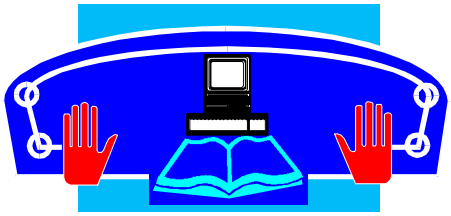

Arctic Development
Library

Review Of The Northwest Territories (commercial) Fishing Industry
Type of Study: Analysis/review
Date of Report: 1979
Author: Unknown
Catalogue Number: 3-14-34

Fisheries

3-14-34

EW OF THE NORTHWEST TERRITORIES COMMERCIAL) FISHING INDUSTRY

BACKGROUND

The fishing industry in the NWT is composed of three sectors. These sectors include the domestic subsistence fishery, the commercial fishery and sport fishing. Management of fish resources in the NWT is the responsibility of the Department of Fisheries and Oceans (DFO). DFO is also responsible for inspection and stock assessment and assumes a role in test fisheries.

In terms of resource allocation, the domestic subsistence sector is given priority, subject only to the requirements of conservation. Only those fish stocks in excess of subsistence needs may be utilized for development of the commercial and sport fisheries. Although traditional harvesting activities are considered a priority, there is a gradual transition to commercial development of the renewable resource economy (Table 1).

Commercial fishing in the NWT dates to the opening of the Great Slave Lake fishery, in 1945. The industry grew rapidly during this period and by 1949, a total of 4.5 million kg of lake trout and whitefish were harvested making Great Slave Lake the largest producer of these fish in North America (Table 2&3).

In 1961, attention was focused on development of the inland [illegible] coastal charr fisheries. Three factors led to [illegible]ative:

[illegible]eat Slave Lake fish populations were in decline [illegible]d there was a need to decrease fishing pressure;

ii) [illegible] decline in whitefish production from Lake Winnipeg [illegible]d the Great Lakes had led to improved marketability [illegible] Northern production; and

iii) [illegible]evere economic conditions in the Keewatin Region [illegible]lue primarily to the closure of Rankin Inlet Nickel [illegible]ine).

[illegible] to 1970 over 140 waterbodies were fished (Table [illegible]ng this period numerous attempts were also made [illegible]ntial of the Mackenzie Delta (Table 5).

Since 1970, fish [illegible]ion and the number of areas fished has declined sig[illegible]tly. During the 1986-87 fishing season, only the [illegible] fisheries, Great Slave Lake and two walleye produ[illegible]kes were being harvested. Despite this decline, the [illegible] fisheries still contributed $1.7 million (Table 2) [illegible]port sales with primary employment of approximately 1[illegible]le (Table 6).

.../2

AQUATIC RESOURCES
OF THE NORTHWEST TERRITORIES

By

J. Den [illegible]

Aquatic Environments Limited
Calgary, Alberta

For

Science Advisory Board
of the Northwest Territories
December 1979

FOREWORD

The abundance and quality of fishes was a significant factor for the pattern of human settlement in what is now the Northwest Territories. Fish remain an important element in the traditional life style of northern society. Also. commercial fishing for export to Canadian and International markets is an important element in the economy of the Northwest Territories. In this volume the Science Advisory Board attempts to compile the available information relevant to the understanding and management of the most significant northern fish species. Where data for proper management of species and populations in northern waters are lacking the authors were encouraged to highlight these gaps and recommend procedures for correcting the short-coming. While the paper reflects the views of the authors the Board feels that the information here contained deserves attention by those in a position to effect improvements in the management of the fish resources in the Northwest Territories, Furthermore, in promoting the distribution to the public the Science Advisory Board hopes to generate a greater understanding for fisheries in the Northwest Territories by readers not only i n southern Canada but also by those in the Northwest Territories.

Ben A. Hubert
Executive Secretary
Science Advisory Board
of the Northwest Territories

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

OVERVIEW

The productivity of freshwater environments in the north is generally low in comparison with lakes at temperate latitudes and, as a consequence, the rates of production of fish and other consumers directly utilizable by man are also very low. Fish production per unit area may be less than that of moderately to highly productive lakes further south. There are a number of factors which contribute to this low productivity including low light levels during the winter months, extended periods of ice cover, low water temperatures, and, especially, low nutrient concentrations.

In response to low productivity, northern populations of freshwater fish are characterized by slow growth, late maturity, and long life. Lake trout are an extreme example of these tendencies. They may not mature for the first time until well into their teens then continue spawning until they reach an age of years or more. The low productivity of fish populations might not be immediately apparent because, in many populations, the numbers and biomass of fish are very high. As a result, unexploited lakes and streams in the Arctic often harbour dense populations of fish, providing a temporary bonanza to fishermen. However, because the biomass of each individual and of the population as a whole represent the stored production of many years, such populations are extremely sensitive to exploitation and collapse. Where the fishery is sufficiently intense, fish populations show typical responses:

1) There is a reduction in both the average size and average age of the population as the larger, older fish are selectively eliminated;

2) Catch per unit effort declines as the numbers of fish in the age classes susceptible to the gear declines;

3) There may be an increase in the growth rates of smaller, predominantly juvenile fish, which are too small to be susceptible to the gear, as older intraspecific competitors are eliminated;

4) Increased growth among juvenile fish may be accompanied by a reduction in the age at which they mature.

