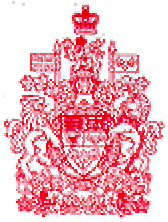


SELECTED THEMES ON CANADA'S FRESHWATER AND NORTHERN FISHERIES

Report of the Standing Senate Committee on Fisheries

First Session
Thirty-Seventh Parliament

February 2002

(Ce rapport est disponible en français)

Available on the Parliamentary Internet:
http://www.parl.gc.ca/common/Committee_SenRep.asp?Language=E&Parl=37&Ses=1&comm_id=7

Selected Themes on Canada's Freshwater and Northern Fisheries

Interim Report of the Standing Senate Committee on Fisheries

Chair
The Honourable Gerald J. Comeau

Deputy Chair
The Honourable Joan Cook

February 2002

MEMBERSHIP

37th Parliament - 1st Session

THE STANDING SENATE COMMITTEE ON FISHERIES

The Honourable Gerald J. Comeau, *Chair*
The Honourable Joan Cook, *Deputy Chair*

And

The Honourable Senators:
Adams
Callbeck
Carney, P.C.
*Carstairs, P.C. (or Robichaud, P.C.)
Chalifoux
*Lynch-Staunton (or Kinsella)
Mahovlich
Meighen
Moore
Robertson
Watt

*Ex Officio Members
The following Senators also served on the Committee during its study: The Honourable Senators Corbin, DeBané, Forrestall, Graham, Hubley, Johnson, Kenny, Milne.

36th Parliament - 2nd Session

The Honourable Gerald J. Comeau, *Chair*
The Honourable Fernand Robichaud, P.C., *Deputy Chair*

And

The Honourable Senators:
Adams
*Boudreau, P.C. (or Hays)
Carney, P.C.
Cook
Johnson
*Lynch-Staunton (or Kinsella)
Mahovlich
Meighen
Perrault, P.C.
Perry
Robertson
Watt

*Ex Officio Members
The following Senators also served on the Committee during its study: The Honourable Senators Furey, Squires.

ORDER OF REFERENCE

37th Parliament – 1st Session

Extract from the *Journals of the Senate* of Tuesday, March 13, 2001:

The Honourable Senator Comeau moved, seconded by the Honourable Senator Di Nino:

That the Standing Senate Committee on Fisheries be authorised to examine and report upon the matters relating to the fishing industry;

That the papers and evidence received and taken on the subject during the Second Session of the Thirty-sixth Parliament be referred to the Committee;

That the Committee submit its final report no later than March 31, 2002; and

That the Committee be permitted, notwithstanding usual practices, to deposit any report with the Clerk of the Senate, if the Senate is not then sitting; and that the report be deemed to have been tabled in the Chamber.

The question being put on the motion, it was adopted.

Paul C. Bélisle

Clerk of the Senate

36th Parliament - 2nd Session

Extract from the *Journals of the Senate* of Tuesday, December 7, 1999:

The Honourable Senator Comeau moved, seconded by the Honourable Senator Lynch-Staunton:

That the Standing Senate Committee on Fisheries be authorized to examine and report upon the matters relating to the fishing industry;

That the Committee report no later than December 12, 2000; and

That the Committee be permitted, notwithstanding usual practices, to deposit its report with the Clerk of the Senate, if the Senate is not then sitting; and that the report be deemed to have been tabled in the Chamber.

After debate,
The question being put on the motion, it was adopted.

Paul C. Bélisle

Clerk of the Senate

TABLE OF CONTENTS

FOREWORD

SELECTED THEMES ON CANADA'S FRESHWATER AND NORTHERN FISHERIES

> *Leaving the red chamber for the North, four Senators have come looking for information about the region's fishing industry. The Standing Senate Committee on Fisheries was in Nunavut and the Northwest Territories over the past week, gathering information on an industry that is widely unrecognized within Canada. – Mike W. Bryant, "Senate Comes North: Committee Studies Northern Fisheries," Northern News Services, Yellowknife (Northwest Territories), 31 July 2000*
>
> *A group of Canadian Senators were in Gimli last week to learn about the freshwater fishery and how best to preserve it. ... It was certainly no prissy boardroom tour for the Senators who had an opportunity to actually taste, touch and smell the lake (Lake Winnipeg) during their visit... – Adrienne Spring, "Big Fish Visit Small Pond," The Interlake Spectator (Manitoba), 15 May 2000*
>
> *It is good to see you again since we went to the site in June and released the "little fish" – the small char. – Allen Gordon, President, Nayumivik Landholding Corporation (Nunavik), Committee Proceedings, 23 October 2001*

In keeping with its mandate and recognizing the value of visiting Canada's regions, the Standing Senate Committee on Fisheries conducted a series of informal meetings in 2000 and 2001 to better familiarize its members with the freshwater and northern fisheries.

With its two million lakes and rivers that cover 7.6% of its land mass, Canada has the world's largest freshwater system. Sixty percent of Canada's freshwater flows north toward the Arctic, which accounts for about two-thirds of the country's maritime coastline. The area under our consideration included a large part of the Department of Fisheries and Oceans' Central and Arctic Region – the largest of the Department's six administrative regions, covering almost two-thirds of Canada. We limited our scope to Lake Winnipeg and Canada's Arctic region (Nunavut, the Northwest Territories, and Nunavik) because of the Region's expanse and extreme diversity

in terms of climatic conditions, fish species, fish habitat, demographics, fishing activity, and because of the many government jurisdictions involved. Our intention was not to present an exhaustive assessment of all freshwater fisheries in all regions of Canada.

Since the Committee last considered the northern and freshwater fisheries in its September 1986 fish marketing report, a series of major developments had taken place: the federal government's Program Review in 1995 had resulted in cut-backs and changes to programs administered by the Department of Fisheries and Oceans (DFO); the activities of the Canadian Coast Guard (CCG) had merged with those of the DFO to become a major component of the work of the Central and Arctic Region; and the DFO had redefined its relationship with fishery stakeholders, with resource users now having a greater decision-making role in management. This last development was brought about largely by forces outside the Department – the settlement of Aboriginal land claims in the Arctic, which led to new systems of governance and the establishment of co-management regimes over vast tracts of lands and resources, including fish. On 1 April 1999, the political geography of Canada's North also changed when the Northwest Territories was divided to create the new territory of Nunavut. A northern visit was long overdue.

Although overshadowed by the much larger fisheries on the Atlantic and Pacific coasts, fishing in the North generates economic activity where there are few other opportunities, and where most fishers are of Aboriginal origin. Fishing is a significant contributor to household economies, a traditional way of sustenance, and a pursuit that is deeply rooted in the northern cultural heritage. There are a large number of fisheries; some are very small, but all are locally important. Another important characteristic of fishing is its isolation and the high costs of transporting products to southern markets. Both marine and freshwater species are harvested for subsistence, commercial and sport purposes.

Located mainly along major inland waterways and the coastline, most communities are accessible only by air or seasonal sea and river transport. Mindful of costs, a working group of Committee members participated in discussions that took place in boardroom-type settings and in the form of on-site visits in Manitoba in May 2000, and the Northwest Territories and

Nunavut in July 2000. In June 2001, another similar group traveled to Nunavik in northern Quebec, which is situated in the DFO's Laurentian Region. These deliberations were later supplemented by more formal and recorded hearings in Ottawa. The dissolution of Parliament and the November 2000 federal election delayed our report, as did our report on *Aquaculture in Canada's Atlantic and Pacific Regions*, which was tabled at the end of June.

This document sketches out what Committee members heard.

We appreciate the interest shown by the wide range of individuals and groups who so generously took the time to meet with us. The Committee would like to thank the dedicated staff at the Freshwater Institute in Winnipeg, and Burt Hunt and Ron Allen – DFO area managers for the Eastern and Western Arctic regions – for their time and expert guidance.

A sense of "northerness" is an important aspect of the Canadian identity. Getting northern issues on the political agenda is often difficult, however. We will consider our efforts worthwhile if they have made Canadians more aware of what's going on in the region.

Gerald J. Comeau
Chair

FISHERIES MANAGEMENT

A. Fisheries Conservation

> *The freshwater fisheries are just one of the many areas of public policy divided between federal and provincial jurisdictions. Both orders have their own fisheries legislation, regulation, and administrative policy and practice. The northern territories provide additional variations. Indeed, the inland fisheries may be one of our most complex cases of divided jurisdiction. – Peter H. Pearse, Rising to the Challenge: A New Policy for Canada's Freshwater Fisheries, Canadian Wildlife Federation, February 1988*

Fisheries are managed and regulated to ensure that fishers do not catch more fish than the stocks can sustain, and to allocate the catch among competing users of the resource. In Canada, the *British North America Act, 1867* (now the *Constitution Act, 1867*) assigns jurisdiction over both marine (or "sea coast") and inland (freshwater) fisheries to the Parliament of Canada (section 91.12). In 1868, Parliament enacted the *Fisheries Act* to give effect to this federal responsibility.(1) In 1979, the Department of Fisheries and Oceans was created under the *Government Organization Act*. The new department was made up of elements which had functioned as the Fisheries and Marine Service in the previously titled Department of Fisheries and the Environment. Today, the DFO's core activities are very diverse and include: marine safety; conservation and sustainable resource use; protection of oceans environment and fish habitat; scientific research (oceanographic and environmental science, including climate change, hydrography, aquaculture, and fisheries research); and maritime trade, commerce and ocean development. Some fisheries are shared between Canada and the United States, bringing into play the federal government's constitutional responsibility for international relations.

---

(1) Among other things, the *Fisheries Act* authorizes the Cabinet to make regulations on a wide variety of subjects, including: management and control of the fisheries; conservation and protection of fish stocks; catching, handling, transportation, possession and disposal of fish; use of vessels and fishing gear; licensing and leasing of fishing; habitat protection; export and trade in fish; powers of fishery officers, and their control of closed areas and fishing quotas; appointment of fishery officers and guardians; and collection of information.

Under the Constitution, the provinces are also assigned a number of important powers that affect the inland fisheries. Sections 109 and 117 of the *Constitution Act* vested in the provinces the natural resources within their respective boundaries and, under section 92, the provinces have exclusive jurisdiction over matters dealing with property and civil rights and the management of public lands, including inland waters. Following Confederation there was uncertainty surrounding the extent to which federal authority superseded provincial property rights in non-tidal fisheries.(2) In 1898, the Judicial Committee of the Privy Council concluded essentially that the provincial governments have the sole responsibility to: lease and license inland fisheries; enforce provincial licensing; or otherwise determine how property rights are to be managed.

To complicate matters, over time, the federal government delegated much of its fisheries management administration to the provinces, and federal-provincial arrangements have varied from one province to the next. In order to clarify respective roles and responsibilities, federal-provincial agreements have been developed.(3) For example, a variety of agreements were signed between the Province of Quebec and the federal government between 1898 and 1983. In Ontario, authority for the day-to-day management of fisheries is delegated to the Province. In Manitoba, Saskatchewan and Alberta, Natural Resource Transfer Agreements dating back to 1930: provided for the transfer of administration and control of Crown lands and resources to the provincial governments; and acknowledged the provinces' proprietary fishery rights. However, regulatory control for fisheries conservation is administered and enforced under the *Fisheries Act* and remains with the Minister of Fisheries and Oceans.(4)

---

(2) In tidal (marine) waters, there are no property rights under common law (there is a so-called common law "public right to fish"), and the federal government retains full management responsibility. The situation is different in non-tidal, inland waters, where fisheries is an area of public policy divided between federal and provincial jurisdictions.

(3) There have also been cost-sharing cooperation agreements between orders of government to promote entrepreneurship, sustainable development and recreational fisheries, and agreements on national sport fishing surveys, fisheries and aquaculture development, and the gathering and publishing of catch statistics.

(4) The governments of Manitoba, Saskatchewan, Alberta and Ontario are responsible for the day-to-day management of provincial fisheries. They are responsible for recommending to the DFO the content of provincial Fisheries Regulations enacted under the *Fisheries Act*. These regulations address conservation and other items under federal legislative control.

In the North (the words "Arctic" and "North" are used interchangeably in this paper), the management framework has evolved considerably because of the federal government's constitutional responsibilities for Aboriginal peoples. Modern comprehensive land claims agreements now recognize their ownership of large tracts of land in the territories. Examples include: the James Bay and Northern Quebec Agreement (1975); the Inuvialuit Final Agreement (1984); the Gwich'in Agreement (1992); the Nunavut Land Claims Agreement (1993).(5) The DFO's programs are conducted mainly in conjunction with co-management boards established under these claims settlements that guarantee indigenous residents significant harvesting and resource management rights. Co-management involves the establishment of boards comprised of equal numbers of government and Aboriginal representatives. Their role and composition vary somewhat depending on the specific terms of each claim. Although advisory to government, in practice, they are *de facto* decision-making bodies. In Canada's southern provinces (outside of the comprehensive claims process), it may be said that co-management is not as well established.

B. Fish Habitat

> *There are significant challenges facing Canada's fresh water and marine fish habitat, including biological, chemical and physical threats from a range of diverse human activities that directly and indirectly affect the productivity of fish water and habitat. As a result of those threats, fish habitat can be damaged and lost due to changes big and small, and in ways that are both obvious and subtle. …The bottom line is that without habitat, there are no fish and no related benefits to Canadians. – Paul Cuillerier, Director General, Habitat Management and Environmental Science, DFO, Committee Proceedings, 16 October 2001*

In modern fisheries management, conservation is also generally understood to apply not only to fish, but also their habitat (i.e., the aquatic environment). Fish habitat management involves managing industrial and other uses of aquatic environments to avoid or minimize

(5) Since 1973, a total of 14 comprehensive claim agreements have been signed. Other agreements include: the Northeastern Québec Agreement (1978); the Sahtu Dene and Metis Agreement (1994); the Nisga'a Agreement (2000); seven Yukon First Nation Final Agreements based on the Council for Yukon Indians Umbrella Final Agreement (1993) and corresponding Self-Government Agreements for: the Vuntut Gwich'in First Nation (1995); the First Nation of Nacho Nyak Dun (1995); the Teslin Tlingit Council (1995); the Champagne and Aishihik First Nations (1995); the Little Salmon/Carmacks First Nation (1997); the Selkirk First Nation (1997); and the Tr'ondëk Hwëch'in First Nation (1998).

damage to fish stocks. It also means improving water environments to make them better places for fish to live and reproduce.

