

**Communicating Canada's *Oceans Act*:
A Strategy Tailored to the Coastal Communities of the
Canadian Arctic**

By

Andrea M. Lamboo

A thesis submitted to the Faculty of Graduate Studies of the University of
Manitoba in partial fulfillment of the requirements of the degree of Masters of
Natural Resources Management.

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**Communicating Canada's *Oceans Act*:
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BY

Andrea M. Lamboo

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of
Master of Natural Resources Management**

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ACKNOWLEDGEMENTS

There are a number of people that I would like to thank for their encouragement, time and effort as I made my way through this research. First, I would like to thank Fisheries and Oceans Canada, Central and Arctic Region, Oceans Sector. In particular, Dr. Helen Fast who first believed that I would be capable and interested in working on this research and Dr. Jack Mathias for working closely with me throughout my research, asking the tough questions and providing suggestions to guide and refine my ideas. Furthermore, without the funding supplied by the Oceans Sector, this research would not have been possible. I would especially like to thank Sharon Leonhard, Rachelle Smith and Andries Blouw and the whole Fisheries and Oceans Canada, Communications Directorate, for being so generous and helpful, providing me with invaluable information, assistance and opportunities. In general, thanks to all the great people at Fisheries and Oceans Canada for being so friendly, supportive and helpful over the past year.

During my research I was fortunate enough to do community visits in Iqaluit (Nunavut), Inuvik (NT) and Yellowknife (NT). I am very grateful that I had the chance to experience what the North is all about, to see the culture and way of life with my own eyes. While in the North I had the opportunity to meet with a number of northern communication experts, community members, and Fisheries and Oceans Canada employees. I am grateful to all the individuals who took the time to meet with me and for the information and suggestions they have provided me to improve my research.

My gratitude is also extended to my Faculty Advisor Dr. Fikret Berkes of the Natural Resources Institute and my committee members, Ms. Sharon Leonhard of Fisheries and Oceans Canada, Dr. Jack Mathias of Fisheries and Oceans Canada and Mr. Laszlo Pinter of the International Institute for Sustainable Development. Each have reviewed and commented on their fair share of thesis revisions and provided support and guidance throughout the development of this research.

Finally, I would like to take this opportunity to thank my family and friends. Without their smiles, kind words and encouragement I would not be here today.

ABSTRACT

This thesis presents the results of research initiated in May of 1998 to address the need for a communication strategy for Canada's *Oceans Act* and its three programs. The *Oceans Act*, which was passed in January of 1997, is a new and progressive piece of environmental legislation. It is different from Canadian legislation of the past because of the principles it is based on, and its dependence on participatory processes. The Act is based on three principles: sustainable development; the precautionary approach (to err on the side of caution); and integrated management. There are three programs under the Act - Integrated Management, Marine Protected Areas, and Marine Environmental Health. These programs are being developed, in collaboration with oceans stakeholders, to manage oceans activities and uses, as well as, to protect the interests of oceans stakeholders. With stakeholder participation being a fairly new concept, communication with oceans stakeholders is a necessity.

The development of a strategy to communicate the Act and its three programs to the Canadian Arctic coastal communities of Fisheries and Oceans Canada's Central and Arctic Region is the overall goal of this research. To effectively communicate the Act and its three programs, there are three objectives: 1) to identify and document Arctic Ocean activities and resource uses in the Central and Arctic Region, developing a catalogue of uses for the area; 2) to identify resource users and stakeholder groups that are affected by ocean activities and compile stakeholder contact information into a database for future reference; and 3) to develop a communication strategy for the *Oceans Act* and its programs for the coastal communities of Fisheries and Oceans Canada's Central and Arctic Region.

The research was carried out through literature reviews, unstructured interviews, Internet searches, and community visits. The demographics of these communities, their social and economic characteristics, as well as values, perceptions and cultures in relationship to the ocean were researched. Each stakeholder group is different in terms of information needs; thus certain

communication channels are more effective than others. To illustrate, economic and social conditions in the North include high unemployment, dependence on subsistence harvesting, lower levels of formal education in comparison to the rest of Canada, and high numbers of young people. These characteristics are important and will inevitably affect the method of communication chosen and the way the message is relayed.

This research found that in the North, there are already well established ways of communicating that need to be acknowledged and incorporated in trying to communicate with stakeholder groups. An analysis of which forms of communication (audio, visual, print, structured and/or unstructured) have the greatest success rate, is a necessary part of this research. Some of the existing communication bodies include the Inuvialuit Communications Society, the Inuit Broadcasting Corporation, the Native Communication Society, Canadian Broadcasting Corporation, Television Northern Canada, Northern News Services, and Nunatsiq News. All of these bodies have well-established programs and are willing to work in partnership with Fisheries and Oceans Canada to communicate the key messages of the Act and its programs.

A number of potential communication tools are suggested to foster the communication of the Act and its programs to the coastal communities of the Canadian Arctic. They include: increasing direct contact with communities and community members; working closely with local community liaison persons; developing educational materials (audio, visual, and/or print) and strong links with the identified northern communication bodies; developing an Oceans Webpage; ensuring continued cooperation and collaboration between the different Fisheries and Oceans Canada Regions through participation on the National Oceans Conservation Program Marketing Working Group; developing a calendar of events; establishing a Speakers' Bureau; developing an educational program inventory; establishing partnerships with the Northern school system; developing a portable educational "ToolKit"; and utilizing "edutainment" as a communication tool. The suggested communication tools are based on the

findings of the research and can be applied directly to the northern stakeholder groups of Fisheries and Oceans Canada's Central and Arctic Region.

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LIST OF ACRONYMS

CORB	Community Operated Re Broadcast
DFO	Fisheries and Oceans Canada
DIAND	Department of Indian Affairs and Northern Development
GNWT	Government of the Northwest Territories
HTA	Hunters and Trappers Association
HTC	Hunters and Trappers Committee
IBC	Inuit Broadcasting Corporation
ICS	Inuvialuit Communications Society
IFA	Inuvialuit Final Agreement
IM	Integrated Management
ISR	Inuvialuit Settlement Region
IUCN	The World Conservation Union
MEH	Marine Environmental Health
MPA	Marine Protected Area
NCS	Native Communications Society
NGO	Non Governmental Organization
NWT	Northwest Territories
NLCA	Nunavut Land Claims Agreement
OMS	Oceans Management Strategy
PSA	Public Service Announcement
TVNC	Television Northern Canada

CHAPTER 1: INTRODUCTION

1.0 BACKGROUND

In January of 1997 the Government of Canada passed the *Oceans Act*, giving Fisheries and Oceans Canada (DFO) the lead role in developing and implementing the *Oceans Act* and *Oceans Act* initiatives. With this new responsibility, the DFO created the Oceans Sector. This Sector is dedicated to further development of *Oceans Act* Initiatives and implements the *Oceans Act*. There is an Oceans Sector within each of DFO's five regions. The *Oceans Act* was developed to address the need for an integrated approach toward the management of potentially competitive ocean activities. It is intended to foster a new method of management and to take the "urgent action required to reconcile competing ocean interests. [The Act should] chart our future course toward healthy, safe and prosperous oceans" as well as encourage the shared stewardship that will be required to accomplish this goal (Government of Canada, 1997b). In an attempt to achieve this, the Government of Canada is in the process of developing a national Ocean's Management Strategy (OMS) in collaboration with stakeholders who have vested interests in ocean activities. The strategy is targeted for implementation in the year 2000.

The OMS will be built on three principles: sustainable development, integrated management, and the precautionary principle. The Strategy will have four immediate goals (Government of Canada, 1997b). First, to replace the current, fragmented approach to oceans management with a collaborative, integrated approach. Second, to expand working partnerships among oceans stakeholders and to increase their responsibility and accountability. Third, to optimize the economic potential of our oceans while ensuring their conservation and sustainability. Fourth, to position Canada as a world leader in oceans management. These goals are progressive and are needed to address changes and the increase in competitive use of our ocean resources, yet they are somewhat different from previous governmental approaches to oceans management. Before

these goals can be realized strong communication of their importance and what exactly they will mean to stakeholders of the Central and Arctic Region is needed.

The Central and Arctic Region is an area that is vast in size and rich in social cultures, renewable and nonrenewable resources and economic opportunity. For these reasons, this Region is typified by a large number of stakeholders and user groups. To better understand whom these stakeholders and user groups are, the Government of Canada has developed a list. According to the Government of Canada, oceans stakeholders consist of:

- indigenous groups of the Inuvialuit Settlement Region, and the Nunavut Land Claims Settlement;
- coastal communities;
- resource industries primarily dominated by oil and gas exploration and extraction, sea-bed mining, sand and gravel extraction, shipbuilding, defense production, aquaculture, boating, shipping and transportation, and marine navigation;
- different levels of government including the territorial government, the federal government and their associated departments, and municipal governments;
- the tourism and recreation industry; and
- interest groups, neither governmental nor commercial that have expertise and provide informed advice on matters such as economic, environmental and social issues, science and technology, community living, jobs and growth, public education, and the Arctic (Government of Canada, 1997b).

After reading through the list of potential stakeholders in the Central and Arctic Region, it is clear that each group will have different information needs and the *Oceans Act* and *Oceans Act* initiatives will have different meanings for each of the different groups. During the early stages of implementing the Act, developing strategies to communicate with each of the identified stakeholders, to raise awareness of the Act, will be a priority for the DFO.

Communication will be needed not only to understand the current mindset of stakeholders and help stakeholders realize/anticipate what the *Oceans Act* will mean to them as compared with previous fragmented legislation, but also to foster the internalization of the importance of oceans and their resources. The desired mindset emanating from the *Oceans Act* is one of systematic and integrated

thinking. This change in attitude will not happen overnight but over time and with greater sharing of information and opportunities for stakeholder contribution. Furthermore, for *Oceans Act* initiatives to be successful, there must be a willingness, on the part of the stakeholders, to internalize and appreciate the need for an integrated oceans management approach.

1.1 ISSUE STATEMENT

National Communications Plan...

[At this point] no formal mechanism exists to identify the information requirements of the various target audiences...a more formal target audience scanning mechanism is required to ascertain the information needs of target audiences." (Westbrook and Harris, 1999)

Canada's *Oceans Act* is new and progressive in nature. As with any new development, communication needs to play a key role in order to raise awareness of the issues. A communication framework needs to be developed to address how the DFO can reach the identified stakeholders and communicate the *Oceans Act* and its programs and what it will mean to them. For this reason, the DFO needs to research stakeholder groups and find methods of communication that will be the most successful with the identified groups. What is needed is a communication process for oceans management that will flow from the *Oceans Act* to the multiple stakeholders of the Region. A communication strategy is needed to provide recommendations that will facilitate a better understanding of oceans interdependencies and a stronger sense of stewardship among stakeholders.

1.2 RESEARCH OBJECTIVES

The overall objective of this research is to help with the communication of Canada's *Oceans Act* and its programs. The specific objectives are:

1. To identify and document Arctic Ocean activities and resource uses in the Central and Arctic Region, and to develop a catalogue of uses for the area;
2. To identify resource users and stakeholder groups that are affected by ocean activities and decisions made regarding the resources (e.g.

allocation rights). This will involve compiling the contact information of user groups into a database for future reference; and

3. To develop a communication strategy for the communication of Canada's *Oceans Act* and its programs. This strategy will be tailored to meet the needs of Canadian Arctic coastal communities in the Central and Arctic Region.

1.3 SCOPE

1.3.1 Geographical Scope

The scope of this research will be the communities located along the coast of the Northwest Territories (NWT) and the territory of Nunavut. These communities are located within the area over which the DFO, Central and Arctic Region has jurisdiction and responsibility (Figure 1). When identifying ocean uses, the Canadian Arctic Ocean will be the body of water of major concern. Although the waters of the Hudson Bay are within the jurisdiction of the DFO and border the southern part of the Nunavut Territory, ocean activity occurring in this body of water is outside the area of emphasis. The communication strategy developed will be targeted to the communities within the Inuvialuit Settlement Region (ISR) as outlined in the Inuvialuit Final Agreement (IFA) 1984 and the communities within the territory of Nunavut, as outlined in the Nunavut Land Claims Agreement (NLCA) 1993. The coastal communities of these two areas engage in oceans related activities therefore making them one of DFO's primary concerns when attempting to communicate the *Oceans Act*.

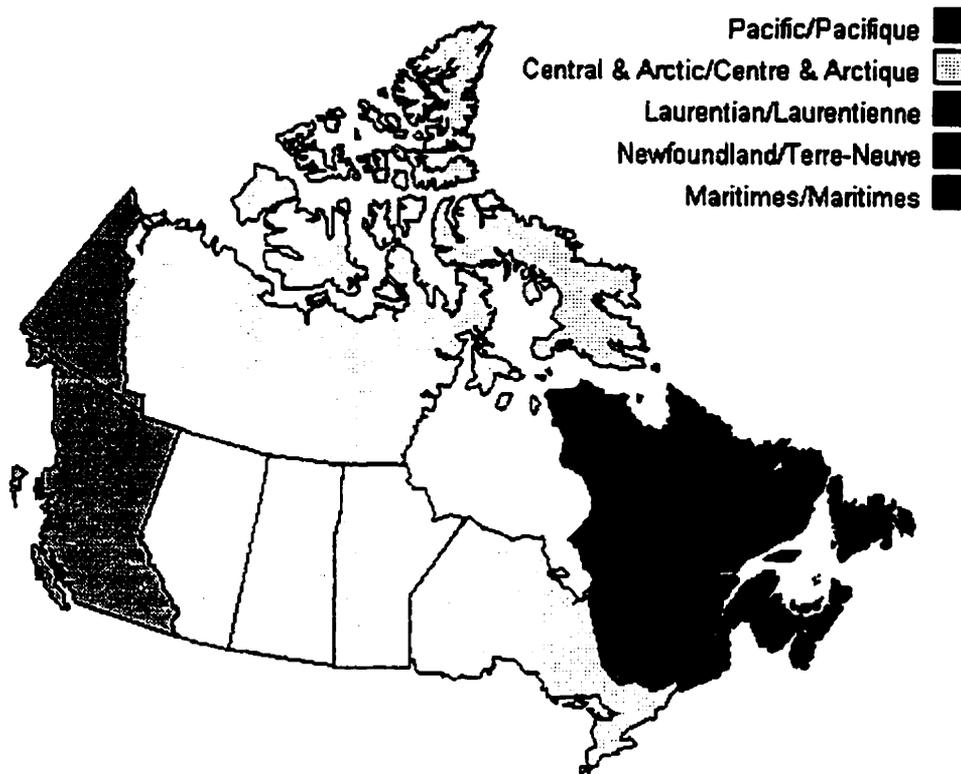


Figure 1: Fisheries and Oceans Canada Regional Areas of Jurisdiction and Responsibility (Source: Fisheries and Oceans, 1998c)

1.3.2 User Scope

Identification of stakeholder groups will be based on the documented Arctic Ocean uses occurring within the jurisdictional boundaries of the DFO, Central and Arctic Region. Once Arctic Ocean resource uses have been identified in the Central and Arctic Region, the identification of key ocean resource users and stakeholder groups will follow.

1.4 DELIMITATIONS OF THE RESEARCH

Because the Region over which the DFO has jurisdiction is so large (Nunavut, NWT, Manitoba, Ontario, Saskatchewan and Alberta); there will be a large number of stakeholders and user groups identified as having ocean related interests. It would be impossible to develop a communication strategy that would

encompass the unique information needs of each. In order for a communication strategy to be effective, a great deal of research is needed to identify and understand the stakeholder groups' culture, perceptions, values, and how they in turn relate to the ocean. Furthermore, the *Oceans Act* and its programs will mean different things to different groups. Therefore, the communication strategy developed will need to be tailored to a specific stakeholder group in order for it to be as effective as possible. In this case, the specific target audience will be the coastal communities of the Canadian Arctic.

The communication strategy will be further narrowed to deal only with northern stakeholders that have an arctic marine relationship. This thesis limits its scope to the Indigenous groups of the ISR and the NLCA. This excludes stakeholders that engage solely in land-based activities in the North. These groups include the Dene, Sahtu, Gwich'in, Yellowknife, and Deh Cho Aboriginal bands that are based inland and do not have oceans related activities. Furthermore, the scope of this research excludes stakeholder groups that affect and are affected by oceans activities outside of the Central and Arctic Region.

1.5 IMPORTANCE OF THE RESEARCH

"The Canadian Arctic is not as pristine as might be expected, given the low population and lack of industrial development. Contamination has reached it from distant sources, largely through atmosphere, but also in animal life, in ocean currents, and in rivers. Increasing human activity in the Arctic ecozones over the past several decades has brought local environmental impacts from resource development, waste disposal, military activities, tourism, and construction." (Government of Canada, 1996a)

The *Oceans Act* is a legislative tool. If implemented successfully, it has the potential to offer management programs that with the participation of stakeholders can act to manage the issues of rising concern surrounding the Arctic Ocean. Although the Arctic is not free from pollutants or development, it is still an environment that has experienced less development than the two other oceans that border Canada. This lack of industrial development to date provides an opportunity for the DFO to work with stakeholders in early stages to develop a

strong management process for oceans activities, hopefully avoiding environmental problems which have happened elsewhere as a result of weak oceans management. This management process can serve as a model for sustainable oceans management in other parts of Canada and around the world. The situation in the Arctic provides an opportunity to develop a multi-stakeholder framework that encourages and formalizes stakeholder participation before the pressures of development cause conflict to rise until stakeholder positions become rigid and inflexible.

The Act provides the opportunity for public involvement in managing Canadian oceans, which is a promising new governmental approach to managing our natural resources. It is a progressive development that has the potential to significantly change ocean activities and resource decision-making. Stakeholders are an integral component of this new paradigm. They now have a vocal role but before they can actually take their deserved part in the decision-making process they have to be made aware of the new opportunity to do so. Without effective communication of the Act and its programs, stakeholders will not be informed or active in oceans management. The government will be blamed for simply paying lip service to the notion of public participation and community empowerment. It is for this reason that the DFO, Central and Arctic Region is dedicated to developing an effective way to communicate the *Oceans Act* and what it will mean to the stakeholders of its Region.

CHAPTER 2: METHODS

2.0 INTRODUCTION

A number of methods and tools were used to achieve the objectives of this research, which were as follows:

1. To identify and document Arctic Ocean activities and resource uses in the Central and Arctic Region, and to develop a catalogue of uses for the area;
2. To identify the stakeholders that are affected by ocean activities and decisions made regarding the resources (e.g. allocation rights). This will involve compiling the contact information of user groups into a database for future reference; and
3. To develop a communication strategy for the communication of Canada's *Oceans Act*. This strategy will be tailored to meet the needs of Canadian Arctic coastal communities in the Central and Arctic Region.

2.1 FRAMEWORK FOR DEVELOPING *OCEANS ACT* COMMUNICATIONS STRATEGY

When developing the communications strategy for the northern stakeholders of the Central and Arctic Region a framework was needed to provide guidance through the research process, or a “step-by-step set of instructions for conducting the investigation” (Locke, Spirduso, and Silverman, 1993). Figure 2 outlines the framework designed for developing the *Oceans Act* communication strategy. This framework can in fact be utilized for all the identified target audiences without losing its applicability. It encompasses consistent steps that can be followed when trying to assess how successful communication can be achieved with an identified stakeholder group.

2.1.1 Step 1: Identify Arctic Ocean Uses

When identifying and documenting ocean activities and resource uses in the Arctic, primary and secondary data were utilized. An extensive literature review of publications, journals, agency reports, government reports and news articles was completed to provide detailed information on the history of events, as

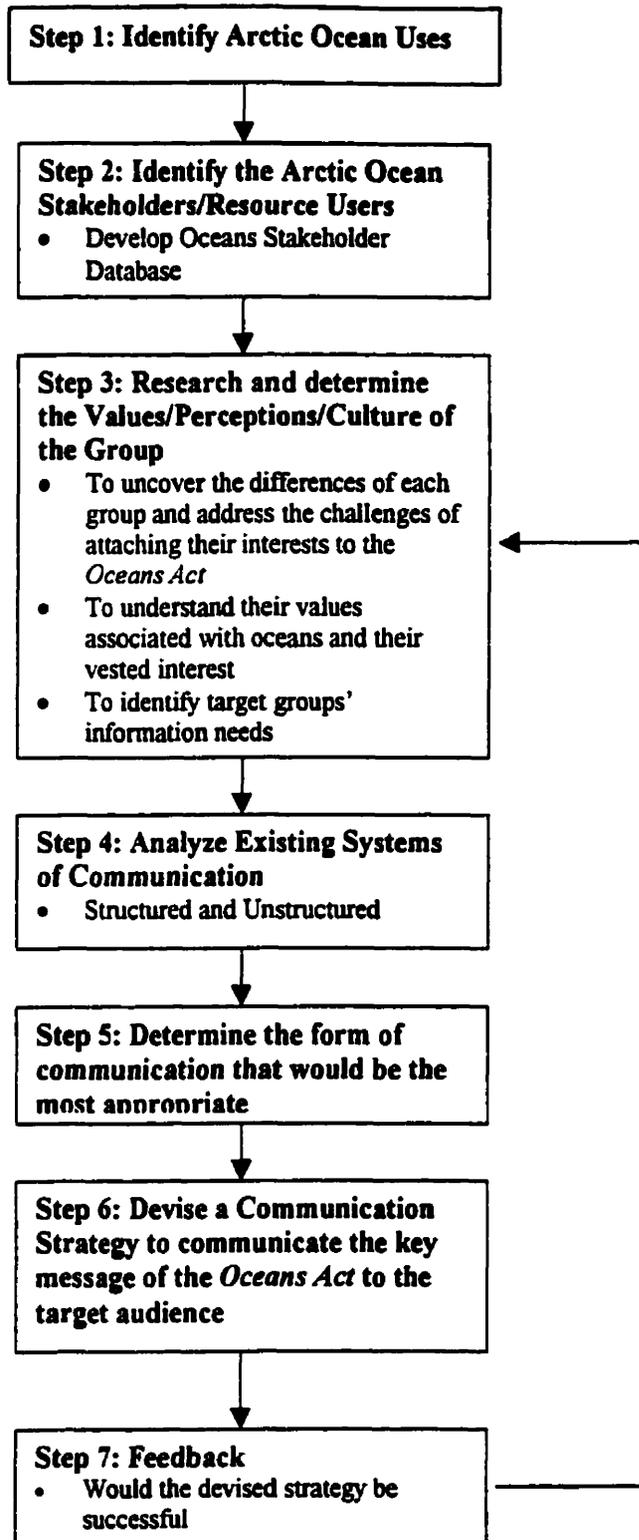


Figure 2: Framework for Developing *Oceans Act* Communication Strategy

well as, current issues that are affecting the Arctic environment. Searching the Internet for government agencies' webpages (e.g. the Department of Indian Affairs and Northern Development (DIAND), Environment Canada, Natural Resources Canada, and Parks Canada-Canadian Heritage) was useful. These sites are constantly updated to provide information regarding natural resource development in Canada. Individuals with experience in the Central and Arctic Region were also a valuable resource. They were able verbally to fill in the gaps that the literature did not cover sufficiently. Through researching the history of the area, and resource uses, conflicts of interests became evident providing not only a strong background of the Region but aiding in ocean stakeholder identification as well.

2.1.2 Step 2: Identify the Stakeholders/Ocean Resource Users

Once oceans activities and resource uses in the Arctic were documented it was possible to identify who was actually utilizing these resources and under what rights (e.g. land claims agreements). There are a number of organizations that have developed techniques for identifying and distinguishing among potential stakeholders in a given resource management situation (e.g. The World Conservation Union-IUCN). These techniques were researched to provide guidance for this portion of the research. Journal articles, newsletters, government reports, local newspapers, and local telephone books were valuable information sources when naming the key players in a given resource situation. The use of the Internet and personal communications were also valuable tools used to identify key organizations, their mandates, and their individual role in oceans management.

Once a preliminary list was developed it was necessary to solicit feedback from individuals who could provide further information as to which potential groups and individuals were missing. Contacting and consulting the actual groups identified also provided further information, ensuring that all the individuals, organizations, departments, and bodies that will be affected by the *Oceans Act*

and its programs were included in the list. This portion of the research was done on the most part by telephone due to the physical limitations involved with the size of this region. The list will not be static but dynamic, growing and changing as new bodies are conceived and/or existing bodies change shape or dissipate. The list includes the major groups, individuals, organizations, etc. and was entered into a database that can be used for future reference. This database was developed to organize the collected oceans stakeholder information.

2.1.3 Step 3: Determine the Values/Perceptions/Culture of the Group

At this point in the research, once the Arctic Ocean uses and stakeholder groups had been identified, defining a narrower scope was necessary. It was expected that there would be a number of stakeholder groups identified and although understanding each groups' values, perceptions and culture will be important to communicate the *Oceans Act* and its programs, only one stakeholder group was the focus of this research.

The target audience for this research was the identified northern stakeholder groups, in particular Canadian Arctic coastal communities. Learning as much as possible about their values, perceptions and cultures and their relationship with the ocean was extremely important when attempting to communicate with this group about environmental issues. There are a number of ways I learned more about this group. Reading northern newspapers, journals and government documents helped to construct a larger picture of how life is in the North and what many of the major issues are. Using the Internet to visit northern webpages provided another source of information. Personal communications with communications experts (both northern and local), scientists who do work in the North and Arctic community members provided important information about this target group, some of which could not be found in the literature. Personal communications, which aided in the completion of this research, was done through informal discussions rather than formal interviews. Community visits were arranged to provide an avenue to speak with northern communication experts and community members. Once in the communities, personal observation

played a major role in developing an understanding of the perceptions, values and culture of this group.

2.1.4 Step 4: Analyze Existing Systems of Communication

Analyzing the existing systems of communication in the North involved researching the communication bodies in the North, identifying their area of expertise and what communication vehicles they used to disseminate information to their target audiences (e.g. television, radio, newsprint, etc.). It was important to identify the actual communication sources (e.g. CBC North Radio) and place these sources into a table for further market share analysis. Once research was completed on the actual communication vehicles utilized in the North and the communication sources that provide information through these vehicles, analysis was done to assess which of these sources were in fact the most effective. Some forms of communication were more effective in certain situations than others.

To research the existing systems of communication in the North a number of different research methods were used. Personal communications with community members, the DFO Communications Directorate and other individuals who do work in the North were helpful in identifying key communication bodies and programming in the North. Reading northern newspapers and journals, as well as, searching the Internet were also strong sources for identifying key communication bodies and often provided contact information for these bodies.

2.1.5 Step 5: Determine the Priority for the Mode of Communication

To determine the form of communication that was most successful for communicating with northern communities, some degree of both qualitative and quantitative analysis was completed. There was a need to research and understand Arctic community characteristics (education level, number of youths, language spoken, cultural backgrounds, etc.). There was also a need to research community populations, communication sources' market reach, and market share in relation to these community populations (McCarthy, 1994). Through both market share

analysis of communication sources and personal communication with northern communication bodies and community members, a communication strategy was developed that internalized analytical results, ensuring the strategy recommended communication channels and sources that have had the greatest degree of success in the North.

To obtain the information needed to do both the qualitative and quantitative analyses outlined above, a number of sources were used. Personal communications and previously compiled statistical information were the main sources used to complete this step in the research. Talking with northern communication experts provided useful information and statistics that were often not found in written documents. The main reason for the lack of documented northern market research being that marketing situations change frequently and the area with which they are dealing is small in terms of population, therefore not a great deal of market information has been gathered (Cathy Bolstad, *pers.comm.*, March 30, 1999; Wilson, 1994). However, governments, in particular the Government of the Northwest Territories (GNWT), have done a great deal of work on community populations and community characteristics. The GNWT was a major source for northern population information.

2.1.6 Step 6: Devise a Communication Strategy for the *Oceans Act*

Based on the research and information gathered in Steps 1 through 5 of this framework (Figure 2), a communication strategy for northern stakeholders was developed. The strategy was based on the information gathered throughout the research process and findings were incorporated to ensure that the strategy will be as successful as possible. A number of communication tools were suggested. The recommendations were presented in the standard format for government communication strategies.

2.1.7 Step 7: Feedback and Adjustment to Improve Effectiveness of Communication

There was a need to build feedback loops into the communication strategy. This will ensure that the communication taking place is effective, or modified to be as effective as possible when communicating with the target audience. Certain feedback mechanisms for the suggested communication tools were researched and included in the strategy. Feedback mechanism research involved talking with communication experts, finding out what has worked for them when attempting to monitor communications with Arctic communities, and reviewing other communication strategies.

CHAPTER 3: LITERATURE REVIEW

3.0 INTRODUCTION

In the context of developing a strategy to communicate the *Oceans Act* to the stakeholders of the Central and Arctic Region, there are certain concepts that must be reviewed and their importance linked to fully understand the foundation and complexity of the strategy. Sustainable development is the foundation upon which the Act is based. The Act is concerned with encouraging and building roots for the sustainable development of Canada's oceans. Of particular importance to this research is the Arctic Ocean, which including the coastal communities, serves as the scope for this research. A review of the area and its people is an important starting point. This literature review will attempt to tie together the concept of sustainable development, the role of public participation as an important and necessary tool to attaining sustainable development, and how the *Oceans Act* is seeking to establish a framework that will encourage participation by the stakeholders of the Region to work towards sustainable development in the Arctic. Implementation of the *Oceans Act* will only be as effective as its communication. Therefore, the final component of this literature review identifies the ingredients of effective communication and how these components can be used to break through the barriers of inefficient communication.

3.1 THE ARCTIC AND ITS PEOPLE

3.1.1 The Area

The Canadian Arctic is a unique environment that differs substantially from any other region in Canada. It is a region of harsh climate with short summers and long winters having temperatures that average between -25°C and -35°C during the winter months. "The climate and physical conditions in the Arctic result in very harsh conditions for the organisms living there. Precipitation is generally low and the environment is characterized by an extremely marked seasonal rhythm with long, cold, dark winters and brief summers with long days"

(PAME, 1996). The Arctic encompasses nearly a quarter of Canada's land area and boasts a coastline longer than that of all ocean-fronting provinces combined (Government of Canada, 1996a). The area is renowned for its continuous permafrost, and unique flora and fauna. This vast area is broken up into regions, for the purposes of this research the Western Arctic, Central and Eastern Arctic are the regions of concern.

There are a number of different species that inhabit Arctic waters. The fish and shellfish species found in the Arctic include: Arctic cod, Arctic char, Greenland halibut, redfish, round-nosed grenadier, greenland shark, shrimp, scallops, and several species of clam (Beckmann, 1996). The Arctic is home to a large number of seabirds, which include thick-billed murres, northern fulmars, black legged kittiwakes, black guillemots, gulls, duck and loons. The Arctic also supports a large marine mammal population of harp seals, hooded seals, ringed seals, walrus, beluga, narwhal, bowhead whales, and polar bears (Beckmann, 1996). Due to the intense weather, this area tends to have less species diversity than other regions of Canada because Arctic "organisms must be very robust, be able to withstand the cold and the periodical lack of food/nutrients as well as reproduction failure" (PAME, 1996). The species have lower reproductive rates and longer life spans than similar species in other regions (Beckmann, 1996). The fragile nature of the Arctic ecosystem, as just described, illustrates how sustainable development is crucial to ensure that species have time to replenish stocks.

To date, the Arctic has experienced limited nonrenewable resource development despite the high potential for such development in the North. "Economic activity in the North currently contributes less than 5% (or \$950 million) to Canada's Gross Domestic Product (GDP) with mining and gas industries accounting for the majority of this, with hunting, trapping, and tourism providing the balance" (Beckmann, 1996). This is in stark contrast to the total contribution of the oceans sector to the Canadian economy. In 1996, "the total value of output from the oceans sector was \$18.9 billion" (Government of Canada, 1999). This will not be the case in the future. It is expected that access to

the Arctic will become more efficient as a result of new technology, as well as, potential warming in the North. The Mackenzie basin, where there are a large number of oil deposits and leases, has been termed a “hot spot”. Around the Mackenzie Basin “temperatures have risen by three times the global average of half a degree” (Grescoe, 1997). New technology and rising temperatures coupled with the depletion of nonrenewable resource stocks elsewhere, indicates that industry will be turning to the resource pools of the Arctic. Overall, development can be expected to increase rapidly in the next century making the tools of sustainable development even more relevant in the North.

3.1.2 The People of the Arctic

“Changes have occurred too quickly in the North. Many of the people were living off the land as little as fifty years ago, and in some Inuit areas that lifestyle still exists. These people have had to make a transition, which has taken most cultures centuries to complete, in just a few years. They have gone from hunting and gathering societies to being wage-earning employees on oilrigs or behind government desks. They have had to survive in a totally different psychological and economical environment. They have had to deal with treaties, re-establish themselves into native organizations on white man’s terms, and attempt to reclaim land benefits, which they felt were rightfully theirs. They have been truly a people in transition” (Aquilina, 1981).

“The Canadian Arctic has one of the lowest population densities in the world (about 85,000 residents), with the majority of the population living in coastal communities” (Government of Canada, 1996a; Department of Indian Affairs and Northern Development, 1991). Yet this area is one of the richest areas in tradition and culture. The Inuit of the Arctic, although different in culture among the different regions, have much in common. They have had to cope and adjust to significant changes in their lifestyles due to the influence of the ‘Tan’ngit’, Inuvialuit for foreigners. “The white man made his way into these regions, bringing with him his culture – world views, religions, languages, morals, values, and social systems” (Aquilina, 1981). The history of this people’s

evolution is spotted with impacts that have been caused by economic cycles historically based on the exploitation of renewable and nonrenewable resources. Efforts to 'educate' the Inuit disrupted their traditional lifestyle and method of teaching their youth, which is characteristic of verbal communication, story telling and hands on experience. The Canadian government also played a role in challenging the Inuit culture. In their attempts to increase sovereignty and government 'presence' in the Arctic the Inuit lost much of their flexibility as a result of the push to change from a nomadic lifestyle to one of a sedentary colonial nature.

3.1.3 History of Events

The Inuit began to inhabit the Arctic as early as 6000 years ago (Inuit Tapisirat of Canada, 1995). Their own culture had evolved; one based strongly on their relationship with the land, depending on its resources for their subsistence. The first sign of outside exposure started in 1576 when the first European explorer, William Frobisher, entered the Arctic. From this point on the Inuit lifestyle would never be the same. There was a flux of outsiders that poured into the Arctic in search of whales, furs, oil, and gas. This economic explosion of course brought with it other outside influences. Of these influences missionaries had the most severe impact. Once economic development in the North had begun the Canadian government became concerned with the lack of Canadian cohesion. The government began to leash the resources and increase their sovereignty efforts to bring the Arctic closer into the governmental fold.

Commercial Whaling Era (1719 – 1910)

With the increased value of whale products on the market the demand grew and drove the commercial whaling industry to new heights. The Inuit were now being exposed to large numbers of people from different areas of the world. With exposure to foreigners came exposure to diseases that were not known to them or their immune systems. The commercial whaling era not only depleted the stocks of whales that Inuit survival was dependant upon but the disease brought in

by outsiders almost wiped out the Inuit population in the North. “Each whaling season, boats would arrive bringing in diseases that the local population had little ability to withstand. Apart from the massive depopulation caused by death, the attendant chronic sickness and incapacity would have had a seriously disruptive effect upon a society where gender roles and the division of labor are so clearly differentiated.” (Freeman, Wein, and Keith, 1992).

Influx of Missionaries and the Establishment of Schools (Late 1800's – Early 1900's)

“By the early 1900's most of the (Arctic) regions had felt the impact of missionary activities, a process which brought significant alterations to the Inuit worldview.” (Inuit Tapisirat of Canada, 1995). This outside influence and pressure to conform to a different worldview and religion made it increasingly difficult for the Inuit to maintain their belief system and culture. Two major impacts resulted from the missionary movement. First, children were often removed from the home and contact with their elders. This resulted in the loss of the Inuit passing tradition on to their youth. The children were no longer exposed to family related activities such as cooking, hunting, sewing, etc. Second, the missionary movement caused the weakening of the native language and probable loss of some traditional cultural values and practices among the young people (Freeman, Wein, and Keith, 1992).

Development of the Fur Trade (1905 – 1930's)

The development of the fur trading industry marked the emergence of an economic relationship between the Inuit of the Arctic and the outside world in the form of fur trading companies. Inuit communities became dependant on the economic benefits from the fur trade and when the fur trade began to decline due to factors such as anti-trapping lobbying the Inuit felt the impact of losing an income they had become so dependant upon. At this point, the Canadian government began to move into the regions in an attempts to increase its presence in the Arctic and “to meet its responsibility as a provider of government services

and programs to the Inuit” (Inuit Tapisirat of Canada, 1995). The government began providing assistance to the Inuit communities that were now suffering economic hardships.

Settlement Living (1950 – Onward)

With the entrance of greater government involvement, the Inuit of the North began to feel pressure to colonize. This change from nomadic to sedentary living changed the Inuit lifestyle forever. With settlement living came the development of schools, medical facilities, government agency buildings, housing programs, telecommunication links and infrastructure. “The Canadian government’s forced settlement and education policy took the Inuit off the land. It would be the beginning of the end of their traditional lifestyle” (Lett, 1999a).

Nonrenewable Resource Industries

It was with the exploration and development of nonrenewable resources in the late 1960’s that the federal government finally heard the voice of the Inuit communities. The development and search for fossil fuels became intense in the North and the Inuit were concerned about the impact this exploitation would have on the renewable resources of the area upon which their subsistence depended. The noise pollution generated from operations of this magnitude no doubt affected the species which the Inuit hunted as well as their habitat (Steltzer, 1982). “Exploration activity added greatly to the sense of loss of control over local concerns” (Freeman, Wein, and Keith, 1992). The federal government addressed these issues by creating a forum for public opinions and concerns to be heard. This forum would come to be known as the Mackenzie Valley Pipeline Inquiry (MVPI). The MVPI allowed the Inuit of the area (the Inuvialuit) to voice their concerns. The government and the Inuit organizations have taken this process further with the establishment of land claims. Land claims provide the Inuit with greater control over their destiny and more responsibility in management efforts. Under land claims agreements the government and the Inuit

now have a joint responsibility for managing resources and providing an environmental impact assessment of proposed projects in the North.

Land Claims and Aboriginal Rights

The struggle to maintain a unique culture in the face of interaction and change is a constant challenge for the Inuit of the Canadian Arctic. Over the years, the challenge to maintain a cultural balance has not been easy, yet this group of people have continued to fight to maintain their worldviews and have attempted to adapt these views to a modern day society where they often have to interact in a political setting. With the development of land claims agreements in Canada Inuit groups can now have some degree of stability and certainty when it comes to charting their own future. There are two land claims that affect the study area for this research. These include the IFA, 1984 (Figure 3) which affects the Inuvialuit of the Western Arctic, more specifically the Inuvik Region and the area encompassed under the NLCA, 1993 (Figure 3) which sets in motion the development of the Nunavut Territory and Government effective April of 1999 (Hunter, 1998; Department of Indian Affairs and Northern Development, 1993; Jull, 1993; Department of Indian Affairs and Northern Development, 1984). The NLCA affects the Inuit of the Central and Eastern Arctic, more specifically, the Keewatin/Kivalliq, Kitikmeot, and Baffin Regions.

