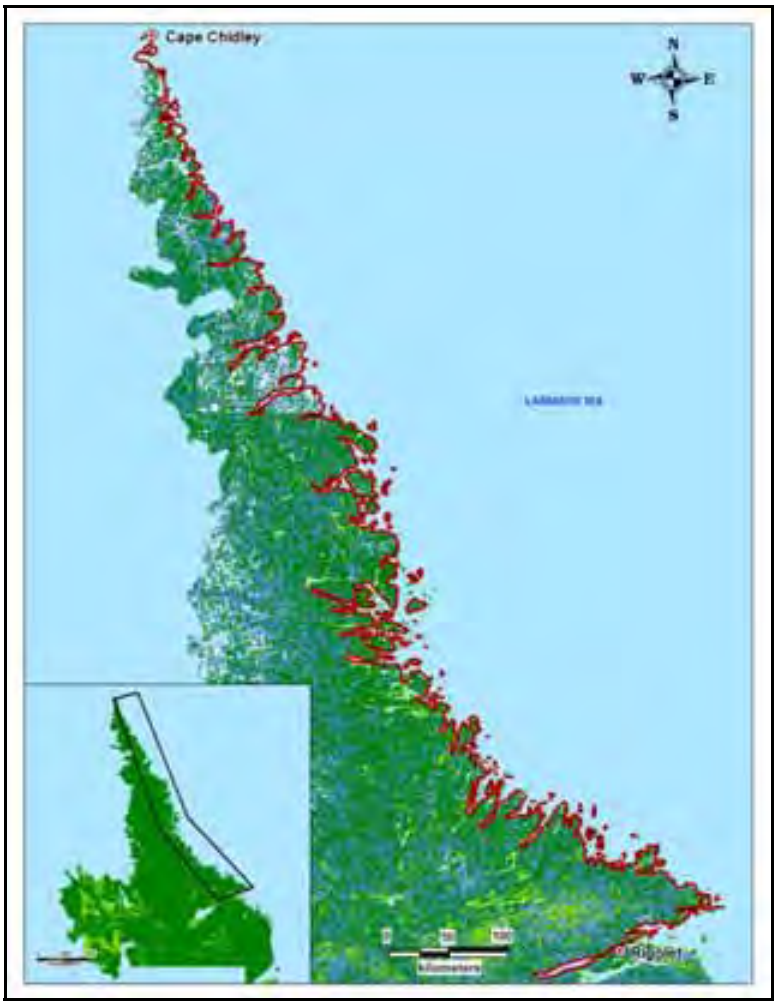


Figure 9-1 Study Area for Northern Labrador

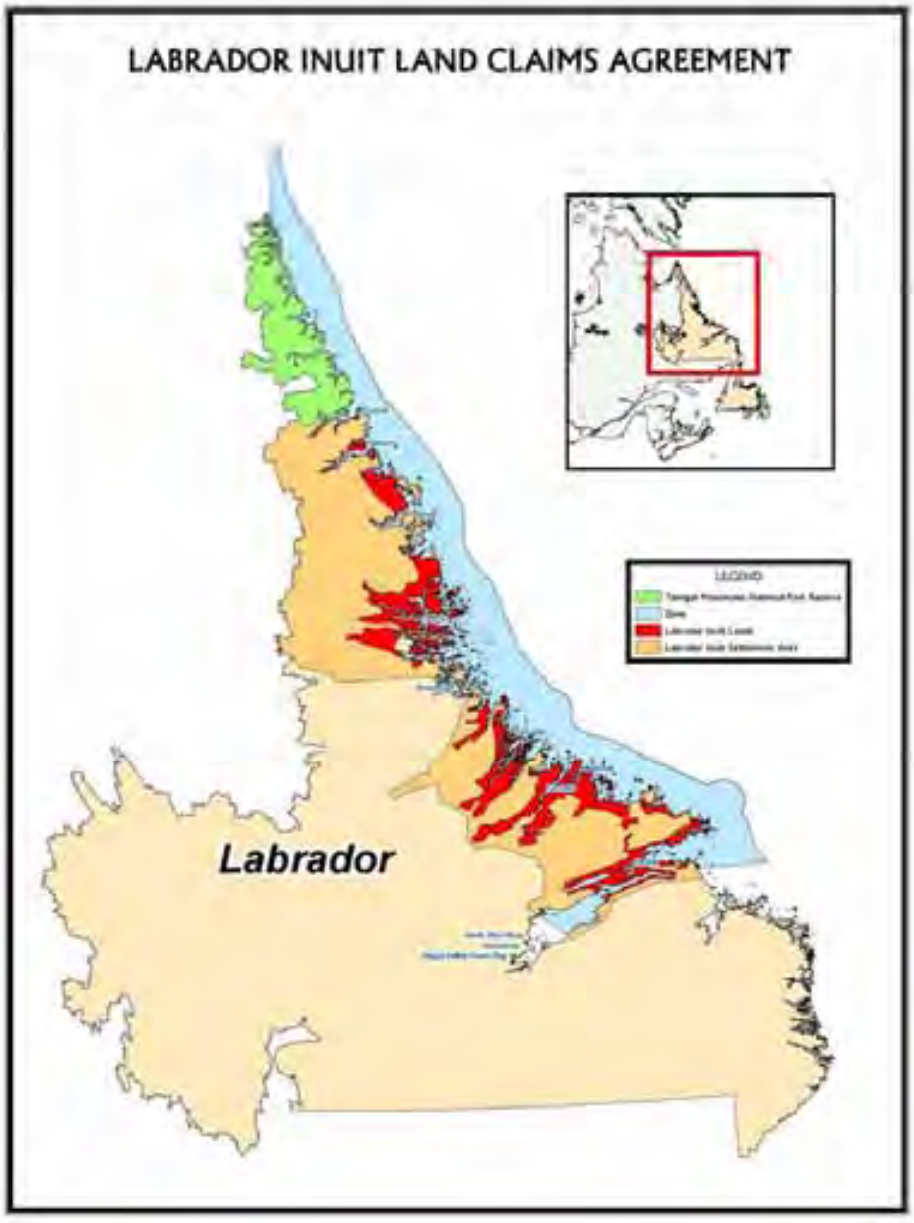
Most of the North coast Zone is covered under the Labrador Inuit Land Claims Agreement (see Figure 9-2 below). Under the terms of this agreement, Labrador Inuit own most of the coastline in northern Labrador as Labrador Inuit Lands. In this area, Inuit have final authority with regards to all development. Inuit also have rights and benefits in the adjacent Labrador Inuit Settlement Area. Inuit have priority rights for subsistence hunting and fishing throughout the Labrador Inuit Settlement Area, including Labrador Inuit Lands. The Nunatsiavut Government has the authority to control who may hunt or fish in Labrador Inuit Lands. The five Inuit communities of Nain, Hopedale, Makkovik, Postville and Rigolet are included in the area covered by the land claims agreement. Each of the communities has marine wharf infrastructure to support coastal shipping and local fishing activity. Management of the coastal area is subject to a land claims agreement between the federal and provincial governments and the Nunatsiavut Government.

The Torngat Mountains National Park Reserve is also within the area covered by the land claims agreement. The Voisey's Bay Area is also subject to the terms of the Labrador Inuit Land Claims Agreement plus Voisey's Bay Nickel has Impacts and Benefits Agreements with the Nunatsiavut Government and the Innu Nation.

The Labrador Inuit Land Claims Agreement (Government of Canada, Public Works and Government Services, 2005) specifically addresses federal and provincial government roles and responsibilities to consult on coastal and marine areas in the Inuit Settlement Area. Section 6.3 of the Land Claim Agreement states that the Nunatsiavut Government has to be consulted by government(s) prior to finalizing an ocean management strategy.

The Nunatsiavut Government's Department of Lands and Resources is responsible for a broad range of issues within the Nunatsiavut Government's jurisdiction under the Labrador Inuit Land Claims Agreement and with respect to Nunatsiavut Government legislation. It is also responsible for responding to federal and provincial government consultation obligations required under the land claims agreement. The Nunatsiavut Government's Department of Lands and Resources has responsibilities related to: land use planning, ocean management, water

management and Inuit water rights, environmental assessment, environmental protection and monitoring, and management of fisheries, wildlife and plants, and development and access to Labrador Inuit Lands. It is also responsible for implementing both the Voisey's Bay Impacts and Benefits Agreement and the Torngat Mountains National Park Reserve Impacts and Benefits Agreement.



Courtesy Labrador and Aboriginal Affairs

Figure 9-2 Labrador Inuit Land Claims Agreement

The Innu Nation has an overlapping land claim to some areas within the Inuit lands. There is a federal Indian (Innu) reserve at Natuashish. The Innu claim aboriginal rights to subsistence fishing in the coastal/ocean area adjacent to Natuashish.

The coastal and ocean management issues and opportunities in the Northern Labrador region are discussed in Section 9.2 through 9.14 and summarized in Section 9.15.

9.2 AQUACULTURE

There was no specific issue raised respecting aquaculture for this region. Currently, there is no aquaculture activity or development in Northern Coastal Labrador. A major impediment to aquaculture development is the weather and coastal ice conditions.

9.3 COMMERCIAL FISHERIES AND FISH PROCESSING

The fishery is a major issue for the region. There are some ongoing commercial fisheries and fish processing in the region. The commercial fisheries consist of snow crab, turbot, Arctic charr, scallops and rock cod. The Torngat Fish Producers Co-op Society operates the only fishing company in the region. There are fish plants in Makkovik, Postville and Nain. Their offshore shrimp license is the main revenue source for the company.

Some of the key issues identified that affect the fisheries in this region are:

- Access to sufficient quotas to ensure sustainable fishing operations
- Impact of fuel costs on harvesting and shipments to markets
- Impact of high electrical power costs for processing
- Lack of research and a lack of at-sea observers to aid in data collection.

9.4 NEW INDUSTRIAL DEVELOPMENT

The issue of minimizing environmental impacts from industrial development is a significant issue for this region. Currently, there is a high level of active and potentially active industrial development opportunities in the region.

There is uranium mining exploration and the potential for mine development involving an open pit and underground mine in the region. Recently, members of the Newfoundland and Labrador Chamber of Mineral Resources along with representatives of seven mineral exploration companies (Mega Uranium, Bayswater Uranium, Altius Minerals, Cornerstone Capital Resources, Silver Spruce Resources, Santoy Resources and Aurora Energy) held consultations in nine communities on the North Coast and in the Central region. These consultations included discussions on health, safety and environmental issues, as well as potential opportunities, surrounding uranium exploration and mining in the area near Postville and Makkovik. For the Nunatsiavut Government, the major issue is the disposal of the tailings and their impact on adjacent water quality and the surrounding environment. The matter of proceeding to development is under active consideration by the Nunatsiavut Assembly.

Nickel mining activity at Voisey's Bay is a major activity on the North Coast, and associated shipping also has an impact along the southern coastal regions.

The Labrador Sea adjacent to the Northern Coast offers oil and natural gas reserves that have been identified as having the potential for future development. The development of these resources is seen as having a positive impact on the economic development of the coastal communities such as Makkovik. Simultaneously, there is concern regarding competition with ongoing fisheries development in terms of access to labour and potential adverse environmental impacts. A Strategic Environmental Assessment of offshore oil and gas exploration is presently underway through the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB).

Another suggested opportunity for the area is the possibility of an iceberg water bottling plant using coastal resources as the input for this product.

It is generally stated that future industrial development in this region and for all of Coastal Labrador will assist the economic stability of communities; however, their environmental and cultural impacts have to be considered.

Courtesy Newfoundland and Labrador Tourism

9.5 MARINE INFRASTRUCTURE

There are some important issues with respect to marine infrastructure specific to the Northern coast. Improved and expanded infrastructure would assist existing fishing operations and any future cruise ship operators.

Improved marine charts and navigational aids would benefit the region. In addition, improved federal port infrastructure in the region would support national Arctic sovereignty initiatives operating from coastal Labrador.

Overall, there is general consensus that wharf infrastructure needs to be expanded. This would aid economic development, new tourism development (e.g. cruise ship friendly docking and support facilities) which in turn would enhance the sustainability of communities.

9.6 LAND USE PLANNING

Land use planning is a priority issue for this region which is being addressed by both the Nunatsiavut Government and the Provincial government. Preparation of a regional land use plan is required under the Labrador Inuit Land Claims Agreement. The land use plan is being jointly undertaken by the Nunatsiavut Government and the Government of Newfoundland and Labrador. Both governments have agreed to a completion date of March 31, 2011. The plan is being undertaken under the Province's Urban and Rural Planning Act 2000, thus will include areas within provincial jurisdiction under that Act. The plan will not be binding on the lands or tidal waters within the jurisdiction of the federal government, however there are provisions for collaboration with the federal government related to Canada's ocean management strategy under part II of the Oceans Act.