The Constitution makes no specific reference to the conservation and protection of fish habitat. The main tools for achieving these objectives are the fish habitat protection and pollution prevention provisions of the *Fisheries Act,* which deal with both freshwater and saltwater, and make no distinction between them. The main provisions are: section 35, which prohibits any work or undertaking that would cause the harmful alteration, disruption or destruction of fish habitat, unless authorized by the Minister of Fisheries and Oceans; and section 36, which prohibits the deposit of deleterious substances into waters frequented by fish, unless authorized by regulation under the *Fisheries Act* or other federal regulation. Section 35 is administered by the DFO in accordance with the Department's *Policy for the Management of Fish Habitat* (1986), the overall objective of which is to achieve a net gain of the productive capacity of the fisheries resource through fish habitat conservation, habitat restoration, and fish habitat development. The administration of section 36 is the responsibility of the federal Department of the Environment (DOE).(6)

The provinces also have environmental and resource management responsibilities and legislation relevant to, and overlapping with, the management of fish habitat. Management therefore calls for a good deal of federal-provincial cooperation. With the proclamation of the *Canadian Environmental Assessment Act, 1995*, the DFO's mandate was expanded to include the conduct of environmental assessments pursuant to the *CEAA*, prior to the Department making any regulatory decisions under the *Fisheries Act*, the *Navigable Waters Protection Act*, and the *Natural Energy Board Act*. Until the early 1990s, responsibility for the day-to-day management of fish habitat had been considered to be part of the delegation of fisheries management responsibilities to inland provinces. However, court decisions on environmental assessment

(6) Department of Fisheries and Oceans, *Policy for the Management of Fish Habitat*, 1986. Under the guiding principle of "no net loss of productive capacity of fish habitats," actions are taken to balance unavoidable habitat losses with habitat replacement on a project-by-project basis. The Department's fish habitat management program consists primarily of reviewing development proposals for potential threats to fish habitat and outlining measures to avoid or mitigate them. A decision by the Minister to authorize the harmful alteration, disruption or destruction of fish habitat (HADD) triggers an environmental review pursuant to the *Canadian Environmental Assessment Act, 1995* (CEAA).

review processes for the Oldman Dam and the Rafferty-Alameda Dam projects indicated that the federal government had a greater role in fish habitat management than previously undertaken.

More recently, in 1999, the Federal Cabinet decided to: implement a Strengthening Fish Habitat Protection program to ensure federal consistency in protecting fish habitat; and provide the necessary resources to achieve that end. For example, prior to 1999, the three Prairie provinces were responsible for the habitat provisions of the *Fisheries Act*. In the year 2001, the Fish Habitat Management program: had a budget of 115 staff and $10.4 million; was hiring new biological, enforcement and compliance, engineering, and administrative staff; and was delivered from eight offices, including seven new offices. As of the end of October 2001, about 60% of the positions were said to have been staffed permanently, with other positions being filled temporarily.

Also in 1999, the federal and provincial fisheries ministers signed an Agreement on Interjurisdictional Cooperation with respect to Fisheries and Aquaculture. As a result, the Canadian Council of Fisheries and Aquaculture Ministers (CCFAM) established an intergovernmental Task Group on Freshwater Fisheries to develop a draft of a national Freshwater Fisheries Strategy to strengthen freshwater fisheries conservation, management, rehabilitation and protection. At its September 2001 meeting, the CCFAM (with the exception of Quebec): endorsed the draft national Freshwater Fisheries Strategy; decided that fish habitat would be a focus of more concerted effort; directed the (aforementioned) Task Group to consult with stakeholders to confirm the direction set out in the Strategy; directed the Task Group to identify opportunities to link with other initiatives (e.g., on the introductions and transfers of exotic organisms, the protection of species at risk); and endorsed the finalization of an implementation plan to be approved by the Council in 2002.

In the Arctic, the federal government is ultimately responsible for freshwater and marine fisheries conservation and management, including fish habitat. However, the land claims agreements in place guarantee Aboriginal participation in decision-making with respect to lands and environmental management. For example, since 1986, a feature of the Inuvialuit Final Agreement (in the western Arctic) are two co-management agencies that deal with environmental

impact screening and review. The first, an Environmental Impact Screening Committee, reviews all development proposals (e.g., sport fishing and hunting lodges, other commercial developments) to decide whether they require environmental impact assessment. If deemed necessary, the proposals are referred to a second agency – the Environmental Impact Review Board – for a public environmental impact review. Important features of the environmental screening and review process are: the equal and meaningful participation of Inuvialuit; and the application of Inuvialuit traditional knowledge. In the Northwest Territories (excluding Wood Buffalo National Park and the Inuvialuit Settlement Area), the Mackenzie River Valley Environmental Impact Review Board is the main agency mandated to undertake environmental assessment and review. In Nunavut, an Impact Review Board was established in July 1996 with responsibilities for the environmental assessment of projects.

OUR MEETINGS

A. Manitoba

About half of the commercial catch in the Central and Arctic Region is marketed through the Freshwater Fish Marketing Corporation (FFMC); the other half is marketed by private processors in the Great Lakes fishery. On 10 May 2000, in Winnipeg, officials of the FFMC briefed a working group of Committee members on its activities. Established in 1969 under the authority of the federal *Freshwater Fish Marketing Act* as a Crown corporation, the FFMC was created to: market fish in an orderly manner; promote markets and export trade in fish; and improve returns to fishers while operating on a self-sustaining basis without appropriations by Parliament.(7) Modelled after the Canadian Wheat Board, the FFMC regulates the interprovincial and export trade of commercially caught freshwater fish in the three Prairie Provinces, the Northwest Territories, and parts of northwestern Ontario. Approximately 50 agents are reportedly hired to deal directly with about 3,000 commercial fishers who deliver their catches at one of the Corporation's 75 delivery stations scattered throughout its jurisdiction. Once packed

(7) The FFMC sets initial guaranteed prices to fishermen, followed by final payments at the conclusion of the operating year. The working capital and capital asset requirements of the Corporation are financed through loans from the Minister of Finance.

in ice, the fish are shipped to the FFMC's processing plant in Transcona (Winnipeg), a state-of-the-art facility which Committee members visited later that day.

The Province of Manitoba has the largest commercial fishery within the FFMC's jurisdiction, accounting for approximately two-thirds (or 9.4 million kilograms) of the total weight of the fish delivered to the Corporation (14.3 million kilograms). Approximately 7% of the total amount delivered (by weight) comes from the Northwest Territories. It is noteworthy that since 1969, centralized "single desk" selling by the FFMC has been the subject of continuing controversy, debate and scrutiny. More recently, the House of Commons Standing Committee on Fisheries and Oceans tabled detailed reports on the Corporation in February 1995 (*Review of the Freshwater Fish Marketing Corporation*) and November 1998 (*Central Canada's Freshwater Fisheries Report*). The major species purchased by the Corporation are whitefish, pickerel, sauger, northern pike, mullet, and lake trout.

On 11 May 2000, Committee members met with DFO officials at the Freshwater Institute in Winnipeg to learn about the activities and programs of the Department's Central and Arctic Region (see Map 1) where: the majority of Canada's population lives; the majority of pleasure boat owners and recreational fishers are found; and a significant proportion of commercial shipping takes place. Bounded by 71% of Canada's coastline, the Central and Arctic Region encompasses about 65% of Canada's marine waters, 67% of Canada's freshwater, and 20% of the world's freshwater.

The Freshwater Institute is a national centre of expertise in aquatic biology and freshwater and marine fisheries. As such, the Institute houses several departmental programs. Committee members were briefed on a wide range of subjects: the state of freshwater stocks; fish habitat degradation or loss due to development; climate change; the effects of domestic and transboundary pollution on fish and food chains; the activities of the Canadian Coast Guard; small craft harbours; hydrography; fish stock assessment; Aboriginal and treaty rights; marine and freshwater research (including the work undertaken at the world-renowned Experimental

Lakes Area in north-western Ontario[8]); oceans activities; sea lamprey control; the impact of non-indigenous aquatic organisms on local stocks; and the possible adverse effects on the Red River and Lake Winnipeg ecosystems of a proposed water diversion project in the State of North Dakota (the Devil's Lake diversion project). Also of interest to Committee members were the fisheries management and scientific programs administered by the DFO in the Arctic (for an overview of some of the Department's science activities in the Central and Arctic Region, see *Proceedings of the Standing Senate Committee on Fisheries*, 30 October 2001).[9]

Map 1 – The DFO's Administrative Regions

Source: The Department of Fisheries and Oceans

(8) Located on the Precambrian Shield near Kenora and managed through a joint agreement between the Canadian and Ontario governments, the Experimental Lakes Area (ELA) includes 58 small lakes and their drainage basins. The ELA makes whole-lake manipulation studies possible; hypotheses can thus be tested about freshwater ecosystems. In existence since the late 1960s, the ELA also has a 30-year record of hydrological, meteorological, chemical and biological data for a number of natural "control" lakes.

(9) The Department's varied programs in the Central and Arctic Region can be viewed at http://www.dfo-mpo.gc.ca/regions/CENTRAL/home-accueil_e.htm.

B. The North

> *We had the good fortune – and we much appreciated the opportunity – to join in your travels during the Committee's visits to the Arctic... – Arthur J. Hanson, Oceans Ambassador, International Institute for Sustainable Development, Committee Proceedings, 20 November 2001*

Our May 2000 discussions in Manitoba paved the way for deliberations that followed in Nunavut (Iqaluit, Pangnirtung) and the Northwest Territories (Yellowknife, Wool Bay, Inuvik, Tuktoyaktuk) on 24-28 July of that year. Accompanying the Committee's working group in the North were Canada's newly-appointed Oceans Ambassadors – Dr. Art Hanson (for the Northwest Territories portion of our northern visit) and Mr. Geoff Holland (in Nunavut) – who had been instructed by the Minister of Fisheries and Oceans to develop a comprehensive list of potential candidates to form a new Oceans Advisory Council. On 6-7 June 2001, another similar group of Committee members traveled to Nunavik (northern Quebec).

The Arctic – which accounts for 40% of Canada's land mass, but only 1% of the population – is first and foremost the homeland of Aboriginal people. The story of the Inuit who make their lives there is an ancient one, going back over thousands of years of continuous occupation.[10] Approximately 41,000 Inuit live in 53 communities across northern Canada, with First Nations making up the majority population in another 46 communities. In the Yukon, approximately 21% of the population is Aboriginal, while in the Northwest Territories, the proportion increases to 50%. In Nunavut, 85% of the population is Inuit. In Nunavik (northern Quebec) and northern Labrador, Inuit and First Nations make up a majority of the population. Demographically, however, the most startling feature of the Aboriginal population in the North is its youth – about half of the population is under 25 years of age, which sets the stage for tremendous pressures to create jobs.

Over the past three decades, negotiations undertaken by the Government of Canada, provincial and territorial governments, and Aboriginal communities led to the establishment of

(10) The word "Aboriginal" flows from Canada's Constitution of 1982, which includes North American Indians (First Nations), Inuit and Metis peoples of Canada.

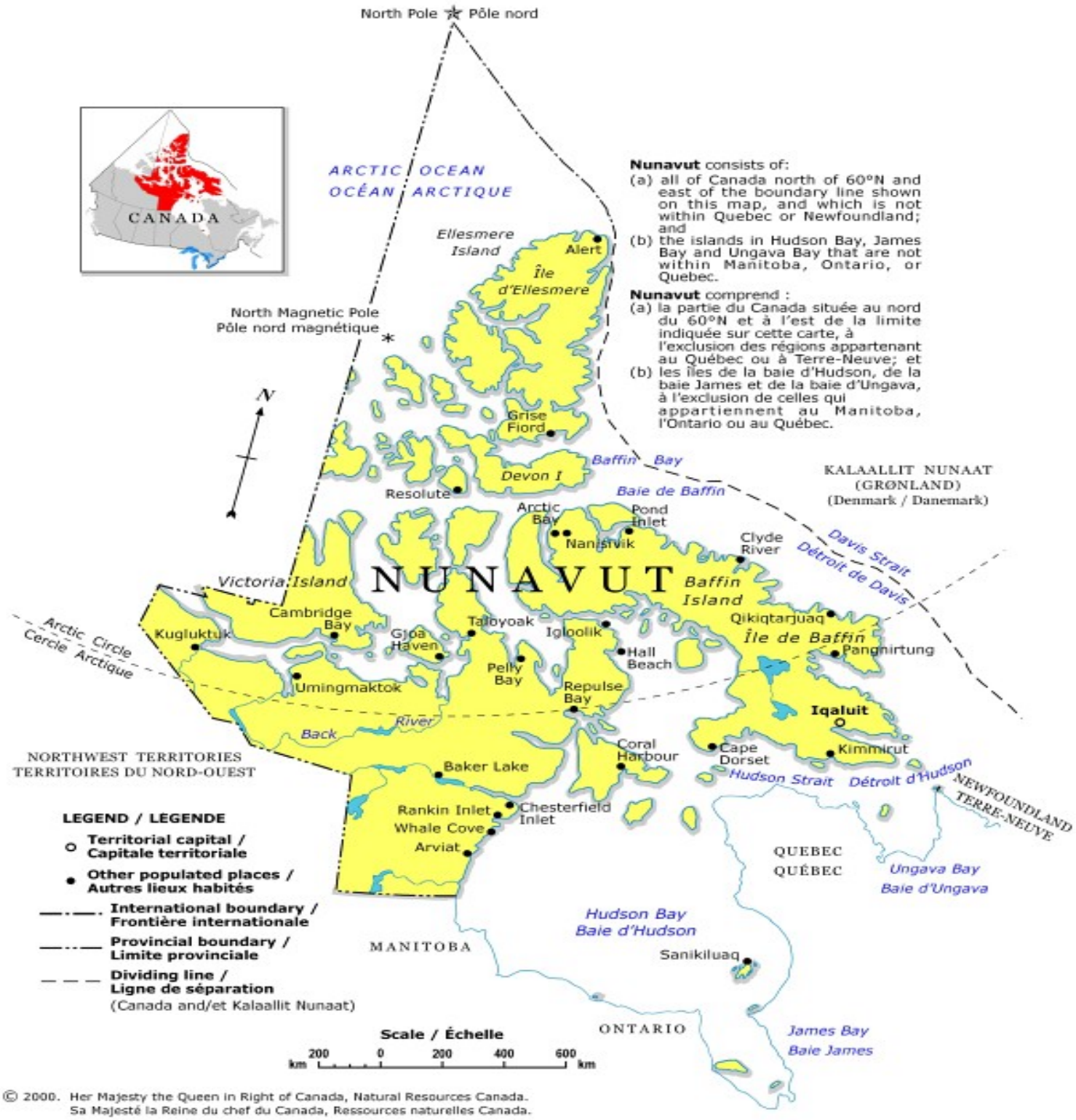
self-government and the settlement of long-standing land claims in Canada's Arctic. Although most federal departments have responsibilities in the region, some departments have mandates that impact more directly on the region; these include the Departments of Indian and Northern Affairs, Foreign Affairs and International Trade, Environment, Natural Resources, Health, Transport, Canadian Heritage, and the Department of Fisheries and Oceans – a department having considerable sustainable development responsibilities. In Nunavut and the Northwest Territories, more than 300 stocks of fish and more than 50 stocks of marine mammals are reportedly harvested in subsistence, commercial and recreational fisheries. Arctic char, beluga, narwhal and seal are the most important species for subsistence and cultural reasons.