In time, heavily exploited populations may be made up almost entirely of juveniles and first time spawners. In time, stocks subject to heavy exploitation may be reduced to very low levels or, in exceptional circumstances, become extinct. On the other hand, many populations can recover if fishing mortality is reduced or eliminated. Resiliency varies considerably, however, and among major northern species, populations of Arctic char and the whitefishes have been found to recover more rapidly than lake trout.

It is likely that the dangers of collapse are even greater among northern than among fish populations in general and that, therefore, great caution and restraint should be exercised in the management of northern fisheries. In fact, the management of most fisheries in the Northwest Territories is conducted at a rather unsophisticated level, largely because of a lack of information concerning fish resources. Until more is known, it will not be possible to effectively manage fisheries or to accurately assess the fishery potential of the Territories. In order to these information gaps, we have made a number of recommendations. Briefly, we recommend that:

1) There should be further study of the productivity of northern freshwater ecosystems and the development of indices to fish productivity;

2) There should be further development and testing of the concept of cyclical fisheries in the Northwest Territories;

3) Every effort should be made to upgrade the quality of data describing fisheries in the north, particularly domestic fisheries for which the data are especially poor;

4) The government monitor major industrial development projects in the north to determine, in detail, their impacts on water quality, aquatic productivity, and fish populations so that a body of information is available which can be used in predicting and mitigating the impacts of future developments;

5) There be a study of the feasibility of sport fishing in the Northwest Territories and of the potential impacts of encouraging greater utilization of the fisheries resources by sport fishermen;

6) There be a study of methods of increasing the proportion of the commercial catch marketed within the as a method of increasing the availability of low cost protein;

7) There be a continuing effort to develop biologically and economically sound strategies for commercial fisheries in the N. W. T.;

8) That a central information depository be developed to provide easy access to information regarding fisheries and related subjects for the

ACKNOWLEDGEMENTS

The authors wish to acknowledge the assistance of numerous individuals in government organizations, the academic community, and within private industry who have provided input into the preparation of this document. We wish to especially thank the following individuals for their valuable contributions to this document: Ben Hubert and Dan Murphy of the North-west Territories Science Advisory Board: Brian Wong and Don Dewier of the Fisheries and Marine Service, R. B. Supervisor, Resource Development, Lionel Johnson, Roger Peet, Robert Moshenko, Kaz Machniak, William Bond, Eric Marshall, Mike Lawrence, Dave and Larry de March of the Freshwater Institute; Jerry Hunter of Arctic Biological Station; personnel of the Arctic Institute, Calgary; and Cecilia Gossen and Joyce Harris of Aquatic Environments Limited. We also would like to thank those unnamed individuals who provided reviews and editorial comments on the document.

PRODUCTION AND FISH PRODUCTION IN NORTHERN ENVIRONMENTS

SOME GENERAL CONSIDERATIONS

in any aquatic ecosystem, a basic division can be made between the physical (non-living) and biotic (living) environments. The former includes the water itself, temperature, and other dissolved substances including minerals and nutrients, light, etc. The latter includes all living things, from the simplest microorganisms to fish, birds, and mammals.

The biotic components of the ecosystem can be further subdivided on the basis of status (i.e., their relationships to energy flow within the system). The basis of the ecosystem is the group of primary producers, predominantly chlorophyll-containing, photosynthetic green plants, which are able to use the energy of sunlight along with water, carbon dioxide, and various dissolved substances (e.g., nitrates and phosphates) to produce molecules. Organic molecules are characterized by the fact that they contain carbon and the rate of primary production is usually measured quantitatively in terms of the amount of carbon (grams C) incorporated in the molecules produced. This rate can be influenced by a variety of environmental factors. I n the north, light and nutrient (particularly phosphorous) availability appear to be the two most important factors limiting primary production.

Consumers are organisms, chiefly animals, which cannot themselves produce organic from simpler substances and instead ingest other organisms or particulate organic matter. They are ultimately dependent upon the primary producers for the organic molecules which they use as blocks in their own metabolisms. The process by which consumers break down and rearrange organic molecules can be termed secondary productivity. Consumers be classified as primary (herbivores which feed directly on producers), secondary (carnivores feeding on tertiary (carnivores feeding on other carnivores), and so on, depending on how far they are from the primary producer base. Decomposes are organisms, chiefly bacteria and fungi, which break down dead protoplasm, absorbing some of the decomposition products and releasing many simpler substances, such as nutrients, which are then available again to primary producers.