For the five Inuit communities, their previous municipal plans will now be the responsibility of the new Inuit Community Governments. The Nunatsiavut Government is also engaged in internal land use planning processes as part of assuming its new jurisdictional responsibilities under the Labrador Inuit Land Claims Agreement.

Courtesy Newfoundland and Labrador Tourism

9.7 CLIMATE CHANGE

The matter of climate change is a significant issue for this region. Currently, the Nunatsiavut Government (in conjunction with ArcticNet, Nasivvik Centre for Inuit Health and Changing Environments, and the Northern Contaminants Program) is studying the impacts and benefits of climate change and contaminants on the health of people and the environment in the region.

As commented in the earlier sections on Coastal Labrador, the Canadian Climate Impacts and Adaptation Research Network (C-CIARN) has developed some preliminary assessment of coastal climate change impacts for Labrador as part of a Atlantic study (C-CIARN, 2002). The Network is suggesting that there will be a sea-level decline in some areas of Labrador (as opposed to a sea-level rise elsewhere) as well as changing weather and sea ice conditions, and a potential change in human use. They also identify the need for planning to consider climate change.

One significant factor to measure climate change is changing ice conditions. While observers note changing ice conditions and a loss of sea ice in recent time, they are considered normal for this winter. For this region, a change in ice conditions can impact fishing, trapping and hunting that takes place in and around the coast and the rivers that flow into the Labrador Sea. Ice conditions also affect coastal habitat for animals such as for polar bears. It has been reported that polar bears are being spotted in record numbers in Labrador.

It has been noted that reduced ice conditions as a result of climate change offer an opportunity for increased commercial shipping including Arctic tourism via cruise ships. It also could allow Labrador communities to be the launching harbours for national sovereignty expeditions by Canadian forces. At the same time, these and other opportunities bring the potential for increased oil contamination through accidents or spillage as well as other marine environmental quality concerns.

9.8 TOURISM

There are opportunities as well as challenges to expand tourism in this region.

The Nunatsiavut Government is currently developing its own long-term tourism strategic plan. Interest in Nunatsiavut from tourists, cruise operators and travel writers has increased with the announcement of the Torngat Mountains National Park Reserve. For Nunatsiavut, the target market is small boat outings, small cruise ships, adventure tourism, with a focus on attracting tourists to the communities (Nunatsiavut Government, 2007).

As noted for the Southern coast of Labrador, tourism and other marine travel are limited by the lack of marine charting, port infrastructure and tourism products and services on the coast.

As noted in the previous sections on Coastal Labrador, the Northern Strategic Plan for Labrador addresses the increasing potential for Labrador tourism as a year–round opportunity. It also relates tourism to cultural preservation. The plan identifies various initiatives that will be undertaken to stimulate growth including the support of traditional and aboriginal cultures, winter trail grooming and improvements in the coastal marine ferry services that could benefit the region.

9.9 INTEGRATED MANAGEMENT

The Labrador Inuit Land Claims Agreement outlines that the Nunatsiavut Government will approach development from an integrated management framework. The presence of the land claims agreement brings greater certainty to resource management in this zone.

The Nunatsiavut Government with the federal and provincial governments have established the Torngat Joint Fisheries Board and the Torngat Wildlife and Plants Co-Management Board. These boards make recommendations to the federal, provincial and Nunatsiavut governments on conservation and resource management of fisheries, wildlife, and plant resources of the Labrador Inuit Settlement Area. The two boards have established a joint secretariat to support the delivery of their responsibilities. An example of this approach is through the preparation of a management plan for polar bears in collaboration with the Nunatsiavut Government.

In general, there is a need for more research as part of any future integrated management activity in the region. Any research project needs to be developed co-operatively to ensure all interests in the research results are recognized at the outset. The Nunatsiavut Government has adopted a research policy to ensure their interests are incorporated in any research project by external parties.

As noted in the earlier sections on Coastal Labrador, DFO is leading integrated management practices in Labrador and uses it as a model for fisheries management in other regions of the province. Finding the balance between government's interests and those of the Aboriginal communities is their ongoing challenge.

9.10 COMMUNITY SUSTAINABILITY

Community sustainability was not identified as a significant factor for this region. One notable fact is that the aboriginal communities are growing and expanding. Many appreciate that the fishery in itself cannot sustain them economically though they see a continuing role for it in their communities.

Both direct and spin-off economic activities from potential new industrial developments in the region and elsewhere in Labrador are seen as potential opportunities to help sustain these communities. Intra-community transportation is also seen as a means to contribute to the sustainability of the coastal communities in the region.

9.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

For the Nunatsiavut Government, traditional knowledge is a key component in their governmental decision-making. The focus is on the knowledge held by elders and it is used in the early stages of policy development.

Protection of cultural sites in the region such as old burial grounds and resettled communities (e.g. Hebron) is an ongoing challenge.

The Province's Northern Strategic Plan specifically outlines a goal to maintain and strengthen cultural integrity in Labrador.

It is generally agreed that local and traditional knowledge is widely available to be gathered and used to inform ongoing research on climate change and to assist in environmental assessments of large industrial projects but to date this is not widely happening. For aboriginal and settler alike, there is a perception of a gap in the role that traditional knowledge plays currently and the potential it has in influencing resource management practices and development decisions (Nunatsiavut Government, 2006). The Nunatsiavut Government and other aboriginal organizations' responses to the recent EIS guidelines for NL Hydro's hydroelectrical generation project for the Lower Churchill River have drawn greater attention to this issue.

It was observed that the scientific community needs to demonstrate greater respect for the use of traditional knowledge while local residents and others need to gain a better appreciation for science and the role it can play to inform natural resource management activities.

Any change in ice conditions will impact cultural practices. By way of example, a recent media report identified that Inuit elders are seeing more polar bears in northern Labrador than in the past. This information is being used by Parks Canada to inform their research on habitat in and around the Torngat Mountains National Park Reserve.

There are opportunities to sustain local and traditional knowledge by focusing attention on its use, documentation and passing it along to school age children, the youth as well as the general public.

9.12 NATURAL AREAS

There were no significant issues raised respecting the protection and development of natural areas, recognizing there is the ongoing development of the Torngat Mountains National Park Reserve in the northern area of the region.

Outside the five Inuit communities and the Innu community of Natuashish, the Northern Coast of Labrador is largely uninhabited and presents a vast area of natural

beauty and undeveloped coastline. The Torngat Mountains National Park Reserve is promoted as an example of the region's potential to manage natural areas.

A specific issue that was raised was in regard for the need to increase protection of cold water deep sea corals in the Hudson Strait. There is a voluntary closure on fishing activity in the area, but it is viewed by some at being as currently being inadequate (Dr. Evan Edinger, personal communication).

Courtesy Newfoundland and Labrador Tourism

9.13 MARINE ENVIRONMENTAL QUALITY

The quality of the marine environment in Northern Coastal Labrador is generally assessed as good due to low and dispersed populations. There are some minimal human waste impacts on the coast from sewage outfalls and leaching of landfills (Memorial University, Fisheries and Marine Institute, 1998). Water is supplied in the coastal communities through a mix of community water systems and private wells. Most communities have a sewer outfall with minimal to no sewage treatment facilities available.

As discussed in Section 9.4, there are environmental concerns surrounding uranium exploration and potential mining in the area near Postville and Makkovik. The Nunatsiavut Government is specifically concerned with the disposal of tailings and their impact on adjacent water quality and the surrounding environment. The matter

of uranium exploration and mining development is currently under active consideration by the Nunatsiavut Assembly.

It is recognized that any significant industrial development activity, such as mining and potential offshore oil and natural gas exploration and development may have some marine and other environmental impacts. It is suggested that these projects be fully assessed before any development proceeds.

A recent report respecting potential environmental impacts from offshore petroleum production in the Labrador Sea identified several potential issues (Canada-Newfoundland and Labrador Offshore Petroleum Board, 2007). These are summarized as:

- Potential sensitivity of eelgrass beds, shallow subtidal and intertidal areas to accidental events, as they are host to a variety of migratory birds (including species at risk);
- Important habitat within the Labrador Shelf SEA Area used by birds for breeding, nesting and overwintering, which includes the Harlequin Duck (listed as Species of Concern under SARA);
- Potential sensitivity of suspension and filter feeding benthic invertebrates, in particular bryozoans and soft and hard corals, to drilling discharges;
- The presence of a coral conservation area, Cape Chidley near the northern edge of the Labrador Shelf SEA Area;
- Potential sensitivity of key fish spawning and nursery areas within the Labrador Shelf SEA Area, in particular the Hamilton- Bank-Hawkes Channel, Gilbert Bay, Nain Bight and Hamilton Inlet;
- Ice conditions (including pack ice, icebergs and iceberg scour) and related ice management issues that are unique to the Labrador Shelf SEA Area and would greatly influence timing and type of exploration and drillings activities;
- Two potential National Marine Conservations Areas (NMCA) have been identified in Nain Bight and Hamilton Inlet; should either one or both Nain Bight and Hamilton Inlet become NMCAs, then oil and gas exploration would be prohibited in these areas;
- Presence of all three species of wolffish, in particular the northern and spotted wolffish, which are protected under the Species at Risk Act, throughout the Labrador Shelf SEA Area; and
- The presence of fifteen Important Bird Areas (IBAs) within the Labrador Shelf SEA .

The report also outlines a number of data gaps on potential environmental impacts from offshore petroleum activity for the area.

Voisey's Bay is cited as a current example where development is proceeding with minimal impacts. Though, there is some concern that leaching from the holding sites at Voisey's Bay is yet to be realized.

Fish waste disposal from the fish processing operations in Northern Labrador that has gained some attention for its potential negative impact on the local marine environment. Due to its remote location there is no viable secondary market for the waste from these operations. Regulators and local fishing operations do not currently view the dumping as a significant environmental concern.

Similar to other Labrador regions, oil spill and emergency response capability in the region is seen as inadequate.

9.14 DATA GAPS AND INFORMATION NEEDS

The Nunatsiavut Government and the Government of Newfoundland and Labrador are in the early stages of developing a regional land use plan for the Labrador Inuit Settlement Area. Also, the Nunatsiavut Government has started to develop a land use planning data base and land management processes for areas under its jurisdiction. The Nunatsiavut Government is adopting an integrated management philosophy. A means should be developed to allow this information to be shared with other Labrador regions as well as other governments and their agencies as they address coastal management issues.

Like Central and Southern Labrador, more data and knowledge about environmental impacts of industrial and large-scale commercial developments need to be shared with the communities to allow then to be better informed and to effectively participate in any review processes. There is also some concern regarding unknown environmental impacts of barge and oil tanker movements on fish and migratory birds.

Like other regions, scientific knowledge about climate change needs to be shared with the local communities. At the same time, traditional knowledge can help influence the overall knowledge base on climate change.

The deficiency in coastal mapping, navigational aids and port infrastructure to support large vessels as well as tourism operators (namely cruise vessels) needs to be addressed to allow the region to reach its potential as a departure point to the Arctic.

Courtesy Newfoundland and Labrador Tourism

Finally, additional input from the Nunatsiavut Government, the Innu Nation, and non-government agencies and others in the region would add to the findings presented herein.

9.15 SUMMARY

It is widely recognized that the principles of land use planning, integrated management, research and use of traditional knowledge are critical to supporting future development in the region. These principles are inherent in coastal and oceans management and are being actively applied on a regional basis in Northern Coastal Labrador.

10 PROVINCE-WIDE PERSPECTIVES

10.1 NON-REGION SPECIFIC PERSPECTIVES

The following views were provided by non-governmental organizations, federal and provincial government departments and their agencies. Examples of organizations included in this section include Transport Canada, Canadian Coast Guard, Fisheries and Oceans Canada, NL Aquaculture Industry Association (NAIA), environmental non-government organizations, the Cruise Association of NL, the Marine Institute of Memorial University, the Provincial Coastal and Ocean Network (PCON), and the Harris Centre. Many issues identified by these groups were not specific to a particular region within the study area, but instead address the province in its entirety.

10.2 AQUACULTURE

Overall within the province, there is a need for improved education initiatives for the general public on the aquaculture industry. Communication must be provided on the economic benefits, as well as potential impacts, of aquaculture operations. This effort would likely increase understanding of the industry and promote cooperation amongst stakeholder groups, allowing for fewer marine-user conflicts.

