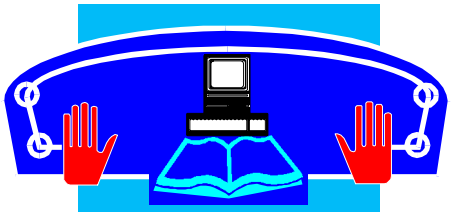

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Production And Marketing Of Country Food In The Nwt
Type of Study: Marketing & Trade Arctic Foods, Food Marketing/prod Development
Date of Report: 1988
Author: Deloitte Haskins & Sells
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Deloitte Haskins & Sells

Production and Marketing
of Country Food in the
NWT

Deloitte
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2-3-12

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Mr. Syd Kirwan
Director, Natural Resources Development
Economic Development and Tourism
Government of the Northwest Territories
P.O. BOX 1320
Yellowknife, N.W.T. X1A 2s89

June 30, 1988

Dear Mr. Kirwan:

Re: Production and Marketing of Country Food from the N.W.T.

We are pleased to submit the final version of this important study.

The report contains a discussion on the background of the Country Food industry in the N.W.T., with a ensuing analysis into production and marketing of:

- Muskox
- Caribou
- Reindeer
- Bison
- Whitefish
- Arctic char
- Lake Trout
- Northern Pike
- Inconnu
- Scallops
- Shrimp
- Greenland Halibut

The *report is then* closed with summary statements, conclusions and recommendations.

We appreciate the opportunity to have undertaken this study and we look forward to working with you again in the future.

Yours truly,
DELOITTE HASKINS & SELLS

Deloitte Haskins + Sells

/da

Enclosure

PRODUCTION AND MARKETING
OF COUNTRY FOOD
FROM THE NORTHWEST TERRITORIES

Prepared For

ECONOMIC DEVELOPMENT AND TOURISM

GOVERNMENT OF NORTHWEST TERRITORIES

Prepared By

DELOITTE HASKINS & SELLS

EDMONTON, ALBERTA

June , 1988

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1.0 INTRODUCTION

1.1 Background

The Northwest Territories (N. W. T.) is highly dependent on imported *foodstuffs* and durable and nondurable consumer items that are transported in from southern Canadian locations, such as Alberta and British Columbia, and the U.S.A. Government of the Northwest Territories (G.N.W.T.) statistics indicate that the Territory spends an estimated $130 million annually on imported southern foods.[1] Many imported products cannot be produced locally for a variety of reasons, such as uneconomic plant scale, small population distributed over a large area and climate limitations (e.g., extreme temperatures, sunlight variability, soil).

However, further potential may exist in naturally available food products, called 'Country Foods-. Such production may be a means to local economic growth by import substitution and export strategies which have been used by Canada and many other countries to achieve economic growth and improve income levels in designated sectors. Although local production *of some types* of products may not be currently feasible because of economic (e.g., low volumes) or technical reasons, local conditions do favour production *of* meat, fish and seafood from indigenous species such as caribou, muskox, arctic char and whitefish. Such local naturally occurring food sources could become viable "country *food*' production opportunities. Country Foods being harvested now amount to a pproximately $70 million.[2]

Reduction *of* certain *foodstuffs,* such u highly perishable fresh meat and vegetables by the local community, is a desirable goal to

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1 G.N.W.T. 'The Arctic Food Industry'.

2 Ibid.

strive for and has been promoted by federal, provincial/territorial and municipal governments in the past. Clearly, governments realize the need for and social benefits of increasing such local production. The G.N.W.T.'s commitment to this goal is recognized by its Commercial Renewable Resource Use Policy, which allows for the provision of financial assistance for developing renewable resource businesses. The Territorial government is designing a northern food strategy that will provide direction to the industry. The approach to any such industry development should focus on those country food items exhibiting the greatest economic potential while remaining consistent with local needs and constraints. A balance of resource development and resource conservation is the key underlying principal as country food production strategies are formed.

1.2 Study Objectives

As stated in the Terms of Reference and further clarified in discussion with the Department of Economic Development and Tourism, the main objective of the study was to:

> "...determine the cost/benefit of establishing a Northern foods industry in the N.W.T., the constraints and how they can be overcome and particularly the N.W.T.'s ability to produce and market its food products competitively both in the N.W.T. and the South."

Specific sub-objectives were then developed in an addendum to the initial study proposal:

- Quantify commercial harvest levels of country food products (on a regional basis if possible). The five regions utilized were the N.W.T. Administrative Regions: Inuvik, Fort Smith, Kitikmeot, Keewatin and Baffin (except for the freshwater fish).
- Estimate costs of production for the products and provide a breakdown by major components (i.e., slaughter/capture, processing, transportation, marketing).

- Measure demand for the various commercial products end report their respective prices (by region end/or community).
- undertake market research to identify demand end product specification requirements in Alberta, British Columbia, Quebec ● nd Ontario markets.
- Evaluate competitiveness of N.W.T. Country Food products relative to other products ●vaileblo.
- Identify opportunities end constraints in the N.W.T. Country Food sector.
- Provide recommendations to ● ncourage greater production of the key products *with identified* market potential.

1.3 scow of the Study

The scope of the study was limited to ● xsmitiag *specific species* occurring in the N.W.T. that were understood to be commercially bested. These included:

- Muskox
- Caribou
- Reindeer
- Bison
- Whitefish
- Arctic Char
- Lake Trout
- Northern Pike
- Inconnu
- scallops
- Shrimp
- Greenland Halibut (Turbot)

Subsequent research discussed throughout the remainder *of* this report outlines the varying degree to which these species occupy commercial markets .

The market centers visited included Yellowknife, Vancouver, Edmonton, Montreal end Toronto. Interviews were conducted in each of these centres. Recent research conducted *for the* Department of Economic Development end Tourism was ● lso used for the market assessment.

1.4 Methodology and Study Outline

The study was divided into three key components:

- Production - Harvest/Processing Review (Chapters 3 to 5)
- Market Assessment (Chapter 6)
- Summary, Conclusions and Recommendations (Chapter 7).

Each component was researched in light of the specific game or aquatic species (or group of species) being examined. Commercial harvest and processing practices were reviewed to provide an understanding of the production and resource utilization aspects of the industry. Markets were examined through industry contacts and a review of past research identifying production strengths, requirements and consumption trends. Based on the combined assessments of production and markets, opportunities and constraints for economic development of each identified species were then outlined. The final research component then combined the results of the preceding reviews and formulated recommendations to encourage both greater commercial production of country foods with the most economic potential and further research into production and markets.

2.0 BACKGROUND TO COUNTRY FOOD

Country food is defined as "food obtained from the northern wilderness by people who either eat it or share it with others". This may be further broadened to include commercial production and sales of food harvested. It encompasses various species of game animals, freshwater fish, marine fish and marine mammals. country food production has typically been a non-commercial activity, although the economic importance to native families in terms of value of equivalent store-bought food has been demonstrated by several studies[3]. There have also been commercial sales of country food both within and outside the N. W. T. in recent years.

Composition of the country food harvest (in terms of species) varies considerably from region to region depending upon availability. A study in the area of the Norman Wells Oil field Expansion and Pipeline Project indicated that the harvest was composed mainly of big game (56%), fish (27%), with some fur bearing animals (8%) and birds (7%)[4]. A 1975 study of an isolated camp of Inuit hunters in southern Beffin Island found that common seal accounted for 66 percent of the total harvest, followed by bearded seals and beluga whales. These three species accounted for 83 percent of the annual harvest. The remaining 17 percent was made up of 15 different species with duck eggs contributing the largest proportion.[5]

Hunting, fishing and trapping in the N.W.T. is primarily undertaken by the native inhabitants and practically all of the harvest is utilized for their domestic consumption. It was estimated that native people consume about 95 percent of the red meat and nearly

---

[3] *Bone*, p. 3

[4] Ibid.

[5] Kemp, p. 24

half the *fish* caught *in* the N. W.T.[6] This is *not to* suggest that ● ationsl markets *for* these *products* are not ● vailsblo, and the topic of potential markets will be addressed in Chapter *6.* The Science Advisory Board of the Northwest Territories ● 8thtod that "under *intensive* management and carefully controlled harvest", ● bout 10 million kg of meat and fish could be harvested annually on ● sus - tainable basis without depleting the ●vailsblo resources. This is shout two to four times ● stinted recant harvests[7]. The G. N.W.T. ● stfitos that the Country Foods industry has the potential to become ● $150 million industry. [8] Several ● ltornstives have been considered in the pest in an attempt to maintain ● consistent harvest volume, including the ● stablishment of reindeer herds in northern Canada. However, one researcher concluded that wild populations *of* caribou end musk-oxen offered the best potential *for* converting northern tundra into meat, hides, hooves and other products useful to man[9].

Although potential production appears to be Substantial, the possi- bility *for* commercial production must be evaluated considering many factors including location of supplies relative to individuals involved in harvest, harvest quotas, processing *end* distribution *system* ● vailsbl- and potential markets. These aspects ● re" discussed throughout the reminder *of* this report.

Currant technologies including snowmobiles, ● ircraft and *freezers* have *been* incorporated into the harvest *of country* foods. Although the ● doption of these technologies has increased the we snd ● fflciency *of* harvesting *country foods,* ● new problem has ● risen in how to obtain funds to acquire the tools and equipment.

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[6] Usher, pp. 19-21

[7] Usher, p. 19

[8] G. N.W. T. "The Arctic Food Industry-.

[9] Scotter, p. 173

In 1977, Justice Berger in his report Northern Frontier Northern Homeland stated the problem thus:

> "The basic problem is not the resource base but the realization of ●cash income from it. . .persons participating in the traditional ●conoq spend ●total of ●hsc $3.5 million ●year to outfit themselves... These ●*xpenses* amount to nearly $1,600 *for* each *General* Hunting Licence holder . . . this ●st-tod $3.5 million is three times the present cash yield from trapping and ●ubatantlally more than the most optimistic potential yield from *this* ●*ctiviq*
>
> *. .. further . . .*
>
> ...This differential doss, however, highlight the need for cash *from* other sources to support the viability of the traditional sector as it now ●xists, and it demonstrates yet ● gain why so many *persons who* identify themselves as trappers also work - indeed, may have to work - for wages. In some small communities, transfer payments, such U family ●llowances and old ●ge pensions, can be important sources of capital *for* hunting . . . Even the most optimistic estimates of the harvest potential of renewable resources do not suggest that ●very man, woman and child in ths territories can harvest enough, not only to ●at, but ●lso *to* pay for ●ll the other things they might want. I have made it quite clear that *there* is ●need for cash *that* goes far beyond what is at present ●arned from that sector. "[10]

The Government of the Northwest Territories has responded to this identified need for outside capital with several programs:

1. Outpost Camp Program: Provides financial ●ssistance to any family *or* group *of* persons, loss than 60 in number, who hold General Hunting Licenses and who wish to live or move away from settlements to isolated areas in the N.W.T. *for* at least three months to make ●living from the land. In 1986-*87*, ●total *of* $461,927 was distributed through this program. Items provided include:
   - transportation *of* persons/supplies and equipment to cup ●nd return.
   - sufficient funds for first year's requirement *of food and* supplies.

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[10] R. H. C., pp. 10-11

. fuel oil above the tree line.
. materials for basic shelter.
. loan of a radio.
. medical services.

2. Community Harvest Program: This program provides similar benefits as the Outpost Camp Program, but is available to individuals. In 1986-87, $423,700 was made available through this program.

3. Special ARDA: This program is a joint Federal-Territorial program to provide financial help to people of N.W.T. (especially of Indian and Inuit ancestry). The program has supplied capital equipment such as traps, boats, outboard motors, snowmobiles, sled and cabin materials, to assist hunters and trappers to earn a living.

