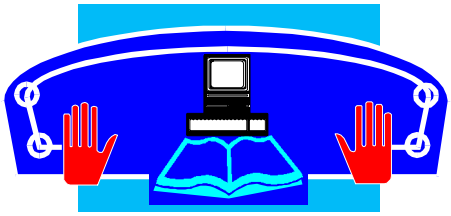

Report On Great Slave Lake Commercial Fishery Surveys Fisheries, Great Slave Lake Fishery

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REPORT ON

GREAT SLAVE LAKE

COMMERCIAL FISHERY SURVEYS

SUBMITTED TO:

THE DEPARTMENT OF ECONOMIC DEVELOPMENT AND TOURISM

NATURAL RESOURCES DIVISION

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MARCH 31,1991.

Report on
Great Slave Lake
Commercial Fishery Surveys

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HIGHLIGHTS

Fifty-seven operations comprise the Great Slave Lake Commercial Fishery. In the Fall and Winter of 1990 - 1991 two Questionnaires were administered to those operations.

Questionnaire I gathered information on fishermen's opinions regarding the subsidy programs. Questionnaire II gathered information on fishermen's costs and earnings and their capital inventory. Both surveys had a response rate of 79%.

The information gathered was summarized into data that is categorized by season (annual, winter, summer) and by amount of annual production (size of operation, small, medium and large) .

OPERATIONS

There are a number of distinctions separating the operations by category. Of the 57 operations, 38 were winter operations and 45 were summer operations. Based on annual production values, and the cumulative totals, the 23 small operations represents approximately 5%, the 17 medium operations approximately 15% and the 17 large operations 80% of total lake production.

The majority of small operations have been in the fishery for less than 10 years and tend to fish on a part-time basis and for one season of the year. They generally fish the commercial areas close to Hay River and in the summer, area 4 as well, and rather consistently produce under 10,000 lbs.

The majority of medium operations have been in the fishery for less than 10 years, generally fish full-time, and 50% fish both seasons. In the winter they fish the areas close to Hay River and tend to produce between under 10,000 and 49,999 lbs. with the greatest concentration under 10,000. In the summer they tend to fish all areas of the lake and the majority catch between 10,000 and 24,999 lbs. of fish.

The vast majority of large operations have been in the fishery over 10 years, with a significant number over 20 years. They fish both seasons on a full-time basis. Winter production ranges widely from 25,000 lbs. to over 100,000 lbs. and in the summer they consistently produce over 75,000 lbs. They fish all areas of the lake but tend to concentrate in areas furthest from Hay River.

On GSL, area 4 has the most fishing activity in the summer season and the least in the winter. Areas 1 East and 1 West have the most fishing activity in the winter.

A slight majority of small and medium operations feel that their levels of production have been increasing over the last 5 years, while the vast majority of the large operations feel that their levels of production have remained relatively consistent.

The majority of all the operations feel that they are "making ends meet" some of the time, and indicate that GNWT subsidies are probably the single most important factor in maintaining financial viability.

All categorys of operations feel that many factors limit their potential to be viable, but indicate that generally low fish prices are the most significant factor, especially the lack of premium whitefish prices throughout the winter season. Large operations feel that their lake freighting costs are important reasons for non-viability, while the small and medium operations feel that inadequate equipment are prohibiting factors for them.

SUBSIDIES

The majority of winter operations indicate that they require additional subsidies ranging from $.04 - **$.10** lb. depending upon area fished, in order to be profitable in the winter season. The large and medium operations indicate that they would move into remote areas to fish in the winter time if additional freight subsidies were offered. However the small operations indicate they would not move primarily because they do not own the necessary equipment for fishing in remote areas.

The majority of all operations felt that winter subsidy programs do not meet their needs. The majority of medium and large operations feel that the summer subsidy programs do meet their needs, while the small operations disagreed. The vast majority of all operations indicated that they could not afford any reduction in summer subsidies. As well, the vast majority of operations indicated that they would not fish in either season without subsidies. They feel quite strongly that each one of the subsidy programs were very important and worked together well for the benefit of their own operations and for the fishery overall.

When asked for their opinions regarding potential changes to subsidy programs, the majority of all operations supported the following potential changes:

1. Subsidy to cover the freighting costs from the net to receiving stations for both summer and winter seasons.
2. Subsidy extended to receiving stations operating in the winter season to cover the costs of freighting fish to Hay River.
3. The whitefish price support extended to the winter season.

While some of the fishermen were uncertain, the majority felt strongly-that the money necessary to pay for these changes should not come from the reduction of any subsidy programs, but rather that the money should be found elsewhere, in particular from savings captured as a result of more efficient lake operations.

All operations agreed that removing the territorial tax on fuel would be most beneficial to their operation and that paying freight subsidies directly to fishermen would be counter-productive. The large operations also felt that faster payment of subsidies money to their accounts would benefit their operations. Small operations indicated that subsidies to assist with upgrading their equipment would be of most benefit to them.

The vast majority of all operations feel the owner/operator (certificate holder) should be a resident of the NWT in order to receive subsidies, but that they should not be required to hire 100% Northern employees in order to receive those subsidies.

Only about 50% of operations feel fishermen understand how the subsidy programs worked on GSL and felt fishermen needed more information. They also felt fishermen should participate directly in the decision making process about subsidies, and expressed strongly a need to ensure fair and adequate representation for all types of commercial fishing operations.

REVENUE AND EXPENSES

It is of particular interest to compare operations by season.

The small operations summer revenue is nearly twice that of their winter revenue. GNWT subsidies comprise 20% ($1,088) of total summer revenue vs. 10% ($282) of winter revenues. However, total summer expenses are nearly double those of winter. The average expense per pound of production is $1.14 in the winter, and $.88 in the summer. For both seasons, the small operations expenses exceed their revenues, though by less than $1,000. The majority have operating loans with monthly payments averaging under $300.

The medium operations earn about the same total revenue in both seasons. GNWT summer subsidies ($2,807) are twice as high as the winter subsidies ($1, 456) . Winter expenses ($1.19 per pound of production) are nearly double those of summer ($.66 per pound of production) so that winter expenses exceed winter revenue by $5,500, and summer revenue exceeds summer expense by $2,600. About 50% of the operations have operating loans which average in the range of $300 - $749 monthly.

The large operations winter revenue is larger than their summer revenue. On average, they receive GNWT subsidies that are 50% higher in the summer ($12,517) as those received in the winter ($8361) . However, winter expenses ($1.19 per pound of production)

"are higher than summer expenses ($.69 per pound of production). Winter expenses exceed winter revenue by $5,000 and summer revenue exceeds summer expense by $7,300. The vast majority also have operating loans and pay on average $300 - $749 monthly.

In general, it can also be said that:

1. Summer subsidies contribute nearly double the percentage to summer revenue as do winter subsidies to winter revenue.
2. Major operating expenses are; Wages, Fuel, Food, Equipment Repair, and Net Replacement. Together they comprise over 80% of total annual expense.
3. Wages paid to employees are the single largest expense for medium and large operations in both seasons. It alone comprises over 30% of total expenses.
4. Winter expenses are higher in relation to winter revenue than summer expenses are in relation to summer revenue. In particular, winter Fuel and Equipment Repair costs are approximately double those of summer.
5. When considering expenses per pound of production it is interesting to note that all sizes of operations for both seasons have a considerable range in expense per pound. The range is approximately from $.50 to over $1.25 in the winter. In the summer the range is from $.50 to $.74.
6. When considering operations on the basis of profitability, (defined as the difference between annual revenues and expenses) several trends are revealed. In all categories and for both seasons, the profitable operations have higher production levels than the operations with losses. The difference increases markedly with the size of operation. Generally, the profitable operations have considerably higher expenses than the non profitable operations. But when combined with higher production levels, their actual expense per pound of production is lower than the non profitable operations.
   In the winter, the expenses per pound for the profitable small, medium and large operations are $.72, $1.17, $1.17 vs the respective nonprofitable operations, $1.14, $1.22, $1.14.
   In the summer, the expenses per pound for the profitable small, medium and large operations are $.54, $.51, $.58 vs the respective nonprofitable operations, $1.17, $.99, $.77
7. A number (16) of operations indicated they had other fishing income. The major sources are from Government Grants, U.I.C. benefits and working for other fishermen. The small operations other income averages $235, the medium $3,889, and the large $7,686.
8. The large operations fishing income contributes from 7S% to 100% to total household income, while the small and medium operations fishing income on average contributes from 25% to 49% to their total household income.