Food webs are diagrammatic representations of the interrelationships between primary producers and other levels. In simple terms, they describe who eats whom. A simple example would be a relationship or food chain.

In practice, even the simplest natural food webs are much more complex than this. There may be more phic levels and more than one kind of organism at each level. A species may occupy one level at one stage in its life history and another later. Arctic char, for instance, may feed on midge larvae and other small primary consumers (e.g., copepods) when they are small, and on secondary consumers, including smaller individuals of their own species, as they grow. Individual fish may feed at several simultaneously. The straight-line example is instructive, however, in that it does illustrate the dependence of one level on preceding ones and the ultimate dependence of consumers (and decomposes) on primary producers.

FOOD CHAIN

Organisms		Level	Relative Production
1709	3(	primary producers	100
1230	2(	primary consumers	10
decomposes 1050	3(	secondary consumers	1
1441	1:	tertiary consumers	0.1

Because there is considerable loss of energy between primary producers and the higher levels, energy conversion within ecosystems is relatively inefficient. Using our simplified example and the average 10% ecological efficiency which (1962) suggests can be normally expected, it would require a production of 100 grams of algae to support a production of one gram of Arctic char. In more complex ecosystems, where there are more levels and complex relationships, and therefore more opportunity for energy loss, the difference might be even greater.

Waterbodies do, of course, vary in their rates of primary production, usually expressed as grams of carbon produced per unit area per unit time (g C

Fisheries

3-14-34

EW OF THE NORTHWEST TERRITORIES
COMMERCIAL) FISHING INDUSTRY

BACKGROUND

The fishing industry in the NWT is composed of three sectors. These sectors include the domestic subsistence fishery, the commercial fishery and sport fishing. Management of fish resources in the NWT is the responsibility of the Department of Fisheries and Oceans (DFO). DFO is also responsible for inspection and stock assessment and assumes a role in test fisheries.

In terms of resource allocation, the domestic subsistence sector is given priority, subject only to the requirements of conservation. Only those fish stocks in excess of subsistence needs may be utilized for development of the commercial and sport fisheries. Although traditional harvesting activities are considered a priority, there is a gradual transition to commercial development of the renewable resource economy (Table 1).

Commercial fishing in the NWT dates to the opening of the Great Slave Lake fishery, in 1945. The industry grew rapidly during this period and by 1949, a total of 4.5 million kg of lake trout and whitefish were harvested making Great Slave Lake the largest producer of these fish in North America (Table 2&3).

In 1961, attention was focused on development of the inland lakes and coastal charr fisheries. Three factors led to this initiative:

i) **Great Slave Lake fish populations were in decline and there was a need to decrease fishing pressure;**

ii) **a decline in whitefish production from Lake Winnipeg and the Great Lakes had led to improved marketability of Northern production; and**

iii) severe economic conditions in the Keewatin Region (due primarily to the closure of Rankin Inlet Nickel Mine).

From 1961 to 1970 over 140 waterbodies were fished (Table 4). During this period numerous attempts were also made to develop the huge potential of the Mackenzie Delta (Table 5).

Since 1970, fish production and the number of areas fished has declined significantly. During the 1986-87 fishing season, only the charr fisheries, Great Slave Lake and two walleye producing lakes were being harvested. Despite this decline, the total fisheries still contributed $1.7 million (Table 2) in export sales with primary employment of approximately 120 people (Table 6).

.../2

CURRENT SITUATION

The GNWT has assigned a high priority to the goal of maximizing the economic benefits from the renewable resource sector, including fisheries (Table 2&7) . The Commercial Renewable Resource Use Policy demonstrates this commitment. Schedule A (Commercial Fisheries Assistance) of this policy provides price support and freight assistance to the fishing industry (Table 8).

The Department of Indian Affairs and Northern Development, the Department of Regional Industrial Expansion and Canada Employment and Immigration each contribute to fisheries development through their economic development programming. These federal Departments provide capital investment as well as operational and training support to the industry.

Commercial freshwater and anadromous fish harvested in the NWT and shipped south are required by legislation to be marketed by the Freshwater Fish Marketing Corporation (FFMC). **The FFMC, a federal crown corporation, has exclusive jurisdiction in the inter-provincial and export trade of freshwater fish from the NWT and the provinces of Manitoba, Saskatchewan, Alberta and portions of Ontario.** The FFMC, however does not have an overall monopoly on the marketing of these products (Table 9). The FFMC is required to purchase all fish (regardless of demand) delivered, on grade, to its fish receiving stations.

Current research, development and expansion initiatives in the NWT commercial fishing industry are summarized on a regional basis below.