In addition to meeting with fisheries stakeholders and government representatives in Nunavut, the Northwest Territories and Nunavik, the northern visits provided us with the opportunity to gain a greater understanding of the culture, lifestyle and aspirations of Canadians living in this picturesque, resource-rich region where elders play a crucial advisory role in all aspects of society.

1. Nunavut

In 1993, the largest Aboriginal land claims agreement in Canadian history (see Map 2) was signed by the Inuit, the Government of Canada, and the Government of the Northwest Territories. The Nunavut Final Agreement also set in motion plans for the creation of a new territorial government that would afford the residents of Nunavut greater control over their future. On 1 April 1999, Nunavut (which means "our land" in Inuktitut) officially became Canada's third territory, replacing the Government of the Northwest Territories in the eastern Arctic of Canada, including the High Arctic Archipelago, but excluding adjacent western Arctic regions, which comprise the Inuvialuit Settlement Region. Nunavut, which encompasses about one-fifth of Canada's geography (or 1.9 million square kilometres), is governed by a public government framework that represents all residents, Inuit and non-Inuit alike.

Map 2 – Nunavut



Source: Natural Resources Canada, http://atlas.gc.ca/english/quick_maps/index_quickmaps.htm

The Nunavut settlement provided 19,000 Inuit beneficiaries with: title to approximately 351,000 square kilometres of land;[11] financial benefits over 14 years; a share of resource royalties from oil, gas and mineral development on Crown lands; guaranteed wildlife harvesting rights (including the right to harvest subsistence resources, and priority in establishing sport and commercial fish and wildlife ventures); and a strong voice in decision-making bodies dealing with wildlife, land use planning, screening and review of environmental impact of developments, and regulation of water use.

Many Canadians would be surprised to learn that the Nunavummiut are very much a "maritime people" dependent on the sea and its resources. Indeed, 25 of the Territory's 26 communities are coastal. In fact, because many articles of the Nunavut Final Agreement relate directly to marine matters, the agreement is sometimes referred to as a "sea claims agreement." Overseeing fisheries is the Nunavut Wildlife Management Board (NWMB) – the main instrument of wildlife management in the region.[12] Board members are expected to make their decisions on behalf of the public of the Settlement Area, and not as agents of their appointing bodies. Hunters and trappers organizations and regional wildlife organizations are responsible for much of the local harvest management in the Territory.

2. The Northwest Territories

In the Northwest Territories (see Map 3), Committee members also met informally with representatives of co-management boards in two land claims settlement areas.

The first region – the Inuvialuit Settlement Area (435,000 square kilometres) – is located in the Mackenzie Delta, Beaufort Sea and Amundsen Gulf area of the Northwest Territories. The Inuvialuit settlement: was signed and became effective in 1984; granted 2,500 Inuit beneficiaries with title to approximately 91,000 square kilometres of land;[13] and included a financial component, a one-time payment to an economic enhancement fund, and a social

(11) Of which 37,000 square kilometres include mineral rights.

(12) The NWMB is comprised of nine members: four appointed by Inuit; four by government; and a chairperson, nominated by the eight other members and appointed by government.

(13) The Inuvialuit have title to subsurface rights to approximately 13,000 square kilometres.

development fund. Subject to conservation, Inuvialuit (meaning "the real people") have: exclusive or priority use of the harvest of fish and wildlife; and structures to ensure their participation in wildlife management, conservation and environmental protection, including local community-based committees.(14) Joint advisory bodies having equal government and Inuvialuit representation were also established. On matters relating to fisheries and marine mammals, the Inuvialuit Fisheries Joint Management Committee (FJMC) advises the Minister of Fisheries and Oceans.(15) The FJMC also works closely with other government agencies, local community user groups (there are six communities in the settlement area), and other renewable resource boards, including those in Alaska that oversee common migratory stocks.

In the second region – the Gwich'in Settlement Area (57,000 square kilometres) – the Gwich'in Renewable Resources Board (GRRB)(16) is the co-management body responsible for wildlife, fish and forest management activities in the Mackenzie Delta region, which has four communities. The 1992 Comprehensive Land Claim Agreement provided: 2,300 Gwich'in with title to approximately 22,329 square kilometres of land;(17) financial benefits over 15 years; a share of resource royalties from the Mackenzie Valley; guaranteed wildlife harvesting rights; and participation in decision-making bodies dealing with renewable resources, land use planning, environmental impact and assessment review, and land and water use regulation.

---

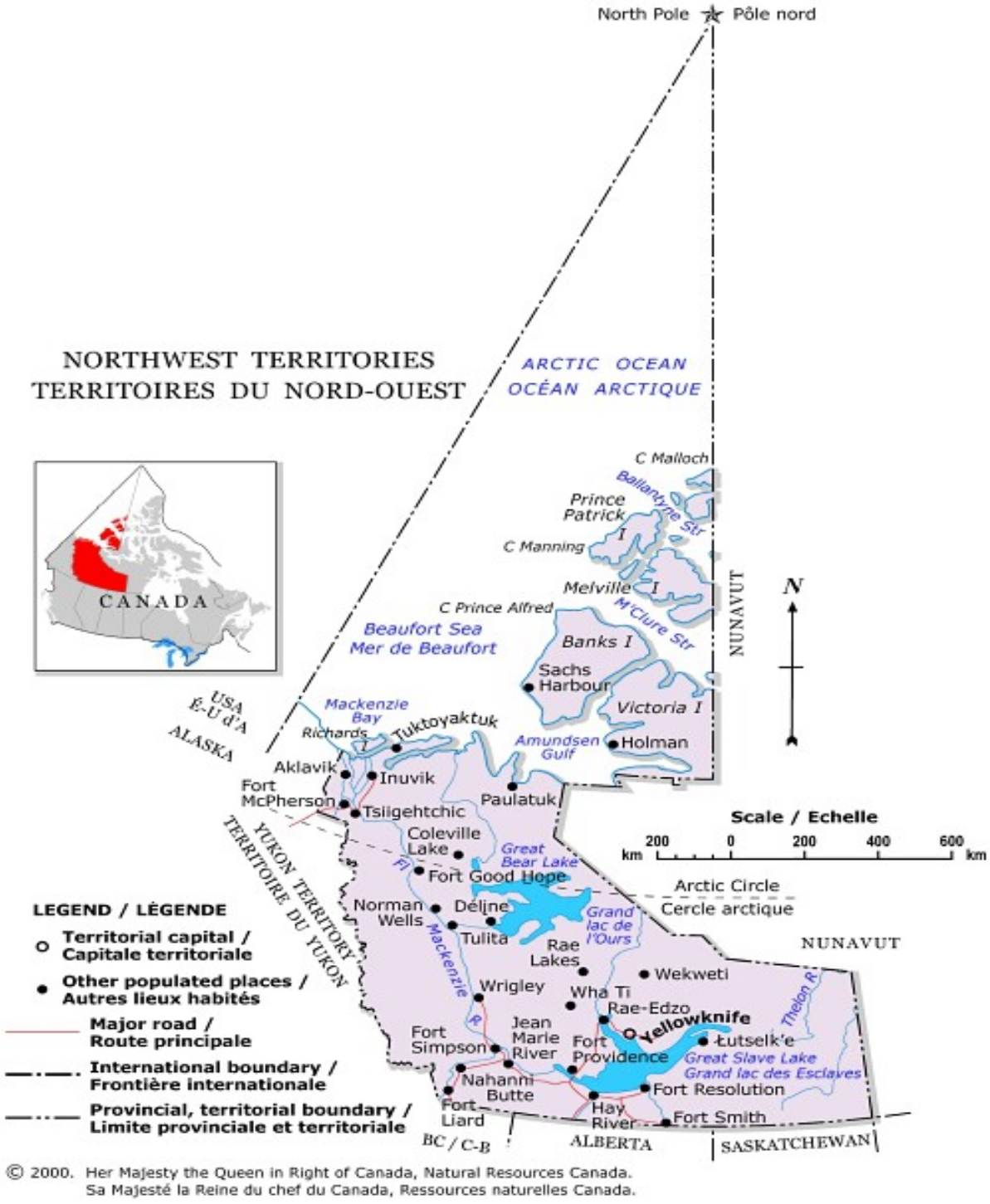
(14) Non-Inuvialuit persons may fish in the region at the discretion of the Inuvialuit after registering with the local hunters and trappers committee. Non-exclusive sport and commercial access by outsiders is allowed in waters open to fishing if the outsiders have the proper government licenses and registration.

(15) The FJMC has four members; the Inuvialuit Game Council and the government each appoint two members. A Chairperson is then appointed by the four members. Through bilateral agreements between native groups, membership may be extended to include other native representatives who have recognized traditional interests within the Inuvialuit Settlement Region, provided that equal representation between government and native membership is maintained.

(16) The GRRB is comprised of six members and six alternates. Three members and three alternates are nominated by the Gwich'in and by the government. The seventh board member is the chairperson who must be a resident of the Settlement Area and agreed upon by the government.

(17) Approximately 19% of which includes subsurface rights.

Map 3 – The Northwest Territories



Source: Natural Resources Canada, http://atlas.gc.ca/english/quick_maps/index_quickmaps.htm

3. Nunavik

In June 2001, Committee members also travelled to Nunavik (see Map 4). There, in 1975, the James Bay and Northern Quebec Agreement (JBNQA) was negotiated between the James Bay Cree, the Inuit of Quebec, the Province of Quebec and the Government of Canada.[18] As the first settled comprehensive claim in Canada, the JBNQA set the tone for the other comprehensive claims and modern-day treaties that followed by including the following elements: self-government; monetary compensation; ownership of lands; participation in an environmental and social protection regime; and hunting and trapping rights over 150,000 square kilometres of land.

Map 4 – Nunavik

Source: Makivik Corporation, http://www.makivik.org/eng/media_centre/nunavik_maps.htm

(18) The Government of Quebec's intention to develop the hydro-electric resources of James Bay in the early 1970s lent some urgency to the settlement of the comprehensive claim. In 1973, the James Bay Cree and the Inuit obtained an injunction from the Quebec Superior Court ordering a halt to the project. Although the injunction was eventually overturned by a higher court, an Agreement – the JBNQA – was eventually reached.

Nunavik ("main land") is located north of the 55th parallel. Approximately 8,643 Inuit reside in 15 communities along the coast of Hudson Bay, Hudson Strait, Ungava Bay and the Quebec/Labrador Peninsula. The co-management body responsible for fishing is the Hunting, Fishing and Trapping Coordinating Committee (HFTCC).(19) Settlement lands are divided into three categories: lands in the vicinity of Inuit communities, which operate as self-administered municipalities, within which Inuit have exclusive hunting, fishing and trapping rights (category I); lands upon which Inuit have exclusive hunting, fishing and trapping rights, but which may be developed at the discretion of the province so long as replacement lands are provided to them (category II); and lands on which Inuit retain traditional rights to fish, hunt and trap, but which otherwise are treated as public lands under the administration of Quebec (category III).

SELECTED THEMES

A. The Health of the Lake Winnipeg Ecosystem

> *Support from every sector is vital in getting this program started and keeping it going. It has given us a tremendous boost to have the ear of the Senate Fisheries Committee. I can't say too much about that. – Allan H. Kristofferson, Co-ordinator, Lake Winnipeg Research Consortium, Committee Proceedings, 2 October 2001*

> *All of the water varies in quality as it enters Lake Winnipeg and then flows into Hudson Bay. ... Do we know what is going into that lake system from all these rivers? What is it doing to the ecosystem of Hudson Bay? We have no clue. – Arthur J. Hanson, Oceans Ambassador, International Institute for Sustainable Development, Committee Proceedings, 20 November 2001*

In spite of Canada's comparatively low population density and relative abundance of freshwater, many Canadian lakes and rivers are believed to be under environmental stress. While in Manitoba, we heard a great deal about Lake Winnipeg – the largest and most economically important body of water west of the Great Lakes, and the world's 10th-largest

(19) Consisting of 12 members: three each from Inuit and Cree constituencies, three from the Province of Quebec, and three from the federal government.

freshwater lake. Its surface area of some 23,750 square kilometres is greater than that of Lake Ontario.(20)

The economic and aesthetic values of Lake Winnipeg are equally considerable. They include: the cottage, tourism and recreation industry; the generation of hydroelectric power; and important historic, cultural and subsistence values for Aboriginal communities. Fish are another obvious source of wealth; the lake supports the largest freshwater fishery west of the Great Lakes. Landed values approach $15 million annually, and approximately 30% of the fish (by weight) delivered to the Freshwater Fish Marketing Corporation originates from Lake Winnipeg. In spite of its significance, comparatively few studies have been carried out on Lake Winnipeg (Table 1).