9. The large operations own considerably more fishing related capital equipment than do the small or medium operations.
Much of the equipment owned by the large operations are designed for large catch volumes.

INTRODUCTION

The Government of the Northwest Territories (GNWT) Department of Economic Development and Tourism (EDT) has as one of its primary objectives the long term development of the renewable resource economy. The commercial fisheries of the N.W.T. are a major sector of that economy.

In July of 1990, the Department of Economic Development and Tourism established a Subsidy Review Committee, with a mandate to review the financial assistance requirements of fisheries in the NWT. A working group was struck, consisting of both government and industry representatives.

The first objective targeted by the Review Committee focused on evaluation of the government subsidization program of the Great Slave Lake (GSL) fishery. Accurate knowledge of the economic performance of the GSL commercial fishery is key for the sound management and planning activities of the Department of Economic Development & Tourism. Unfortunately, there existed a lack of current data and financial information on the GSL fishing fleet. In order for the Subsidy Review Committee to be able to undertake informed decision making and make sound recommendations, certain types of information were required.

This study was commissioned in order to capture and present the following information on the Great Slave Lake fishery:

1. Background information and a historical overview of the Commercial Fisheries Assistance Policy.

2. Accurate and current information about the financial and economic condition of the GSL fishery.

The latter of this information was obtained by means of a two-part survey constituted of two questionnaires administered in personal interviews with Great Slave Lake fishermen.

Questionnaire I was administered during the fall of 1990 and targeted physical data, as well as fishermen's subjective opinions regarding the subsidy programs. It provided fishermen with the opportunity to express their opinions, thereby engaging their participation in the review process.

Questionnaire II was administered during the winter of 1990-1991, and targeted fishermen's income and expenses on a seasonal basis. A capital inventory was included as well.

'The first--stage of information was provided to the committee during the summer of 1990. The second stage of information has now been gathered, processed and the data reviewed. That information, is now presented to the committee in draft report form for review and comments.

BACKGROUND

I. POLICY:

By 1983 it was clear that the GSL fishery was not financially viable. To address the concerns of the fishery, the Minister of Economic Development and Tourism initiated the Great Slave Lake Task Force, with a mandate to examine options for increasing the efficiency and reducing the costs of fishing operations on the lake, thereby increasing fishermen's incomes.

Upon recommendation of the Task Force, in July of 1985 the Executive Council of the Government of the Northwest Territories approved the Commercial Fishing Assistance Policy (Schedule A) 'of the Commercial Renewable Resource Use Policy 61.05. The schedule was designed to encourage the commercial fisheries on Great Slave Lake and the Coastal Arctic by offering freight subsidies on the transport of whitefish and arctic char, and by providing a production incentive on whitefish. The subsidies were designed to increase the competitiveness of the NWT commercial fisheries.

To be eligible under the policy an individual must:

1. Be a licensed commercial fisherman
2. Be a resident of the Northwest Territories
3. Be actively participating/producing in the fishery
4. Hire 100% northern residents. (This requirement has not been strictly enforced, as the GNWT has recognized the difficulties in hiring northern residents due to various conditions within the industry. However, there has been no official change in the policy) .
5. The industry must be operating at a financially marginal level.

Assistance is provided for Great Slave Lake as follows:

WINTER

Road freight subsidy: established in order to offset the cost of freighting whitefish from Hay River to Winnipeg, to a maximum Of $.095/pound.

Lake freight subsidy for Area V a $.15/pound subsidy was established in the winter of 1989-1990 as an amendment to the winter program, and was designed to encourage winter production in this area by covering a portion of the cost of freighting all species of fish from this area to Hay River.

'SUMMER

Road freight **subsidy:** the same as shown above for the winter road freight subsidy.

Lake freight subsidy: covers most of the cost of freighting all export grade species from the three Great Slave Lake delivery stations to Hay River, in order that the net cost to fishermen remains at $.015/pound.

Whitefish production subsidy: a $.05/pound to $.08/pound subsidy which can vary annually, in part depending upon the percentage of northern residents employed per operation. The subsidy is designed to help cover the high cost of operating in the north, in order that fishermen realize at minimum the same net return per pound as Lake Winnipeg commercial fishermen. (There is no whitefish production subsidy in the winter season, as it has been presumed that higher prices for whitefish at that time have made it unnecessary) .

Assistance is also provided for 'three other fisheries:

1. Other export grade inland lakes.
2. Export Char fisheries.
3. Inter-settlement trade fisheries.

A problem exists in that while industry freight rates continue to increase the demand on public financial resources, the increase in whitefish prices have weakened support for the subsidy program. While the strain on government resources is real, it is as yet unclear as to the real nature of the connection between the government's current GSL subsidy program and the assured viability of the GSL fishery.

The challenge then is to determine this relationship as accurately as possible.

GREAT SLAVE FISHERY

The fishery is managed as a limited entry fishery. This evolved as a method of regulating the potential for Lake and Area quotas to be filled.

As a result, the current structure allows for the following maximum number of licences to be issued for each class per season:

SUMMER - Class A: 28; Class B: 70.
WINTER - Class A: 32; Class B: 40.

Licences "are issued on the basis of one licence per one vessel/ vehicle. The number of active vessels/vehicles in each category are generally less than the maximum limits. This has largely been thought to reflect the marginal financial prospects for fishermen.

According to Northwest Territories Fisheries Regulations:

A Class A certificate is issued to:

1. A vessel of more than 900 kg. gross weight, when weighed with its attached mechanical equipment; or

2. A vehicle of more than 900 kg. gross weight.

A Class B certificate is issued to:

1. Vessels or vehicles other than those referred to above.

The GSL fishing fleet is comprised of four vessel/vehicle types according to season:

Summer Class A: Whitefish Boat - They are usually 38-50 feet in length, and have either steel or aluminium hulls. They generally have a crew size of 4-6, and are equipped with mechanical net lifters. Some have refrigerated fish storage areas, and most have living accommodations that permit operation in remote areas. Fish deliveries are generally made every 1-2 days to a delivery station, where the owner/operator sells the catch to the Freshwater Fish Marketing Corporation.

Summer **Class B:** Skiffs or Yawls - The distinction between the two vessels is generally recognized to be that yawls are designed specifically for commercial fishing, and are factory built. The majority of yawls on GSL are of fibreglass composition. Skiffs are adapted recreational boats or are home-made by the fishermen themselves. These are generally of wood composition.

Both are open boats ranging from 18-22 feet in length, and powered by 1-2 outboard motors. Skiff enterprises employ on average a 1-2 man crew, which usually includes the owner/operator. One man operations are quite common. Gill nets are lifted manually, with the catch delivered to a delivery station on a same day basis. Summer camps are occasionally established, permitting a wider range for fishing, with deliveries on a two day basis.

Winter Class A: Bombardiers - These are the large half-tracked and skied motorized vehicles used for ice fishing. They are often equipped with a power auger attached to the rear of the vehicle and running off the engine. Bombardier operations usually employ a crew of 3-5 per vehicle, and often work with one or more cabooses

(portable living quarters) . This allows for harvesting in areas varying greatly in distance from delivery stations. Nets are lifted manually, and fish deliveries range from every 1-5 days.