BAFFIN

Recent stock discoveries in the Baffin Region make this area the most dynamic and promising in terms of current initiatives. Baffin fishery activities fall into six categories:

i) Offshore Shrimp and Turbot Fisheries

Qikitaaluk **Corporation, the corporate arm of the** Baffin **Region** Inuit **Association, has received a license to fish for shrimp in Davis and Hudson Straits. A quota of 1,000 metric tonnes was allocated for this purpose.**

Qikitaaluk is also considering exploratory offshore turbot and scallop fishing.

ii) Pangnirtung Turbot Fishery

A winter fishery for turbot is currently practised in Greenland. The timing of this fishery coincides with premium turbot prices. Prospects for developing such a fishery in Baffin are exciting since this fishery is not capital intensive and is undertaken in the winter when unemployment is highest. The first commercial venture is expected in early, 1988 (Table 10) .

.../3

Efforts at resource assessment, training in harvesting and processing, market-development and feasibility analysis of a winter turbot fishery are underway.

iii) Pangnirtung Arctic Charr Fishery

Currently, Pangnirtung Arctic charr is sold on an intersettlement trade basis to Iqaluit and occasionally to other NWT locations such as Yellowknife.

Use of the local processing facility has been suggested to improve quality control at the supply end.

iv) Pangnirtung Cod Fishery

In 1985, a limited Atlantic cod test fishery was undertaken. Competing priorities prevented further effort in 1986.

The catch-rates and harvesting economics for this species are very favorable and a limited market has been identified in Iqaluit and other communities within the NWT, including Yellowknife (Table 10).

v) Pangnirtung Scallop Test Fishery

A test fishery for scallops has been approved. Current levels of production are set a 10,000 lbs (meat) (Table lo).

vi) Igloolik (Steensby Inlet) Charr Fishery

A test fishery program has been in progress since 1985. Ten rivers in the Steensby Inlet area of Baffin Island have been investigated for commercial fishery potential.

DFO has recently provided revised quotas for this system and efforts to determine the commercial viability of summer and winter fisheries are proceeding. On a trial basis, DFO is permitting lake frozen charr to be sent to FFMC in Winnipeg for inspection and processing. This arrangement may contribute greatly to the commercial development of remote charr stocks.

KEEWATIN

A **limited potential to develop commercial fisheries for local sale of freshwater species** such as whitefish and lake trout has been identified. Baker Lake has an annual quota of almost 23,000 kg. for the se two species but production has been sporadic.

Significant subsistence fisheries for charr take place near all the coastal communities and account for about 80 tonnes annually. Recently, a 60% increase in the price paid to fishermen for searun Arctic charr by the FFMC has resulted in a significant increase in interest to expand the commercial fishery.

There is potential for further development of commercial fisheries for searun Arctic charr along the Keewatin coast. The commercial take in the region is about 16-20 tonnes annually. This represents only a fraction of the regional quota. However, these quotas were based on limited field work and are dispersed throughout the region.

Production costs and quality control prevent commercial development of many remote quotas. There is considerable pressure on DFO to establish harvest levels for new areas within an economic radius of established receiving stations and transportation links. Numerous test fisheries are ongoing near Repulse Bay and Chesterfield Inlet as are stock assessment projects at Duke of York Bay on Southampton Island.

Current and proposed initiatives in the Keewatin include:

i) use of a freezer/packer vessel at Duke of York Bay for commercial fishing and test fisheries;

ii) establishment of a multi-purpose food processing plant in Rankin Inlet to replace the current facility;

iii) test fisheries in the Ross Bay area of Lyon Inlet and the Chesterfield area (including: Daly Bay, Kamarvik Creek, Gordon River and Mistake Creek); and

iv) feasibility studies to address:

- commercial fishing in Lyon Inlet
- country food demand in the Keewatin
- regional fishery infrastructure requirements
- alternate ice harvesting technologies.

In addition, the Department of Economic Development and Tourism is initiating a study to develop a comprehensive fishing strategy for the region.

KITIKMEOT

The most widespread freshwater species in the area include lake trout and landlocked Arctic charr. To some extent both are utilized by subsistence fisheries. Lake whitefish and broad whitefish are also used for subsistence purposes. A small commercial fishery for local sale of lake whitefish is being developed on Netsilik Lake, near Spence Bay.

The estimated annual subsistence harvest of searun Arctic charr for the Kitikmeot region is in the order of 60-80 tonnes. Commercial fishing for searun Arctic charr in the Kitikmeot region produces 50-70 tonnes annually. This represents 35% of the total commercial landings of Arctic charr in the NWT and 80% of the total export sales. The fishermen's co-op plans to introduce a weir to the Ellice River system in the near future (Table 11).

.../5

INUVIK

Development of a commercial fishery in this Region has made limited progress to date. The Joint Fishery Management Committee (JFMC) has been established to represent the Inuvialuit and to provide guidance and advice on developing a commercial fishery that is consistent with the desires of regional residents.

The JFMC recommended a market study for Mackenzie Valley inconnu, humpback whitefish and broad whitefish. This study including product testing is currently underway. A second recommended project is the development of markets for herring roe and herring carcasses.