Research should be completed to identify future potential aquaculture sites so as to ensure ideal locations are not utilized by other industries. The possibility of introducing multi-trophic aquaculture should be examined as this would allow maximum use of marine space.

Many opportunities exist regarding the utilization of both wet and dry wastes associated with aquaculture operations for production of aquatic and terrestrial (eg: mink) animal feeds (this is also true of the commercial fishing and fish processing industry). Concerns were identified regarding waste management associated with aquaculture operations.

Biosecurity is a concern in all facets of this industry but particularly as it relates too inter-provincial transfers of seed and gear. Efforts should also be taken to ensure clean-up of abandoned aquaculture sites.

NAIA stated that there is a need for more support services throughout the areas of aquaculture activity in the province, although there has been some improvement in this area over the past number of years.

There are currently missed market opportunities and more investigation should be completed into identifying potential markets and taking full advantage of initiatives such as those delivered by Fly Fresh Freight, Inc. (NAIA, 2008), which flies fresh fish and seafood products from the province to Europe via Gander.

Courtesy Newfoundland and Labrador Tourism

10.3 COMMERCIAL FISHERIES AND FISH PROCESSING

Consumers are making more educated decisions and demand that food products be of high quality and developed using ecologically friendly methods. A high level of importance is being placed on certification, such as the National Aquatic Animal Health Program (NAAHP) and the Marine Stewardship Council (MSC) program. To remain competitive and obtain these certifications, seafood producers in this

province must continue to produce high quality products in environmentally sustainable means.

Development of marketable products from fish processing by-products should also be further investigated, such as utilization of shellfish waste of chitin or utilization of shellfish waste in terrestrial animal feed applications. Community development of value added products, utilization of fish oil for biophysical, and processing automation were some opportunities identified.

There were also concerns raised regarding the impacts of fishing techniques and gear, specifically trawling, on the environment and seafloor. Concerns were also raised regarding the level of by-catch in the fishery. Further investigation should take place to ensure reduction of by-catches.

Increasing fuel cost, in addition to increased fuel consumption in the fishing industry as vessels travel further from shore for fishing activities, has resulted in increased operating cost for fishing enterprises.

There is a need for greater numbers of fish harvesters to obtain certified safety training, as well as vessel stability training.

Greater importance should be placed on developing fishery stewardship initiatives throughout the province, as well as ensuring mechanisms for community involvement in governance of fisheries. Concerns were raised regarding the recreational fisheries, specifically that individuals are not abiding to the limits, requiring greater monitoring and enforcement.

10.4 NEW INDUSTRIAL DEVELOPMENT

There are concerns with new industrial development and associated increases in marine traffic. Participants want impacts of new developments on coastal and ocean quality to be seriously considered within the environmental assessment process for each proposal.

10.5 MARINE INFRASTRUCTURE

Improvements are needed to the various navigation aids and supporting tools such as charts, radar, VHF communication, deep sounding information, and sea ice monitoring. This is particularly true along the Labrador coast, considering that federal marine services provided in Labrador are not comparable to other marine coasts in the country.

Labrador is the marine 'Gateway to the Arctic' - all vessels going to/from the Arctic pass the Labrador coast. Considering recent trends in oil development, and ice conditions in the Labrador region, vessel traffic to and from the Arctic is expected to increase.

The lack of accurate charting for the Labrador coast currently limits tourism initiatives, has insurance implications, and may limit resource development. Lack of quality charting for the Labrador coast is not conducive for effective emergency response (for example, salvage vessels may be reluctant to enter uncharted waters).

Inadequacies associated with the provincial ferry system (for both residents and tourists) were indicated a number of times in consultations. Delays and unreliable ferry scheduling result in economic losses, for example, due to spoilage of goods. There is a lack of marine infrastructure, such as vessel haul-out facilities, for use by fish harvesters.

Within the province there is great potential to expand coastal information systems. Using the SmartBay initiative as an example to build on, proposals have been made for the development of a large-scale Northwest Atlantic Ocean Observing System (NWAOOS). To be effective, this system would need to ensure a focus on local interests and would have as a consequence to vary from region to region.

Systems such as this would provide a wide range of services, including surveillance of ships and potential terrorist threats, understanding ocean circulation and weather effects of global warming, and fill a major gap in global large-scale ocean observing coverage. Lack of support and the need for better linkages between all levels of government has been recognized as issues associated with projects such as these.

10.6 LAND-USE PLANNING

Current land-registry systems are inadequate, making long-term coastal land-use planning very difficult. Efforts to update and maintain a provincial land registry system are strongly encouraged by issues scan participants.

It has been suggested that a Coastal Land Use Plan will provide the needed policy and regulations regarding coastal land use and development. It is recognised that land use planning is complicated due to the high number of unincorporated communities in this province.

The need for a coastal land-use plan was identified as a strong priority for several environmental non-government organizations (ENGOs). This priority was shared by the Provincial Coastal and Ocean Network (PCON), which consists of representatives from a number of Provincial government departments involved in coastal and ocean activities.

Courtesy Parks and Natural Areas

10.7 CLIMATE CHANGE

The implications of climate change within the province are not well understood. Current planning should take possible climate change impacts into consideration, particularly for new development in vulnerable low-lying areas. It has been suggested that in some areas development be restricted below the 3m contour line

to allow for future potential increases in sea level (Martin Batterson - Department of Natural Resources, personal communication).

Further coastal monitoring and mapping of areas of high risk and natural hazard would provide the province and municipalities with the information needed for future land use planning. Future residential development regulations (in relation to high/low water mark) should take storm surges and coastal flooding risks into consideration. Legislation and by-laws could then be formalized with suggestions for setback limits.

Increased ice flow and ice remaining later into the year have been observed in northeast Newfoundland resulting in impacts to the fishery and aquaculture industries. The behaviour of ice off the coast of Labrador and north-east Newfoundland has been unpredictable in recent years, creating both opportunities (cruise ships, greater number of icebergs) as well as problems (inhibiting normal fishing activities, damage to fishing and aquaculture gear, more demand on icebreakers).

10.8 TOURISM

The lack of marine infrastructure is considered a limiting factor in attracting additional marine-based tourism initiatives. Additional infrastructure, such as marinas, is required to support growth in recreational boating and tourism.

Lack of customs/border services throughout the province greatly limits the ports of call available to cruise ships travelling from other countries, such as Greenland and Iceland. Clearance must first be made in the ports of Corner Brook or St. John's.

With the interest in eco-tourism, the Province's best practices for tourism operations related to marine life, seabirds and protected areas should be emphasized.

10.9 INTEGRATED MANAGEMENT

Province-wide research is needed in order to determine an appropriate governance model to allow incorporation and integration of both federal and provincial coastal and ocean management initiatives. Communication and capacity for integrated

management must be improved at the provincial level. Cooperation between government(s) and organizations such as the Ocean Science Centre, Harris Centre, and the Marine Institute should be a priority.

10.10 COMMUNITY SUSTAINABILITY

The demographics of many coastal communities in the province show an aging population. Labour shortages are being observed in many industries, such as the fish harvesting and processing sectors.

As more interest is placed on developing sources of 'green energy', rural communities are being considered prime locations for ocean (tidal) and wind energy. More consideration and effort should be placed on determining prime coastal locations for these types of developments.

10.11 CULTURE, HERITAGE AND TRADITIONAL KNOWLEDGE

Concern has been raised regarding loss of traditionally used coastal areas and related implications due to a lack of long-term coastal land use plans. Efforts are needed to ensure that present and proposed industrial projects do not hinder the ability of residents to participate in traditional activities. Cultural and traditional activities associated with our province's coasts and ocean should be preserved.

10.12 NATURAL AREAS

Some concern was raised regarding commercial fishing (in vessels less than twenty meters) being permitted in the marine portions of ecological reserves. Members of the Canadian Parks and Wilderness Society have indicated that use of fixed and drift gill-nets in waters surrounding major breeding colonies leads to the accidental mortality of many birds (Jones, 2007).

Further work should be undertaken to expand the network of protected areas throughout the province to increase the current 4.5% of provincially protected areas to the international and national commitment of 12%, specifically to improve protection of additional coastal and marine areas. Priority should also be placed on

DFO's initiative to identify Ecologically and Biologically Significant Areas (EBSAs) for the coasts in the province. The Department of Environment and Conservation's Natural Areas System Plan should be prioritized and implemented.

Courtesy Parks and Natural Areas

Further stewardship initiatives should be encouraged at the community level, allowing increased involvement of the public, as well as fostering attitudes toward responsible coastal use.

10.13 MARINE ENVIRONMENTAL QUALITY

Effective precautions must be taken to ensure invasive species do not make their way into prime aquaculture areas. Efforts should be made on prevention versus response. Work is currently being done to identify areas of high risk for invasive species due to high levels of vessel traffic. An effort is currently being taken by the Canada Shipping Federation in developing an Environmental Action Plan that will address aquatic invasive species.

Comments were made regarding the current emergency response capacity at both municipal and provincial levels. The lack of financial support, little practice in

implementation of plans and lack of coordination have been identified as weaknesses in this province's current emergency response systems (Dr. Norm Catto, personal communication). It is understood that action is currently being taken on this issue by the provincial government.

Consideration should also be made in identifying ports of refuge throughout the province for vessels in distress, given current and potential increases in coastal-related industrial development.

Sewage, marine dumping, fish processing effluent, and leachate have also been identified as areas of concern. Canada's National Programme of Action for the Protection of the Marine Environment from Land-Based Activities would assist in addressing these issues.

11 ANALYSIS OF DATA

11.1 EXPLANATION OF DATA ANALYSIS TABLES

As explain in Section 2.0 - Methodology, data was collected through a variety of means. Issues obtained under the 13 categories from the previously completed issues scan were cross-referenced to the determined eight overall challenges to coastal and ocean management in this province, namely:

1. Competing needs and interests;
2. Coastal land use planning;
3. Coastal and marine infrastructure;
4. Healthy marine environment;
5. Climate change;
6. Social, cultural and economic sustainability;
7. Public education and awareness; and
8. Jurisdiction, regulatory and policy frameworks.

The results of this undertaking represent a 'snapshot in time' of Newfoundland and Labrador coastal and ocean issues. This issue scan provides a qualitative analysis of issues on participant's minds. During meetings, when necessary, discussion was prompted using the 13 categories of coastal and ocean issues presented in the previously completed issues scan (2007).

Consultations led to the following results, which have been presented regionally in tabular form (Tables 11.1 – 11.6). The top five coastal and ocean priorities for each of the seven regions within the study area have been presented (with the exception of the St. John's sub-region of the Avalon Peninsula in which the top three priority issues are identified).

Within these tables, 'Ranking' indicates the relative priority placed on a particular coastal and ocean issue (1 being highest priority). Prioritization of issues took into account a number factors, including the level of priority attached to an issue by community roundtables participants, the consultant's assessment of an issue's

relative priority based on the results of regional consultations, the results of the survey and individual interviews, and by reference to the available literature and document review findings.

'Linkages' provides information on which of the eight overarching challenges (see above list) a particular coastal and ocean issue can be linked to. For example, in Table 11-2, "Aquaculture - Conflicting use with recreational boaters, cabin owners, fish harvesters" is linked to Challenge #1 - Competing needs and interests".

The 'Gaps' column indicates whether a data gap exists ('X') with respect to a particular coastal and ocean issues or if additional research/information is required.

A discussion of the eight coastal and ocean challenges facing this province follows in Section 12.