Hunters and trappers generally pay 35 percent of the cost of an item and can only receive funding once for a particular item. For 1986-87, $1,907,834 was approved for this program.

6. Hunters & Trappers Associations (HTAs): The Wildlife Service contacts the HTA's or Band Councils routinely to gather information. In recognition for the service these organizations provide, the Wildlife Service issues grants to the HTAs or Band Councils. In 1986-87, a total of $837,400 was distributed to a total of 58 HTAs and the Bands in the N.W.T.

s. Organized Caribou Hunts: In 1986-87, $13,403 was paid from this program to provide financial assistance to holders of GHL's to provide transportation for caribou hunts when it was otherwise impossible for the hunters to access caribou.

Additional programs ro ● vailabla specifically to trappers to provide interest-free loans, fur marketing services end gasoline subsidies.[11]

[11] N.W.T. Wildlife Notes, *Number 9,* May 1983 and updated by Department of Renewable *Resources for* 1986-87.

3.0 GAME ANIMALS

3.1 Main Species of Game Animals

3.1.1 Barren-ground Caribou

Barren-ground caribou (Rangifer tarandus groenlandicus) are the most numerous of the four subspecies found in the N.W.T. Caribou are long-legged animals with sharp hooves to aid in travelling over ice and snow. Males typically stand about 43 inches at the shoulder and weigh about 250 lb. The caribou has an exceptionally warm coat due to the insulating effect of the hollow hairs. Both bulls and females have antlers which are shed and regrown each year. Caribou are migratory animals and travel from their winter feeding grounds to calving grounds - trips which may be as long as 450 miles.

Caribou are economically important to the people of the N.W.T. for several reasons. They are utilized for basic subsistence purposes by N.W.T. residents to provide meat, hides and bones. Meat is sold commercially, locally and within the N.W.T. They are also hunted by resident and non-resident sportsmen.

3.1.1.1 Regional Distribution of Caribou: Barren-ground caribou populations in the N.W.T. have been estimated to be between 1,193,000 to 1,646,000 animals.12 Population estimates by region are shown in Table 3.1.

Due to migration of caribou, the same herd may be found in different regions. Also, the herds migrate outside the N.W.T. The populations indicated are therefore not available solely to the residents in a particular region.

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12 Ference, p. 15

Table 3

Population Estimates Of B

Found in Each Regi

Herd	Inuvik	Fort Smith	Ki
- -	150,000	·	
Bluenose	50,000- 80,000	·	50,00
Bathurst	320,000-450,000	320,000-450,000	320,00
Beverly	·	250,000-420,-	
Wager	·	·	110,00
Boothia	·	·	
Victoria Island	·	·	7,00
Kaminuriak	·	·	
South Hampton	·	·	
Coates Island	·	·	
South Baffin	·	·	
North Baffin	·	·	
Somerset and Prince of Wales Island	·	·	
Northeast Baffin	·	·	
Belcher Islands	·	·	
Banks Island	5,000	·	
Queen Elizabeth Island	·	·	
Total	525,000-685,000	570,000-870,000	495,00

Source: Ference, p. 15 referenced to World Status of Wild Rangifer Tarandus Pop

3.1.1.2 Caribou Quotas and Harvest: Potential harvests are limited by quotas established by the Department of Renewable Resources. The available commercial quota for caribou totals 4,200 animals annually and is divided into three categories:

- outfitting of non-resident hunters or meat harvested for commercial sale in country food retail outlets.
- Inter-settlement trade which cannot be used for outfitting of non-resident hunters or commercial meat sales outside N.W.T.
- country food which cannot be used for outfitting non-resident hunters.

Table 3.2 outlines commercial quotas by region and designated use. It should be noted that quotas for some herds (e.g., Bathurst) apply to several regions and therefore quotas per region & not added to total quota.

The allocation of quotas by community is outlined in Table 3.3. Commercial quotas were originally established to provide an opportunity for local residents to earn additional income by hunting and selling meat and other products. The quotas were distributed among the communities with this purpose in mind rather than on the basis of where excess caribou might be available. As a result, much of the commercial quota is not utilized by communities which are located too far from the herds to make commercial hunting viable. A redistribution of commercial quotas might be more conducive to the establishment of viable commercial caribou hunt, but would require a reassessment of the goals and purpose of the commercial quota program.

Table 3.4 provides the only information available at this time on volumes harvested for different uses. Data collection systems are currently being established to provide more complete information.

3.1.1.3 Future Harvest Potentials: The Ference report outlined total harvest volumes by herd (Table 3.5).

Table 3.

Commercial Barren-ground Ca

(October 1

Quota	Inuvik	Fort Smith	Kit
Commercial Outfitting and Country Foods			
North Baffin	-	-	
South Baffin	-	-	
Banks Island	95	-	
Bathurst	400	400	
Bluenose	950	-	
Melville Peninsula	-	-	
Queen Maud	-	-	
Victoria Island	-	-	
Wager Bay	-	-	
Total Outfitting and Country Foods			
Country Foods Only			
Bathurst	650	650	
Total Country Foods Only			
Inter-settlement Trade Only			
Kaminuriak	-	-	
Beverly	-	200*	
Total Inter-settlement Trade			
TOTAL	2,095	1,250	2,3

Source: Ference, p. 19 referenced to Planning Framework for Renewable Resources

* Updated by Department of Renewable Resources, GNWT

Ference indicated that an ● -l harvest of S percent *of* the herd would be feasible, and stated that based on population ● nd harvest e stimates, hunting could increase in only ●few herds if herd numbers ●ro to be maintained. Hunting could potentially be ● xpmded in the Porcupine , Bathurst , Beverly, Somerset and Prince of Wales Island horde . Estimated surplus *caribou* in some *of* the major *horde is* shown in Table 3.6. The number of surplus animals depended on whether the upper or lower estimate of caribou population was utilized. [13]

Table 3.3

Commercial Quota Allocation By Community

(October 1987)

Herd	Annual Quota	HTA(s)
North Baffin	100 ●	Arctic Bay, Pond Inlet
south Baffin	500 ●	Iqaluit, Cape Dorset, Lake Harbour, Pangnirtung
Banks Island	95 a	Sachs Harbour
Bathurst	200 a	All HTAs on range
Bathurst	200 ●	Non-HTA outfitters
Bathurst	650	50 to Bay Chimo, Others to Rae, Rae Lakes, Lac La Marte, Snare Lake, Detah, Yellowknife and Coppermine
Bluenose	930 a	All HTAs on range
Melville Peninsula	3s0 ●	Repulse Bsy, Hall Beach, Igloolik
Queen Maud	180 ●	Spence Bay, Pony My, Gjoa Haven
Victoria Island	125 ●	Cambridge Bay (7 S), Holman Island (50)
Wager Bay	230 ●	Keewatin Wildlife Federation
Kaminuriak	350 b	Keewatin Wildlife Federation .
Beverly	50 b	Keewatin Wildlife Federation
Beverly	200 b	Fort Smith (October 1987)
Total N.W.T.	4,200 head	

●- May be used *for* Non-resident hunting

b - Not for export south of 60° North

Source: Department *of* Renewable Resources, G.N. W. T.

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13 Ibid

Table 3.4

Harvest Volumes By Region By Use

	Inuvik	Fort Smith	Kitikmeot	Keewatin	Baffin	Total
Estimated Population	525,000-685,000	570,000-870,000	495,900-677,900	543,200-833,200	108,900-110,300	1,193,000-1,646,400*
Harvest Volumes						
GNWT	2,700- 4,450[5]	3,000- 6,000[1]	7,100	8,000- 12,000	12,000- 17,000	32,800- 46,550
Resident Hunters[2]	96	301	47	31	95	570
Sports Hunters[3]	N/A	N/A	N/A	N/A	N/A	168
Country Foods[4,*]	100	-	-	20	? -	120

Source: Ference, p. 17 referenced to:

1 A Planning Framework for Renewable Resource Development in N.W.T.

2 Resident Hunter Harvest Estimates

3 Department of Renewable Resources

4 Interviews with country food outlets in N.W.T.

5 These harvest figures are thought to be low but actual harvest levels are not known

* As edited by DN&S

Table 3.

Harvest Levels

Herd	Estimated Harvest Volume
- - -	400
Bluenose	4,000
Bathurst	14,200
Beverly	6,000
Wager	3,900
Boothia	N/A
Victoria Island	1,000* 1,500
Kaminuriak	10,000
South Hampton	70
Coates Island	200
South Baffin	8,000
North Baffin	7,000
Somerset and Prince of Wales Island	150- 250
Northeast Baffin	1,000
Belcher Islands	32
Banks Island	300
Queen Elizabeth Islands	WA
Total	56,652-57,252

Source: Ference, p. 16 referenced to World Status of Wild Rangi
D.C. Heard, Rangifer, 1986.

Table 3.4

Surplus Caribou in N.W.T.

Herd	Surplus (animals)
Bathurst	1,700 - 8,200
Beverly	6,S00 - 15,000
Wager	1,600 - 2,600
Kaminuriak	0 - 4,000
Porcupine	7,100
Total	16,900 - 36,900

Source : Ference, p. 17

Ference indicated that ● ddltloml information snd population ● sti - mates are required before surpluses can be ● ccurately calculated[14]. However, these surplus ● stktes differ greatly from the commercial quotas discussed earlier which set the current upper limit of harvest potential. Department *of* Renewable Resources *officers* indicated thst it is unlikely that commercial quotas till change in the *foreseeable* future.

3.1.1.4 Summary: There are currently 4,200 commercial caribou tags available. Table 3.4 indicated that 168 of these have been used previously *for sports* hunting. Assuming sports hunting will continue at ● pproxktely this level, there are 3,432 tags ●vailable to be sold ● *ither* within or outside the N.W.T.[15] An ● dditioml 600 tags are available which could be used for inter-settlement *trade* in the N.W.T.

There ●ppeus to be sufficient quota ● vailsble to establish ● commercial country *food trade* in caribou meat. Due to the diffi- culties ● ssociated with exporting the meat from *the* N.W.T. it is

[14] Ibid

[15] Calculated es (2,950 + 650) - 168 used *for* sports hunts - 3,432.

likely that only sales within the Territories will be feasible in the foreseeable future. The total quote ● vailablo for country food is therefore 4,032 ● n-is or ● pproximstoly 403,200 lbs. of meat.

3.1.2 Woodland Caribou

Woodland caribou (Rangifer tarandus caribou) are similar in appearance and behaviour to barren-ground caribou, but inhabit the woodland regions rather than the tundra.

The population of woodland caribou is small relative to barren-ground caribou and is estimated to be between 2,000 and 5,000 ● nimsls.16 These animals are found only in the Fort Smith and Inuvik Regions end harvest is limited due to the small herd sizes. Harvest volumes and use are outlined in Table 3.7.

Table 3.7
Woodland Caribou Harvest Volumes

Use	Inuvik	Fort Smith	Total
Domestic Subsistence	50-130	230	300-400
Resident Hunters	11	48	59
Outfitters	100	85	185
Total	161-261	383	544-644

Source: Ference p. 22 referenced to Planning Framework of Renewable Resource Development in the N.W.T. and Resident Hunter Harvest Estimates.

Since herd size and harvest numbers ● re so small, they ● re considered to have no potential for commercial country food production at this tin .

3.1.3 Muskox

The muskox (Ovibos moschatus), aptly described u "the bearded one" by the Inuit, is en animal which is entirely covered with● double

16 Ference, p. 22

coat of hair and wool. Except for its horns, hooves, lips and nose. This protective coat allows the animals to survive the clerk cold winters in the Arctic islands. Muskox appear exterly large because of their thick coats. Bulls may stand 50 to 60 inches tall at the shoulder end weigh about 750 lbs.; females weigh about 200 lbs. Muskox do not migrate like caribou, but will travel many miles between their winter and summer ranges.