Northern pike, Arctic charr and Lake trout are also found in the Inuvik Region. Stock assessments and test fisheries will be required to determine whether these populations can sustain the pressures of a commercial fishery.

FORT SMITH

The Great Slave Lake fishery and pickerel production from Tathlina Lake and Kakisa Lakes represent the extent of the commercial fishery in the Fort Smith Region. Whitefish and Lake trout quotas for inland lakes in the Central Inland Region remain untapped at this time.

The Great Slave Lake whitefish fishery generates the greatest revenue of all commercial fisheries in the NWT. Fishing activities are well established in this Region.

It is worthwhile to note that FFMC and the GNWT have initiated a study to assess the feasibility of replacing the seasonal fish receiving station at Wool Bay with a year-round station located at Kam Point (near Yellowknife). The three fish receiving stations on Great Slave Lake are owned and operated by the FFMC and transfer of ownership and operation to the fishermen is being considered by FFMC.

A body of NWT fishermen remain highly critical of FFMC's monopoly over purchase and distribution rights to their production. In response to this ongoing concern two initiatives have been proposed: one involves a marketing study to determine the costs and benefits of opting out of the FFMC marketing arrangement; the other calls for the development and marketing of processed fish products that do not fall within the mandate of FFMC. These issues are dealt with in detail by the FFMC review requested by the current Executive.

.../6

IMPEDIMENTS TO INDUSTRY DEVELOPMENT

It can be demonstrated that private development of the fishing industry is limited by estimates of probable profitability rather than by. resource availability. To overcome the competitive disadvantage of distance to markets the NWT fishing industry has relied on significant occurances of high quality fish stocks as well as on-going efforts to develop an efficient production process.

The following constraints relate to development of the NWT commercial fishery:

i) commercial development has been constrained by the relatively slow growth, depressed productivity and low abundance associated with arctic fish resources;

ii) territorial producers are remote relative to markets;

iii) for many species of commercial interest there are lower-cost sources of supply and substitute food items; and

iv) many northern residents have little or no experience in the production, processing and/or financial components of a commercial fishing venture.

OPTIONS FOR DEVELOPMENT

Despite the biological and economic constraints territorial fishery development will continue to be supported because of the limited economic base of many northern communities. In addition, fisheries development is seen to contribute to social and cultural objectives.

A need has been identified to develop a comprehensive fishing strategy for the NWT and to provide policy guidelines for determining trade-offs between economic efficiency and distributional and social objectives. A draft arctic fisheries policy will soon be released by DFO and will serve as a point of departure for general discussion. This policy is-based on the" following principles:

i) integration of subsistence and commercial fishing interests;

ii) sensitivity to the differing character of the North's regions and peoples;

iii) foundation upon sound biological information and sustainable ecological principles; and

iv) a view that economic criteria are important but not the sole determinants of commercial viability.

Table 1

TABLE 30

MAJOR FISH SPECIES IN N.W.T
(kilograms)

COMMERCIAL QUOTA LEVELS

Species	Baffin	Fort Smith	Inuvik	Keewatin	Kitikmeot	Total
Arctic charr	~~261,600~~ 296,000	14,000	~~38,500~~ ~~30,000~~	183,000	261,800 ~~296,000~~	~~813,000~~ 677,300
~~Lake Trout~~	~~2,500~~	~~[illegible]~~	~~30,000~~	~~619,000~~	~~900~~	~~3,047,400~~
Whitefish / Lake Trout	~~2,500~~	~~2,390,100~~ ?	~~30,200~~ ?	~~618,600~~ ?	~~93,700~~	~~3,135,400~~ 3,221,600
~~Arctic Grayling~~			116,500	~~800~~		~~800~~
Burbot / Northern Pike	-	-	13,800	-	-	13,800
Cisco	-	-	30,200	~~500~~	-	30,200
Cod	45,500	-	11,400	-	-	56,900
Inconnu	-		7,000	-	-	7,000
TURBOT ~~Northern Pike~~	~~100,000~~ -	~~12,800~~	-	-	-	~~100,000~~
Pacific Herring	-	~~227,000~~	682,400	-	-	~~227,000~~ 682 400
~~Brook Trout~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
Walleye		72,000	-	-	-	72,000
Total	~~44,000~~	~~5,102,800~~ ?	~~160,600~~	~~1,422,300~~	~~388,100~~	~~7,417,800~~
		2,462,100	899,800	301,600	355,700	4,861,200

Estimated HARVEST LEVELS (Subsistence + Commercial)