Winter Class B: Snowmobile - The vehicle used for this class is the snowmobile. A sleigh is pulled behind for carrying equipment and fish. Most skidoo enterprises are day operations, with a crew of 1-2 which usually includes the owner/operator. Nets are lifted manually, and fish deliveries are usually on a same day basis. Occasionally small cabooses are used, permitting a further range with deliveries on other than a same day basis.

All GSL commercial fishing ventures operate under certain common conditions.

1. The total GSL commercial harvesting quota is 3.7 million pounds. This is further divided into Area quotas.

I West	500,000
I East	700,000
II	700,000
III	100,000
IV	900,000
V	800,000

Quotas are not split between the summer and winter seasons. The quota starts on November 1. The remaining quota left after the winter fishing season is applied to the summer season, and continues until the quota is captured in each area, or until October 31, which ever occurs first.

2. There are no individual licensed quotas. Quota capture is related to equipment and effort. There are no individual maximum limits.

3. All commercial fishing is done with gill nets. Mesh size is 5.25 inches. There are no restrictions on depth or length, although most nets average 100 yards in length, and range from 16-100 mesh deep. There are no limits on the number of nets each certificate may use. However, some control is exercised in the regulations by the requirement that nets in the summer must be lifted every 30 hours, and nets in the winter, every 72 hours.

4. The summer season begins in June with open water, and ends late in October. The winter season begins in November with first ice, and continues into May.

5. All fish commercially caught on GSL for export out Of the Territories must be sold through the FFMC. However, commercial fishermen have the right to sell their fish locally and through-out the NWT.

6. FFMC operates all of the four delivery stations around the lake: Hay River, Areas 2, 4 and 5. In the summer season there are usually one or two delivery stations open out on the lake, in addition to the Hay River station. During the winter season, there is only one delivery station open at Hay River.

7. Initial prices per species for both seasons are set in advance by the FFMC, and are based on 80% of projected net revenue for the upcoming year. All prices are established on the basis of delivery (FOB) in Winnipeg. Transportation costs from Hay River to Winnipeg are deducted from the Winnipeg price to establish the price paid to fishermen on GSL. FFMC utilizes a differential pricing mechanism to co-ordinate fish harvesting with market demand. Fish caught in the summer season command a lower market price. Fish caught in the winter season are sold in the fresh form, and receive a higher market price, though for only a portion of the season. Generally the winter price is low during the early weeks of the season, climbing higher during the middle, and lowering again for the last portion of the season. This presents a dilemma for winter fishermen, as generally the most productive times in the winter are early and late into the season. To illustrate:

FISH PRICE F.O.B. WINNIPEG (WINTER 90/91)

Whitefish	May-October	November	January	April
Export medium	$.49	$.51	$.85	$.51

The GNWT subsidizes the transportation costs from lakeside delivery stations to Hay River during the summer season, and the road freight costs to Winnipeg all year, in order to assure parity with Winnipeg prices.

Final payments based upon the net revenues by species are made by the FFMC to individual fishermen at the end of the calendar year.

OBJECTIVES, GOALS, AND SCOPE

SCOPE

The scope of this study was limited to the Great Slave Lake commercial fishery including:

1. Summer and Winter fishing seasons.
2. Class A and Class B operations.

OBJECTIVES

Based on the terms of reference, the project had several objectives, the primary one being to supply qualitative and quantitative information that would assist in the determination of:

1. The perceived as well as factual conditions and requirements of the fishery.

2. The re-evaluation of certain assumptions upon which previous subsidy support policies have been based.

3. A classification of the various fishing operation types by class, season, production.

4. The long term and short term viability of the fishery, and specifically for the various classifications types. This will include average income statements for each, and the potential to project break even volumes and prices necessary for fishermen to receive a fair return for their investment and labour.

5. Minimum capital investment requirements for efficient operation per classification type.

6. Options for threshold entry levels based on income and production thresholds.

7. A balance between economic efficiency and income distribution.

Utilization of the above objectives and methods are intended to assist in the achievement of the following goal:

1. To recommend revisions as necessary to the current commercial fishery assistance policy, so as to enable more efficient use of subsidy money in order that those dollars be used to the maximum benefit of the GSL commercial fishery.

Inherent in this is the need for a policy that will address:

1. Present and future requirements of the fishery.

2. A mechanism to encourage the efficient use of available labour, capital, and biological resources.

3. The variant operating conditions and costs of each classification type.

4. The need for flexibility and 'safety net' guarantees.

The realization of these goals will clarify the requirements of the GSL fishery, and allow for the completion of the first stage of the Subsidy Review Committee's work.

METHODOLOGY

In order to help meet the aforementioned objectives, a survey of GSL commercial fishermen was needed. In conjunction with the Bureau of Statistics, GNWT, a questionnaire was designed for administration to the fishermen.

Entitled the Great Slave Lake **Fishery Study**, the survey was divided into two sections:

Questionnaire I: Targeted primarily fishermen's perceived needs and opinions regarding their fishing operations, and about the subsidy programs on GSL. Some physical data was gathered as well.

Questionnaire II: Targeted fishermen's actual earnings and costs of production, as well as their fishing related capital inventory. The questionnaire was designed to provide an accurate picture of the industry for a specific period of time, namely the winter season of 1989/1990, and the summer season of 1990.

The **Fishery**

Data supplied by the Department of Fisheries and Oceans (DFO) included:

1. Annual total and individual listings of GSL certificate and licence holders with corresponding registration numbers.

2. Total and individual seasonal production records of all deliveries to FFMC made by certificate and licence holders.

The GSL fishery could be defined as a complexity of fishing operations. This leads to real confusion when attempting to estimate the number of actual operations on the lake. There are a number of factors causing this situation:

A commercial licence issued by DFO enables an individual to commercially fish on GSL.

A certificate registration issued by DFO enables an individual to operate on GSL a vessel or vehicle for the purpose of commercial fishing.

All certificate holders are also in possession of a licence. However all license holders are not necessarily holders of a certificate. Therefore the unusual situation exists that the

number of individual licensed deliveries to FFMC can actually exceed the number of certificate holders.

The GSL fishery then, operates under various scenarios which for this study presented a dilemma.

In some cases:

An employee may receive some production on his licence as a bonus, or in partial lieu of wages.

An individual without a certificate may operate another fisherman's vessel/vehicle and place production under only his own, the owners', or both licences.

A fisherman may hold several certificates. He may fish only one vessel/vehicle, yet distribute his production among all his certificates.

Some fishermen hold certificates, yet have no active participation (production) in the fishery.

Family members may produce under several different certificates, yet operate as a single family unit.

Two or more fishermen may work together, and distribute total production among their certificates in a mutually agreed manner.

Some fishermen sell the majority of their catch to local markets, with no official record keeping of that production by any government agency.

Reliable, realistic and representative data was required. Therefore some standard of consistency in operation had to be established in order to meet those requirements. Merely summarizing information from all licence and certificate holders would not necessarily result in a realistic representation of the fishery.

Before interviews could commence then, a clear definition Of the target population had to be determined. In order to qualify as part of the targeted survey population, a commercial fishing operation had to meet the following criteria:

1. Hold a certificate issued by DFO for Great Slave Lake.

2. Show an officially recorded minimum production of 1000 pounds per season for at least one year out of the past two years - for the summer of 1989 or 1990, and for the winter of 1988/1989 or 1989/1990.

3. Express intention to continue activity in the GSL --fishery.

4. Operate either as:

   a. an individual economic unit, or as
   b. partners in a single economic unit that for a majority of time shares one, or a combination of the following resources:

   -labour
   -equipment
   -expenses

According to the above criteria then, it was possible to condense (for the purposes of the survey) the GSL fishery into precisely 57 operations.