Table 1 – Electronic Searches Using Lake Names as Keywords in Three Bibliographic Archives From Cambridge Scientific Abstracts

Lake	*Aquatic Sciences and Fisheries Abstracts* (1978-March 2000)	*Conference Papers Index* (1982-March 2000)	*Environmental Sciences and Pollution Management* (1981-March 2000)
Lake Ontario	1,438	253	1,615
Lake Erie	1,289	345	1,410
Lake Huron	496	72	551
Lake Michigan	1,382	414	1,628
Lake Superior	795	149	820
Lake Winnipeg	53	15	41

Source: The Lake Winnipeg Research Consortium, *Report to the Standing Senate Committee on Fisheries: The Health of the Lake Winnipeg Ecosystem and the Role of the Lake Winnipeg Research Consortium,* April 2001.

To address the pressing need for research, the Lake Winnipeg Research Consortium (LWRC) was formed in August 1998 (and incorporated in August 2001). On

(20) The lake's watershed approaches 40 times its surface area. Major rivers supplying the lake are the Saskatchewan from the west, the Red from the south, and the Winnipeg from the east. Lake Winnipeg has a massive drainage basin that stretches from the foothills of the Rockies in the west, to north-western Ontario in the east, and which extends into the United States (North and South Dakota, Montana and Minnesota). The outlet to the sea (Hudson Bay) is through the Nelson River to the north.

10 May 2000, in Gimli, Committee members met with representatives of the Consortium, who described the activities they undertake to: facilitate multi-disciplinary scientific research; encourage the sharing of information among stakeholders; and assist in the coordination of specific research ventures involving universities, governments and private interests. The 24 agencies that belong to the LWRC include a diverse group: university researchers, Aboriginal groups, commercial fishers, federal and provincial government agencies, crown corporations, industry, community organizations, recreational interests, and others.

The LWRC's program is centered around the vessel *Namao* – a DFO Canadian Coast Guard (CCG) ship that became surplus to CGG needs in 1997 when the Aids to Navigation program was contracted out to private interests. Instead of disposing of the vessel, the CCG agreed to crew the *Namao* and make it available on a cost-recovery basis as a research platform – a task it performed in 1994 and 1996. The LWRC was able to raise funds to conduct an inaugural three-week research cruise of Lake Winnipeg in August 1999, with water samples being taken from a number of sites over the entire lake. This was said to have been the most extensive survey undertaken in 30 years. While the *Namao* was not available in 2000 and 2001 because of maintenance needed to meet Transport Canada safety requirements, a limited amount of research was carried out from smaller vessels during those years. On 21 September 2001, the Consortium received $326,000 under the Canada-Manitoba Economic Development Partnership Agreement. It was explained to us that: the funding would cover the costs of maintaining the *Namao*; and the LWRC was completing a plan to fund and operate the *Namao* for a minimum of ten weeks per year for each of the next three years.

Research on Lake Winnipeg is critically important because of a number of worrying trends. Among some of the LWRC's findings to date: Lake Winnipeg is approaching a state of deterioration that may affect ecosystem sustainability; significant changes have occurred in water transparency, biological species composition, productivity and sediment chemistry; the lake is on a path of progressive eutrophication (degradation through nutrient enrichment) not unlike that seen in the lower Great Lakes during the late 1960s; the discovery of an exotic species of zooplankton (*Eubosmina coregoni*) is an indication that environmental conditions are changing; and the recent invasion by rainbow smelt could change the structure of the lake's food web. We

were told: there is a pressing need for research on the ecosystem effects of agricultural and urban expansion and hydroelectric development; and Lake Winnipeg is in need of a remediation program.

Another recent development was the federal and Prairies fisheries ministers' announcement on 21 September 2001 of a revised Memorandum of Understanding (MoU) on the prioritizing of fisheries science activities in the Prairie provinces, and on improving collaboration and cooperation.(21) Faced with funding pressures for freshwater research, the Ministers agreed that science priorities should be coordinated, where possible, to ensure the most effective science programs are delivered in each jurisdiction. Also announced was a Federal-Prairie Provinces Fisheries Science Team that would identify common fisheries science needs and priorities on such topics as habitat productivity, physical habitat alteration and destruction and remediation, chemical contaminants in the environment, exotic species, stock assessment, fishery management issues, species at risk, aquaculture and fish health.

B. Transboundary Environmental Issues in the Canadian Arctic

> *Your question was whether Canada is doing enough international science. All I can tell you is that we get more phone calls from our international partners about doing joint work with them than we can handle. – Martin Bergmann, Director, Arctic Science Program Development, DFO, Committee Proceedings, 30 October 2001*
>
> *How much research is enough? Sometimes, when we visit communities in the North and tell them that we have found contaminants that originate in banana plantations somewhere in South America, they are not happy with us passing on that sort of information. However, looking at research in the Arctic overall in terms of contaminants, we are getting a good overall picture of what is happening with some of the important contaminants such as mercury, for example. – Michael Papst, Division Manager, Arctic Research, DFO, Committee Proceedings, 30 October 2001*
>
> *We are on the cusp of a set of very major problems in the North relating to climate change. – Arthur J. Hanson, Oceans Ambassador,*

(21) In May 1998, DFO signed a Memorandum of Understanding (MoU) with Manitoba, Saskatchewan and Alberta on prioritizing fisheries science activities in the Prairie Provinces.

International Institute for Sustainable Development, Committee Proceedings, 20 November 2001

In Canada's Arctic, the impact of global warming on ecosystems, wildlife and animal migrations was repeatedly raised in the communities we visited. Participants in our review drew our attention time and time again on the fact that: climate change is well under way; future changes will likely be more rapid than in the past; and the long-term consequences of global warming on cultures and economies would be greatest in the Arctic. We heard that animals and fish were appearing in areas they had not been previously seen in, and that the coastlines were changing due to the melting of ice. Considering its very sparse population and comparative lack of development, it would be an understatement to suggest that the Arctic is disproportionately affected by this global phenomenon. With its unique and sensitive environment, the Arctic was likened to a canary in a mine shaft – an early warning system of sorts for the rest of the planet – and, because of this fact, international interest in the region was said to be growing.

Another major worry was the contamination of food obtained through hunting, trapping and fishing. Understandably, this is a major health concern of Aboriginal people because "country food" (e.g., fish and marine mammals) is a major part of their diet. Although not believed to pose an immediate threat to human health, the risks associated with the accumulation of contaminants increase over a person's lifetime. Persistent organic pollutants (POPs) have been linked to cancer, birth defects, and various genetic abnormalities; and high levels of these substances have been found in mothers' breast milk. However, the effects of not consuming traditional foods, which are vital from both a nutritional and cultural standpoint, were deemed to be just as serious.

Over the past 25 years, studies confirm the presence of organochlorine pesticides (e.g., DDT, toxaphene and chlordane) and industrial compounds (e.g., PCBs – polychlorinated biphenyls) in marine mammals (e.g., seals, beluga and walrus – animals that are at the top of the food chain). Some toxins were said to originate from former military installations (former DEW line sites), but the majority of these compounds are transported to the Arctic by atmospheric and oceanic currents and originate from industrial and agricultural sources in Asia, Europe and North America. Heavy metals present in northern food chains were said to include lead, cadmium and

mercury (a toxic substance that has both man-made and natural sources). In the Northwest Territories, it was pointed out that the data on contaminants provide reasonably good coverage for beluga and ringed seal, but less is known about freshwater and anadromous fish, and even less about marine species.(22) Throughout the Arctic, there were calls for more research to more fully understand the potential harmful impacts of contaminants on ecosystems and human health.

An important source of information on contaminants is the *Canadian Arctic Contaminants Assessment Report* – a 400-page document that summarizes the results of research conducted by Northern Contaminants Program (NCP) during the period between the 1970s and 1997.(23) Established in 1991 and administered by Department of Indian and Northern Affairs, the NCP brings together the three territorial governments, northern Aboriginal organizations, university researchers, and other federal departments. The DFO's primary role was said to be in detection; the Arctic Research Division collects data on contaminants from community-harvested animals and fish, and passes information on possible risks to human health to Health Canada, northern health boards, and co-management boards. The NCP's goal is to reduce, and wherever possible, eliminate contaminants in traditionally harvested foods, and assist individuals and communities in making informed decisions about their food consumption. Phase I of the NCP focused on establishing the location and levels of contaminants in the Arctic, and confirming their regional source. Phase II (1999/2000 to 2002/2003) now places more emphasis on community dialogue and participation (providing advice to communities and reducing their intake of contaminants), and working towards international agreements; and the NCP provides some $5.4 million in annual funding for research.

In the past decade, a number of Canadian initiatives have focused on environmental issues in the North. The Canadian Polar Commission, for example, was established in 1991, and a Circumpolar Ambassador was appointed in 1993. More recently in June 2000, the federal

---

(22) A May 2000 report commissioned by the Fisheries Joint Management Committee provides background information on the source of contaminants in the Inuvialuit Settlement Area. See Colin Macdonald (Northern Environmental Consulting), *The Status of Contaminants in Fish and Marine Mammals in the Inuvialuit Settlement Region, Report Submitted to the Fisheries Joint Management Committee*, May 2000.

(23) See Department of Indian and Northern Affairs, *Summary of Northern Contaminants Program: Projects for 1999-2000*.

government adopted *The Northern Dimension of Canada's Foreign Policy*, the objectives of which include: the preservation of Canada's sovereignty in the North; the promotion of the human security of northerners and the sustainable development of the Arctic; and a renewed commitment to protect the Arctic environment from environmental degradation and transboundary environmental threats such as persistent organic pollutants, climate change and nuclear waste. In August 2000, the federal Minister of the Environment also announced the establishment of a $20 million fund, to be administered by the World Bank, to help developing countries reduce their production of POPs.

Because changes in the Arctic environment and ecosystems affect other parts of the world, and reciprocally, there have been an increasing number of international agreements and instruments to protect the Arctic, which Canada has either signed or endorsed.(24) Implementation of these commitments is a priority for northerners. Canada and the other circumpolar nations have also collaborated in scientific research and monitoring. As part of the circumpolar region and in cooperation with other circumpolar countries, Canada (mainly the Departments of Foreign Affairs and International Trade, and Indian and Northern Affairs) has been an active participant on the Arctic Council. Established in 1996, the Council is a ministerial-level, intergovernmental forum which addresses the common concerns and challenges faced by governments and northern peoples in the Arctic.(25) Members of the Council include the United States, the United Kingdom, Norway, Finland, Sweden, Russia and Denmark. On our visits, several people pointed out that Inuit had long recognized the benefits of multilateral cooperation and information-sharing.(26)

---

(24) Examples include: the 1979 Convention on Long-Range Transboundary Air Pollution (LRTAP) and associated protocols on: Persistent Organic Pollutants (1998); Heavy Metals (1998); the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes (1988); and the Further Reduction of Sulphur Emissions (1994). Other examples include: the 1985 Vienna Convention for the Protection of the Ozone Layer; the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer; and the 1992 United Nations Framework Convention on Climate Change.

(25) Five working groups support the Arctic Council; programs are delivered in the following areas: Arctic Monitoring and Assessment; Conservation of Arctic Flora and Fauna; Protection of the Arctic Marine Environment; Emergency Prevention, Preparedness and Response; and Sustainable Development. The latter program involves cooperation on diverse projects, such as improving the health and well-being of Arctic children and youth, managing regional fisheries, assessing prospects for expanded use of telemedicine on a circumpolar basis, promoting cultural and eco-tourism, and improving rural sanitation systems.

(26) In 1977, for example, the Inuit Circumpolar Conference (ICC) was formed, uniting approximately 125,000 Inuit from Greenland, Canada, Alaska, and, more recently, Russia. Other examples of

C. Co-Management Under Comprehensive Land Claims

> *Co-management is a joint process that brings together local resource users and government agencies to share management responsibility for local or regional resources. It is important to note that in making management decisions, we incorporate "traditional ecological knowledge" from Canada's Aboriginal communities. – John Cooley, Regional Director of Science, DFO, Committee Proceedings, 30 October 2001*

> *Our marine environment in Nunavut is what farmland is to many other parts of Canada – the source of our food and our income. It has shaped who and what we are in Canada. – The Honourable Olayuk Akesuk, Minister of Sustainable Development, Government of Nunavut, Committee Proceedings, 8 May 2001*

Beginning in 1975, Canadian land claims agreements have incorporated systems of sharing power and responsibilities between government and local users of resources, including fish. The DFO's fisheries programs in the North are now conducted mainly in conjunction with co-management boards established under land claims settlements (e.g., the Gwich'in Renewable Resources Board, the Fisheries Joint Management Committee, the Nunavut Wildlife Management Board), which the Department considers to be "primary clients" or "partners."(27) However, co-management arrangements – a much-discussed subject during our northern visit – range from large-scale, multi-stakeholder projects between government authorities and Aboriginal organizations, to small-scale, community-based, cooperative projects in which government officials work closely with local user groups. Community-based co-management, in turn, recognizes local-level management systems and traditional local knowledge, which can often yield many benefits.

---

cooperation include a 1988 management agreement for polar bears in the south Beaufort Sea between the Inuvialuit and the Inuit of Alaska, and the participation of northern Aboriginal communities in the management of the Porcupine Caribou herd and its range in Alaska, the Yukon and the Northwest Territories. On 3 March 2000, an international agreement on beluga (the Inuvialuit-Inupiat Beaufort Sea Beluga Whale Agreement) was formally signed in Inuvik between the Inuvialuit and the Inupiat of Alaska.

(27) Other partners or "clients" are said to include: other boards and organizations established under land claims agreements; other fishery management advisory committees; fishers; the fishing industry; commercial and recreational fishery organizations; hunters and trappers organizations; developers and industry associations; Aboriginal organizations; other government departments; community organizations; and conservation groups.

For example, in the Northwest Territories, Committee members learned that Rat River char (known as "Dolly Varden charr") – an important subsistence food for Gwich'in of Aklavik and Fort McPherson – was in decline due to suspected overfishing. In cooperation with the DFO, a research project was initiated which saw Gwich'in elders and fishers assist biologists by providing them with basic information on the fish's seasonal movements, preferred habitat, and spawning areas. Local fishers were hired to sample fish and collect much biological data on the fish. With this information, biologists worked with the community to design a suitable and acceptable management strategy. In 1997, community members voluntarily reduced their catch by half.