In 1982, Aboriginal and Treaty rights became entrenched in Section 35 of the Constitution and the Government of Canada developed a formal policy on comprehensive land claims shortly after in 1983. Although negotiations in this process take a great deal of time and effort there are now land claims throughout the Arctic with Labrador being the only Inuit group yet to settle a claim (Inuit Tapisirat of Canada, 1995). Each land claim is different and tailored to the needs of the particular group initiating the claim, yet there are common principles that can be found in all land claims. These principles include:

- confirming land ownership to specific areas and reaffirming additional rights to other areas;
- recognizing aboriginal harvesting rights throughout their traditional territory;

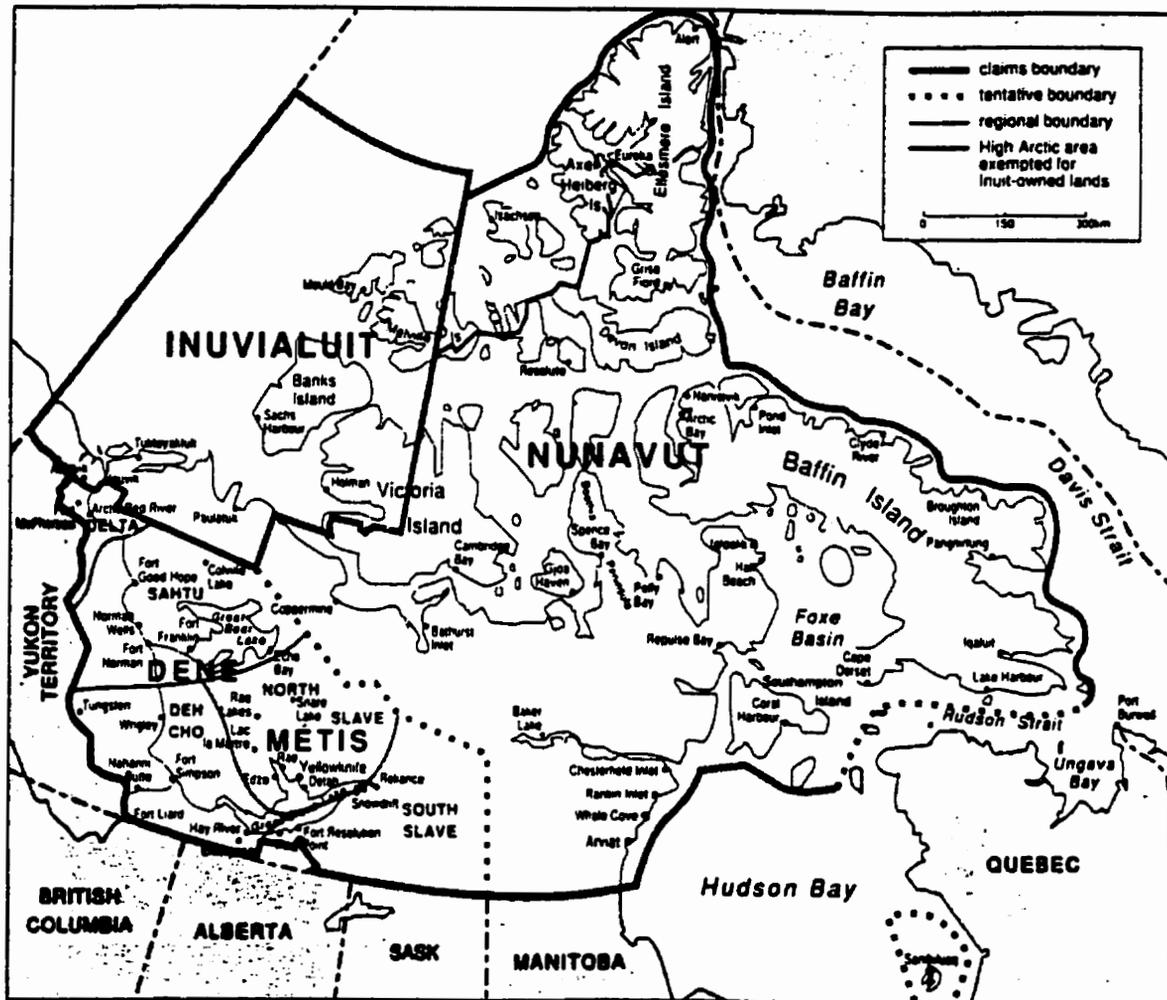


Figure 3: Coastal Communities of the Canadian Arctic within the Inuvialuit Settlement Region (as per Inuvialuit Final Agreement, 1984) and Nunavut (as per Nunavut Land Claims Agreement, 1993) (Source: Dickerson, M. O. and McCullough, K. M., 1993)

- developing management regimes for sharing, with government, the responsibility within their territory for environmental and wildlife resource management and impact assessment for proposed projects;
- establishing programs to support our social and economic development; and
- negotiating capital transfers which provide funds to be managed by their own institutions created for this purpose (Inuit Tapisirat of Canada, 1995).

3.2 SUSTAINABLE DEVELOPMENT

3.2.1 Sustainable Development: The Concept

Sustainable development is a paradigm that has evolved to address the increasing need for conservation and preservation in the face of continued development. “In the past, the Earth’s seemingly unlimited supply of natural resources and its ability to assimilate waste were taken for granted. (As a result) the finite resource base of our world is being depleted and degraded at an increasingly rapid rate...placing profound stress on the Earth’s capacities” (Sitarz, 1994).

The concept of sustainable development encompasses not only environmental sustainability but social and economic sustainability as well. All three are integral components that play a role in the management planning process when attempting to analyze whether a certain situation can be potentially sustainable. Therefore, the overall goal of sustainable development is to balance conservation and development to ensure resources are not exploited and lost forever while considering the components of social, economic, and environmental sustainability.

There are numerous definitions of sustainable development. Regardless of the definition chosen the underlying concepts of each remain the same. According to *Our Common Future*, the report of the World Commission on Environment and Development (the Brundtland Report) sustainable development:

- satisfies the needs of the present without compromising the ability of future generations to meet their needs;

- initiates processes of change in which the exploitation of resources, direction of investments, orientation of technological development, and institutional change are made consistent with future, as well as present, needs;
- enables societies to meet human needs both by increasing productive potential and by ensuring equitable potential and opportunities for all; and
- defines economic growth in terms of the limits of regeneration and natural growth (The World Commission on Environment and Development *in* National Roundtable on the Environment and the Economy, 1998).

Basically, sustainable development is a “general philosophy to guide progress with regard to the environment, the economy, and the well-being of communities and individuals” (Manitoba Environment, 1997).

Although sustainable development is crucial for long term sustainability there are certain obstacles associated with this concept (Costanza and Patten, 1995). First the discussion around sustainable development is often misdirected because it casts the problem as definitional, when in fact it is more one of prediction of what will last and on achieving consensus on what we want to last. We, as a collective society, have generally been determining what is valuable and worth regenerating in economical terms when perhaps a more diverse approach which incorporates social and environmental concerns is needed to maintain fragile ecological balances. Second, sustainable development “fails to account for the range of interrelated time and space scales over which the concept must apply” (Costanza and Patten, 1995). Third, humans are attempting to answer questions and make predictions on often-unpredictable natural systems, e.g. weather and climate change, etc. Fourth, ingrained in sustainable development must be the realization that all systems are of limited longevity, so sustainability does not and can not mean “maintenance forever” regardless of the resources economic worth (Costanza and Patten, 1995). Fifth, some environmental impacts can only be seen and studied after time delays. The danger here is irreversible damage to the environment as a result of certain developments. Sixth, sustainable development is often used as a buzzword and taking the concept lightly can lead to empty promises. “There is a constant danger when using co-management or

partnership terminology and theory without a significant transfer of decision-making power” (Campbell, 1996).

Costanza and Patten’s concerns are valid and pose challenges in the sustainable development field. Yet raised awareness surrounding these issues when developing management plans, legislation, or protected areas strategies will help to ensure that decision makers know these challenges exist and need to be taken into consideration in the development process. Sustainable development is a foundation that can be built upon and will become a more efficient tool as time goes on. It has already made significant contributions to improving environmental laws and regulations in attempts to balance conservation and development. Goodland said it best when he stated, “the implications of implementing environmental sustainability are immense: the sooner we start, the easier it will become...for the longer we delay, the worse will be the eventual quality of life” (Goodland, 1995).

3.2.2 Sustainable Development in the Arctic

“I am an outsider to the North but the High Arctic remains indelibly imprinted in my mind. To be sure, the dramatic landscapes of icy whites and blues and the surprise of delicate, diminutive plants in a prairie-like tundra are subjects of well reviewed photographs. But even as I think about the powerful silence of a northern sunrise, another stark image imposes itself – garbage. The sight of empty oil drums littering the landscape so far North, in a place seemingly untouched by human beings, is jarring – surely disrespectful and certainly short-sighted.” (Dowdeswell, 1998)

Although many think the Arctic is a pristine, untouched wilderness this is no longer the case. The Arctic is being influenced and affected by southern development and pollution as well as increasing pressures for development in the North. Despite this, the case in the North is distinctly different from other cases in Canada. In the past, the geography, climate and remoteness of the Arctic have kept development relatively low in comparison to other regions. This limited development provides the opportunity to manage the resources sustainably at the onset of development before environmental disasters and stakeholder conflicts become the norm, as is the case in other regions of Canada.

There is a high dependency on the Arctic Ocean by the people that inhabit the area, the remaining population of Canada, and the world as a whole. "Almost half of the world's population depend on the earth's oceans relying on: seafood as their source of protein; drugs to treat illnesses that are extracted from marine species; algin from kelp that is found in products like drinks, medicines, paper, and paint to name a few. Oceans also play a crucial role in the global climate system: regulating temperature, producing oxygen and absorbing much of the carbon dioxide that is responsible for climate change" (Beckmann, 1996). "The oceans also purify our air and supply us with fresh water. They absorb between a third and a half of the carbon dioxide produced by the burning of fossil fuels and play a vital role in the hydrological cycle - the cycle of rainfall, runoff, evaporation, and condensation - which replenishes the world's fresh water" (National Roundtable on the Environment and the Economy, 1998).

Today, there are certain threats that negatively affect the ability of oceans to perform their needed functions. These threats include: unsustainable harvesting practices such as over-harvesting, pollution in the form of sewage and other land-based sources, accidental and intentional release of gas and oil, and long-range transport of pollutants, habitat loss due to urban encroachment, aquaculture practices, new fishing technologies that result in a greater loss of biodiversity, and atmospheric change in the form of either climate change or ozone depletion (Beckmann, 1996).

The Arctic is also an environment that is more vulnerable than most others by the very adaptations species undergo to survive in this environment. These adaptations include simple food chains, storage of energy as fat (if pollution related contaminants are stored in organisms lower in the food chain it may result in predators reaching toxic levels of contaminants), effective uptake of nutrition by lower species, concentrations of animals in limited area for specific periods of time (more dangerous to population in terms of accidents such as oil spills), Arctic animals live long lives yet reproduce at low rates, many Arctic species need large, undisturbed territories of home ranges to meet demands for food, breeding and shelter (PAME, 1996). All of these characteristics were developed

by the species over time to increase chances of survival, yet these adaptations result in increased threat by development in this area of undisturbed vast open spaces.

For these reasons, sustainable development in the oceans sector is becoming a major concern and priority. Oceans play an integral role in social, economic, and environmental circles with threats to oceans affecting society, the economy and the environment either directly or indirectly. Managing the identified threats will require an integrated approach that considers all components of sustainability: social, economic, and environmental. Figure 4, adapted from *Australia's Ocean Policy: Caring for the Commons, Socio-cultural Considerations in Oceans Policy Development and Implementation*, illustrates that oceans management needs to operate at the intersection of the relationships between economics, society, and the natural environment if any management effort is "to be successful in integrating the needs of stakeholders from all sectors and ensure sustainable access to the ocean's resources" (Brown and Spink, 1997). Figure 4 illustrates integrated management as encompassing societal, economic, and environmental concerns as it should. However, I would argue that sustainable development, social equity and a supportive environment are not independent and outside the realm of integrated management but rather a direct result of it.

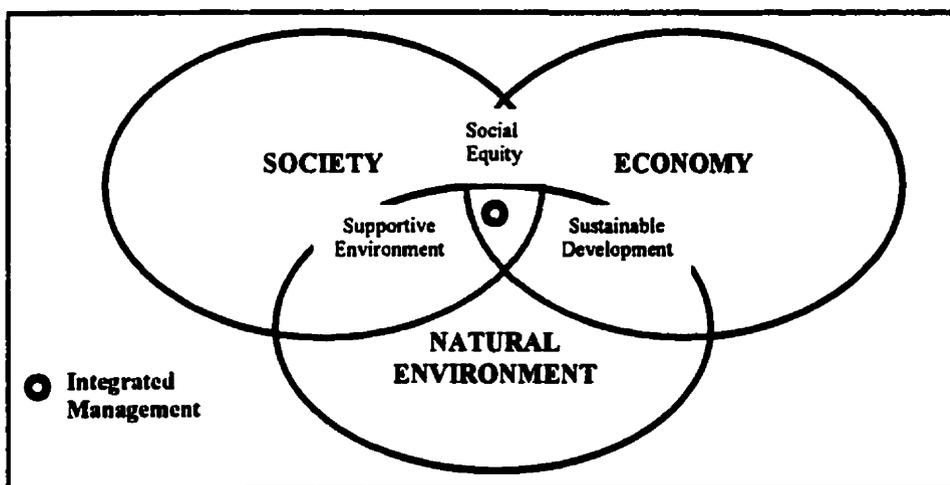


Figure 4: Relationship between Economic, Socio-Cultural and Ecological resources in Oceans Management (Source: Brown and Spink, 1997)

3.2.3 Tools of Sustainable Development

"One of the reasons Canada's political leaders currently fail to deal with marine issues consistently is the general lack of appreciation in most of Canada of the importance of healthy marine ecosystems to the functioning of the country's economy and environment. Only with a new appreciation of the true range of crucial roles oceans play can there be a national will to conserve them. Governments and educators across the country must work to foster this awareness and appreciation." (Beckmann, 1996)

In order to truly reap the benefits and internalize the concept of sustainable development, there are certain tools that can be utilized to reinforce sustainable development's purpose and importance. These tools will also make it easier to achieve the goals and objectives of sustainable development. Environmental legislation is one tool that can pave the way to sustainable development and provide a framework for action. In a democratic society such as ours with so much of our culture ingrained in the role of our government it is only natural to turn to them to help us, as a country, address the environmental issues of today. Granted, legislation will play an important role in sustainable development, yet governmental legislation is not the only answer. A change in attitude and mindset at the individual level accompanied by certain levels of participation and collaboration, will be the responsibility of everyone to work together to make the concept of sustainable development a real and viable option.

For sustainable development to be successful it is important to be able to "count on a well-informed public that will support the measures required for sustainable development" (Learning for a Sustainable Future (LSF), and The World Conservation Union – Commission on Education and Communication (IUCN-CEC), 1998). A knowledgeable public can result from environmental education initiatives that lead to greater awareness as to the state of our environment and our role as part of the problems and solutions. The balance between conservation and development is everybody's responsibility. With heightened awareness individuals, organizations, communities, etc. will be more willing to undertake the necessary changes and participatory steps to make sustainable development happen. Perspectives are different and constantly changing. For this reason "resource management needs to become participatory in

new ways and input and even regulation from local people will become increasingly significant” (Slocombe, 1992). Everyone must buy in to sustainable development in order to make global changes.

3.3 PUBLIC PARTICIPATION AND STAKEHOLDER INVOLVEMENT

“We must have a true participation of all the society in the decision making and more particularly in the allocation of resources. And why so? Because all of us are perfectly aware that there will never be sufficient resources for everything that we wish, but if the population participates in the decision making it will benefit those who need the most and it will express their thought about the allocation of resources and it will give us certainty that that which is being done is the legitimate aspiration of the people.” (Aristides Marques, National Council for Urban Development, WCED Public Hearing, Brasilia, 30 Oct 1985 in The World Commission on Environment and Development, 1987)

3.3.1 Models of Public Participation

Public participation (also referred to as partnering, collaborative management, joint management, co-management, participatory management, shared-management, multi-stakeholder management, or community-based management) is just one term that depicts stakeholder involvement in management activities. “A range of terms are often used in different sources and different situations” (Claridge and Claridge, 1997). Basically, these terms are all the same for “citizen power”. Citizen power “is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future. It is the strategy by which the have-nots join in determining how the information is shared, goals and policies are set, taxes are allocated, programs are operated, and benefits like contracts and patronage are parceled out” (Arnstein, 1969).

Arnstein (1969) argues there are different stages of citizen participation, which she illustrates on a ladder, with each rung reflecting varying degrees of participation (Figure 5). The lower rungs such as manipulation or therapy are basically informing communities of policies and decisions and are typically non-participatory. There is then the level of tokenism, which is basically lip service to the idea of citizen participation, before there are actual degrees of citizen power. The

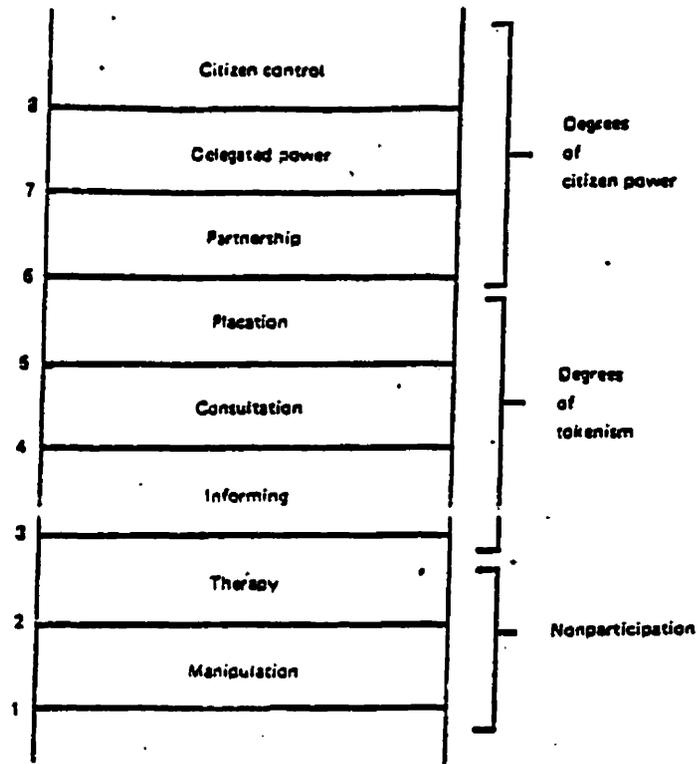


Figure 5: Arnstein's Ladder of Citizen Participation (Source: Arnstein, 1969)

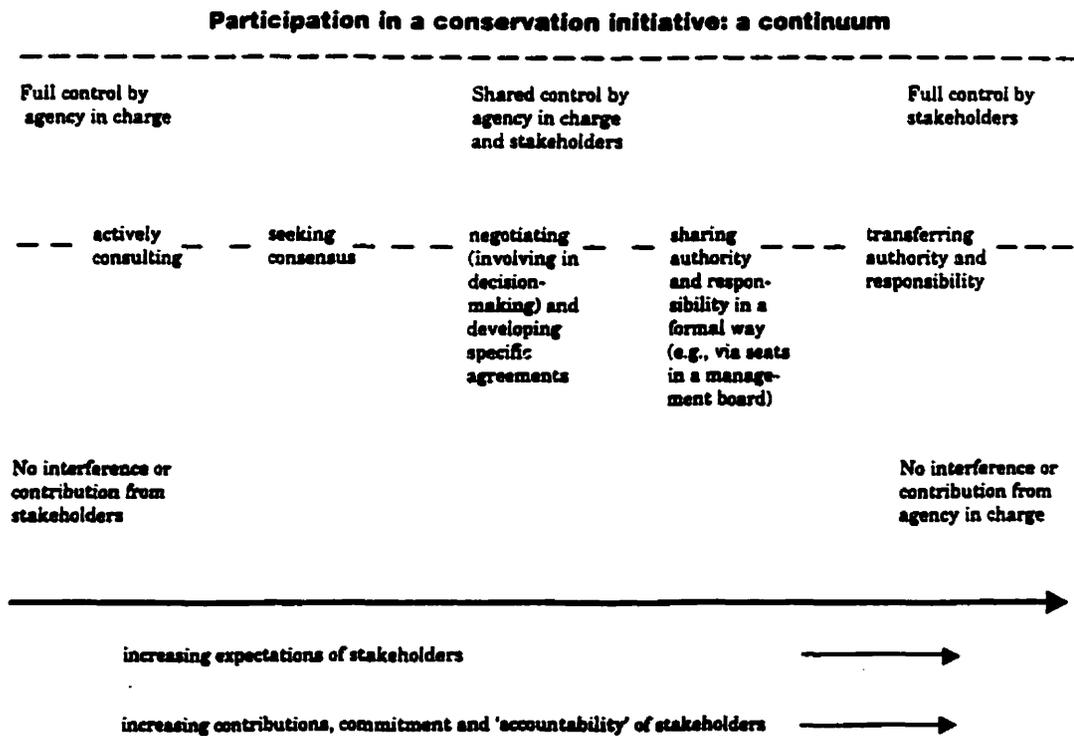


Figure 6: IUCN's Participation in Conservation Initiatives Continuum (Source: Borrini-Feyerabend and Buchan, 1997)

higher rungs of the participation ladder lead to greater citizen control and a greater degree of decision-making clout in the form of partnerships. The fundamental underlying issue of citizen participation is that the 'nobodies' in several arenas are trying to become 'somebodies' with enough power to make target institutions responsive to their views, aspirations, and needs" (Arnstein, 1969).

Similarly, IUCN has developed a schematic illustrating participation in conservation initiatives on a continuum (Figure 6). IUCN's illustration differs from Arnstein's because it incorporates three major factors that affect participation arguing, unlike Arnstein, that different levels of participation are not necessarily a bad thing because every resource management situation is unique. First, Borrini-Feyerabend (1996) states that legislation and policy most definitely affect the position of participation on the continuum but not in all cases. The level of participation generally is stronger and communities are more empowered (closer to the right end of the continuum) when the participation is mandated by legislation and legislative policy but not as a rule. "Control can be exercised in many ways, not all necessarily codified or specifically mandated" (Borrini-Feyerabend and Buchan, 1997). Second, every conservation situation is different. Therefore, the levels and degrees of stakeholder participation will vary according to the situation. According to Borrini-Feyerabend and Buchan (1997), "there is no 'best' place in the participation continuum. Different approaches should always be compared in terms of benefits, costs, and expected effectiveness" (Borrini-Feyerabend and Buchan, 1997). Third, conservation initiatives are not static; they will grow and change. As a result, the position of participation on the continuum will grow and change to reflect the static nature of the initiative.

Regardless of the model chosen, the fact remains that there are serious roadblocks that prevent the higher levels of participation and citizen empowerment from ever being realized. There is "a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process" (Arnstein, 1969; Priscoli, 1995). Unfortunately, much of the citizen participation today occurs at the lower end of the continuums or ladders. Too often in participation processes there is a lack of redistribution of power, after all "it is

against the normal survival instincts of governments to want to share power and responsibility” (Campbell, 1996). This lack of transference eventually leads to frustration and doubt in the intent of the system and many “participators” call citizen participation “a nasty game” (Wisner, 1996). Yet at the same time, the “powerholders can claim that all sides were considered” (Arnstein, 1969). Only once these criticisms are realized and addressed can citizen participation be an effective part of any resource management solution.

3.3.2 Identifying Stakeholders in Public Participation

Definitions of Stakeholders:

“Stakeholders are those individuals or organizations who are interested in, can significantly influence, and/or are influenced by or concerned about, ocean use. They are members of communities that share an interest in ocean issues. They may be categorized individually or by association with groups organized around specific ocean policy issues; as a public sector, private sector, or non-profit sector; or as concerned individuals.” (National Roundtable on the Environment and the Economy, 1998)

“Stakeholders are the various institutions, social groups and individuals who possess a direct, significant and specific stake in (the issues at stake). They are aware of their interests, usually possess specific capacities (e.g. knowledge, skills) and/or comparative advantage and willing to invest specific resources.” (Borrini-Feyerabend, 1996)

“Stakeholders are those persons or bodies responsible for the management, conservation or development activities that impact on oceans and their resources, as well as those persons or bodies directly benefiting from oceans.” (Fisheries and Oceans Canada, 1997a)

In order to have successful and valuable public participation the stakeholders that are affected by the resource management situation need to be identified. There are a number of competing uses for resources today and with these different uses comes a variety of individuals/organizations/communities/etc. who feel strongly that they deserve a portion of the allocated resource rights. “In today’s context of finite natural resources, the intensity of that conflict appears to be rising exponentially, as more interests than ever before are competing for use of and access to both renewable and nonrenewable resources” (Campbell, 1996). When attempting to manage resources identifying the issues and interests at stake, as well as, the potential stakeholders of a resource situation is the logical first step.

IUCN has developed a list or “snapshot” of interests at stake that can be applied to almost any resource management situation. Table 1 provides a guide of what questions to ask in the early stages of identifying resource issues and the individuals affected by these issues. Once the issues of the resource management situation have been noted the potential stakeholders affected by the situation or conservation initiative can be researched and identified. There are a number of different social actors that can be potential stakeholders in conservation efforts. Table 2 is a generic list of potential stakeholders. IUCN developed this list to aid in the identification of who could potentially be affected by resource management (Borrini-Feyerabend, 1996). The list highlights the potential individuals and groups that should be considered when seeking effective public participation and identifying relevant stakeholder groups.

3.3.3 Effective Public Participation and its Related Benefits

“(Effective Participation) is special types of relationships formed among a number of actors to work collaboratively at all stages towards the achievement of a common goal, where there is reciprocal respect, a shared understanding of the roles and responsibilities and flexibility to respond and adapt to changing circumstances.” (Scherl, 1996)

Once the stakeholders are defined the wheels of participation can be set in to motion. Public participation is needed and encouraged for many reasons, one of the most important being the need to integrate a variety of concerns and opinions of different stakeholders in order to ensure that the management of resources in today’s setting is fair and sustainable. Since the arrival of the environmental movement in the 1970’s public concern for the environment and future generations grew. “The demand for meaningful public participation has been (further) heightened by public doubt about the ability of government to effectively address complex issues involving a variety of competing interests and requiring the collection and evaluation of large quantities of information about values and technical matters” (Commission on Resources and Environment, 1995). As a result, governments have a number of pressures in the natural resources arena pushing for greater opportunities for the public to be heard.

**Table 1: IUCN's "Snapshot of Interests at Stake" in Resource Management
(Source: Borrini-Feyerabend, 1996)**

A snapshot of the interests at stake

- *who are the people and groups actually or potentially affected by and/or concerned about the protected area? Are there historical occupants (e.g., indigenous inhabitants and transients) or settlers who were already in the area before the protected status was declared? Are there recent migrants? Are there non-resident users of resources, absentee landlords? Are there major secondary users (e.g., buyers of products, tourists)? Are there government agencies responsible for various resources? Are there local authorities, local and national politicians, interested NGOs, people's associations, research institutions, staff of relevant development and conservation projects, interested businesses and initiatives*
- *are there local institutions with experience and concern in natural resource management (e.g., forest user groups, fishermen associations, women's groups)?*
- *how are the natural resources in the PA being used at present and by whom? Who specifically is having an impact on the ecology of the PA? Has this changed over time? Are there gender, age, class or economic-based factors to appreciate?*
- *who are the people or groups most dependent on the natural resources at stake? Is such dependence a matter of livelihood or economic advantage? Are these resources replaceable by other resources not in the protected area which could fulfill the same functions?*
- *who possesses claims - including legal jurisdiction and customary use - over the natural resources at stake? Are several government sectors and ministry departments involved? Are there national and/or international bodies involved because of specific laws or treaties?*
- *who are the people or groups most knowledgeable about, and capable of dealing with the natural resources at stake? Prior to the declaration of PA status, who was managing the resources? With what results?*
- *are the stakeholders - and the stakeholders' interests in the resources - geographically and seasonally stable (e.g., are there seasonal migration patterns)? Are there on-going events or trends with potential to introduce new stakeholders (e.g., development initiatives, land reforms, migration, population growth or decline in a specific area)?*

Table 2: IUCN's List of Social Actors Potentially Stakeholders in Resource Management (Source: Borrini-Feyerabend, 1996)

**Social actors potentially stakeholders
in PA management**

- *individuals (e.g., owners of relevant land holdings in the PA);*
- *families and households (e.g., long-term local residents);*
- *traditional groups (e.g., extended families & clans, with cultural roots in the PA territory);*
- *community-based groups (e.g., self-interest organizations of resource-users, neighborhood associations, gender or age-based associations, etc.);*
- *local traditional authorities (e.g., a village council of elders, a traditional chief);*
- *local political authorities prescribed by national laws (e.g., elected representatives at village or district levels);*
- *non-governmental bodies that link different relevant communities (e.g., a council of village representatives, a district level association of fishermen societies);*
- *local governance structures (administration, police, judicial system);*
- *agencies with legal jurisdiction over the PA at stake (e.g., a State Park Agency with or without local offices or an NGO set in charge by the government);*
- *local governmental agencies and services (e.g., education, health, forestry and agriculture extension);*
- *relevant non-governmental organizations (e.g., environment or development dedicated) at local, national and international levels;*
- *political party structures (at various levels);*
- *religious bodies (at various levels);*
- *national interest organizations (e.g., workers' unions) - also called people's associations;*
- *national service organizations (e.g., the Lions club);*
- *cultural and voluntary associations of various kinds (e.g., a club for the study of unique national landscapes, an association of tourists);*
- *businesses and commercial enterprises (local, national and international, from local cooperatives to international corporations);*
- *universities and research organizations;*
- *local banks and credit institutions;*
- *government authorities at district and regional level;*
- *national governments;*
- *supra-national organizations with binding powers on national countries (e.g., the European Union)*
- *foreign aid agencies;*
- *staff and consultants of relevant projects and programs;*
- *international organizations (e.g., UNICEF, FAO, UNEP);*
- *international unions (e.g., IUCN).*

In order for public participation to be meaningful there are a number of key components required to ensure that participation is actually reaching its maximum potential. Based on the work of Scherl (1996), Beckmann (1996), and Claridge and Claridge (1997) successful participation is based on:

- open, timely and adequate information;
- maximum involvement of actors;
- legitimacy/representativeness of stakeholders and partners;
- freedom from fear of injury because of participation;
- money and other means of facilitating the full participation of those with limited resources, e.g. equal opportunities;
- independent facilitation and recognizing the importance of recording agreements;
- voluntary participation and clear tasks;
- balanced representation;
- transparency / accountability in/of decision making;
- right to dissent or withdraw;
- listening, delegating authority, and clarifying responsibility;
- supporting cultural and bureaucratic environment;
- participating stakeholders that have adequate skills and knowledge to allow them to play their assigned role in the management process;
- ability to modify rules of arrangement; and
- a conflict resolution mechanism.

If these components of participation are present, the true benefits associated with public participation can be realized. Some of the major benefits of participation, according to Scherl (1996), Rodal and Mulder (ND) and Claridge and Claridge (1997) include:

- stronger responsiveness to a resource management situation;
- increased self-efficacy;
- improved effectiveness;
- risk sharing;
- mobilize greater amounts, and a wider variety of skills and resources than can be achieved by acting alone;
- address problems in a more integrated, multidisciplinary and comprehensive manner;

- it can eliminate unnecessary duplication of cost and effort, which is especially important where there are shortages of financial resources or relevant skills;
- it can help traditional adversaries, or organizations which have had little cause to interact in the past, to broaden their perspectives and to respect each others' needs and capabilities;
- facilitate the dialogue, creativity and mutual trust needed to work through diverse and apparently conflicting interests, towards common goals;
- facilitate the flow of information;
- more effective and more sustainable resource use;
- improved local and regional economies;
- lower rates of infringement of laws;
- higher standard of living/quality of life for local people;
- empowered local people; and
- a greater sense of community and community cohesion.

3.3.4 Public Participation in the North

There is no doubt that northern communities have a strong right to be part of the natural resource management process. The development and exploitation of resources in the North directly affect the indigenous communities and their lifestyles. Large-scale resource development projects usually take place in small, remote aboriginal communities and "in territories where traditional hunting, trapping, fishing, and gathering activities still play a role in the subsistence lifestyles practiced by aboriginal groups" (Campbell, 1996). Furthermore, these subsistence practices are not expected to fade in the near future "despite predictions of the demise of the traditional economy of hunting, fishing, and trapping. This sector of the northern economy has persisted, for economic as well as cultural reasons" (Myers, 1996).

To date, although indigenous groups have a large knowledge base and could offer a different perspective to the resource management process, there remains considerable frustration on the part of indigenous groups over their lack of input in resource management (Campbell, 1996). This situation is changing slowly. With new forms of legislation and land claims agreements such as the IFA, 1984 and the NLCA, 1993, Inuit groups are gaining more autonomy and participation rights in the

natural resources field. Co-management boards have been established to share the management responsibility between the federal government and the Indigenous groups. The Nunavut Wildlife Management Board and the Inuvialuit Game Council are two strong examples of government, Inuit and Inuvialuit working together to make decisions regarding renewable resources.

Borrini-Feyerabend (1996) cited the situation in northern Canada as a positive one. Within their analysis they suggest that the boards, established by legislation, have formalized the right of aboriginal stakeholders to participate in management which has seriously improved the co-management situation in the North. IUCN suggests that on the continuum illustrated in Figure 6, this Canadian example of collaborative management could be “placed in the center right, which is sharing authority and responsibility in a formal way (e.g. via seats in a management body)” (Borrini-Feyerabend, 1996).

With the passing of Canada’s *Oceans Act*, there are strong possibilities to further improve public participation in the North. Although the Act is young and the DFO is at the information dissemination stage, once the programs under the Act are better established implementation of the Act could bring public participation in the North to new levels. Currently, DFO is on the fourth rung of *Arnstein's Ladder of Citizen Participation* (Figure 5) and in the center left of *IUCN's Participation in Conservation Initiatives Continuum* (Figure 6). The DFO is in the process of consulting stakeholders to seek consensus, negotiate and secure agreements to implement *Oceans Act* programs, e.g. Marine Protected Areas. Although Arnstein (1969) and Borrini-Feyerabend and Buchan (1997) consider consultation middle to lower end participation, there are ways that northern communities can create opportunities for stronger participation through the negotiating process. Northern communities can guarantee citizen control and the sharing of authority and responsibility by making any agreements with the Government of Canada contingent upon these factors.

It is obvious that mistakes have been made in the past and stakeholder groups that have every right to be included in the resource management process have been excluded or have had their worldviews manipulated and pressured in

order to resemble some of their southern counterparts. Fundamentally "if sustainable, appropriate development is to be achieved by northern native communities, we must not repeat the mistake of imposing values and assumptions from southern Canada" (Myers, 1996). Instead, communication between affected stakeholder groups has to occur to ensure that all groups have the opportunity to share their values and suggestions for effective resource management leading to sustainable resource decisions that can be accepted by all parties involved.

3.4 CANADA'S OCEANS ACT

"The objective of the Oceans Act is to establish a framework for oceans resource management and marine environmental protection in Canada by: defining the oceans area that Canada proposes to manage and protect; establishing guiding principles and assigning the authority to negotiate partnerships for the development of an oceans management strategy; and consolidating and defining some oceans programs to improve the effectiveness of Canada's conservation and protection initiatives." (Government of Canada, 1997a)

"Canada's new Oceans Act is an important model, not only to meet our own needs, but also as an example that may be adopted by others. This Act takes sustainable development as a starting point. It builds recognition of integrated management, and other important matters for coastal management in a fashion never before seen in Canadian law. It also sets in place a consultation process for defining key objectives for sustainable ocean use." (Hanson, 1998)

Canada's *Oceans Act* was enacted in January of 1997. "The Act confirms Canada's rights and responsibilities regarding its three oceans" (Fisheries and Oceans Canada, 1998a). The Act was developed to address Canada's economic, social and environmental oceans objectives, leading to integrated management of the many oceans activities affecting Canada's oceans. The *Oceans Act* is a breakthrough in resource management for a number of distinct reasons. This Act is a piece of environmental legislation strongly rooted upon the principles of sustainable development, the precautionary principle and integrated management. It is the first oceans management legislation of its kind to address oceans issues by incorporating public participation as a required component of integrated management. In the past, Canada has had fragmented legislation and jurisdiction when dealing with the protection and conservation of our oceans. The onus for protection was on various pieces of legislation that had some form of a marine

component and could monitor oceans activities indirectly yet never had full jurisdiction over oceans. Thus, the *Oceans Act* is the first piece of legislation in Canada that deals directly with the preservation and conservation of our oceans.

Under the Act, a single governmental body has been delegated to develop and direct the process of integrated management. “Canada’s DFO is the (government agency chosen to take the) lead for the management, conservation and protection of Canada’s oceans resources” (Fisheries and Oceans, 1998a). The Minister of Fisheries and Oceans is given the responsibility to act as the coordinator and the facilitator for the development and implementation of the OMS as well as *Oceans Act* initiatives.

There are three parts to Canada’s *Oceans Act*; each directing Canada in relation to its rights and responsibilities concerning its three oceans. The three parts are:

1. Recognizing Canada’s Ocean Jurisdiction;
2. Oceans Management Strategy; and
3. Consolidation of Federal Responsibilities for Canada’s Oceans.

3.4.1 Part I – Recognizing Canada’s Ocean Jurisdiction

Part I of the Act defines the marine areas that are under Canadian jurisdiction for oceans management. Like all countries, Canada has jurisdiction over its Territorial Sea, which extends 12 nautical miles from the lower watermark along the coast. Two zones have been declared under the *Oceans Act*, which include 1) the Contiguous Zone (CZ) and 2) the Exclusive Economic Zone (EEZ). The CZ extends 12 nautical miles from the outer edge of the Territorial Sea. Within this zone Canada has the right to take action against offences that occur on Canadian Territory in relation to customs, sanitary, fiscal and immigration laws. The EEZ reaches 200 nautical miles along side Canada and according to the Act, Canada has the right to explore, exploit and conserve all living and non-living natural resources within this established zone. Canada also has the right to protect the marine environment, regulate scientific research and control the erection of offshore structures in the EEZ (Fisheries and Oceans,

1996). These zones are depicted pictorially in Figure 7. Also, Table 3 outlines the various zones and the jurisdictions of the corresponding zones in a tabular format for easy understanding and reference.

Table 3: Zones, Definitions, Rights and Responsibilities of Fisheries and Oceans Canada under the *Oceans Act* (Fisheries and Oceans, 1996)

ZONE	DEFINITION	RIGHTS & RESPONSIBILITIES
Territorial Sea (TS)	The TS extends 12 nautical miles from the baseline	Full rights and may be exercised within this zone
Contiguous Zone (CZ)	The CZ extends 12 nautical miles from the outer edge of the TS	Canada's rights and responsibilities in this zone allow us to prevent and take action with respect to the commission of offences on Canadian territory relating to customs, sanitary, fiscal and immigration laws
Exclusive Economic Zone (EEZ)	The EEZ extends 200 nautical miles from Canada's baseline	Canada may exercise rights and responsibilities with respect to the exploration and exploitation of living and non-living resources of waters, subsoil and seabed in the EEZ; right to conduct marine scientific research; right to take measures to protect the marine environment
Continental Shelf (CS)	The CS includes the seabed and subsoil from the outer edge of the territorial sea to the outer edge of the Continental Margin, or to 200 nautical miles whichever is greater	Canada may exercise rights and responsibilities with respect to the exploitation of mineral, and other non-living resources and of living resources (sedentary species)

3.4.2 Part II – Oceans Management Strategy (OMS)

Part II of the *Oceans Act* dictates the need for coordination and development of a national oceans strategy for stronger collaborative oceans management. The Act declares that the "Minister in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established

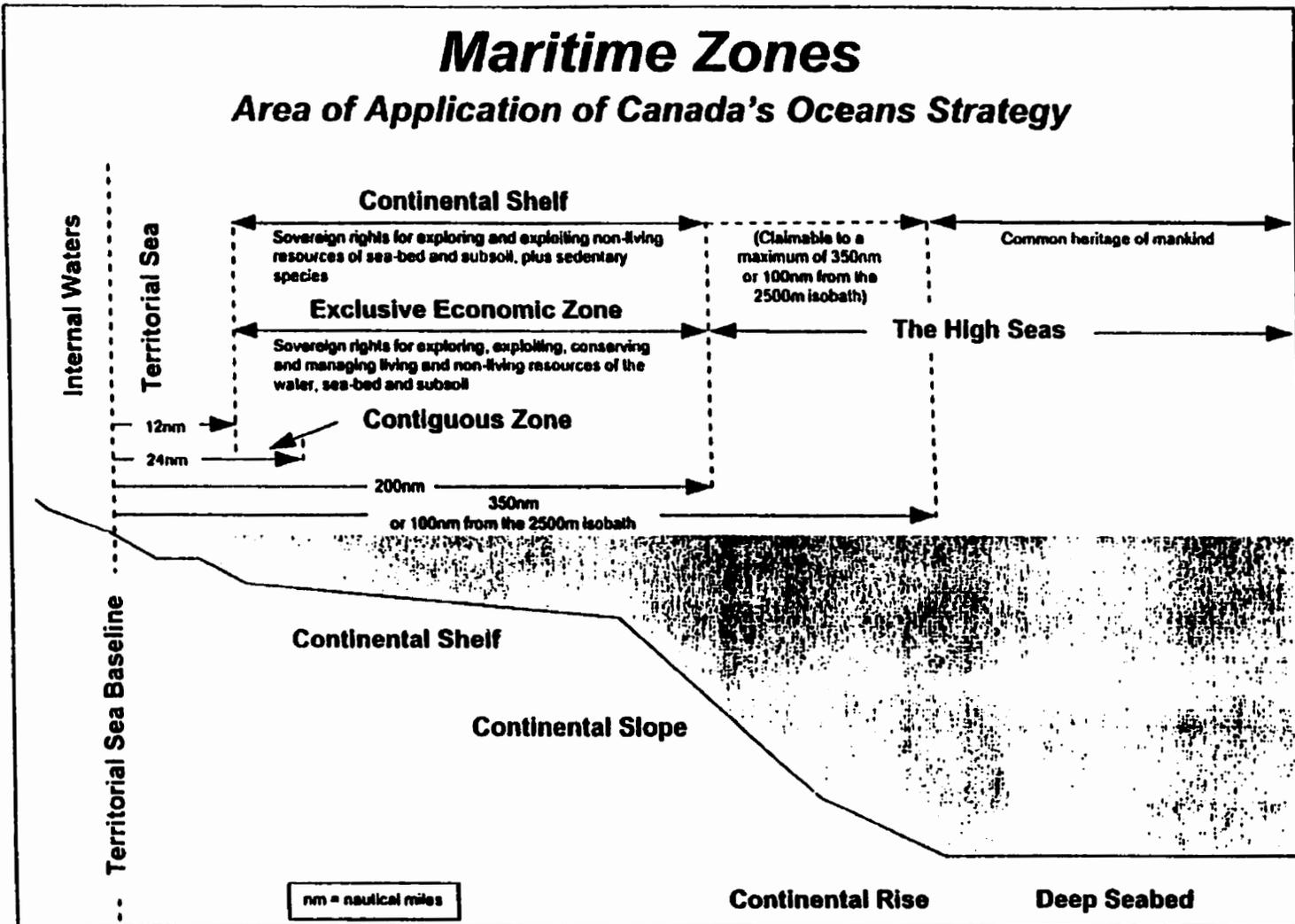


Figure 7: Canada's Maritimes Zones Under Canada's Oceans Act (Source: Government of Canada, 1997b)

under land claims agreements, shall lead and facilitate the development and implementation of a national strategy for the management of estuarine, coastal and marine ecosystems in waters that form part of Canada in which Canada has sovereign rights under international law” (Government of Canada, 1996b). Currently, a national OMS for Canada’s oceans is proceeding through the development stages with consultations taking place throughout Canada. The expected date for completion of the strategy is the year 2000 at which point the strategy will be the guide for future oceans management in Canada. Figure 8 is a depiction of the role the OMS plays in the *Oceans Act* and the initiatives flowing from the Act.