Muskox are used for their meat, hides and qiviut (muskox wool).

3.1.3.1 Regional Distribution and Harvest of Muskox

Regional distribution of muskox population and commercial quotas and utilization are outlined in Table 3.8. Ference indicated that population figures are only estimates and should not be relied upon, especially because populations can fluctuate dramatically due to harsh climatic factors.[17] There are currently no statistics of non-quota harvest volumes for subsistence use.

The total muskox population was estimated by Ference to be 57,100 (Urquhart indicates this may be at the high end[18]), with the largest population being on Banks Island. There are also large populations on Victoria Island and Queen Maud Gulf. No explanation was given for the small commercial quota available In Kitikmeot Region although the area has an estimated muskox population close to that of the Inuvik Region.

At the present time it appears that due to animal numbers the Sachs Harbour area exhibits the best potential for development of commercial sales of muskox. The existing quota of 2,000 animals per year shows potential for the establishment of a viable commercial enterprise. Quotes for other communities could be altered if reviews of animal numbers indicated that this was desirable. It is unlikely,

17 Ference, p. 21

18 Urquhart, p. 4

Table 3.8

Muskox Populations, Quotas And Utilization By Community

(November, 1987)

Region/Community	Population[1]	Quota Total	Quota M/F	Use[2]	Surplus
Baffin Region:					
Grise Fiord		18	9/9	t	
Grise Fiord		2	1/1	n	
Grise Fiord		4	4/0	t	
Arctic Bay		4	2/2	t	
Resolute Bay		7	4/3	n	
Resolute Bay		12	9/3	t	
Total	7,600	47		38	9
Inuvik Region:					
Melville Island[3]		12	-	t	
Sachs Harbour		2,000		500 ?	
Paulatuk		50	30/20	20	
Tuktoyuktuk		10		n	
Total	26,500	2,072		532	1,540
Kitikmeot Region:					
Coppermine		5	-	t	
Holman Island		110		t	
Cambridge Bay		30	-	n	
Cambridge Bay		65	-	t	
Spence Bay		3	-	n	
Coppermine		50	-	t	
Bay Chimo		30	-	5	
Coppermine		20	-	n	
Cambridge Bay		35	-	n	
Gjoa Haven		30	-	20	
Gjoa Haven		10	-	t	
Total	20,600	388		265	123
Keewatin Region:					
KWF[4]		10	-	t	
Baker Lake		6	4/2	t	
Baker Lake		3	2/1	t	
Baker Lake		3	2/1	t	
KWF[4]		10		t	
Total	2,400	32		32	0
Total N.W.T.	57,100	2,539		867	1,672

1 Ference referenced to Planning Framework of Renewable Resource Development *for the H. V.I., and* Wildlife Division Renewable Resources, G. N.W. T.

[2] Average Use Over Past Three Years:
t = Total Use
n = Never Used

[3] This quota is shared by Sachs Harbour and Holman Island

[4] This quota is allocated by the Keewatin Wildlife Federation (KWF) to the Keewatin Communities

source : Department of Renewable Resources, G.N.W.T.

however, that quota *sufficient to* establish a commercially viable hunt would be available to other communities.

The total commercial quota for 1987 was 2,539 animals. Most *of* this quota (2,000) applies to Banks Island, with the next largest allocation (110) to Holman Island. The average harvest *over* the last three years was only about 867 animals or 34 percent of the total commercial quota, which means considerable surplus exists.

Ference indicated that he felt commercial quotas for muskox could increase in the future if *sufficient* demand existed *for* hides, meat and qiviut.[19] Current quotas, however, establish the upper commercial harvest limit at this time, and Department of Renewable Resources *Officers* indicated that quotas were unlikely to change in the foreseeable future.

Urquhart's study entitled Muskox - Life History and Current Status of Muskoxen in the N.W.T. outlines muskox populations and use. A summary for each region follows.

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[19] Ference, p. 21

3.1.3.1.1 Muskox in the Baffin Region:

Devon Island: It is ● otktod that ●-t 400 muskox inhabit Devon Island. The ● n-is are hunted on the north coast by residents of Grise Fiord. This area is the most ● ccassiblo of three available. Quota for Resolute residents for muskox on the same part of the island is not used.

South Ellesmere Island: This island is ● lso hunted by residents of Grise Fiord. Muskox populat ion on the island is ● sthted to be ●pproxktely 1,120. Hunting occurs in two zones on the island, but quota is seldom filled due to the inaccessibility of the hunting ● rou.

The meat harvested is mainly used for subsistence, but some is sold in Frobisher Bay. Hides, heads end horns are used for handcrafts snd souvenirs and sold locally or in Resolute.

Muskox have boon observed on other islands in the region, with the largest number of sightings on Axel Heiberg, North Ellesmere and Melville Islands, but little or no hunting ● ctivity occurs in these areas.

3.1.3.1.2 Muskox in the Inuvik Region:

Banks Island: This island supports about 35 percent of Canada's known muskox population. A quota of 2,000 animals bee been ● smbl-ished, but, to dete, only ● bout 500 animals per year have been taken.

ULU Foods in Inuvik is run by the Inuvialuit Development Corporation and sells various cuts of muskox meat to the restaurant trade within and outside the N.W.T. Commercial harvest programs ● re run In ● four-party cooperative management ● greant between Inuvialuit Development Corporation, the Inuvialuit Game Council, Sachs Harbour Hunters ● nd Trappers Association and the Government of the Northwest Territories. Sport hunts have been held successfully since 1979.

3.1.3.1.3 Muskox in the Kitikmeot Region:

Victoria Island: The most-tod muskox population on Victoria Island is 12,160 animals. Residents of Holman hunt the animals on a quote basis to provide meat and sleeping robes. Hides and heads are also sold to local barge crews. Sport hunting accounts for a small part of the quota, as doss hunting from outpost camps at Kuuk River and Minto.

Residents of Cambridge Bay hunt on a quota basis to the north of the settlement. Local hunters and the HTA sell the hides and heads, or they may be shipped to taxidermists.

Quota for an additional hunting area near Hadley Bay is not utilized due to the remoteness and inaccessibility of the zone.

Prince of Wales Island: The population of muskox on this island is estimated to be 1,100 animals. The settlements of Resolute and Spence Bay have harvest quotes. Resolute utilizes a portion of its quote, while Spence Bay uses none due to the remoteness of the area. Meat harvested is used for subsistence or sold in Igloolik. Son hides may be sold.

Queen Maud Gulf: The 8,500 muskox in this area are accessed by residents of five communities and one outpost camp.

Residents of Cambridge Bay sell hides and heads locally or export them to taxidermists in the south through the Bunters and Trappers Association or through individual hunters. Horns may b. tamed and sold locally; meat is used for subsistence.

In Gjoa Haven, muskoxen are used entirely for subsistence, with hides being utilized for sleeping robes.

Baker Lake residents use animals primarily *for* subsistence. Hides are seldom sold and heads may be displayed as trophies by the hunters.

Perry Island residents use muskox meat *for* subsistence *end* ship hides end heads to the Cambridge Bay Hunters and Trappers Association for sale .

Thelon Game Sanctuary: The sanctuary was established to protect a small number of animals believed to be one of the last remnants of the mainland Population. The population *of* about 600 animals in this area is protected.

Thelon East: Population of muskox in this area is estimated at 300 animals which are hunted by the residents of Baker Lake.

Central Mainland: This area has approximately 1,000 to 1, S00 caribou which are hunted on a quota basis by *residents of* Bathurst Inlet end Bay Chimo . Meat is used for subsistence; hides end heads may be sent to Cambridge Bay Hunters and Trappers Association *for.* sale. Some hides are used for sleeping robs.

Great Bear North: An estimated population Of about *4,* 500 animals is found in the area and caribou hunted by quota by residents of Paulatuk end Coppermine.

Fifty percent of the Paulatuk quota is reserved for sport hunting. Hides, heads end horns are sold locally and meat is used for subsis - tence or cold in Inuvik. Sport hunting 1s likely to increase in this area.

Coppermine quota is usually fully utilized *for* subsistence hunting. 20

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20 (Regional Summaries) Urquhart, pp. 11-33

3.1.3.2 Summary: Table 3.9 Outlines Regional quota utilization and *product* movement.

Based on the regional analysis, only 34 percent of available commercial quota is being utilized with significant surplus quota● vailablo in the Inuvik Region on Banks Island. This *region* ● ppears to be the most promising area *for* the development *of* ● commercial muskox ● nterprise, depending on costs involved and market available.

Table 3.9

Regional Quota Utilization And Product Movement

Region	Quota	Utilization	Surplus	Product Movement
Bsf f in	47	38	9	Host meat consumed locally for subsistence. Some intra-regional sales o f meatfrom Grise Fiord to Frobisher Bay, ● nd Resolute to Igloolik.
Inuvik	2,072	S32	1.540	Some consumed locally. Meatfrom organized hunts by Sachs Harbour HTA moves to the S ouch through Inuvik. son quota is used for sport hunting.
Kitikmeot	388	265	123	Meat is used for subsis-tence. Some quota is used *for sports* hunting.
Keewatin	32	32	Q	Meat is used for subsis - tence.
Total	2,539	867	1,672	

The harvest activities that● re currently carried out ● nd costs involved will be described in *Section 3.2. Costs of Production".

3.1.4 Bison

Bison are the largest terrestrial mammals in North America. They can measure up to 6 ft. at the shoulder and weigh *over 2,000* lbs. The

animals have a wooly undercoat covered by long guard hairs. Bison roam in herds end may make seasonal migrations depending on the vaildility of forage.

There are two subspecies of bison in the B.W.T., the wood bison snd the plains bison. For clarity, each till be discussed separately.

3.1.4.1 Wood Bison: Wood bison (Bison bison athabasca) ro deemed an "endangered" species by the Northwest Territories Act, the Committee on the Status of Endangered Wildlife in Canada end the Red Data Book *of the* International Union for the Consolation of Nature and Natural Resources. The Mackenzie wood bison herd is the largest herd of wood bison in the world, with population estimated to be 1,206 animals in 1984.[21] It is *stkted* that the Mackenzie Bison Sanctuary could *support population* of 7,100 animals, and conservative management plen 1s in place to assure continued s1ou herd growth towards this population.

Population growth will be moderated through harvest program end transplant program in en attempt to stablish additional horde. It is expected that the target population for the Mackenzie Bison Sanctuary of 7,100 n18sls may be reached by 1992.

The initial harvest of animals was scheduled for the fall of 1987 when 20 bulls were to be harvested. The target harvest *for* 1988 was set at 40 animals. These hunts would llov valuation *of the* impact of hunting on the herd without disturbing its productivity. Future limited harvests would be set t rates necessary to maintain population at the desired level.

Hunting would be restricted to *specific* season, with GHL holders and local residents receiving tags based on recommendation by the

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21 Bison Management Plan, p. 13

local Hunters' and Trappers' Association for the former, and by a drsw for the latter.[22]

3.1.4.2 Plains Bison: In 1906, the Canadian Government imported 709 plains bison from the U.S.A. in an attupt to re-establish the species in Canada. When relocated to the Wood Buffalo National Park, these animals interbred with resident wood bison to produce hybrid bison. Herds of hybrid bison now exist in Wood Buffalo National Park and the Slave River Lowlands. Diseases such as brucellosis, tuberculosis and anthrax have plagued the herds. Population of the Wood Buffalo Park herd appears to be stable at 3,000 to 4,000 animals, but the Sieve River herds are declining and their future appears bleak.

3.1.4.3 Bison Farming Potential: A 1987 study conducted for the Fort Smith Hunters & Trappers Association[23] undertook a detailed analysis of the financial feasibility of a bison ranch in the Slave River Lowlands. The study looked at site selection, herd productivity assessment, and the design and costing of an optimum scale ranch. Detailed financial and risk analyses were also undertaken to determine the overall commercial feasibility of the ranch.