Species	Baffin	F. Smith	Inuvik	Keewatin	Kitikmeot	
Artic charr	220 000	-	16,840	28,659	52,150	317,649
Lake Trout	-	110,171	-	13,302	10,200	133,673
Whitefish	-	874,037	-	671	5,810	880,518
Arctic Grayling	-	-	-	12	-	12
Cod	-	-	-	65	-	65
Inconnu	-	71,082	-	-	-	71,082
Northern Pike	-	105,149	-	83	6	105,338
Brook Trout	-	10,000	-	-	-	10,000
Walleye	-	42,700	-	-	-	42,700
Total	~~220,000~~	1,213,139	16,840	42,892	68,166	1,561,031

Table 7.4

NORTHWEST TERRITORIES
LANDINGS BY MAJOR LAKES.
1985/86
(quantities in live weight equivalent tonnes)

species	Great Slave	Cambridge Bay	Rankin Inlet	All Others	Total
Whitefish	1001	0	0	n	1001
Pickerel	13	0	o	23	36
Lake Trout	108	0	0	0	108
Northern Pike	145	0	0	1	146
Arctic Char	0	44	19	6	68
Inconnu	73	0	0	1	74
Total	1341	44	19	30	1433

Table 7.5

NORTHWEST TERRITORIES
LANDED VALUES BY MAJOR LAKES.
198s/66
(values in $OOO1s)

Species	Great Slave	Cambridge Bay	Rankin Inlet	All Others	Total
Whitefish	916	0	0	0	916
Pickerel	28	0	0	51	79
Lake Trout	116	0	0	0	116
Northern Pike	107	0	0	0	107
Arctic Char	0	204	89	27	320
Inconnu	116	0	0	0	116
Total	1283	204	89	78	1654

scallop. 1200 Kg meat.
turbot. 800 kg

source: DFO

Table 3

Table 2. Great Slave Lake commercial fisheries harvest, 1945-1985. Harvest volumes in thousands of kg round weight. From **DFO,** MS Reports and Ken Roberts, Hay River.

Year	Whitefish	Lake Trout	N.Pike	Inconnu	Pickerel	Total
1945	228	484		40		752
1946	570	735		51		1357
1947	907	757		39		1698
1948	2196	994		102	2	3294
1949	2468	1825	18	163		4474
1950	2608	1157	51	124	1	3941
1951	1913	1259	33	146	1	3351
1952	1665	1346	33	90	3	3138
1953	1788	1092	31	91	1	3004
1954	1789	1121	29	78	1	3018
1955	1991	1295	30	75	5	3397
1956	1864	1189	27	76	2	3155
1957	1993	900	42	97	1	3033
1958	1533	915	71	99	3	2618
1959	1557	775	114	141	10	2587
1960	1722	498	110	78	5	2413
1961	1678	486	175	135	10	2484
1962	2042	533	123	125	5	2828
1963	2042	317	139	156	6	2660
1964	1764	303	80	133	10	2290
1965	1709	369	108	139	14	2339
1966	1230	268	149	98	14	1760
1967	1050	303	212	111	16	1693
1968	1441	123	162	84	11	1819
1969	1368	136	133	80	7	1724
1970	1469	223	134	58	8	1892
1971	1375	146	99	62	15	1697
1972	1067	86	90	79	7	1328
1973	1006	92	155	104	17	1374
1974	975	111	111	100	45	1478
1975	923	100	96	95	10	1223
1976	977	83	103	77	9	1249
1977	1175	108	119	87	11	1499
1978	1109	106	158	153	13	1539
1979	1067	121	130	154	6	1478
1980	1180	122	200	65	19	1585
1981	1097	85	151	43	4	1381
1982	1124	81	138	18		1411
1983						1096
1984						1056
1985						1157

Table 4

Table 6. A summary of the commercial harvest for the Inland Lakes fishery of the Northwest Territories (1953-1984). Round weight (kg.). From Table 5.

Year	Lakes Fished	Whitefish	Lake Trout	Pickerel	Northern Pike	Mixed	Total
1953	1			16286			16286
1954	1			32563			32563
1955	1			5095			5095
1956	1			29616			29616
1957	1			25884			25884
1958	1			54300			54300
1959	3	3016	7965	41014	6101		58096
1960	9	5746	9917	109436	3795	10616	139510
1961	10	26158	25259	18573	8211	26185	104386
1962	9	55679	62425	582	107	488850	607643
1963	14	29887	20857	47619	820	310563	409746
1964	19	272756	118501	733		258332	650322
1965	10	94272	71647	1947		402481	570347
1966	26	7458	14132			311174	332764
1967	19	7364	905			152728	160997
1968	13	302	421	60		146490	147273
1969	16	6818	24475			355836	387129
1970	30	254439	99449	34274	604	29690	418456
1971	14	157552	46293	53117	4082	11777	272821
1972	12	373649	75464	59455	6732	9623	524923
1973	15	36937	31806	29887	281	838	99749
1974	6	1992	1600	27995	216	953	32756
1975	8	15150	11005	35991		3558	65704
1976	4			23123			23123
1977	4	98	68	18577	3	909	19655
1978	4	1048	683	1885	78	888	4582
1979	5	2995	73	25474	267		28809
1980	10	14130	7639	33385	5102		60256
1981	2	81	226	50897			51204
1982	5	2850	8457	46689	1308	6	59310
1983	5	3312	1971	40275	904		46462
1984	2	53		26329	92	200	26674

Table 5

Table 7. A summary of the commercial landings from the Mackenzie Delta Area, 1955-1980. Harvest volumes in kg round weight. (reported by Corkum,L.D. and McCart,P.J. in Can. MS Rep. Fish. Aquat. Sci. 1613: v + 55 p. from data by B. Wong, Fisheries Biologist, Yellowknife).