Interviews

Census was attempted for both sections of the survey. When possible, all eligible fishermen were approached for a personal interview. Each survey received a response by 45 fishing operations. However, the 45 operations were not necessarily the same for the two surveys. The final capture rate was 79%.

For both surveys the vast majority of questionnaires were interviewer-administrated. The majority of Questionnaire I surveys were administered out on Great Slave Lake during the months of September through November, 1990. Fishermen had requested that the second questionnaire (focusing on costs and earnings) take place after the completion of the summer season, in order that the information supplied be as accurate as possible. Therefore Questionnaire II interviews were administered in Yellowknife and Hay River between the months of December 1990 through mid-February, 1991.

The first attempts at interviewing for the second questionnaire clearly disclosed the fact that most fishermen keep very poor, if any, business records. The majority of most fishermen's financial transactions take place through FFMC's Hay River office and the Freshwater Fish Marketing Corporationts accounting system.

In order to obtain the most reliable financial data possible, Freshwater Fish Marketing Corporation/s head office in Winnipeg was approached (and supplied) copies of each individual fishermen's financial operating Statements of Accounts with the Corporation. Those statements detail every transaction through FFMC, and were divided into two separate sections to reflect seasonal distribution of income and expenses. Those divisions were:

Winter: November 1 - April 31
Summer: May 1 - October 31

In the case of those operations holding multiple certificates and licences, all related statements were grouped together and income and expenses totalled onto one survey form to reflect that - operation.

Interview time for Questionnaire I averaged 2.5 hours. Interview time for Questionnaire II ranged from several hours to two days per questionnaire.

With specific reference to Questionnaire II: Through personal interview contact, each fisherman's statements were reviewed with him/her. All expenses have been reviewed for proper expense classification. Expenses unrelatedto fishing have been identified and removed from calculation. Expenses paid out of personal accounts, rather than through FFMC have been incorporated into the respective expense categories.

Final figures for each expense category were the total of:

1. Actual fishing expenses listed on the FFMC statement Of account, and

2. Fishermen's estimates of additional fishing expenses.

Also included as expense, though separately identified, were:

1. Monthly loan payments.

2. Major capital expenditures for the year.

Individual fishermen's income figures were obtained from data provided by FFMC. These were totalled and then divided into two categories per season:

1. FFMC Income: This was comprised of two amounts -

   a. Initial payment (actual figures) .
   b. Final payment (actual for the winter 1989/1990 season) . For the summer 1990 season, no final payment figures are available. After discussion with the client and FFMC officials, a formula for estimating that payment was agreed to be the most plausible: an averaging of the final payment for each species for the years 1988/1989 and 1989/1990.

2. GNWT Subsidy Income: the total of all payments made to each fishing operation.

A third source of income exists for some fishermen. Categorized as "Other Income", this includes:

-Freighting for other fishermen
-Rental of Equipment
-Working for other fishermen
-Unemployment Insurance Benefits
-Government Grants
-Local Sales of Fish

Because of the difficulty in separating by season the sources of other fishing income, it has been added on as annual income.

In a few cases, a fisherman's expense figures reflected purchases made in relation to government grants or contributions. In those instances, the amount of the grant was entered under Question #2, page 1, as "other fishing income".

Interest charges listed under "Business Expenses" reflect the cOSt of carrying a deficit balance with FFMC. This is generally the result of current and/or previous seasonal losses, or the result of the Corporation carrying the cost of a major capital purchase, and applying carrying charges to the fisherman's account.

Under equipment' inventory, up to a maximum of three spaces were allocated per category. However a number of operations own more than three items in some categories. This is not reflected in the survey analysis.

Fishermen frequently were vague and reticent about listing details regarding their fishing equipment, particularly regarding equipment age. This should be kept in mind when reviewing equipment inventory tables.

Fishermen expressed serious concerns regarding the confidentiality of the information provided by them in the interviews. All Questionnaire I and Questionnaire II survey forms were assigned a number, match-coded for cross reference purposes, and the fishing certificate numbers deleted. With these assurances of privacy being made known to survey respondents, the quality of detail for information provided was excellent.

All questionnaires were returned to Yellowknife. They were reviewed and obvious corrections and edits made.

Data entry was completed directly from questionnaires using data entry screens prepared by the Bureau of Statistics.

SURVEY RESULTS

The following report should be used along with the report issued by the GNWT Bureau of Statistics, "Great Slave Lake Fishery Study, Overall Results". These reports summarize data collected in the two GSL Fishery Surveys.

Fifty-seven commercial fishing operations can be said to realistically represent the GSL commercial fishery. There are a number of characteristics which can be used to delineate those operations. It is these characteristics that comprise the first section of tables in the report on survey results. A review of those tables will give a portrayal of the various fishing operations which in fact comprise what is known as the Great Slave Lake Fishery. From this 'ground-level' description of the fishery, we establish our perspective for reviewing the remainder of the data.

The following five sections summarize data that is categorized by season, and by size of operation. The first three sections summarize information from Questionnaire I. The last two sections summarize information from Questionnaire II.

1. Characteristics of Fishing Operations
2. Opinions on Your Own Operation
3. Opinions on the Subsidy Program
4. Revenue and Expense
S. Fishing Equipment Inventory

Of the 57 operations identified, 52 fishing operations completed either one or both questionnaires. Specifically 45 operations responded to the Questionnaire I survey form and 45 responded to the Questionnaire II survey form. However, these are not necessarily the same 45 operations. Each questionnaire had a response rate of 79%.

In reviewing the results, it is important to keep in mind that percentages listed are based upon the number of fishermen that responded to each specific question. In particular, one should exercise caution when interpreting tables that have a low response rate. In those cases, one or two responses can represent up to 25%. Also, because of 'weighting' methods, figures do not necessarily add up to an exact total.

Operations were divided into three categories, based upon the amount of annual production:

SMALL :	0 -	10,999 lbs.
MEDIUM:	11,000 -	59,999 lbs.
LARGE :		over 60,000lbs.

Because annual production was used, in some cases a category may include operations whose seasonal production does not necessarily correspond to annual production classifications.

Based upon both annual production values and the cumulative totals, the 23 small operations represented approximately 5% of the total lake catch, the 17 medium operations represented approximately 15% and the 17 large operations accounted for 80% of the total production from Great Slave Lake.

Data on operations were further broken down into three categories, by Annual Fishing Operations, Winter Fishing Operations, and Summer Fishing Operations.

I. CHARACTERISTICS OF FISHING OPERATIONS

Table 1.1 : Fishing Operations, by Season Fished.

Of the 57 operations, a total of 38 winter fished, and a total of 45 fished the summer season. The majority of small operations fished only one season, while approximately one-half of medium operations fished both seasons. It is significant to note that the vast majority of large operations fished both seasons.

Table 1.2 : Fishing Operations, by Production Levels.

In the winter, 47% of operations produce less than 10,000 pounds apiece, and in the summer, 33%. Conversely, 16% and 27% produce greater than 75,000 pounds apiece.

Table 1.3 : Fishing Operations, by Production Levels and License.

In the winter, all of the B certificate operations produce under 10,000 lbs. The A certificate operations produce a wide range Of seasonal catch, from under 10,000 lbs., to over 100,000 lbs., with the majority producing between 25,000 and 49,999 lbs. The A & B Certificate operations tend to produce in the range of 50,000 to 74,999 lbs. In the summer season, the majority of B operations produce under 10,000 lbs., however a significant 30% do produce between 10,000 and 25,000 lbs. The vast majority of A and A & B operations produce over 75,000 lbs.

No Table : Fishing Operations, by Production **Levels and** Category.