The conclusion of the report was that although sow difficulties and constraints exist, a commercial scale ranch in the Slave River Lowlands is an economically viable enterprise. This project has not proceeded to date, and it is unknown whoa an economically feasible bison farm may be established in the N.W.T. in the future.

3.1.5 Reindeer

Reindeer (Rangifer tarandus) are a domesticated variety of caribou although they are slightly smaller. Reindeer measure up to 43 inches at the shoulder and weigh up to 225 lb. Reindeer are now considered

22 Ibid, pp. 8-17

23 Ruitenbeek, H. Jack, et al.

totally domesticated and● rc ● - ily herded and handled. They are valued *for* their meat, hides ● nd antlers.

Very little information is ● vai18blo on the N.W.T. reindeer industry. The N.W. T. industry has boon directed through the ● fforts of ● private company which is currently selling *off the* herd to Alberta and B.C. Details provided in this section● re based on a single interview. 24

3.1.5. 1 Background: Canadian Reindeer Company Ltd. was● s-blished in 1961 to slaughter and market reindeer raised in ths N.W. T. Reindeer were introduced to the N.W.T. in 1934 because *of* the lack of caribou in the Inuvik region. This herd vu ● cquired from Alaska with breeding stock originating in Russia and Scandinavia. The herd was managed by the government until 1973 when it was sold to Canadian Reindeer Ltd.

The company was successful in marketing its product at a profit. The most recent slaughter was conducted in the *winter of* 1985. A portable slaughter facility was employed under the direction of Agriculture Canada meat inspectors. 'The animals (approximately 3,000 " in recent years) were corralled, *slaughtered,* gutted and halved on location. The carcasses were ● llowed to ● ir-freeze and then were trucked hanging to the Federally- inspected Lambco plant in Innisfail, Alberta whore they were *further* processed and wholesaled. with the construction of the Dempster highway, trucking costs were cons idered very inexpensive , ● t $.07/lb. in ● refrigerated van, to Innisfail. The freight cost is said to compare to that for ● herd located within 1S0' to 200 miles of ● processing plant because there is very little a lternative back-haul ● vailable to truckers returning to Edmonton or Calgary from Inuvik.

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24 Personal communication with Mr. Doug Billingsley, Manager, Canadian Reindeer Company.

The product wholesaled for $4.70/lb. in hanging fore, and typically retailed for $7.00 to $9.00/lb. through Woodwards Stores in Alberta. It also sold in the food service sector in Alberta and central Canada.

3.1.5.2 Current Situation: As mentioned earlier, the last reindeer slaughter occurred in 1985. The ongoing negotiations to settle native land claims have included *northern* land *claims* containing the Reindeer Grazing Reserve. As a result, Mr. Billingsley indicated that ". . . there is no way to carry on now. . . the government gave the reserve away twice". When Canadian Reindeer Company set up their portable facility and attempted slaughter in 1985, the ". . . natives threaten to serve notice for using the land, hoping to collapse the company". Because slaughter under such conditions is no longer deemed possible, the company is now selling *off the* herd to British Columbia and Alberta interests. The company is confident that demand exists for the meat and the purchasers will be *successful* in their ventures.

'If indeed all of the reindeer from the Inuvik region are sold to outside interests, the only remaining reindeer in the N.W.T. will be those located on Belcher Island as a result of a transplant of 63 reindeer in 1978. Mr. Billingsley estimated the population of this herd to now be 700 to 800. However, he is highly skeptical *of* the *economics of* commercially harvesting this herd which would require air freighting meat to southern markets. He believes that only the returns from selling antlers (valued at $20 to $50/lb.) can warrant such expense.

3.1.5.3 Opportunities in the Reindeer Industry: Based on a discussion with the manager *of* the Canadian Reindeer Company, it was indicated that reindeer harvesting in the N.W.T. was a *profitable* enterprise up to the time the land claim conflicts arose. Their approach to accessing markets through an Alberta-based Federally inspected outlet and utilizing low-cost back-hauls apparently worked

extremely well. Although the reindeer are not considered to be true "country *food" of* the N.W.T. because they are not indigenous, the southern markets still demand such products. Currently, such product is being supplied primarily from New Zealand. It may indeed be profitable for the Alberta and B.C. buyers to develop this resource.

The market outlook for rod game meat is discussed separately in a later section.

3.2 Costs *of* Production

This section summarizes previous research on production costs for game and estimates current costs of production for caribou and muskox. Reindeer costs cannot be estimated because the information is kept confidential by the Canadian Reindeer Company. Wood bison are not expected to be slaughtered commercially in the *foreseeable* future and no plains bison are yet produced in the N. W. T., thereby rendering such analysis premature.

3.2.1 Background

Very little information has been collected in the past regarding costs involved in hunting country foods. Most country *foods* which are sold commercially are gathered in conjunction with subsistence hunting and/or commercial trapping and most hunters involved in country food production do not have definite ideas of the cost to them of obtaining the products. Results *of* previous studies are outlined below, and current production cost estimates are outlined in the nut section.

A study issued by the Baffin Region Inuit Association as reported in the Northern Food Costs - Draft #1 report surveyed hunting costs for the *month of* May 1983 in the communities *of* Hall Beach and Pangnirtung. The report stated:

> 'Hunters in Hall Beach reported spending a total of $S,17S. 1S in May, $4,371.20 on operating costs and $803.95 on capital expenditures. . . Each person who hunted pur-

chased mean of 24.6 . . . gal. (116 1.) of gas, 0.92 . . . 1. of 011 and 1.03 . . . boxes Of ammunition. This cost mean of $65.20 *for* gas, $1.61 *for* oil and $17.10 for ammunition. Additionally, hunters spent a mean of $38 on snowmobile parts. The average spent on all operating costs was $121.

Pangnirtung hunters reported spending $6,851.04 in May, a mean of $208 per hunter on operating costs... Each hunter reported spending a mean *of* $118 on gas, $15 on oil, $33 on ammunition, $37 on snowmobile parts, end $3.70 on naptha.[25]

It was indicated that these costs cannot be extrapolatod to an annual cost since May does not represent the period of heaviest harvest *or the* time *of* most difficult harvest. The figures indicated make no allovancs for capital purchases such as snowmobiles or wages.[26]

A 1976 study by Nowak Is also *referenced* by Northern Food Costs. This study looked at hunting costs in Alaska for seven species and indicated a total annual cost figure of U.S. $2,788 *or* $4.12 per edible kg *of* meat and fish. Costs varied by species from $1.60 per kg for tomcod to $7.90 per kg for ptarmigan. The Northern Food Costs report indicated that taking exchsnga rates, inflation and other *factors* into consideration, the Canadian cost would likely have been approxktely $6,000 *for the* same harvest in 1984. This would mean an average cost of $8.90 Cdn. per edible kg.

ProductIon cost of country *foods vu* indicated by an analysis entitled Man and Caribou: The Economics Of Naskapi Hunting in Northeastern Quebec (1982). The Naskapi of Schefferville hunt caribou to supply the community with meat and raw materials for crafts. Some hunting in the area is undertaken by individuals, but a considerable amount of the local hunt takes place under the Naskapi Hunter Support Program. Under this program, a grant is made available which is administered by the Naskapi Hunter Support Program Committee. The committee distributes the money based on hunters'

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25 Northern Food Costs, p.12

26 Ibid, p. 13

Table 3.10

Hunting Statistics and Acquisition Cost of Traditional Food

Alaska: 1976 (U.S. $)

Particulars	Total	Seals	Reindeer	Salmon	Tomcod	Geese	Ducks	Ptarmi
Shells used	247	36	16	-	-	30		
	1 2 0 2 3							
Days of Hunting	123	21	10	14	30	16	16	16
Number of Trips	4 s	3	2	1	30	4	4	4
Animal Nos.	1,270	6	4	250	900	25	60	25
Total Weight (kg.)	906	2s2	182	170	314	45	81	36
Edible Meat (kg.)	674	130	160	145	97	40	72	30
COST (U.S.A. $):								
1. Capital								
Weapons	130	24	24		-	3 4	3 4	34
Boats[1]	746	219		89 219	-	73	73	73
Snowmobiles[1]	631	36S		131 .	105	9	9	9
Nets[1]	4	0 -	-	40	-	-	-	-
Sub-total	1,567	611	244	259	105	116	116	116
2. Recurring								
Repairs	17s	30	25	30	5	15	15	15
Permit	80	-	s o		- .	.	-	
Ammunition	122	16	7	-	-	33	33	33
Line, Baits	3	0	-	- -	30			
Fuel	804	18s	119	266	15	7;	7;	73
Sub-total	1,211	2s1	231	316	30	121	121	121
3. Total Cost	2,7SS	S62	475	575	155	237	237	237
Cost per Edible kg. (U.S. $)	4.32	6.63	2.97	3.97	1.60	5.93	3.29	7.90

[1] Economic life 4 years.

Source: Northern Food Costs, Appendix X, Table 21.

● pplications to purchase hunting ● quip-nt, provisions *for* hunting parties, garb ● nd transportation to the hunting fields. Hunters are ● lso paid ● per diem for time spent hunting.

Hunts are usually ● fthor day - long hunts by individuals, teams or family groups, or ● xtended hunts to more distant locations averaging one week in duration. Additional hunts are undertaken by individuals using their own resources end for their own *benefit.* The *hunts* typically occur in August and in ● arly September, December, March sad April. Most *of the* wildlife harvest has been derived from team hunts to remote locations. Carcasses (all parts *of* the animals ore utilized) ● re transported back to Schefferville. Carcasses ● re then cut up and distributed among households in the community.

Records were ●vailable documenting 41 hunts end the maj or expenses involved. The 41 hunts involved 36 hunters in 907 man-days *of* hunting ● nd yielded 42, 445 lb. of ● diblo meat, *of* which 93.5 pert.nt was caribou. It wes indicated thet weighted means for ● ll recorded hunts indicate ● delivered price of $1.97 per lb. end en average dolly return of 47.45 lb. per man-day.

The yield obtained by ● ach hunter ● ppeared to vary substantially end vu not always related *to* ● *xpenditure on* hunting. It is possible that low yields were partly due to the different 1ovs1s of experience *of* hunters, end some could *benefit from a* training program.

The ● uthor commented thst the dote & not reflect private hunting ● ctivities which might show higher productivity (lover cost per lb.). However, the program hunts could ● lso prove more productive then private hunts since capitol restrictions ● re not ● problem. The results shoved great variation between months which indicate that consolidating of fort in certain months could be beneficial. 27

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27 Meredith, pp. 40-42

Data from *the* Game Management Division N.W.T. (1973-75) outlined costs *for* organized caribou hunts. The results showed costs f rom $0.1S per lb. for hunts in the Aklavik region, $0.22 to $0.37 per lb. in the Yellowknife region and up to $0.51 per lb. in the Spence Bay region. It was indicated that these e stimates do not include ● ll costs, and should be considered rough ● st-tes only. 28

As these examples illustrate, there is great variation in costs involved in obtaining country *foods.* There is ● lso a lack *of* published information ● dequetoly itemizing these costs. The next section outlines ● vsrago cost estimates *for* the two species which are considered co have the greatest commercial potential.

3.2.2 Current Cost of Production Estimates

This section outlines cost of production estimates for caribou end muskox . Information used in these estimates was obtained through interviews with HTA representatives end industry end government staff.[29]

3.2.2.1 Caribou Hunting Costs: It is estimated that there are a pproximately 12,000 ● c~~-'''-i~-r~ - in the N.W.T. who could be involved in harvesting commercial tags. [30] & outlined in Table 3.5, harvest volume for 198S was ● sttitod ● t 56, 6S2 to 57, 2S2 animals. Most of this harvest was for subsistence use, with only ● smell portion sold commercially.