Year	Whitefish*	Arctic Charr	Inconnu	Northern Pike	Others	Mixed	Total
1955							752
1956							8500
1957	611		8	62			681
1958						13	13
1959							
1960	5445					5976	11431
1961	18204		968			5000	24172
1962	8784		1614	2376	4262		17036
1963	6516				1851		8401
1964	35161		4036			34	42566
1965	9059	7311				3369	16370
1966	28235	364			101		28700
1967							
1968							
1969							
1970							
1971							
1972	1715						1715
1973	22273		409				22682
1974	15909						15909
1975							
1976	16145						16145
1977	523						523
1978	2727	1136					3863
1979	6198	639	2375	364		182	9758
1980	9045	4723	2388			3459	19615

* Includes broad whitefish and lake whitefish

Table 6

Table 12. A summary of employment and incomes for the Northwest Territories, 1970/71 - 1984/85. Data from Dept. of Fisheries and Oceans, Economics Branch.

Year	Self-employed Operators	Average Income per Operator(gross)	Total Employment
70/71	236	4,631	
71/72	199	4,882	
72/73	112	6,686	
73/74	119	6,788	
74/75	112	6,596	
75/76	136	5,237	
76/77	118	7,789	
77/78	144	10,116	239
78/79	121	12,875	205
79/80	100	15,363	168
80/81	102	18,284	198
81/82	97	16,000	161
82/83	89	15,199	134
83/84	69	25,060	118

Table 1

Table 1. Northwest Territories commercial landings, 1945-1984. Harvest volumes in thousands of kgs round weight. Summarized from Tables 2, 6, 7 and 9.

Year	Wh.fish*	Lake Trout	N. Pickerel	Pike	Arctic Inconnu	Charr	Mixed	Total
1945	228	484			40			752
1946	570	735			51			1357
1947	907	757			39			1698
1948	2196	994	2		102			3294
1949	2468	1825		18	163			4474
1950	2608	1157	1	51	124			3941
1951	1913	1259	1	33	146			3351
1952	1665	1346	3	33	90			3138
1953	1788	1092	17	31	91			3020
1954	1789	1121	34	29	78			3051
1955	1991	1295	56	30	75		1	3403
1956	1864	1189	32	27	76		8	3193
1957	1994	900	27	42	97		4	3060
1958	1533	915	57	71	99			2672
1959	1560	783	51	120	141			2645
1960	1733	508	114	114	78	24	17	2588
1961	1722	511	29	183	135	23	31	2636
1962	2106	608	6	125	125	53	493	3519
1963	2078	343	54	140	156	51	316	3138
1964	2072	429	11	80	133	42	258	3033
1965	1812	441	16	108	139	74	406	3000
1966	1266	282	14	149	98	76	311	2198
1967	1057	345	16	212	111	48	153	1944
1968	1454	126	11	162	84	48	146	2030
1969	1375	160	7	133	80	91	356	2202
1970	1728	329	42	135	58	51	30	2373
1971	1533	197	68	103	62	114	12	2089
1972	1442	173	66	91	79	97	10	1963
1973	1065	134	47	155	104	135	1	1632
1974	993	113	45	111	100	166	1	1693
1975	938	111	46	96	95	154	4	1443
1976	993	83	32	103	77	80		1369
1977	1176	108	30	119	87	138	5	1661
1978	1113	107	15	158	153	108	1	1655
1979	1076	121	31	131	154	103		1620
1980	1203	130	52	205	65	105		1770
1981	1097	85	55	151	43	102		1535
1982	1127	89	17	139	18	86		1556
1983			40			85	6	1277
1984			26			143	4	1226

* includes lake whitefish, broad whitefish and round whitefish

Fellance.

TABLE 8

TABLE 36

GREAT SLAVE LAKE FISHERY
G.N.W.T. PRICE SUPPORT
(cents/pound)

Item	1985	1986
Summer		
Freight Subsidy	13.5	**13.5**
Price Subsidy	15.0	15.0
	28.5	28.5
Winter Subsidy	**9.5**	**9.5**
Total Subsidy **for Year**	$426,000	$476,000

Source: Personal Communication with FFMC

Table 9.