It should be kept in mind that categories are based on **annual** production.
In the winter, the vast majority of the small operations produce under 10,000 **lbs.** The majority of medium operations also produce under 10,000 **lbs.** However, a significant 34% produce between 10,000 and 49,999 **lbs.** The large operations produce a wide range of seasonal catch from under 10,000 **lbs.,** to over 100,000 **lbs.,** with the largest concentration in the over 100,000 lb. range.

In the summer, all of the small operations produce less than 10,000 **lbs** ., the majority of medium operations produce between 10,000 and 24,999 **lbs.,** and the majority of large, over 75,000 **lbs.**

Table 1.4 : Fishing Operations, by Number of Years.

In the winter, the majority of small and medium operations have fished less than 10 years. 100% of the large operations have fished over 10 years. One-third of small and large operations have fished over 20 years.

In the summer, the majority of small and medium operations have fished less than 10 years. 92% of the large operations have fished over 10 years, (42% for over 20 years).

Table 1.5 : Fishing Operations, by Full-Time and Part-Time.

This refers to seasonal effort. In both seasons, 100% of large operations are full-time.
In the winter, the majority of small operations are part-time, while a slight majority of medium operations are full-time.
In the summer, a slight majority of both small and medium operations are full-time.

Table 1.6 : Fishing Operations, by Number of Certificates Held.

In the winter, the majority of small, medium and large operations hold one Certificate. 30% of large operations hold two or more.

In the summer, the majority of small and medium operations hold one certificate. A slight majority of large operations hold two or more Certificates.

Table 1.7 : Fishing Operations, by Area Fished.

In the winter, the vast majority of small and medium operations fished Areas 1 East and 1 West, and somewhat in Area 3 - all areas close to Hay River. The majority of large operations fished in Areas 4 and 5, (areas furthest away from Hay River) .
In the summer, small operations tended to fish in Areas 1 East and

4. Medium operations tended to fish quite evenly all areas on the lake with a slightly higher concentration in Area 4. The large operations also were fairly evenly distributed, with the excePtion of Area 3 seeing very low activity, probably due to the small quota allotment. However, there was a slightly higher concentration of activity in Area 4. Specifically, it can be said that Area 4 saw the most activity overall in the summer season, and the least activity in the winter. Areas 1 East and 1 West saw the most activity in the Winter.

II. OPINIONS ON YOUR OWN FISHING OPERATION

Table 2.1 : Fishing Operations, by Changes in Production in Past 5 Years.

In the winter, the vast majority of medium and large operations felt they experienced consistency in their levels of fish production. However, while half of the small operations felt they experienced the same consistency, one-third felt their levels of production were increasing.
In the summer season, half of the small operations felt their levels were increasing, while the medium operations were split about 50/50 between consistency in levels and increasing levels of production. Again, the vast majority of large operations felt their levels of production remained consistent.

Table 2.2 : Fishing Operations, by Making Ends Meet, in the Past 5 Years, Yes or No.

In the winter, the majority of all categories answered yes, they were making ends meet SOME of the time (years) .
In the summer, the same was true for the medium and large operations. However, the small operations were split between yes, making ends meet some years, and no, never doing so.

Operations answering “yes” (or “no”) were requested to answer the questions in the corresponding table. Of those operations answering yes, some years, they were requested to go on and answer the questions in the following two tables.

Table 2.3 : Fishing Operations, by Reasons for Making Ends Meet in the Past 5 Years.

In the winter, close to 100% feel government subsidies to the industry are probably the single most important factor in their operations’ financial viability. As well, keeping costs down is regarded as very important by the vast majority of small and medium operations, while increased price for Whitefish is listed as very important by the large operations, (probably a result of the

significant effect of increased prices at high production levels). Increased- production levels are also regarded by the medium operations to be very important, probably in reflection of their awareness of its direct connection to profit. General comments indicate that higher whitefish prices and equipment in good working condition are important factors for viability.

In the summer, again the vast majority feel that Government subsidies are very important to their viability. Small operations feel keeping costs down is important. The large operations do not share this opinion, perhaps due to the feeling that it is hard to control operating costs in a large operation.
The large operations feel that both increased prices for Whitefish, and sufficient production levels, are very important. Interestingly, the small operations feel increased production levels are quite unimportant, perhaps a reflection of their attitude that their growth potential is limited by certain factors. General comments point to difficulty in controlling costs, especially for new operations. Also, the importance of having a full and experienced crew is directly related to viability.

Table 2.4 : **Fishing Operations,** by **Reasons for Not Making Ends Meet in Past 5 Years.**

In the winter, the vast majority of all categories feel that the lack of a premium price for Whitefish throughout the winter season is probably the most important reason they do not make ends meet. Generally, they list all factors as being very significant in their inability to be viable: high operating costs, inadequate equipment, low fish prices, shortage of skilled labour, lake freight costs being too high, and premium whitefish prices not being consistent over the season. It is of interest to note that while 100% of the large operations feel their lake freight costs are very significant, the small operations feel the opposite, perhaps because they are day operations, and therefore fish close 'to a delivery point. Generally, the operating costs of fuel, freighting and repairs are viewed as prohibitive to operational viability.

In the summer, there is a more varied response. The majority of all categories agree that low fish prices are probably the most significant factor in their inability t'o be viable. The small and medium operations feel that inadequate equipment is a very important contributant, while the large operations rate this as being unimportant. The large operations feel that high operating costs and high lake freight costs are very important. Again, of interest is the conclusion that the small and medium operations feel that their lake freight costs are not a significant factor. Generally, capital costs are high, especially for new operations, and this cost becomes prohibitive.

III. OPINIONS ON TEE SUBSIDY PROGRAM

Tables 3.1 through 3.4 refer to the winter fishing season, and were asked only of fishermen participating in that fishery.

Table 3.1 : Winter Operations in Each Area, by Amount of Additional Subsidy Needed to be Profitable.

"Additional subsidy" refers to an amount in addition to 1990 levels.

1 East: Fishermen expressed needs ranging from $.04 - $.10.
1 West: Majority of fishermen expressed a need for $.10.
Area 2: Fishermen expressed needs ranging from $.04 - $.10.
Area 3: Majority of fishermen expressed a need for $.10.
Area 4: Majority of fishermen expressed a need for $.10.
Area 5: The response was evenly divided between; Profitable now, needing $.04 - $.06, to needing $.10.

Generally, fishermen express a need for more whitefish subsidy in all areas, particularly early and late in the season, when whitefish prices are low.

Table 3.2 : Winter Fishing Operations, by Amount **of Subsidy Needed in Order to Encourage You to Move to Areas 2, 4,** *or* 5.

This table addresses operations not already fishing in each Of these areas.

Area 2: Majority of all categories would move for $.08.

Area 4: For $.08, the majority of small operations would not move, while the majority of large ones would. The medium operations were evenly split.

Fishermen generally indicated that Area 4 needs a receiving station in winter, otherwise they would need more than $.08/lb to fish there.

Area 5: For $.15, the majority of small operations would not move, the majority of medium operations would, and of the respondents, the majority of large operations are already fishing there.

A note of caution: There was a fairly significant non-response rate by the large operations category. Also, a recurring comment made by many of the small operations was that they could not move because they did not own the necessary equipment for fishing and freighting from such remote areas.

Table 3.3 : Winter Fishing Operations, by Whether Subsidy Program Meets Their Needs.

The vast majority of small and medium operations answered no. The large operations were quite evenly split between yes and no. General comments indicate a need for either higher fish prices or more subsidies all season, especially early and late in the season. As well, freight subsidies are needed.

Table 3.4 : Winter Fishing Operations, by Whether They Would Keep Fishing Without Subsidies.

The majority of all categories (particularly the large operations) answered no. The small operations had a significant response of yes and don't know, probably due to the part-time nature of some operations.

Tables 3.5 through 3.8 refer specifically to the summer fishing season, and were asked only of fishermen participating in that fishery.