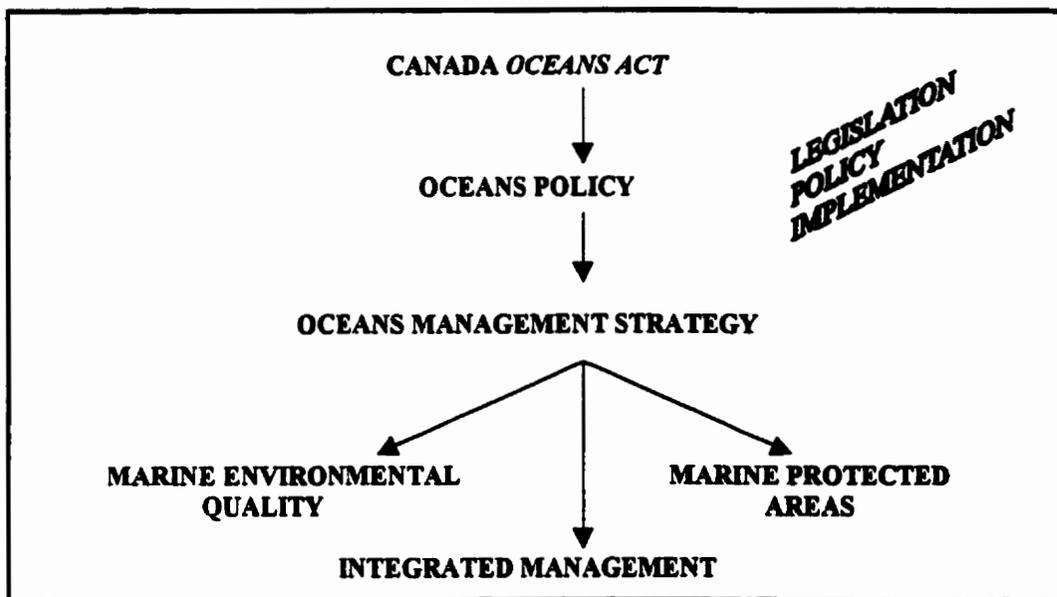


Figure 8: Depiction of *Oceans Act* Initiatives flowing from Legislation (Source: Mathias, J. and Fast, H, 1997)

Oceans Management Strategy

Under the Act, the OMS will be based on the principles of sustainable development, integrated management, and the precautionary principle (which is to err on the side of caution). Within the OMS Discussion Paper developed by the Government of Canada (1997) entitled, *Toward Canada's Oceans Strategy*, sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is the utilization of resources, investment, technological development

and institutional change in a manner that considers future as well as current needs. Integrated management is defined as the method of management that will be adopted under the Act to work towards sustainable development in the oceans sector. The Government of Canada defines integrated management as a “continuous, transparent decision-making process developed by stakeholders to integrate planning and implementation of activities and policies affecting Canada’s oceans” (Government of Canada, 1997b).

With these three underlying principles as a guide there are four goals that the OMS is expected to achieve in oceans management (Government of Canada, 1997b). First, the OMS is expected to replace the current, fragmented approach to oceans management with a collaborative, integrated approach. Second, the development of the OMS is hoped to expand working partnerships among ocean stakeholders and increase their responsibility and accountability. Third, the goal of the OMS is to optimize the economic potential of our oceans while ensuring their conservation and sustainability. Fourth, the OMS framework is to position Canada as a world leader in oceans management. To assist the Minister of Fisheries and Oceans in achieving these outlined goals the Minister has been granted the authority to (Fisheries and Oceans, 1996):

- coordinate the activities of oceans stakeholders to develop the OMS;
- develop tools to coordinate with stakeholders the development of specific plans to implement the strategy;
- establish, if necessary, regional bodies to assist with the implementation of the plans;
- establish and enforce marine protected areas; and
- develop marine environmental health indicators and guidelines to monitor the marine environment.

Under the authority granted to the DFO, *Oceans Act* initiatives are being developed by the DFO to help the Minister achieve the outlined goals of the national OMS. These initiatives include developing the components for an Integrated Management (IM) framework, developing Marine Protected Areas (MPAs), and establishing Marine Environmental Health (MEH) standards for Canadian oceans. The three initiatives are highly interconnected with MPAs and

MEH working under the umbrella of IM. Efforts in coordination, consensus and collaboration are components of IM and will be required when trying to establish MPAs in coastal communities or to agree upon what will be the indicators for MEH in a particular area. IM will provide a more cohesive framework than what currently exists in oceans management by bringing together the stakeholders of the region and engaging in reciprocal communication to listen and voice concerns with regards to oceans management. IM will also foster stronger working partnerships because involving the stakeholders will create a greater sense of trust and commitment, increasing their feeling of responsibility.

Integrated Management (IM)

IM as defined in the draft discussion paper by the DFO, *Towards a Canadian Framework for Integrated Coastal Zone Management*, is “an ongoing planning process in which all the stakeholders and regulators reach general agreement on the best mix of conservation, sustainable resource use, and economic development. (At the same time it is) a legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental and social goals” (Fisheries and Oceans Canada, 1997a). There are four principles underlying IM. According to Fisheries and Oceans Canada (1997a) these principles are:

- 1. All stakeholders in the wealth of Canada’s coastal resources, but particularly the coastal communities themselves, will be enabled to become fully involved in the planning and decision making process;**
- 2. Management of the coast and its resources will, at all times, be consistent with the related objectives of sustainable development and inter-generational equity, wherein the needs of this generation are met without jeopardizing or threatening the ability of future generations to enjoy the same or improved benefits;**
- 3. An integrated, ecosystem-based approach will be adopted to plan all human activities that may impact on the coast or its resources; and**
- 4. A lack of knowledge of potential impacts will be cause to temper with precaution any decisions taken in regard to activities affecting the coasts or their resources.**

With these underlying principles in mind there are three major goals to be accomplished by the establishment of an IM framework. First, conservation of oceans based on an ecosystem approach, for the purpose of maintaining biological diversity and productivity in the marine environment. Second, sustainable development and use of living marine resources. Third, economic diversification based on oceans resources and the generation of wealth for the benefit of all Canadians, and in particular for coastal communities.

Marine Protected Areas (MPAs)

In the government publication entitled *Marine Protected Area Program*, DFO defines a MPA under the *Oceans Act* as “an area of the sea that forms part of the internal waters of Canada, the territorial sea of Canada (12 nautical miles) or the exclusive economic zone of Canada (to 200 nautical miles); and that has been designated for special protection under the *Oceans Act* for one or more reasons” (Fisheries and Oceans Canada, 1998b). The reasons for protection listed in Section 35 (1) of the *Oceans Act* are (Government of Canada, 1996b):

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

The goal is to have MPAs established collaboratively with oceans stakeholders especially with coastal communities to ensure that their interests and needs are also met in the MPA development process.

Marine Environmental Health (MEH)

The MEH component of the *Oceans Act* and its implications are unlike the MPA and IM component in the sense that it has not yet been well defined and

program development for this area is still in the early stages of planning. Government draft discussion papers on both IM and MPAs have been released and discussed yet a paper of this nature has not yet been released regarding the MEH component of the *Oceans Act*. MEH is referred to as the “standards designed to conserve and protect the integrity and quality of ocean ecosystems and to guide decisions affecting oceans” (Fisheries and Oceans, 1998a). “It is the condition of a particular marine environment (shoreline, estuary, bay, harbour, nearshore and offshore waters, open ocean) measured in relation to each of its intended uses and functions” (Wells and Rolston, 1991). When attempting to measure any form of environmental quality through parameters such as biological diversity it is a highly scientific exercise and extremely complex. For this reason the MEH component will be very technical and scientific in nature when further development occurs in this area.

3.4.3 Part III – Consolidation of Federal Responsibilities for Canada’s Oceans

With the passing of the *Oceans Act* one important goal was to establish a legislative framework to coordinate and support Canada’s new oceans management regime. The purpose of consolidation is to provide ease of coordination and clarify responsibilities and jurisdictions. Under this new regime most federal oceans responsibilities will be consolidated to the DFO, the government agency that is taking the lead in *Oceans Act* implementation. The Minister of Fisheries and Oceans now has new oceans-related powers, duties, and functions which include coast guard services, marine sciences, and hydrographic services (Fisheries and Oceans Canada, 1996). Table 4 illustrates the focus of services and activities under the three new areas of responsibility for the Minister of Fisheries and Oceans.

Table 4: Services and Responsibilities of the Minister of Fisheries as specified under the *Oceans Act* (Source: Fisheries and Oceans Canada, 1996)

MINISTER'S NEW SERVICES UNDER PART III OF THE <i>OCEANS ACT</i>	RESPONSIBILITIES
Coast Guard Services	<ul style="list-style-type: none"> • supporting the provision of safe, economical and efficient marine transportation system in relation to navigation; • the marine component of the federal search and rescue program; • pleasure craft safety; • pollution prevention response; and • support to other departments, boards, and agencies of the Government of Canada.
Hydrographic Services	<ul style="list-style-type: none"> • surveying and charting the navigable waters of Canada; • gathering, publishing, distributing and selling of hydrographic data and marine navigation information documents; • setting standards and establishing guidelines for use by hydrographers and others in collecting data and preparing charts; and • providing hydrographic advice, services and support to other persons and/or bodies.
Marine Sciences	<ul style="list-style-type: none"> • collecting data and carrying out investigations for the purpose of understanding oceans and their living resources ecosystems; • conducting hydrographic and oceanographic surveys of Canadian and other waters; • conducting marine scientific surveys relating to fisheries resources and their supporting habitat and ecosystems; • conducting research related to hydrography, oceanography and other marine sciences; and • participating in ocean technology development, and conducting studies to obtain traditional ecological knowledge.

3.5 ROLE OF COMMUNICATION IN NATURAL RESOURCE MANAGEMENT

"A communication gap has kept environmental, population, and development assistance groups apart far too long, preventing us from being aware of our common interest and realizing our combined power. Fortunately, the gap is closing. We know now that what unites us is vastly more important than what divides us. We recognize that poverty, environmental degradation and population growth are inextricably related and that none of these fundamental problems can be successfully addressed in isolation. We will succeed or fail together. Arriving at a commonly accepted definition of 'sustainable development' remains a challenge for all the actors in the development process." ('Making Common Cause' U.S. – Based Department, Environment, Population NGOs, WCED Public Hearing, Ottawa, 26-27 May 1986 in The World Commission on Environment and Development, 1987)

Communication is playing an increasingly important role in the management of human activities affecting our natural environment. As natural resources become scarce or threatened as a result of increasing consumptive behaviors and the growing global economy, there is a need to communicate with people to gather and provide information. What natural resource managers, including oceans managers, are now beginning to realize is that although natural resource managers "need to know many things about the natural world, [they] do not manage the environment per se. What [they] do is manage human involvement in that environment" (Lien, 1988). The role of communication becomes clear. Managing human activity involves effectively communicating with resource users and stakeholder groups that have oceans related interests. Communicating environmental issues and the legislative tools that can help manage development, e.g. the *Oceans Act*, is an important first step in reaching sought after, long-term sustainability.

Before discussing the importance of communicating for environmental literacy and the government's role in environmental communication it is important to understand what exactly effective communication is and how it can be achieved. Communication serves many different functions for individuals, groups, organizations and even cultures as a whole. It is defined as the "transference and understanding of meaning. It is the transmitting of meaning from one person to another where information and ideas are conveyed" (Robbins, 1993; Grunig, *et.al.*, 1992). Communication may foster certain levels of control,

motivation, emotional expression, and information. Each of these functions is of equal importance with no one function superior to another (Robbins, 1993).

3.5.1 Theory of Communication

The Communication Process

Communication occurs as a process or flow. The process is required because of one individual's desire to communicate a message to another individual. Effective communication of the message occurs only when there are no barriers to this process. The communication process is comprised of seven components: the communication source or sender, encoding, the message, the communication channel, decoding, the receiver and feedback. Figure 9 is a depiction of these components within a communications framework.

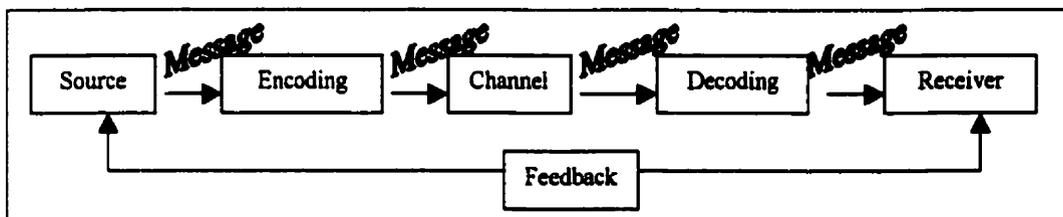


Figure 9: The Communication Process (Source: Robbins, 1993)

The first stage of the communication process is the sender or the source encoding the message that will be sent through the channel and eventually decoded by the receiver. Encoding the message will be dependent on what communication channel the source or sender is planning to use whether it is audio, visual or print. For example, if the source is developing a written document or brochure, encoding will involve writing the brochure in a language and reading level the receiver is comfortable with. How well the message is encoded is dependant upon how well the receiving group has been researched and the skills either verbal and/or written, attitudes, knowledge, and social-cultural roots of the source. Obviously, the greater the communication skills, the more positive the attitude, the greater the knowledge base regarding the topic you are trying to communicate the more successful your communicating efforts will be.

The actual message is what you as a communicator are trying to communicate. It is the physical product that is being encoded and sent through the communication channel. For example, it could be a written document, a verbal announcement, or a gesture. Whichever the form, the message is sent through a channel, which is the medium through which the message travels. The channel could be a radio broadcast, a television broadcast, an information package, telephone conversation, a conference, or face to face verbal discussion with the receiver. With the variety of different channels there is undoubtedly some channels that are more effective than others. This would be a reflection of the communication channel's 'richness', which translates to the channel's ability to carry the message successfully and effectively. For example, according to Robbins (1993), face to face talking has the highest channel 'richness' whereas fliers, bulletins and general reports have the lowest channel 'richness'. This point illustrates that although general information packages are a good method of communication because they are easy to distribute and reasonable in cost, they may not be the answer for every communication situation. In the long run, when establishing and maintaining relationships are the primary goal for communication, a more personal approach with a faster feedback loop and greater communication accuracy may be the most efficient route.

The final steps in the communication process are the decoding of the message by the receiver and the feedback of the message to ensure that the communication was in fact effective and understood. Robbins (1993) argues that decoding of the message is similar to the coding of the message in the sense that decoding once again is dependent on the skills, attitudes, knowledge base and social-cultural roots and beliefs of the receiver. The feedback loop is critical because it will notify the sender or communication source as to whether or not the message was sent, received and understood successfully. If the communication was successful "feedback helps the communicator to keep communicating in terms and under conditions that favor acceptance" (Harrison *et.al.*, 1988). If it was not, the message might have to be adjusted and resent in a way that will translate

easier by the receiver or using an alternative channel may be the only option to ensure communication success.

Barriers to Effective Communication

By examining the communication process it becomes obvious that there are many ways in which communicating a message can go wrong. Distortion of a message could occur at any stage of the communication process. By being aware of these potential barriers when developing a communication strategy it is possible to avoid them and increase the chances of effective communication. Barriers to effective communication include differences in frame of reference, emotions, language, physical distance, hierarchy, information overload, distractions, prejudice, and faulty communication skills (Garnett, 1992).

Differences in frame of reference relate once again to the sender/receiver and his/her skills, attitudes, knowledge base and social-cultural roots and beliefs. The information to be communicated is filtered through the sender's frames of reference. On the other end the information or message to be received is filtered through the receiver's frames of reference. Both these phenomenon often cause distortion or barriers in effective communication. These different frames of reference such as filtering, selective attention, selective perception, selective retention, emotions, and language can be the leading sources for barriers of effective communication.

Filtering occurs when the sender or communication source alters the information to make it seem more favorable to the targeted audience. This causes problems and distorts the actual message. Selective attention, perception, and retention all have to do with the receivers choice regarding the relationship of the information to them, such as its importance to them or how it affects them. "The receivers in the communication process selectively see and hear based on their needs, motivations, experience, background, and other personal characteristics" (Robbins, 1993). Furthermore, individuals tend to "ignore or avoid messages they perceive as unimportant, dissonant, or negative" (Garnett, 1992). What the receiver listens to, understands, and retains is dependant on their perceived

perceptions of its importance. For these reasons, it becomes important to tailor the information provided to ensure it is relevant to the needs of the individual or group that is the target of the communication.

Emotions and language are also issues that can cause distortion and act as a barrier when attempting to communicate a message. How a receiver feels at the time of decoding often will have an effect on what the receiver interprets from the message. Robbins (1993) suggests that it is the extreme emotions, either jubilation or depression, which have the greatest impact on message interpretation. Aside from emotions, the language of a message can cause problems as well. "Language, whether a foreign language or technical or bureaucratic jargon, can create communications barriers" (Garnett, 1992). When developing a message or communication strategy special attention needs to be taken to ensure that every effort is being made to avoid this potential barrier in communication. Jargon and highly technical terms are obviously inappropriate when attempting to communicate with varying levels of education and backgrounds.

Physical distance and information overload can also be challenges when trying to communicate. In the Arctic, vast areas with little to no communication are especially challenging. The cost of travel can be extremely high making it difficult to always communicate face to face causing the communicator to depend on a form of communication that has a lower channel 'richness'. It is also important to keep conscious the factor of possible information overload. Although there is always a great deal of information that communicators feel is important and requires discussion, the information needs to be presented in a manner that is concise, interesting and easy to understand to avoid the barrier of information overload.

Overcoming Barriers to Effective Communication

There are ways for a communicator to increase their capacity for effective communication. With a little effort one can become a stronger communicator by working on improving their communication skills and consciously making an effort to avoid the barriers to communication. The two skills that can significantly

counteract ineffective communication are the development of effective, active (vs. passive) listening skills and developing effective feedback skills, both negative and positive. “Active listening requires you to get inside the speaker so that you can understand the communication from his or her point of view” (Robbins, 1993). There are four requirements of active listening, which include:

1. listening with intensity;
2. listening with empathy;
3. listening with acceptance; and
4. listening with a willingness to take responsibility for completeness.

These skills are not easily attained but are required to ensure that you as the receiver understand what the sender of the message is saying. These skills require you to abandon your personal biases and judgements. Asking questions and paraphrasing are good techniques that will aid the listener in understanding and interpreting the message correctly.

Feedback skills are the second necessity to overcome the barriers to effective communication. Both negative and positive feedback are equally important, yet negative feedback is often withheld in order to avoid conflict or hard feelings. This type of information retention can harm the communication process and set the process back in terms of development and relationship building. Robbins (1993) suggests negative feedback is most likely to be taken poorly unless it is backed by hard numbers and facts or it is coming from a high status, respected source. There are certain ways to ensure that negative feedback is taken more positively. Keeping the feedback focused specifically on behavior, keeping the feedback impersonal, and timing the negative feedback well are three ways to frame negative feedback in a more positive light.

3.5.2 Communicating for Environmental Literacy

Increasing environmental literacy can be achieved through environmental education, which is defined as “a learning process that increases people’s knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address these challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action.” (Sanera, 1998)

“Environmental communication refers to the delivery of information on environmental subjects. It is similar to and distinctly different from any other type of communication” (Harrison, *et.al.*, 1988). Although environmental communication follows the same communication process, there are distinct differences in this form of communication. Environmental communication is distinctive in its complexity, technical dimensions, personal impact and elements of risk. When trying to communicate issues of environmental concern the level of complexity is almost always higher than communicating non-environmental issues. The communicator in this case is communicating information that deals with science, economics, law, business management, and human behavior, with their many trade-offs and interactions (Harrison *et.al.*, 1988).

There is a definite technical dimension when dealing with the environment which can lead to a large gap between what the given “public” knows in comparison to what the communicator knows (e.g. natural resources manager). The communicator has to be conscious of this gap when communicating environmental issues. Aside from the technical nature of environmental communication there are also personal impacts associated with the environment and environmental issues. “Like few other forms of communication, environmental communication engages people in deeply personal ways because it often involves the air that we breathe, the water that we drink, the food that we eat, and the products that come in contact with them” (Harrison *et.al.*, 1988). For these reasons there is a level of caution that must be taken when communicating environmental issues and their respective effects on the lives of the dependant individuals.

However sensitive this area of environmental communication is, it is still an extremely important cause. With oceans covering more than 70 percent of the Earth’s surface, constituting more than 90 percent of all habitable space on earth, and providing the lifeblood of our planet, one would assume that Canadians are concerned for and aware of the importance of our oceans (Grove, 1998). This however is not the case. Studies have been done to estimate what Canadians know about the ocean, including both prairie and coastal populations. According to Lien

(1992) Canadian children received a “C”, and “although they receive passing marks, most fail to understand very basic things about the ocean, such as where energy comes from, what constitutes a food web, etc.”. Similar findings occurred from a sample of Canadian and Newfoundlander adults. These findings indicate that efforts need to be made to raise awareness and improve Canadians’ understanding of oceans, their functions, our dependence on them, and the need for their conservation and protection. Canadians need to know that “more than 1,600 marine scientists and biologists from around the world have issued an unprecedented warning that the sea is in trouble due to overexploitation of species, physical alterations of ecosystems, pollution, alien species from distant waters disrupting local food webs, and global atmospheric change” (Grove, 1998).

Environmental education programs can lead to action. They have the potential to heighten environmental literacy, develop an eco-ethic, and provide individuals with important information that will enable them to respond to environmental issues in a knowledgeable way. Greater environmental literacy can empower the Canadian public to make more environmentally sound decisions and demand the same type of decision-making from their government. Learning for a Sustainable Future and the World Conservation Union (1998) suggest that education and communication for sustainable development can:

1. foster changes in terms of values, behaviors and lifestyles;
2. spread knowledge, values and skills that promote changes required in the fields of consumption, the management of natural resources and industrial and energy production; and
3. develop a well-informed public that will support the measures required for sustainable development.

3.5.3 The Role of Government in Communicating for Environmental Literacy

The Government of Canada defines communications as a management function which ensures that the public receives information about government policies, programs, and services and that the concerns and interests of the public are taken into account in the formulation and implementation of government policies and programs." (Treasury Board of Canada, 1991)

Governments have the opportunity, through programming, implementation of legislation, and environmental education initiatives, to play a strong role in communicating for environmental literacy. Because Canada is a democratic country with strong roots in government, the general public often turns to environmental legislative policy as the tool to control development and protect and conserve our natural resources. In the face of continued development environmental legislation will be used more and more. Yet, legislation will not be utilized in isolation as it has been in the past. Public involvement and participation in the management of activities affecting natural resources will be an integral component in future resource management.

Increased pressures for public participation in decision-making will require the government to be a stronger communicator in environmental issues. The government recognizes and advocates that good communication and strong programs are fundamental to achieving governmental objectives. "The responsibility to provide information is inseparable from the nature of representative government" (Treasury Board of Canada, 1991). However, the Government of Canada faces new roles that are uncharacteristic of its past. As highlighted in the *Northwest Territories Protected Area Strategy*, governmental duties now range from "information providers, communicators and decision facilitators, consensus builders, negotiators, instigators, funders, legislators, administrators, (to) co-managers" (Government of the Northwest Territories, ND). The *Oceans Act* demands that the DFO perform all of these duties.

According to a recent poll, the public perceptions of Canadian coastal and oceans management policy/practices are not favorable (Coffen-Smout, 1997). Canadians feel the government could be doing a better job at protecting their

oceans interests. The implementation of Canada's *Oceans Act* is an opportunity for the DFO to assume its new role as a partner, co-manager, communicator, and information provider and change the public perceptions of Canadian coastal and oceans management policy and practice.

CHAPTER 4: OCEAN ACTIVITIES, RESOURCE USES, AND RESOURCE USERS IN THE CENTRAL AND ARCTIC REGION

4.0 INTRODUCTION

There are key questions that coastal planners (the Oceans Sector) will need to answer when dealing with oceans management (Clark, 1996). Two of the major questions are (1) what are the coastal resource uses, and (2) who are the users of the coastal areas and resources (Clark, 1996). This chapter attempts to answer these two questions. When attempting any type of communication, proper identification of the target audience is a necessary first step. To identify the resource users or stakeholders of the Central and Arctic Region (the ultimate target audience), one must first identify the ocean uses. This chapter will outline current and potential ocean resource use in the Arctic, as well as, identify the stakeholders who are benefiting from the use of these resources. Figure 10 is a guideline that explains how this research was approached and undertaken. This chapter will also explain how the researched stakeholder information was organized in a database for future use in communication. Through identifying the ocean uses and key resource users, the target audiences for communicating the key messages of the *Oceans Act* and *Oceans Act* initiatives will become clear.

4.1 ARCTIC OCEAN USES

"Economic development that accompanies growth contributes to the increasing pressures on marine ecosystems, as do offshore exploration for fossil fuels and the extraction of sand, gravel, and minerals. Marine ecosystems, both nearshore and offshore, are currently under a variety of pressures, which vary in scale and intensity." (Government of Canada, 1996a)

"Historically, natural resource use in the Arctic has been limited to fishing, hunting, mining and reindeer herding. More recently, oil, gas and hydroelectric power have been developed, and, along with them, infrastructure as pipelines, roads and electric transmission lines. Shipping activities are expected to increase along with the tourism in the Arctic." (PAME, 1996)

Although the Arctic Ocean has historically been less developed than the other Canadian oceans, because of remoteness and expenses associated with development, it is still an area that is rich in resources and will not remain void of

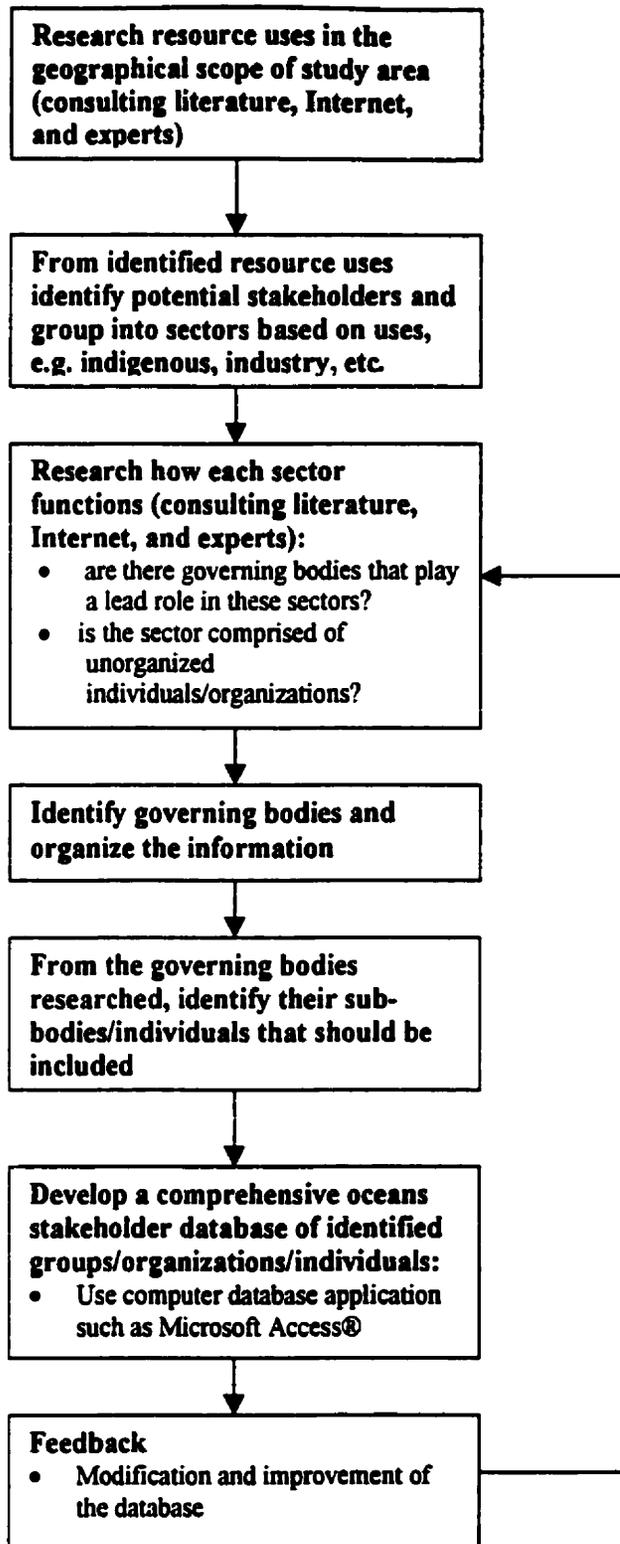


Figure 10: Identifying Arctic Ocean Resource Use and Oceans Stakeholders

development indefinitely (Government of Canada, 1996a; Lanken and Vincent, 1999; Environment Canada, 1994). As resources become scarce in other regions, development will reach distant locations to satisfy the demand pressures that are placed on the industrial natural resource sector. For the purposes of this research, ocean uses can mean both direct uses of resources such as oil extraction and/or indirect uses such as the value of oceans for the absorption of excess carbon dioxide, and the regulation of climate.

Currently, ocean resource uses in the Arctic can broadly be divided into opportunities for industrial uses revolving around offshore oil and gas exploration and development, mining, transportation and shipping, the tourism industry, commercial fisheries and historical uses such as subsistence harvesting by the indigenous groups of the area (Brouwer, *et.al.*, 1988; PAME, 1996; Lanken and Vincent, 1999; Wells and Rolston, 1991; Government of Canada, 1999). Table 5 summarizes Arctic Ocean uses, present and future, as well as the potential conflict that can arise from these uses.

4.1.1 Offshore Oil and Gas Exploration and Development

“Geologically, lands extending north of 60 from the Alberta-British Columbia border to the Beaufort Sea are a continuation of the oil and gas-rich Western Canada Sedimentary Basin, but, in comparison are lightly explored” (Department of Indian Affairs and Northern Development, 1998b). “The circumpolar Arctic has some of the largest hydrocarbon reserves in the world” with three decades of exploration producing 73 oil and gas discoveries in the Canadian Arctic to date (Government of Canada, 1996a). The minerals and energy (including crude oil) sector accounted for 10.6% or 74.4 billion dollars of Canada’s GDP in 1996. These numbers illustrate that energy resources make important contributions to Canada’s economic power and well being indicating that the North and its reserves will play a vital role in maintaining Canadian standing in the production of these resources in the future.

Figure 11 illustrates areas in the Arctic of both high potential for oil and gas development and areas where development is already occurring. There is

Table 5: Ocean uses in the Canadian Arctic

Sector	Oceans Uses/Interests Present and Future	Competitive Interests Existing and Potential Conflicts
Environment	<ul style="list-style-type: none"> • Habitat • Global climate system • Ecological regeneration • Purifying agent for air and water • Absorption of carbon dioxide produced by the burning of fossil fuels • Regulator of hydrological cycles 	<ul style="list-style-type: none"> • Increased industrial development results in decreased environmental assimilative capacity • Stress on the Arctic environment, e.g. global warming, pollution, Arctic haze • Loss of regenerative abilities • Loss of habitat
Government	<ul style="list-style-type: none"> • Science; climate change studies, e.g. SHEBA-JOIS • Knowledge gathering through data collection; • Co-management Bodies • Regulation of uses • Coast Guard • Arctic Sealift • Number of Canadian government agencies with oceans related activities, e.g. DFO, Transport Canada, Health Canada. etc. • Government agencies with marine protection capabilities 	<ul style="list-style-type: none"> • Jurisdictions • Regulations • Industrial Developers potentially unhappy with greater regulations and environmental laws • Indigenous groups potentially unhappy with land claim protection • Government held accountable to public, NGOs for environmental problems
Indigenous Groups	<ul style="list-style-type: none"> • Survival of traditional lifestyle • Identity and Culture • Subsistence harvesting of marine mammals and other marine species • Transportation • Jobs and income 	<ul style="list-style-type: none"> • Potential decrease in marine species stocks as a result of unsustainable development, decreased environmental capacity, increased stress on Arctic environment, etc. effecting Inuit harvest quotas • Loss of marine habitat • Decrease in ability to maintain and continue traditional lifestyle • Potential loss of culture and identity • Decrease in effectiveness of Traditional Ecological Knowledge
Industry	<ul style="list-style-type: none"> • Oil and gas exploration and development • Mineral exploration and development • Marine Transport, Shipping • Fisheries • Raw materials for commercial Products, e.g. medicines, shampoos, etc. • Tourism, small to large scale 	<ul style="list-style-type: none"> • Restrictions on development due to Land Claims, Indigenous groups and communities • Restrictions on development imposed by different levels of Canadian government and levels of protection and regulation • Tourism effected by levels of remaining industry groups and development • Industry limited by the amount of resources available for extraction and their sustainable use

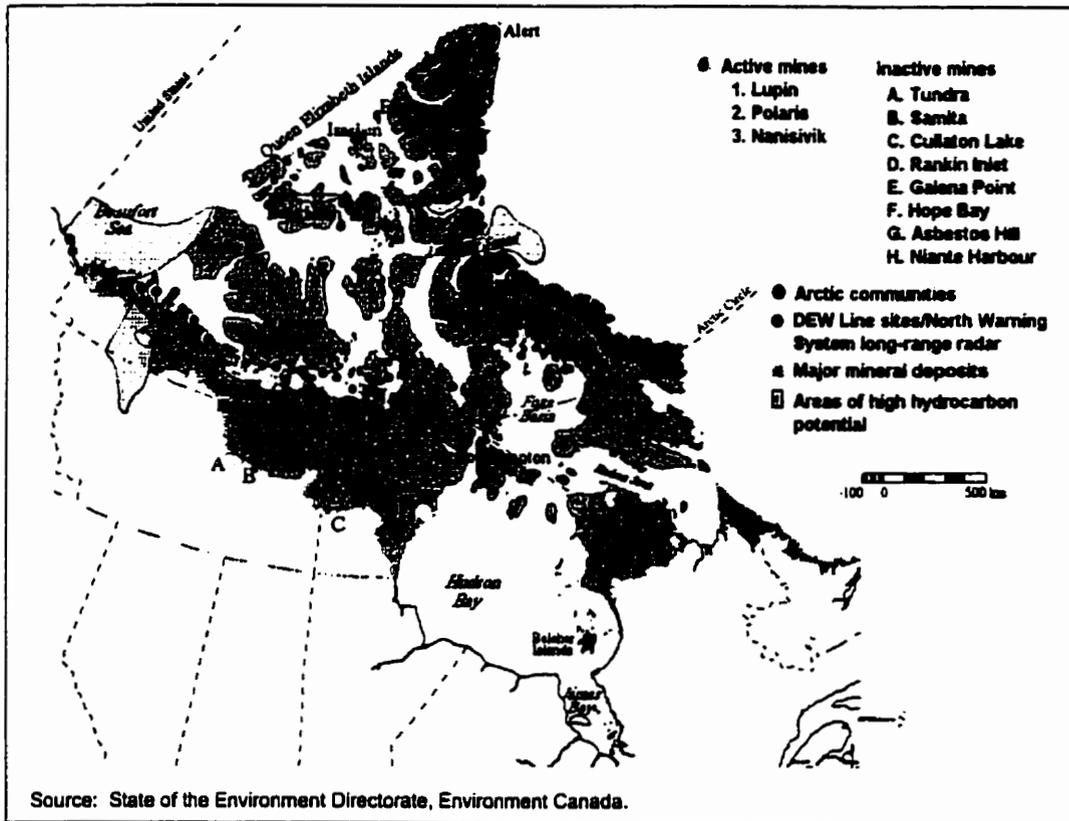


Figure 11: Areas of High Hydrocarbon Potential, Active and Inactive Mines, Former DEW Line Sites and Major Mineral Deposits in the Canadian Arctic (Source: Government of Canada, 1996a)

currently only one oil center located in the Arctic Islands, Bent Horn Oil on Cameron Island, which is a strong producer, showing no indication of declining production rates (Morrell, 1995). Although petroleum production is slow at this point in time, some regions in the far North have previously seen a flurry of activity surrounding oil and gas development. The 1980's marked a particularly active period for oil and gas development in the Beaufort Sea and with "Native land claims largely resolved in the Arctic, companies have shown renewed interest, and a revival of activity is likely over the next few years" (Government of Canada, 1996a).

It is estimated that northern Canada is the site of one quarter of Canada's remaining discovered petroleum and one half of the country's estimated potential. "The basins of northern Canada contain substantial reserves and a long inventory of discovered resources both oil and gas, [representing] one of the last extensive and under-explored hunting grounds for conventional gas in the North American continent" (Morrell, 1995). Since oil remains one of the world's major source of energy, there is little doubt that the Arctic will be targeted for future development beginning a resurgence of industrial activity in the North. There is an expected resurgence of oil and gas development with the signing of key land claim agreements and potential decreases in supply. "Discoveries made within the next few years can expect to contribute to the supply to meet a building continental demand for gas and an increasing share of domestic oil production" (Morrell, 1995). "Today, governments, working in partnerships with northerners and Aboriginal peoples, are refocusing on northern oil and gas exploration and development as key components of the future economic well-being of northern Canada" (Department of Indian Affairs and Northern Development, 1998b).

4.1.2 Mining

Gold, base metals, tungsten, rare earth, polymetallc, iron, diamonds, and uranium are the main mineral deposits in the North. Canada ranked first in the world for zinc production and fourth for gold production with exports estimated at 1.5 billion and 3.5 billion respectively (Natural Resources Canada, 1997).

Currently, the principal minerals extracted and processed in the Arctic are gold, petroleum, lead and zinc. There are two major mining centers located on islands in the Arctic Ocean. These include the Nanisivik Mine on Baffin Island and the Polaris Mine on Little Cornwallis Island (Figure 11). The Polaris Lead-zinc mine “mills approximately one million tonnes of ore each year” (Natural Resources Canada, 1998). There is also potential for offshore mineral development in future. In fact, federal geological surveys, as well as the mineral industry indicate significant mineral potential and Canada’s territories are eager to work with the federal government to develop a management regime for offshore mineral resources (Government of Canada, 1997b).

4.1.3 Transportation

“Oceans are used as global highways. [Oceans] once provided access for early explorers to discover new lands. Today [they] provide access for international trade” (Grove, 1998)

Transportation and shipping in the Arctic can be categorized by “shipping of cargo and passengers, including tourism; shipping related to onshore and offshore oil and gas activities and mining; fishing/catching of living resources; research and other activities” (PAME, 1996). In the Canadian Arctic, shipping is seasonal due to the extreme weather. “The recorded number of tanker voyages per year in this area is 20, general cargo ships voyages is 19, bulk cargo is 22 voyages, there are 6 to 8 ice breakers operating in support of Arctic commercial shipping and Sealift cargoes, and on average there are 6 passenger ships voyages yearly” (PAME, 1996).

Because of the remoteness of Arctic communities, receiving groceries, construction materials, furniture, etc. requires yearly planning on the part of Inuit families and transport companies. Much of these supplies are transported by ship to the coastal communities once or twice a year, requiring families to place orders months in advance of arrival. Aside from providing communities with goods, there are other demands for transport. Transportation and shipping are expected to increase along with the infrastructure needs to transport extracted and processed natural resources from the North. There are also proposed pipeline developments,

such as a pipeline connecting the Mackenzie Delta to southern markets, to address the transportation needs from oil and gas development.