Hunting practices vuy from community to community end depend upon ● variety of factors such as the location of the animals relative to

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28 Arctic, pp. 116-117

29 Processing costs have been estimated to the degree possible. ULU Foods in Inuvik is the only slaughter/processor that has been in business for several years. Kal's Country Foods in Rankin Inlet end Central Arctic Meat ● t Cambridge Bay ● e both recent ● ntries into meat processing.

3° Department *of* Renewable Resources.

the community, *facilities* ● vailablo in the community, commercial quotas ●vaileblo and potential commercial markets.[31] Most hunting activity is for subsistence purposes. Hunting *of* commercial tags 1s usually done in conjunction with subsistence hunting and/or comercial trapping. The ● xcoption to this would *b.* organized hunts, often organized by the HTA, set up specifically to harvest commercial tags.

Subsistence hunting is usually undertaken on day hunts if the location of the herd permits. Overnight or longer hunts may also occur. Day hunts●ro feasible if animals are located within ●pproxi - mately 100 miles of the community. Greater distances then this require overnight or ● xtanded hunting trips. Day hunts are generally undertaken by individuals or pairs *of* hunters travelling by snowmobile . Skilled hunters ●ro usually successful in harvesting en average of seven caribou per trip which would be the capacity *of the* snowmobile toboggan.

Organized hunts are generally several days in length end often involve flying to more isolated hunt ing● rees if insufficient caribou are located within ground travel distance. These hunts are often set up by the local HTA. Some of the organized hunts are community hunts *end* meat harvested is distributed to members of the community, especially to those who are unable to hunt for themselves. Air costs *for these* hunts is generally subsidized by the C. N.W.T.

Some commercial hunts are organized by HTA's. The HTA's of ton pay each hunter per day plus ●portion of the take end the HTA sells the meat ● ithor in the local community or outside.

The costs involved in hunting caribou *for* commercial purposes include fixed costs for"' snowmobiles, rifles, sleds end tents, as well as variable costs such es gasoline, oil end ammunition, repairs end maintenance. Since most commercial hunting is done in conjunction

31 Renewable Resource Officers end HTA representative interviews.

With other activities (subsistence hunting and/or commercial trapping) costs must be ● llocatod ● ppropriately. Table 3.11 outlines typical total fixed and annual fixed costs incurred by hunters in the N.W.T.

Table 3.11
Fixed Costs For Hunting, 1987-88

Fixed Costs	Capital Cost	Economic Life (Years)	Annual Cost
. snowmobile	$5,000	3	$1,667
. sled	700	10	70
. rifle	800	7	114
. miscellaneous (tent, stove, ● tc.)	500	5	100
Cost	$7,000		$1,951

Hunters who harvest commercial animals ● re generally ● lready involved in hunting for subsistence purposes and/or in commercial trapping end would not need to purchase additional ● quipment in order to harvest commercial animals. The cost of this equipment must therefore be spread over the ● *ntire* period of use. Subsistence hunting occurs year round, and the rifle and miscellaneous items would be available for use during the ● ntire year. The cost of these items is calculated on ● per diem basis ● t ● pproxktely $0.60 per day ([$114.00 + 100] ÷ 365 days). The snowmobile and sled are usable only during the winter (approximately seven months) and the *cost of* these items is *therefore* ● pproxhtely $8.30 per day ([$1,667 + 70] ÷ 210 days). Fixed costs to the hunter therefore teal $8.90 *per* day.

Typical prices of variable items ● re outlined in the Table 3.12. The total cost *of these* items till vary depending on the type of hunt undertaken.

Table 3.12

Variable Costs For Hunting, 1987-88

Variable Costs

. gasoline	$3.40/gal ($0.75/l)
. oil	$5.10/quart ($4.50/l)
. repairs and maintenance (3 bolts, 2 sets of plugs Annually)	$125.00/year
. shells	$25.00/box (24)
. miscellaneous (supplies, etc.)	$s.00/day/man

The above costs are used as the basis for estimating production costs for typical types of hunts undertaken. The two most common types of hunts undertaken are day hunts by individuals and organized group hunts to fly-in locations.

Costs involved for individuals on day hunts are outlined in Table 3.13 and are subject to the following assumptions.

- Each hunting trip (one day) would yield on average seven caribou.
- Each one-day trip would require 5-15 gallons (23-68 litres) of gasoline with average use of 10 gallons per trip.

The total cost for the one day hunt was estimated to be $74.84. Assuming an advantage take of seven animals per day, the cost per kill is therefore $10.69, or approximately $0.11 per lb. of meat produced (caribou dress out about 100 lb. per animal). It should be noted that the above estimate includes cash costs. Any return to the hunter for time involved would be in addition to this cost and appears to be adequate. Each caribou would sell for about $125.00 (100 lb. X $1.25/lb.) and cash costs of $10.69 would indicate a return of about $114.00 per animal to the hunter or $798.00 per day if he were to sell all seven animals. However, this does not mean that a hunter is able to sustain such production and daily income for the whole season.

Table 3.13

Cost For A One Day Hunting Trip, 1987-88

Costs

Fixed Costs (1 day X $8. 30/day)	
. snowmobile, sled, riffle, miscellaneous items	$8.30
Variable Costs	
. gasoline (lo gal. x $3.60/gal.)	34.00
. oil (40:1 mixture; 1 quart x $5.10/quart)	5.10
. repairs snd maintenance ($125 .00/year t 210 days)	0.60
. shells (7 ● n-is x 3 shells/ani.ul x $1.04/shell)	21.64
. miscellaneous	5.00
Total Cost Per Day Hunt	$74.84

IfAny of the costs involved in ● xtondod fly-in group hunts ●re ● quivalsnt to those involved in day hunts since the hunters ●re using the same ● quip=nt, and tin which would not otherwise be involved in hunting ● ctivitioa. The main ● dditional cost would b. for ● ir transportation.

Costs ● stktod *for* an organized hunt are outlined in Table 3.14 snd are based on the following assumptions:

- ● party of *four* would include two hunters snd two skinners.
- ● ach hunter would harvest an ●vorato of 7 animals psr dsy.
- air costs ●ro based on ● Twin *Otter* plane flying 60 miles into the hunting *ground;* two trips transporting men snd ● quipment and two trips transporting the harvested a nimals.
- approximately 70 animals could be harvested by ths *four* men in 4-6 days (including trsnsportstion, cup set up snd *knock.* down time).
- minimal food supplies would be required since the hunters live mainly from the land.
- ● ach hunter would us. ● pproximately 10 gallons of gasoline per dsy.

Table 3.14

Cost For A Five Day Hunting Trip, 1987-88

Costs (5 Day Hunt)

Fixed Costs (5 days x 2 hunters x $8.30/day)	$ 83.00
Variable Costs:	
. Air transportation ($700.00 per trip x 4 trips)	2,800.00
. gasoline (10 gal. X $3.40/gal. X 2 machines x 5 days)	340.00
. oil (50:1 mixture: 1 quart x $5.10/quart x 2 machines x 5 days)	51.00
. repairs and maintenance ($125.00/yr. ÷ 210 dsys X 2 machines X 5 days)	6.00
. shells (70 animals x 3 shells/animal X $1.04/shell)	218.40
. miscellaneous ($5.00/day x 5 days x 4 men)	100.00
Total Cost Per 5 Day Hunt	$3,598.40

The total cost of the hunting trip was estimated to be $3,598.40. The cost *per* animal harvested is therefore $51.41, or approx-tely $0. S1 per lb. of meat produced (70 animals at 100 lb. *per* animal). Again, this includes cash costs only, and any return to the two hunters snd two skinners for tin involved would be in addition to this cost. If the entiro- harvest wore sold, returns would be approxtitoly $8,7S0.00 (70 animals x $125.00/anisAfter cash costs, the returns to the four men would be $1,288.00 each ([s8,750.00 - $3,598.40] ÷ *4)* or about *$258.00 per* day.

Commercial Potential: As outlined in Table 3.2, the current commer - cial quota for barren-ground caribou is 4,200 animals. The initial intent of establishing commercial tags was to provide a means for hunters throughout the N.W.T. to earn supplemental income by selling some of their harvest. Commercial tags are often made available to those who could *benefit most* from supplemental income. Quotas were established hued upon biological considerations such as herd size snd rate of increase so that harvesting could occur without disturbing the natural equilibrium in the herd.

As outlined previously, the maximum quote ● vailablo for country food sales is limited to 4,200 animals. Table 3.4 indicates that ●bout 168 commercial tags have been used *for sports* hunting. If we assume this 10V81 *of* sports hunting will cent-, the ● vailablo maximum quantities of caribou would be:

3,43232 animals or ● pproxl.mataly 343,200 lbs. *of* meat which could be sold commercially either inside or outside the *N.* W.T.

600 animals or ●pprox-tsly 60,000 lbs. *of* meat which could b. commercially marketed only within the N.W. T.

Commercial quotas were distributed among the communities ● nd HTA's throughout the Territories. Quotas ● llmted to ● ach community or HTA very but ●ro generally a limited number *of* animals (20-100) are allocated to each community. 'l'his distribution of quotas makes the ● stablishment of viable commercial sales *of* caribou difficult because larger ● n-l numbers are needed than ●ro currently ● vailable in any community in order to set up an organized slaughtering, storage, transportation and marketing system.

Many communities do not currently utilize any of their commercial tags because the herds ●ro located too distant frog the community to make harvesting *feasible.* Reallocation of commercial tags to communities located in a position to ● fficiently harvest larger numbers of caribou would ● id in the expansion *of* commercial sales of caribou. Such ●reallocation might, however, not be socially or politically a cceptable.

Additional constraints are ● lso placed on the feasibility of selling caribou commercially due to difficulties of inspection requirements. Meat cannot be ● xported from the N.W. T. without Federal inspection by Agriculture Canada. Retail stores within the N. V. T., ● nd non-native consumers ●s well, are showing concern regarding purchase of uninspected meat.[33] Therefore, inspection of caribou ● ppears to be ●

32 Calculated u (2,950 + 650) - 168-3,432.

33 Webber, p. 22

necessity in order to ● stablish significant levels of commercial Sales . It is unlikely that Federal inspection of caribou kills could b. ● ccomplished satisfactorily due to timing ● nd logistical problems ● ssociated with the slaughter.

3.2.2.2 Muskox Hunting Costs: Muskox are currently *hunted for* subsistence use end *for* commercial sale. Commercial hunting has boon undertaken through organized group hunts. These hunts have taken place on a large scale on Banks Island, where muskox ● ro abundant. The Island supports about 35 percent of Canada's muskox population end herd size has been estimated ● t 19,328 ± 25 percent (1980).[34] The commercial quota for the Island is 2,000 animals end, es previously stated (Table 3.8), an ● verage of 500 ● nMls per year hsve been harvested over the past three years.

The hunts were organized by the Sachs Harbour HTA in conjunction with ULU Foods of Inuvik. The slaughter *of* animals is organized to meet Federal inspection requirements and two hunts have been conducted' under Federal inspection and the meat was ● xported from *the N.V.I. by* ULU *Foods.*

The location of the hunt varies depending on movement of the muskox. Some hunts have been set up within *forty* miles of Sachs Harbour, while others may require travelling distances of more then 100 miles. The number of ● n-is in ● particular location end the experience from previous hunts ● re important in deciding where the next hunt till take place.

The HTA has been paid $1.2S per lb. for meat harvested. The hunters supply their own food ● nd transportation by snowmobile to the hunting site. All other costs were covered by the purchaser ● nd included project direction and supervision, field supervision end meat inspection, transportation, equipment, supplies end ● erial survey.