In the North, community-based data collection and monitoring is an essential component of fisheries. As described to us, it usually involves hiring members of local communities as fish monitors who: count, measure and weigh fish; take otoliths (pieces of bone found in the inner ear that reveal a fish's age); and record the place and date of capture, and fishing effort. Besides generating valuable information on fish stocks, this type of activity also provides valuable training and employment. We were advised that community monitoring is especially effective if the data collection methods employed can be readily used by fishers, if accurate and reliable data is collected over a long time period. Aboriginal people were said to be increasingly becoming aware of the career opportunities that wildlife and fisheries co-management can bring in their communities, and are seeking appropriate training. In the Inuvialuit Settlement Region, we heard about a student mentoring program, run by the Fisheries Joint Management Committee in co-operation with the DFO, that encourages Inuvialuit youth to pursue their studies so they can one day become the region's future scientists and resource managers.

Significantly, the co-management systems in place attempt to bridge the cultural differences between local users and fisheries managers. This is accomplished largely through commitments to consensus decision-making, and by combining the local, traditional ecological knowledge (TEK) of Aboriginal people with western scientific research and management techniques for the purpose of improving resource management. In the Northwest Territories, witnesses stressed the fact that the territorial government's policy officially recognizes TEK as a valid and indispensable source of information in management.[28] In essence, co-management in

(28) The TEK concept is not an entirely new one for this Committee. In 1995, subsequent to the collapse of Atlantic groundfish, the Committee tabled a report recommending that the DFO not only promote

the North is founded on the notion that government shares decision-making power with local fishers in a given geographical area in exchange for their knowledge, cooperation and assistance in resource management. By devolving authority to local levels of administration, government authorities not only increase compliance with rules, they also improve data-gathering and knowledge of fish stocks.

Sometimes referred to as "joint" or "shared stewardship," "partnerships," or "joint management" in the literature, co-management is a consensus-based approach and, as such, it requires: a substantial commitment and investment of time in order to take into account different worldviews; and much consultation, so that it often takes a longer time to reach decisions. In the North, several people pointed out that the vastness of the region also makes effective communication difficult and increases research costs. In both the eastern and western Arctic, some commented that the DFO was critically understaffed, making it difficult for the Department to live up to its responsibility as a co-management partner. For example, we learned that there was only one enforcement officer for the entire Gwich'in Settlement Area. In Nunavut, a lack of administrative capacity in the Territory was attributed to the fact that most activities related to fisheries are coordinated either from the Central and Arctic Region in Winnipeg, or the DFO's regional office in St. John's, Newfoundland and Labrador, making it difficult for decisions to be made in the best interest of the Territory.

In the South, a key element of the DFO's strategic plan for the Atlantic and Pacific regions has also been to decrease its involvement in the management of commercial fisheries in favour of co-management. Interest in co-management has increased; it is seen as an alternative to property-based fishing rights (i.e., individual quota licences, known as IQs) in the much-larger marine commercial fisheries.(29) Now spreading rapidly, this concept was endorsed by this

---

the participation of fishers in fish stock assessments and in carrying out various fisheries research activities, but also that the Department recognize the value of the anecdotal knowledge of coastal fishers. The Committee also recommended that fishers play a greater role in decision-making through a genuine and effective system of co-management and partnership with government.

(29) In fisheries, conflicts result from the finiteness of the resource. When harvested in a common property, traditional competitive fishery, fish become "private property" only after they are caught and removed from the water. The so-called "tragedy of the commons" theory holds that an unregulated and open-access fishery results in a free-for-all race for limited fish stocks in an effort to maximize immediate personal economic gain. "Property rights-based fisheries" (or the "privatization of fishing

Committee throughout the 1990s. However, many are wary of the DFO's intentions; they fear that the co-management approach is a convenient means by which the Department can shift the costs of management to resource users.(30)

It is noteworthy that, in May 1999, the DFO launched an Atlantic Fisheries Policy Review (AFPR), the first such review in two decades. In early 2001, a round of public consultations was conducted with industry stakeholders (in the Atlantic provinces, Quebec and Nunavut) on the objectives and principles outlined in a DFO discussion paper (*The Management of Fisheries on Canada's Atlantic Coast: A Discussion Document on Policy Direction and Principles*). In the not-so-distant future, the DFO plans to issue a new policy framework that will define objectives and principles to guide the management of the Atlantic fisheries in the long term. Among other things, the AFPR discussion paper states that: the DFO does not have the resources to regulate and monitor every fishing activity; and the elaboration of structures for effective co-management at the local and regional levels is an obvious priority. An expanded co-management system is suggested. Co-management is defined as "the sharing of authority and responsibility for fisheries management, and of accountability for results, between DFO and resource users."

From what we heard in Canada's North, co-management and community-based fisheries and wildlife management is widely accepted and supported. Although the setting and circumstances are unique to the Northwest Territories and Nunavut, as practised in small-scale fisheries within land claims settlements, co-management appears to be working well in responding to the needs and priorities of local communities, and as a means of sharing decision-making.

---

rights") in the form of individual quota licences (or IQs) are often prescribed to prevent overfishing. However, many have observed that the so-called "tragedy" frequently does not occur in small-scale, locally-organized fisheries, even in the absence of formal rules and regulations. See Standing Senate Committee on Fisheries, *Privatization and Quota Licensing in Canada's Fisheries*, December 1998, http://www.parl.gc.ca/36/1/parlbus/commbus/senate/com-e/fish-e/rep-e/rep03dec98part1-e.htm.

(30) In December 1998, an independent Panel on Partnering (the Savoie Panel) appointed by the DFO asserted: "It is not simply a coincidence that discussions around co-management and partnering took on a sense of urgency at the time the government of Canada launched its program review exercise." Donald J. Savoie, Gabriel Filteau, and Patricia Gallaugher, *Partnering the Fishery: Report of the Panel Studying Partnering,* 10 December 1998, http://www.dfo-mpo.gc.ca/communic/backgrou/1998/hq90_e.htm.

D. Sustainable Development in the North

> *We are in serious need. If we are to emerge out of what The Globe and Mail and the Ottawa Citizen always perceive us to be – a serious welfare state supported by the rest of Canada which is not a true picture by the way – we need an EDA (economic development agreement). – Peter Ittinuar, Assistant Deputy Minister, Department of Sustainable Development, Government of Nunavut, Committee Proceedings, 8 May 2001*
>
> *Our presence in the North is deficient. I am the first one to say that. ... At this time, there is an initiative involving northern science and technology. There are northern oil and gas initiatives. We are part of those because we know we need a better presence in the North. We are conscious of that. All the economic development activities happening in the North require that presence. It is not there. We are dealing with it at this time. – Paul Cuillerier, Director General, Habitat Management and Environmental Science, DFO, Committee Proceedings, 16 October 2001*
>
> *The (char) project is specific to our community at the moment, although it may have other implications across the North later. ... Are other communities interested? Yes. – Allen Gordon, President, Nayumivik Landholding Corporation (Nunavik), Committee Proceedings, 23 October 2001*

Demographically, the most startling feature of the Aboriginal population in the North is its youth – about half of the population is under 25 years of age, which sets the stage for an increasing need to create jobs in a region where unemployment is much, much higher than in the rest of the country. Unemployment exacerbates social problems, including high rates of youth suicide.

There are many challenges, not the least of which will be a growing number of people dependent on the renewable resource base. In Nunavut, for example, those whom we met stressed the fact that the population is expected to double within the next two decades. Throughout the North, there was much interest in developing the renewable resource economy, including fisheries, while at the same time preserving subsistence harvesting. Wildlife-based tourism and fisheries were considered to: be compatible with northern Aboriginal cultures and

lifestyles; have an immense and largely untapped potential; and represent a major economic opportunity for the future. In the North, the fisheries mean jobs.

By national standards, northern communities possess very modest physical infrastructures. An important feature of the economy is its mix of traditional subsistence activities (wildlife harvesting), wage employment (with direct employment in government and in government support services accounting for the largest percentage of wage income), private enterprise (the mining and oil and gas sectors), and transfer payments. Generally speaking, sustainable development faces many unique challenges: uneven distribution of economic opportunities; high transportation, energy and communication costs; isolation from potential markets; and a small population with few industrial skills or little formal education. Insufficient transportation infrastructure is another problem. For example, in Nunavut, where there are no deep port facilities or small craft harbours and only one processing facility (located in Pangnirtung), the people there talked a great deal about the need for improved infrastructure, particularly port and wharf facilities.

Lack of capital was a recurring theme. In July 2000, Committee members toured a packing facility on the shore of Great Slave Lake at Wool Bay, Northwest Territories. There, the concern was the high costs of entry into the fishery that make it difficult for young people to get into the industry. Generally speaking, stakeholders held that financial support and specific policy initiatives were needed to stimulate development and realize the fisheries' potential.

Canada's North has undergone enormous change over the years. Several participants spoke of the international campaigns against hunting, trapping, and the marketing of wildlife products which had: unfairly created market barriers to traditional northern wildlife products; and a disruptive and devastating economic effect on northerners and Aboriginal people who had depended heavily on sealing and fur trapping for their livelihoods. The future will likely see even greater change. There will be difficult decisions to make on how to balance emerging economic opportunities (e.g., in oil and gas exploration, mining, tourism), with the need to maintain traditional values and lifestyles. Because of the Arctic's sensitive and fragile ecosystem, and because it is relatively slow to recover from the impacts of industrial or human

activity, the concept of "sustainable development" becomes more than a nice concept or convenient buzz phrase in the North. For Inuit, sustainable development is very much a matter of economic and social survival.

Northern waters are considered to be especially vulnerable to pollution because the cold climate slows chemical and biological processes that affect their ability to recover. On the DFO's Fish Habitat Management Program in the region, the Department agreed that its presence in the North is limited, but indicated that this would soon change:

> In the next few months there will be Northern oil and gas issues, because energy security in the States and in Canada must be dealt with. We will need to talk about the Beaufort Sea, the Mackenzie Valley and the Foothills Lines. We are not sure which line people will take, but we know that industry will ultimately make those decisions, and it will have an impact on the North. ... We must ensure that we protect those resources in the North. We are now preparing ourselves specifically for that. I mentioned earlier that we have approximately 128 people in the three prairie provinces. We have advised our people in the regions to move people from the provinces to the North because of that increased demand, which is growing as we speak. – Paul Cuillerier, Director General, Habitat Management and Environmental Science, DFO, *Committee Proceedings,* 16 October 2001.

In May 2001, Nunavut's Minister of Sustainable Development appeared before the Committee, and pointed out that federal policies were far from helpful in assisting the Territory attain its fisheries objectives. He stated that: Nunavut was not receiving its rightful share of the adjacent groundfish resource; the DFO had determined that Nunavut did not qualify for the Aboriginal Fisheries Strategy's Allocation Transfer Program(31) (even though the Nunavut Land Claims Agreement specifically states that nothing in the agreement shall affect the ability of Inuit to participate in and benefit from government programs for Inuit or Aboriginal people); and the Territory had not benefited from the DFO's small craft harbours program or programs administered by the Department of Human Resources Development that support Atlantic fishers in capacity building and skills training. According to the Minister: Nunavut fishers were quite

(31) To ensure stable fishery management, the DFO launched the Aboriginal Fisheries Strategy (AFS) in 1992. Under the AFS, fisheries agreements contain a commitment to provide commercial fishing licences, and other economic development opportunities. A component of the AFS is the Allocation Transfer Program (ATP), which involves the voluntary retirement of commercial licences and the issuance of licences to eligible Aboriginal groups.

possibly the only group in Canada's marine fishery to have been "completely excluded" from the public expenditures that had benefited other Atlantic regions; investments in infrastructure were needed to set the foundation of the northern economy and to catch up with the rest of Canada; and the three northern territories were the only jurisdictions in Canada that do not have economic development agreements (EDAs) with the federal government.(32)

On a community scale, Committee members were made aware of relatively small projects that show good potential for development in the North, as the following illustrates.

In June 2001, a small group of Committee members travelled to Nunavik (northern Quebec), and visited Canada's first fish ladder (or "fish way") in the Arctic. There, we learned about: a phenomenon called "post glacial rebound"(33) which in some cases has created barriers or physical obstacles (e.g., waterfalls, low water flows) that impede the migrations of anadromous fish that migrate to the sea in summer and over winter and spawn in freshwater.(34) On the Nepihjee River near the town of Kuujjuaq, a fish way was built in 1999, involving a series of small drops that allow fish to swim up to freshwater. Explosives were used to blast a channel around two previously insurmountable waterfalls – one nine feet high, the other six feet – that flow into Ungava Bay. Prior to work on the site, studies had shown lake trout (a major food fish in the area) to be unfit for human consumption because of mercury contamination – a problem, we were told, that had never been associated with anadromous Arctic char in the region. It is also noteworthy that anadromous Arctic char(35) usually return to their (natal) home

(32) As a follow-up to a briefing session that took place in Iqaluit (on 26 July 2000) with the (former) Minister of Sustainable Development (the Honourable Peter Kilabuk), a televised hearing was also conducted on 8 May 2001 with territorial officials and the Honourable Olayuk Akesuk, Minister of Sustainable Development.

(33) When glaciers dominated North America in the last Ice Age, the crust and mantle beneath the ice suffered severe compression and bulging. Although the ice is gone, the land is reshaping (springing back) from the immense load in the process known as postglacial rebound (PGR).

(34) "Anadromous" fish spend the first part of their lives in freshwater, and then migrate to sea before returning to spawn in freshwater.

(35) There are two types of Arctic char: anadromous and landlocked (known as "nutillik," in Inuktitut). Anadromous char spend their first few years in freshwater, migrate to sea for summer feeding (once a certain size is reached), and return to freshwater over winter. Anadromous char are important to the commercial and sport fisheries because they grow bigger and faster than landlocked fish. In the western Arctic, the fish is believed to migrate at a younger age.

streams every year, but sometimes find their way to different ones.(36) In this regard, the fish's behaviour differs somewhat from that of Atlantic salmon – its salmonid cousin. Arctic char also grow more slowly; it may take a few years before they are old enough to spawn or large enough to catch, so that the benefits of the hatchery's production may not be seen for some time (the fish reaches sexual maturity at age seven or eight).