Table 3.5 : Summer Fishing Operations, by Level of Subsidy Reduction That-Would **Cause Reduction in Operation.**

This refers to 'the Whitefish price support subsidy. The majority of all categories felt they could afford no reduction in level of subsidy. A $.01 reduction would cause them to reduce their fishing effort.

Table 3.6 : Summer Fishing Operations, by Amount of Increase in Freight costs that Would Cause Reduction in Operation.

This refers to the lake station freight subsidy. The majority of all categories felt that at a cost of $.02, they would have to reduce their fishing effort.

Table 3.7 : Summer Fishing **Operations, by Whether Subsidy Program Meets Their Needs.**

A slight majority of small operations answered no; the majority of medium operations, yes, and the vast majority of large operations also answered yes, the subsidy program does meet their needs. General comments indicate that the subsidies come too late in the season. As well, fishermen felt whitefish prices should be higher.

Table 3.8 : Summer Fishing operations, by Whether They Would Keep Fishing Without Subsidies.

The vast majority (90%) of all three categories answered no.

Table 3.9 : Fishing Operations, by Ranking of Importance of Various Subsidy Programs to the Fishing Industry.

The results were inconclusive, because the majority of all fishermen ranked all of the programs as #1, indicating that they felt the programs worked together very well to the benefit of the fishery as a whole, and directly to their own operations' benefit. A subsidy program to cover the costs of freighting fish from the net to a receiving station was ranked last in relative importance by respondents in all three categories.

Tables 3.10 to 3.12 : Fishing Operations, by Rating of Potential Changes to Subsidy as Re: Subsidy For Freight Costs *from* Net to Receiving Station.

Responses were summarized into three tables by: All Fishing Operations, Winter Fishing Operations and Summer Operations.

There was a slight tendency for the large operations to favour a winter lake freight subsidy while the small operations disagreed. Interestingly, the vast majority of all three categories agreed strongly that if there could be such a freight subsidy program it should be available in both seasons. This held consistent for all three tables - an indication that fishermen view the fishery in broader terms than merely in their own context. When asked if other subsidy programs should be reduced in order to pay for this proposed program, the majority of all categories strongly disagreed, though a significant number were uncertain.

Tables 3.13 to 3.15: Fishing Operations, by Rating of Potential Changes to Subsidy as Re: Subsidy for Costs From Winter Receiving Stations to Hay River.

Again, responses were summarized into three tables by: All Fishing Operations, Winter Operations and Summer Operations.

The vast majority of all three categories strongly agreed that a subsidy program should be extended to winter receiving stations. This again held consistent for all three tables, indicating a broadly based view of the whole fishery.
Again the majority of all categories in both seasons strongly disagree that the summer lake freight costs should be reduced in order to pay for the proposed Winter freight subsidy.
As well, the majority of all categories strongly disagreed that other subsidy programs should be reduced in order to pay for the proposed winter freight subsidy. However, a significant number of small operations felt uncertain about such reductions.

Tables 3.16 to 3.18: Fishing Operations, by Rating of Changes to Subsidy Program to Extend Whitefish Price Support to Winter.

Again responses were summarized into three tables by: All Fishing

'Operations, Winter Operations and Summer Operations.

The vast majority of all three categories strongly agreed that the Whitefish price support should be extended to the winter season. This again held very consistent for all three tables, indicating that fishermen view the fishery in an annual context.

The majority of all categories of operations either strongly disagreed with, or were uncertain that the summer Whitefish support should be reduced in order to pay for a similar winter subsidy. As well,the majority of all categories either strongly disagreed with or were uncertain about the reduction of other subsidy programs in order to pay for the extension of the Whitefish price support into the winter.

Generally fishermen agree that the above three changes would be positive as long as:

A. Other subsidy programs in general, and by season are not adversely affected;

B. Savings could be captured as a result of more efficient management of lake operations. These savings could be used to fund new programs.

Tables 3.19 to 3.20 :Fishing Operations, by Number Who Strongly Agree With Each Potential Subsidy Change to Improve Their Operation, and Which Two Changes would be the Most Beneficial.

The potential subsidy changes listed were:

1. Faster Payment to Fishermen/s Accounts
2. Increased Price Support when Industry Production is Low
3. Freight Subsidies Paid Directly to Fishermen
4. Subsidize Lake Freight Costs in Winter
5. Subsidize Lake Freight Costs in Summer
6. Subsidize Costs of Upgrading Equipment
7. Remove the Territorial Tax on Fuel

The vast majority of fishermen in all **categories** of operations in both seasons strongly agreed that all of the above potential changes to the subsidy program would be beneficial to their operations. The one significant exception was in regards to # 3, **Paying Freight Subsidies Directly to Fishermen:** the vast majority disagreed with this change to subsidies.

The vast majority in the three categories (and for both seasons), listed # 7, **Removing** the Territorial Tax on **Fuel,** as the mOSt beneficial change. 'The small operations listed #6, Subsidizing Costs of Equipment Upgrade as the other most beneficial subsidy. The large operations listed # 1, **Faster Payment of Subsidies to**

-Fishermen's Accounts as their other choice of a beneficial change to subsidies.

Those fishermen supporting option #6, Subsidizing Costs of Upgrading Equipment, felt there should be stringent controls to ensure valid need and to prevent abuse of programs.

Tables 3.21 to 3.22: Fishing Operations, by Number Who Strongly Agree With Each Potential Subsidy Change to Improve the Industry, and, Which Two Would be the Most Beneficial.

The potential subsidy changes listed were:

1. More Flexibility in Adjusting to Changes in the Industry
2. Guaranteeing a Minimum Price for Whitefish
3. Guaranteeing a Minimum Price for Other Species
4. Long Term Guarantee of Subsidy Levels
5. Supporting Wages Paid to Northern Helpers
6. Subsidizing Winter Freight Costs Based on Area Fished

The vast majority of fishermen in all categories of operation for both seasons strongly agreed that all of the above potential changes to the subsidy program would be beneficial to the GSL fishing industry as a whole.

There was considerable variety in the response by category as to which two potential changes would be the most beneficial. The small operations tended to rank # 2 (Guaranteeing a Minimum Price for Whitefish) and # 4 (Long Term Guarantee of Subsidy Levels), as the most beneficial to the industry. The medium operations were less clear as to their preference, but seemed to rank #5 #4 and # 1 as being the most beneficial. The large operations quite clearly listed # 6 (Subsidizing Winter Freight Costs Based on Area Fished) and # 2, (Guaranteeing a Minimum price for Whitefish) as' the changes to subsidies most likely to benefit the industry as a whole.

Some fishermen felt options #2 and #3 (above) could be important, but are at a minimum level now, and shouldn't go any lower.

Table 3.23 : Fishing Operations, by Whether Subsidies Should be Tied to Northern Residency Requirements of Owners/Operators.

The vast majority of all operations for both seasons answered yes, northern residency of the owner/operator and subsidy receipt should be linked.

Fishermen feel quite strongly that non-residents should not own a commercial license, nor receive G.N.W.T subsidies for Great Slave Lake. However, the situation exists in that non-residents can

potentially receive subsidies through the current system.

Table 3.24 : Fishing Operations, by Whether Subsidies Should be Tied to Northern Residency Requirements of Employees.

The vast majority of all operations for both seasons answered no. For those operations hiring employees, they indicate that the viability of their operation is directly affected by the quality of their crew. Reliability, experience and availability are essential. They feel this is impossible to ensure with only northern help. A common opinion is that with access to U.I.C. and welfare, some northerners are not motivated to seek fishing employment.

Fishermen suggest:

A. Subsidized training programs for northerners.

B. Fifty (50%) percent northern residency should replace the existent 100% northern residency requirement.

C. All residency requirements should be eliminated from policy in order to have a healthy GSL fishery.

Table 3.25 : Fishing Operations, by Whether Fishermen Understand the Subsidy Programs.