4.1.4 Tourism

"Kayaking today is to make money, especially with the tourists. If we have them every year, it will be good for the community." (Hossack, 1999)

Nature based tourism is on the rise in the Arctic. As people increasingly search for outdoor adventure and unique experiences, more and more they turn to the pristine state of the Arctic to avoid congestion (Duffy, 1998). The Canadian Arctic, or "the Last Frontier" as many refer to it, attracts visitors not only as a result of the unique environment but its unique culture and traditions as well. The Canadian Arctic boasts four national parks, and approximately eight territorial parks, park reserves and historic sites (New Parks North, 1997). Tourist operations range from local tour operators taking tourists out kayaking, snowmobiling, whale watching, hunting, etc. to a handful of large cruise ships promising Arctic adventure in grand style.

The Canadian Arctic is receiving up to 100,000 tourists annually, with the greatest concentration of tourists in the Western Arctic's Mackenzie Delta region (Dingwall and Cessford, 1996 *in* Dressler, 1999). The lure to the Eastern Arctic is sure to rise as well, with the creation of the new Nunavut Territory, the people of Nunavut are anxious to increase economic gain and welcome the money tourism can bring to their communities. The new Arctic Territory has the welcome mat out with a fledging tourist industry that will try to promote Inuit cultures and traditions in hopes to use the land and water that once sustained a semi-nomadic society to sustain the modern Nunavut economy (Crary, 1999; Lancken and Vincent, 1999).

4.1.5 Historical Indigenous Use of the Land and Sea

The majority of Arctic communities are located along Canada's coastline. The mere geographical location of these communities indicates the importance of

and high degree of dependency on the sea. As mentioned previously, the Inuit of northern Canada historically have depended on ocean resources for their subsistence (Freeman, 1997). Although, the level of dependency, with the introduction of settlement living, technology, grocery stores, southern cultures, etc., has decreased, subsistence harvesting still remains a part of their heritage, culture, and traditions (Semeniuk, 1999; Hrynshyn, Crompton and Stoddart, 1998). In the Inuit culture there are socially and culturally important ways of obtaining, distributing and consuming food (Freeman, Wein, and Keith, 1992). The Inuit continue to have strong ties to the land and sea. Hunting, trapping, and fishing continue to supplement the mixed cash-subsistence economy in the North (Government of Canada, 1996a). Northern community members rely on the sea for other important functions as well. Inuit rely on the sea not only for food, but also for transportation of goods, and income through ocean related jobs.

4.2 IDENTIFYING RESOURCE USERS/OCEAN STAKEHOLDERS

After identifying Arctic Ocean uses it is possible, through research, to now identify the actual resource users and stakeholder groups associated with each of the researched ocean uses/interests. The purpose of identifying these user groups is to complete Step 1 of the communication strategy framework, which is to establish the target audience for communicating the key messages of the *Oceans Act* (Figure 2). Tables 1 and 2 were particularly useful in identifying resource users/oceans stakeholders.

Table 1, *IUCN's "Snapshot of Interests at Stake" in Resource Management*, provided a list of questions researchers could ask when trying to identify resource users/ocean stakeholders. These questions were asked prior to beginning and referred to throughout oceans stakeholder research. All the questions listed in Table 1 were useful and applicable for identifying oceans stakeholders in the Arctic. Although Table 2, *IUCN's List of Social Actors Potentially Stakeholders in Resource Management*, is a generic list of potential stakeholders it illustrates what actors should be included (e.g. northern traditional

groups, local northern governments, northern universities and academic institutions, etc.). Table 2 was used as a comparative list, which was consulted once stakeholder research was completed to cross check and ensure important stakeholder groups were not missed. Once the stakeholder information was collected there was a need to organize the research. The contact information for the identified resource users and stakeholder groups was entered into a database and categorized for future reference.

4.2.1 Oceans Stakeholder Database

"Coastal management programs are information driven and, because information is derived from data, a database always will be required for coastal management programs. The database is a system for collection and storing of relevant data." (Clark, 1996)

The computer application used to design the Oceans Stakeholder Database was Microsoft Access®. If designed properly, Microsoft Access® databases can provide a reliable and efficient information system that meets user needs (Betz, 1994). Clark (1996) outlines some key conditions for database development. First, the database should allow for continuous update and easy retrieval, second the database should be readily acceptable and easily manipulated, and third, combining data from different sources should be enabled. Microsoft Access® satisfies all of these conditions. The Oceans Stakeholder Database is a living document allowing for continuous update. To date, there are over 900 stakeholder and stakeholder groups entered into this database. The Oceans Stakeholder Database has been attached as Appendix A.

The stakeholders are divided into four broad categories/sectors within the database. The sectors include government, indigenous, industry, and a general sector, which includes: academic institutions, scientific institutions, and non-governmental organizations (NGOs). The database is furthered organized into subcategories. Within the government sector, the stakeholders are organized by the federal, provincial, territorial, and municipal levels of government that have oceans related interests. Within the Indigenous sector, the stakeholders are organized by subcategories including First Nations bands, community Hamlet

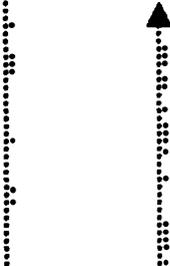
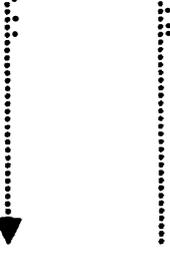
offices, Hunters and Trappers Associations/Organizations, Inuit Associations, Land Claim Bodies, northern natural resource management boards, and co-management boards. The industry sector organizes stakeholders into the subcategories of construction, fisheries, mining, petroleum development, tourism and transport. The final sector organizes the academic category into schools, colleges, universities and research institutes that have an interest in the Arctic Ocean and lists the scientific Institutes and NGOs that have potential interests in the Central and Arctic Region as well as Arctic Ocean activities. Table 6 is a summary of these broad sectors that have been identified as stakeholder groups, in relation to their ocean uses.

4.2.2 Government Stakeholders

Borrini-Feyerabend (1996) states that the different levels of government are important stakeholders in resource management (Table 2). There are various levels of government that will play a role in implementing the Act and will therefore become target audiences for communication. This will not only increase their level of understanding surrounding the Act and its programs, but also encourage partnerships in oceans management between DFO and other government agencies.

Although in Canada the federal government has principle authority over oceans and their resources, DFO will need the assistance of other agencies to ensure the proper management of oceans activities and to address overlapping jurisdictions in some cases (Fisheries and Oceans Canada, 1997b). There are a number of different government agencies that carry out ocean related activities with respect to previously identified Arctic Ocean uses. The DFO (1997b) highlights 22 federal government agencies with oceans related activities ranging from the DFO to Health Canada to the Royal Mounted Police (Fisheries and Oceans Canada, 1997b). When dealing with the Arctic Ocean, there are also a number of territorial government agencies and municipal offices such as Hamlet Offices that need to be consulted when attempting to manage ocean activities and implement *Oceans Act* programs such as MPAs. Extensive research has been

Table 6: Identifying Oceans Stakeholders

Sector	Stakeholder Group	Ocean Uses	Competitive Interests
Selected Government Agencies	<p>Government Agencies Involved with Marine Management and Protection:</p> <ul style="list-style-type: none"> • Fisheries and Oceans Canada, Marine Protected Areas • Parks Canada – Canadian Heritage, National Marine Conservation Areas (pending), National Parks • Environment Canada, Canadian Wildlife Service, Marine Wildlife Areas, Migratory Birds Sanctuaries • Federal Government of Canada, Provincial, Territorial, and Municipal Governments of the Northwest Territories, Nunavut, Yukon, Manitoba, and Ontario • Other Canadian government agencies with oceans related activities 	<ul style="list-style-type: none"> • Science • Marine Protection through laws, regulations, and protected areas • Commercial product monitoring and testing, e.g. fish products 	<p style="text-align: center;">Overlap in Jurisdictions</p> 
Indigenous	<p>Inuvialuit and Inuit</p> <ul style="list-style-type: none"> • Inuvialuit Communities • Inuvialuit Organizations • Nunavut Communities • Nunavut Organizations • Nunavut Government • Co-management Bodies • Institutes of Public Government • Educational Institutions <p>First Nations</p>	<ul style="list-style-type: none"> • Traditional lifestyles • Subsistence harvesting • Transportation • Jobs and income 	
Industry	<ul style="list-style-type: none"> • Operating Mining Companies • Operating Oil and Gas Companies • Oil and Gas, Mining Lease Holders with right to explore • Shipping Companies • Transport Companies • Tourism Operators • Tourism Boards • Arctic Fisheries 	<ul style="list-style-type: none"> • Oil and gas development • Mineral development • Shipping routes • Tourism base • Fisheries 	<p style="text-align: center;">Competitive uses between Stakeholder Groups (E.g. hunting and development)</p> 
Academic NGOs Scientific Institutions	<ul style="list-style-type: none"> • Universities and academic institutions with a marine and oceans component in their curriculum • Elementary, secondary and post secondary, Institutions in the Central and Arctic Region • NGOs with environmental protection objectives; e.g. IMMA, IISD, Friends of the Environment, Sea Shepherd, Greenpeace, etc. 	<ul style="list-style-type: none"> • Science • Protection lobbying • Education 	

done to identify these agencies and all findings have been entered into the Oceans Stakeholder Database (Appendix A).

4.2.3 Indigenous Stakeholders

Implementing programs under the *Oceans Act* will involve close collaboration with northern indigenous groups. Program success, e.g. implementation of a MPA, will depend upon the acceptance of traditional groups with cultural roots in the North especially because the group has some legal jurisdiction over and customary use of the natural resources at stake (Borrini-Feyerabend, 1996).

As mentioned earlier, the culture and traditions of the North are very different from those of the South. There are well-established organizations, and co-management boards in the North that have decision-making responsibilities that affect their community members (Roberts, 1995). Many decisions that affect the community in terms of natural resources are made only on the advice of elders and respected leaders (Byers and Roberts, 1995). For this reason, DFO will need to work with the management boards, Inuit Associations, and Hamlet Offices in the North to gain acceptance for potential IM plans, MPAs and/or MEH programs. Figures 12 and 13 highlight the key decision-making bodies for wildlife and environmental issues, in both the ISR and Nunavut. It would be beneficial for the Oceans Sector to work closely with these groups on certain program initiatives and announcements. The key appointing agencies, Hamlet Offices, Hunters and Trappers Associations/Organizations, Inuit Associations, Land Claim Bodies, northern natural resource management boards, co-management boards and northern communication bodies have all been researched and are entered in the Oceans Stakeholder Database (Appendix A).

4.2.4 Industry Stakeholders

Industrial developers are important stakeholders to include in communication plans and to collaborate with in oceans management because they

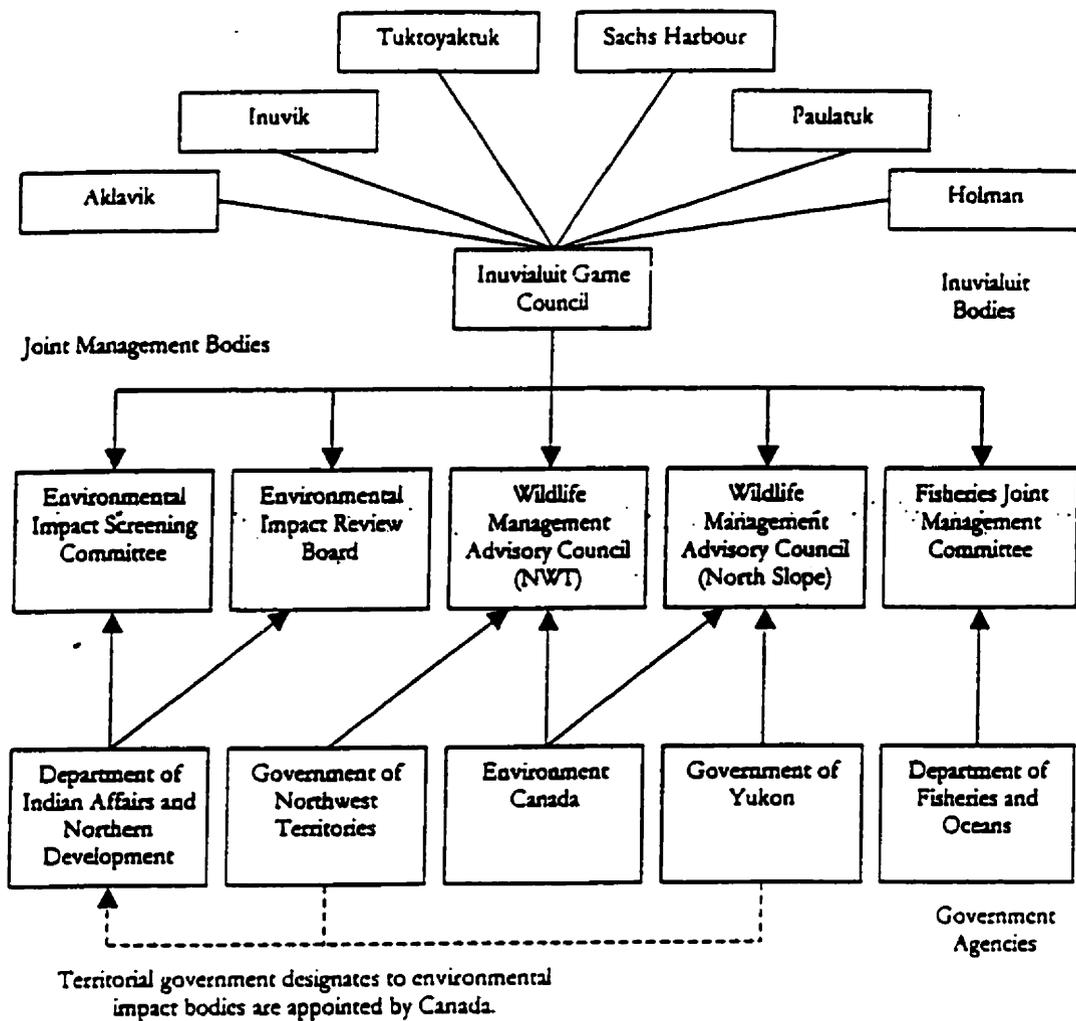


Figure 12: The Inuvialuit Settlement Region's Environmental Management Regime (Source: Muir, 1997)

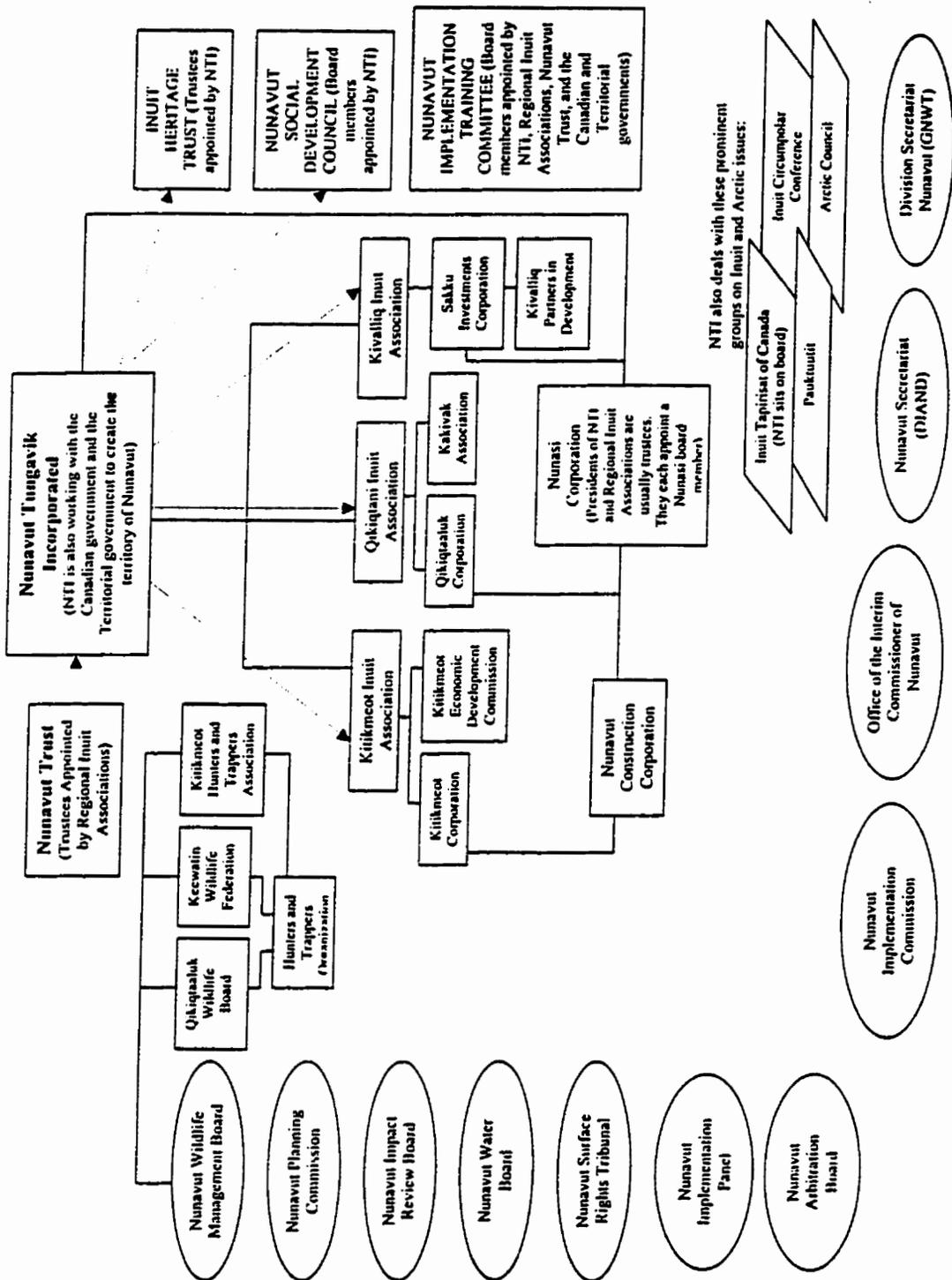


Figure 13: The Territory of Nunavut's Environmental Management Regime
(Source: Nunavut Tunngavik Incorporated, 1998)

inevitably will be affected by and/or concerned about the *Oceans Act* programs (e.g. a MPA designated where there is high oil production potential or MEH standards that may require them to alter their methods of waste disposal) (Borrini-Feyerabend, 1996). As outlined previously, there are seven main types of industrial activity occurring in the North, and which have an impact on the Arctic Ocean. These activities include construction, fisheries, mining, petroleum development, tourism and transport. Based on the identification of these key industrial activities, research was done to pinpoint the organizations/individuals associated with each.

Commercial Fisheries

There are a number of commercial and community fisheries in the Arctic. These fisheries include, but are not limited to, northern shrimp, Arctic charr, broad whitefish and Greenland halibut fisheries (Jack Mathias, *pers.comm.*, June 1, 1999; Mathias, Pike, and Fast, 1998). Arctic fisheries are small in comparison to the larger scale fisheries typified by both the East Coast past cod fishery and West Coast salmon fisheries. However, the Nunavut Territory has expressed interest in expanding their Greenland Halibut commercial fishery to increase the economic development needed in the territory (Canadian Press, 1999).

Mining

The number of Arctic mines varies with market conditions. There are 8 mines operating in the North and only two operate out of the Arctic Islands. They include Polaris Mine, owned by Cominco Ltd. And Nanisivik Mine, owned by Nanisivik Mines Ltd. (PAME, 1996; Natural Resources Canada, 1998).

Oil and Gas Development

There are approximately 11 petroleum companies that have leases in the Beaufort Sea, the Mackenzie Delta, the Eastern Arctic Offshore, and the Arctic Islands. These companies include Amoco, Chevron, Husky, Gulf, Imperial Oil, The Inuvialuit Petroleum Corporation, Shell Canada, Panarctic Oil, Dome, Esso

and Suncor (Department of Indian Affairs and Northern Development, 1999; Brouwer, *et.al.*, 1988). However, there is currently only one active oil field, Bent Horn Oil, which is owned and operated by Panarctic Oils Ltd.

Tourism

Tourism industry is growing in the North and over the past couple of years the number of local and foreign tour operators has increased dramatically. The two umbrella organizations that monitor and provide information about local tour operators are Nunavut Tourism (Nunavut) and Arctic Tourism (NWT). Each umbrella organization has offices scattered throughout the communities of their respected territory. It should also be mentioned that there are four tourist cruise ships that make their way through Arctic waters. The companies responsible for arranging these cruises are Quark Expeditions, TCS Expeditions, Marine Expeditions, and Cross Marine Inc. An extensive list of community tour operators, foreign tour companies, and cruise ships can be found in the Oceans Stakeholder Database (Appendix A).

Transport

After researching the transport industry it became clear that there are only a handful of large shipping companies that operate in the North. The Northern Transportation Company Limited (NTCL) is the major transport company. NTCL is a member of the NorTerra group of companies. "NorTerra Inc. is 100% aboriginally owned holding company, which is managed equally by two "birthright corporations". They are the Inuvialuit Development Corporation representing the Inuvialuit of the Western Arctic and Nunasi Corporation representing the Inuit of the Eastern Arctic" (Northern Transportation Company Limited, 1999). "Birthright cooperations" were established under the existing northern land claim agreements (Harper, 1999). NTCL has operating terminals that serve the Western Arctic and all regions of the Eastern Arctic. They are located in Hay River, NT, Iqaluit, Nunavut and Churchill, Manitoba (Chris Cote, *pers.comm.*, June 22, 1999).

Arctic Sealift is a major supplier to northern communities, bringing yearly supplies that can not otherwise be purchased in the North (e.g. building materials, bulk cooking ingredients, furniture, etc.). Transport Canada and DFO's Coast Guard Office coordinate Arctic Sealift. There is a handful of other shipping companies that transport goods (e.g. the oil produced at Bent Horn Oil) all of which are entered in the Oceans Stakeholder Database (Appendix A).

4.2.5 Academic Institutions, Scientific Institutions and NGOs Stakeholders

To date, there is little known about oceans, their functions and their delicate ecosystem. There is a continual quest for more knowledge about the oceans fragile systems. Many academic institutions across Canada have specialized programs to address this need for knowledge. Likewise, scientific institutions are eager to learn more about our oceans in order to aid environmental management decision-making. With greater knowledge about ocean systems, decisions can be more soundly based, helping to avoid environmental disasters. There are also a significant number of NGOs, spanning from local to global, who play the role of environmental watchdog having interest in Canada's oceans and raising awareness about their global importance. All of the established academic, scientific institutions and NGOs with oceans related programs and interests can play a role in raising awareness of the *Oceans Act* and its programs. There is great potential for partnerships with these identified institutions. Research has been done to identify academic and scientific institutions and NGOs with oceans related interests. These organizations can be found in the Oceans Stakeholder Database (Appendix A).

4.3 SUMMARY

By identifying Arctic Ocean uses and the stakeholder groups that benefit from these uses, a clearer picture emerges with respect to the broad target audience with whom the Oceans Sector will need to communicate and work. After researching oceans stakeholder groups, it became obvious that the

information needs of and communication channels used to communicate with these groups will be very different. Further research would need to be done on each group to identify important characteristics such as their socio-economic status, relationship to and values of the ocean, and the culture of the individuals that make up these stakeholder groups. Clearly, this is an enormous undertaking and for the purposes and duration of this research not feasible. As a result, one stakeholder group was researched and a communication strategy developed to meet determined needs. Extensive research on the stakeholder group could aid in determining the characteristics of this group, their information needs, as well as, which communication channels would be most effective in delivering the message. In fact, this research was undertaken to better comprehend the socio-economic status, values and cultures of the northern indigenous stakeholders inhabiting the coastal communities of the Canadian Arctic. Chapter 5 is a summary of my research findings.

CHAPTER 5: COMMUNICATING IN CANADA'S NORTH

5.0 INTRODUCTION

Chapter 4 identified Arctic Ocean uses and the stakeholder groups associated with ocean uses. It is obvious that there are a number of groups and individuals that need to be targeted when communicating the key messages of the *Oceans Act*. However, each targeted group will have very different information needs and the forms or channels of communications that are most successful with these groups may vary. Therefore, "awareness programs should be carefully designed to meet specific objectives for each "target group" or audience and a specific message or messages should be defined" (Clark, 1996). Northern stakeholders are the target audience for this particular research. The next steps (after identifying the user groups relationship with the oceans and before developing a communication strategy) are to understand the target groups values, perceptions and culture, analyze the existing systems of communication, both structured and unstructured, and determine which forms of communication are most effective for communicating with northern populations (Figure 2). To better understand Inuit culture and research existing systems of communication, community visits were arranged. Time was spent in two Arctic communities and the city of Yellowknife, NT. The two communities visited were Iqaluit, Nunavut and Inuvik, NT.

The intent of the community visits was to meet with communication experts who either work directly in the field of communications or their job, by its nature, involves a great deal of communicating with the public, in particular Arctic communities. Table 7 is a listing of all the individuals who were informally interviewed with regards to their experiences communicating with northern communities. After meeting with individuals who frequently work in the communications field, it is possible to identify best practices, in layman's terms – what works and what does not. There are many factors that affect whether a particular communication channel will be effective in reaching the northern population. Population demographics and community characteristics are very

Table 7: Northern Communications/Marketing Informal Interviews

Contact	Organization	Responsibility	Location	Telephone Number
<i>IQALUIT (March 22 – March 23, 1999)</i>				
Katherine Clarida-Fry	ICSL Division of Inuit Broadcasting Corporation	Managing Director	Iqaluit	867-979-1661
Margaret Keast	DFO Area Office, Eastern Arctic	Scientist	Iqaluit	867-979-8009
Steven Lowe	Nortext Multimedia Marketing/ Nunatsiaq News	Marketing Analyst	Iqaluit	867-979-4376
Lorne Levy	Baffin Divisional Education Council	Assistant Director	Iqaluit	867-979-8200
Lynn Siegersma	DFO Area Office, Eastern Arctic	Liaison Officer	Iqaluit	867-979-8009
Gary Weber	DFO Area Office, Eastern Arctic	Area Manager	Iqaluit	867-979-8002
<i>INUVIK (March 25 – March 26, 1999)</i>				
Andrew Applejohn	Aurora Research Institute	Programs Manager	Inuvik	867-777-3298
Cathy Canavan	Beaufort/Delta Divisional Education Council	Assistant Director	Inuvik	867-777-7136
Stephen Charlie	DFO Area Office, Western Arctic	Acting Area Manager	Inuvik	867-777-7508
Debbie Gordon – Ruben	The Inuvialuit Communication Society	Executive Director	Inuvik	867-777-2320
Lois Harwood	DFO Area Office, Western Arctic	Biologist	Inuvik	867-777-7508
Effie McLeod	Beaufort/Delta Divisional Education Council	Education Consultant	Inuvik	867-777-7136
<i>YELLOWKNIFE (March 29 – March 30, 1999)</i>				
Dave Anderson	Northern News Services	Marketing Analyst	Yellowknife	867-873-4031
Cathy Bolstad	CBC North	Program Marketing Coordinator	Yellowknife	867-669-3530
Doug Chiperzak	DFO Oceans Sector	MPA Planner	Yellowknife	867-979-8009
Patricia Fitzpatrick	DIAND	Community Consultations Assistant – Diavik Diamond Mining Project	Yellowknife	867-669-2590
Judith Knapp	Yellowknife Education District #1	Director	Yellowknife	867-873-5050
Linda O'Shaunassy	Television Northern Canada	Programming	Yellowknife	864-669-7299
Zoe Raemer	DIAND	Director Communications	Yellowknife	867-669-2575
Bruce Valpy	Northern News Services	Managing Editor	Yellowknife	867-873-4031

important and will play a major role in the communication of the *Oceans Act* and its programs. Clark (1996) states that the socio-economic status of coastal communities and information on social organization of coastal communities and dependencies on coastal resources are priority data items that coastal planners and communicators need to be aware of and understand.

Some of the important demographic, cultural, social, and economic characteristics, which should be considered in determining the approach taken for communications, include:

- The size of Canada's northern population;
- The culture and economy;
- the level of youth versus adult versus elder population in communities;
- the level of education that is typified in northern communities (e.g. literacy rate); and
- the language spoken.

These population characteristics directly affect how northern communities will receive and understand *Oceans Act* key messages. They will also determine how the source (DFO) should encode the message and which communication channel the source should be using to communicate (Figure 9). Table 8 summarizes the community populations, education and language characteristics of the five regions of the NWT and Nunavut. For the purposes of this communication strategy, the target audiences are the Arctic coastal communities bolded in Table 8.

5.1 POPULATION DEMOGRAPHICS AND COMMUNITY CHARACTERISTICS

5.1.1 Canada's Northern Population: A Snapshot

According to Statistics Canada's *1996 Census*, the NWT and Nunavut have a population totaling 64,402 (Statistics Canada, 1999). Of this population, 62% or 39,690 are Aboriginal. In the Arctic, the population is even smaller reaching numbers of approximately 30,539 with the majority of this population living in coastal communities along the Arctic Ocean coastline, close to the resources on which many of them are highly dependent (Figure 3) (Government

Table 8: Demographics and Community Characteristics of the Northwest Territories (Source: Statistics Canada, 1999; Government of the Northwest Territories, Bureau of Statistics, 1998a; Government of the Northwest Territories, Bureau of Statistics, 1998b; Government of the Northwest Territories, Bureau of Statistics, 1999a)¹

Northwest Territories	Region	Community	Pop.	Youth %	Higher Education %	Language %
Western NWT	Inuvik Region	Aklavik ²	727	49	5.5	E ³ =85 A ⁴ =15
		Colville Lake	90			
		Deline	616			
		Fort Good Hope	644			
		Fort McPherson	878			
		Holman	423	54	7.7	E=64 A=33
		Inuvik	3296	44	16.3	E=85 A=8
		Norman Wells	798			
		Paulatuk	277	60	8.7	E=82 A=18
		Sachs Harbour	135	48	0	E=81 A=22
		Tsiigehtchic	162			
		Tuktoyaktuk	943	51	7.7	E=83 A=16
		Tulita	450			
		Inuvik Unorganized	8	N/A	N/A	N/A
		Total	9024	51	7.7	E=80 A=18.7
	Fort Smith Region	Detah	190			
		Enterprise	86			
		Fort Liard	512			
		Fort Providence	748			
		Fort Resolution	536			
		Fort Simpson	1257			
		Fort Smith	2441			
		Hay River	3611			
		Hay River Reserve	253			
		Jean Marie River	53			
		Kakisa	36			
		Lutsel'ke	304			
		Nahanni Butte	75			
		Rae Lakes	256			
		Rae-Edzo	1662			
		Reliance	2			

¹ Statistical information obtained from the Government of the Northwest Territories, Bureau of Statistics, and Statistics Canada's 1996 Census. Population is number of people, youth sector is the percent of the population that is under the age of 25, education is the percent of population 25 years of age and over who have completed university, and language is the percent of population that speak and understand English versus the percent of population that speak and understand their mother tongue. See text for discussion of education levels.

² Communities that are within the geographical scope of this research are in bold font.

³ E represents the percentage of the community population that speaks and understands English as their first language.

⁴ A represents the percentage of the community population that speaks and understands their mother tongue (in most cases Inuktitut) as their first language.

		Salt Plains	11						
		Snare Lake	135						
		Trout Lake	68						
		Wha Ti	418						
		Wrigley	167						
		Yellowknife	17275						
		Fort Smith	129						
		Unorganized							
		<i>Total</i>	<i>30225</i>						
		All Western NWT	39672	44%	13%		U/A ⁵		
Nunavut	Baffin Region	Arctic Bay	639	64	10.9	E=9	A=91		
		Broughton Island	488	56	9.10	E=3	A=95		
		Cape Dorset	1118	59	4.3	E=10	A=89		
		Clyde River	708	64	7.7	E=6	A=94		
		Grise Fiord	148	57	0	E=0	A=90		
		Hall Beach	543	61	4.7	E=6	A=93		
		Igloolik	1174	63	8	E=6	A=93		
		Iqaluit	4220	47	18.6	E=36	A=56		
		Kimmirut	397	57	8.8	E=10	A=90		
		Nanisivik	287	31	12.8	U/A			
		Pangnirtung	1243	59	6.9	E=6	A=93		
		Pond Inlet	1154	64	8.3	E=7	A=93		
		Resolute Bay	198	48	10	E=36	A=64		
		Sanikiluaq	631	59	5.9	E=7	A=92		
		Baffin Unorganized	270	22	11.6	U/A			
				<i>Total</i>	<i>13218</i>	<i>54.1</i>	<i>8.5</i>	<i>E=9.5</i>	<i>A=75.5</i>
			Kivalliq Region	Arviat	1559	63	7.1	E=7	A=93
		Baker Lake		1385	56	9	E=19	A=80	
		Chesterfield Inlet		337	55	0	E=8	A=89	
		Coral Harbour		669	63	5.9	E=6	A=94	
		Rankin Inlet		2058	53	15.7	E=33	A=64	
		Repulse Bay		559	65	7.5	E=8	A=91	
		Whale Cove		301	60	0	E=12	A=88	
				<i>Total</i>	<i>6868</i>	<i>59.3</i>	<i>6.5</i>	<i>E=13.3</i>	<i>A=85.6</i>
		Kitikmeot Region	Bathurst Inlet	18	U/A	U/A	U/A		
			Bay Chimo	51	39	0	E=18	A=73	
			Cambridge Bay	1351	51	13.1	E=61	A=37	
			Gjoa Haven	879	61	5.9	E=31	A=68	
			Kugluktuk	1201	53	9	E=65	A=34	
			Pelly Bay	496	63	5.4	E=13	A=85	
			Taloyoak	648	87	5.7	E=24	A=74	
				<i>Total</i>	<i>4644</i>	<i>59</i>	<i>6.5</i>	<i>E=35.3</i>	<i>A=61.8</i>
			All Nunavut	24730	56%	7%	E=19.4	A=74.3	

⁵ U/A is the abbreviation for Unavailable. U/A means that the numbers for this community could not be located.

of Canada, 1996a; Government of Northwest Territories, 1999a; Statistics Canada, 1999). Although the Canadian Arctic has one of the lowest population densities in the world, the birthrate is growing and is currently double that of the Canadian average (Government of Canada, 1996a; Lett, 1999b; Department of Indian Affairs and Northern Development, 1997). The communities of the Eastern Arctic tend to have a higher number of young people than the Western Arctic. The average percent of youths in the Eastern Arctic communities is 56%, making it the youngest population in Canada (Lanken and Vincent, 1999) (Table 8). Whereas the average percent of youths in the communities of the Western Arctic is lower at 44% (Table 8).

5.1.2 Northern Culture and Economy

"Young children watch an episode of a popular American TV drama while their grandmother chews on a caribou skin to make it softer." (DLAND, 1990)

The Inuit of the North are living in a land of transition, trying to balance their culture and tradition with the needed economic development that can improve their standard of living and provide them with a sense of control over their own future. There is a constant 'struggle to lure the younger generations into learning traditional ways of hunting, fishing, and sewing' (Lett, 1999a). More and more Inuit are having difficulty passing their culture and tradition onto their youth. There are a number of socio-economic factors such as "unemployment (averaging 29%), substance abuse (35% of Nunavut residents have sniffed solvents), suicide (six times the national average)" that are plaguing the Inuit culture (Lanken and Vincent, 1999; Investigative Productions and Greenwald, 1990). Economic development is seen as having the potential to improve socio-economic conditions in the Arctic.

The economic structure in the North is unique from any other in Canada. The structure is comprised of three components. First, early sovereignty initiatives by the Government of Canada created a dependency of the North on the federal government for transfer payments (86% of the budget of the NWT came from the federal government in 1988-1989) (Government of Canada, 1996a). "The

dependence on social assistance can reach as high as four times the national average in some communities” (Department of Indian Affairs and Northern Development, 1996). Second, the residents of northern communities also derive wages and cash from employment in various sectors such as government, tourism and resource development. Third, despite the two previous sources of income the “local economies in the North are heavily based on “subsistence” hunting, trapping, and fishing, for despite living in settlements for several decades, Inuit retain strong ties to the land and sea” (Environment Canada, 1994 *in* Government of Canada, 1996a). In light of these northern economic components, the North can be typified as having a “mixed cash/subsistence economy where cash from employment is often used to buy the tools needed for subsistence hunting and fishing” (Government of Canada, 1996a).

“The unemployment rate in the NWT is approximately 12.9% in total” (Statistics Canada, 1999). This average is almost double that of the national average of 8.2% (as at August 1998) and the average Aboriginal unemployment is much higher yet (Human Resources Development Canada, 1999; Royal Commission on Aboriginal Peoples, 1996). “Although Aboriginal people’s living standard has improved in the past 50 years, they do not come close to those of non-aboriginal people” (Royal Commission on Aboriginal Peoples, 1996). For example, far fewer Aboriginals go on to college and university and fewer Aboriginal people have jobs. The unemployment rate is much higher in small communities than in larger communities. For example, the population of Pond Inlet is 1,154, an almost entirely Inuit population, has an unemployment rate of 26.3% (Statistics Canada, 1999). This latter case is more common and representative of communities in the Canadian Arctic.

5.1.3 Level of Education

“The [Northern] education system has not succeeded in graduating Inuit professionals – doctors, nurses, lawyers, accountants – and so non-Inuit, some of whom become committed to making Nunavut their long-term home, hold almost all of these jobs.” (Harper, 1999)

The level of formal education in the North is very low in comparison to the rest of Canada. This is in part because northern Aboriginal culture is one of oral tradition. In the past, Aboriginal peoples have taught their young at home, not the things we have learned in a formal, structured setting such as Math, English, History, but in a way quite foreign to southerners. Aboriginal youth were taken out on the land with their elders and taught about hunting, fishing and trapping, the very things they needed to know to survive as Inuit people. At home they were taught how to sew, make clothing, and prepare food (Investigative Productions and Greenwald, 1990).

Table 8 includes a detailed breakdown of the level of formal education in the coastal communities that are within the geographical scope of this research. More generally, recent polls taken by both Statistics Canada (1999) and the Government of the Northwest Territories, Bureau of Statistics (1998a, 1998b, 1999a and 1999b), indicate that:

- 48% of individuals 15 years of age or older in the NWT and Nunavut have no degree, certificate or diploma versus the national average of 37%;
- 14% of the population over 15 years of age in the NWT and Nunavut have their secondary (high) school graduation certificate in comparison with the national average of 23%; and
- 7% of the NWT and Nunavut population has completed a bachelor's degree, but this is not that far behind the national average of 9%.

Although these statistics are for both the NWT and the Nunavut Territory, the larger southern city centers within these areas skew the statistics. Less than half of the population of the NWT and Nunavut reside in remote coastal communities (Government of Canada, 1996a; Government of Northwest Territories, 1999a; Statistics Canada, 1999). The populations in these communities are small and a number of southerners go north to gain early career experience in the fields of medicine, nursing, education, natural resource management, etc. Transient community members are then included in the statistics for education levels. This results in a misleading representation of education levels within remote Arctic communities.

However, the importance placed on education is expected to change in the near future. Although education was formalized in the early 1900's with the missionary movement, the value of university has only recently been recognized for the self-empowering qualities it can provide to Inuit. The GNWT and the Nunavut Government are beginning to develop programs to encourage their youth to seek a post secondary education and take advantage of the vast opportunities they have to contribute to their communities and new levels of government.

5.1.4 Language of the North

Inuktitut, although there are diverse dialects, is the common language shared by the Inuit (Government of Canada, 1996a; Lett, 1999b). However, the Inuit language only remains strong in certain regions of Canada's Arctic. In the past, the Western Arctic has had more exposure to southerners. There is also a more diversified ethnic background in this region. Many people in these communities understand and can speak English as their first language, yet the Eastern Arctic, having had less exposure, has far fewer communities where English is spoken and understood as a first language (Table 8). For example, in Sachs Harbour, a small community of the Western Arctic, (Figure 3) the population is 135 people, with the majority of residents of Aboriginal descent. Eighty-one percent of this community speaks and understands English and only 22% speak their mother tongue. Conversely, in Pangnirtung, a large community in the Eastern Arctic, (Figure 3) the population is 1243 with only 6% of the residents speaking English and 93% speaking their mother tongue (Statistics Canada, 1999).

All of the population demographics and community characteristics (cultural, social, and economic) discussed are factors that will play a role in the effectiveness of different communication channels. There are certain channels that will be more effective at reaching this target audience than others. Furthermore, the format in which the communication is delivered will have to acknowledge and respect the northern culture, the state of the economy, the level of education, and the language spoken. Demography is another aspect that cannot be ignored. The

statistics indicate that almost half the population in Canada's Arctic is youth. Keeping demographics in mind, communication will have to follow the channels that reach the youth effectively. Stiles and Usher (1998) argue that it is essential to research and "learn as much as possible about [your target audience] – their information needs, educational backgrounds, literacy levels, familiarity with science and traditional knowledge, interests and attitudes" in order for any communication to be meaningful and successful.