The objective of the fish way project was to establish Arctic char in an area where they were no resident stocks, and increase the traditional food available to the growing population of Kuujjuaq. To boost the increase in the stock, juvenile fish are also reared in a hatchery operating in the community's former water treatment plant. The eggs are brought in from Finger Lakes (an area about 85 miles from Kuujjuaq), near the village of Tasiujaq, with the authorization of that community and on the condition that the eggs or fry will not be sent elsewhere.(37) Female fish are not selected for any particular characteristic or trait, and project managers hope to be eventually self-sufficient in egg production.

Witnesses testified that: Arctic char (and other species, such as brook trout and whitefish) had started using the fish way in a matter of hours after it was built; the Nephijee River could probably support a very large run of Arctic char because of the large surface of its lakes; and, once subsistence needs are met, the run could one day support a sport or commercial fishery. For the people of Kuujjuaq, other benefits were said to include: reduced exposure to mercury poisoning; and the opportunity to practise traditional harvesting techniques. We were told that: other lakes and rivers could be similarly reconnected to the sea; and, with expanded hatchery facilities, fish populations could be similarly enhanced. The potential for enhancing Atlantic salmon was also said to be good; this is because as much as half of the potential spawning and rearing habitat for salmon could be increased by constructing another fish ladder (over Limestone Falls). Put simply, there are opportunities for enhancing anadromous fish to

(36) When spawning fish do this, they end up breeding with a different stock, so that stocks in a given river or lake may change over time. This changing of stocks can be good because it helps to spread desirable characteristics (e.g., faster growth, greater strength) of some fish stocks to others. The tendency for some fish to migrate to different streams helps establish populations in new areas.

(37) For obvious economic reasons, most Arctic communities do not wish to see Arctic char being transferred and introduced in the South.

meet the subsistence needs of Nunavik's growing population. Other communities in Nunavik were said to be interested in undertaking similar projects.

E. Scientific Research in the North

> *Canadians have learned in recent years the difficult lessons associated with inadequate science and over harvesting. We do not want to repeat these mistakes with our adjacent stocks as their extent is still largely unknown. ... Canadians expect us to harvest our resources in a sustainable manner. – The Honourable Olayuk Akesuk, Minister of Sustainable Development, Government of Nunavut, Committee Proceedings, 8 May 2001*

> *Working in the Arctic presents many challenges to our researchers. Often, study sites are difficult and expensive to access because of their remoteness and the lack of infrastructure, such as roads and airports. It requires that our staff be in the field and away from families for extensive periods, often under less than ideal working conditions. The work is hard, long and, at times, both dangerous and stressful, but we have a committed staff of professionals who are dedicated to the challenge. – John Cooley, Regional Director of Science, DFO, Committee Proceedings, 30 October 2001*

The Arctic has a fragile, low-productivity environment, which nonetheless supports varied freshwater and marine species. The DFO faces a number of science and research challenges in the region, not the least of which are program costs. Work in the Arctic is very expensive; staffing costs alone were said to be more than double those in the South.

In July 2000, a number of concerns about the state of Canada's research were brought to our attention. Later that year, in September, a Joint Task Force on Northern Research established by the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC) reported that Canadian research in the region was in a state of crisis, and warned that, if action were not taken, Canada would be unable to meet its international science and research obligations, or contribute to issues of global

importance, or even meet basic national obligations to monitor, manage and safeguard the northern environment or respond to emerging social issues.(38)

In October 2001, we learned of the DFO's Arctic Science program's effort to secure an icebreaker which had been declared surplus to the needs of the Canadian Coast Guard.(39) There were many reasons given for acquiring a vessel dedicated to serving the research needs of the Arctic science research community, including: the increasing demands for Arctic science in Canada and among other polar nations; the valuable information it could provide Canada in advancing its resource conservation efforts; the huge international demand for research platforms capable of working safely in the Arctic; and the many partners (e.g., northern agencies, universities, and other governments) that are ready to sign on.

The research effort in Canada's North takes many forms. For example, a major focus of the DFO's research has been the development and application of new stock assessment methods using DNA profiles to distinguish individual populations of animals, and the use of satellite tags to record the movements of marine animals, such as whales. Much of its activities are driven directly by the needs of co-management boards. Much of the research is directly funded by these boards, and research is no longer done strictly by southern scientists; the input of Aboriginal people, through their knowledge and experience, is a fundamental part of the research process.

A number of people in the North spoke of the benefits of traditional ecological knowledge (TEK). They said that TEK had: improved our understanding of various species; been useful in guiding modern scientific research; and resulted in better compliance with management plans. These are important and welcome benefits in many areas of the North. The beluga harvest in Nunavik – where the hunt is regulated by a combination of controlled seasons and closures, and village quotas – is one example. There, compliance is critically important; of the three stocks harvested, one stock (the Ungava Bay stock) was classified as endangered in

(38) *From Crisis to Opportunity: Rebuilding Canada's Role in Northern Research*, Final Report to NSERC (Natural Sciences and Engineering Research Council of Canada) and SSHRC (Social Sciences and Humanities Research Council of Canada), September 2000, http://www.sshrc.ca/english/resnews/pressreleases/crisis.pdf.

(39) Thus far, Canadian Coast Guard icebreakers have been used to undertake science projects.

1988, while a second population (the eastern Hudson Bay stock) was identified as threatened. In the Beaufort Sea – where beluga whales are not endangered – we learned that the DFO, with the support of Aboriginal organizations (e.g., the Inuvialuit Fisheries Joint Management Committee), had been undertaking research and consultations to create a Marine Protected Area (MPA) in support of the management plan. Throughout the North, Committee members were reminded that the *Oceans Act, 1997* was the first federal legislation to explicitly mandate a federal department or agency to consider and use TEK.(40)

In Nunavut, the Wildlife Management Board has two research funding programs: the Nunavut Wildlife Research Trust Fund,(41) which provides funding for wildlife research projects undertaken by government agencies; and a funding program for non-government organizations, such as hunters and trappers organizations. There, Committee members were provided with an informative briefing on the Board's Nunavut Wildlife Harvest Study, which began collecting data in 1996. Community field workers collect monthly information on wildlife harvested by Inuit across the Territory; a final database resulting from this exercise will establish a basic needs level for Inuit, and will be used as a tool to assist in decision-making. Another Board-managed similar (five-year) study – the Inuit Bowhead Knowledge Study, which was released a few weeks prior to our visit – documents the knowledge, observations and historical experience of Inuit hunters. With regard to bowhead, we were told that: the population was increasing after having been decimated by commercial whaling in the past century; and an ongoing, limited hunt for bowhead was necessary to ensure that Inuit knowledge and hunting skills are passed on to future generations.

In Inuvik, which is situated in the Inuvialuit Settlement Region, the various projects funded by the Fisheries Joint Management Committee (FJMC) also impressed us. They include:

---

(40) Principle 22 of the Rio Declaration on Environment and Development recognizes that indigenous people and their communities "have a vital role in environmental management and development because of their knowledge and traditional practices," and advises that "States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development."

(41) Examples of projects undertaken by the DFO and funded by the Trust Fund include: whale sampling and stock identification, determining the status of ringed seals in western Hudson Bay, walrus tagging, conducting surveys on narwhal and beluga, and studying Arctic char in Cumberland Sound.

studies on the reproduction of Beaufort Sea beluga; studies on the status and movement of ringed seal; and programs that monitor Arctic char and Mackenzie River whitefish. A Harvest Study, in which field workers collect data and information from harvesters in the six Inuvialuit communities, was described to us as important in helping to: assist the establishment of the fish and wildlife needs of Inuvialuit; make informed wildlife management decisions so that wildlife can be protected and preserved for future generations; and provide information to justify compensation for loss of harvesting opportunities and income as a result of development.

In the Gwich'in Settlement Area, the Renewable Resource Board also allocates research funds from its Wildlife Studies Fund. Among many things, we learned that: the Land Claim Agreement required a five-year Harvest Study to help determine minimum annual needs in feeding Gwich'in households; the potential for sport fishing lodges on inland lakes (for trout, northern pike) was good; every research project and management plan incorporates traditional ecological knowledge; and a Gwich'in traditional knowledge project had resulted in the publication of a book (*Gwich'in Words About the Land*). At the time of our visit, work on a second book was said to be nearly completed.

In the western Arctic, industrial development on the Mackenzie River watershed was a subject of much discussion. The Mackenzie is the world's twelfth-largest drainage area and extends into the more populated provinces of Alberta and British Columbia, flowing northward into the Beaufort Sea in the western Arctic. In this shared waterway, important fish species: feed in the ocean and migrate into the river systems to spawn; are vulnerable to overfishing at any point along their migration routes; and are managed cooperatively amongst the land claim beneficiaries in the region. On the Mackenzie, the following points were made: the cumulative impacts of upstream developments in the south are felt downstream where fewer people reside, many of whom are Aboriginal; large-scale development activities and projects (e.g., those linked to the exploitation of hydrocarbon reserves, mineral deposits and hydroelectric potential) are likely to affect the fishery resource; conservation depends on various interests working together; and the Mackenzie Valley Environmental Impact Review Board (MVEIRB) undertakes environmental reviews and assessments and in the region.

From the standpoint of new commercial fisheries, the marine waters off Baffin Island appear to offer the best potential for development, yet Committee members were told that:

scientific knowledge on species such as snow crab, sea urchins, clams, turbot, shrimp and marine plants is very limited; and the vast area lacks experimental and exploratory activity, even though an MoU between Nunavut and the federal Fisheries Minister on new emerging fisheries was signed in August 2000.(42) In the western Arctic, we heard that there was interest in the commercial exploitation of herring, but that people were wary of this because not much is known about their abundance and because the fish are a food source for beluga whales.

The management of Arctic char – a vitally important staple in the subsistence diet of Aboriginal people and a species that has supported limited commercial and sport fishing operations – was another popular subject in our northern discussions. In some areas, its contribution to the Aboriginal diet was said to be second only to caribou. By and large, individuals and groups warned that the subsistence needs of a growing population and the demands for commercial and sport fishing would increase fishing pressures on Arctic char, a fish that is vulnerable to overfishing because of its slow growth rate. In Nunavik, Arctic char may be declining, but very little research has so far been conducted. Some called for more study to determine the potential for enhancing stocks through stream rehabilitation or hatchery production.

In sum, participants in our discussions: emphasized the importance of having a sound information base in order to ensure conservation and avoid the risk of overharvesting; urged that more scientific work be conducted on northern species (e.g., to determine the distribution, abundance and age structure of northern fish stocks and marine mammals); pointed out that scientific information on fish and marine mammal stocks is often limited, or even non-existent; argued that research is all the more important because of the relatively low biological productivity of northern ecosystems; and stated that more research will be required if the impacts of development are to be minimized and the sustainable development of fisheries assured.

---

(42) In August 2000, the federal Minister of the DFO and the Minister for the Nunavut Department of Sustainable Development signed a Memorandum of Understanding (MoU) to strengthen cooperation on emerging fisheries development in Nunavut. The two governments are to cooperate on maximizing marketing opportunities, promoting regional development, encouraging public- and private-sector cooperation, and ensuring the most sustainable and economically viable use of under-exploited fishery resources for the benefit of Nunavut. The DFO also pledged to provide scientific

F. Nunavut's Adjacent Turbot Resource

> *I would like to respond in part to the senator's question to us on the matter of allies, I am not going to name any jurisdiction. We have no allies. In fact, it is the opposite, for obvious reasons. ... – Peter Ittinuar, Assistant Deputy Minister, Department of Sustainable Development, Government of Nunavut, Committee Proceedings, 8 May 2001*
>
> *One of the areas in which there is actually a potential for real growth in opportunities is the fishery. It is not something of which I had thought, even though ... I had some experience with Northern Affairs a long time ago. – Arthur Kroeger, Chair of the Independent Panel on Access Criteria, Atlantic Fisheries Policy Review, Committee Proceedings, 6 November 2001*
>
> *Our territory has only been in existence for two years. Decisions in the past may not always have been made in our best interests. We came in a step behind. With the collapse of the Northern cod fishery, there is much movement to the North. That movement took place before we got a chance to get in there and decisions were often made without our involvement and awareness of them. — Carey Bonnell, Director, Fisheries and Sealing, Department of Sustainable Development, Government of Nunavut, Committee Proceedings, 8 May 2001*

A major issue in Nunavut was the territory's disproportionately small share of the overall quota for turbot (also known as Greenland halibut) in the Davis Strait fishery when compared to the amount of fish allocated by the DFO to southern fishing interests.(43) The history of Inuit fishing for turbot in Davis Strait is relatively short; commercial fishing first began there in 1986.

The discussion centred largely around the concept of "adjacency," a policy in fish allocation that is generally understood in Canada to mean that those who reside next to the

---

support and develop scientific capacity, with the Government of Nunavut assisting in data collection, evaluation and analysis of results.

(43) Related issues were: the need for reciprocal access to fishery resources in southern waters; and concerns over "ghost fishing" by the lost or abandoned gillnets of the southern fleet. While the DFO's Central and Arctic Region conducts programs to conserve and manage fishery resources from Winnipeg, the marine areas directly adjacent to Nunavut waters are managed as part of the DFO's Newfoundland Region, from St. John's.

resource should have priority access to it.(44) Adjacency is also a politically-charged concept: the uproar in the Province of Newfoundland and Labrador concerning the allocation of 1,500 tonnes of shrimp to Prince Edward Island fishing interests in the summer of 2000 illustrates this point. At the time, Newfoundland and Labrador claimed the benefit of the federal government's adjacency policy that supports the concept that fishers adjacent to a particular fishing ground should catch that fish, or at least have the first opportunity to do so.