The small operations answered no, the medium operations were split evenly in their response between yes and no, and the large operations answered yes, believing fishermen do understand subsidy programs.
It would appear that there is some confusion and uncertainty about GNWT subsidy programs to Great Slave Lake.

Table 3.26 : Fishing Operations, by Whether Fishermen Should Participate in Decision-Making Processes Re: **Subsidy Programs.**

The vast majority of operations in all categories answered yes. However, a much repeated concern expressed by fishermen was the need to ensure adequate and fair representation for all types of fishing operations in such a process.

General Comments

Fishermen were given the opportunity at the conclusion of Questionnaire I to address any other concerns they might have. Among the resulting comments, several common concerns became apparent. They are:

A. Fishermen should be involved in decisions re: Great Slave Lake subsidy programs. However, fair and representative participation must be assured. There must be involvement of both A and B certificate fishermen.

B. Winter fish prices are too low, and winter operating expenses are too high. Higher winter subsidies are needed.

C. There is a need for more freight subsidies, based on distance travelled to receiving stations.

D. **The** cost of fuel is too high, and as such, has a detrimental effect on the fishery.

E. There is a need for subsidization of equipment upgrades. Inadequate equipment keeps production levels low, with resulting profit levels too low to support the necessary upgrades.

F. Subsidies are essential to the Great Slave Lake Fishery, for without subsidies, the entire fishery would collapse. Subsidies must be tied to the rate of inflation.

IV: REVENUE and EXPENSES

As the tables that follow refer to Revenue and Expenses, a brief summary of what those categories entail will be helpful.

Revenue:

Sales of Fish: FFMC Initial plus Final Payment to fishermen.

Subsidies: GNWT Freight and Price Support Subsidies to fishermen.

Other Income: Freighting **for** other fishermen, rental of equipment to other fishermen, working for other fishermen, Unemployment Insurance Benefits, government grants, and local sales of fish.

Expenses:

Wages: Wages paid to employees, plus benefits.

Fishing Operations: Food, net replacement, freight, misc. gear, drydock, storage.

Equipment Expenses: Fuel, grease, propane, maintenance, repairs, motor vehicle, small tools.

Business Expenses: Insurance, licenses, accounting costs, telephone, equipment and space rentals, interest charges.

Other Expenses: Travel, Expediting, Other.

Table 4.1 : Fishing Operations by Response to Cost and Earnings Questionnaire.

The vast majority of small, medium and large fishing operations in both seasons responded to the Cost and Earnings Questionnaire.

Table 4.2 : Fishing Operations, by Average Total Revenue by Source.

The small operations have nearly double the total revenue in the summer as in the winter. Subsidies comprise 20% of total revenue in the summer, as opposed to 10% in the winter. Revenue from sales of fish is greater in the summer.

The medium operations earn approximately the same total revenue for both summer and winter. However, summer subsidies are double those of winter. Revenue from sales of fish is greater in the winter-

The large operations' income from sale of fish is larger in the winter than in the summer. Total winter revenue is also greater than total summer revenue. Summer subsidies are on average 50% higher than winter subsidies, comprising over 20% of total summer revenue, as opposed to winter subsidies which comprise only 13% of total winter revenue.

Overall, summer subsidies constitute double the percentage of seasonal revenue as do winter subsidies. Also of interest is the comparison of total annual revenue by the three categories: Small - $4,667, Medium - $25,762, and Large - $125.263. Other income contributes 5%, 15% and 6% respectively to the three categories' total income. However, the actual dollar value is twice as much for the large operations ($7,686) as for the medium ones **($3,889).**

Table **4.3** : **Fishing Operations, by Number with Other Income.**

Of the 49 operations responding to the survey, a total of 16 indicated they had sources of other fishing income. Grants from Government, Working for other fishermen, and Unemployment Insurance Benefits were the most monetarily valuable sources of other income, representing on average $28,550, $4,000 and $2436. U.I. benefits with 11 operations in receipt and Government Grants with 5 operations in receipt, were the two most frequent sources. Only one operation reported income from local fish sales.

Table **4.4** : Fishing Operations, by Percentage of Income Spent in the Northwest Territories.

100% of all categories of operations spend between 75% to 100% of their fishing income in the N.W.T.

Table **4.5** : **Fishing** Operations, **by Percentage of Household Income From Fishing Operation.**

The income from fishing contributes 25% to 49% to total household income for half of the small and medium operations. The other half of these operations derive from less than 25% to the maximum 100% of their household income from fishing. However, the vast majority, (93%), of the large operations receive 75% to 100% of their household income from fishing.

Table 4.6: Fishing Operations, by Average Total Expenses by Source.

The small operations' annual expenses and by season exceed their respective revenues, though by only a few hundred dollars. Total summer expenses are nearly double those of winter, with the major winter expenditures, (51% and 41%), being fishing operations and equipment expenses. The major summer expenses (37%, 33% and 23% respectively), are equipment expenses, fishing operations and wages. Both wages and equipment expenses are significantly higher in the summer season.

The medium operations' annual and winter expenses exceed their respective revenues by $2,000 and $5,500. However, summer revenues exceed expenses by $2,600. Wages, fishing operations and equipment expenses contribute the major portion of operating expense in both seasons. Wages and equipment expenses are 100% higher in the winter than in the summer. Overall, total winter expenses are nearly double those of summer.

The large operations' total winter expenses exceed total revenue by $5,000. However, annual and total summer revenues exceed their respective expenses by $2,500 and $7,300. Again, wages, fishing operations and equipment expenses contribute the major portion of operating expense in both seasons. Total as well as specific expenses are all generally higher in the winter. For both seasons wages are the major expense, though equipment expenses are also a major contributor in the winter, being 100% higher than in the summer.

Table 4.7 : Fishing Operations, by Average Expense per Pound of Production.

The small operations' annual, winter and summer expenses per pound of production are $.77, $1.14, and $.88 respectively. Fishing operations and equipment expenses contribute by pound annually $.36 and $.33; in the winter, $.63 and $.40; and in the summer, $.31 and $.34. Wage expenses are $.18 in the summer, compared to $.07 in the winter.

The medium operations' annual, winter and summer expenses per pound of production are: $.90, $1.19, and $.66 respectively. The three major expenses are wages, fishing operations and equipment expenses, contributing by pound annually $.22, $.31 and $.33; in winter $.33, $.34 and $.47; and in summer $.14, $.26 and $.22.

The large operations' annual, winter and summer expenses per pound of production are: $.83, $1.15 and $.69 respectively. The three major expenses are wages, fishing operations and equipment

expenses, contributing by pound annually $ .32, $.21 and $.24; in the winter $.42 $.25 and $.42; and in the summer, $.26, $.20 and $.17.

Expenses per pound are the highest in the winter. On a comparative basis overall, total expenses per pound are less for large operations on an annual basis, the highest for medium operations in the winter, and the least for the medium and large operations in the summer.

Table 4.8 : Fishing Operations, by Total Expenses per Pound of Production.

On an annual basis, the small operations total expense per pound shows a large range from $.50 - $1.24. The trend is similar for the medium operations with a range from less than $.50 to over $1.25. The large operations total expense per pound of production tends to range from $.50 to $.99.
In the Winter season, total expense per pound of production for the small and medium operations tends to be from $1.00 to $1.24, and for the large operations a range from $.50 to over $1.25. Specifically 36% of the large operations are in the $.50 to $.74 range and 50% are in the over $1.00 range.
In the Summer season, total expense per pound of production for the small operations is $.50 to $.74, for the medium operations from less than $.50 to $.74, and for the large operations, $.50 to $.74. All three tend to be in the $>50 to $.74 range.

Table 4.9 : Fishing Operations, by Detailed Average Expenses.