5.2 COMMUNICATING IN THE NORTH

5.2.1 Northern Communication Bodies

"One of the areas where Inuit have taken advantage of modern technology has been in the field of electronic media: radio and television. Radio and television, after all make use of two age-old devices among the Inuit: creative use of the spoken word, the oral tradition and a strong visual tradition. But more significantly, Inuit access to these media has meant that they have some control over the ideas and images that flood into the North." (DLAND, 1990)

There is a small group of northern communication bodies that dominate the Eastern and Western Arctic. They are comprised of:

- CBC North (both radio and television);
- the Inuvialuit Communication Society (ICS) (both television and newspaper);
- the Inuit Broadcasting Corporation (IBC) (television);
- the Native Communication Society (NCS) (both radio and television);
- Television Northern Canada (TVNC);
- Northern News Service (newspaper), and
- Nunatsiaq News (newspaper).

These communication bodies do a great deal of work within the community and also work with a number of outside organizations to further their communication mandates. CBC North spans the entire Arctic, both Eastern and Western, whereas the communication societies and newspapers are specific to either the Eastern or Western Arctic in order to serve the unique needs of their communities and clients. These bodies have been developed to address the need for an aboriginal perspective reflective of the Arctic regions. "Over the past ten to fifteen years Aboriginal groups had expressed concerns that mainstream programming did not

adequately address their immediate cultural and social issues” (Wilson, 1994). The majority of households in the North have both a radio and television, yet the majority of programming that reaches these households consists of “distorted pictures of non-native cultures often portraying a lifestyle and set of values that are very different from those of both traditional and contemporary Inuit society” (DIAND, 1990). With Aboriginal communication bodies, the people of the North have greater autonomy, managing their own programming based on their own cultures and traditions. When developing a communication strategy for northern populations, knowing who these northern communication bodies are and how they operate is important.

Radio. The Canadian Broadcasting Corporation (CBC) established northern radio in 1958 (Department of Indian Affairs and Northern Development, 1990). CBC North has provided services and placed transmitters in communities with a population of 500 or more people. The remaining communities in the Arctic which have less than 500 people (13 communities in the scope of this research as indicated in Table 8), received assistance from the GNWT who provided transmitters. There are currently radio transmitters in 32 of the Arctic communities that are within the scope of this research, with only 3 communities having no transmitter. Recently, the GNWT stopped providing services in the smaller communities, instead they turned the transmitters over to the communities which now run community operated re-broadcasting (CORB) (Cathy Bolstad, *pers.comm.*, March 30, 1999). These communities have an agreement with CBC North and the CORB plays much of CBC North’s programming through their transmitter. There is also discussion taking place between CBC and the communities where they have transmitters to provide communities with the opportunity to air one-hour of local programming to cover anything that CBC North programming may have missed (Cathy Bolstad, *pers.comm.*, March 30, 1999). It is clear that CBC North is the major broadcaster in the North in terms of radio and working with them on any communication projects that may develop makes sense.

There are opportunities for the federal Government of Canada to receive airtime on CBC North to provide public service announcements (PSAs). "CBC recognizes the importance for the well-being of the community of many social, charitable, and artistic activities. Therefore, it makes available to qualifying private and public organizations a limited amount of free time to assist them in promoting their public service aims and objectives" (Canadian Broadcast Corporation, 1993). There are however guidelines associated with PSAs. After examining CBC's guidelines on PSAs, it is safe to say that delivering the messages of oceans conservation, the need for IM plans, MPAs and the importance of MEH fit well within the guidelines. Throughout this process it is also important to consider and abide by DFO departmental guidelines with respect to PSAs.

Furthermore, when important initiatives are scheduled to take place in relation to the *Oceans Act* and its programs, there may be an opportunity to heighten awareness through seeking a reporter to cover the 'story'. There are a number of community reporters and programming personnel with CBC North that are constantly trying to fill their time slots. If an Oceans Sector representative can contact these reporters and programming officers, there is potential to receive greater exposure in conjunction with PSAs.

Television. In the North there is a network dedicated completely to Aboriginal programming that is designed to address the concerns and issues of Aboriginal people. This network is Television Northern Canada (TVNC). It is extremely popular across the North and should be considered an effective communication channel. "TVNC consists of a group of Aboriginal Broadcast Societies [that seek] to provide television programming of direct pertinence to Aboriginal Peoples in the regions they serve" (Wilson, 1994). TVNC started broadcasting in January of 1992 to both Aboriginal and non-Aboriginal populations. The major focus of programming is directly related to the rising northern community concerns. In recent years these concerns have been over Aboriginal culture, traditional activities, language and health (Wilson, 1994).

TVNC broadcasts in both English and Inuktitut and programming consists of children's shows, accredited and general interest educational programming, cultural and current affairs, documentary features, phone-in and community discussion programs, Northern legislative and political coverage, live and special events, and activities of Indigenous Peoples of the Circumpolar World (Wilson, 1994; Television Northern Canada, 1999).

There are a number of Aboriginal Broadcast Societies that are members of TVNC. The IBC serving the Inuit of the Eastern Arctic, the ICS serving the Inuvialuit of the Western Arctic, and the NCS out of Yellowknife, are all communicating bodies serving the target audience of this research. Each of these communicating bodies develops programming that is geared to their particular target audience. It would be wise to develop a strong relationship with these communicating bodies because they are in control of their own programming and have time slots allocated by TVNC. They can air any products that they feel relate to the interests of their respective audience. Alternatively, DFO could also formally approach TVNC programming with a written proposal to air a particular product so long as it fit with TVNC's mandate for programming (e.g. Oceans conservation videos) (Jennifer David, *pers.comm.*, April 13, 1999).

Newspapers. There are a handful of newspapers that dominate the Canadian North publishing either weekly or bi-weekly (Canadian Corporate News, 1998). Northern News Services is a major newspaper provider in the North producing five newspapers for the five different regions (Table 8) (Dave Anderson, *pers.comm.*, March 30, 1999). Northern News Services produces the *Inuvik Drum*, the *Deh Cho Drum*, *Kivalliq News*, *The Yellowknifer* and *News/North*. For the purposes of this research, the Northern News Services newspapers that reach the coastal communities of the Western and Eastern Arctic are the *Inuvik Drum* (serving the Inuvik Region), *Kivalliq News* (serving the Keewatin/Kivalliq Region) and *News/North* (serving the entire Arctic). In general, Northern News Services dominates in the Western Arctic and *Nunatsiaq News* (produced out of Iqaluit, Nunavut) dominates in the Eastern Arctic. Northern

News Services produces newspapers in primarily English, whereas Nunatsiaq News produces their newspaper in both English and Inuktitut. The primary reason that Northern News Services produces in English is due to the community characteristics of their target audience. As mentioned earlier, in the Western Arctic English is usually the first language used in communicating, unlike the Eastern Arctic where Inuktitut is the primary language.

5.2.2 Structured Forms of Communication

Research indicates that there are well-defined communication channels existing in the North. Table 9 is a compilation of existing structured forms of communication, the channels of communication and the actual northern communication sources which are the larger northern communication bodies. The table also indicates the frequency of the channel's distribution and the market share of the communication source in terms of listeners, viewership and readership. The purpose for designing this table is to determine through percentage of market share, based on established statistics and personal communications, which communication sources are the most effective to communicate Canada's *Oceans Act* and its initiatives to northern populations.

The table is divided into three main forms of communication 1) audio, 2) visual and 3) print media. Audio includes radio exposure, visual, for the purposes of this market study, is television and print media consists of newspapers, journals and newsletters. Because the northern market is considered small in comparison to southern markets, many organizations do not have recent market studies done, putting a limitation on the market share analysis that could be generated. Yet, by using both the market share statistics that were available in combination with personal communication with northern communicators and community members, it became obvious which of these three forms of communication were most preferred by and effective with the northern population.

Table 9: Communication Channels in the North

Form of Communication	Communication Channel	Communication Sources	Frequency of Distribution	Market Share	City	Telephone Number
Audio	Radio	CBC North Owner of: CFWH –AM Whitehorse CHAK –AM Inuvik CFFB –AM Iqaluit CBQR –FM Rankin Inlet CFYK –AM Yellowknife Radio One – Cape Dorset Radio One – Igloodik Radio One – Fangmirtung Radio One – Pond Inlet Radio One – Resolute Radio One – Arviat Radio One – Baker Lake Radio One – Cambridge Bay Radio One – Gjoa Haven Radio One – Kugluktuk Radio One – Taloyoak Radio One – Aklavik Radio One – Tuktoyaktuk Native Communications Society of the Northwest Territories Owner of: CKLB –FM Radio CJCD –AM – Mix 100FM Yellowknife Cape Dorset FM Radio	Daily	High ¹	Yellowknife	867-669-3502
			Daily	Unavailable	Yellowknife	867-920-2566
			Daily	N/A ²	Yellowknife	867-920-4636
			Daily	Unavailable	Cape Dorset	867-897-8875

¹ CBC North has no current statistics on market coverage, yet there was consensus among personal communications in the North that CBC North has the monopoly in the Arctic communities where CBC has transmitters.

² For the purposes of this table, N/A means that the communication source is not applicable to the geographical scope of this research (communities within the scope of this study are all coastal communities and are bolded in Table 8) but is included for potential future use when communicating with the greater NWT.

Audio (cont'd)	Radio (cont'd)					
	CKQN Radio Station	Daily	Unavailable	Baker Lake	867-793-2962	
	Aquminiut Radio Station	Daily	Unavailable	Clyde River	867-924-6264	
	Gjoa Haven Radio Station	Daily	Unavailable	Gjoa Haven	867-360-6341	
	Igloodik Community Radio	Daily	Unavailable	Igloodik	867-934-9824	
	Issatikpaulik Radio Society	Daily	Unavailable	Whale Cove	867-896-9930	
	Taloyoak Broadcasting Society	Daily	Unavailable	Taloyoak	867-561-6808	
	CKRX Radio	Daily	N/A	Fort Nelson	250-774-2525	
	CHON FM	Daily	N/A	Whitehorse	867-668-6629	
	CORB ³ - Arctic Bay	Daily	High ⁴	Arctic Bay	Unavailable	
	CORB - Pelly Bay	Daily	High	Pelly Bay	Unavailable	
	CORB - Broughton Island	Daily	High	Broughton Island	Unavailable	
	CORB - Hall Beach	Daily	High	Hall Beach	Unavailable	
	CORB - Kimmirut	Daily	High	Kimmirut	Unavailable	
	CORB - Sanikiluaq	Daily	High	Sanikiluaq	Unavailable	
	CORB - Chesterfield Inlet	Daily	High	Chesterfield Inlet	Unavailable	
	CORB - Repulse Bay	Daily	High	Repulse Bay	Unavailable	
	CORB - Holman	Daily	High	Holman	Unavailable	
	CORB - Paulatuk	Daily	High	Paulatuk	Unavailable	
	CORB - Sachs Harbour	Daily	High	Sachs Harbour	Unavailable	
	CORB - Tsiigehtchic	Daily	High	Tsiigehtchic	Unavailable	
	CORB - Coral Harbour	Daily	High	Coral Harbour	Unavailable	
	CORB - Grise Fiord	Daily	High	Grise Fiord	Unavailable	
	CBC North Programs: <i>Igalaaq - Window</i> (English/Inuktitut, news and interviews) <i>CBC Northbeat</i> (news, and feature reporting, and documentaries)	Daily	86% (watch 1/week) ⁵ 58% (watch 3-5/week) 36% (watch daily)	Yellowknife	867-920-5400	
Visual	Television					

³ CORB is the acronym for Community Operated Re Broadcast. These sites were abandoned by the GNWT in 1996 and are now owned and operated by the communities (Cathy Bolstad, *pers.comm.*, March 30, 1999).

⁴ CORBs have high market reach because they are the only radio stations within the community (Cathy Bolstad, *pers.comm.*, March 30, 1999).

⁵ Percentages based on a 1997 survey of households in the Yukon and NWT (CBC North, CBC North Television Advertising Rate Card, 1999; Cathy Bolstad, *pers.comm.*, March 30, 1999).

Visual (cont'd)	Television (cont'd)	Inuit Broadcasting Corporation TV Programs: <i>Qanuq Isumavit? - What Do You Think?</i> (Inuktitut, Live Phone-In) <i>Qaggiq - Drum Dance Gathering</i> (Inuktitut - Current Affairs) <i>Qimaivvik</i> (Inuktitut, Cultural)	Tuesdays	High ⁶	Ottawa	613-235-1892
			Thursdays			
			Wednesdays			
		Inuvialuit Communications Society TV Programs: <i>Tanapta</i> (Inuvialuktun/English, Culture and Entertainment) <i>Suangaan</i> (Inuvialuktun/English, Current Affairs)	Fridays	High	Inuvik	867-777-2320
GNWT - Department of Education, Culture and Employment Programs: <i>Live and Well</i> (English, Live Phone-In Show, Health and well-being) <i>GNWT Presents</i> (English/Inuktitut, Feature Programming)	Unavailable	Unavailable	Yellowknife	867-920-6420		
Native Communications Society of the Northwest Territories Programs: <i>Dene Weekly Perspective</i> (Dogrib, Chipewyan, North Slavery, and South Slavery, News)	Fridays	High	Yellowknife	Unavailable		

⁶ The actual statistics are unavailable, yet there was a consensus among personal communications and literature that Aboriginal based programming has high viewership in the North (Wilson, 1994; Katherine Clarida-Fry, *pers.comm.*, March 22, 1999; Debbie Gordon-Ruben, *pers.comm.*, March 26, 1999; Jennifer David, *pers.comm.*, April 13, 1999).

Print	Newspapers	Northern Native Broadcasting Yukon Programs: <i>Nedaa - Your Eye</i> (English, Current Affairs) Northern News Service Owner of: <i>News North - Yellowknife</i> (867-873-4031) (NWT, Nunavut) <i>Yellowknifer - Yellowknife</i> (867-873-4031) <i>Inuvik Drum - Inuvik</i> (867-777-4545) (Inuvik Region) <i>Deh Cho Drum - Fort Simpson</i> (867-695-3786) (Fort Smith Region) <i>Kivalliq News - Rankin Inlet</i> (867-645-3223) (Keeewatin Region) <i>Tusaayaksat</i>	Mondays	High	Whitchorse	Unavailable
			Weekly (M)	Inuvik Region 52% ⁷ Baffin Region 34% Keeewatin Region 26% Kitikmeot Region 36% N/A	Yellowknife	867-873-4031
			Bi-Weekly (W, F)	Inuvik 85% All Others in Inuvik Region 18% ⁸ N/A		
			Weekly (R)			
			Weekly (R)			
			Weekly (R)	Iqaluit 11% Keeewatin Region 40%		
			Quarterly	High (All Inuvialuit receive a free copy of this newspaper shipped to them wherever they reside)	Inuvik	867-777-2320

⁷ The percentages for readership were calculated based on market coverage data from Northern News Services as at February 3, 1999. The percentages were calculated only for the communities within the scope of this research (highlighted communities in Table 8). The number of papers distributed in the communities was multiplied by three, to represent that more than one person would read a newspaper that was delivered to a single household. This number was then divided by the population of that community to give a broad sense of how many people in the community were reached by this communication source. These numbers are approximate estimates and should be interpreted with care (Northern News Services Market Coverage Reports, 1999; Dave Anderson, *pers. comm.*, March 30, 1999).

⁸ All others, refers to the remaining communities in that particular region (as highlighted in Table 8).

Print (cont'd)	Newspapers (cont'd)	Nunatsiaq News	Weekly (F)	Baffin Region 50% ⁹ Keewatin Region 36% Kitikmeot Region 19%	Iqaluit	867-979-5357
		Whitehorse Star	N/A	N/A	Whitehorse	867-667-4481
		Hub Publications Ltd.	N/A	N/A	Hay River	867-874-6577
		L'Aquilon	N/A	N/A	Yellowknife	867-873-6603
		Slave River Journal	N/A	N/A	Fort Smith	867-872-2784
	Journals	Up Here	8 issues/year	10% ¹¹	Yellowknife	867-920-4343
		Above & Beyond	Quarterly	2% ¹²	Yellowknife	867-873-2299
	Newsletters	GNWT – RWED, NWT Protected Areas Strategy: Special Places	Irregular	Unavailable	Yellowknife	867-873-7902
		Parks Canada: New Parks North	Unavailable	Unavailable	Yellowknife	867-669-2820
		DFO: HTO Newsletter	As needed	Reaches 28 HTOs in Nunavut communities	Iqaluit	867-979-8002

⁹ The percentages for readership were calculated based on market coverage data from Nunatsiaq News as at March 1998. The percentages were calculated only for the communities within the scope of this research (highlighted communities in Table 8). The number of papers distributed in the communities was multiplied by three, to represent that more than one person would read a newspaper that was delivered to a single household. This number was then divided by the population of that community to give a broad sense of how many people in the community were reached by this communication source. These numbers are approximate estimates and should be interpreted with care (Nunatsiaq News Circulation Report, 1998; Bill McConkey, *pers.comm.*, April 15, 1999).

¹⁰ This percentage is Nunatsiaq News' total distribution in the Eastern Arctic (including all communities, unlike previous calculation where they included only communities where 25 papers or more were delivered) multiplied by three. This number was then divided by the population of those communities (Nunatsiaq News Circulation Report, 1998; Bill McConkey, *pers.comm.*, April 15, 1999).

¹¹ This percentage is an estimate of how many northerners read this magazine. The total population of the communities within the scope of this research divided the number of magazines circulated in the NWT gave a percentage of how many magazines went to these communities. This is an approximate estimate, keeping in mind that a portion of these circulation numbers is hotels, travel centers, and restaurants (Up Here Circulation Information, 1999; Karen O'Hanley, *pers.comm.*, March 10, 1999).

¹² Percentage is an estimate of how many northerners read this magazine. The total population of the communities within the scope of this research divided the number of magazines circulated in the NWT gave a percentage of how many magazines went to these communities. This is an approximate estimate, keeping in mind that a portion of these circulation numbers is hotels, travel centers, and restaurants (Above and Beyond Circulation Information, 1999; Kim Kattouw, *pers.comm.*, March 10, 1999).

An Analysis of Key Communication Channels

Audio. Table 9 illustrates that audio forms of communications have high market coverage in the North. Almost every northern household owns both a radio and a television and it is not uncommon for one or the other to be on at all times either because someone is watching, listening or to have as background noise (DIAND, 1990; Steven Lowe, *pers.comm.*, March 23, 1999). The radio is a common communication channel used in the North. "Radio stations are the lifeline of smaller communities" (Lanken and Vincent, 1999). Community members listen to the radio throughout the day to keep up to date on what is happening in their community and it is not at all uncommon for local programming to be interrupted for a brief news flash (Gary Weber, *pers.comm.*, March 22, 1999). Radio programming, whether produced by CBC North or the CORB, is a communication channel that reaches the target audience daily (Cathy Bolstad, *pers.comm.*, March 30, 1999). The fact that these programs are reaching the target audience daily makes it an attractive channel for the purpose of repetition. "In these busy times it is easy to lose sight of the importance of repetition in a effective local advertising campaign. Messages have to be repeated over and over to make an impression on an audience that is bombarded daily with thousands of pieces of information" (News/North, 1999).

Visual. Aboriginal based programming produced by northern communication societies for northerners has a very large market share in the North (Table 9) (Katherine Clarida-Fry, *pers.comm.*, March 22, 1999; Debbie Gordon-Ruben, *pers.comm.*, March 26, 1999; Steven Lowe, *pers.comm.*, March 23, 1999). "Virtually all of the potential Aboriginal television and radio audience listen to or watch Aboriginal programming. Viewership can be as high as 80% in some areas" (Wilson, 1994). There are specific programs that would act as strong agents for the communication purposes of DFO (Table 9). These programs are produced by the local communication societies (the ICS, the IBC, and the NCS), CBC North, and the GNWT to serve the interests and concerns of the Inuit of the Western and Eastern Arctic.

Print. As indicated in Table 9, print media is generally effective in larger communities where population levels are higher than most other communities and there is a larger non-Inuit population. These communities would include primarily Inuvik, NT and Iqaluit, Nunavut. For example, in both the Inuvik Region and the Baffin Region, newspapers reach approximately 85% (*The Inuvik Drum*) and 50% (*Nunatsiaq News*) respectively (Table 9). This statistic is higher than the smaller communities in the Keewatin/Kivalliq Region (*Kivalliq News* reaches approximately 40%) and the Kitikmeot Region (*News/North* reaches approximately 36%) (Table 9). These numbers support the findings that print media are more effective in the larger Arctic communities. There is however a smaller newspaper produced by the ICS worth mentioning. *Tusaayaksat*, although irregular and dependent on available funding, when published reaches every Inuvialuit regardless of residential location. This wide distribution makes it a valuable tool when trying to communicate with the community members of the Western Arctic.

Journals and newsletters in general are not effective communication channels for reaching northern coastal community populations. On average the two major journals in the North, *Up Here* and *Above and Beyond*, reach approximately 10% and 2% respectively (Table 9). One newsletter that does however have strong potential to reach coastal community populations is the newsletter produced by the DFO, Eastern Arctic Office which is distributed to 28 Hunters and Trappers Organizations in the Eastern Arctic.

Educational System

Schools are a major environmental learning source, providing important information to children (Lien, 1992). Therefore, the northern educational system is considered another source of structured communication and should be treated separately from the audio, visual and print forms of communication. As previously mentioned, the youth population in the North is soaring with a birthrate double that of the national average. These statistics indicate that this sector of the population is large and should be addressed in any communication strategy that is seeking to reach northern communities. Educational jurisdictions

in the North are divided into ten districts, which include the (Government of the Northwest Territories, 1999b):

- Baffin Divisional Education Council;
- Beaufort/Delta Divisional Education Council;
- Deh Cho Divisional Education Council;
- Dogrib Divisional Education Council;
- Keewatin Divisional Education Council;
- Kitikmeot Divisional Education Council;
- Sahtu Divisional Education Council;
- South Slave Divisional Education Council;
- Yellowknife Education District #1; and
- Yellowknife Education District #2.

For the purposes of this research only the Baffin Divisional Education Council, the Beaufort/Delta Divisional Education Council, the Keewatin Divisional Education Council, and the Kitikmeot Divisional Education Council were researched extensively. Table 10 is a comprehensive list of the schools that are under the jurisdiction of these four education councils.

After researching two major northern curriculum documents: *Piniaqtavut* and *Imnuqatigiit*, it became obvious that these schools are well advanced in their understanding of the environment and our human dependence on the environment (Government of the Northwest Territories, 1996; Baffin Divisional Board of Education, 1989). This heightened awareness no doubt stems from their culture, which has traditionally been tied to the land. The Divisional Educational Councils have worked closely with teachers, elders and community members, developing curriculum documents that highlight Inuit values and beliefs and how they can be incorporated into northern schools. The curriculum “expresses what is important to Inuit: respect for yourself, family, other people and everything that belongs to the environment” while at the same time seeks to develop “the skills [students] need to succeed within contemporary Canadian society (Government of the Northwest Territories, 1996; Baffin Divisional Board of Education, 1989).

Children in the North, under the developed curriculums, learn about the importance of the sea throughout their entire elementary and secondary academic

Table 10: Schools of the Inuvik, Baffin, Keewatin and Kitikmeot Regions
 (Source: Lorne Levy, *pers.comm.*, March 23, 1999; Cathy Canavan, *pers.comm.*, March 25, 1999; the Kivalliq Divisional Education Council, *pers.comm.*, September 16, 1998; the Kitikmeot Board of Education, *pers.comm.*, September 16, 1998)

Region	Educational Jurisdictions	School	Community	Telephone
Inuvik Region	Beaufort/Delta Divisional Education Council	Angik School	Paulatuk	867-580-3201
		Chief Julius School	Fort McPherson	867-952-2131
		Chief Paul Niditchie	Tsiigehtchic	867-953-3211
		Inualthuyak School	Sachs Harbour	867-690-4241
		Mangilaluk School	Tuktoyaktuk	867-977-2255
		Moose Kerr School	Aklavik	867-978-2536
		Samuel Hearne Secondary School	Inuvik	867-777-7175
		Sir Alexander Mackenzie	Inuvik	867-777-7180
		Helen Kalvak School	Holman	867-396-3804
Baffin Region	Baffin Divisional Education Council	Nanook School	Apex	867-979-6597
		Inuujaq School	Arctic Bay	867-439-8843
		Inuksuit School	Broughton Island	867-927-8938
		Pitseolak School	Cape Dorset	867-897-8826
		Sam Pudlat School	Cape Dorset	867-897-8332
		Quluq School	Clyde River	867-924-6313
		Umimmak School	Grise Fiord	867-980-9921
		Arnaqjuaq School	Hall Beach	867-928-8855
		Ataguttaaluk High School	Igloolik	867-934-8600
		Ataguttaaluk Elementary School	Igloolik	867-934-8996
		Inuksuk School	Iqaluit	867-979-5281
		Joamie School	Iqaluit	867-979-6206
		Nakasuk School	Iqaluit	867-979-5335
		Qaqqalik School	Kimmirut	867-939-2221
		Allurut School	Nanisivik	867-436-7350
		Attagovuk School	Pangnirtung	867-473-8815
		Alookie School	Pangnirtung	867-473-8803
		Takjualuk School	Pond Inlet	867-899-8864
		Ulaajuk School	Pond Inlet	867-899-8964
Qarmartalik School	Resolute Bay	867-252-3888		
Nuivak School	Sanikiluaq	867-266-8816		
Kivalliq Region	Kivalliq Divisional Education Council	Levi Angmak Elementary School	Arviat	867-857-2547
		Qitiqliq Secondary School	Arviat	867-857-2778
		Rachel Arngnamaktiq Elementary	Baker Lake	867-793-2513
		Jonah Amitnaaq Secondary School	Baker Lake	867-793-2842
		Victor Sammurtok School	Chesterfield Inlet	867-898-9913
		Sakku School	Coral Harbour	867-925-9923
		Leo Ussak Elementary School	Rankin Inlet	867-645-2814
		Maani Ulujuk Ilinniarvik School	Rankin Inlet	867-645-2761
Simon Alaittuq Ford Secondary School	Rankin Inlet	867-645-2761		

Kivalliq Region (cont'd)	Kivalliq Divisional Education Council (cont'd)	Tusarvik School	Repulse Bay	867-462-9920
		Inuglak School	Whale Cove	867-896-9300
Kitikmeot Region	Kitikmeot Board of Education	Kiiliniq High School	Cambridge Bay	867-983-2726
		Kullik School	Cambridge Bay	867-983-2720
		Kugluktuk High School	Kugluktuk	867-982-4406
		Jimmy Hikok School	Kugluktuk	867-982-5001
		Qiqraq School	Gjoa Haven	867-360-7414
		Netsilik School	Taloyoak	867-561-6606
		Kugaardjuq School	Pelly Bay	867-769-6211

career. Figures 14 and 15 illustrate the basic foundations that teachers in the North are expected to teach with. It is clear that the sea and Inuit dependence on the sea is taught throughout the schooling process. With such a strong environmental education foundation in the North, there are numerous possibilities that DFO could pursue within the Northern educational system in terms of communicating the importance of the *Oceans Act*, its programs and the potential the Act has to protect their way of life.

5.2.3 Unstructured Communication

The structured communication channels (radio, television, newspapers, journals, newsletters, and the educational system) in the North have been well addressed. It is also important to mention the 'unstructured' forms of communication in the North. Because of the nature of Arctic communities (e.g. small populations of primarily an oral culture) unstructured communication can be very useful in certain situations. There are a number of unstructured communication channels in the North that are statistically unmeasured in terms of success in reaching the target market, yet there is a general consensus by many in the North that these channels are extremely effective in reaching the local population. Face-to-face contact has been highly recommended by many communication experts, especially if there is communication that will need to take place with elders in the community (Patricia Fitzpatrick, *pers.comm.*, March 29, 1999; Zoe Raemer, *pers.comm.*, March 29, 1999). A shortlist of the unstructured communication channels could consist of:

- posting notices and information on the local bulletin boards at the post office, the Northern Store (the large store that supplies groceries, clothes, and numerous other supplies), the Church, the College, etc.;
- using VHF radios to communicate with outpost camps during the summer months;
- verbal communication with community members (in small communities of sometimes 300 people, word and news travel fast); and
- placing advertisements on the local television station. Every community has a channel that airs all the local advertisements from such things as upcoming

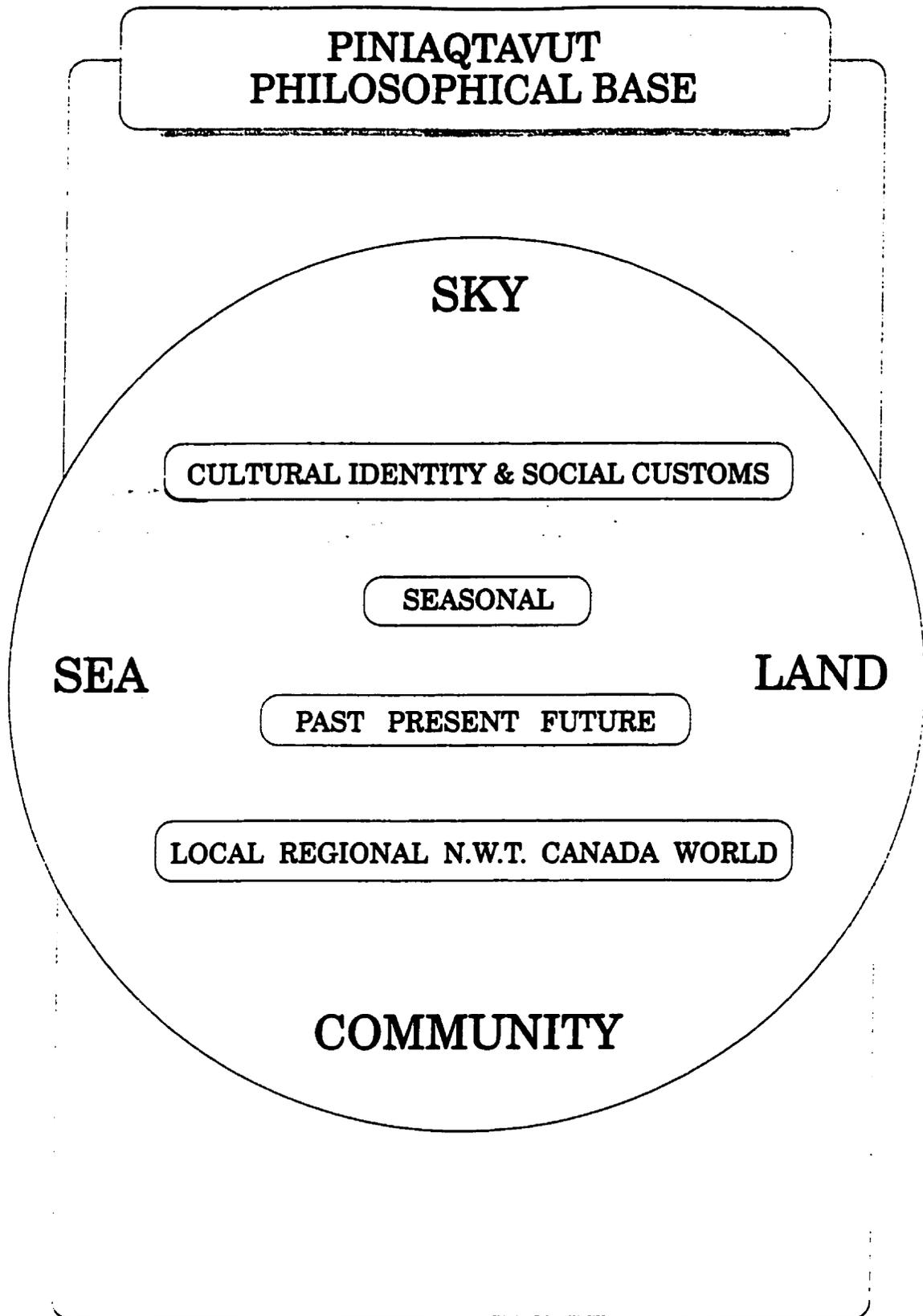


Figure 14: Foundations for Teaching Curriculum in the North (Source: Baffin Divisional Board of Education, 1989)

**RELATIONSHIP
TO THE
ENVIRONMENT**

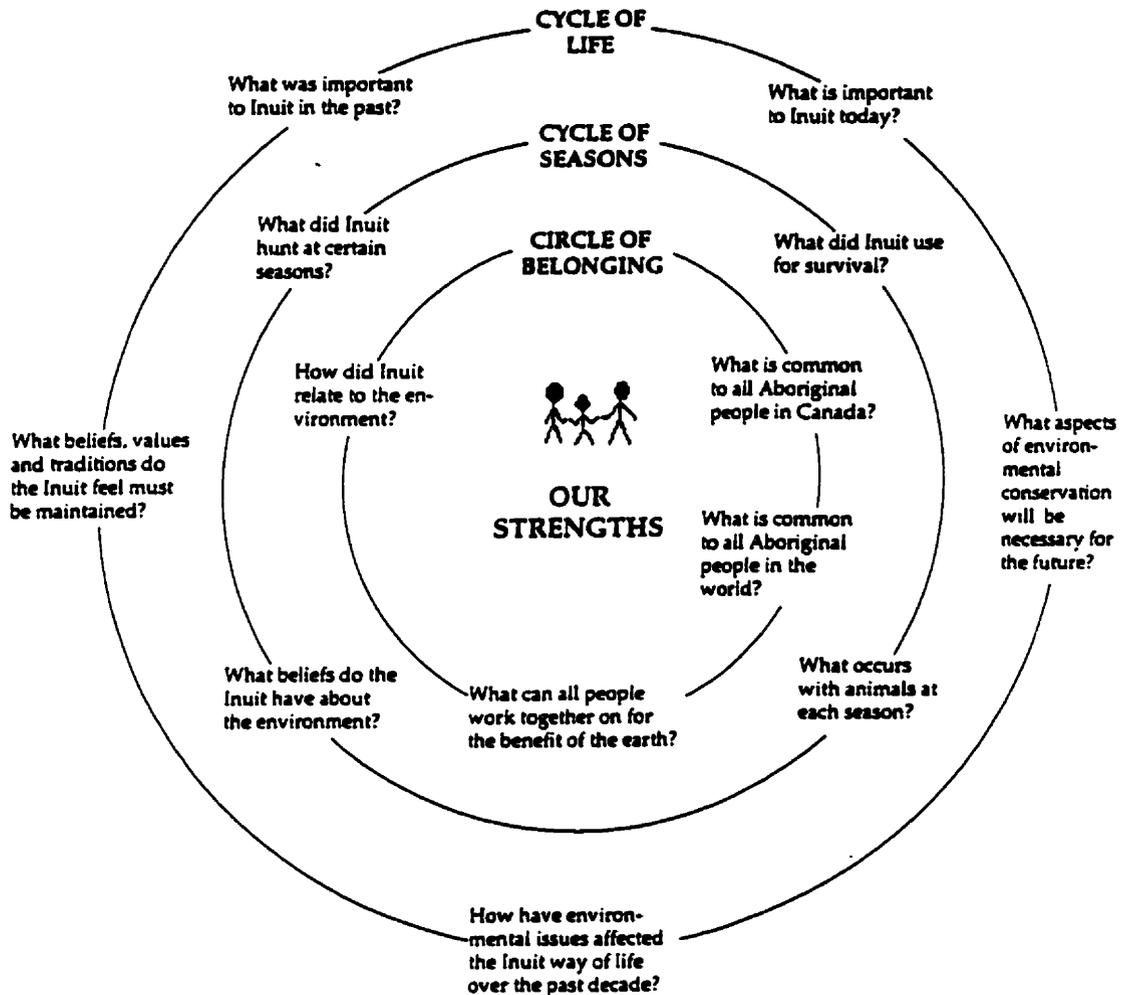


Figure 15: Foundations for Teaching Curriculum in the North (Source: Government of the Northwest Territories, 1996)

social events, meetings, to who is selling their snowmobile. For example, in Inuvik, NT the station is called Inuvik TV and it airs all the advertisements for the community on channel 4.

These types of communication would prove to be useful when there is a scheduled event such as a community consultation that is to take place, the announcement of a MPA, or the yearly celebration of Oceans Day.

5.3 SUMMARY

There are definite conclusions that can be drawn after speaking with northern communication experts. Primarily, there are certain communication channels that will be more effective than others in terms of communicating what the *Oceans Act* is and why *Oceans Act* Initiatives are important. In general, out of the three structured forms of communication (audio, visual, and print) print has been touted as the least effective when trying to communicate with Arctic coastal communities (Zoe Raemer, *pers.comm.*, March 29, 1999; Steven Lowe, *pers.comm.*, March 23, 1999; Andy Swiderski, *pers.comm.*, December 12, 1999). Audio and visual forms of communication have more success because they appeal to and stimulate ways of communicating traditional to Inuit. According to Zoe Raemer, Director of Communications for the DIAND, the order of priority for a communications strategy targeting the North should be face-to-face contact first (if possible), appealing to the visual or audio sense second, and developing written materials last (Zoe Raemer, *pers.comm.*, March 29, 1999). Working with the northern educational system is a must. The general northern population demographics and community characteristics that have been researched illustrate the abundance and importance of the youth sector in the North, indicating the northern educational system should play a large role in communicating the *Oceans Act* and its importance.

PLATES

1. **The community of Iqaluit, Nunavut.**
2. **A stop sign in Iqaluit, Nunavut displaying both Inuktitut and English.**
3. **The Nunavut Arctic College, Nunatta Campus (Arctic College Headquarters), Iqaluit, Nunavut.**
4. **Children's school work on display at the Baffin Divisional Education Council, Iqaluit, Nunavut.**

(Photographs: Andrea Lamboo)



CHAPTER 6: CONCLUSIONS: A COMMUNICATION STRATEGY

6.0 INTRODUCTION

There were three major objectives of this research. They included (1) identifying and documenting ocean activities and resource uses in the Central and Arctic Region, developing a catalogue of uses for the area, (2) identifying the resource users and stakeholder groups that are affected by ocean activities and decisions made regarding the resources (e.g. allocation rights), developing a database for future reference, and (3) developing a communication strategy for the communication of Canada's *Oceans Act*, and its programs to meet the information needs of the Arctic coastal communities of the Central and Arctic Region. The strategy was to be designed for the northern stakeholders of the Central and Arctic Region. Objectives 1 and 2 have been addressed in Chapter 4. This chapter addresses objective 3. Within the strategy, a number of potential communication tools are outlined to aid in communicating the Act and its programs. This strategy is based on extensive research and findings, highlighted in Chapter 5.

The *Oceans Act* is a national piece of environmental legislation. The DFO is the lead agency delegated to implement the Act. DFO national headquarters is working collectively with its five regions (Figure 1) to implement the Act through program development. Naturally, DFO headquarters has developed a national communications plan for the Oceans Sector. DFO, Central and Arctic Region has also developed a strategic communications plan for the new Sector. The communication strategy outlined in this chapter fits into the larger framework, complementing the goals and objectives that have been identified in both the national and regional communication plans. Throughout the duration of this research, participation in the National Program Marketing Working Group (which consisted of representatives from each of the DFO's five Regions) provided close contact with national and regional efforts that have been taking place with regards to the *Oceans Act* and *Oceans Act* initiatives. Whether communicating at the regional or national level, although the form of communication and channel utilized will be different based on stakeholder information needs in the Regions,

the message itself should not change only the way the message is communicated. Therefore, it became important when developing the strategy to research what was happening at the national level and understand where the DFO, Central and Arctic fit in as a Region.

6.0.1 National and Regional Communication Plans

National Communications Plan...

"The purpose of [the national] communications plan is to provide the Oceans Directorate within Fisheries and Oceans Canada with a plan to "bridge" the information needs of its stakeholders and target audiences and to provide a coordinated approach to the Directorate's communications planning. [At this point] no formal mechanism exists to identify the information requirements of the various target audiences... a more formal target audience scanning mechanism is required to ascertain the information needs of target audiences." (Westbrook and Harris, 1999)

DFO's Central and Arctic Region's Strategic Communications Plan...

"The [Central and Arctic Region's] strategic communications plan is very broad in its approach because it is necessary to look at the 'big picture'. It is recommended that individual communications plans/strategies be prepared to address specific needs." (Smith, 1999)

The national and regional communication plans are broad and identify national/regional communication objectives, target audiences and key messages. These plans provide a strong, consistent foundation that can be built on when developing future plans or strategies. There are a number of stakeholder groups identified as target audiences in these plans, each with very different population demographics, economic systems, traditions, cultures, values and beliefs. How respect for the oceans fit with their value system and how their activities, business, and lifestyle relate to oceans becomes very important when trying to communicate with these groups. These differences illustrate the need for tailored approaches to communication when communicating the *Oceans Act* and its three programs. The communication strategy outlined below is tailored to the information needs of the northern stakeholders of the Central and Arctic Region.