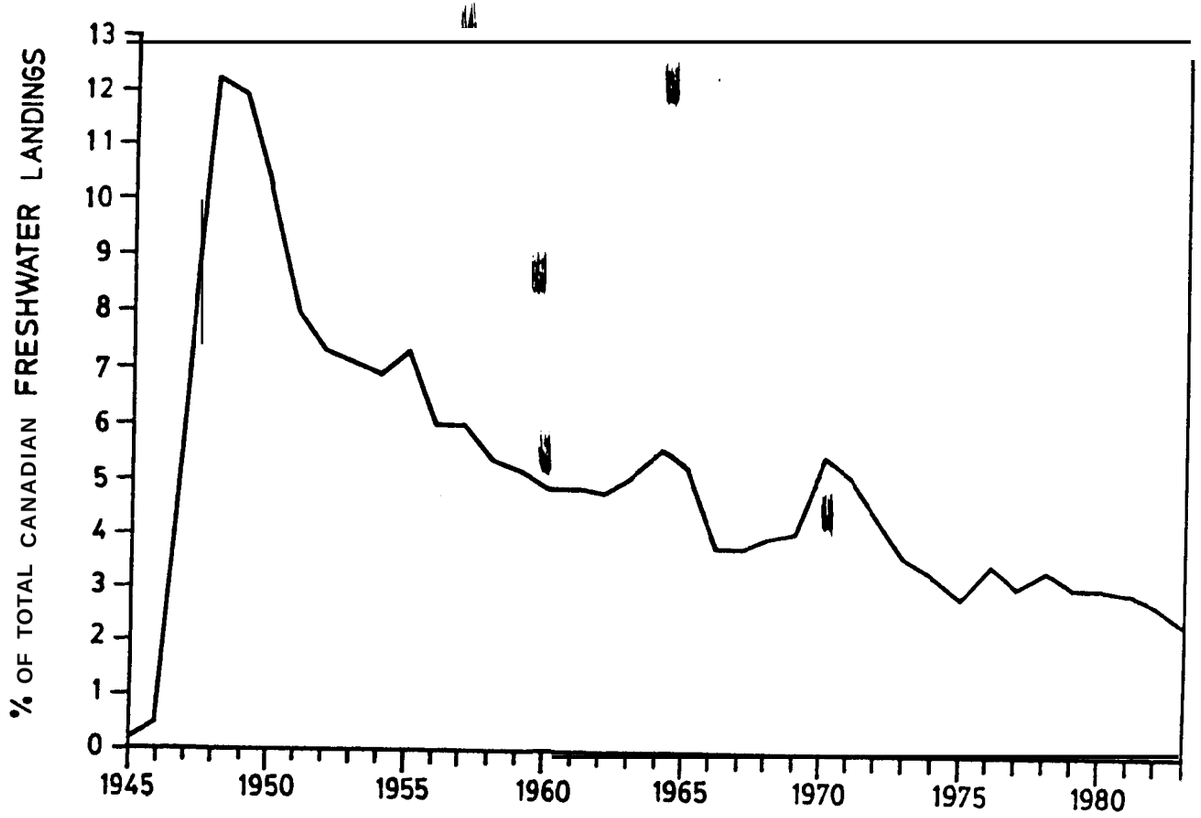

Figure 1. Total commercial landings of the N.W.T., expressed as a percentage of the total Canadian freshwater landings, 1945-1983. Data from D.F.O., Data Reports and Canadian Fisheries - Annual Statistical Review.

Table 10

TABLE 42

NOMINAL CATCHES AND LANDED VALUES OF
ATLANTIC FISHERY TURBOT, COD, AND SCALLOPS
1983 - 84

Species	1983 Harvest		984 Harvest	
	Catch (tonnes)	Value ($/kg)	Catch (tonnes)	Value ($/kg)
Turbot	20 210	$0.30	21,000	$ 0.29
Cod	50 052	0.37	463,100	0.36
Scallops	5 289	1.38	34,750	1.61

Source: Canadian Fisheries Statistical Highlights

Table 1

Table 9. A summary of commercial landings for the Arctic coastal fishery, 1960-19840 From Table 8.
Weights in kg round weight.

Year	Searun A. charr	Landlocked A. charr	Whitefish	Lake Trout	Mixed	Total
1960	24225					24225
1961	23303					23303
1962	53312			12563	113	65988
1963	51318			4794	3329	59441
1964	41891		489	7829	18	50227
1965	74361					74361
1966	76219					76219
1967	48342			41199		89541
1968	48241		12394	2663		63298
1969	91056					91056
1970	51236		4088	6756		62080
1971	103216	10315	455	5000		118986
1972	81647	15195		11521		108678
1973	125218	9921				135139
1974	163999	1850				165849
1975	153187	1255				154442
1976	80438					8043&E
1977	138094				4163	142257
1978	107809					107809
1979	103349					103789
1980	105465					105465
1981	102563					102563
1982	85646					85646
1983	84748					84748
1984	143329					143329