11.2 AVALON PENINSULA

Table 11-1 Analysis of Data - Avalon Peninsula

Avalon Region			
Ranking	**Category**	**Gaps**	**Linkages**
St. John's			
1	**Land-Use Planning** • Preserving access to shoreline (also Tourism) • Potential conflicts – new developments with traditional use (also Industrial Development) • Impacts/risk of urban sprawl on coastal communities • Impacts/risk of climate change/extreme environment on new development (also Climate Change and Emergency Response)	 X X	 1, 2, 3, 6 1, 2, 3, 6 1, 2, 3 5
2	**Integrated Management/Governance** • Ad hoc approach to port management by three levels of government • Need for provincial policy on coastal management/enforcement	 X X	 8 8
3	**Marine Environmental Quality** • Being addressed?		 4, 6
Outside St. John's			
1	**Land-Use Planning** • Lack of land-use planning (also Culture, Heritage) • Loss of coastal properties to outside purchasers (also Culture and Heritage, rising land prices) • Need for regulatory process of land development	 X	 1, 2, 3, 6 2, 3, 6 8
2	**Marine Infrastructure** • Need long term infrastructure plan • Dock space, marine development (also Tourism) • Wharf repairs • Federal small crafts funding	 X	 1, 3 6 6 6, 8

Avalon Region			
3	**Climate Change** • Impacts/risks/opportunities to coastal communities • Public awareness	 X X	 2, 5 7
4	**Commercial Fisheries** • Conflicting use/safety (St. Mary's Bay and Conception Bay)		 1, 3
5	**Industrial Development** • Lack of knowledge of impacts/risks	 X	 6, 4

11.3 TRINITY – BONAVISTA BAYS

Table 11-2 Analysis of Data - Trinity - Bonavista Bays

Trinity Bay / Bonavista Bay			
Ranking	**Category**	**Gaps**	**Linkages**
1	**Commercial Fisheries** • Importance of fish harvesters involvement in management (integrated management) • Role for recreational fishery to enhance tourism (also Tourism) • Need to be able to sell fish to tourists (also Tourism)		 6 6 6
2	**Community Sustainability** • Need for planning to ensure economic sustainability • Need to understand values of resources • Emphasis on tourism	 X X	 6 6 6
3	**Land-Use Planning** • Lack of coastal land use/ownership management • Lack of regulatory responsibility • Need land-use planning/ management systems • Concern over loss of coastal lands to outsiders • Ensure public access to coasts (also Tourism)	 X X X	 1, 2, 3 8 1, 2, 3, 8 1, 2, 3 1, 2, 3
4	**Integrated Management** • Better coordination among government departments • Better cooperation among stakeholder groups		 8 8
5	**Aquaculture** • Need for public education on value • Conflicting use with recreational boaters, cabin owners, fish harvesters	 X	 6, 7 1

11.4 NOTRE DAME BAY

Table 11-3 Analysis of Data - Notre Dame Bay

Notre Dame Bay			
Ranking	**Category**	**Gaps**	**Linkages**
1	**Marine Infrastructure** • Port infrastructure repair / upgrading (especially Botwood) • Need for new expanded infrastructure/docking space/facilities • Marina development/services		 6 6 6
2	**Tourism** • Focus on marina development and docking space/facilities		 6
3	**Integrated Management** • Better cooperation/communication amongst stakeholder groups (ie: aquaculture) • More community engagement/participation • Determination of shared long-term goals/sustainability • Building governance and stewardship capacity		 8 8 8 8
4	**Community Sustainability** • Loss of economic activity around ports (i.e.: Botwood) • Plan for diversifying economy – opportunities	 X	 6 6
5	**Land-Use Planning** • Need to develop land-use management plans	 X	 1, 2, 3

11.5 WHITE BAY – EASTERN NORTHERN PENINSULA

Table 11-4 Analysis of Data - White Bay - Eastern Northern Peninsula

White Bay – Eastern Northern Peninsula			
Ranking	**Category**	**Gaps**	**Linkages**
1	**Commercial Fisheries** • Sustainability of fisheries/ management • Impact of seal on cod populations? • Opportunities – fish offal, seals?	 X X X	 6 6 6
2	**Community Sustainability** • Out migration		 6
3	**Marine Infrastructure** • New wharf space • Causeway construction		 6 1
4	**Marine Environmental Quality** • Untreated sewage • Marine debris		 4 4
5	**Tourism** • Lack of supporting infrastructure		 3, 6

11.6 LABRADOR

Table 11-5 Analysis of Data - Southern Labrador

Southern Labrador			
Ranking	**Category**	**Gaps**	**Linkages**
1	**Commercial Fisheries and Fish Processing Operations**		
	• Access to sufficient quotas to ensure sustainable fishing operations		1, 6, 8
	• Assessing the commercial viability of under-utilized species	X	6, 8
	• Impact of fuel costs on harvesting and shipments to markets		6
	• Impact of high electrical power costs for processing		6
	• Access to new technology and equipment for harvesting, especially for exploratory fisheries		3, 6, 8
	• Restrictive as well as multi-governmental policies (federal, provincial impacting harvesting as well as processing	X	8
	• Lack of at-sea observers to aid in data collection	X	3, 8
2	**Marine Infrastructure**		
	• Lack of wharf infrastructure to support fishing operations, tourism, national sovereignty initiatives		3
	• Lack of navigational aids, coastal mapping	X	3
3	**Integrated Management**		
	• More community and public awareness of integrated management philosophy warranted in relation to coastal management strategy	X	4, 7, 8,
4	**Community Sustainability**		
	• Out migration a concern, especially of youth		6
	• Insufficient economic activity to support communities; government assistance and support needed		6
5	**Culture, Heritage and Traditional Knowledge**		
	• Concern expressed about local residents being intimated in sharing their knowledge	X	6

Table 11-6 Analysis of Data - Central Labrador

Central Labrador			
Ranking	**Category**	**Gaps**	**Linkages**
1	**Industrial Development** • NL Hydro development on the Lower Churchill river expected to impact Lake Melville and potentially coastal areas	X	1, 4
2	**Integrated Management** • More community and public awareness of integrated management philosophy warranted and relation to coastal management strategy	X	7
3	**Culture, Heritage and Traditional Knowledge** • Recognized as critical component in resource management and environmental assessment of industrial and other major projects	X	6
4	**Marine Infrastructure** • Lack of port management authority limiting potential of Happy Valley-Goose Bay		3, 8
5	**Healthy Marine Environment** • Quality of Lake Melville is a concern as a result of sewage treatment and potential impact of future development of the Lower Churchill River	X	4

Table 11-7 Analysis of Data - Northern Labrador

Northern Labrador			
Ranking	**Category**	**Gaps**	**Linkages**
1	**Land Use Planning** • Challenge to undertake land use planning in coastal areas especially in frozen ice conditions when the marine and terrestrial divide is absent		2, 5, 8
2	**Industrial Development** • Current and future mining activity to have environmental impacts but also offer increased economic activity in coastal communities • Offshore oil and gas exploration and development also offer economic development opportunities but will impact local environment and fisheries • NL Hydro development on the Lower Churchill river expected to impact Lake Melville and potentially Inuit lands and other coastal areas		1, 4, 6 1, 4, 6, 1, 4
3	**Integrated Management** • Lands claim agreement promotes integrated management philosophy		1, 8
4	**Commercial Fisheries and Fish Processing Operations** • Access to sufficient quotas to ensure sustainable fishing operations • Assessing the commercial viability of under-utilized species • Impact of fuel costs on harvesting and shipments to markets • Impact of high electrical power costs for processing • Access to new technology and equipment for harvesting, especially for exploratory fisheries • Restrictive as well as multi-governmental policies (federal, provincial and Nunatsiavut) impacting harvesting as well as processing • Lack of research, and a lack of at-sea observers to aid in data collection	 X X X X	 1, 6, 8, 6, 8 6 6 6, 8 1, 8 3, 8
5	**Culture, Heritage and Traditional Knowledge** • Recognized as critical component in resource management and environmental assessment of industrial and other major projects	X	6

11.7 A BROADER PERSPECTIVE (NON-REGION SPECIFIC)

Table 11-8 Analysis of Data - Non-Region Specific

Non-Regional Specific			
Ranking	**Category**	**Gaps**	**Mapping**
1	**Land-Use Planning**		
	• Widespread Lack of land use planning and management in coastal areas.	X	1, 2, 3, 6
	• Inadequate land registry with tools that would enable identification of issues.	X	1, 2, 3, 6
	• Need for incorporation of natural systems / ecosystems planning.	X	1, 2, 4
	• Need for incorporation of culture, traditional use into planning.	X	1, 2, 6
	• Ensuring public access to coastal areas – concern for increasing ownership by non-residents.		1, 2, 6
	• Need for more research into implications for climate change effects on coastal land use / ecosystems and options for mitigation.	X	2, 3, 4, 5, 6, 7
	• Concern for impacts of leachate / hazardous waste from land-fills on MEQ and implications for tourism.		2, 4, 7
	• Need for expanded mapping of hazards along coast.	X	1, 2, 3, 4, 7
2	**Integrated Management / Governance**		
	• Need to increase the number / size of Marine Protected Areas (MPAs).	X	4, 6, 8
	• More protection for coastal lands similar to MPAs.	X	4, 6, 8
	• Strengthen interaction among stakeholder groups.		8
	• Enhance education and awareness.		7
	• Define more effective role for NGOs with communities, regulators, users.		8
	• Need for more integrated information systems (like SmartBay) for disseminating information in support of marine operations and planning.		3, 7, 8
3	**Marine Infrastructure**		
	• Wharves, port facilities need repair, upgrading to support fisheries, tourism – lack of funds		3, 6
	• Development of more full-facility marinas and services in support of tourism.		6

Non-Regional Specific			
4	**Commercial Fisheries** • Communities need more input / influence on fisheries management decisions. • More effort / planning need to ensure fisheries will continue to sustain communities – by-catch and food fisheries control, development of underutilized species, waste material. • Increased effort in detecting, controlling invasive species and mitigating effects.	X	8 6 6
5	**Community Sustainability** • Need to assist coastal communities in diversifying their economic base – planning, business development, funding.	X	6
6	**Tourism** • Need inventory of port facilities to facilitate tourism development – cruise ships, yachts – and plan to facilitate access / attract business.	X	6
7	**Climate Change** • Need for research into impacts / risks / opportunities related to climate change in coastal areas.	X	5
8	**Industry Development** • Potential for ocean energy development – wave, tidal, coastal wind – along coast.	X	6
9	**Aquaculture** • Need to reduce user conflicts. • Need for educating public on benefits, opportunities for aquaculture.		1, 6 6, 7

12 DISCUSSION OF CHALLENGES

The information gathered from the literature and document review and discussions with individuals, organizations and agencies throughout the study area has been discussed and analyzed by region and/or group in earlier sections of the report. This section provides a synthesized view of the coastal and ocean management issues identified by the issues scan throughout the study area.

The issues are linked to the eight overall areas of focus or challenges described in the Introduction and Methodology sections and as shown in Tables 11-1 to 11-8 in Section 11 - Analysis and Results.

The order of discussion of the areas of focus reflects the study team's assessment of priority for attention.

12.1 COMPETING NEEDS AND INTERESTS (AKA USER CONFLICTS)

User conflicts were identified as a current coastal and ocean management issue in all regions of the study area.

Three specific types of conflicts were identified:

- Conflict with aquaculture operations;
- Competing demands on marine infrastructure; and
- Conflict between traditional use and access of coastal areas and new developments or uses.

The siting and location of aquaculture operations on the island were frequently identified as being in conflict with other uses and users of the coastal waters, such as cabin owners, recreational boaters, fish harvesters, and tourism operations. Several suggestions were made as to how to address these situations, including public education about aquaculture, better communication and better consultation processes for new aquaculture ventures.

Competition for wharf space and marine services among commercial fishing vessels, recreation craft and tourist vessels (and other commercial vessels) was a recurring concern as was the state of repair of existing infrastructure.

In all regions, proposed or actual changes to coastal access as well as appearance (through structures from buildings to fences to signs) have raised concerns about the loss of (traditional) access to the coast and a call for coastal land use planning, including the need of a coastal buffer zone.

12.2 COASTAL LANDS USE PLANNING

Coastal land use planning was identified repeatedly during the issues scan as an essential basis for coastal and ocean management in Newfoundland and Labrador. The planning should be based on an over-arching vision for the coasts of the province and culminate in a coastal land use plan for the province. Neither a coastal and oceans vision nor a plan presently exists.

A provincial coastal lands use plan would provide clear guidance to regulators, communities, individuals, business and industry as to the acceptable use of coastal lands and waters.

Development of a vision and a plan should address:

- Traditional access to coastal areas;
- Traditional use of coastal lands and waters;
- Identification and approval process for appropriate developments;
- Sustainability of communities;
- Risk management associated with climate change effects; and
- Public engagement.

The current provincial land registry is not capable of providing the information needed for effective management of coastal areas. This lack of information hinders good decision-making and may fail to control development in coastal areas.

In Labrador, the Nunatsiavut Government has initiated consultations for the development of a territory-wide land use plan that will consider traditional knowledge and land use as well as plan for the future. Nunatsiavut's jurisdiction includes both areas of the coast as well as coastal waters.

12.3 COASTAL AND MARINE INFRASTRUCTURE

Concerns about the lack and/or condition of marine infrastructure are present throughout the study area.

In some areas, such as St. Mary's Bay, participants stated that there is no wharf available to fishing vessels. Haul-out facilities are a considerable distance away, possibly as far as Harbour Grace in Conception Bay. In other areas, the harbour and wharf areas are congested with commercial and recreational vessels all vying for space. In St. Anthony, for example, the consultant was told that the marine infrastructure cannot cope with present levels of use and new economic opportunities have been lost.