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[34] Urquhart, p. 19

Hunts have involved harvests of about 200 animals and it was indicated that the goal of the next hunt is to harvest 400 animals. Between 15 and 20 HTA members or. typically involved in a hunt. Each individual has specialized responsibilities including herders, skinners, gutters, splitters and camp coordinators. A professional butcher and skinner have also been involved in the past and have trained the HTA members in slaughter techniques to meet Federal inspection standards.

A camp and portable abattoir are set up near the herd. The site is generally on a frozen lake so an adequate supply of water for the abattoir is available.

The muskox travel in herds and, unlike caribou, can be herded so a controlled slaughter can take place. The *herders* travel by snowmobile and round up the muskox *to* bring them back to the corrals. The muskox can be herded *for UP to* fifteen miles which can take up to ten hours. The animals are then rested in the corrals for eight hours *before the* slaughter begins. About 30 - 50 animals can be slaughtered per day.

The carcasses are halved and some are deboned and cut up, but" not into retail cuts. The meat is then flown out to Inuvik and on to a Federally approved facility outside the N. W. T.

Approximate costs involved in the 1985 hunt which supplied meat to Expo '86 are outlined below:[35]

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35 ULU Foods statistics.

Table 3.15

Muskox Hunting Costs

Management (Fees and Expenses)	
Project Director	$ 13,510.00
Field **Supervisor**	4,500.00
Skinning **Foreman**	2,200.00
Accommodation	962.60
Meat Inspectors	536.50
	23,709.10
Transportation to **Inuvik**	38,261.67
Purchase of Meat from HTA (27,675 lbs. @ $1.25/lb.)	34,593.75
Equipment (Purchase and Rental)	9,580.46
Supplies	18,632.36
Aerial Survey	06.00
	102,094.24
Total Expenses	$125,803.34

Total costs **of the** hunt **were** therefore $125,803.34 or $4.55 per lb. ($125,803.34 ÷ 27,675 lb.) to **Inuvik.** It should be noted that $1.25 per pound paid to the hunters **is** in the sue range u the price **paid** for caribou. The previous analysis showed thet this price adequately covers all the **cash** costs involved in caribou hunting plus en **allowance** ***for the*** hunters' **time.** **It** is therefore **assumed that,** at this price, the **muskox** hunters are also adequately **compensated** for their time and costs. If the hunt want es planned, 27,67S lbs. could be **harvested** in about 5 days plus 2 days ***for*** travel **and camp setup/takedown.** **Each HTA** ***member*** involved would receive $2,326.25 ($34,S93.75 ÷ 15 persons) **which would amount** to **$332.00/day** ***for the*** 7 **days** the **HTA members** were involved. **The annual income** that **a member could** receive would depend **on the number** ***of*** **hunts** he is involved in. **Most** of the additiorul costs are incurred to provide ***for*** Federal inspection ***of the*** meat so that it **can be** sold outside the **N.W.T.**

Commercial Potential: As previously stated (Table 3.8), the current **commercial** quota ***for*** **muskox** ***is*** 2,539 **animals,** of which 867 were utilized in 1987. Commercial quota are fairly **small** (2-110 **animals)** on **a** per community basis. It **was also** indicated **that** over half of

13 Meat Inspection and Handling

13.1 Inspection Procedures

For meat to be legally exported *for* sale from the Northwest Territories, it must be 'Federally inspected'.[36] Federally inspected, as the term applies to game not in captivity, differs somewhat *from* the typical interpretation *of* inspection that would apply to domestic animals.37 However, certain roles must still be adhered to.

A "ante mortem" (pro-slaughter) inspection *of the* animal is not required although the "post *mortem*" inspection must be completed immediately after slaughter while the meat is warm. The Agriculture Canada inspectors who have observed reindeer and muskox slaughters in the past have made an effort to visually assess general herd health and ensure that only fit-looking animals were slaughtered *for* meat. The only such involvement *of Agriculture* Canada *to* date *in* the N.W.T. has been with Canadian Reindeer Company and IJLU Foods, both of Inuvik Region.

If slaughter *of* muskox (and previously reindeer) takes place near a suitable processing facility which is equipped with water and Ring. The animal Is gutted, skinned end halved or quartered at the site. The meat is hung to freeze and is then netted and plastic wrapped for flight or trucking south. The meat must be *transferred*

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36 Personal discussion with Drs. C. H. Spencer end M.N.B. Nan, Agriculture Canada, Food Production end Inspection Branch, Ottawa.

37 Recent amendments to the Meat Inspection Act have served to differentiate gems from domestically raised animals to "...exempt meat products derived from wild muskox, caribou and reindeer that are moved into interprovincial trade from the requirement that they be prepared in a registered establishment". (p. 1315, Canada Gazette Part II, Vol. 120, No. 7).

to ● federally-approvod[38] storage or processingfacility if it is to be sold in southern Canada. Some such muskox 1s being hold by Capital Packers in Edmonton as no Federally-approved processing facility is located on Banks Island or at Inuvik currently.

Meat sold within the territories does not require Federal inspection. There appears to be concern by stores and consumers towards purchasing uninspected product es indicated by the Country Food Marketing Survey - Iqaluit.[39] Because no territorial regulations ●re in place, the only other regulatory departments ●ro Health and Welfare and Consumer & Corporate Affairs whose standards are said to generally *focus* only on the retail level. This leads to the next section.

3.3 2 The Future of Meat Inspection in the N.W.T.

The subject *of* meat inspection has been in the *forefront of* discussion for several years. At the close *of the* Northern Food *Conference* held in February 1987, a recommendation was made that:

> "...the Federal end Territorial governments ● stablish ● uniform, consistent end reasonable set of quality control s tandards, in cooperation with industry representatives. 'The legislation and regulations should address harvesting, processing, inspection and packaging issues.
>
> The inspection services should be ● dministered ● nd be available on ● regional basis.
>
> All policies, standards and regulations should be compiled in one *reference* volume so that current end prospective participants in the food industry can be ● ssured that they have ● ll the relevant background information."[40]

This same recommendation was ● cheed ● t the Producers' Workshop on the Northern Foods Industry in February, 1988.

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38 To ship product to the EEC, ● n EEC-approved facility would hsve to be used.

39 Webber, p. 22

40 Northern Food Conference - Proceedings, p. 4, Section IV

The Government of the Northwest Territories is taking action on this issue by commissioning a study on meat inspection this spring. The study will address the key issues of Territorial/Federal standards, location/accessibility of inspectors, and other issues pertinent to game slaughter and processing standards.

3.4 Chapter Summary

Four main species of game animals var. evaluated for commercial country food potential. Two species, caribou and muskox, show the best potential at the present time. Muskox has been harvested through organized slaughters which meet Federal inspection requirements and shows the best potential for export outside the N.W.T. It is unlikely that slaughter of caribou could meet these requirements, so commercial sales of caribou would be restricted to the N.W.T. at the present time.

Table 3.16 gives a summary of expected volumes and returns which could be expected from the commercial sale of game.

Table 3.16

Summary Statistics For Game Meat

	Muskox	Caribou
-Reduction (lbs.)	300,000	403,200
Price per lb.	$1.25	$1.25
Estimated Returns	$375,000	$504,000

4.0 FRESHWATER FISHERIES

4.1 Background

The Northwest Territories freshwater fishing industry is comprised of three sectors: 1) domestic (or subsistence) fishing; 2) commercial fisheries; and 3) sport fishing. All three sectors have played an important role In development of the Territory.

Domestic fishing has been important ss a source of protein for the population of the N.W.T. and represents a traditional lifestyle of native northerners. It refers to the catching of fish for personal consumption of rid not for sale. Although in recent years there has been a decline in domestic harvests, they still equal or exceed commercial production in some areas. The decline in domestic harvests has been attributed to the change from dog sleds to snowmobiles and the move many fishermen have taken into other industries such as oil and mining. In terms of resource allocation, domestic subsistence fishing is still given priority over the commercial and sport fisheries. The only limits placed on domestic fishing are conservation requirements.

Fish stocks in excess of domestic requirements are allotted to the commercial and sport fisheries. Sport and commercial fishing have both developed in more recent years, in concert with improved access and transportation into the Territories. The first fishing lodge was built in 1951 at Talthelei Narrows on Crest Slave Lake. Today there are approximately 48 fishing lodges situated throughout the N.W.T. The majority are lake trout (Salvelinus namaycush) lodges that are concentrated in the Great Slave Lake and Great Bear Lsks areas and in inland lakes north of the Manitoba border. Arctic char (Salvelinus alpinus) sport fishing along the Arctic coastal areas is also increasing in importance. Angler license sales have also increased steadily since their introduction in 1951.

The commercial fisheries ro the third sector of the N.W. T. fishing indus try. Commercial fishing dates back to 1945 with the opening of the Great Slave Lake fishery (a chronology of important events in the history of commercial freshwater fishing in the N.V.I. is found in Table 4.1). The early years of this fishery saw rapid expansion; by 1949, 4.5 million kg of lake trout and whitefish (Coregonus Clupeaformis) were harvested, making it the largest producer of these fish in North America.

The next major development in the N.W.T. commercial fisheries came in 1961 with efforts directed at the inland lakes and coastal char fisheries. Three factors led to this development: 1) a need to decrease fishing pressure on Great Slave Lake where fish populations were declining; 2) increased market potential for whitefish due to a decline in production from Lake Winnipeg and the Great Lakes; and 3) depressed economic conditions in the Keewatin district due to closure of the Rankin Inlet Nickel Mine. Over the next ten years, over 140 water bodies were fished. Attempts were also made to exploit the Mackenzie Delta's huge potential.

Since the early 1970s, production and areas fished have declined" substantially in the N.W.T. commercial fisheries (excepting char fisheries), although the industry still contributes close to $2 million in export sales and employs over 100 people in primary production alone. Table 4.2 shows total N.W.T. harvests for five species from 1976 to 1985.[41] Total commercial harvests of the five species have declined from the levels of the late 1970s, although 198S indicates some recovery. It should be noted here that pickerel (walleye) is also hamested commercially, but is not dealt with in

41 1985 is the. most recent year of data availability. It should be noted that some inconsistencies were found with the harvest and quota data. Contact was made with Mr. Brian Wong and Mr. Gerald Yaremchuk of DFO to correct these inconsistencies. However, it would appear that some of the data may not be completely reliable. Caution must be exercised when using this data that appeazs throughout Chapter 4.0.

Table 4.1

Important Events in the History of Commercial Freshwater Fishing in the Northwest Territories

1945 . Great Slave Lake opened for commercial fishing

1946 . Kakisa Lake opened for commercial fishing

1967 . Department of Fisheries end Oceans opened its Hay River office

. Commercial char fishing started at Frobisher Bay

1948 . Talthelei Narrows on Great Slave Lake closed to commercial fishing

. Completion of Mackenzie Highway to Hey River caused expansion of the fishery

1949 . Peak production of 4.5 million kg of lake trout and whitefish taken from Great Slave Lake; this level hss never been equalled

19s0 . McLeod Bay closed to commercial fishing

. Great Slave Lake quota raised to 4 million kg of lake trout end whitefish

19s5 . First attempt made to commercially fish in the Mackenzie Mite Region of Fort McPherson

1960 . Cambridge Bay Char fishery started

1961 . Commercial fishing expanded to include numerous inland lakes

. S8811 fisheries started at Aklavik and Peel River

1964 . Peak production of approximately 45,500 kg taken from the Mackenzie Delta fisheries

1965 . Cannery started at Rankin Inlet

1969 . Freshwater Fish Marketing Corporation (F.F.M.C.) formed to act as the sole marketing agency for commercial production

. Pelly Bay fishery started

1970 . Commercial fishing of inland lakes peaked with over 30 lakes being fished

1972 . Groat Slave Lake ● *dvisory* committee ● stablishod

1974 . Nettilling Lake Char fishery started

. Complete east arm *of* Great Slave Lake closed to commercial fishing

1976 . Rankin Inlet cannery found to b. uneconomical ● nd closed

1981 . Government of the Northwest Territories provided price support *for* whitefish on Great Slave Lake

1985 . Arctic char test fisheries conducted at Steensby Inlet ● nd " Holman Island

. Commercial char fishery started ●t Chesterfield Inlet

. Fish processing plant constructed ●t Chesterfield Inlet

1986 . Arctic char test *fisheries* conducted ●t Duke *of* York Bay

. Test *fishery* ●t Steensby Inlet expanded to include weir operation

Source: Adapted from: "A History of Commercial Fishing in the Northwest Territories", G.N.V.I. Department *of* Economic Development and Tourism.

this report: Pickerel harvests have ● lso declined in recent years. Several reasons have been cited for the decline in freshwater fish harvests, including: heavy demands placed on the stocks from domestic, commercial ● nd sport fishing; high costs of production; and availability *of* employment in other resource sectors (oil and gas and mining).