For fisheries administration purposes, the Northwest Atlantic Fisheries Organization (NAFO) divides the Atlantic Ocean immediately off Canada's East Coast into several Subareas. Subarea 0, located in the Davis Strait off the coast of Baffin Island, is administered by Canada (Subarea 1, the area along the western coast of Greenland, is administered by that country). The Nunavut Land Claims Agreement, in turn, divides Subarea 0 into two parts. The first part, the Nunavut Settlement Area (NSA), takes in the area of the 12-mile territorial sea adjacent to the Nunavut coastline (east of Baffin and Ellesmere Islands). Here, the Nunavut Wildlife Management Board (NWMB) is the main instrument of wildlife management. The other part, Zone 1, is the area within Canada's 200-mile limit (Subarea 0) less the 12-mile NSA.(45) In Zone 1, the Minister of Fisheries and Oceans is responsible for fisheries management; however, the Minister must seek and consider the advice of the NWMB with respect to fisheries management decisions that affect the substance and value of Inuit harvesting rights and opportunities within the marine areas of the NSA.(46) The 1993 Land Claims Agreement between the Inuit of Nunavut and the Government of Canada provides that in cases where the Agreement and any federal law conflict, the Agreement is paramount. The Agreement recognizes the principle of adjacency in Article 15.3.7, which stipulates as follows:

---

(44) For example, previous Atlantic Groundfish Management Plans have stated that the allocation of fishery resources are based on equity, taking into account adjacency to the resource, the relative dependence of coastal communities, and the various fleet sectors upon a given resource, and economic efficiency and fleet mobility. A policy is not law; by its nature, it is a guideline that identifies only a general intention.

(45) Zone II encompasses the waters of James Bay, Hudson Bay and Hudson Strait, which are not part of the Subarea 0 turbot fishery.

(46) Article 15.3.4 states that "Government shall seek the advice of the NWMB with respect to any wildlife management decisions in Zones I and II which would affect the substance and value of Inuit harvesting rights and opportunities within the marine areas of the Nunavut Settlement Area," and that "the NWMB shall provide relevant information to Government that would assist in wildlife management beyond the marine areas of the Nunavut Settlement Area."

> Government recognizes the importance of the principles of adjacency and economic dependence of communities in the Nunavut Settlement Area on marine resources, and shall give special consideration to these factors when allocating commercial fishing licences within Zones I and II. Adjacency means adjacent to or within a reasonable geographic distance of the zone in question. The principles will be applied in such a way as to promote a fair distribution of licences between the residents of the Nunavut Settlement Area and the other residents of Canada and in a manner consistent with Canada's interjurisdictional obligations.(47)

In April 1997, the Minister of Fisheries and Oceans announced an increase in Canada's Total Allowable Catch (TAC) of turbot by 1,100 tonnes.(48) Of this amount, Nunavut received 100 tonnes of the offshore, reducing its share of the TAC from 27% to 24%, and increasing the allocation of fish to interests based in Labrador and Northern Quebec from 27% to 32%.(49) The Fisheries Minister's decision subsequently went before the Federal Court of Canada (*Nunavut Tunngavik Inc. v. Canada (Minister of Fisheries and Oceans*)),(50) which found that the facts of the case raised a reasonable inference that the Minister did not give special consideration to the principles of adjacency and economic dependence of the Nunavut Inuit. The Court therefore referred the matter back to the Minister for reconsideration. The same day, the Minister appealed the decision to the Federal Court of Appeal. After having reconsidered, the Minister applied the same allocations for 1997 that had applied for the 1996 fishing season. In September 1997, Nunavut Tunngavik Inc. brought another judicial review application in the Federal Court, challenging the Minister's redetermination of the quota. This time it was ruled that the Minister had kept in mind the special considerations required under the Nunavut Final Agreement, and

---

(47) *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada, Part 3: Wildlife Management and Harvesting Beyond the Marine Areas of the Nunavut Settlement Area.*

(48) Without seeking the agreement of the Northwest Atlantic Fisheries Organization (NAFO).

(49) Prior to the decision, the Nunavut Inuit had advised the Minister that they considered their previous share to be an absolute minimum. The Minister disregarded the advice of senior departmental officials in setting the allocation.

(50) This was an application for a judicial review based on the following grounds: the Minister's decision infringed on the Nunavut Wildlife Management Board's (NWMB) sole responsibility to establish levels of the TAC in the NSA (Article 5.6.16 of the Land Claims Agreement); the Minister failed to consider the advice of the NWMB as is required in the Agreement (Articles 15.3.4 and 15.4.1); and the Minister failed to give special consideration to the principles of adjacency and other relevant principles set out in the Agreement (Article 15.3.7). Nunavut Tunngavik Incorporated is a legislated agency responsible for ensuring that the 1993 Nunavut Land Claims Agreement is implemented in accordance with its provisions.

that the turbot allocation was not unfair. In June 1998, the Minister extended the 1997 fish allocation for the period 1998 to 2002, but granted the Nunavut Inuit half of any future increase in the TAC (above the level set for 1998). There were unsuccessful appeals by Nunavut Tunngavik Incorporated in Federal Court in 1999 (an application for judicial review) and in 2000 (an appeal on the 1999 decision). In 2001, the Supreme Court dismissed an application of leave to appeal the Federal Court of Appeal's ruling.

With respect to the northern shrimp fishery, it was pointed out to us that Nunavut's participation was limited to approximately 14% of the fishery.

Under the DFO's Atlantic Fisheries Policy Review currently underway, the DFO plans to issue a new policy framework that will define a set of objectives and principles to guide the long-term management of the Atlantic fisheries. On the principles governing access to the fishery and criteria for allocating fish stocks, the federal Fisheries Minister created an Independent Panel on Access Criteria (IPAC). In February 2001, the Fisheries Minister released a discussion paper intended to form the basis of public consultations within the context of its ongoing Atlantic Fisheries Policy Review. Among many things, the discussion paper states that: over time, the DFO wants to remove itself from decision-making concerning commercial allocations of the resource because of criticism that such decision-making is "political"; a condition for removing itself from allocation arrangements will be the establishment of appropriate rules and documentation of the shares held by individuals and fleets; current sharing arrangements could be recognized; and "with some exceptions," fleet shares could be "fixed" and set for longer terms. On the foregoing, Nunavut's position was made quite:

> (T)he principle of adjacency has not been applied in Nunavut and nor is it being recognized. We recognize the principle of adjacency as it is described. It means priority consideration. It does not mean exclusivity; it means priority consideration. It means that the majority of the resource goes to the adjacent user. In terms of Nunavut, right now in our southern division, 0B, we have 27% of our adjacent resource. ... The policy review states that there might be exception under special circumstances. I think that we would certainly want to look at Nunavut as a special circumstance. We were not involved in the development, and in many cases were excluded from the development of the fishery there. Twenty-seven per cent of our adjacent resources certainly is not something that we would want to

look at fixing for the long term. – Carey Bonnell, Director, Fisheries and Sealing, Department of Sustainable Development, Government of Nunavut, *Committee Proceedings*, 8 May 2001.

CONCLUSION

As an organization that facilitates multi-disciplinary science, coordinates public and private research, and promotes information-sharing, the Lake Winnipeg Research Consortium is a model that could be emulated elsewhere in Canada.

In Canada's North, major challenges include high unemployment, accelerating social change, and a young and rapidly growing population dependent on the renewable resource base. Although oil and gas exploration, mining and tourism hold the promise of economic opportunities in some areas, appropriate infrastructures (e.g., transportation, sewage, water) are needed to realize that potential. Without economic development agreements with the federal government, officials of the Government of Nunavut told us that Canada's three territories would be unable to make much progress in this area. Development must also proceed in ways that do not compromise the environment. Government initiatives need to be strategic, with northerners and their organizations involved each step of the way.

The region has a myriad of lakes and rivers and a long maritime coastline. However, fish stocks are not as plentiful as this suggests because northern waters are not as productive as more southern waters. Industrial development is also expected to put increasing pressures on wildlife, including fish and their habitat. Aboriginal people deeply wish to maintain their traditional way of life. In this regard, the DFO has considerable sustainable development responsibilities.

We were impressed by the deep passion displayed by those who spoke about the fishery. Many northern communities are looking to the fisheries for the much-needed economic benefits they can generate. However, comparatively little scientific information exists on northern ecosystems and fish stocks. A more sizeable investment in research – stock assessments, related scientific studies, and ongoing monitoring – is essential if safe harvesting levels are to be set, fish

habitats preserved, and emerging fisheries are to proceed in a sustainable manner. Precautionary, multi-disciplinary, and ecosystems-based approaches are also needed, as is traditional ecological knowledge – the valuable information base that Aboriginal people have acquired through centuries of living in close harmony with the land and sea.

Scientific research is also critical if Canada is to fulfil international commitments to protect Arctic ecosystems. As steward of one-quarter of the world's northern circumpolar region, Canada has a major stake in conserving renewable resources, protecting the Arctic environment, and helping to find solutions to problems of transboundary pollution and global environmental change. The issue of Arctic contaminants is a very serious one for northern Canadians; it raises serious concerns about the safety of traditionally harvested country food that makes up a substantial part of their diet. Global warming is another problem that threatens to end a way of life. Obviously, these two issues transcend state boundaries. They are more than any one department or country can possibly resolve, and require concerted and sustained international action and cooperation on a global scale.

The acquisition of an icebreaker dedicated to serving the needs of the research community would be invaluable in advancing Canada's conservation efforts. International demand for research platforms capable of working safely in the Arctic was said to be huge, with many potential public- and private-sector partners.

With the settlement of land claims in the North, Aboriginal people now have co-management responsibilities for an area larger than the four Atlantic provinces. From what we heard, co-management appears to be working well as a means of sharing decision-making, and in responding to the values, priorities and needs of Aboriginal communities. The use of traditional ecological knowledge is widely supported by fisheries stakeholders and government officials alike. However, there were disturbing comments made to us on inadequate DFO staffing levels in the region (e.g., in the area of enforcement), making it difficult for the Department to live up to its responsibility as a co-management partner. The demands made on the DFO's Central and Arctic Region are probably more than the Department can effectively meet. With respect to its

fish habitat program in the region, the Department recently acknowledged its limited presence in the region, but also indicated that this would soon change.

On Nunavut's share of the total allowable catch for turbot in the Davis Strait fishery, the general conclusion is inescapable: the Territory's disproportionately small allocation of fish is a glaring inconsistency in the application of the key principle of adjacency. The Government of Nunavut strongly objects to the notion of permanently fixing or codifying current fishing access arrangements and fish allocations, as suggested in the DFO's Atlantic Fisheries Policy Review discussion paper (*The Management of Fisheries on Canada's Atlantic Coast: A Discussion Document on Policy Direction and Principles*), because this would entrench existing inequities.

RECOMMENDATIONS

1. **The Committee recommends that the work undertaken by the Freshwater Institute in support of sustainable development in the DFO's Central and Arctic Region, a jurisdiction that covers 67% of Canada's freshwater, be expanded in the Lake Winnipeg watershed and in the North.**

2. **The Committee recommends that the Government of Canada, and the provincial and territorial governments and other appropriate jurisdictions, actively encourage and financially support the formation of organizations, such as the Lake Winnipeg Research Consortium, that promote public- and private-sector partnerships as well as collaborative and cooperative research.**

3. **The Committee recommends, as a general principle, that traditional ecological knowledge (TEK), as an indispensable complement to scientific knowledge in the North, always be given full consideration in fisheries decision-making.**

4. **The Committee recommends that the Department of Fisheries and Oceans increase its funding for multi-year, fish stock and marine mammal assessments, and related**

research capabilities, in support of fisheries co-management in Nunavik, Nunavut and the Northwest Territories.

5. **The Committee recommends that the Government of Canada provide the Department of Fisheries and Oceans with the financial resources necessary to secure an icebreaker that could be dedicated to Arctic science-based activities.**

6. **The Committee recommends that the DFO expand the amount of research it undertakes in determining contaminant levels in fish and marine mammals in the Canadian Arctic. The Department should work more closely with other federal government departments such as the Departments of Health, Indian and Northern Affairs, and Environment, as well as Aboriginal communities to monitor and interpret the significance of findings.**

7. **The Committee recommends that the Government of Canada more vigorously promote international action to address the global issues of climate change and long-range transboundary air pollution. Aboriginal participation at international forums should be expanded. The Department of Foreign Affairs and International Trade should report, on an annual basis to Parliament, on the activities undertaken by Canada to ensure that the world has a better understanding of the impacts that global warming and transboundary air pollution are having on Aboriginal people and Arctic ecosystems.**

8. **The Committee recommends that the Government of Canada continue to encourage the building of partnerships with other circumpolar countries in support of global Arctic issues. Regional linkages, such as those established by the Inuit Circumpolar Conference and the Arctic Council and its working groups, can only strengthen efforts for action on common Arctic interests.**

9. **The Committee recommends that, in developing the federal sustainable development strategy in the North, the Department of Indian and Northern Affairs work very closely with the Department of Fisheries and Oceans, a department that**

has mandated responsibilities in the areas of fish habitat protection and safe shipping.

10. **The Committee recommends that governments encourage and help fund local river improvement projects in the North that help achieve a "net gain" in the productive capacity of fish habitat. Fish way projects, such as the Nepihjee River waterfall development project for Arctic char in Nunavik, are deserving of federal and provincial government support.**

11. **The Committee recommends that the Government of Canada move to operationalize the Memorandum of Understanding it signed with the Government of Nunavut in August 2000, in which the DFO, among other things, agreed to: (a) support the priorities of the Government of Nunavut in the pursuit of fisheries-related economic development funding from other agencies; and (b) work towards the development of capacity amongst Nunavummiut in all shore-based and at-sea aspects of the fishery through education, training and development.**

12. **The Committee recommends that the Minister of Fisheries and Oceans adopt a fair and consistent policy with respect to Nunavut's access to its adjacent Atlantic fisheries resources, including turbot. Quotas should be set in accordance with the spirit and intent of Article 15.3.7 of the Nunavut Land Claims Agreement, which stipulates that special consideration be given to the principles of adjacency and Inuit economic dependence on the resource.**

APPENDIX I

WITNESSES

Date	Name
37th Parliament – 1st Session	
March 20, 2001	**From the Canadian Code of Conduct for Responsible Fishing Operations:** • Mr. Rick Misner, Chair (Ontario Commercial Fisheries Association); • Mr. Patrick McGuinness (Fisheries Council of Canada); • Mr. Henry Copestake, Code Secretariat.
May 8, 2001	**From the Government of Nunavut:** The Honourable Olayuk Akesuk, Minister of Sustainable Development **From the Department of Sustainable Development, Government of Nunavut:** • Mr. Peter Ittinuar, Assistant Deputy Minister; • Ms. Jane Cooper, Executive Assistant to the Minister; • Ms. Carey Bonnell, Director, Fisheries and Sealing.
October 2, 2001	**From the Lake Winnipeg Research Consortium:** ***(BY VIDEO-CONFERENCE)*** • Mr. Allan H. Kristofferson, Coordinator; • Mr. Terry Miles, Member, Board of Directors (LWRC); • Mr. Herb Lawler, Member, Head (LWRC).
October 16, 2001	**From the Department of Fisheries and Oceans:** • Mr. Paul Cuillerier, Director General, Habitat Management and Environmental Science; • Mr. Richard Nadeau, Director, Habitat Operations, Habitat Management and Environmental Science; • Mr. Patrice LeBlanc, Director, Habitat Program, Habitat Management and Environmental Science.
October 23, 2001	**From the Nayumivik Landholding Corporation:** Mr. Allen Gordon, President. **From the Makivik Corporation:** Mr. Geoff Klein, Biologist.
October 30, 2001	**From the Department of Fisheries and Oceans:** **From Ottawa:** Mr. Martin Bergmann, Director, Arctic Science Program Development.