There is interest in several regions within the study area in constructing and operating marinas to support recreational boaters and take advantage of the growing number of tourist yachts and sailboats visiting the province. Other harbours and ports need maintenance, replacement and expansion to support the fishery and other commercial operations.

Funding for improvement is an issue. There are inconsistencies in the administration and funding arrangements for ports and harbours. Some ports and harbours that were previously operated by the federal government have had their administration devolved to communities or private owners. Funding for repairs or modifications to these ports is available only on a competitive basis that prevents strategic planning and management. At present, an ACOA assessment of marinas for the province has been completed but is not yet available. It is anticipated that there will not be funding for new marina projects until the report is issued.

Vessel traffic along Coastal Labrador is expected to increase with the Arctic opening up to shipping, tourism, ongoing and potential resource development activities and Canada's activities to establish sovereignty. Increases in navigational support will need to keep pace with activity levels. The pressure on the existing marine infrastructure and services can be expected to increase. These considerations will need to be addressed by government.

12.4 HEALTHY MARINE ENVIRONMENT

Throughout the study area, issues affecting the health or quality of the marine environment were identified. A healthy marine environment is necessary for fish habitat and maintenance of fish/shellfish stocks, for aquaculture, for community health and aesthetics, and for tourism.

Concerns included untreated sewage entering coastal waters; discharges and effluents from other land-based sources; leaching from waste disposal sites; illegal dumping of waste; improper ocean disposal of fish processing offal; beach debris; and floating debris at sea. Education and awareness, increased enforcement as well as the development and implementation of cost-effective technology (especially for sewage treatment) would help address these issues.

The introduction of invasive species into coastal areas was identified as an issue for commercial fisheries, aquaculture and conservation (biodiversity). While Canada has ballast water treatment regulations which help address this problem, France does not which means that vessels entering St. Pierre are not required to change ballast at a specified distance from the coast.

12.5 CLIMATE CHANGE

Typically, climate change was not identified spontaneously by those participating in the issues scan as an issue. However, when introduced into the discussion by the consultant team, it was acknowledged as a factor to be considered in coastal and ocean management. Participants suggested that there are both negative and positive implications from climate change but also pointed out that more information was needed to thoroughly understand the implications for livelihoods, coastal structures and activities.

Participants recognised the potential negative effects on fisheries from a changing ocean environment. Participants identified some of the present and future practical implications of climate change on coastal infrastructure and coastal activities such as fishing, transportation and recreation. In many cases, they had already experienced some of the predicted results of climate change, such as changes in storm surges,

storm severity and changes in sea ice conditions. There was also some recognition that climate change was creating opportunities, such as increased shipping and tourism in the Arctic as well as around this province.

The need for improved emergency response preparedness was often prompted during a discussion of climate change issues.

12.6 SOCIAL, CULTURAL AND ECONOMIC SUSTAINABILITY

Community sustainability was frequently identified outside of the St. John's Metropolitan Area but less so for Northern Labrador. People, especially young people, are leaving the coastal communities. Participants are concerned that rural areas of the province are losing the energy and conviction that are needed to bring the necessary innovation (in governance, economic diversification, environmental awareness, etc.) to their communities.

Participants noted that with the departure of many members of the community, local and regional history, customs and traditions are being lost. It was suggested that with so many young people turning away from rural residence and livelihoods, the skills and affinity necessary for rural coastal life are disappearing or lost.

Coastal communities have ideas for enabling their continued sustainability. They are frustrated by the lack of resources to help them implement the initiatives, such as the necessary research into new seafood products or monies for tourism features.

Suggestions for assisting with economic sustainability range from immediate actions such as highway signage to enhanced tourism, to longer-term actions such as research into under-utilised species and new seafood products.

It is also an issue that the information and knowledge gained by fish harvesters through years of observation and work on the sea is not being recognized or used to address management of the fish stocks that are their livelihood.

12.7 PUBLIC EDUCATION AND AWARENESS

The issues scan has identified two aspects to public education and awareness: awareness about coastal and ocean management (issues) and awareness about environmental and economic implications of various activities and practices.

Many of the people contacted during the issues scan had not previously considered many of the problems, concerns, frustrations, hopes, ideas and plans they identified in the context of coastal and oceans management. This issues scan has provided the context and forum for an integrated discussion of various issues. It has in effect initiated public awareness about coastal and ocean management throughout the study area at the community level.

In many of the discussions about specific issues, it was mentioned that more communication, information, and consultation could help clarify or address the issues. Examples are more public education about aquaculture and more education about the effects of marine debris on marine animals. On another scale, different sectors of the marine community could benefit from a better understanding of the operational needs of one another.

In a report on effectiveness of the Placentia Bay Integrated Management Committee, it was stated that one major benefit is information sharing. This benefit has allowed the Committee to move from conflict to resolving conflict to preventing or avoiding conflict.

On several occasions, statements were made along the lines of ‘we don’t’ know what we have’ or ‘we don’t realise the value of what we have’. The references were to an apparent general lack of appreciation or understanding of the value of the province’s coasts and coastal waters. The concern is that without this appreciation, the coastal and ocean ‘resource’ will be given away or lost.

12.8 JURISDICTION, REGULATORY AND POLICY FRAMEWORKS

Participants in the issues scan pointed out that the different jurisdictional responsibilities of different levels of government in coastal and ocean matters can (and do) cause confusion, frustration and inaction.

For any given coastal issue, there could be as many as four levels of government involvement – municipal, aboriginal, provincial, federal – but there may be no or insufficient communication among them. Canada's Oceans Strategy (2002) recognized that mechanisms are needed to address this issue and introduced the concept of 'integrated management'.

Various forums have been established within the government sphere, such as the federal/provincial Regional Oversight Committee supported by the Canada-NL Committee on Oceans Management. DFO has also initiated mechanisms that endeavour to include members of the overall marine community. An example is the Placentia Bay-Grand Banks Large Ocean Management Area advisory group, which includes representatives from various stakeholder groups, industry and environmental non-governmental organizations.

The challenge is to identify and take actions that are visible and effective at the community and/or stakeholder level.

While jurisdictional responsibility must be respected, government at all levels should be willing and eager to draw upon expert advice from all sources. It was pointed out during the issues scan that governments are not taking full advantage of knowledge and assistance available from non-government sources such as environmental groups and the research community.

The Placentia Bay Integrated Management Committee and the multi-stakeholder Advisory Committees for the Gilbert Bay and Eastport Marine Protected Areas are successful examples of the ability and benefits of management to addressing coastal and ocean issues.

13 CONCLUSIONS AND RECOMMENDATIONS

The study team has drawn several conclusions from the issues scan and presents them below in the form of recommendations for the Departments of Fisheries and Aquaculture and Environment and Conservation as they seek to advance development of a provincial coastal and oceans management strategy and policy framework.

A Coastal Vision

The overall vision of what Newfoundland and Labradorians want and need from their coastal lands and waters has not been defined. Without this definition, there is the risk of irretrievably altering or losing what is not recognised as valued and valuable.

A vision for the coast of Newfoundland and Labrador is considered to be a foundation for coastal and oceans management in the province.

A Coastal Lands Use Plan

A consistent message was given throughout the study area, namely, that a land use plan for coastal lands is essential in order to respect and manage the many demands on coastal lands and marine areas. Without such a plan and associated supports such as an improved land registry, the basis for development decisions does not exist.

A Coastal Lands Plan is a foundation for supporting coastal and oceans management in the province.

A Marine Infrastructure Strategy

Reports of deteriorating and inadequate marine infrastructure permeated the issues scan discussions. A thorough inventory and assessment of present and future marine infrastructure needs is required as soon as possible to provide the basis for an informed, practical, cost-effective and collaborative (among all levels of government and community) marine infrastructure strategy.

Marine infrastructure is a foundation for coastal and oceans management.

Public Education and Awareness

Virtually every resident of the province is affected by the coasts and oceans whether living beside it, earning a livelihood from it or benefiting from the revenues from its resources. The understanding and recognition of the value of the coasts and ocean waters adjacent to our coasts must be enhanced through awareness and education at all levels of society. The value of these areas is multifaceted - aesthetic, practical, traditional, historical, cultural, environmental and economic - and irreplaceable.

An awareness and education program should be developed and become integrated into the provincial government's overall developmental strategies, plans, policies and regulations.

Integrated Management

The coasts and oceans are of importance to many individuals, communities, agencies and organisations. Integrated management is a concept and practice that has been proven on a small scale in the province, through Marine Protected Areas and the Placentia Bay initiative. Integrated management requires a long-term view with considerable investment of time and resources by all involved.

The use of integrated management techniques and tools should be supported, encouraged and facilitated as a means to address coastal and oceans management.

Engage the Public

The public has been referenced throughout the issues scan report. Many members of the public as individuals, researchers, municipal councils, businesses and industry, interest groups or public servants have interest, experience and knowledge of coastal and oceans matters. As the provincial government leads development and implementation of a coastal and oceans management policy framework and strategy, it is encouraged to look outside government. This resource, the public, can be

accessed, informally or possibly more formally through a new Coasts and Oceans advisory group or groups, or regional forums.

Strong support for coastal and oceans management was voiced during the issues scan and the provincial government is encouraged to develop a strong and effective coastal and oceans management strategy.

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Personal Communications Cited

Dr. Martin Batterson

Dr. Norm Catto

Dr. Evan Edinger

APPENDIX A

List of Individuals and Organizations Contacted During Consultations

APPENDIX A - List of Individuals and Organizations Contacted During Consultations

REGION: AVALON

- Avalon Gateway Regional Economic Development Board
- Baccalieu Trail Tourism
- Cape Broyle Sea Products Limited
- Cape Race Heritage Inc.
- Cape St. Mary's Ecological Reserve
- Carbonear Board of Trade
- Celtic Business Development Corporation
- City of St. John's (Representatives from: Building & Property Management; Economic Development, Tourism & Culture; Planning; Engineering)
- Colony of Avalon
- Conception Bay North Chamber of Commerce
- Cupid's Tourism Association
- East Coast Trail Association
- Executive Director - Ocean Sciences Centre
- FFAW - Fish Harvester, Cupids
- FFAW - Fish Harvester, Baie de Verde
- FFAW - Fish Harvester, Port De Grave
- Green Seafoods
- Harbour Authority - Dildo
- Harbour Authority - Grates Cove
- Harbour Authority - Harbour Grace
- Harbour Authority - Salmon Cove/Victoria
- Harbour Authority - Sibley's Cove
- Harbour Authority - Flatrock
- Harbour Authority - Harbour Grace
- Harbour Grace Shrimp Co. Ltd.
- Heart's Delight – Islington Enhancement Committee
- Irish Loop Chamber of Commerce
- Irish Loop Development Board
- Joint Councils of Conception Bay North
- Joint Mayors – Trinity/Bay de Verde
- Lower Trinity South Development Association
- Mayor and Chair of Harbour Authority, Carbonear
- Mount Carmel Council
- Mariner Resource Opportunities Network (MRON)
- Ocean Quest Charters
- P. Janes Processors
- Port of St. John's
- Quinlan Brothers
- Riverhead Council
- Salmon Cove-Victoria Futures Committee
- Southern Avalon Development Association
- Southern Avalon Tourism Association
- Town of Bay Bulls
- Town of Bay Roberts - Mayor
- Town of Colinet - Mayor
- Town of Harbour Grace – Mayor
- Town of Mount Carmel – Mitchell's Brook – St. Catherine
- Town of Old Perlican -Mayor
- Town of Riverhead - resident
- Town of Upper Island Cove - Mayor
- Town of Harbour Main and Admiral's Beach – representative
- Town of Wabana
- Trepassey Management Corporation
- Winterton Boat Building Museum
- Woodman's Fisheries

REGION: TRINTY/BONAVISTA BAY

- ACOA
- The Barry Group Inc.
- Beothic Processors
- Bonavista Area Chamber of Commerce
- Bonavista Harbour Authority
- Bonavista Historic Foundation
- Bonavista Town Council
- Chairman of LSD (?) board
- Clarenville Yacht Club member
- Coastal Connections (Tour boat)
- Dept. of Fisheries and Aquaculture Inspector
- Discovery Regional Development Board
- Drover's Ridge Cabin Association
- Elizabeth J Cottages – Cottage owner, Bonavista
- FFAW - Fish harvester, Bonavista
- Gilbert Bay Marine Protected Area (MPA) Steering Committee representatives
- Harbour Supervisor - Bonavista
- Hickman's Harbour – resident