Tables 4.3 and 4.4 show ●ten-year landed values trend for the N.W.T. *fisheries, by* major water body and by species. Values by major water bodies have not shown much increase, and have declined in some instances (even in nominal dollars). The same holds true when considering the individual species. The commercial fisheries industry has contributed $1.6 million to the N.W.T. economy in 1984 and 1985.

Currently, the coastal char fisheries, Croat Slave Lake and two walleye producing lakes (Kakiska and Tathlina) are the only major commercial fisheries in operation. Many smaller commercial fisheries exist, particularly along the Arctic coast for ansdrowus char. Many of these fisheries are only sporadic, with the lakes and rivers only opened to commercial fishing avary few years upon request. It is still believed, however, that the N.W.T. fisheries hold tremendous potential for commercial operations.

Table 4.2

Total Northwest Territories Commercial Harvests

1976-1985

('000 **kg. round weight)**

Year	White Fish[1]	Lake Trout	*Northern* Pike	Inconnu	*Arctic* Char	Total
1976	976	102.3	103	80	102	1,363.3
1977	1,293	118	118	91	165	1,785
1978	1,110.6	119	1s7	167	104	1,657.6
1979	1,111.3	13s	129	1s8	122	1,6S5.3
1980	1,270.7	13s. s	199,1	.72	106	1,783.3
1981	1,110	92,5	149	43.4	152	1,346.9
1982	1,142,1	83	166.3	23.3	136	1,s50.7
1983	844[2]	59.3	94.1	24	164	1,185.4
1984	961[3]	57	130	70	167	1,365
198S	1,004.4	113.2	134.2	75	129	1,475.8
1986[42]	N/A	R/A	N/A	u/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A

[1] Includes *lake* whitefish, broad whitefish end round whitefish.

[2] Includes lake trout *for* region II.

[3] Includes lake trout *for* region 11 and IV.

Note: Yearly totals are based on fiscal year timeframes.

Source: Tables 4.3 - 4.7.

42 According to Mr. C. Yaremchuk, DFO, Freshwater Institute, Winnipeg, data for 1986 and 1987 harvests and quotas will be available in July, 1988.

Table 4.3

Northwest Territories

Ten Year Landed Values Trend By Major Lakes

(values in nominal $000's)

Lake	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/8"
Great Slave	676	1,029	1,314	1,218	1,319	1,117	997	763	1,216	1,283	1,59:
Cambridge Bay	164	276	178	179	236	200	179	278	309	204	299
Rankin Inlet	o	50	37	44	112	113	102	29	40	89	112
Others	79	103	29	95	198	122	75	104	89	78	52
Total	919	1,457	1,538	1,536	1,86S	1,5S2	1,353	1,174	1.634	1,654	2,0S6

Source : DFO Annual Reports.

Table 4.4

Northwest Territories

Ten Year Landed Values Trend By Species

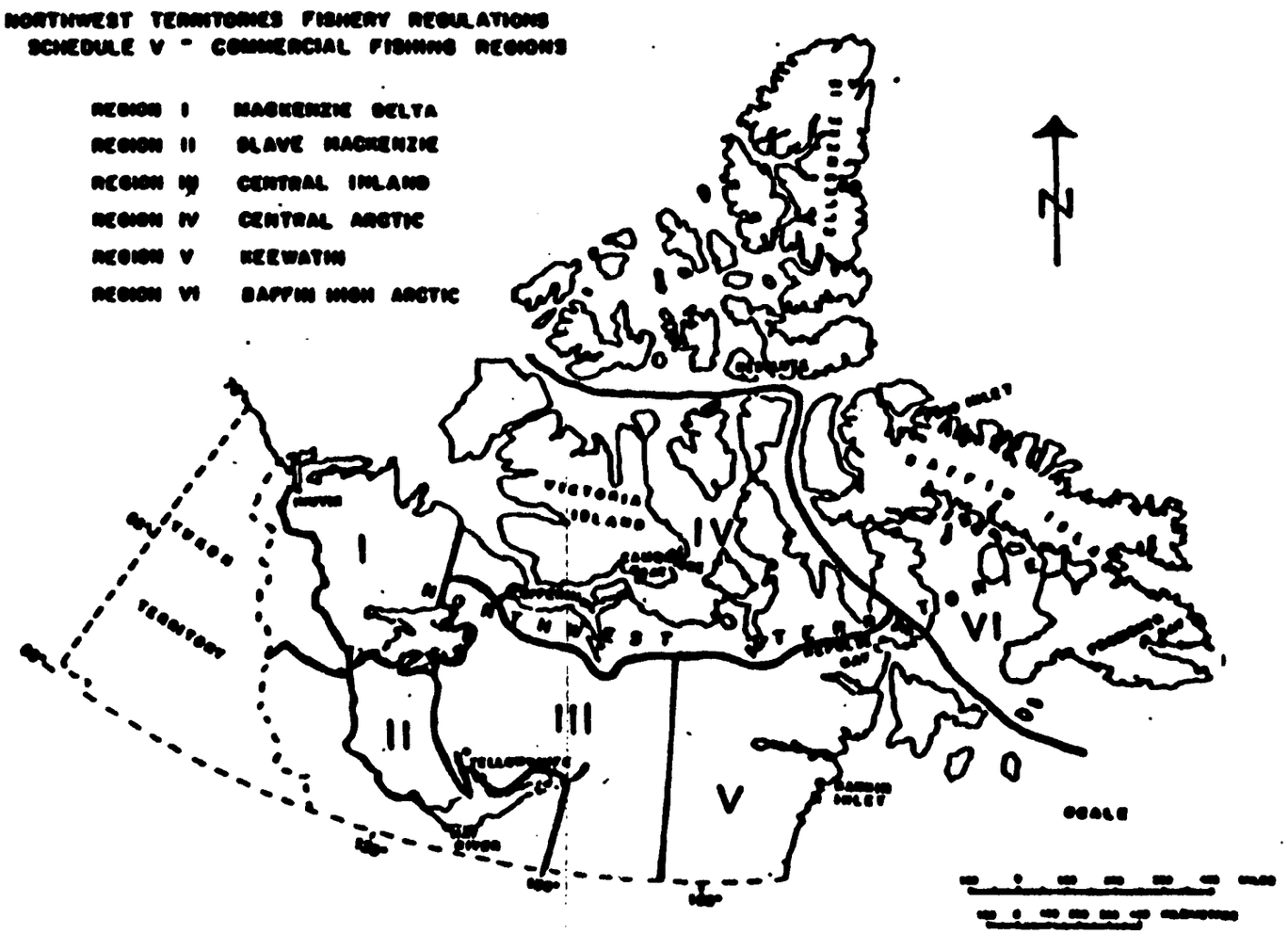
(values in nominal $000's)

Species	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87
Whitefish	592	874	1,070	%3	1,068	894	865	571	907	916	1,132
Lake Trout	23	31	72	62	85	76	57	88	76	116	112
Northern Pike	49	85	104	114	99	82	58	56	97	107	1s6
Arctic Char	186	397	239	265	417	313	281	307	380	320	411
Inconnu	19	27	52	6S	55	49	14	41	112	116	141
Others	0	6	0	0	0	0	0	0	0	0	104
Total	919	1,457	1,538	1,S36	1,865	1,552	1,3S3	1,174	1,6S4	1,6S4	2,056

Source: DFO Annual Reports.

Figure 5.1

Regions Used in Schedule V of the N.W.T. Fishery Regulations



Source: Department of Fisheries and Oceans

The fishery resources in the N.W. T. ●re managed by the Central ● nd Arctic Region of the Federal Department of Fisheries ● nd Oceans (DFO) . Resource assessment ● nd the setting of seasons ● nd quotas is done by the Fisheries ● nd Marine Mammals Management Division, situated ● t the Freshwater Institute in Winnipeg. For purposes of fisheries management, DFO divides the N.W.T. into six jurisdictions: Mackenzie Delta, Slave Mackenzie, Central Inland, Central Arctic, Keewatin ● nd Baffin High Arctic. These ●re illustrated in Figure 4.1. Schedule V of the Northwest Territories Fishery Regulations, which fall under the Federal Fisheries Act, lists quotas ● nd closed commercial seasons for the fisheries. Fishing seasons ●re opened for operation in response to public requests by the issuing of variation notices by the DFO Regional Director General. The variation notices state, by region, the water body, species, mesh size, dates of opening, and quotas. Quotas ● re revised by DFO personnel when needed and in response to changes in exploitation and production.

Fish may also be harvested commercially under test fishery permits, where provisional quotas are set for water bodies which are not listed on Schedule V. These water bodies ●re fished under supervision of the Government of the N.W.T. (G.N.W.T.) Wildlife Officers or DFO Fishery Officers. Biological samples ● re taken to ● ssess the fisheries potential. Field services staff of DFO ● lso collect information on total commercial harvests through surveys of fishermen end sales slips. The figures on total commercial harvests for the N.W.T. were derived from this database. While this database is the most comprehensive ●vailable, the accuracy of the statistics is variable, snd decreases with increasing ● ge. Son harvests have likely gone unreported. Therefore, the total commercial harvest figures contained in this report should be used with some caution. They ●re best used to look at the overall picture of commercial harvests in the N.W.T. ● nd identify trends in production.

4.2 Production Trends By Species

Tables 4.5 co 4.9 show commercial harvests of the five species by DFO regions. It should b. noted that these regions are established by DFO and do not correspond precisely to G.N.W.T. regions. There are similarities, however, and the rest of this chapter will refer to DFO regions.

Whitefish (Coregonus Clupeaforinis): Commercial harvests of whitefish are kst totally sourced from Region *11* (Table 4.5). There are small harvests in Regions I, III, IV and V as well. AS Table 4.5 shows, the majority of the harvests in Region II are exported out of the N.W.T.[43] In other regions, most of the whitefish harvest is sold locally.

Overall, except for a resurgence in 1985, whitefish harvests have declined substantially since 1980. It should be noted that there has been an excess of whitefish in recent years. A voluntary Whitefish Reduction Program was introduced in 1987. The Voluntary Reduction program was an attmt- to reduce the overall *whitefish* production by 25 percent (in FFMC's jurisdiction). This was accomplished by a guaranteed bonus to fishermen over and above the initial 8S percent payment. The outcome of the program was: 1) less production; 2) same (or close) return to fishermen as if they produced at high level but at lower price; and 3) FFMC reduced inventory and therefore carrying costs . Reductions in whitefish harvesting on Great Slave Lske will of course influence harvests of the other species for that water body.

Lake Trout (Salvelinus Namaycush): Lake trout harvests are also concentrated *in* Region 11 (Table 4.6). As with the whitefish, most

43 "Export" harvests refer to all volumes sold to FFMC, which are then exported out *of* the N.W.T. FFMC then sells the fish to various markets. 'Domestic" harvests *refer to* volumes of fish sold locally.