According to the framework for developing an *Oceans Act* communication strategy, as outlined in the methods section (Figure 2), developing the actual strategy is completing steps five, six, and seven. The strategy focuses on tailoring the message to a particular stakeholder group (coastal communities), outlining

communication avenues to relate the message (based on research that determined the most appropriate methods of communication for that particular group), and addresses the importance of feedback loops to ensure the communication methods chosen have been successful. This is only one strategy. Further strategies should be developed that target the remaining stakeholder groups which have been identified as having oceans related activities. Even though information needs will be different, the same framework can be applied to all stakeholder groups. It can provide a working plan of how to develop a tailored communication strategy. The strategy outlined below is presented in the generally accepted format for communication strategies, which has been provided by the DFO Communications Directorate.

6.1 A COMMUNICATIONS STRATEGY FOR THE ARCTIC COASTAL COMMUNITIES OF THE CENTRAL AND ARCTIC REGION

6.1.1 Issue

The development of a communications strategy to communicate the key messages of Canada's *Oceans Act* and its three programs - MPAs, MEH and IM - to the Arctic coastal communities of the Central and Arctic Region. The strategy will highlight the communication channels that have been researched to be the most effective when communicating with northern communities. It will also outline potential communication tools that can utilize successful channels to communicate key messages.

6.1.2 Background

In January of 1997 the Government of Canada passed through legislation Canada's *Oceans Act*. Under the Act, the DFO was appointed the "lead federal department for the management, conservation and protection of Canada's oceans resources", where DFO would be responsible for implementing the *Oceans Act* and developing *Oceans Act* initiatives. The Act is intended to foster a new method

of participatory management, changing the direction of current oceans management.

The Act was developed to address the need for an integrated approach to managing potentially competitive ocean activities. One of the immediate goals of the Government of Canada, with regards to the Act, is to expand working partnerships among oceans stakeholders and increase their responsibility and accountability by raising awareness surrounding the importance and dependence on world oceans. The need to inform stakeholders and user groups of their growing role in oceans management is forefront.

The stakeholders of the Central and Arctic Region are diverse with different cultural, ecological, and economic backgrounds. These differences need to be valued and respected if the *Oceans Act* and integrated ocean management are going to be well received and supported. With these key points in mind, developing a communication strategy to communicate the *Oceans Act* becomes a priority for the DFO. The DFO needs to find effective ways to communicate the Act and relay the message in a form that is interesting, important, and relevant to the targeted stakeholder(s).

6.1.3 Communications Objectives

1. To effectively communicate Canada's *Oceans Act* and DFO's leading role under the Act to the DFO's clients;
2. To raise awareness and understanding surrounding oceans issues, emphasizing the importance of and our dependence upon ocean resources and oceans functions;
3. To raise awareness as to the need to protect and conserve oceans resources for future generations; and
4. To promote and encourage participation in the oceans activities management process.

6.1.4 The Communications Process

Communicating the *Oceans Act* and its programs, as with any other communication, follows the process outlined in Figure 9. It is now possible to revisit Figure 9, *The Communication Process*, and link the DFO, the *Oceans Act* and its programs to this general schematic. To communicate the *Oceans Act* and its programs the DFO (the source) will encode the key messages of the Act based on the communication channels that have been researched and identified as having the greatest level of success with the target audience (receiver). Basically, this means communicating the Act based on the findings documented in Chapter 5. Chapter 5 highlighted important population demographics and community characteristics, as well as, the most heavily used communication channels in the North. Utilizing the findings in Chapter 5 can ensure that these important population demographics and community characteristics are considered and built into the communication process so that northern communities (receivers) can decode key messages to the best of their abilities, based on language, education, etc.

Mass distribution of general *Oceans Act* information has been disseminated and the Oceans Sector is now looking towards building the relationships needed to foster lasting partnerships and potentially change behaviors. Over time, through relationship building, heightened general awareness can be achieved regarding the importance of, dependence on, and need for protecting Canada's oceans. Heightened general awareness can foster changes in Canadians' attitudes and behaviors towards our oceans environment. Building partnerships and changing behaviors can be direct results of effective communication. "Communication [should be] an ongoing process, and not simply as [a one-stop] conveying of information. Effective communication is a two-way, interactive, on-going process" (Stiles and Usher, 1998).

6.1.5 Target Audience

The Canadian public is made up of a variety of oceans stakeholder groups, each group having different communications needs. As noted earlier in Chapter 1,

the Government of Canada has developed a list of these stakeholders. This list has been further refined in both the national and regional communication plans. According to these plans, the broad groups that will be targeted for *Oceans Act* communication in the Central and Arctic region include (Westbrook and Harris, 1999; Smith, 1999):

- Residents of the Canadian Arctic (coastal communities, land claim boards, local governments, municipal associations, school children/youth, and community leaders/elders);
- Internal DFO agencies;
- International/Federal/Territorial/Provincial/Municipal government agencies with oceans related activities;
- Special interest groups;
- Marine Industry (mining, oil and gas exploration, tourism operators, shipping and transport, fisheries);
- Academic Community;
- Scientific Community;
- Youth;
- Environmental NGOs with oceans related interests;
- Environmental Action Groups; and
- General public/Canadians.

The broad target audience for the communication of Canada's *Oceans Act* is large. The target audience for this research, are the residents of Canada's North, in particular those who inhabit the coastline of the Arctic Ocean. Many representatives of special interest groups, the academic community, and youth are part of these communities. The narrow scope of this research in no way implies that the remaining target audiences are any less important or that the communication suggestions outlined in this strategy are not applicable to them. The narrower scope is simply to keep the size of the research manageable and specific to the target audiences' demographics, community characteristics and information needs for greater applicability and communication success.

6.1.6 Where

The primary areas of interest are the coastline communities of the Canadian Arctic (Figure 3). In particular, it is the communities that are covered under both the IFA, 1984 and the NLCA, 1993 (Figure 3). These areas cover vast tracts of land and are sub-divided into four major regions known as the Inuvik Region, Kitikmeot Region, Keewatin/Kivalliq Region, and Baffin Region. Each Region has their own distinct culture and is represented by their own Inuit Associations and educational jurisdictions.

6.1.7 Key Messages

"In order to address the many interrelated social, economic, and ecological problems that face the world today, humanity must undergo a radical change in its attitudes, value and behavior. An integrated vision of the basic ethical principles and practical guidelines that should govern the conduct of people and nations in their relation with each other and the Earth is urgently needed." (Rockefeller, 1996)

The primary message is Canada's *Oceans Act* and its three programs – IM, MPAs and MEH. However, it is not enough to simply communicate the Act and its three programs. The message must be strong "since it will likely be in competition with several thousand other messages reaching the same individuals every day, no matter how remote the community" (Stiles and Usher, 1998). Stiles and Usher (1998) have a few suggestions for crafting effective messages. They recommend creating positive messages, appealing to the target group's needs – psychological, social, economic, emphasizing how a desired behavior or action will benefit the target group, personalizing the message as much as possible, and making each message brief, appealing understandable, memorable, convincing, relevant and technically correct.

Basically, the Oceans Sector will need to communicate what exactly the *Oceans Act* and its three programs will mean to Arctic Ocean stakeholders and more specifically residents of Northern communities. The key messages communicated should be based on three important questions, 1) how does the ocean affect us, 2) how do we affect the ocean, and 3) how can Canada's *Oceans*

Act and its three programs help to balance our dependence on and development of oceans.

Sustainable development, the precautionary principle and integrated management, as they relate to marine protection and conservation, are the foundations of the Act. Accordingly, communication with stakeholders should address the importance of these foundations in oceans management in layman terms and how they relate to northern residents. Coastal residents tend to hold a more utilitarian view of oceans than inland people do (Lien, 1992). Therefore, communicating how the Act relates to their ocean values is crucial.

For example, MEH is important for ocean resource sustainability, which is directly related to the survival of Inuit cultures, and the traditional legacy of dependence on sea life. MPAs employ the precautionary approach by setting aside certain habitats crucial to marine species, avoiding unwanted conditions such as overfishing, habitat degradation by development, and can ultimately protect the culture and tradition of subsistence harvesting in the Arctic. MPAs are also flexible by design and can accommodate development at certain times of the year, if that is what residents believe would be most beneficial. IM can then provide the cohesive management plan that will take into consideration these important issues and stakeholder viewpoints to ensure that a coastal area is managed in a manner that is widely accepted by all individuals involved with and affected by the area. How these programs will be implemented and ultimately affect the people with Arctic Ocean interests are very important to communicate.

The ultimate goal of communicating the *Oceans Act* and its programs is to raise the level of awareness through conservation education initiatives and provide individuals with a greater understanding enabling them to respond to environmental issues in a knowledgeable way. The tools outlined below can be used for this exact purpose. They are tailored to incorporate the demographics, community characteristics and information needs of northern stakeholders.

6.1.8 Potential Communication Tools

There are a number of communication tools that could be used to communicate the key messages of the Act and its three programs. Because the recommended communication tools are based on extensive research in and about the North, the probability that information will reach northerners in a way that is meaningful to them is higher. Many of the recommended communication tools will take time and effort to develop but will be beneficial in the long-term communication efforts of the Oceans Sector. Furthermore, there are many opportunities for cross utilization. For example, if developed using plain language, communication tools can be used in a number of different venues. Tools that were originally developed for radio or television use can also be utilized in classrooms, visitor centers, on community tours, at conferences, and so on to increase exposure and cost effectiveness in developing these products.

The recommendations listed are in order of priority based on personal observations from community visits, unstructured interviews with northern communicators, literature reviews, and researched effectiveness of northern communication channels. Immediate community needs, and the cost, time and effort involved in developing and implementing the suggested communication tools also played a large role in prioritizing the suggestions.

Ideally, the first step for the DFO is to develop stronger links and partnerships with northern communities. Public relations or educational efforts should begin as early in management planning processes as possible (Lewis, 1996). In my opinion, the programs under the Act will only be as strong as the partnerships built behind them. This involves direct contact initially, to let the communities know who the Oceans Sector is, what their mandate and goals are, and how the DFO can work together with local communities to manage the ocean resources in the North. The Oceans Sector, working closely with other DFO sectors, needs to be more visible in the North. This can be accomplished by scheduling regular community visits or by placing/hiring community liaisons who actually live and work in northern communities. Through regular community visits or the work of the community liaison, strong ties can be built between the

DFO and community members, northern communication bodies, and northern schools.

With stronger ties developed between the DFO and northern groups there will be greater opportunity to reach communities using the educational materials the Oceans Sector will develop (e.g. oceans conservation videos, written articles, educational “ToolKits”, “edutainment” productions). Furthermore, with partnerships, the DFO will have a greater understanding of the specific needs, audiences, and circumstances in communities. It is argued that understanding these specifics is crucial in effective education/public relations programs (Lewis, 1996).

A number of the following recommendations are already being developed, yet it is important to mention them here for the sake of consistency. It is also important to note that these suggestions are part of a general strategy, whether or not they are feasible will depend on the Oceans Sector’s funding, time restraints, etc., variables that are uncertain at this point. Further work plans should be developed when implementing these suggestions to provide specific dates, timelines, budgets, etc. The recommendations include:

1. Direct Contact;
2. Working with Community Liaisons;
3. Developing Educational Materials; audio, visual and print and Strong Links to Northern Communication Bodies;
4. Developing an Oceans Webpage;
5. Ensuring continued participation in the National Oceans Conservation Program Marketing Working Group;
6. Developing a Calendar of Events;
7. Establishing a Speakers’ Bureau;
8. Developing an Educational Program Inventory;
9. Establishing Partnerships with Northern school systems;
10. Developing a Portable Educational “ToolKit”; and
11. Utilizing “Edutainment” as a communication tool.

1. Direct Contact. Historically, culture and traditions of the North have been primarily based on oral and visual communication. Direct contact is often

the most effective communication when working with community members. Once in the community, direct contact is also manageable due to the nature of the size of Arctic communities. Community tours and “virtual symposiums” are two options that could be used to facilitate direct contact with Arctic community members. Community tours are extremely useful to seek exposure in the community and they allow community members to associate a face with a name/organization. There have been some community tours done by the Oceans Sector to raise awareness surrounding the Act, primarily in the Western Arctic. More direct contact is always useful. Virtual symposiums can also be used to get important members of the community together providing a forum for direct contact. Virtual symposia take advantage of telecommunication technology such as videoconferencing, teleconferencing, live broadcast, and Internet applications. They are cost effective, saving large amounts of money and time that would otherwise need to be spent on travelling, and are extremely participatory (Katherine Clarida-Fry, *pers.comm.*, March 22, 1999).

Virtual symposia have been very successful in the North connecting northerners and bridging the distance between communities in the North. The Inuit Communications Systems Limited (owner of the IBC) has been a pioneer of northern virtual symposiums organizing them for clients such as the GNWT, Environment Canada, and the Nunavut Implementation Committee. They have covered many important issues in the North spanning from National Aboriginal Career Symposiums (1997) to the Price of Progress – Global Pollution in the Arctic (1997) to the Future of Work in Nunavut (1997) to Self Esteem for Young Women (1995) (Katherine Clarida-Fry, *pers.comm.*, March 22, 1999).

There are of course both strengths and weaknesses associated with direct contact as a method of communication.

Strengths

- Direct contact provides the opportunity to relay the message one on one with community members, addressing their concerns and questions first hand avoiding the potential for “noise” to alter the original message;
- Provides for two-way communication;
- Clear and consistent message;

- Uses a method of communication that emphasizes Inuit traditional forms of communication, an oral and visual history of story telling;
- Face to face communication is the most effective form of communication (Zoe Raemer, *pers.comm.*, March 29, 1999; Andy Swiderski, *pers.comm.*, December 12, 1998; Patricia Fitzpatrick, *pers.comm.*, March 29, 1999);
- Addresses the northern population demographic issues of low literacy;
- Establishes contact within community, builds consistency, develops partnerships with community Inuit Associations; and
- Provides immediate feedback.

Weaknesses

- Extremely expensive and time consuming to travel throughout the North;
- Presentations are usually in English, which may show a lack of respect for traditional language;
- High dependence on strong communicator who knows the way of life in the North, who is cross-culturally sensitive and respectful, and who has researched how to present successfully in the North. For example, it is necessary to make presentations relevant, communicate in a manner that caters to audiences' particular learning style, translate materials into the aboriginal dialect as a sign of respect, keep it simple, clear and concise using plain language, avoid tables, use analogies when speaking of measurement terms, make appropriate use of humor, always remembering less is best (Stiles and Usher, 1998);
- Logistical considerations such as strong funding and manpower for direct contact projects, timing, and translators are not always available; and
- Lack of planning with other government agencies working in the area can result in overlap, confusion, and unnecessary disjointedness.

2. Working with Community Liaisons.

"Community leaders – those who are influential in shaping attitudes and actions in the community – are the people you need most to engage in an effective public relations or environmental communication program. They are your potential communication partners, without whom you can not succeed." (Harrison, et.al., 1988)

The Oceans Sector may wish to work closely with community liaisons when engaging in direct contact. The Oceans Sector can communicate with liaisons, illustrating the key messages of the Act and what they hope to accomplish (e.g. a MPA in the Region, MEH community monitoring programs,

etc.). The community liaisons need to be someone who is credible on the community's terms, who is an information gatherer and a spokesperson (Lien, 1988). The key individual also needs to be the person who spreads the message, informs, educates, and maintains contact (Lien, 1988). Fostering consistent interaction between the liaison and community members is a strong step toward removing distrust in the planning and implementation of *Oceans Act* programs.

3. Developing Educational Materials and Strong Links to Northern Communication Bodies. As summarized in Chapter 5, there are a handful of large communicators in the North, and the formal communication channels include radio, television, and print media. In the early stages of the program, it would be wise to develop relationships with these large northern communicators who have communicating capabilities in the North to ensure that they are familiar with the program and will cover stories as they develop, e.g. the announcement of a MPA in the Arctic. "Working with existing communication societies to co-communicate, increases reliability, decreases costs, and increases buy-in" (Zoe Raemer, *pers.comm.*, March 29, 1999). In fact, the Oceans Sector is currently doing much of the work needed to build the relationships between the Sector and the northern communication groups. Currently, there are newspaper articles being developed for the northern newspapers, storytelling audiotapes are being developed for the northern radio stations, and two videos (one nearing completion) have been developed for potential airing on TVNC.

Seeking publicity to cover good news stories is another reason why strong links to northern communication bodies is crucial. However, it is important to be careful, remembering that the North is a highly political area and "the media is extremely influential and often what media says becomes fact. [Therefore] you will need a good spokesperson, who is well prepared and well trained to deal with northern media effectively" (Zoe Raemer, *pers.comm.*, March 29, 1999). However, if journalists are dealt with carefully, they can be most helpful for environmental education work (Clark, 1996).

4. Developing an Oceans Web Page.

"Peter Ernerk was on the phone from Iqaluit, dealing in facts and figures about Nunavut, when he stopped and said, "Why don't I just send an e-mail?" And then he stopped again and said, "You know, sometimes I'm amazed. Forty years ago I was living in an igloo. Now I'm sending e-mails." (Lanken and Vincent, 1999)

The Internet has become a very important information source and communication tool in today's technological world. It has served to connect communities and individuals, including those that are remote, all over the world. Developing an Oceans Web Page would be beneficial for the Oceans Sector. The website could be used as an educational tool as well as a valid source of information to be used by a variety of target audiences including northern communities. In fact, there is an Oceans Web Page in progress that will be a regional website focused on the *Oceans Act* and *Oceans Act* Initiatives specific to the Region. Once completed this site should be linked to DFO's National Web Pages (<http://www.oceansconservation.com> and <http://www.oceanscanada.com>), that are provided and maintained by DFO Headquarters in Ottawa. By linking the Central and Arctic Region's Oceans Web Page to DFO headquarters pages, the site will be close to the remaining four DFO regional sites, reducing confusion for the end user. The site should include:

- general information regarding the Central and Arctic Region, the people and the area;
- what the Oceans Sector is;
- what the need for the Oceans Sector is;
- who the main stakeholders of the region are;
- what the Arctic Ocean conservation issues are;
- regularly updated information regarding scientific activities and community monitoring programs;
- real life case studies to illustrate the meaning/implications of the *Oceans Act*;
- an interactive page targeted to the youth sector of the population; and
- important links to other agencies or groups that have oceans related interests and responsibilities.

There are a number of organizations that have done exciting and creative things using the Internet. For example, the Arctic Borderlands Ecological

Knowledge Co-operative, whose “purpose is to bring together traditional knowledge and scientific knowledge to monitor change in the range of the Porcupine caribou herd”, has in collaboration with the Department of Environment developed a website where community members can enter information (the actual website can be located at <http://www.taiga.net>) (Berkes, *et.al.*, 1999). This concept of community monitoring can be directly related to *Oceans Act* programs and ocean resource issues. For example, marine mammal migration patterns, climate change and country food contamination monitoring can be done by community members and directly related to stakeholder participation in monitoring MEH. Findings from community monitoring programs can highlight areas that would be best served by MPAs and where there is a need for IM plans.

Industry Canada has a strong initiative called SchoolNet that seeks to connect schools all over Canada to the Internet and provides services (see SchoolNet’s webpage at <http://www.schoolnet.ca>) (Industry Canada, 1999). Canada’s SchoolNet was established in 1993, and is designed to “promote the effective use of information technology amongst Canadians by helping Canadian schools and public libraries connect to the Internet” (Industry Canada, 1999). As a result of the *Grass Roots Program*, an initiative of Canada’s SchoolNet, many Canadian schools, including the North, are on-line. In fact, Leo Ussak School in Rankin Inlet boasts an award winning home page (see their website at <http://www.arctic.ca/LUS>). Using the Internet to communicate with northern classes could be used as a cost-effective way to reach this target audience provided it is used in collaboration with other communication tools. The Internet could provide a forum for northern classes to communicate with southern classes, elders, scientists, and international schools of the circumpolar Arctic. The possibilities are endless.

Although the Internet is an excellent source to get information out to the public, there are some pitfalls associated with using the Internet as a communication tool that should be addressed when designing a webpage. Listed

below are some strengths and weaknesses associated with using web pages to communicate key messages.

Strengths

- the Internet is global with the ability to connect remote communities;
- fairly inexpensive way to communicate;
- if used properly can be a strong tool used to communicate with younger generation; and
- can build feedback loops into web page to monitor how many people are visiting the site and the duration of their visit.

Weaknesses

- the potential to remain static;
- often poor marketing and exposure of sites leads to limited visits to the site and does not reach the target audience intended;
- dumping site for information overloading users;
- potential to be confusing to users if not designed properly;
- success is highly dependant on computer literacy of the target audience;
- competition with every other website in the world;
- files are too large and require a lengthy amount of time to download; and
- too many layers of information result in inefficiency. It is argued that anymore than three layers (or clicks) is too many and the end user could be lost due to lack of time or boredom (Graham Van Der Slaght, *pers.comm.*, March 5, 1999; Mark Jowett, *pers.comm.*, March 5, 1999)

5. Ensuring Continued Participation in National Oceans Conservation Program Marketing Group. The National Oceans Conservation Program Marketing Working Group is an initiative that was developed to establish a network of communications/marketing people in each of the DFO Region's Oceans Sectors. The mandate of the group is to cost-share on projects, share ideas and best practices of how to communicate key messages with clients. It is also to ensure there is a certain level of consistency in program development and implementation at both the national and regional levels. DFO headquarters also has the potential to provide program-marketing tools such as posters, bookmarks, videos, etc. to aid in communicating the *Oceans Act* and its programs.

6. Developing a Calendar of Events. Developing a calendar of events that lists dates, places, potential target audiences and contact information can lead to stronger coordination, can reduce duplication of efforts and potential costs. Successful communication is highly dependent on timing and venue. By developing a calendar of events, there will be a visible timetable of when and where the Oceans Sector can gain greater exposure for the *Oceans Act* and its programs. Table 11 is an example of a calendar of events, and is not inclusive yet gives the reader an idea of what it could potentially look like and the information it should include. This type of table, once compiled, could be put into poster format of what is happening in the North and the information could be shared with other government agencies, schools, colleges, universities, and Inuit groups.

7. Establishing a Speaker's Bureau. As summarized in Table 9, there are a number of structured communication channels and sources in the North. As indicated, television and radio are strong communication channels and the key northern communication bodies, as described in Chapter 5, do the majority of programming. The information located in this table will be useful in establishing a Speaker's Bureau, which can be considered a forum for communicating DFO initiatives. Establishing a Speaker's Bureau would involve developing a network of scientists and DFO representatives to appear on programs and talk about their areas of expertise. It would also involve networking with northern communication bodies to identify their programs and programming requirements, and scheduling speakers for the identified programs.

The television programs highlighted in Table 9 could provide a strong forum for the Oceans Sector to communicate the key messages of the *Oceans Act* and its programs. Northern communication bodies are more than willing to cover stories that affect their communities, which could at the same time help raise awareness surrounding DFO science and work that is being done in the communities (Debbie Gordon-Ruben, *pers.comm.*, March 26, 1999). The structure of these programs tend to be live, phone-in shows covering current affairs.

Table 11: Sample Calendar of Events (Source: Arctic Tourism, pers.comm., March 12, 1999; Nunavut Tourism, pers.comm., March 12, 1999; Andries Blouw, pers.comm., January 12, 1999; Cathy Canavan, pers.comm., March 25, 1999; Lorne Levy, pers.comm., March 23, 1999; Judith Knapp, pers.comm., March 29, 1999;)

Event	Dates	Location	Key Contact	Organization of Principle Interest	Target Audience
Conferences					
Beaufort Sea Conference 2000	Sept. 15-18, 1999	Inuvik	Andries Blouw Communications Officer DFO - Central and Arctic Region	DFO	Academics, community members, scientists, and youth
Coastal Zone Canada Conference	Sept. 2000	St. John	DFO - Maritimes	DFO	Academics, community members, Aboriginal peoples, scientists, and youth
Nunavut Trade Show	February 18-20	Iqaluit	Colleen Dupuis Baffin Regional Chamber of Commerce	Baffin Regional Chamber of Commerce	Businesses
Nunavut Mining Symposium	February 18-20	Iqaluit	Colleen Dupuis Baffin Regional Chamber of Commerce	Baffin Regional Chamber of Commerce	Mining companies, Land claims organizations, and delegates from across Nunavut who work in the mineral industry and who require updates on exploration.
Education System					
Northern Science Fairs	March	Community Schools	Divisional Education Council	Northern Schools and Divisional Education Councils	Students from kindergarten to Grade 12
Northern Career Days	---	Community Schools	Principals, Directors-Boards of Education	Community Schools	Students
Festivals - Nunavut					
Toonik Tyme	April 4-10	Iqaluit	Nunavut Tourism and Iqaluit Hamlet Office	Community	Community members and tourists
Hamlet Days	April	All communities of Nunavut	Nunavut Tourism and community Hamlet Office	Community	Community members and tourists

Canada Day Celebrations	July 1	All communities of Nunavut	Nunavut Tourism and community Hamlet Office	Community	Community members and tourists
Nunavut Day Festivities	July 9	All communities of Nunavut	Nunavut Tourism and community Hamlet Office	Community	Community members and tourists
Kitikmeot Northern Games	August	Gjoa Haven	Nunavut Tourism and community Hamlet Office	Community	Community members and tourists
<i>Festivals - NWT</i>					
Ikhlukpik Jamboree	Mid August	Paulatuk	Arctic Tourism, Paulatuk Hamlet Office	Community	Community members and tourists
Beluga Jamboree	Mid April	Tuktoyaktuk	Arctic Tourism, Tuktoyaktuk Hamlet Office	Community	Community members and tourists
Kingalik Jamboree	Holman	June 19-20	Arctic Tourism and Holman Hamlet Office	Community	Community members and tourists
Spring Carnival	April	Tuktoyaktuk	Arctic Tourism, Tuktoyaktuk Hamlet Office	Community	Community members, children and tourists
Canada Day	July 1-3	Tuktoyaktuk	Arctic Tourism, Tuktoyaktuk Hamlet Office	Community	Community members and tourists
Caribou Carnival	March 26-28	Yellowknife	Arctic Tourism	Community	Community members and tourists
NWT Mining Week	June 13-20	Yellowknife	NWT Chamber of Mines	NWT Chamber of Mines	Community, tourists, businesses, school children
Far North Film Festival	Mid November	Yellowknife	Arctic Tourism	Arctic Tourism	International audience
Muskkrat Jamboree	March 25-27	Inuvik	Arctic Tourism, Inuvik Hamlet Office	Arctic Tourism	Community members and tourists
<i>Environmental</i>					
Oceans Day	June 8	All over Canada	Sharon Leonhard, Director of Communications, DFO - Central and Arctic Region	DFO, Canadian Wildlife Federation, Environment Canada, Canadian Heritage - Parks Canada	Communities, general public, schools
Earth Day	April 22	All over Canada	Department of Environment, Friends of the Environment, NGOs	Government Organizations, NGOs	General public

Oceans Act initiatives and scientific studies fit well into their program specifications. They inevitably affect the community and are therefore of interest to the northern communication bodies.

Finding good candidates for the speaker's bureau is important. Ideal candidates should be approachable, friendly, excited about their work, excited to share their findings with others, informative and knowledgeable, well trained in public speaking and dealing with the media, and supportive of the *Oceans Act*. By establishing a successful Speaker's Bureau, the Oceans Sector will utilize the media advantageously and for "good news stories". The Speaker's Bureau could be organized and operated out of Winnipeg. A communications/marketing officer could work with the major northern communication bodies, making arrangements and scheduling scientists' speaking and/or interview appearances.

8. *Developing an Educational Program Inventory.* As the environment and its conservation are becoming more and more of a concern to the general public, the number of environmental conservation and education initiatives are growing rapidly. It would be very useful for the Oceans Sector to compile an inventory of educational program initiatives that are currently taking place which have an oceans or marine conservation component and mandate. The purpose for developing a programs inventory is to coordinate efforts and to "piggyback" initiatives. By identifying programs that already exist and then developing partnerships to work with these programs costs can be reduced, risk can be reduced and there is often less controversy associated with the initiative. Furthermore, the Oceans Sector will have an opportunity to increase its presence in communities. Funding is always an issue that determines the future of potential projects. By working together with other agencies and already established projects, the Oceans Sector has an opportunity to contribute funds when it can, and receive good publicity associated with the project while at the same time contributing both time and ideas to a great program.

Table 12 is an example of an educational program inventory. Although this table is by no means comprehensive, the reader can better grasp what are the

Table 12: Example of Educational Inventory for Oceans Related Programs
 (Source: Oceans Conservation Program Marketing Working Group, *pers.comm.*, March 5, 1999; Caroline Sparling, *pers.comm.*, April 29, 1999; Andrew Applejohn, *pers.comm.*, March 26, 1999; Glen Sukket, *pers.comm.*, April 21, 1999)

Program	Lead Organization	Contact	Program Mandate
Oceans 11	DFO	Tim Hall	To provide curriculum for oceans education in the classroom tailored to Grade 11 students.
By the Sea	DFO – Maritimes	Ernest Ferguson	Educational module developed to teach young children about the sea and what it means to live By the Sea.
The Living by Water Project	Living by Water	Caroline Sparling	To provide oceans and shoreline education regarding the importance of healthy shorelines. Use theatre and drama to communicate environmental message.
"On the Land"	Aurora College	Marshall Buchanan	Mentorship program where students of the Natural Resource Technology Program take grade 6 students out on the land.
Blue School Program	Canadian Wildlife Federation	Canadian Wildlife Federation	The Blue School Program is a five-year project (initiated in 1998) to stimulate student participation in educational activities that enhance learning about the value and health of the world's ocean. Schools register with the Canadian Wildlife Federation and provided they meet specific criteria, receive funding to carry out their oceans conservation project.
YouthCan	DFO & Environment Canada	Maxine Westhead & Tonya Wilts	YouthCan (short for Youth Coastal Action Network) involves volunteers aged 15-29 who are trained to teach oceans education modules. It is committed to engaging youth in the conservation and restoration of the coastal environment. They are also part of the youth component of the Coastal Zone Canada Conferences. They are hoping to have representation from all five DFO regions at the next conference.
Oceans in the Classroom	DFO – Pacific Region	Marc Pakenham & Tonya Wilts	Developed activities guide for teachers to use in the elementary level classrooms. They provide training to the teachers who carry out the activities as part of their own lesson plans.
Project Wild	Canadian Wildlife Federation	Glen Sukket	Developed activity guide for teachers to use in their classroom and lesson plans. It is an interdisciplinary, supplementary environmental and conservation education program for educators of kindergarten through high school age young people.

existing oceans conservation initiatives. There are a number of educational programs that have been developed by colleges such as the Aurora College and the Arctic College, universities, Inuit youth organizations, NGOs, other government agencies, other DFO regions, etc. Further research should be dedicated to compiling a conclusive inventory of what these programs are and the contact person for the program.

9. Establishing Partnerships with Northern Educational System.

"Students learn more effectively within an environment-based context than within a traditional educational framework. Studies have found that students in programs that used the environment as a context for learning performed better in mathematics, social studies, science and language arts than did their peers in traditional programs." (Grant, 1998)

Working with the northern educational system should be a priority for the Oceans Sector. As indicated in Chapter 5, the percentage of youth in the NWT and Nunavut is very high, making this sector of the population important for communication initiatives. There has been a considerable amount of effort dedicated to developing oceans related curriculum and activity guides for teachers to use in the classroom. *Oceans 11* and *Oceans in the Classroom* are two initiatives that have been undertaken by the DFO in the Maritimes Region and Pacific Region respectively. These programs seek to provide activities and oceans education curriculum to teachers. *Oceans 11* is a "new grade 11 science credit course that has been designed to provide schools with the opportunity to utilize the expertise of local fish harvesters, scientists, entrepreneurs, representatives from industry and community leaders" (Government of Canada, 1999). *Oceans in the Classroom* is tailored for younger students in grades 3 to 6 (Tonya Wilts, *pers.comm.*, March, 5, 1999).

Although the curriculum and activity guides have been developed with particular regional environmental characteristics and education levels in mind, the format of both of these programs is strong and could be (with help from northern communicators, northern teachers, and scientists) used in northern schools once adapted. With the majority of Arctic communities located on the coastline, the ocean is obviously a big part of their everyday lives. Educators understand the

importance of and believe there is a distinct place for oceans education in their curriculum (Lorne Levy, *pers.comm.*, March 23, 1999). However, recruiting teachers who are excited to teach about oceans will be very important. Many argue that “curricula and information alone are not the key to changing attitudes. The literature is quite clear: values and attitudes are learned best when they are presented as personal views by a respected or liked teacher. What counts is not curricula, but the teacher” (Lien, 1992).

Northern schools, like any other school, have science fairs, career days and other organized events. These events could provide the Oceans Sector with an opportunity to raise oceans awareness and promote oceans conservation. For example, the Oceans Sector could create an incentive for students to do their science projects on the importance of the Arctic Ocean, the functions of the ocean, and why a healthy ocean is so important. The Oceans Sector could for example make an arrangement with a scientist or regional person to volunteer to judge the projects and the winner could be awarded with a prize (e.g. a trip to Churchill to celebrate Oceans Day on June 8th or a ride in a Canadian Coast Guard helicopter). Working with northern schools that are on-line poses another opportunity for the Oceans Sector to raise oceans awareness and promote oceans conservation. This idea has already been discussed in the recommendation for developing an Oceans web page.

Direct contact has been touted by many northern communicators as the most effective form of communication. However, this form of communication is not always possible due to the high costs of traveling in the North and limited budgets of government programs. Selecting Oceans Youth Ambassadors, one for the Western Arctic and one for the Eastern Arctic, could provide a direct link to the youth within Arctic coastal communities. The Youth Ambassadors could be recruited to speak to schools within their region to discuss the importance of oceans and their conservation, cover conferences where oceans are on the agenda and report back to their schools, local newspapers, television shows and radio programs. This would also be an ideal opportunity for partnering with northern

Land Claim Bodies and/or Inuit Associations that believe strongly in developing their youth, devoting time, energy and money to this cause.

10. Developing a Portable Educational "ToolKit". Developing a portable educational toolbox can provide the Oceans Sector or educators with interactive tools to engage people in learning about oceans and their conservation. The toolbox could be entitled "*The Sand box*" or "*The Treasure chest*" and made portable for easy transport and use. It would be useful to send a toolbox to the Central and Arctic Regional offices in both Inuvik, NT and Iqaluit, Nunavut, as well as, have a couple of toolboxes at the Central and Arctic Region Head Office in Winnipeg. Many of the scientists in the Regional office do classroom presentations on a volunteer basis when teachers contact the office. This type of communication tool would be useful for their school visits. The toolbox could consist of a variety of tools suitable for various grade levels. If the toolbox is successful a separate one may be needed for elementary and secondary education levels. The toolbox could consist of:

- Activity guides such as *Oceans in the Classroom's "One Ocean"* and "*What Does Clean Really Mean?*" providing guided activities to do with the students;
- Demonstration materials for in class, e.g. oil spill demonstration, *Ocean in a Bottle*, the *Web of Life* (Arctic food chain), stuffed animals such as the food chain fish;
- Videos produced on importance of oceans to start class discussions;
- Puppet show materials;
- Coloring books, posters, bookmarks, Oceans Web Page information;
- Scientist Picture Books with photographs of scientists' work and Arctic mammals with actual artifacts from research, e.g. beluga teeth, narwhal tusk, pieces of balene from bowhead whales, etc.

These are only a few ideas and it would be useful to do more research on oceans related education material that is available. A number of NGOs develop materials tailored to oceans education. *Green Teacher*, *Chem Ecology*, and the *Journal of Environmental Education* are just a few of the key magazines which focus on

environmental education providing step-by-step activity guides for environmental educators to use in the classroom.

11. Utilizing "Edutainment" as a Communication Tool

"Locally acceptable forms of drama are one of the best ways of getting your messages across to your audience. People like to be entertained and, if they can be made aware of the issues and motivated at the same time all the better." (Clark, 1996)

The concept of "Edutainment" is to make learning entertaining and fun. Communicating the key messages of the *Oceans Act* to certain stakeholder groups will require a different and exciting approach, moving away from traditional styles of teaching into more interactive styles for learning. The term "Edutainment" is a combination of education and entertainment. It is environmental education that uses skits, role-playing, theatre and drama to communicate environmental messages and presents information in an entertaining way. There are a number of environmental education groups that communicate their environmental messages in this way. Green Kids (see their web page at <http://www.greenkids.com>) and The Living by Water Project are two Canadian examples of these kind of education groups (GreenKids, 1999; Caroline Sparling, *pers.comm.*, April 29, 1999). Internationally theatre, drama, and song have been used to communicate messages since time immemorial. For example, a conference sponsored by the Conservation Development Forum, entitled *Forum '97 New Linkages in Conservation and Development*, used a number of theatre and dance presentations throughout the conference to address the issues of conservation and development (Conservation Development Forum, 1997).

Although there are a number of environmental education groups that follow this educational pattern, it would be beneficial to work with Inuit groups in the North that have an interest in communicating the oceans conservation message in their traditional methods of communication. The culture and traditions found in the Arctic are that of an oral history where story telling, song and dance are common. This type of communication tool is a logical fit and would most likely ensure successful communication of the oceans conservation message.

Further research should be done in this area to uncover whether or not there are such groups in the North or if there is interest and potential for developing one.

6.1.9 Feedback Mechanisms

Monitoring whether or not communication initiatives have been successful is just as important as communicating itself, for there really is no point to communicating if it is not working (Clark, 1996). The DFO's ultimate goal of communicating the *Oceans Act* and its programs is to modify stakeholder behavior in order to facilitate a positive change in behaviors. However, there are certain criteria for success that must be met before the end result, a positive change in behavior, can occur (Laszlo Pinter, *pers.comm.*, July 12, 1999). First, the message must obviously be communicated. Second, the message must be received. Third, the message must be understood and fourth, the message must result in a modified change in behavior. Each of these criteria becomes progressively harder to achieve successfully.

Although necessary, monitoring whether or not your message has made an impact on an individual's behavior is often very difficult. "The benefits of education programs are often only realized long after the program is implemented. Resource managers are therefore reluctant to assign adequate funding for education programs since it is difficult to measure the benefits of such programs" (Alder, 1996). Stiles and Usher (1998) suggest that "a combination of assessment methods is the most effective way of getting a reading on your performance and the results of your communication". Listed below are a number of methods suggested by communicators that can help assess the effectiveness of communication. An important aspect to understand with relation to monitoring communication is that deriving success measurements will be a lengthy process.

Some of the recommended communication tools have stronger monitoring potential than others. For example, using the Internet and webpages allows for strong monitoring. Functions can be built in during the design process that will allow the Oceans Sector to monitor how often people are visiting their site and for how long. With direct communication (e.g. community hall presentations,

classroom presentations and plays) pre and post-tests or before and after questionnaires (verbal or written) are useful monitoring tools. By using before and after questionnaires, the communicator can determine the audiences' level of understanding surrounding the topic before information was presented and their level of understanding after the information was presented. Stiles and Usher (1998) suggest that a presenter can also develop participant reaction forms, or have audiences write down two or three of the most important messages they are able to recall. If long-term information retention is desired further questionnaires could be sent out 4-6 months later. The communicator can then compare results from immediately following the presentation and several months following the presentation (Stiles and Usher, 1998).

Another option for the Oceans Sector is to do a baseline survey to monitor the effectiveness of their communication efforts. In fact, this is exactly what the Great Barrier Reef Marine Park Authorities (GBRMPA) did (Alder, 1996). In the period between 1985 and 1991, the GBRMPA was involved in a number of education programs to inform their audience of the park's existence, values, issues, and management. Communication tools used by GBRMPA ranged from displays at local shows, to classroom talks, to radio advertising. To determine whether or not these efforts were working, they designed a baseline survey to measure levels of awareness of the park, and attitudes towards various aspects of management in the area. Follow-up surveys were then done after a period of time to measure changes in awareness and attitudes. What the GBRMPA found was that "funds spent on education contributed to achieving the management objectives of this study" which were to increase awareness, change attitudes and behaviors, increase support for management, and increase participation in park planning (Alder, 1996).

There are similar efforts taking place in the North. The DIAND is working with consultants to develop a focus group model that will test communication products within northern communities (Zoe Raemer, *pers.comm.*, March 29, 1999). The focus group model will involve the creation of groups within northern communities that are comprised of local community members. This group will

then provide feedback on how effective they feel DIAND's communication and marketing efforts have been in reaching them as a target audience. The purpose of the focus group model is to create dialogue circles, either through direct contact or virtually, and determine what is working and what is not in terms of advertising materials. A dialogue circle is simply a forum to facilitate verbal communication where the focus groups can share their findings. A combination of both baseline surveys and focus groups could be one way to determine whether or not *Oceans Act* communication initiatives are succeeding in raising awareness and changing behaviors towards oceans, their protection, conservation and management. Furthermore, focus groups could be a useful feedback mechanism to test whether or not the designed communication strategy and the recommended communication tools would be successful in communicating the *Oceans Act* and its programs to the coastal communities of the Canadian Arctic.