The range of total annual expense is : Small operations $4,877, medium, $23,764 and large, $115,078.

This table refers to annual expenses. For all categories, the major expenses are helpers' wages, food, net replacement, fuel, repairs and maintenance. These five expense categories combined comprise 82%, 85%, and 81% of total annual expenses for the small, medium and large categories.

Business and other expenses contribute very little to total operating expenses. It is worth noting that all categories have interest charges with FFMC which comprise about 2% of total expenses. The largest expenses for the-small operations are food and fuel, for the medium and large ones, the single greatest expense is helpers' wages.

Table 4.10 : Winter Fishing Operations, by Detailed Average Expenses.

The range of total winter expense is: Small operations, $2,967., medium, $20,409. and large, $69,228.

For the small winter operations, the single largest exPense is food, (30%), followed by fuel, (21%), and equipment repair, (15%) . For the medium winter operations, wages (32%) are the largest expense, followed by equipment repair (18%), fuel (15%), and food and net replacement, both (12%) . For the large winter operations, wages (at 35%) is the largest expense, followed by equipment repair (16%), fuel (15%) and food, (13%).

Again, business expenses account for less than 5% for any of the categories.

Table 4.11 : Summer Fishing Operations, by Detailed **Average** Expenses.

For the small summer operations, wages (at 23%) are the **largest** single expense, followed by fuel, (20%), food, (15%), **and net** replacement and equipment repair, both (10%). For the medium operations, wages, (at 30%), are the largest expense, followed by fuel, (17%), food, (16%), and net replacement and equipment repair, both (10%). The large operations' major expense are wages (at 38%) followed by food, (17%), and fuel and equipment repair, both (10%) . Business and other expenses account for no more than (8%) for any category.

It is of interest to compare actual expenditures between the two seasons. Many expenditures are considerably higher in the winter. For the small operations, fuel costs are nearly double those of summer, yet wages are higher in the summer. For the medium and large operations, wages, fuel and equipment repair costs **are** considerably higher in the winter, often being more than double the expenditure in summer. For example, the large operations spend on average $4,886 on fuel and $4,870 on equipment repair in the summer, and $10,052 and $11,266 respectively in the winter. Expenditures on net replacement vary between the three categories, with the major expenditure for small and large operations being in the summer, and in the winter for the medium-sized operations. Motor vehicle expenses are higher for the large operations in the winter, and in the summer, for the small operators.

Tables 4.15 - 4.16 : Fishing Operations, by Whether the Operation **Has a** Loan, **and by Monthly Payments.**

It must be noted that loan payments have not figured into operating expenses in previous tables.

The majority of winter small operations have a loan, and the majority pay under $300 a month, although a significant 33% pay from $300 to $749 monthly. One-half of the summer small operations have loan payments, and all pay under $300 monthly.

One-half of both winter and summer medium operations have loan payments, and in all cases pay between $300 and $749 monthly.

.-The vast majority of both winter and summer large operations have loan payments, with the majority paying $300 to $749 monthly. A significant 33% pay over $750 monthly.

The following tables provide revenue and expense information based on the annual profitability of the operation. Annual profitability is defined by the difference between annual revenues and expenses. Revenues include sales of **fish,** government subsidies and fishing income from **other sources. Expenses include all expenses listed in Question 8 of** the **cost and earnings questionnaire.**

Table 4.17 : Fishing Operations, by Annual Profitability.

The small operations are split evenly between losses from $1.00 to $4,999 and profits from $ 1.00 to $4,999. The medium operations range widely from losses of $5,000 to $9,999 up to profits of over $10,000. There is a tendency for these operations (medium) to group in the range of losses from $5,000 to $9,999 to profits of $1.00 to $4,999. 25% have profits from $5,000 to over $10,000. The large operations also range widely from losses over $10,000 to profits over $10,000. They do however exhibit a fairly strong (33%) tendency toward profits over $10,000.

Table 4.19 : Fishing Operations by Average Production Levels, Annual Profitability.

In all cases and in both the summer and winter seasons, the profitable operations have higher production levels than the operations with losses.
For the small operations the difference in production levels for profitable vs. non profitable is small, approximately 1,000 pounds. However the difference in production levels for profitable vs. non profitable increases considerably with the size of operation, and by season as well.
In the Winter, the profitable medium operations average 22,000 pounds vs 16,000 pounds for the non profitable. The profitable large operations average 87,000 vs 66,000 for the non profitable. In the Summer, the difference for the medium is 26,000 pounds VS 8,000 pounds. For the large, 102,000 Vs 55,000.

Tables 4.24-4 .25:Winter Fishing Operations, by Average Expenses, by Pound of Production and by Profitability.

Of interest is that all sizes of the profitable operations actually have larger total expenses than the non profitable operations. Equipment expense (fuel, repair, maintenance) is the major contributor to the increase in costs of operation. As well the profitable large operations spend considerably more on Fishing operations (food, nets, freight) . When combined with lower production levels the expense per pound of production is actually higher for the non profitable operations. There is one exception as

can be seen:
The" expenses per pound of production for the profitable small, medium and large operations are; $.72, $.1.17, $1.17 vs. the expense per pound of production for the nonprofitable small, medium and large operations; $1.41, $1.22, $1.14. The profitable large operations actually have a higher expense per pound due largely to their significantly greater expenditure on equipment repairs and fuel. The profitable small operations have the lowest expense per pound and the non-profitable small operations have the highest expense per pound.

Tables 4.26-4.27: Summer Fishing Operations, by Average Expenses, by Pound of Production and by Profitability.

The small operations with a loss have overall higher expenses than the small operations with profits. The major increases are in the Fishing operations and Equipment expense categories. The medium and large operations with a profit have considerably higher expenses than those operations with a loss. The major increases in expenditures are in the Wages, Fishing operations, and Equipment expense categories. Again, as in Winter, when combined with lower production levels, the expense per pound of production is actually considerably higher for the non profitable operations. The profitable small, medium and large expenses per pound are; $.54, $.51 $.58, and for the non profitable small, medium and large; $1.17, $.99, .$.77.
Of the profitable operations, the large have the highest expense per pound, possibly due to their overall very high expenditures. Of the non profitable operations, the small have the largest expense per pound.

V. EQUIPMENT INVENTORY

Table 5.1 : Fishing Operations, by *Number Who Own* Each Type *of* Equipment.

The small operations, on average, own: 1 Skiff, 1-2 Outboard Motors, 1-2 Snowmobiles, and 1 Truck.

The medium operations, on average, own: 1 Skiff, 1 Yawl, 2 or more Outboard Motors, at least 1 Bombardier, 1 or more Snowmobiles, and 1 Truck.

The large operations, on average, own: 1 or 2 Whitefish Boats, 1 or 2 Skiffs, 2 or more Outboard Motors, 2 or more Bombardiers, at least 1 Snowmobile, 1 Auger, and 1 or more Trucks.

Table 5.2 : Fishing Operations, by Number Who Own Each Type of Miscellaneous Equipment.

The majority of large operations own the following equipment: Depth Sounder, Radio Phone, Generator, Net Lifter, Fish Finder, CB Radio, Cabooses, Sleds, Camps. Only a very few own Radar or Refrigeration Units.

The majority of small and medium operations do not own the above types of fishing equipment, with the exception of Cabooses, Camps and Sleds. The majority do own either Camps, Cabooses (or both), and Sleds.

Table 5.3 : Fishing Operations, by Number of Nets Owned, and Type of Net.

The vast majority of small operations, (9S%), own less than 50 nets in total.

The majority of medium operations own less than 50 of either the Nylon or Twisted Mono style nets. However, a significant number do own more than 50 nets.

The vast majority of large operations own over 100 nets. While they tend to own both Nylon and Twisted Mono style of nets, they appear to own more of the Nylon than any other type of net.