(BY VIDEO-CONFERENCE)
From Burlington:
Dr. John Cooley, Regional Director of Science.

(BY VIDEO-CONFERENCE)
From Calgary:
Mr. Garry Linsey, Area Director, Prairies Area.

(BY VIDEO-CONFERENCE)
From Winnipeg:

- Dr. Redmond Clarke, Regional Director of Habitat, Fisheries and Oceans Management;
- Dr. Michael Papst, Division Manager, Arctic Research;
- Mr. Terry Shortt, Division Manager, Environmental Science Division;
- Mr. Robert Fudge, Science Program Coordinator.

November 6, 2001

From the Department of Fisheries and Oceans:

- Mr. Paul Sprout, Associate Assistant Deputy Minister, Fisheries Management;
- Ms. Catrina Tapley, Director, AFPR and National Policy Framework;
- Ms. Michelle Doucet, Director, Program Development, Fisheries Renewal;
- Mr. Arthur Kroeger, Chair of the Independent Panel on Access Criteria;
- Ms Martha Jackman, Board Member, Independent Panel on Access Criteria.

November 20, 2001

From the International Institute for Sustainable Development:
Dr. Arthur J. Hanson.

From 2WE Associates Consulting Ltd.:
Mr. Geoffrey L. Holland, Consultant.

APPENDIX II

EXHIBITS

Date	Name

37th Parliament – 1st Session

Exhibit #1:	Canadian Code of Conduct for Responsible Fishing Operations, Ottawa, ON
Exhibit #11:	The Lake Winnipeg Research Consortium, Winnipeg, MB
Exhibit #16:	Minister of Sustainable Development, Government of Nunavut, Iqualuit, NU
Exhibit #27:	Department of Fisheries and Oceans, Ottawa, ON
Exhibit #28:	Nayumivik Landholding Corporation, Kuujjuaq, Nunavik

APPENDIX III

EXHIBITS

Date	Name

36th Parliament – 2nd Session

Exhibit #54:	Freshwater Institute, Winnipeg, MB
Exhibit #55:	Lake Winnipeg Research Consortium, Winnipeg, MB
Exhibit #56:	Jake MacDonald, Winnipeg, MB
Exhibit #57:	Freshwater Fish Marketing Corporation, Winnipeg, MB
Exhibit #59:	Canadian Coast Guard, Winnipeg, MB
Exhibit #60:	Dennis G. Wright, Winnipeg, MB
Exhibit #61-62:	The Freshwater Institute, Winnipeg, MB
Exhibit #63:	Department of Fisheries and Oceans, Ottawa, ON
Exhibit #73:	Ad Hoc Parliamentary Committee on Lightstations, Ottawa, ON
Exhibit #84:	Nunavut Wildlife Management Board, Iqualuit, NU
Exhibit #85:	Department of Fisheries and Oceans, Western Arctic Area, Yellowknife, NT
Exhibit #86:	Office of the Minister of Sustainable Development, Iqualuit, NU
Exhibit #87:	Wool Bay Fisheries, Wool Bay, NT
Exhibit #88:	Inuvialuit Fisheries Joint Management Committee, Inuvik, NT
Exhibit #89:	Gwich'in Renewable Resource Board, Inuvik, NT
Exhibit #90:	Inuvialuit Fisheries Joint Management Committee, Inuvik, NT
Exhibit #91:	Gwich'in Renewable Resource Board, Inuvik, NT
Exhibit #93:	Department of Fisheries and Oceans, Western Arctic Area, Yellowknife, NT
Exhibit #94:	Department of Sustainable Development, Iqualuit, NU

APPENDIX IV

MEETINGS & TOURS

Date	Name
37th Parliament – 1st Session	
June 6, 2001 **MEETINGS:** **Kuujjuaq, Quebec**	**From the Department of Fisheries and Oceans:** Mr. Daniel Gagnon, Director, Operations, Acting Director, Aboriginal Fisheries **From Kativik Regional Government (KRG):** Mr. Johnny Adams, President **From the Hunting, Fishing and Trapping Association:** • Mr. Paulusi Novalinga, President • Mr. Jimmy Johannes, Secretary
June 7, 2001	**From Makivik Corporation:** • Mr. Bill Doidge, Director • Mr. Joseph Agma, Department Head **From the Nayumivik Landholding Corporation:** • Mr. Allen Gordon, President • Mr. Geoff Klein, Biologist, Makivik Corporation

APPENDIX V

MEETINGS & TOURS

Date	Name
36th Parliament – 2nd Session	
April 13, 2000 **MEETINGS:** **Ottawa, Ontario**	**From the Freshwater Fish Marketing Corporation:** • Mr. Sam Murdock, President of the Board • Mr. Robert Hand, Chief Executive Officer **From the Rawson Group:** Mr. Bruce Rawson
May 10, 2000 **MEETINGS:** **Winnipeg, Manitoba**	**From the Freshwater Fish Marketing Corporation:** • Mr. Sam Murdock, President of the Board • Mr. Ed Isfeld, Member, Board of Directors • Mr. Robert T. Kristjanson, Member, Board of Directors • Mr. Stephen Kendall, Manager, Resource Development • Mr. Albert Macleod, Plant Manager
MAY 10, 2000 **TOUR:** **Winnipeg, Manitoba**	**Tour of Fish Plant**
May 10, 2000 **MEETINGS:** **Gimli, Manitoba**	**From the Lake Winnipeg Research Consortium:** Mr. Al Kristofferson, Coordinator **From the Office of Senator Janis Johnson:** Ms. Kathy Arnason, Adivser
May 10, 2000 **TOUR:** **Gimli, Manitoba**	**Tour of Lake Winnipeg by boat** • Mr. David Olson • Mr. Kris Olson
May 10, 2000 **MEETINGS:** **Gimli, Manitoba**	**From the Town of Gimli:** • Mayor Bill Barlow • Mr. D.J. Sigmundson, Town Administrator • Mrs. Diane Hall, Town Hall Secretary
May 10, 2000 **MEETING:** **Winnipeg, Manitoba**	Mr. Jake MacDonald, Fishing Guide and Writer

May 11, 2000
MEETINGS:
Winnipeg, Manitoba

From the Freshwater Institute Central and Arctic Region, Department of Fisheries and Oceans:

- Mr. Ray Pierce, Regional Director General
- Mr. Terry Shortt, Division Manager, Environmental Science
- Mr. Dennis Wright, Environmental Affairs Biologist
- Mr. Jeff Stein, Acting Area Director, Prairies
- Dr. Mike Papst, Division Manager, Arctic Research
- Mr. Marty Bergmann, Acting Manager, Oceans
- Dr. Red Clarke, Regional Director, Habitat, Fisheries and Oceans Management
- Mr. Alan Kathan, Manager, Western Area
- Mr. Peter Thompson, Policy Officer
- Mr. Chris Hawksworth, Marine Superintendent, Coast Guard

May 11, 2000
TOUR:
Winnipeg, Manitoba

Tour of Laboratories:

Experimental Lakes Area
Mr. John Shearer, Senior Biologist

High Resolution Mass Spectrometer
Dr. Gary Stern, Research Scientist, Arctic Research

Arctic Research / Oceans Research

- Dr. Michael Papst, Division Manager, Arctic Research
- Mr. Jack Mathias, Head, Oceans Programs

Automated DNA Sequencer
Ms Lianne Maiers, Biologist, Arctic Research

Contaminants

- Dr. Jack Klaverkamp, Research Scientist, Environmental Science
- Dr. Vince Palace, Research Scientist, Environmental Science

July 24, 2000
MEETINGS:
Iqaluit, Nunavut

From the Department of Fisheries and Oceans:

- Mr. Burt Hunt, Director, Eastern Arctic Area
- Ms. Leesee Papatsie, Resource Technician
- Mr. Winston Fillatre, Supervisor, Conservation & Protection
- Mr. Patrice Simon, Fisheries Management Biologist

July 24, 2000
MEETINGS:
Iqaluit, Nunavut (Cont'd)

From the Nunavut Wildlife Management Board:
Dr. Michelle Wheatley, Director of Wildlife Management

From the Baffin Region Fisheries Council:
Mr. Ben Ell, Representative

From the Amarok Hunters and Trappers Association:
Mr. Pitseolak Alainga, Representative

From the Nunavut Department of Sustainable Development:
Mr. Carey Bonnell, Director of Fisheries & Sealing, Fisheries Division

July 24, 2000 **TOUR:** **Iqaluit, Nunavut**	**Tour of Communication Centre** Ms. Kelly Howarth, Officer-in-Charge, Marine Communications & Traffic Services, Canadian Coast Guard, Fisheries and Oceans Canada
July 25, 2000 **MEETINGS:** **Pangnirtung, Nunavut**	**From: Hamlet of Pangnirtung** • Mr. Joanasie Maniapik, Mayor • Ms. Meeka Mearns , Assistant to the Mayor **From the Angmarlik Visitor Centre:** Ms. Margaret Karpik, Manager
July 25, 2000 **TOUR:** **Pangnirtung, Nunavut**	**Tour of Pangnirtung Fisheries Ltd.:** • Mr. Michael Nowinski, General Manager • Mr. Gordon Whiffen, Plant Manager
July 25, 2000 **MEETINGS:** **Pangnirtung, Nunavut**	**From the Hunters and Trappers Association of Cumberland Sound:** Mr. Mosesie Qappik, Chair **From the Cumberland Sound Fisheries:** • Mr. Mosesie Nowdlak, Co-Chair, Board of Directors • Mr. Joopa Sowdluapik, Co-Chair, Board of Directors **From the Pangnirtung Fisheries:** Mr. Billy Qaqasiq, Vice-Chair, Board of Directors
July 26, 2000 **MEETINGS:** **Iqaluit, Nunavut**	**From the Department of Sustainable Development:** • The Honourable Peter Kilabuk, Minister of Sustainable Development (Constituency – Pangnirtung) • Mr. Pat Best, Executive Assistant to the Hon. Peter Kilabuk • Mr. Peter Ittinear, Assistant Deputy Minister • Mr. Carey Bonnell, Director of Fisheries & Sealing, Fisheries Division
July 26, 2000 **MEETINGS:** **Yellowknife, N.T.**	**From the Department of Fisheries and Oceans:** Mr. Ron Allen, Area Director – Western Arctic Area, Fisheries Management Directorate, Central and Arctic Region **Commissioner of the Northwest Territories** The Honourable Glenna F. Hansen **From the N.W.T. Department of Education, Culture & Employment:** Ms. Lesley Allen, Assistant Deputy Minister **From the Department of Fisheries and Oceans:** • Mr. Grant Pryznyk, Director of Enforcement, Centre & Arctic Region, Former Chair of Great Slave Lake Advisory Committee • Mr. Pete Cott, Acting Chief of Habitat, Western Arctic Area

July 27, 2000
TOUR:
Wool Bay, N.T.

Tour of Wool Bay Fish Plant:

- Mr. Wallace Brown, Manager, NWT Operations, Freshwater Fish Marketing Corporation
- Mr. Darryl Murdock, Plant Manager, Wool Bay Fish Plant

July 27, 2000
MEETINGS:
Inuvik, N.T.

From the Department of Fisheries and Oceans:

- Mr. Ron Allen, Area Director – Western Arctic Area, Fisheries Management Directorate, Central and Arctic Region
- Mr. Stephen Charlie, Land Claims Liaison Officer, NWT Area
- Ms. Lois Harwood, Stock Assessment Biologist, Arctic Science
- Mr. Sam Stephensen, Fish Management Biologist
- Mr. Doug Chiperzak, ISR Oceans Program Coordinator, Oceans Directorate
- Mr. Cliff Tattersall, Officer-in-charge, Marine Communications, Canadian Coast Guard
- Ms. Sharon Zirk, Area Admin. Clerk, Inuvik
- Ms. Laurie Embleton, Area Admin Clerk, Yellowknife
- Ms. Andrea Hoyt, Graduate Student
- Ms. Kim Howland, Graduate Student

July 28, 2000
MEETINGS:
Inuvik, N.T.

From the Fisheries Joint Management Committee (Inuvialuit) (FJMC):

- Mr. Frank Pokiak, Wildlife Management Advisory Committee
- Mr. Duane Smith, Chair, Inuvialuit Game Council
- Mr. Ed McLean, Resource Biologist (FJMC)
- Mr. Richard Binder, Chair, Inuvialuit Hunters & Trappers Committee, Member (FJMC)

From the Gwich'in Renewable Resource Board (GRRB):

- Mr. Robert Charlie, Chairperson
- Ms. Jennifer Walker-Larsen, Biologist

July 28, 2000
TOUR:
Inuvik, N.T.

Tour of the Mackenzie River Delta:
Stop at Shingle Point and Herschel Island (Yukon Territory) & Tuktoyaktak

July 28, 2000
TOUR:
Tuktoyaktuk, N.T.

From the Fisheries Joint Management Board:
Mr. Max Kotokak, Representative from Tuktoyaktuk