- KEDC
- Regional Partnership Planner, Rural Secretariat
- Rural Secretariat (Avalon Peninsula)
- Rural Secretariat (Gander - New-Wes-Valley Region)
- Seaward Farms (Aquaculture Operator)
- Shells and Fins Ltd. (Aquaculture operator)
- The Fisheries Loft Inn
- Town of Burnside – representative
- Town of Canning's Cove
- Town of Eastport
- Town of Glovertown – Council member
- Town of Shoal Harbour - Resident
- Town of Trinity

REGION: NOTRE DAME BAY

-
- ACOA
- Beothuk Fisheries
- Cambellton U-Pick
- Dept. of Fisheries and Aquaculture
- Dept. of Tourism, Culture, and Recreation
- Emerald Zone Corporation (EZC)
- Exploits Valley Chamber of Commerce
- Exploits Valley Economic Development Corporation (EVEDC)
- Exploits Valley Tourism Association
- Fisheries and Oceans Canada - Small Craft Harbours Division
- Fogo Island Co-op Society
- Former Chairperson of Local Service District
- Former member of Local Service District Committee
- Fortune Harbour - resident
- Humpback Whale Pavillion (Project Manager)
- Kittiwake Economic Development Corporation
- LSD of Cotrell's Cove – resident
- LSD Cotrell's Cove - chairperson
- LSD Pleasetview – resident
- Norris Arm – resident
- Northern Arm – Town Council representative
- Ocean Management Research Network (OMRN) representative
- Point Leamington – Town Council representative
- Rural Secretariat (Grand Falls-Windsor - Baie Verte - Harbour Breton Region)
- Sunrise Fish Farms (aquaculture operator – La Scie)
- Town of Bishop Falls
- Town of Burlington
- Town of Botwood - Deputy Mayor
- Town of Joe Batt's Arm – Barr'd Islands – Shoal Bay
- Town of Leading Tickles – Mayor
- Town of Lewisporte
- Twillingate Development Association

REGION: WHITE BAY - EASTERN GREAT NORTHERN PENINSULA

-
- Danny Corcoran Lodge – Harbour Deep
- Ed Lally & Associates (civil engineers)
- EJ Green & Co. Ltd.
- French Shore Historical Society
- Great White Adventures
- Green Bay Waste Authority
- Grenfell Interpretation Centre
- Mayflower Outfitters
- Moose Country Adventures
- Nordic Economic Development Corporation
- Norstad Viking Trade Village Reconstruction – Chair
- Northland Discovery Tours
- Parks Canada
- Reeves Oceanview B & B
- RJP Seafoods
- Sop's Arm Park
- St. Anthony Basin Resources Inc. (SABRI) – Director
- St. Anthony Seafoods
- Town of Conche – Mayor
- Town of Hampden
- Town of Jackson's Arm – Mayor
- Town of Raleigh
- Town of Roddickton – Mayor
- Town of St. Anthony - Mayor
- Viking Trail Tourism Association
- White Bay Ocean Products

REGION: LABRADOR

- Central Labrador Economic Development Board
- Combined Councils of Labrador
- Dept. of Fisheries and Aquaculture
- Dept. of Labrador and Aboriginal Affairs
- Destination Labrador
- Experience Labrador
- FFAW Fish Harvesters Committee Representative - Cartwright
- FFAW Fish Harvesters Committee Representative - L'anse au Clair
- FFAW Fish Harvesters Committee Representative - L'anse au Loup
- FFAW Fish Harvesters Committee Representative - Nain
- FFAW Fish Harvesters Committee Representative - Rigolet
- Fisheries and Oceans Canada
- Gilbert Bay Marine Protected Area (MPA) Steering Committee
- Grand Riverkeepers
- Innu Nation
- Institute for Environmental Monitoring & Research
- Labrador Fisherman's Union Shrimp Co./Labrador Choice Seafoods
- Labrador Institute (MUN)
- Labrador Inuit Development Corporation
- Labrador Metis Nation
- Labrador North Chamber of Commerce
- Labrador Sea Products/Quinlan Brothers
- Labrador Southeast Coastal Action Program (ACAP)
- Labrador Straits Development Corp.
- Minaskuat Limited Partnership
- NL Hydro
- Nunatsiavut Government
- Parks Canada, Torngat Mountains
- Postville Inuit Community Government
- Private citizens
- Quebec-Labrador Foundation
- Rigolet Inuit Community Government
- Rural Secretariat (Labrador Region)
- South East Aurora Development Corp.
- Torngat Joint Fisheries Board
- Torngat Mountains National Park
- Town Council – West St. Modeste
- Upper Lake Melville Environmental Society (ACAP)
- Woodward Group of Companies

REGION: GROUPS/INDIVIDUALS WITH PROVINCE-WIDE PERSPECTIVES

- Atlantic Canada Cruise Association
- Canada-NL Offshore Petroleum Board
- Canadian Association of Petroleum Producers
- Canadian Centre for Marine Communications (CCMC)
- Canadian Coast Guard
- Canadian Parks and Wilderness Society Newfoundland and Labrador
- Department of Natural Resources
- Dept. of Environment and Conservation – Parks and Natural Areas Division
- Dept. of Municipal Affairs - Urban & Rural Planning Division
- Dept. of Tourism, Culture, and Recreation
- Dr. Dick Haedrich
- Dr. Evan Edinger
- Dr. Joe Wroblewski
- Dr. John Green
- Dr. Norm Catto
- Dr. Ratana Chuenpagdee
- Dr. Rodolphe Devillers
- FFAW
- Fisheries and Oceans Canada – Oceans Division
- Marine Institute of Memorial University (several representatives from the School of Fisheries)
- Nature Conservancy of Canada
- Newfoundland and Labrador Aquaculture Industry Association (NAIA)
- Northeast Avalon Atlantic Coastal Action Program (ACAP)
- OceanNet
- Protected Areas Association
- Sierra Club of Canada
- The Harris Centre
- Transport Canada
- Tri-Nav
- WWF Canada

APPENDIX B

Interview Guide

Issues Scan of Selected Coastal and Ocean Areas of Newfoundland and Labrador

– East & Northeast Coast of Newfoundland and Coastal Labrador –

The Province of Newfoundland and Labrador will develop a provincial coastal and ocean strategy and policy framework to support an integrated approach to coastal and ocean management. This work is being done by the provincial Departments of Fisheries and Aquaculture and Environment and Conservation.

The issues scan will cover the east and northeast coast of the Island and the coast of Labrador. This work supplements the 'Issues Scan of Selected Coastal and Ocean Areas in NL' ─ which BAE-Newplan Group/SNC-Lavalin completed in April 2007. The scope of the first project focused on the west and south coasts of the Island of Newfoundland.

This second issues scan will review and discuss coastal and ocean management and resource use issues for the province as a whole. Together the issues scans will provide key input to the provincial coastal and ocean management strategy and policy framework.

Consultations will be held in communities within the study area. The study team will consult with a variety of groups, including the general public, regional economic development boards, industry stakeholders, academia, Marine Protected Area committees, Atlantic Coastal Action Program Sites, Aboriginal groups and non-governmental organizations.

Techniques used to collect information will include a focused literature review, mail/e-mail surveys, roundtables, teleconferences and community visits. To ensure issues are identified and given priority in a consistent manner, the study team will develop a standard process for classifying issues.

The issues scan will consider biophysical, social, cultural and economic issues. Issues identified will be summarized and given priority; and may be used for future work by groups interested in coastal and ocean resource management.

For more information, please contact:

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Kaylen.hill@snclavalin.com

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Coastal and Ocean Management Strategic Plan and Policy Framework Issues Scan

The provincial government has initiated development of a Provincial Coastal and Ocean Strategic Plan and Policy Framework. The Department of Fisheries and Aquaculture (DFA), in collaboration with the Department of Environment and Conservation, are the responsible agencies.

To ensure input in this policy development process, DFA has placed a high level of importance on collecting preliminary information from communities, regulatory agencies, interest groups and individuals on what they presently identify as coastal and oceans issues.

An initial coastal and oceans management issues scan was completed in March 2007, with information collected from groups and individuals involved with coastal issues along the south and west coasts of the Island. A second survey of the northeast coast of Newfoundland and coastal Labrador is underway through a contract with BAE-Newplan/SNC-Lavalin Inc, to complete a province-wide issues scan.

We would greatly appreciate you taking the time to identify coastal and ocean **issues or opportunities from your point of view**, as grouped under the following 13 categories listed below**.** Please fill in as many or as few categories as you see fit. You input will assist in providing information from a range of perspectives, experience, knowledge, and involvement with the coast or ocean and geographic area of the province.

Replies to our survey can be:

- E-mailed: abbhan@nl.rogers.com
- Mailed: P.O. Box 23005, St. John's, NL A1B 4J9
- Faxed: (709)739-0832
- Completed over the telephone: (709) 576-3745

This survey will also be used in various roundtable discussions throughout the study areas as a tool for consultations.

SURVEY

NAME: _____

ADDRESS: _____

AFFILIATION: _____

Aquaculture

Commercial Fisheries and Fish Processing

New Industrial Development

Marine Infrastructure

Land-Based Infrastructure

Land-use Planning

Climate Change

Tourism

Integrated Management (IM)

Community Sustainability

Culture, Heritage and Traditional Knowledge

Natural Areas

Marine Environmental Quality (MEQ)

Other Issues?

Please add other issues that you believe should be considered in the development of the Coastal and Ocean Strategic Plan and Policy Framework.

One last question: please review the issues you have identified, and indicate your five priority issues, with 1 being the issue you think should receive most priority – please include any new issues you have suggested in your list.

Thank you for taking the time to complete this survey – your input is greatly appreciated.

APPENDIX C

Literature Review Results

APPENDIX C - Literature Review of applicable Documents

Report	Key Points	Issues Identified
REGION: Avalon		
Catto, N. R., Scruton, D. A., & Ollerhead, L. M. N. (2003). The Coastline of Eastern Newfoundland. Canadian Technical Report of Fisheries and Aquatic Sciences, No. 2495.	• Examines anthropomorphic influences on coastline of eastern Newfoundland	• Marine debris- processed woods, plastics, fishery-related debris • Seal carcasses are common on shores of Conception Bay • Mortality of birds- oiling • Terrestrial run-off, such as fertilizers and pesticides • Sewage is serious problem in many communities; has impacts on tourism • Aquaculture – fish sharing diseases and other pathogens – more research on optimal spacing • More research needed into effects of climate on capelin spawning • Construction of any new marine infrastructure should be done with prudence
Government of Canada, Office of Critical infrastructure Protection and Emergency Preparedness (2004). Flood Hazard and Vulnerability in Newfoundland Communities: Final Report March 2004.	• Assesses flood hazard and vulnerability in 3 areas of Newfoundland, with Torbay being one of three study areas.	• Hurricane-related flooding, mostly in rivers • Development – poor planning and diversions or modifications of natural drainage • Research needed on effects of climate change on flooding patterns in Torbay • Absence of rainfall intensity data • According to Town Plan, town development for Torbay will require construction in the headwater areas of streams that discharge into Torbay • There has been clearance of forest and brush which has produced accumulations of woody debris in stream valleys (can locally contribute to impoundment and flooding) • Some areas have inadequate infrastructure to allow for rapid evacuation of water resulting from flooding • Several areas along Torbay Road have suffered erosion due to floodwaters • Backfilling of sediments for development in Torbay is causing undercutting of the opposite bank of the main stream upstream from Main Bridge – destabilization of trees • Scarcity of monitoring meteorological stations province-wide • Happy Valley-Goose Bay requires flood mapping
NEIA (2004). Private Partnering of Waste Management Services for the Greater Avalon – July 2004.	• Examines public-private partnerships to result in economic growth and increased local business capacity	• Gaps between the need for public infrastructure and government's fiscal capacity • These partnerships seem to provide faster, better and cheaper services than traditional government delivery or procurement • Need to examine best way to procure funds • A new Newfoundland and Labrador infrastructure investment fund should be developed
REGION: Trinity/Bonavista Bay		
Discovery Regional Development Board (2005). Strategic Economic Plan, Zone	• Identified potential for growth in this region (economic	• Effects of fishery crisis still being felt • Tourism is rebounding economy • Areas to diversify agricultural activities (e.g. development of wildberry crops)