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PERSONAL COMMUNICATIONS

CONTACT NAME	DATE	LOCATION	POSITION
Dave Anderson	March 30, 1999	Yellowknife	Marketing Analyst, Northern News Services
Marjorie Anderson	March 17, 1999	Winnipeg	Professor, Advanced Communications University of Manitoba
Andrew Applejohn	March 26, 1999	Inuvik	Programs Manager, Aurora Research Institute
Arctic Tourism	March 12, 1999	Winnipeg	---
Andries Blouw	May 1998 – June 1999	Winnipeg	Communications Officer, DFO Central and Arctic Region
Cathy Bolstad	March 30, 1999	Yellowknife	Program Marketing Coordinator, CBC North
Cathy Canavan	March 25, 1999	Inuvik	Assistant Director, Beaufort/Delta Divisional Educational Council
Stephen Charlie	March 25, 1999	Inuvik	Acting Area Manager, DFO Area Office, Western Arctic
Doug Chipertzak	January 12, 1999 and March 29, 1999	Cornwall and Yellowknife	MPA Planner, Oceans Sector, DFO Central and Arctic Region
Katherine Clarida-Fry	March 22, 1999	Iqaluit	Managing Director, Inuit Communication Society Limited
Chris Cote	June 22, 1999	Winnipeg	Northern Transportation Company Limited
Judi Cozetto	February 9, 1999	Yellowknife	New Parks North Editor, Canadian Heritage/Parks Canada
Jennifer David	April 13, 1999	Winnipeg	Communications, Television Northern Canada
Helen Fast	May 1998 – June 1999	Winnipeg	Manager, Integrated Management, Oceans Sector, DFO Central and Arctic Region
Patricia Fitzpatrick	March 29, 1999	Yellowknife	Community Consultation Assistant for the Diavik Diamond Mining Project,

			DIAND
Debbie Gordon-Ruben	March 26, 1999	Inuvik	Executive Director, Inuvialuit Communications Society
Wayne Hanna	October 20, 1998	Winnipeg	Director of Communications, DIAND
Lois Harwood	March 26, 1999	Inuvik	Biologist, DFO Area Office Western Arctic
Margaret Keast	March 22, 1999	Iqaluit	Scientist, DFO Area Office Eastern Arctic
Kitikmeot Board of Education	September 16, 1998	Winnipeg	Administrative Assistant, Kitikmeot Board of Education
Kivalliq Divisional Education Council	September 16, 1998	Winnipeg	Administrative Assistant, Kivalliq Divisional Education Council
Judith Knapp	March 29, 1999	Yellowknife	Director, Yellowknife Education District #1
Sharon Leonhard	May 1998 – June 1999	Winnipeg	Director of Communications, DFO Central and Arctic Region
Lorne Levy	March 23, 1999	Iqaluit	Assistant Director, Baffin Divisional Educational Council
Steven Lowe	March 23, 1999	Iqaluit	Senior Ad Executive, Nortext Multimedia/ Nunatsiaq News
Jack Mathias	May 1998 – June 1999	Winnipeg	Coordinator, <i>Oceans Act</i> Implementation, Oceans Sector, DFO Central and Arctic Region
Bill McConkey	April 15, 1999	Winnipeg	Marketing, Nunatsiaq News
Effie Mcleod	March 25, 1999	Inuvik	Education Consultant, Beaufort/Delta Divisional Educational Council
Darlene Mulligan	February 2, 1999	Winnipeg	Director, Visual Marketing/Chikak Communications
Nunavut Tourism	March 12, 1999	Winnipeg	---

Oceans Conservation Program Marketing Working Group: Pamela Tuepah (Ottawa) Ernest Ferguson (Maritimes) Laurie Gillmore (Maritimes) Mark Jowett (Ottawa) Joan O'Brien (Newfoundland) Marc Pakenham (Pacific) Slyvi Racine (Laurentian) Graham Van Der Slagt (Pacific) Tonya Wilts (Pacific)	March 5, 1999	Ottawa	Regional DFO-Oceans Communications/ Marketing Representatives
Linda O'Shaunassy	March 30, 1999	Yellowknife	Programming, Television Northern Canada
Laszlo Pinter	May 1998 – July 1999	Winnipeg	Project Officer, International Institute for Sustainable Development
Zoe Raemer	March 29, 1999	Yellowknife	Director of Communications, DIAND
Lynn Siegersma	March 22, 1999	Iqaluit	Liaison Officer, DFO Area Office Eastern Arctic
Rachelle Smith	March 1999 – June 1999	Winnipeg	Communications Officer, DFO Central and Arctic Region
Caroline Sparling	April 29, 1999	Winnipeg	Project Officer, The Living by Water Project
Glen Sukket	April 21, 1999	Winnipeg	Project Wild Coordinator, Manitoba Chapter, Canadian Wildlife Federation
Andy Swiderski	December 12, 1998	Winnipeg	Consultant, Terriplan Consultants

Pamela Tuepah	January 1999 – June 1999	Winnipeg	Program Marketing Coordinator, DFO Headquarters
Bruce Valpy	March 29, 1999	Yellowknife	Managing Editor, Northern News Services
Gary Weber	March 22, 1999	Iqaluit	Area Manager, DFO Area Office, Eastern Arctic

APPENDIX A: OCEANS STAKEHOLDER DATABASE

GENERAL SECTOR (Academic Institutions/Scientific Institutions/and Non-Governmental Organizations)

CONTACT	COMPANY	CITY	PROV./TERRITORY	PHONE
Principal	Allurut School	Nanisivik	Nunavut	867-436-7350
Principal	Alookie School	Pangnirtung	Nunavut	867-473-8803
Principal	Angik School	Paulatuk	Northwest Territories	867-580-3201
	Arctic College - Keewatin Campus	Rankin Inlet	Nunavut	
	Arctic College - Kitikmeot Campus	Cambridge Bay	Nunavut	
	Arctic College - Nunatta Campus	Iqaluit	Nunavut	819-979-7200
	Arctic Institute of North America	Calgary	Alberta	
Principal	Arnaqjuaq School	Hall Beach	Nunavut	867-928-8855
Principal	Ataguttaaluk Elementary School	Igloolik	Nunavut	867-934-8996
Principal	Ataguttaaluk High School	Igloolik	Nunavut	867-934-8600
Principal	Attagoyuk School	Pangnirtung	Nunavut	867-473-8815
Program Manager	Aurora Research Institute	Inuvik	Northwest Territories	867-777-3298
Director	Aurora Research Institute	Inuvik	Northwest Territories	867-777-3298
Assistant Director	Baffin Divisional Education Council	Iqaluit	Nunavut	867-979-8200
	Beaufort/Delta Divisional Education Council	Inuvik	Northwest Territories	867-777-7136
Assistant Director	Beaufort-Delta Education Council	Inuvik	Northwest Territories	867-777-7136
Principal	Chief Julius School	Fort McPherson	Northwest Territories	867-952-2131
Principal	Chief Paul Niditchie	Tsiigehtchic	Northwest Territories	867-953-3211
Director	Churchill Northern Studies Centre	Churchill	Manitoba	
Executive Director	Churchill Northern Studies Centre	Churchill	Manitoba	204-675-2307
	Clarke Institute of Community Studies	Whitehorse	Yukon Territories	
	Faculty of Environmental Studies	North York	Ontario	
	Fisheries and Marine Institute of Memorial University	St. John's	Newfoundland	709-778-0305
Principal	Inualthuyak School	Sachs Harbour	Northwest Territories	867-690-4241
Principal	Inuksuit School	Broughton Island	Nunavut	867-927-8938
Principal	Inuksuit School	Broughton Island	Nunavut	867-927-8938
Principal	Inuksuk School	Iqaluit	Nunavut	867-979-5281
Principal	Inuujaq School	Arctic Bay	Nunavut	867-439-8843
	Inuvik Research Centre	Inuvik	Northwest Territories	
Principal	Joamie School	Iqaluit	Nunavut	867-979-6206
Director	Keewatin Divisional Education Council	Baker Lake	Nunavut	867-793-2803

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Director	Kitikmeot Divisional Education Council	Kugluktuk	Nunavut	867-982-7220
Vice Principal	Mangilaluk School	Tuktoyaktuk	Northwest Territories	867-977-2255
Principal	Memorial University Of Newfoundland	St. John's	Newfoundland	709-737-4058
Principal	Moose Kerr School	Aklavik	Northwest Territories	867-978-2536
Principal	Nakasuk School	Iqaluit	Nunavut	867-979-5335
	Nanook School	Apex	Nunavut	867-979-6597
	Natural Resources Institute	Winnipeg	Manitoba	204-474-8373
	Northern Research Institute	Whitehorse	Yukon Territories	867-668-8888
Principal	Nuiyak School	Sanikiluaq	Nunavut	867-266-8816
	Nunavut Research Institute	Iqaluit	Nunavut	867-979-6734
Principal	Pitscolak School	Cape Dorset	Nunavut	867-897-8826
Principal	Qaqqalik School	Kimmiut	Nunavut	867-939-2221
Principal	Qarmartalik School	Resolute Bay	Nunavut	867-252-3888
Principal	Quluuq School	Clyde River	Nunavut	867-924-6313
Principal	Sam Pudlat	Cape Dorset	Nunavut	867-897-8332
Principal	Samuel Heame Secondary	Inuvik	Northwest Territories	867-777-7170
Principal	Sir Alexander Mackenzie	Inuvik	Northwest Territories	867-777-7180
Principal	Takjjuuluk School	Pond Inlet	Nunavut	867-899-8864
Principal	Ulaajuk School	Pond Inlet	Nunavut	867-899-8964
Principal	Umimmak School	Grise Fiord	Nunavut	867-980-9921
	University of Alberta	Edmonton	Alberta	403-492-1904
	University of Alberta	Edmonton	Alberta	403-492-0348
	University of Calgary, Arctic Institute of North America	Calgary	Alberta	
	University of Calgary, Arctic Institute of North America	Calgary	Alberta	
	University of Calgary, Faculty of Law	Calgary	Alberta	
	University of Manitoba	West Calgary	Alberta	
	University of Waterloo	Winnipeg	Manitoba	
	Yukon Science Institute	Waterloo	Ontario	
	Canadian Arctic Resources Committee	Whitehorse	Yukon Territories	
Executive Director	Canadian Arctic Resources Committee	Ottawa	Ontario	613-759-4284
	Canadian Parks and Wilderness Society	Ottawa	Ontario	613-759-4284
	Canadian Parks and Wilderness Society	Toronto	Ontario	
	Canadian Polar Commission	Yellowknife	Northwest Territories	867-669-0967
Northern Science Officer	Canadian Polar Commission	Yellowknife	Northwest Territories	

Chairman	Canadian Polar Commission	Ottawa	Ontario	613 943-8607
	Canadian Port and Harbour Association	Etobicoke	Ontario	
Executive Director	Canadian Recreational Canoeing Association	Merrickville	Ontario	613-269-2910
Executive Director	CARC, Canadian Arctic Resources Committee	Ottawa	Ontario	
	Ecology North	Yellowknife	Northwest Territories	
Vice President	Economic and Technology Council, S&T Development	Winnipeg	Manitoba	
Director	Endangered Spaces Campaign	Toronto	Ontario	
	Greenpeace Canada	Toronto	Ontario	416-597-8422
Executive Director	Greenpeace Canada	Toronto	Ontario	
Marine Supervisor	Heritage Park Society	Calgary	Alberta	
	Icy Waters Limited	Whitehorse	Yukon Territories	
	Institute for Sustainable Development (IISD)	Winnipeg	Manitoba	
	Manitoba Wildlife Federation	Winnipeg	Manitoba	
	Nature Conservancy of Canada	Toronto	Ontario	
	Northern Environmental Network(NORNET)	Whitehorse	Yukon Territories	
	Sustainable Fisheries Network	Toronto	Ontario	
	Wilderness Society (CPAWS) -- Yukon, Canadian Parks	Whitehorse	Yukon Territories	
	World Wildlife Fund	Toronto	Ontario	
Regional Coordinator	WWF Endangered Spaces	Yellowknife	Northwest Territories	
President	Yukon Conservation Society	Whitehorse	Yukon Territories	

GOVERNMENT SECTOR (Federal/Territorial/Provincial/Land Municipal)

LEVEL	CONTACT	COMPANY	CITY	PROV./TERRITORY	PHONE
Federal		Agriculture Canada	Ottawa	Ontario	613-759-7824
Federal	DG of Advocacy and Industrial Ben.	Atlantic Canada Opportunities Agency	Ottawa	Ontario	613-954-2422
Federal		Canadian Coast Guard	Ottawa	Ontario	613-990-0341
Federal		Canadian Coast Guard	Hay River	Northwest Territories	867-874-5510
Federal		Canadian Coast Guard	St. John's	Newfoundland	709-772-4580
Federal		Canadian Coast Guard	Ottawa	Ontario	613-993-1849
Federal	Director of Operations	Canadian Coast Guard	Quebec	Quebec	
Federal	A/Regional Director CCG	Canadian Coast Guard	Samia	Ontario	519-383-1813
Federal		Canadian Coast Guard - Arctic Office	Ottawa	Ontario	613-990-6369
Federal		Canadian Coast Guard Arctic Office	Ottawa	Ontario	613-993-0007
Federal		Canadian Coast Guard Arctic Office	Ottawa	Ontario	613-990-0414
Federal		Canadian Coast Guard College	Sydney	Nova Scotia	
Federal	Regional Director	Canadian Coast Guard Rescue Auxiliary	Samia	Ontario	
Federal	Director General	Canadian Council of Ministers of the Environment	Winnipeg	Manitoba	
Federal		Canadian Environmental Assessment Agency	Edmonton	Alberta	403-422-7704
Federal		Canadian Environmental Assessment Agency	Winnipeg	Manitoba	204-983-8437
Federal		Canadian Environmental Defence Fund	Toronto	Ontario	416-323-9521
Federal		Canadian Heritage	Hull	Quebec	819-997-4916
Federal		Canadian Heritage	Hull	Quebec	819-997-4910
Federal		Canadian Heritage	Hull	Quebec	819-994-5531
Federal	Manager Ecosystem Services	Canadian Heritage	Vancouver	British Columbia	604-666-0176
Federal		Canadian Heritage - Pacific and Yukon Territory	Yellowknife	Northwest Territories	
Federal		Canadian Heritage - Parks Canada	Inuvik	Northwest Territories	867-777-3248
Federal		Canadian Heritage - Parks Canada	Fort Smith	Northwest Territories	867-872-7900
Federal		Canadian Heritage - Parks Canada	Whitehorse	Yukon Territories	
Federal		Canadian Heritage - Parks Canada	Fort Simpson	Northwest Territories	867-695-2217
Federal	Departmental Operations Manager	Canadian Heritage - Parks Canada	Pangnirtung	Northwest Territories	819-473-8828
Federal	Chief Park Warden	Canadian Heritage - Parks Canada	Honey Harbour	Ontario	
Federal	Park Warden	Canadian Heritage - Parks Canada	Pangnirtung	Northwest Territories	867-473-8962
Federal	Superintendent	Canadian Heritage - Prairie and NWT	Winnipeg	Manitoba	204-983-3601
Federal		Canadian Heritage - Protected Areas Cooperation	Hull	Quebec	819-994-4044
Federal	Specialist, Data Management	Canadian Heritage/Parks Canada	Winnipeg	Manitoba	204-984-6227
Federal	A/Superintendent	Canadian Heritage/Parks Canada	Winnipeg	Manitoba	
Federal		Canadian Heritage/Parks Canada	Churchill	Manitoba	204-675-8863

Federal		Canadian Hydraulics Centre (NRC)	Ottawa	Ontario	613-993-2439
Federal	Executive Director	Canadian Institute of Resources Law	Calgary	Alberta	
Federal		Canadian International Development Agency	Hull	Quebec	819-997-0483
Federal		Canadian Mission Control Centre	Astra	Ontario	613-965-3660
Federal	Senior Field Investigator	Canadian Transportation Agency	Toronto	Ontario	416-952-7895
Federal	Headquarters	Canadian Transportation Agency	Ottawa	Ontario	
Federal	Senior Field Investigator	Canadian Transportation Agency - Central Region	Winnipeg	Manitoba	204-984-6092
Federal	Senior Field Investigator	Canadian Transportation Agency - Western Region	Edmonton	Alberta	403-493-6618
Federal		CAPP	Calgary	Alberta	
Federal		CCG Central & Arctic Region	Ottawa	Ontario	
Federal		CCG Central and Arctic Region	Samia	Ontario	519-383-1807
Federal		CCG- Radio Station	Iqaluit	Northwest Territories	867-979-5260
Federal		CCG-Central & Arctic Region	Samia	Ontario	519-383-1812
Federal		CCG-Central & Arctic Region Marine Aids	Samia	Ontario	519-383-1859
Federal	Director	Central and Arctic Region - Arctic Office/Sealift	Ottawa	Ontario	613-993-0007
Federal		CFIA-Edmonton	Edmonton	Alberta	403-493-7023
Federal		CFIA-Leamington	Leamington	Ontario	519-326-2617
Federal		CFIA-Mississauga	Mississauga	Ontario	905-795-9666
Federal		CFIA-Napanee	Napanee	Ontario	613-354-3041
Federal	Director	Civil Air and Rescue Association (CASARA)-NWT	Fort Norman	Northwest Territories	403-588-4141
Federal		Commercial Services Group-Cdn. Ice Service	Ottawa	Ontario	613-992-2315
Federal		Department of Fisheries and Oceans Canada/CCG	Ottawa	Ontario	613-990-3669
Federal		DIAND	Winnipeg	Manitoba	204-983-2475
Federal	Manager of Environment	DIAND	Winnipeg	Manitoba	204-983-4689
Federal	Regional Director General	DIAND	Yellowknife	Northwest Territories	867-669-2500
Federal	Regional Director General	DIAND	Whitehorse	Yukon Territories	867-667-3100
Federal	A/Director, Fish and Wildlife	Department of Renewable Resources	Whitehorse	Yukon Territories	
Federal	Superintendent	Dept. of Public Works & Govt Services	Winnipeg	Manitoba	204-983-4072
Federal	Director, Hydrography	DFO - Canadian Hydrographic Service	Burlington	Ontario	905-336-4811
Federal		DFO, Inspection Branch Western Area	Edmonton	Alberta	403-495-7024
Federal		DFO-CCG, A/Director, Marine Operations	Samia	Ontario	
Federal		DFO-Central & Arctic Region	Samia	Ontario	519-383-1800
Federal		DIAND - Northern Oil and Gas Directorate	Ottawa	Ontario	819-997-0278
Federal	Director, Canadian Ice Services Branch	DIAND - Northern Oil and Gas Directorate	Ottawa	Ontario	613-996-5088
Federal	G4 Engineer	DND - CFNA HQ Yellowknife	Ottawa	Ontario	
Federal		DND - Northern Region	Yellowknife	Northwest Territories	

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Federal		Dogrib Treaty Council	RAE	Northwest Territories	
Federal		DRC	Fort Simpson	Northwest Territories	
Federal		Eastern Arctic Fisheries	Iqaluit	Northwest Territories	
Federal	Director	Emergency Services - NWT	Yellowknife	Northwest Territories	403-873-7892
Federal	Deputy Minister	Environment & Resource Management	Regina	Saskatchewan	
Federal		Environment Canada	Hamilton	Ontario	905-312-0900
Federal	Compliance & Emergency Specialist	Environment Canada	Edmonton	Alberta	403-951-8753
Federal		Environment Canada - Arctic Section	Yellowknife	Northwest Territories	403-669-4740
Federal	Chief of NWT Monitoring	Environment Canada - Arctic Section	Yellowknife	Northwest Territories	403-920-8501
Federal		Environment Canada - Arctic Weather Centre	Edmonton	Alberta	403-951-8878
Federal		Environment Canada - Canadian Wildlife Service			
Federal	Chief of Northern Conservation Div.	Environment Canada - Environmental Conservation	Yellowknife	Northwest Territories	403-669-4760
Federal	Manager NWT Division	Environment Canada - Environmental Conservation	Yellowknife	Northwest Territories	867-669-4725
Federal	Director	Environment Canada - National Hydrology Research	Saskatoon	Saskatchewan	306-975-5717
Federal		Environment Canada - Prairie & Northern Region	Yellowknife	Northwest Territories	
Federal		Environment Canada-Environmental Protection	Yellowknife	Northwest Territories	867-669-4228
Federal		Environmental Impact Screening Committee	Calgary	Alberta	403-277-1363
Federal		Fisheries and Oceans	Sidney	British Columbia	604-363-6349
Federal	Area Manager	Fisheries and Oceans Canada	Yellowknife	Northwest Territories	867-920-6640
Federal	Science	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Director, Small Craft Harbours	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Science	Fisheries and Oceans Canada	Burlington	Ontario	905-336-4871
Federal	Regional Director, Fisheries Mgmt.	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Regional Director, Science	Fisheries and Oceans Canada	Burlington	Ontario	
Federal		Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Special Projects Officer	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Area Manager - Great Lakes	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Electronic Charts	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Area Office Manager	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Director, OMS	Fisheries and Oceans Canada	Ottawa	Ontario	
Federal	Director, Communications	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Technical Service	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	A/ Regional Director, Human Res.	Fisheries and Oceans Canada	Sarnia	Ontario	519-383-1813
Federal	Science	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Coordinator - Conservation and Prot.	Fisheries and Oceans Canada	Yellowknife	Northwest Territories	
Federal	Regional Director, Coast Guard	Fisheries and Oceans Canada	Sarnia	Ontario	

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Federal	Product Maintenance	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	A / Data Acquisition	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Chief of Property	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Manager, Environmental Science	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Director, Marine Programs	Fisheries and Oceans Canada	Sarnia	Ontario	
Federal	Director, Finance and Admin.	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Regional Director, Informatics	Fisheries and Oceans Canada	Burlington	Ontario	
Federal	Manager, Policy and Economics	Fisheries and Oceans Canada	Winnipeg	Manitoba	
Federal	Area Manager	Fisheries and Oceans Canada	Iqaluit	Northwest Territories	867-979-8000
Federal		Fisheries and Oceans Canada	Whitehorse	Yukon Territories	
Federal		Fisheries and Oceans Canada	The Pas	Manitoba	204-623-5742
Federal		Fisheries and Oceans Canada	Ottawa	Ontario	613-993-0999
Federal		Fisheries and Oceans Canada	Calgary	Alberta	403-292-5858
Federal		Fisheries and Oceans Canada	Fort Francis	Ontario	807-274-2078
Federal		Fisheries and Oceans Canada	Hay River	Northwest Territories	867-874-5500
Federal		Fisheries and Oceans Canada	St. Catherines	Ontario	905-641-4724
Federal		Fisheries and Oceans Canada	Rankin Inlet	Northwest Territories	867-645-2871
Federal		Fisheries and Oceans Canada	St. John's	Newfoundland	709-772-4421
Federal		Fisheries and Oceans Canada	Amherstberg	Ontario	519-736-5449
Federal		Fisheries and Oceans Canada	Kenora	Ontario	807-468-6441
Federal		Fisheries and Oceans Canada	Parry Sound	Ontario	705-746-2196
Federal		Fisheries and Oceans Canada	Selkirk	Manitoba	204-785-6030
Federal		Fisheries and Oceans Canada	Thunder Bay	Ontario	807-345-6311
Federal		Fisheries and Oceans Canada	Kenora	Ontario	807-226-1246
Federal		Fisheries and Oceans Canada	Cambridge Bay	Northwest Territories	867-983-2272
Federal		Fisheries and Oceans Canada	Inuvik	Northwest Territories	867-777-7500
Federal		Fisheries and Oceans Canada	St. Andrews	New Brunswick	506-529-3156
Federal		Fisheries and Oceans Canada	Sault Ste. Marie	Ontario	705-746-2196
Federal		Fisheries and Oceans Canada	Meadow Lake	Saskatchewan	306-236-5828
Federal	National IM Coordinator	Fisheries and Oceans Canada-Oceans Directorate	Ottawa	Ontario	613-990-0308
Federal		Fisheries and Oceans/Canadian Coast Guard	Cap Santé	Québec	
Federal		Foreign Affairs and International Trade	Ottawa	Ontario	613-996-2463
Federal	Special Advisor, Parks and Claims	GNWT-Resources, Wildlife and Economic Development	Iqaluit	Northwest Territories	867-979-5121
Federal	EA Minister	GNWT-Resources, Wildlife and Economic Development	Yellowknife	Northwest Territories	
Federal	Environmental Health Officer	Health Canada	Winnipeg	Manitoba	204-983-2615
Federal	Environmental Health Officer	Health Canada	Edmonton	Alberta	

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Federal	Director International Business	Industry Canada	Edmonton	Alberta	403-495-4507
Federal	Regional Executive Director	Industry Canada - Prairie and NWT Regional Office	Edmonton	Alberta	403-495-4582
Federal		Institute of Ocean Sciences	Sidney	British Columbia	604-363-6347
Federal	Headquarters	International Development Research Centre	Ottawa	Ontario	613-236-6163
Federal	Senior Regional Director	Justice Canada - Prairie and NWT Regions	Edmonton	Alberta	403-495-2970
Federal		Mackenzie Valley Environmental Impact Review	Yellowknife	Northwest Territories	867-873-9636
Federal		Ministry of Natural Resources - Natural Heritage Section	Peterborough	Ontario	
Federal	Director	Ministry of Transportation - Marine Operations Division	Yellowknife	Northwest Territories	
Federal	Director	Ministry of Transportation - Marine Operations Division	Fort Simpson	Northwest Territories	
Federal		National Energy Board	Calgary	Alberta	403-292-4800
Federal		National Research Council Canada	St. John's	Newfoundland	709-772-2582
Federal		National Research Council Canada	Ottawa	Ontario	613-993-6673
Federal	Industrial Technology Advisor	National Research Council, IRAP	Saskatoon	Saskatchewan	
Federal		National Transportation Agency Of Canada	Ottawa	Ontario	819-953-8656
Federal	Minister's Office	Natural Resources Canada	Ottawa	Ontario	613-996-2007
Federal	Director General of Research Grants	Natural Sciences and Engineering Research Council	Ottawa	Ontario	613-995-5833
Federal		NWP Officer-Canadian Coast Guard-DFO	Edmonton	Alberta	403-495-3701
Federal		Parks Canada	Yellowknife	Northwest Territories	(867) 669-2828
Federal	Northern Parks & Sites Advisor	Parks Canada	Yellowknife	Northwest Territories	867-669-2821
Federal		Polar Continental Shelf Project (PCSP)	Ottawa	Ontario	
Federal	Base Manager	Polar Continental Shelf Project (PCSP)-Base Camp1	Resolute Bay	Northwest Territories	819-252-3872
Federal	Base Manager	Polar Continental Shelf Project (PCSP)-Base Camp2	Tuktoyaktuk	Northwest Territories	867-977-2333
Federal	Regional Director General	Public Works & Government Services	Edmonton	Alberta	403-497-3500
Federal	Staff Sargent	Royal Canadian Mounted Police	Winnipeg	Manitoba	
Federal	Sergeant	Royal Canadian Mounted Police	Yellowknife	Northwest Territories	867-669-5100
Federal		Royal Canadian Mounted Police	Winnipeg	Manitoba	
Federal		Statistics Canada	Ottawa	Ontario	613-951-8698
Federal		Statistics Canada-Marine Transport Unit	Ottawa	Ontario	613-951-0188
Federal		TC-Prairie&Northern Region, Dir.of Communications	Winnipeg	Manitoba	204-983-6315
Federal		Transport Canada	Samia	Ontario	519-896-2421
Federal		Transport Canada - Marine Safety	Ottawa	Ontario	613-998-0610
Federal		Transport Canada - Prairie & Northern Region	Winnipeg	Manitoba	204-984-8105
Federal		Transport Canada - Prairie and Northern Region	Winnipeg	Manitoba	204-983-8234
Federal	Regional Director General	Transport Canada - Prairie and Northern Region	Winnipeg	Manitoba	204-984-8106
Federal	Research and Development Officer	Transport Canada - Prairie and Northern Region	Ottawa	Ontario	613-991-2479
Federal		Transport Canada - Quebec Region Laurentian Region	Quebec	Quebec	418-648-3790

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Federal	Regional Director	Transport Canada, Marine, Prairie&Northern Region	Edmonton	Alberta	403-495-2636
Federal		Transport Canada, Ottawa - Marine	Ottawa	Ontario	613-991-6003
Federal		Transport Canada-Marine Safety Branch (AMS)	Ottawa	Ontario	
Federal		Transport Canada-Marine Safety Branch (AMS)	Ottawa	Ontario	
Federal	Senior Manager for Arctic Reg.Serv.	Transport Canada-Prairie and Northern Region	Ottawa	Ontario	613-991-6001
Federal	Surveyor	Transport Canada-Prairie and Northern Region	Ottawa	Ontario	613-991-6011
Federal		Transportation Safety Board of Canada	Sillery	Quebec	418-648-4633
Federal		Transportation Development Center	Montreal	Quebec	514-283-0043
Federal		Transportation Development Centre	Montreal	Quebec	514-283-0043
Federal	Director of Investigations - Marine	Transportation Safety Board of Canada	Hull	Quebec	
Federal	Acting Superintendent	Transportation Safety Board of Canada	Hull	Quebec	
Federal		Wapusk National Park	Churchill	Manitoba	819-953-1572
Federal		Western Economic Diversification Canada	Edmonton	Alberta	204-675-8863
Territorial	P.C., MP Western Arctic	GNWT	Yellowknife	Northwest Territories	403-495-4164
Territorial	Deputy Minister	GNWT - Department of Health and Social Services	Yellowknife	Northwest Territories	867-873-6995
Territorial		GNWT - Resources Wildlife and Economic Development	Yellowknife	Northwest Territories	867-920-6173
Territorial	Director, Policy, Legislation	GNWT - Resources Wildlife and Economic Development	Yellowknife	Northwest Territories	
Territorial	Director, Minerals, Oil and Gas	GNWT - Resources Wildlife and Economic Development	Yellowknife	Northwest Territories	867-920-8046
Territorial	Director, Environmental Protection	GNWT - Resources Wildlife and Economic Development	Yellowknife	Northwest Territories	867-920-3222
Territorial	Director, Wildlife and Fisheries	GNWT - Resources Wildlife and Economic Development	Yellowknife	Northwest Territories	867-873-7654
Territorial	Culture and Heritage Advisor	GNWT - Resources Wildlife and Economic Development	Yellowknife	Northwest Territories	
Territorial	Deputy Minister	GNWT - Education, Culture & Employment	Yellowknife	Northwest Territories	867-920-6370
Territorial	Deputy Minister	GNWT-Dept. of Municipal and Community Affairs	Yellowknife	Northwest Territories	867-873-7118
Territorial	Deputy Minister	GNWT-Dept. of Community, Housing&Transportation	Iqaluit	Northwest Territories	867-979-4690
Territorial	Deputy Minister	Gov. Nunavut-Public Works, Telecommunications	Iqaluit	Northwest Territories	867-979-4720
Territorial	Assistant Director	GNWT-Dept. of Sustainable Development	Iqaluit	Northwest Territories	867-979-5071
Territorial	Assistant Director of Minerals	GNWT-Petroleum Products Division	Rankin Inlet	Northwest Territories	867-645-5178
Territorial	Senior Policy Advisor	GNWT-Resources, Wildlife and Economic Development	Iqaluit	Northwest Territories	867-979-5138
Territorial		GNWT-Resources, Wildlife and Economic Development	Iqaluit	Northwest Territories	867-979-5137
Territorial		GNWT-Resources, Wildlife and Economic Development	Iqaluit	Northwest Territories	867-979-5001
Territorial	ADM - Eastern Arctic	Government of the Northwest Territories	Iqaluit	Northwest Territories	
Territorial	ADM - Western Arctic	Government of the Northwest Territories	Iqaluit	Northwest Territories	
Territorial	Minister of Renewable Resources	Government of the Northwest Territories	Yellowknife	Northwest Territories	
Territorial		Government of the Northwest Territories	Yellowknife	Northwest Territories	
Territorial	Deputy Minister of Renewable Res.	Government of the Northwest Territories	Yellowknife	Northwest Territories	867-695-3424
Territorial	Deputy Minister	Gov. Yukon Territories - Renewable Resources	Iqaluit	Northwest Territories	
Territorial		Gov. Yukon Territories, Environmental Protection	Whitehorse	Yukon Territories	
Territorial			Whitehorse	Yukon Territories	
Territorial			Whitehorse	Yukon Territories	

Territorial		Natural Resources Canada - Northern Region	Yellowknife	Northwest Territories	
Territorial		Northwest Territories Arctic Parks & Tourism	Yellowknife	Northwest Territories	867-873-5007
Territorial		NWT - Chamber of Mines	Yellowknife	Northwest Territories	867-873-5281
Territorial		NWT Fishermens Federation	Hay River	Northwest Territories	
Territorial		Wildlife Management Advisory Council (NWT)	Ottawa	Ontario	613-730-0382
Provincial		Alberta - Environmental Protection	Edmonton	Alberta	
Provincial		Alberta Dept of Forestry, Lands and Wildlife	Edmonton	Alberta	
Provincial	Deputy Minister Fish & Wildlife	Alberta Dept. of Environmental Protection	Edmonton	Alberta	
Provincial	Director	Alberta Enviroment, Standards & Approvals Division	Edmonton	Alberta	
Provincial	Assistant Deputy Minister	Alberta Environmental Protection, Fish and Wildlife Serv.	Saskatchewan	Saskatchewan	
Provincial	Director, Fisheries Management Div.	Alberta Environmental Protection, Fish and Wildlife Serv.	Edmonton	Alberta	
Provincial	Deputy Minister	Department of Energy, Mines and Northern Affairs	Winnipeg	Manitoba	204-945-0542
Provincial		Dept.of Highways, Transport, and Marine Operations	Winnipeg	Manitoba	204-945-3424
Provincial	Director of Parks & Natural Areas	Department of Natural Resources	Winnipeg	Manitoba	
Provincial	Deputy Minister	Department of Natural Resources	Winnipeg	Manitoba	204-945-3785
Provincial	Assistant Deputy Minister	Department of Natural Resources	Winnipeg	Manitoba	204-945-2507
Provincial	Director, Parks and Facilities	Dept.of the Environment and Resource Management	Regina	Saskatchewan	
Provincial		Fish and Seafood Association of Ontario	Mississauga	Ontario	
Provincial		Fish and Wildlife Services	Edmonton	Alberta	
Provincial		Forestry/Lands & Wildlife - Ministry of Enforcement	Edmonton	Alberta	
Provincial		Manitoba - Highways and Transportation	Winnipeg	Manitoba	204-945-3421
Provincial	Director	Manitoba Environment, Environmental Quality Branch	Winnipeg	Manitoba	
Provincial	Director Fisheries Branch	Manitoba Natural Resources	Winnipeg	Manitoba	204-945-8105
Provincial		Manitoba Natural Resources	Winnipeg	Manitoba	204-945-8105
Provincial	Director Wildlife Branch	Manitoba Natural Resources	Winnipeg	Manitoba	204-945-8105
Provincial	Superintendent	Ministry Ontario Parks	Cochrane	Ontario	703-272-7124
Provincial	Director, Rec. & Protected Areas	Natural Resources Service, Environmental Protection	Edmonton	Alberta	
Provincial	Deputy Minister	Northern Affairs	Winnipeg	Manitoba	
Provincial	Area Supervisor	Ontario Mjnisty of Natural Resources	Moosonee	Ontario	705-336-2987
Provincial	Deputy Minister of Natural Res.	Province of Ontario	Toronto	Ontario	
Provincial		Quebec - Ministère Des Transports	Quebec	Quebec	418-643-1221
Provincial	Assistant Deputy Minister	Renewable Resources	Yellowknife	Northwest Territories	
Provincial	Deputy Minister	Safety & Health - Ministry Of (MB), Environment	Winnipeg	Manitoba	
Provincial		Sask - Environment & Resource Mgmt	Regina	Saskatchewan	
Provincial		Saskatchewan Agriculture and Food	Regina	Saskatchewan	
Provincial	Marine Supervisor	Saskatchewan Dept. of Highways	Prince Albert	Saskatchewan	

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Provincial		Saskatchewan Dept. of Hwys.	Laronge	Saskatchewan	306-425-4495
Provincial	Director, Fisheries Branch	Saskatchewan Environment & Resource Management	Regina	Saskatchewan	
Provincial	Director of Environmental Protection	Saskatchewan Environment & Resource Management	Regina	Saskatchewan	
Provincial		Saskatchewan Environment/Resource Management	Regina	Saskatchewan	
Provincial		Service De La Reglamentation Et Des Programmes	Québec	Quebec	418-643-1374
Provincial		Wildlife Branch	Regina	Saskatchewan	
Municipal		City of Brandon	Brandon	Manitoba	204-729-2171
Municipal	Mayor	Coppermine Inuit Community	Coppermine	Northwest Territories	
Municipal	Mayor	Inuvik Inuit Community	Inuvik	Northwest Territories	
Municipal		Local Government District of Churchill, Gateway North	Churchill	Manitoba	
Municipal		Municipality of Broughton Island	Broughton Island	Nunavut	
Municipal		Municipality of Cape Dorset	Cape Dorset	Nunavut	
Municipal		Municipality of Clyde River	Clyde River	Nunavut	
Municipal		Municipality of Hall Beach	Hall Beach	Nunavut	
Municipal		Municipality of Igloolik	Igloolik	Nunavut	
Municipal		Municipality of Rankin Inlet	Rankin Inlet	Nunavut	
Municipal		Municipality of Sanikiluaq	Sanikiluaq	Nunavut	
Municipal	Assistant General Manager	Port of Churchill	Churchill	Manitoba	
Municipal	President	Promotion Committee, The Pas, Port of Churchill	The Pas	Manitoba	
Municipal		Rural Municipality of South Cypress	Glenboro	Manitoba	204-827-2252
Municipal	Mayor	Sachs Harbour Inuit Community	Sachs Harbour	Northwest Territories	
Municipal	Mayor	Town of Churchill	Churchill	Manitoba	204-675-8871

INDIGENOUS SECTOR (First Nations/Hamlet Offices/Inuiters and Trappers Associations/Committees/Inuit Associations/ and Northern Resource Management Bodies)

GROUP	CONTACT	COMPANY	CITY	PROV./TERRITORY	PHONE
First Nations	Chief	Gwicha Gwich'in	Tsiigehtichic	Northwest Territories	867-978-2029
First Nations		Gwitch'in Land Administration	Aklavik	Northwest Territories	867-777-3123
First Nations	Chairperson	Gwitch'in Renewable Resources Board	Inuvik	Northwest Territories	867-953-3361
First Nations		Gwitch'in Social and Cultural Institute	Tsiigehtichic	Northwest Territories	867-777-4869
First Nations		Gwitch'in Tribal Council - Principal Admin.	Inuvik	Northwest Territories	
First Nations		Sahnw Renewable Resource Board	Norman Wells	Northwest Territories	
Hamlets		Arviat Hamlet Council	Arviat	Nunavut	
Hamlets	Senior Administrative Officer	Cambridge Bay Inuit Community	Cambridge Bay	Nunavut	867-436-7404
Hamlets		Community of Nanisivik	Nanisivik	Nunavut	867-793-2874
Hamlets	Mayor	Hamlet Council of Baker Lake	Baker Lake	Nunavut	867-925-8867
Hamlets	Mayor	Hamlet Council of Coral Harbour	Coral Harbour	Nunavut	867-980-9959
Hamlets	Mayor	Hamlet Council of Grise Fjord	Grise Fjord	Nunavut	867-252-3616
Hamlets	Mayor	Hamlet Council of Resolute Bay	Resolute Bay	Nunavut	
Hamlets	Mayor	Hamlet Council of Whale Cove	Whale Cove	Nunavut	
Hamlets	Mayor	Hamlet of Aklavik	Aklavik	Northwest Territories	867-978-2361
Hamlets	Mayor	Hamlet of Arctic Bay	Arctic Bay	Nunavut	867-439-9917
Hamlets	Mayor	Hamlet of Arviat	Arviat	Northwest Territories	867-857-2841
Hamlets	Mayor	Hamlet of Broughton Island	Broughton Island	Nunavut	867-927-8832
Hamlets	Mayor	Hamlet of Cambridge Bay	Cambridge Bay	Nunavut	867-983-2337
Hamlets	Mayor	Hamlet of Cape Dorset	Cape Dorset	Nunavut	867-897-8943
Hamlets	Mayor	Hamlet of Chesterfield Inlet	Chesterfield Inlet	Nunavut	867-898-9951
Hamlets	Mayor	Hamlet of Clyde River	Clyde River	Nunavut	867-924-6220
Hamlets	Mayor	Hamlet of Gjoa Haven	Gjoa Haven	Nunavut	867-360-7141
Hamlets	Mayor	Hamlet of Hall Beach	Hall Beach	Nunavut	867-928-8829
Hamlets	Mayor	Hamlet of Holman	Holman	Northwest Territories	867-396-3511
Hamlets	Mayor	Hamlet of Igloodik	Igloodik	Nunavut	867-934-9840
Hamlets	Mayor	Hamlet of Iqaluit	Iqaluit	Nunavut	867-979-5600
Hamlets	Mayor	Hamlet of Kimmirut	Kimmirut	Nunavut	867-939-2247
Hamlets	Mayor	Hamlet of Kugluktuk	Kugluktuk	Nunavut	867-982-4461
Hamlets	Mayor	Hamlet of Pangnirtung	Pangnirtung	Nunavut	
Hamlets	Mayor	Hamlet of Paulatuk	Paulatuk	Northwest Territories	867-580-3531
Hamlets	Mayor	Hamlet of Pelly Bay	Pelly Bay	Nunavut	
Hamlets	Mayor	Hamlet of Pond Inlet	Pond Inlet	Nunavut	
Hamlets	Mayor	Hamlet of Rankin Inlet	Rankin Inlet	Nunavut	867-645-2953