Report	Key Points	Issues Identified
15 – Discovery Zone; August 2005.	development) • Overview of importance of fishery and tourism to area	• Aquaculture is lacking, and may have been overlooked as an industry option • Not enough time for research, where to get information, overhead costs, no entry-level help, problems getting licenses and site information, lack of raw material • Very few new entrants into the fishing industry (average age 43) • Ensure maintenance of existing infrastructure
Fisheries and Oceans Canada (2007a). Eastport Marine Protected Area (MPA) Regulatory Conservation Objectives and Management Actions. Available at: http://www.dfo-mpo.gc.ca/media/backgrou/2007/nl-tnl30b_e.htm.	• Describes regulatory and non-regulatory conservation objectives for Eastport MPA • Identifies related legislation • Identifies long-term goals	• Need more study on larval drift patterns • By-catch of wolfish • Possibility of Lobster science interpretation centre/science station • Need to increase public awareness and scientific research • Ensure that commercial lobster fishermen in the area are abiding by regulations • Need to encourage local fish plant owners to attend best management practices workshops • Need to monitor fish plants for improper offal dumping and effluent disposal
Jones, I. J. (2007). Newfoundland and Labrador Seabird Nesting in Relation to Marine Protected Areas. The Osprey, V. 38, No. 3, September 2007.	• Highlights interactions between seabird colonies and commercial fishing and marine transportation	• 3 important seabird breeding colonies are not protected – Herring Islands, Wadham Islands and Middle Lawn Island • MPA's should be established within 100 km radius around all major colonies on the continental shelf break; within which fixed or drift gill nets, unshielded lights, flaring after sunset, oil dumping and capelin fishing should be prohibited
LGL Limited, Environmental Research Associated (2001). A Biophysical Overview of Eastport, Bonavista Bay. LGL Report SA684.	• Area was identified as an area of interest for DFO's MPA program • Examines physical and biological information and makes recommendations for future research	• Collection of future data should include information about the physical environment, as distribution and abundance of biological resources are highly related to physical conditions and processes • Need for more detailed mapping of all species and movements • Major data gaps on marine birds in this area • Little information on marine mammals • Identify areas of upwelling, nursery and spawning areas and potential habitat classification
REGION: Notre Dame Bay		
Community Cooperation Resource Centre (2005). New World Island Municipal Service Sharing Case Study.	• Describes service-sharing opportunities for Towns of Cottlesville and Summerford and 13 local service districts on New World Island, i.e. waste disposal and recreation. • New World Island Round Table	• Community sustainability – most young people leave; most of those who are left do not have a high level of formal education. • Need a constant, paid representative in the area that can focus on finding economic opportunities. • Need to foster increased communication and cooperation between all communities, especially Twillingate and New World Island. • Concern about the future of the crab sector; town's/island's largest taxpayer. • Low business base, and those businesses that do exist may not be contributing to the community as much as they can. • Over-burden of Summerford's volunteer fire department – they are the usually the first

Report	Key Points	Issues Identified
	Discussion identified four areas for priority for the island: Fishery opportunities, activities/facilities for seniors and youth, developing the island's new school as a community resources and developing tourism as a major economic generator. • Previous study determined that residents would be in favour of a YMCA or a senior's complex over a pleasure craft marina. • New development ideas include: shrimp gear repair facility, developing the yachting sector in NDB (also cruise guide) and cold ocean research.	point of contact in an event such as a water, ice or cliff rescue, often leading to volunteer loss/burn-out; also a lack of communication between the fire department and other emergency response agencies. • Need more effort in to recreation planning and coordination. • Landfill site in Summerford currently uses trench and open pit burning along with burying – both management and environmental concerns.
Emerald Zone Corporation (2001). Marine Ecotourism Conference: "Catch The Wave".	• Marine Ecotourism in the Emerald Zone • Describes concept of Integrated Management • Whale watching (passive vs. interactive viewing) • Notre Dame Bay Cruising Guide Initiative – targeting opportunities in the Cruising market • Necessary to have environmental integrity to support marine	• Coastline is accessible and publicly owned, but sometimes leads to a lack of responsibility when it comes to dealing with issues • Tourism is a seasonal enterprise – ways to make it year-round business • Transportation issues, getting there is costly • Some tourism operators are inexperienced • Need for stewardship programs starting with young people • Marine debris • Need a land-use policy • Maintaining good marine environmental quality (MEQ) is imperative to support ecotourism • Many marine mammal species are endangered, threatened or of special concern, so need to ensure safety of these animals. Whale watching should result in better protection and conservation practices, not add to existing pressures such as pollution, noise, effects of climate change, hunting, loss of habitat, shrinking prey stocks, entanglement, contamination, disease and compromised reproductive ability from

Report	Key Points	Issues Identified
	tourism • Facts and safety tips about icebergs • Clean water protects environmental and human health, nurtures fisheries and ecotourism, and instills community and environmental pride. • Promote standardization of adventure tourism activities. • Develop and distribute code of conduct/marine mammals ID cards to tour boat operators.	toxins in the food chain. • Opportunity to increase recreational boating in NDB • More infrastructure will be needed to support a growing marine recreational tourism industry • Recreational boaters need to ensure they do not go too close to icebergs • Need to keep oceans clean- clean oceans are critical to the economy – need to highlight an attitudinal change to adopt an ocean conservation ethic. • Concern over oiled seabirds - increase fines under 35.1 of the Migratory Birds Act, to act as a deterrent for pollution from ships. • Governance is often controlled by a relatively small group and carried out with little public involvement.
Emerald Zone Corporation (2004). Economic Zone 11 Three-Year Business Plan, 2005 – 2008.	• Overview of Emerald Zone	• Community sustainability – young, educated people leaving the province because of lack of economic opportunities. • A need for an expanded market – exporting products from the region to others. • Most employment in the zone does not require post-secondary education, therefore there is no impetus for young people to strive for academic excellence. • Lack of official tourism statistics for the area • Disconnect between the amount of visitors that visit the tourist chalet on route 390 and the amount that travel north up the Baie Verte Peninsula. • More exposure needed for marketing of tourism in the Emerald Zone • Inabilities to attract new business and professionals to the area • Limited access to resources for developmental planners • Need a more coordinated approach to developing and submitting proposals for funding consideration. • Strong need to supply community groups with a level of understanding of capacity building in order to potentially catalyze the future development of their community. • Little or no access for municipal councilors and staff to training opportunities • Local craft shops have great difficulty obtaining craft of consistent quality that are produced locally and represent Newfoundland and Labrador culture. • Water bottling plant located in South Brook that is not operating, despite a lucrative market. • Opportunities to increase new markets such as blueberry farming.

Report	Key Points	Issues Identified
Green Bay Tourism Association & Dorset Trail Tourism Association (2002). Trail Strategy For: The Green Bay and Baie Verte Peninsula.	• Examination of hiking as a main tourism product. • Gives tabular description of each current trail in the Green Bay area (8) and the Baie Verte area (14)	• 'Systems Planning' – to determine where future trails should go based on characteristics such as topography, geology, wildlife, vegetation patterns and cultural features. • Need to ensure that trails are constructed to meet the needs of the principle user groups: exercise, limited mobility, recreational, distance hiking and winter activities. • Also they should include adequate trail design, signage, comfort and points of interest. • Need to identify who has the responsibility for trail upkeep right from the start. • Pressure treated lumber on trails – chemicals used to preserve this wood may be harmful to environment; ensure this is strictly enforced in environmentally sensitive areas or habitat.
James Floyd Associates Ltd. (2003). Emerald Zone Corporation Regional Tourism Strategy. Available at: http://ezc.ca/pdf/sep/tourism.pdf .	• Describes tourism strategy for the Emerald Zone – The Great Whale Coast.	• Lack of quality and quantity of products and services, such as fine dining establishments and quality accommodations. • Poor quality roads
Kittiwake Economic Development Corporation (2007). Analysis of Zone 14 Transportation Infrastructure.	• Examines current transportation services (ferry and road) in economic zone 14 (Kittiwake Zone) • Ferries: Farewell – Change Islands/Fogo Island, Lewisporte – Labrador, and Burnside – St. Brendan's. • Identify prime tourist destinations that are affected by poor road conditions.	• Current vessels in service – age, amenities, reliability • Ferry system has a lack of tourism aspect in the terminals and on the ferries • Lack of amenities/services on board and on dock • Poor scheduling – more trips • May be untapped potential • Length of season • Need more signage • Poor accessibility for wheelchairs/people with disabilities • Concern over how the 'vessel replacement strategy' will affect residents. • Condition of road leading to Twillingate is poor, having potential implications for tourism
Kittiwake Economic Development Corporation (2007). Regional Cooperation: Our Best Hope for the Future, March 2007. PowerPoint Presentation.	• Examines the Kittiwake zone and associated issues in general terms	• Community sustainability – low fertility rate and out migration • High number of communities, limited resources. • Limited access to natural resources, i.e. fishery. • Need to identify and engage opportunities for youths to participate in part-time, non-permanent work.
Lien (1999). When marine conservation efforts sink: what can be learned from the abandoned effort to examine	• Describes attempt to establish a Marine Protected Area or a National Marine	• Wrong approach to establishing MPA (lack of funds, lack of public input, no local management, etc.). • Many potential aquaculture sites on the NE coast of Newfoundland suffer from water quality problems due to community sewage discharges.

Report	Key Points	Issues Identified
the feasibility of a National marine conservation area on the NE coast of Newfoundland?	Conservation Area on the NE coast of NL • Fisheries along the NE coast of NL have moved towards invertebrates, crabs, shrimp	• Distribution of these resources and the pattern of fishing is such that some communities do not benefit from on-shore fishery jobs and their sustainability is threatened.
Woodrow, Maureen (2004). Vulnerability in Coastal Communities, Adaptation to Change and Planning for the Future; Overview Report of the Change Islands Workshop. Available at: http://stagesandstores.com/news/ChangeIslandsFinal.pdf.	• Goal of the workshop was to examine the policies, actions and conditions under which diversification and growth can take place in coastal communities to promote sustainability.	• Out-migration of youth, aging population, and lack of workforce for the future • Full-time employment required to attract and youth • Establish clear goals – communities are responsible for their own destiny • Most successful initiatives are driven by communities, not government • Communities need to coordinate efforts with other communities to achieve common goals • Think in terms of the governance structures for full participation in the management process • Governance and capacity building go hand in hand • Capacity building is needed at all levels, individual, community and institutional • Identify and support leaders at all levels, particularly community • Outcome-based planning, monitoring and evaluation of programs needed • Diversify – the fishery is only part of the future coastal community economy; • Modernize the fishery – examine policies and strategies for viable fisheries • Look at community quotas – there are doubts about Individual Quotas • Health and age of the workforce may limit the capacity to develop the fishery • More targeted science needed to understand the fisheries, particularly the cod fishery • Find ways/structures to link community knowledge with science • Real commitment to the precautionary approach required • Be cautious when scaling up the aquaculture industry • Build capacity at the community level for entrepreneurial skills • Excessive government regulations impede progress by small businesses • Coordinate government services at all levels for rural communities • Both federal and provincial governments are urban-focused. Rural communities are being neglected • Consider cost sharing oil industry revenues similar to the Shetland Islands or Norway • Unrealistic expectations of fishery • Difficult process of new business development – large amount of red tape and roadblocks • Lack of bait resources, it is mostly imported.
Woodrow, Maureen & Gallaugher, Patricia (2006).	• Defines vulnerability and adaptation in terms	• Out-migration and limited economic opportunities. • Loss of fishery – loss of identity and sense of culture.

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The Future of Endangered Coastal Communities: Building Capacity for Renewal. Available at: http://www.sfu.ca/coastalstudies/changeislands2006/ChangeIslands2006.pdf.	of coastal communities. • Fisheries and boat building cooperative (1968) still exists today in Change Islands/Fogo. • 8 key attributes that describe successful and sustainable small-scale fisheries.	• Sustainability of crab fishery. • Technology and aging work force will continue to reduce employment in the fishery. • Tourist season is very short. • Lack of leadership – more people need to get involved (volunteer burnout as well). • Coastal communities have little trust in government and regulatory bodies, especially relating to the fishery. • Change Islands – has received some money for trails, however there is no one there with expertise how to set and lay the trails, according to acceptable standards. • Lack of environmental ethic in the fishing industry. • Important to build on what already exists – e.g. create network of tourism opportunities. • Tourism cannot replace fisheries economically, particularly since there is a lack of services, • ITQ-s – cause conflict, reduces number of fish harvesters making a living (those with adequate financial resources buy-out smaller enterprises, no longer belongs to the communities). • There is disconnect between communities and decisions being made by the federal government. • Education into ecosystem management and precautionary principle; lack of understanding about the ocean environment in general. • The current scale of fisheries management does not encourage stewardship. • Too many restrictions and regulations hampering rural developments. • Unexplored geological uniqueness. • Expansion of things like bird-watching, boating and kayaking. • Need to emphasize linkages between all communities there – Twillingate, Fogo, Change Islands.
REGION: White Bay/East Northern Peninsula		
Great Northern Peninsula Fisheries Task Force (2006). Final Report. Available at: http://www.nedc.nf.ca/Communications.asp.	• Great Northern Peninsula Fisheries Task Force was implemented for the specific task of addressing regional concern over the challenges facing the fishery on the Great Northern Peninsula	• There is a need for stakeholders on the Great Northern Peninsula to be proactive and unite to find solutions to problems that continue to plague the local fishery.

Report	Key Points	Issues Identified
REGION: Labrador		
Canada-Newfoundland and Labrador Offshore Petroleum Board (2007). Strategic Environmental Assessment, Labrador shelf, Newfoundland and Labrador Offshore Area, Scoping Document, Draft for Public Comment.	• Describes a scope for a strategic environmental assessment of petroleum exploration activities in the Labrador Shelf are of the Newfoundland and Labrador offshore area	• Outlines the factors to be considered in the assessment process as well as the scope of these factors • Defines the guidelines to be used in preparing the assessment report for the regulator • Consultations with local communities and NGOs during the assessment process is expected • Issues identified regarding eelgrass beds, migratory birds, invertebrates, coral conservation, spawning and nursery areas, ice conditions, National Marine Conservation Areas, wolfish and Important Bird Areas.
Community Cooperation Resource Centre, Newfoundland and Labrador Federation of Municipalities (2005). Labrador North Coast Municipal Service Sharing Case Study.	• Provides the results of a study on the opportunities for sharing of municipal services in northern Labrador	• Presents an overview of municipal service sharing arrangements in the northern Labrador communities • Identifies the lessons learned by local governments, and the success factors in undertaking these shared arrangements • Future directions for shared service arrangements are presented
Fisheries and Oceans Canada (2007b). Gilbert Bay Marine Protected Area (MPA) Regulatory Conservation Objectives and Management Actions. Available at: http://www.dfo-mpo.gc.ca/media/backgrou/2007/nl-tnl30a_e.htm.	• Describes regulatory and non-regulatory conservation objectives for Gilbert Bay MPA • Identifies related legislation • Identifies long-term goals	• Need more study on movement, growth rates, effects of fishing mortality and population estimates, as well as physiological health of the cod population • Need more oceanographic data for the area • Need to regulate scientific and educational activities within the MPA – implementation of activity plan and approval process • Sewage outfall in William's Harbour – continue to monitor • Gaps in information regarding marine mammals in the area • Forestry impacts on water quality of Gilbert Bay • Cabin/cottage development in the area
Gibson, John R. (2008). Lower Churchill (Grand River) Hydroelectric Generation Project. General environmental effects of hydroelectric developments.	• Outlines in a PowerPoint presentation the potential environmental effects of hydroelectric developments with particular reference to Muskrat Fall/Lower Churchill River	• Identifies the impacts on water systems, habitat, plants, fish species for the Churchill River, Lake Melville and Groswater Bay from further hydroelectric development including the impact on greenhouse gases • Suggests a potential impact on the coastal ecosystem from this development
Government of Canada, Public Works and Government Services (2005). Labrador Inuit: Land Claims Agreement. Available at:	• Outlines the roles and responsibilities of the three governments in the administration of the Labrador Inuit	• Identifies such specific areas of jurisdiction as oceans management, land use planning, fisheries, wildlife and plants, and environmental assessment

Report	Key Points	Issues Identified
http://www.laa.gov.nl.ca/laa/liaclaims/pdf/January212005AgreementComplete.pdf.	Settlement Areas and adjacent lands	
Government of Newfoundland & Labrador, Dept. of Labrador and Aboriginal Affairs (2007). The future of our Land. A Future for our Children: A Northern Strategic Plan for Labrador.	• Outlines the Government of NL policy and program priorities for Labrador within the context of a strategic planning framework	• Identifies a series of economic and social development challenges for Labrador • Identifies a number of significant economic and social development opportunities for Labrador
Memorial University, Fisheries and Marine Institute (1998). Assessment of Nine Surface and Groundwater Sites in the Happy Valley – Goose Bay/North West River Area for Arctic Charr Ongrowing Potential.	• Presents the findings of a research project to determine the feasibility of farming Arctic charr in the Happy Valley-Goose Bay/North West River area of Labrador prepared for the Central Labrador Economic Development Board	• Identifies site assessment considerations, research methodology, research results, recommendations and a series of follow-up activities • The report finds that it is not feasible to grow Arctic charr in the designated area
Newfoundland and Labrador Hydro (2007). Draft EIS Guidelines, Lower Churchill Hydroelectric Generation Project.	• Stipulates the environmental assessment process to be followed by NL Hydro for the development of the Lower Churchill River	• Indicates the environmental factors that must be assessed by the proponent in preparing an environmental impact statement for the project as part of the environmental assessment process of both government regulatory authorities
Nunatsiavut Government (2006). Nunatsiavut News Bulletin, Fall 2006.	• Provides an overview of the structure of the Nunatsiavut Government and its priorities	• Identifies specific approach to address the impacts and benefits of climate change and contaminants on the people and environment in Nunatsiavut
Nunatsiavut Government (2007). Nipik, The Voice of Labrador Inuit.	• A periodic magazine that addresses culture, recreation and tourism issues in Nunatsiavut	• Identifies tourism planning in northern Labrador and the role of the cruise ship sector
Pottle, C. & Pardy, T. (2003). Community Based Coastal Resource Inventory, Zone 3, Lake Melville to Groswater Bay.	• Presents an inventory of coastal resources developed from a community-based	• Identifies the presence, distribution and use of marine-related resources in Zone 3

Report	Key Points	Issues Identified
	approach	
REGION: All Newfoundland and Labrador		
C-CIARN (2002). Climate Change Impacts in Atlantic Canada: Executive Summary of the proceedings of C-CIARN Atlantic's Second Regional Workshop, St. John's, NL.	• Provides a summary of a regional workshop on climate change	• Identifies coastal issues and climate change in Atlantic Canada • Identifies climate change impacts on Newfoundland and Labrador communities
C-CIARN (2003). Coastal Climate Change Impact Issues; Preliminary Draft – Revised March 2003.	• A preliminary list of the most important coastal climate change issues for the regions of Canada	• Identifies potential impacts from climate change on oceanographic processes, sea levels, weather conditions, sea ice conditions and human use
Fisheries and Oceans Canada (n.d.). Integrated Management, Newfoundland and Labrador, Oceans Program Division.	• Outlines the concept of integrated management as provided in the Oceans Act and its application in Newfoundland and Labrador	• Defines the concept of integrated management • Identifies who is involved in the integrated management process • Defines the steps in the integrated management process that includes the development and implementation of plans for the integrated management of all activities in Canada's coastal, estuarine an marine waters
*Fisheries and Oceans Canada (2007d). Seeding an industry: mussel culture in Newfoundland.	• There is room for expansion for other sites in Newfoundland • Describes methods of study for aquaculture in Notre Dame Bay • Fortune Bay, Bonavista Bay and trinity Bay have been identified as areas where expansion is likely. Also studying methods of handling and transferring mussels.	• Aquaculture capacity being reached in Notre Dame Bay • Notre Dame Bay - mussel seed shortage, and new seed sources need to be identified.
Government of Newfoundland and Labrador (2007). Regional Demographic Profiles, Newfoundland and Labrador.	• Provides a demographic profile of the province including each of the Rural Secretariat Regions	• Identifies population and demographic changes for Labrador communities and the region as a whole

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Government of Newfoundland and Labrador, Dept. of Natural Resources (2007). Energy Plan.	• Outlines the Government of NL policy and program priorities for energy development in the province	• Identifies a vision and a series of principles and goals to guide energy development in the province • Identifies a series of policy actions to support development of the province's energy resources for the long term interest of the province and in a environmentally sensitive manner • Hydro development in Labrador is a major factor contributing to the energy plan
Government of Newfoundland and Labrador, Department of Tourism, Culture and Recreation (TCR) (n.d.). A Coastal and Marine Tourism Scoping Document.	• Defines marine tourism • Economic Impact and Growth • Defines market profile • Describes impact of tourism on regional/rural areas • Describes partnerships and consultations of the Dept. of TCR • Intra-provincial Oceans Network • Sector SWOT analysis • Describes development needs and opportunities • New tour boat policy being developed • Ecological, social and cultural impacts of tourism • Appendix 1- table showing inventory of marine-based tourism core attractions and tourism operators	• Table 1 – reasons tourists come to Newfoundland and Labrador • Top sites visited in 2006 – Signal Hill, Salmonier Nature Park, L'Anse Aux Meadows, Cape Bonavista lighthouse, Cape Spear, Colony of Avalon, cape St. Mary's, Castle Hill National Historic Park, Port Aux Choix National Historic Park, Red Bay National Historic Park. • Also gives most frequently requested activities • Marine interpretation centres in Terra Nova and Twillingate • Historic fishing stations in Bonavista and Trinity • Lighthouse preservation and adaptive re-use in St. Anthony Ferryland • Cruise destination - 36 points of call around the province (~51,500 passengers and crew visited NL and Lab in 2006), although there are concerns about new Canada Border Services Agency Regulations for cruise ships and increased security measures. • Will need increased port readiness and high quality shore services at ports of call. • Proposed whale and iceberg interpretive centre in Springdale area; iceberg interpretive facilities in places like Twillingate, tip of N. Pen. And along Kittiwake coast • ATANL – quality and human resource development, marketing and market readiness and maintaining integrity of natural and cultural resources (stewardship, environmental and cultural guidelines and standards) • Much of tourism development has been ad hoc, i.e. for a particular purpose - should be broader • Saleable marine tourism products unidentified • Need better public and private sector tourism planning and partnership • Lack of market awareness • Density – some places have too many operators, while others have none • Preservation and adaptive re-use of unique fishing communities and coastal landscapes • Tilting – designated by Heritage Foundation of NL and Lab as being of provincial historical significance (important buildings and features important to inshore fishery). Important to preserve and present marine and fisheries heritage. • Battle Harbour Lab – preservation of marine heritage • Some problems hampering tourism development include user conflicts, degradation of marine resources, lack of high-quality marine infrastructure and supporting amenities, marine safety and poor accessibility

Report	Key Points	Issues Identified
		• Lengthy approval times and numerous application processes for tourism operators • Land-use issues are limiting marine tourism (bad viewscapes for visitors, incompatible activities, bad communication between forestry companies and Dept. of Forestry, etc.) • Potential to further develop the provincial ferry system. Coastal touring routes require major upgrading, signage and further development of scenic laybys etc. • Need for increased monitoring, oversight and enforcement resources and efforts, e.g. DFO and enforcement of the Marine Mammals Act, etc. • Lack of a provincial product inventory and quality assessment (including current operators, infrastructure and capacity, especially in sensitive areas)
REGION: All Canada		
Fisheries and Oceans Canada (2005). Canada's Federal Marine Protected Areas Strategy.	• Presents the federal government strategy with respect to marine protected areas	• Identifies how to build a marine protected area network in Canada • Lays out four strategy objectives with respect to planning, management, raising awareness and networking • Defines guiding principles for implementation, including integrated management
Fisheries and Oceans Canada & Intergovernmental Commission of UNESCO (2002). International Workshop: The Role of Indicators in Integrated Coastal Management.	• Problem identification, setting of objectives, development of management strategies, followed by monitoring.	• Monitoring can lead to a large suite of environmental indicators; prudence must be used when choosing appropriate ones. • Indicators need to be useful at all scales.
Gardikiotis, Pauline (n.d.). The "Grey Water" Mark.	• Discusses practices and regulations governing the discharge of grey water, especially from cruise ships	• Discharge of grey water from ships into the marine environment • Defining 'waste and other matter' • Few cases of cruise ships ever being prosecuted for grey water discharge
Wang, Hanling (2004). Ecosystem Management and Its Application to large Marine Ecosystems: Science, Law and Politics. Ocean Development and International Law, 35:41-74, 2004.	• Explores large marine ecosystem and ecosystem management	• Successful ecosystem management relies upon collective political will and mutual cooperation of stakeholders

Report	Key Points	Issues Identified
REGION: Other		
Kenchington, Richard A. (1990). Managing Marine Environments, Chapter 5: Establishing a Framework For Management. Taylor & Francis, New York.	• Examines how to achieve success through ecosystem management	• Need long-term commitment of people, equipment and finances to implement and monitor a marine management plan.

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