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Hamlets	Mayor	Hamlet of Repulse Bay	Repulse Bay	Nunavut	867-462-9952
Hamlets	Mayor	Hamlet of Sachs Harbour	Sachs Harbour	Northwest Territories	867-690-4351
Hamlets	Mayor	Hamlet of Sanikiluaq	Sanikiluaq	Nunavut	867-266-8874
Hamlets	Mayor	Hamlet of Taloyoak	Taloyoak	Nunavut	867-531-6341
Hamlets	Mayor	Hamlet of Tuktoyaktuk	Tuktoyaktuk	Northwest Territories	867-977-2286
Hamlets	Senior Administrative Officer	Senior Administrative Officer	Gjoa Haven	Nunavut	
Hamlets	Senior Administrative Officer	Taloyoak Inuit Community	Taloyoak	Nunavut	
Hamlets	Senior Administrative Officer	Town of Iqaluit	Iqaluit	Nunavut	
HTA	Chairperson	Aiviq Hunters and Trappers Association	Cape Dorset	Nunavut	
HTA		Aklavik Hunters and Trappers Association	Aklavik	Northwest Territories	867-978-2723
HTC		Aklavik Hunters and Trappers Committee	Aklavik	Northwest Territories	867-978-2723
HTA		Amarok Hunters and Trappers Association	Iqaluit	Nunavut	
HTA		Arviat Hunters and Trappers Association	Arviat	Nunavut	
HTA		Baker Lake Hunters and Trappers Association	Baker Lake	Nunavut	
HTA		Burnside Hunters and Trappers Association	Bathurst Inlet	Nunavut	
HTA		Cape Dorset Hunters and Trappers Association	Cape Dorset	Nunavut	
HTA		Chesterfield Inlet Hunters and Trappers Assoc.	Chesterfield Inlet	Nunavut	
HTA		Clyde River Hunters and Trappers Association	Clyde River	Nunavut	
HTA		Coral Harbour Hunters and Trappers Association	Coral Harbour	Nunavut	
HTA	Executive Director	Coral Harbour Hunters and Trappers Assoc.	Coral Harbour	Nunavut	
HTA		Gjoa Haven Hunters & Trappers Association	Gjoa Haven	Nunavut	
HTA	Takkinuq	Gjoa Haven Hunters and Trappers Association	Gjoa Haven	Nunavut	
HTA		Grise Fjord Hunters and Trappers Association	Grise Fjord	Nunavut	
HTA		Hall Beach Hunters and Trappers Association	Hall Beach	Nunavut	
HTA	President	Holman Hunter's and Trappers Association	Holman	Northwest Territories	867-396-3004
HTA		Holman Hunters and Trappers Committee	Holman	Northwest Territories	867-396-3004
HTA		Igloodik Hunters and Trappers Association	Igloodik	Nunavut	
HTA		Ikajuit Hunters and Trappers Association	Arctic Bay	Nunavut	
HTA	Chairperson	Inuvik Hunter's and Trappers Association	Inuvik	Northwest Territories	867-979-3671
HTA	Resource Person	Inuvik Hunters and Trappers Association	Inuvik	Northwest Territories	867-979-3671
HTC		Iqaluit Hunters and Trappers Committee	Cambridge Bay	Northwest Territories	
HTA		Iviq Hunters and Trappers Association	Grise Fjord	Nunavut	
HTA		Kurtajrojuak Hunters and Trappers Association	Pelly Bay	Nunavut	
HTA		Mayakalik Hunters & Trappers Association	Lake Harbour	Nunavut	
HTA		Mittimatalik Hunters and Trappers Association	Pond Inlet	Nunavut	
HTA		Nainvak Hunters and Trappers Association	Broughton Island	Nunavut	

HTA	Omingmaktok Hunters & Trappers Association	Bay Chimo	Nunavut	
HTA	Pangnirtung Hunters and Trappers Association	Pangnirtung	Nunavut	
HTC	Paulatuk Hunters and Trappers Committee	Paulatuk	Northwest Territories	867-580-3061
HTA	Rankin Inlet Hunters and Trappers Association	Rankin Inlet	Nunavut	
HTA	Repulse Bay Hunters and Trappers Association	Repulse Bay	Nunavut	
HTA	Resolute Bay Hunters and Trappers Association	Resolute Bay	Nunavut	
HTA	Sachs Harbour Hunter and Trappers Association	Sachs Harbour	Northwest Territories	867-690-3028
HTA	Sanikiluaq Hunters and Trappers Association	Sanikiluaq	Nunavut	
HTA	Spence Bay Hunters and Trappers Association	Taloyoak	Nunavut	
HTA	Spence Bay Hunters' and Trappers Association	Taloyoak	Nunavut	
HTA	Tuktoyaktuk Hunters' and Trappers Association	Tuktoyaktuk	Northwest Territories	867-977-2457
HTC	Tuktoyaktuk Hunters' and Trappers Committee	Tuktoyaktuk	Northwest Territories	867-977-2457
HTA	Whale Cove Hunters and Trappers Association	Whale Cove	Nunavut	
Inuit Assoc.	Baffin Region Inuit Association, (BRIA)	Iqaluit	Nunavut	
Inuit Assoc.	Keewatin Regional Inuit Association	Rankin Inlet	Nunavut	
Inuit Assoc.	Kitikmeot Inuit Association	Cambridge Bay	Nunavut	867-983-2458
Inuit Assoc.	Kitikmeot Regional Inuit Association	Cambridge Bay	Nunavut	
Inuit Assoc.	Kitimeot Inuit Association	Cambridge Bay	Nunavut	
Inuit Assoc.	Kivalliq Inuit Association	Rankin Inlet	Nunavut	
Inuit Assoc.	Kugluktuk Anoniatit Association	Coppermine	Nunavut	
Inuit Assoc.	Kugluktuk Anoniatit Association	Coppermine	Nunavut	
Inuit Assoc.	Qikiqtaaluk Inuit Association	Iqaluit	Nunavut	867-979-5391
Inuit Assoc.	Qikiqtaaluk Inuit Association	Iqaluit	Nunavut	867-979-5391
Inuit Assoc.	Qikiqtaaluk Inuit Association	Iqaluit	Nunavut	867-979-5391
Inuit Assoc.	Qikiqtaaluk Inuit Association	Iqaluit	Nunavut	867-979-5391
Mgmt. Boards	Fisheries Joint Management Committee	La Ronge	Saskatchewan	306-425-3136
Mgmt. Boards	Fisheries Joint Management Committee	Inuvik	Northwest Territories	867-777-2828
Mgmt. Boards	Gwitchin Land and Water Working Group	Inuvik	Northwest Territories	867-979-4954
Mgmt. Boards	Gwitchin Tribal Council - President	Inuvik	Northwest Territories	867-777-4869
Mgmt. Boards	Interim Land Use Planning Board	Fort McPherson	Northwest Territories	867-952-2025
Mgmt. Boards	Inuvialuit Development Corporation	Inuvik	Northwest Territories	867-777-2828
Mgmt. Boards	Inuvialuit Game Council	Inuvik	Northwest Territories	867-777-2828
Mgmt. Boards	Inuvialuit Game Council	Inuvik	Northwest Territories	867-777-2828
Mgmt. Boards	Inuvialuit Joint Secretariat	Inuvik	Northwest Territories	867-777-2828
Mgmt. Boards	Inuvialuit Regional Corporation	Inuvik	Northwest Territories	867-777-2828
Mgmt. Boards	Inuvialuit Wildlife Mgmt. Advisory Council	Inuvik	Northwest Territories	867-777-2737
Mgmt. Boards	Nunavut Impact Review Board Transition Team	Inuvik	Northwest Territories	867-983-2593
Mgmt. Boards		Cambridge Bay	Nunavut	

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Mgmt. Boards	Chief Commissioner	Nunavut Implementation Commission	Iqaluit	Nunavut	819-979-4199
Mgmt. Boards	Member (N.T.I.)	Nunavut Implementation Commission	Arviat	Nunavut	819-857-2922
Mgmt. Boards	Member (F.G.)	Nunavut Planning Commission	Clyde River	Nunavut	819-924-6418
Mgmt. Boards		Nunavut Planning Commission	Cambridge Bay	Nunavut	403-983-2902
Mgmt. Boards		Nunavut Planning Commission	Taloyoak	Nunavut	
Mgmt. Boards	Kiitukneq Planning Coordinator	Nunavut Planning Commission	Cambridge Bay	Nunavut	403-982-5611
Mgmt. Boards	Executive Director Trainee	Nunavut Planning Commission	Ottawa	Ontario	613-238-1155
Mgmt. Boards	Chairman	Nunavut Planning Commission	Taloyoak	Nunavut	867-561-6896
Mgmt. Boards	Member (N.T.I.)	Nunavut Planning Commission	Pond Inlet	Nunavut	819-899-8939
Mgmt. Boards	Executive Director	Nunavut Planning Commission	Ottawa	Ontario	613-238-1155
Mgmt. Boards	Member (GNWT)	Nunavut Planning Commission	Rankin Inlet	Nunavut	819-645-2960
Mgmt. Boards	Vice-Chairperson (GNWT)	Nunavut Planning Commission	Cape Dorset	Nunavut	819-897-8943
Mgmt. Boards		Nunavut Planning Commission	Ottawa	Ontario	
Mgmt. Boards	Member (N.T.I.)	Nunavut Planning Commission	Arviat	Nunavut	819-857-2722
Mgmt. Boards	Member (N.T.I.), Manager HTA	Nunavut Planning Commission	Kugluktuk	Nunavut	403-982-4908
Mgmt. Boards	Kiitukneq Planning Co-ordinator	Nunavut Impact Review Board	Cambridge Bay	Nunavut	403-983-2593
Mgmt. Boards	Co-ordinator/Baffin Region	Nunavut Planning Comm./Nunavut Water Board	Iqaluit	Nunavut	867-979-1444
Mgmt. Boards	Chairperson	Nunavut Planning Comm./Nunavut Water Board	Rankin Inlet	Nunavut	819-645-3345
Mgmt. Boards	Executive Director	Nunavut Surface Rights Tribunal	Iqaluit	Nunavut	867-979-1555
Mgmt. Boards	Board Member(GNWT)	Nunavut Water Board	Iqaluit	Nunavut	403-360-6338
Mgmt. Boards	Vice-Chairperson (GNWT)	Nunavut Water Board	Gjoa Haven	Nunavut	403-360-6338
Mgmt. Boards	Chairperson (FedGov)	Nunavut Water Board	Kugluktuk	Nunavut	403-982-3102
Mgmt. Boards	Board Member (NTI)	Nunavut Water Board	Sanikiluaq	Nunavut	819-266-8630
Mgmt. Boards	Board Member(NTI)	Nunavut Water Board	Baker Lake	Nunavut	819-793-2140
Mgmt. Boards	Board Member(NTI)	Nunavut Water Board	Rankin Inlet	Nunavut	819-645-5036
Mgmt. Boards	Member (Keewatin Appointee)	Nunavut Water Board	Gjoa Haven	Nunavut	403-360-6352
Mgmt. Boards	Alternate (Makivik Appointee)	Nunavut Wildlife Management Board	Arviat	Nunavut	819-857-2821
Mgmt. Boards	Member (N.T.I. Appointee)	Nunavut Wildlife Management Board	Rankin Inlet	Nunavut	819-645-2800
Mgmt. Boards	Member (GNWT Appointee)	Nunavut Wildlife Management Board	Akulivik	Quebec	819-496-2578
Mgmt. Boards	Member (Kiitukneq Appointee)	Nunavut Wildlife Management Board	Pond Inlet	Nunavut	819-899-8997
Mgmt. Boards	Member (Baffin Appointee)	Nunavut Wildlife Management Board	Iqaluit	Nunavut	819-979-6720
Mgmt. Boards	Member (DFO Appointee)	Nunavut Wildlife Management Board	Taloyoak	Nunavut	403-561-6006
Mgmt. Boards		Nunavut Wildlife Management Board	Kimmitut	Nunavut	819-939-2284
Mgmt. Boards	Member (DIAND Appointee)	Nunavut Wildlife Management Board	Saskatoon	Saskatchewan	306-955-1781
Mgmt. Boards	Executive Director	Nunavut Wildlife Management Board	Iqaluit	Nunavut	819-979-2777
Mgmt. Boards		Nunavut Wildlife Management Board	Iqaluit	Nunavut	867-979-6962

Mgmt. Boards	Alternate (Makivik Appointee)	Nunavut Wildlife Management Board	Kuujuuaq	Quebec	819-964-2925
Mgmt. Boards	Assistant Director Wildlife Mgmt.	Nunavut Wildlife Management Board	Iqaluit	Nunavut	867-979-6962
Mgmt. Boards	Interim Chairperson	Nunavut Wildlife Management Board	Iqaluit	Nunavut	867-979-6962
Mgmt. Boards	Chairman	Sahlu Renewable Resources Board	Norman Wells	Northwest Territories	867-63-5476
Mgmt. Boards		Wildlife Management Advisory Council	Whitehorse	Yukon Territories	
Mgmt. Boards		Wildlife Management Advisory Council -NWT	Inuvik	Northwest Territories	

INDUSTRY SECTOR (Construction/Fisheries/Mining/Petroleum Development/Tourism/and Transport)

GROUP	CONTACT	COMPANY	CITY	PROV./TERRITORY	PHONE
Construction		A. Frame Contracting Ltd.	Fort McMurray	Alberta	403-791-6851
Construction		Ninety-B. Construction	Berens River	Manitoba	204-382-2161
Fish		Freshwater Fish Marketing Corp.	Riverton	Manitoba	204-378-2456
Fish		Freshwater Fish Marketing Corp.	Hay River	Northwest Territories	867-874-6630
Fish		Freshwater Fish Marketing Corporation	Winnipeg	Manitoba	
Fish		Canadian Association Of Prawn Producers	Bedford	Nova Scotia	902-832-7114
Fish		Fish and Seafood Association of Canada	Woodbridge	Ontario	
Fish	Co-Chairperson	Great Slave Lake Metis Commercial Fisherman	Yellowknife	Northwest Territories	
Fish		N. W. T. Fisherman's Federation	Hay River	Northwest Territories	
Fish		Norway House Fishermans Co-op Ltd.	Norway House	Manitoba	204-359-6579
Fish	Business Administrator	NWT Fisherman's Federation	Hay River	Northwest Territories	867-874-3466
Hydro		Manitoba Hydro	Thompson	Manitoba	204-778-4244
Hydro		Manitoba Hydro	Winnipeg	Manitoba	
Inuit	President	Nunavut Tunngavik Inc.	Iqaluit	Nunavut	867-979-3232
Mining		Cominco Metals	Vancouver	British Columbia	604-682-0611
Mining		Cominco Metals	Toronto	Ontario	416-869-1850
Mining		Etruscan Resources	Dartmouth		902-468-9270
Mining		INMET Mining Corp.	Toronto	Ontario	416-361-6400
Mining		Kit Resources	Vancouver	British Columbia	604-331-1818
Mining		Kitikmeot Corp.	Cambridge Bay	Nunavut	867-983-2458
Mining		Lytton Minerals	North Vancouver	British Columbia	604-904-9800
Mining	Mine Manager	Nanisivik Mines Ltd.	Nanisivik	Nunavut	867-436-7351
Mining		Nuna Logistics	Vancouver	British Columbia	604-682-4667
Petroleum	Supervisor, Environmental Health/Safety	AEC Oil and Gas	Calgary	Alberta	403-261-2400
Petroleum	Manager Environment, Health and Safety	Amoco Canada Petroleum Company Ltd.	Calgary	Alberta	403-233-1313
Petroleum	Manager, Safety and Environment	Anderson Exploration Ltd.	Calgary	Alberta	403-232-7100
Petroleum		Athabasca Petro Sales	Fort Chipewyan	Alberta	403-697-3806
Petroleum	Manager Health, Safety and Environment	BHP Petroleum (Canada) Inc.	Calgary	Alberta	403-263-8500
Petroleum		BHP World Minerals	San Francisco	California	415-774-2256
Petroleum	Staff Engineering Technologist	Canadian 88 Energy Resources Corporation	Calgary	Alberta	403-974-8800
Petroleum	Managing Director	Canadian Association of Oilwell Drilling Contractors	Calgary	Alberta	403-264-4311
Petroleum		Canadian Association of Petroleum Producers	Calgary	Alberta	403-267-1100

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Petroleum		Canadian Energy Pipeline Association	Calgary	Alberta	
Petroleum		Canadian Heavy Oil Association	Calgary	Alberta	403-269-1755
Petroleum		Canadian Marine Drilling Ltd.	Calgary	Alberta	403-298-3500
Petroleum	Manager of Environment and Safety	Chevron Canada Resources	Calgary	Alberta	403-234-5000
Petroleum		Enerchem	Montreal	Quebec	514-395-4500
Petroleum		Enerchem	Montreal	Quebec	514-395-4500
Petroleum	Director Environment, Health and Safety	Gulf Canada Resources Limited	Calgary	Alberta	800-887-4853
Petroleum	Manager Health, Safety and Environment	Husky Oil Operations Ltd.	Calgary	Alberta	403-298-6111
Petroleum		Imperial Oil Products Division	Toronto	Ontario	416-968-5162
Petroleum	Environment	Imperial Oil Resources Limited	Calgary	Alberta	403-237-3737
Petroleum		International Association of Drilling Contractors	Houston	Texas	281-578-7171
Petroleum	President	Inuvialuit Petroleum Corporation	Calgary	Alberta	403-282-8955
Petroleum	Environment	Murphy Oil Company Ltd.	Calgary	Alberta	403-297-8000
Petroleum	Domestic Construction Foreman	Ocelot Energy	Calgary	Alberta	403-299-5700
Petroleum	Operations Administrator	Panarctic Oils Ltd.	Calgary	Alberta	403-269-0311
Petroleum	Coordinator, Environmental Affairs	PanCanadian Petroleum Limited	Calgary	Alberta	403-290-2000
Petroleum	Manager, Environment Health and Safety	Paramount Resources	Calgary	Alberta	403-266-2047
Petroleum	Marine Manager	Petro-Canada	Montreal	Quebec	514-350-2000
Petroleum	Senior Director of Health and Safety	Petro-Canada	Calgary	Alberta	403-296-8000
Petroleum		Petro-Canada Resources	Calgary	Alberta	403-296-8000
Petroleum		Petroleum Communication Foundation	Calgary	Alberta	403-264-6064
Petroleum		Petroleum Service Association of Canada	Calgary	Alberta	
Petroleum		Petroleum Society - Cdn.Institute of Mining&Petro.	Calgary	Alberta	403-237-5112
Petroleum	Manager, Environment Health and Safety	Phillips Petroleum Resources Ltd.	Calgary	Alberta	403-298-1266
Petroleum		Pipe-Protech Corrosion Surveys Inc.	Nepean	Ontario	613-224-2177
Petroleum	Manager of Engineering	Purcell Energy Ltd.	Calgary	Alberta	403-269-5803
Petroleum	Safety and Environment Coordinator	Ranger Oil Limited	Calgary	Alberta	403-232-5200
Petroleum	Director, Health, Safety and Environment	Shell Canada Limited	Calgary	Alberta	403-691-3111
Petroleum		Shell Canada Ltd.	Anjou	Quebec	514-356-7280
Petroleum	Environmental Advisor	Suncor Energy Inc.	Calgary	Alberta	403-269-8100
Petroleum	Chairman, CEPA Environmental Comm.	Trans Mountain Pipeline Co.	Vancouver	British Columbia	604-739-5252
Petroleum	Environmental Services and Regulation	Union Pacific Resources Group Inc.	Fort Worth	Texas	817-321-7014
Petroleum	Environment	Unocal Canada Limited	Calgary	Alberta	403-268-0176
Tourism		Adventure Canada	Mississauga	Ontario	800-363-7566
Tourism		Aiviq Hunters' and Trappers Association	Cape Dorset	Nunavut	867-897-8978

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Tourism		Ajagutaq Outfitting	Clyde River	Nunavut	867-924-6345
Tourism	Owner	Alivaktuk Outfitting	Pangnirtung	Nunavut	867-473-8721
Tourism		Anderson's River - Natures Best	Tuktoyaktuk	Northwest Territories	
Tourism		Appa Tours	Coral Harbour	Nunavut	867-925-8861
Tourism		Arctic Chalet Outfitting	Inuvik	Northwest Territories	867-777-3535
Tourism		Arctic Islands Lodge	Cambridge Bay	Nunavut	867-983-2345
Tourism	President	Arctic Nature Tours	Inuvik	Northwest Territories	867-777-3300
Tourism		Arctic Odysseys	Seattle	Washington, USA	206-325-1977
Tourism	Managing Director	Arctic Tour Company	Inuvik	Northwest Territories	867-777-4100
Tourism		Arctic Tourism	Yellowknife	Northwest Territories	867-873-5007
Tourism		Arctic Vision	Whitehorse	Yukon Territories	867-668-2411
Tourism		Arctic Waterways(Nahanni River Adventure)	Whitehorse	Yukon Territories	800-297-5927
Tourism		Arviat Tundra Adventures	Arviat	Nunavut	867-857-2636
Tourism		Banks Island Big Game Hunts	Sachs Harbour	Northwest Territories	867-690-3028
Tourism		Bathurst Arctic Services	Yellowknife	Northwest Territories	867-873-2595
Tourism		Beaufort Delta Tours	Inuvik	Northwest Territories	867-777-4881
Tourism		Beaufort Outfitting & Guiding Services Ltd.	Tuktoyaktuk	Northwest Territories	867-977-2457
Tourism	Manager	Beluga Tours	Inuvik	Northwest Territories	
Tourism		Black Feather Wilderness Adventures	Ottawa	Ontario	613-722-9717
Tourism		Blue Water Outfitting	Chesterfield Inlet	Nunavut	867-898-9031
Tourism		Canada's Canoe Adventures	Merrickville	Ontario	613-269-2910
Tourism		Canadian Arctic Adventure Tours	Inuvik	Northwest Territories	867-777-4006
Tourism		Canadian Hovertours	Brooks	Alberta	
Tourism		Canadian River Expeditions	Whistler	British Columbia	604-938-6651
Tourism		Canoe Arctic Inc.	Fort Smith	Northwest Territories	867-872-2308
Tourism		Central Arctic Tours & Outfitters	Cambridge Bay	Nunavut	867-983-2024
Tourism		Ch'ii Adventures	Fort McPherson	Northwest Territories	867-952-2442
Tourism		Cross Marine Inc.	Pointe Claire	Quebec	514-630-4910
Tourism		Delta Experience Tours	Inuvik	Northwest Territories	867-777-2861
Tourism		Delta Tours & Outfitting	Inuvik	Northwest Territories	867-777-3727
Tourism		Divii Mountain Tours	Inuvik	Northwest Territories	867-777-3071
Tourism		Eagle Tours	Inuvik	Northwest Territories	867-777-3465
Tourism		Ecosummer Expeditions	Vancouver	British Columbia	800-465-8884
Tourism		Edwin Evo Outfitting	Baker Lake	Nunavut	867-793-2175
Tourism	Co-owner	Eetuk Outfitting and Equipment Rental	Iqaluit	Nunavut	867-979-1984

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Tourism		Ferguson Lake Lodge	Rankin Inlet	Nunavut	867-645-2197
Tourism		Floyd Holdings Ltd.	Aklavik	Northwest Territories	867-978-2527
Tourism		Frontiers North	Winnipeg	Manitoba	204-949-2050
Tourism		Gjoa Haven Tours	Gjoa Haven	Nunavut	867-360-6008
Tourism		High Arctic International Explorer Services Ltd.	Resolute Bay	Nunavut	867-252-3875
Tourism		High Arctic Lodge	Penticton	British Columbia	250-493-3300
Tourism		Huit Huit Tours	Cape Dorset	Nunavut	867-897-8806
Tourism		Husky Lakes Cabin Rentals	Inuvik	Northwest Territories	867-777-4455
Tourism		Ice Dancer Tours	Cambridge Bay	Nunavut	867-983-2268
Tourism		IceBerg Outfitter	Broughton Island	Nunavut	867-927-8457
Tourism		Idlout Lodge Outfitters	Resolute Bay	Nunavut	867-252-3800
Tourism		Igloodik Outdoor Adventurers	Igloodik	Nunavut	867-934-8759
Tourism		Illisavik Camp Ltd.	Inuvik	Northwest Territories	867-777-2210
Tourism		Inuit Sea Kayaking Adventures	Iqaluit	Nunavut	867-979-2055
Tourism		Inuvik Marine Outfitters	Inuvik	Northwest Territories	867-777-4382
Tourism		Jaco Qaqasiq Outfitting	Pangnirtung	Nunavut	867-473-8214
Tourism		Kajjaamaq Arctic Tours	Coral Harbour	Nunavut	867-925-8366
Tourism	Manager	Kasba Lake Lodge	Parksville	British Columbia	250-248-3572
Tourism		Kendail Island Whale Watching Tours	Inuvik	Northwest Territories	867-777-4100
Tourism		Keyotak Outfitting	Broughton Island	Nunavut	867-927-8114
Tourism		Kivalliq Charter Boat Service	Rankin Inlet	Nunavut	867-645-3756
Tourism		Kivalliq Tours	Rankin Inlet	Nunavut	867-645-2731
Tourism		Koomiut Co-op	Pelly Bay	Nunavut	867-769-7211
Tourism		Kungut Outfitting	Hall Beach	Nunavut	867-928-8063
Tourism		Kuptana's Outfitters	Sachs Harbour	Northwest Territories	867-690-4151
Tourism		Levi Palituq Outfitting	Clyde River	Nunavut	867-924-6268
Tourism		Livee Kullualik Outfitting	Arctic Bay	Nunavut	867-439-9949
Tourism		Lucy's Bush Camp	Inuvik	Northwest Territories	867-777-2651
Tourism		Mackenzie Delta Mushing	Inuvik	Northwest Territories	867-777-3253
Tourism		Maligne Lake Tours	Jasper	Alberta	
Tourism	Marine Supervisor	Maligne Lake Tours	Jasper	Alberta	
Tourism		Mangark Boat Tours	Arviat	Nunavut	867-857-2941
Tourism		Marine Expeditions	Toronto	Ontario	800-260-9147
Tourism		Mayukalik	Kimmiut	Nunavut	867-939-2355
Tourism		Midnight Express Tours	Inuvik	Northwest Territories	867-777-2651

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Tourism		Minnewanka Tours (1997) Ltd.	Banff	Alberta	
Tourism		Nauyaq Outfitting	Broughton Island	Nunavut	867-927-8427
Tourism		Niglasuk Co. Ltd.	Arctic Bay	Nunavut	867-439-9949
Tourism		Northcott Tours & Consulting (Eastern Arctic)	Iqaluit	Nunavut	867-979-6261
Tourism		Northern Airlink	Inuvik	Northwest Territories	867-777-2800
Tourism	Owner	Northwest Passage Expeditions Ltd.	Maple Ridge	British Columbia	604-463-2035
Tourism		Northwinds Arctic Adventures	Iqaluit	Nunavut	867-979-0551
Tourism		Nunavut Tourism	Iqaluit	Nunavut	800-491-7910
Tourism	Regional Tourism Development Coor.	Nunavut Toursim	Iqaluit	Nunavut	867-979-6551
Tourism		O Canada! Expeditions	Wakefield	Quebec	819-422-3700
Tourism		Ookpik Tours & Adventure	Tuktoyaktuk	Northwest Territories	867-977-2170
Tourism		Out-Tours	Baker Lake	Nunavut	867-793-2511
Tourism		Paylemonie Etuangat Outfitters	Pangnirtung	Nunavut	867-473-8933
Tourism		Peter Tapatai Outfitting	Baker Lake	Nunavut	867-793-2618
Tourism		Pikaluyak Outfitters	Broughton Island	Nunavut	867-927-8313
Tourism		Pleasure Island Restaurant	Dawson City	Alberta	403-993-5482
Tourism		Purlaavik Outfitting	Iqaluit	Nunavut	867-979-3344
Tourism		Qairrulik Outfitting Ltd.	Iqaluit	Nunavut	867-979-6280
Tourism		Qayak Nunavut	Kimmirut	Nunavut	867-939-2307
Tourism		Qikiqtait Tour and Outfitting Company	Sanikiluaq	Nunavut	867-266-8623
Tourism		Qimuk Adventure Tours	Iqaluit	Nunavut	867-979-1600
Tourism		Quark Expeditions	Carien	CT, USA	203-358-9033
Tourism		Quark Expeditions	Darien		203-656-0499
Tourism		Quest Nature Tours	Toronto	Ontario	416-221-3000
Tourism		Qukiqtaq Nature Tours	Inuvik	Northwest Territories	867-777-2614
Tourism		Qullikkut Guides & Outfitters	Clyde River	Nunavut	867-924-6268
Tourism		Qutsiktumiut Outfitting	Grise Fiord	Nunavut	867-980-9063
Tourism		R. T. Gruban Services	Tuktoyaktuk	Northwest Territories	867-977-2230
Tourism		Rafter's Landing	Edmonton	Alberta	
Tourism		Rat River Tours	Fort McPherson	Northwest Territories	867-952-2363
Tourism		Red Mountain Adventures	Aklavik	Northwest Territories	867-978-2747
Tourism		Rendezvous Lake Outpost Camp	Tuktoyaktuk	Northwest Territories	867-977-2406
Tourism		Sachs Harbour	Sachs Harbour	Northwest Territories	867-690-3451
Tourism		Saunatuk Fishing Lodge	Tuktoyaktuk	Northwest Territories	867-977-2348
Tourism		Sea North Tours	Churchill	Manitoba	204-675-2195

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Tourism		Sea Taxi	Rankin Inlet	Nunavut	867-645-2971
Tourism		Sea to Sky Expeditions	Delta	British Columbia	604-594-7701
Tourism		Siku Outfitting	Cape Dorset	Nunavut	867-897-8198
Tourism		Sila Lodge	Winnipeg	Manitoba	204-949-2050
Tourism		Sioans' Boat Tours	Inuvik	Northwest Territories	867-777-3055
Tourism		Sitidgi Lake Fishing Lodge	Inuvik	Northwest Territories	867-777-3349
Tourism	Owner	Sunrise County Canoe Expeditions Inc.		ME	207-454-7708
Tourism		Tagak Outfitting	Pond Inlet	Nunavut	867-899-8932
Tourism		Taku Outfitting	Igloolik	Nunavut	867-934-8815
Tourism		TCS Expeditions	Seattle	Washington	206-727-7300
Tourism		The Mad Trappers Tours Company	Aklavik	Northwest Territories	867-978-2548
Tourism	Marketing Director	The Northwest Passage	Wilmette	Illinois	847-256-4409
Tourism		Toonoonik Sahoonek Co-op	Pond Inlet	Nunavut	867-899-8847
Tourism		Toonoonik Sahoonek Outfitters	Pond Inlet	Nunavut	867-899-8364
Tourism		Tuktoyaktuk River Tours	Tuktoyaktuk	Northwest Territories	867-977-2415
Tourism		Tumi Tours	Rankin Inlet	Nunavut	867-645-2650
Tourism		Ukalik Outfitting	Igloolik	Nunavut	867-934-8940
Tourism		Ukamaktit Touring and Guiding	Arviat	Nunavut	867-857-2780
Tourism		Ullivik Outfitting & Guiding	Arctic Bay	Nunavut	867-439-8238
Tourism	Marine Supervisor	Wanapitei Wilderness Center	Peterborough	Ontario	705-745-8314
Tourism		Waterton Shoreline Cruises	Waterton Lake	Alberta	
Tourism		Waterton Shoreline Inter-Nation Cruise Co. Ltd.	Waterton	Alberta	
Tourism		Western Arctic Adventures & Equipment	Inuvik	Northwest Territories	867-777-4542
Tourism		Whitewolf Adventure Expeditions/Nahanni River	Port Coquitlam	British Columbia	800-661-6659
Tourism		Whitney & Smith Expeditions	Banff	Alberta	403-678-3052
Tourism		Zoo Cruises	Syvan Lake	Alberta	
Trade		Canadian International Trade Association	Toronto	Ontario	
Transport		Advanced Engine Technology Ltd.	Nepean	Ontario	613-721-1234
Transport		Anglo-Eastern Ship Management Ltd.	Pointe Claire	Quebec	514-697-3091
Transport		Anglo-Eastern Ship Management Ltd.	Pointe Claire	Quebec	514-697-3062
Transport		C.A. Crosbie Shipping Ltd.	Montreal	Quebec	514-849-6194
Transport	Operations Manager	C.A. Crosbie Shipping Ltd.	Montreal	Quebec	514-849-6194
Transport		Canada Ports Corporation, Churchill Ports	Churchill	Manitoba	204-675-8823
Transport		Canadian Ice Service	Ottawa	Ontario	613-996-5088
Transport	Ice Forecaster	Canadian Ice Service	Ottawa	Ontario	613-996-0816

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Transport	Canadian International Freight Forwarders Assoc.	Streetsville	Ontario	416-971-4240
Transport	Canadian Marine Manufacturers Association	Toronto	Ontario	905-646-2261
Transport	Canadian Shipbuilding and Engineering Ltd.	St. Catharines	Ontario	613-232-3539
Transport	Canadian Shipowners Association	Ottawa	Ontario	514-878-6652
Transport	Canarctic Shipping/FedNav	Montreal	Quebec	867-982-3161
Transport	Coronation Marine Transport	Coppermine	Nunavut	604-687-9677
Transport	Council of Marine Carriers	Vancouver	British Columbia	514-878-6527
Transport	Fednav International	Montreal	Quebec	514-878-6680
Transport	Fednav International Ltd.	Montreal	Quebec	514-398-9004
Transport	Fleet Technology Limited	Montreal	Quebec	204-725-2119
Transport	Hudson Bay Route Association	Brandon	Manitoba	306-782-3363
Transport	Hudson Bay Route Association	Yorkton	Saskatchewan	
Transport	Kvaerner Masa Marine Inc.	Vancouver	British Columbia	
Transport	Lloyd's Register of Shipping	North Vancouver	British Columbia	604-985-0477
Transport	Lloyd's Register of Shipping	Montreal	Quebec	514-849-4291
Transport	Macdonald Marine Transport Ltd.	Edmonton	Alberta	403-452-6143
Transport	Marathon Marine Manufacturing (1987) Ltd.	Edmonton	Alberta	
Transport	Marine Transport Ltd.	Selkirk	Manitoba	204-482-6055
Transport	Mcville Shipping Inc.	Ottawa	Ontario	613-236-6300
Transport	Moosonee Transportation Ltd.	Moosonee	Ontario	705-336-2225
Transport	Morlines Maritime Agency Ltd.	Montreal	Quebec	514-285-1571
Transport	Neste Shipping Canada Ltd.	Toronto	Ontario	416-368-2331
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5132
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5134
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5176
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5136
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5173
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5157
Transport	Northern Transportation Co. Ltd.	Hay River	Northwest Territories	867-874-5162
Transport	NTCL/Nortran Inc.	Iqaluit	Nunavut	867-979-0095
Transport	Riverton Welding/ZAGFAB	Riverton	Manitoba	204-378-5314
Transport	Shipping Federation Of Canada	Montreal	Quebec	514-849-2325
Transport	Transport Desgagnés Inc.	Quebec	Quebec	418-692-1000
Transport	Transport Desgagnés Inc.	Québec	Quebec	418-692-1000
Transport	Transport Igloolik	Montreal	Quebec	514-597-0186

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Transport		Transport Nanuk Inc.	Montreal	Quebec	514-597-0186
Transport		Transport Nunuk	Montreal	Quebec	514-597-0186
Transport		Transportation Development Centre (TDC)	Montreal	Quebec	514-283-0066
Transport		Trillium Ship Brokers	Montreal	Quebec	514-288-4448
Transport		Waterways Enterprises Ltd.	Winnipeg	Manitoba	204-668-8339
Transport	Harbour Master	Port of Churchill	Winnipeg	Manitoba	204-885-7802
Transport	Harbour Master	Port of Churchill	Churchill	Manitoba	204-675-8823
Other		AKAC Inc.	Calgary	Alberta	403-240-3431
Other		Arctic Consultants Inc.	Anjou	Quebec	514-353-3552
Other		Arctic Operations International Inc.	Parksville	British Columbia	604-752-1760
Other		Breakwater Resources Ltd.	Toronto	Ontario	416-363-4798
Other		Bureau Veritas	Montreal	Quebec	514-288-6515
Other		C. J. Marine & Associates Ltd.	Campbell River	British Columbia	604-923-3108
Other		C.R. Reville Marine Consultants Ltd.	Calgary	Alberta	403-282-5602
Other		CoPor Inc.	Ottawa	Ontario	613-233-3767
Other		D.C. Maritime Technologies	North Vancouver	British Columbia	604-904-0525
Other		D.C. Maritime Technologies	Vancouver	British Columbia	604-929-9525
Other		D.F. Dickins Associate Ltd.	La Hoya	California	619-454-1048
Other		D.F. Dickins Associated Ltd.	Salt Spring Island	British Columbia	604-537-4492
Other		Det Norske Veritas	North Vancouver	British Columbia	604-985-7425
Other		Det Norske Veritas	Pointe-Claire	Quebec	514-695-0735
Other		DNV	Mississauga	Ontario	905-567-8878
Other		Duterte Manufacturing Inc.	Dinsmore	Saskatchewan	
Other		ENFOTEC	Ottawa	Ontario	613-228-9744
Other		Fédération Des Coopératives Du	Baie d'Urfé	Quebec	514-457-9371
Other		Fleet Technology Ltd.	Kanata	Ontario	613-592-2830
Other		Germanischer Lloyd	Montreal	Quebec	514-287-7102
Other		Hayes Stuart Inc.	Montreal	Quebec	514-866-1801
Other		International Outsource Services Ltd.	Calgary	Alberta	403-233-7401
Other		K.R., Croasdale & Associates	Calgary	Alberta	403-243-7787
Other		Kent Line Ltd.	Saint John	New Brunswick	506-632-1666
Other		KRK Consulting Inc.	Calgary	Alberta	403-244-4093
Other		Lamano	Toronto	Ontario	416-243-7787
Other		M.N.I.	Athens	Ontario	613-924-9730
Other		Mariport Group Ltd.	Cambridge	Ontario	519-624-5513

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Other	Martec Ltd.	Halifax	Nova Scotia	902-425-5101
Other	Metricomp System Ltd.	Calgary	Alberta	403-246-1983
Other	MIL Davie Inc.	Levis	Quebec	418-837-5841
Other	MIL Systems	Ottawa	Ontario	613-726-0500
Other	Naocha Enterprises	Yellowknife	Northwest Territories	867-873-8019
Other	Neo Watin Marine Services Ltd.	Waskesiu	Saskatchewan	
Other	Nexus North Inc.	Winnipeg	Manitoba	204-488-0467
Other	Noetix Research Inc.	Ottawa	Ontario	613-729-7166
Other	Northern Consultant-D. W. T. Surveys	Goose Bay	Labrador	709-896-5937
Other	Nortran Inc.	La Prairie	Quebec	514-659-2950
Other	P.L. Rancier	Bonnyville	Alberta	
Other	Peter S. Hatfield Ltd.	Vancouver	British Columbia	604-253-0955
Other	Polar Design Associates Ltd.	Vancouver	British Columbia	604-873-4601
Other	Prior Data Sciences Ltd.	Kanata	Ontario	613-591-7235
Other	R.P. Browne Marine Consultants Ltd.	Calgary	Alberta	403-276-3832
Other	Red Sky Enterprise Inc.	Cochrane	Alberta	409-932-7524
Other	Robert Allan Ltd.	Vancouver	British Columbia	604-736-9466
Other	S.H.M. Marine International Inc.	Victoria	British Columbia	604-475-9553
Other	Ultramar Canada Inc.	Montreal	Quebec	514-499-6111
Other	Westmar Consultants Inc.	N. Vancouver	British Columbia	604-985-6488
Other	Woodward Group Of Companies	Happy Valley	Newfoundland	709-896-2421
Other	Wright Inc.	Calgary	Alberta	403-266-7519