Commercial Harvest

("C

	I Mackenzie Delta			II Slave Mackenzie			III Central Inla	
	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic
1976	-	-	-	930	45	975	-	-
1977	-	-	-	1,293	·	1,293	-	-
1978	-	S	3	977	130	1,107	-	-
1979	-	12	12	1,099	·	1,099	-	-
1980	-	9	9	1,245	·	1,24s	16	-
1981	-	7	7	1,030	67	1,097	·	-
1982	-	.1	.1	1,121	18	1,139	3	-
1983	-	·	·	808[1]	'29	837	3	2
1984	-	·	·	954	6	960		·
1985	-	1	1	1,001	·	1,001	·	1
1986	-	N/A	N/A	1,315	N/A	WA	·	N/A
1987	WA	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: DFO "Commercial Harvests of Eight Fish Species From the Northwest
Figures for 1983 to 1985 derived from DFO Annual Reports.
FFMC records stored at DFO, Winnipeg. (Export figures).

[1] Includes some lake trout.

Note: Region VI (Baffin High Arctic) is not included as this region has no

Table 4.6

Commercial Harvests Of Lake Trout By Schedule V Regions

('000 kg. round weight)

	I Mackenzie Delta			II Slave Mackenzie			III Central Inland			IV Central Arctic			V Keewatin			Totals for All Regions		
	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total
1976	-	-	-	m	2	83	-	-	-	-	.3	.s	·	19	19	m	21.3	102.3
1977	-	-	-	113	-	113	-	-	-	2	3	5	·	·	·	11s	3	118
1978	-	-	-	119	-	119	-	-	-	·	·	·	·	·	·	119	·	119
1979	-	.4	.4	134	-	134	-	-	-	·	.s	.s	·	.1	.1	1s4	1	13s
1980	-	.3	.3	106	19	124	11	-	11	·	.2	.2	·	·	·	116	19.5	13s.s
1981	-	.S	.S	K	-	92	·	·	·	·	·	·	·	·	·	92	.S	92.5
1982	-	·	·	R	3	7s	8	-	8	·	·	·	·	·	·	80	3	83
1983	-	-	-	%	-	%	2	1	3	·	.3	.3	·	·	·	58	1.3	59.3
1984	-	-	-	53	4	57	·	·	·	·	·	·	·	·	·	53	4	57
1985	-	-	-	la	3	111	-	1	1	·	1	1	·	.2	.2	108	5.2	11s.2
1986	-	N/A	N/A	113	WA	N/A	·	N/A	WA	·	N/A	N/A	·	N/A	N/A	113	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	WA	WA	WA	N/A	N/A	WA	N/A	N/A	WA	WA	N/A	WA

Source: DFO "Commercial Harvests of Eight Fish Species From the Northwest Territories. 1945 to 1982".
Figures for 1983 to 1985 derived from DFO Annual Reports.
FFMC records stored at DFO, Winnipeg. (Export figures).

Note: Region VI (Baffin High Arctic) is not included as this region has not reported commercial fishing for Lake Trout.

Table 4.8

Commercial Harvests Of Inconnu By Schedule V Regions

('000 kg. round weight)

	I Mackenzie Delta			II Slave Mackenzie			Totals For All Regions		
	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total
1976	-	-	-	80	-	80	m	·	20
1977	-	-	-	91	-	91	91	·	91
1978	-	-	-	167	"	167	167	·	167
1979	-	5	5	130	23	15s	130	28	158
1980	·	2	2	70	-	70	70	2	72
1981	-	.4	.4	40	3	43	40	3.4	43.4
1982	·	.3	.s	18	5 2	3	18	5.3	23.3
1983	·	·	·	24	-	24	24	·	24
1984	·	·	·	7 0	" 7	0	70	-	70
1985	·	1	1	?4	-	74	74	1	75
1986	-	n/A	n/A	73	N/A	N/A	n	W/A	Ii/A
1987	N/A	N/A	#/A	N/A	N/A	N/A	N/A	n/A	N/A

Source: DFO "Commercial Harvests of Eight Fish Species From the Northwest Territories. 1945 to 1982".
Figures for 1983 to 1985 derived from DFO Annual Reports.
FFMC records stored at DFO, Winnipeg. (Export figures).

Note: Regions III (Central Inland), IV (Central Arctic), V (Keewatin), and VI (Baffin High Arctic) are not included as these regions have not reported commercial fisheries for inconnu.

Table 4.2

Commercial Harvests Of Arctic Char By Schedule V Regions

('000 kg. round weight)

	I Mackenzie Delta			IV Central Arctic			V Keewatin			VI Baffin High Arctic			Totals For All Regions		
	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total	Export	Domestic	Total
1976	-	-	-	46	4	50	.	39	39	"	1s	1s	46	56	102
1977	-	6	6	87	1	0 103	2	4 -	24	14	18	32	12s	40	165
1972	-	1	1	61	13	74	12	4	16	4	9	13	77	27	104
1979	-	s	5	66	8	74	12	12	24	-	19	19	78	44	122
IWO	-	11	11	61	3	64	25	-	25	6	-	6	92	14	106
1981	-	15	1s	46	17	6s	27	19	46	-	26	26	7s	77	1s2
1982	-	10	10	43	13	56	25	6	31	-	39	39	68	68	136
1983	•	41	41	47	30	77	5	21	26	-	20	20	52	112	164
1984	-	17	17	49	21	70	6	6	12	6	42	48	61	86	147
1985	-	-	-	43	9	52	19	18	37	6	34	40	68	61	129
1986	·	N/A	N/A	50	N/A	N/A	17	N/A	N/A	-	n/A	N/A	67	n/A	N/A
1987	N/A	N/A	N/A	U/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: DFO "Commercial Harvests of Eight Fish Species From the Northwest Territories. 1945 to 1982".
Figures for 1983 to 1985 derived from DFO Annual Reports.
FFAC records stored at DFO, Winnipeg. (Export figures).

Note: Regions II (Slave Mackenzie) and III (Central Inland) are not included as these regions have not reported commercial fisheries for Char.

of the lake trout is sold to FFMC and exported out of the N.W.T. There are minimal amounts of lake trout harvested and sold locally in the other regions.

Lake trout harvests have declined since 1980. The primary reason for this decline has been over fishing. This species of fish is very susceptible to exploitation. Because it is fished together with whitefish, maintaining populations has been a concern.

Northern Pike (Esox Lucius): Most of the commercial harvests of Northern Pike are taken from Region II, and the bulk of this volume is exported out of the N.W.T. The FFMC has established markets for Northern pike in Prince. This species is not favoured for consumption by N.W.T. residents because it is very bony and there is an abundance of other species.

Inconnu (Stenodus Leucichthys Nelma): Inconnu is also harvested primarily in Region II. This species has never been a large part of the N.V.I. freshwater fisheries. Harvests of inconnu have been quite variable from 1976 to 1985. This species has gained popularity in U.S.A. markets as a smoked product. Both Northern pike and inconnu are considered to be "incidental' catches to the whitefish and lake trout harvests.

Arctic Char (Salvelinus Alpinus): Arctic char has been harvested in four regions - 1, IV, V and VI. The char fisheries occur primarily along the coastal regions. The largest char fishery is found in the Cambridge Bay area in Region IV. It has been predicted that char harvests will develop in other Regions as interest in the fisheries is heightened. This will depend on stable/high prices and economically accessible stocks.

4.3 Production Trends By Region

Tables 4.10 to 4.15 show total commercial harvests versus quotas of the five species by region.[44] A comparison of quotas and harvests indicates the extent to which the resources are being utilized.

Region I: Region I has had quotas for whitefish, lake trout, Arctic char, Northern pike and inconnu at various times since 1976. Whitefish and lake trout represent the most abundant species. Table 4.10 indicates that all of these species have been grossly under-utilized in the years that quota has been assigned to them. From a strictly resource utilization viewpoint (ignoring economic constraints), it would appear that Region I shows great potential for commercial harvests of whitefish and lake trout.

Region II: Region II fisheries, of which Great Slave Lake comprises most of the total, have also been under-utilized. Quota in this Region is assigned to whitefish and lake trout jointly. The other species (Northern pike and inconnu) are harvested incidentally with the whitefish and lake trout harvests. Therefore, when the fishermen fill those quotas, fishing for the other species also ceases. Quotas for whitefish and lake trout have been fairly steady since 1979. The surplus has been increasing somewhat since 1980, however.

Region III: There are very few commercial fisheries in Region III, as indicated by Table 4.12. There would appear to be limited potential for commercial fisheries in this Region.

Region IV: Table 4.13 shows the commercial harvests and quotas for Region IV. Arctic char is the most abundantly harvested species in this area. These fisheries are located mainly along the coastal regions. There is a small amount of whitefish and lake trout

[44] The quotas used in this report are derived from the variation notices issued, and not directly from Schedule V.

Commercial

(N

('000

Year	Whitefish and Lake Trout			Arctic Char			Nor
	Harvest	Quota	Surplus	Harvest	Quota	Surplus	Harvest
1976	-	-	-	-	-	-	.
1977	.	119	119	6	33	27	.
1976	3	1s0	127	1	8	7	.
1979	12.4	108	95.6	5	8	3	.
1980	9.3	148	138.7	11	a	.	.
1981	7.5	44	%.5	15	8	.	.
1982	.	124	124	10	8	.	.
1983	-	386	386	41	-	.	.
1984	-	351	351	17	-	-	.
1985	-	10s.s	103.5	-	-	-	.2
1986	N/A	N/A	N/A	WA	H/A	N/A	WA
1987	N/A	N/A	N/A	WA	WA	WA	U/A

1 Quotas include test and commercial fisheries.

2 Quota includes turbot.

Note: Quotas for 1983 to 1985 listed under whitefish and lake trout, are tota
for whitefish and lake trout.

Source: DFO Annual Reports (1983 to 1985).
DFO "Commercial Harvests of Eight Fish Species from the N.W.T. 1965 t

Table 4.11

Commercial Harvests And Quotas[1]

For Region II

(Slave Mackenzie)

('000 kg. round weight)

Year	Whitefish and Lake Trout		
	Harvest	Quota	Surplus
1976	1,058	2,175	1,117
1977	1,406	1,941	535
1978	1,226	1,197	-
1979	1,233	1,680	447
1980	1,369	1,744	375
1981	1,189	1,719	530
1982	1,214	1,736	522
1983	893	1,636	743
1984	1,017	1,682	665
1985	1,112	1,682	570
1986	N/A	N/A	N/A
1987	N/A	N/A	N/A

[1] Test and commercial fisheries.

Source: DFO Annual Reports (1983 to 1985).
DFO "Commercial Harvests of Eight Fish Species From the N.W.T. 1%S to 1982".

Table 4.12

Commercial Harvests And Quotas[1]

For Region III

(Central Inland)

('000 kg. round weight)

Year	Whitefish and Lake Trout			Inconnu			Arctic Char			All Species		
	Harvest	Quota	Surplus	Harvest	Quota	Surplus	Harvest	Quota	Surplus	Harvest	Quota	Surplus
1976	-	-	-	.	.	.	.	.	.	.	.	.
1977	-	-	-	.	1	1	.	.	.	.	1	.
1978	-	-	-	.	.	.	.	.	.	.	.	.
1979	-	11	11	.	.	.	.	.	.	.	11	"
1980	27	154	127	.	.	.	.	.	.	.	1%	.
1981	.	121	-	.	.	.	.	9	9	.	130	"
1902	11	158	147	.	.	.	.	.	.	.	158	.
1983	8	.	.	.	.	.	.	.	.	.	81	.
1984	-	-	-	.	.	.	.	.	.	.	.	.
1985	2	"	-	.	.	.	.	.	.	.	.	.
1906	N/A	WA	N/A	N/A	N/A	N/A	#/A	N/A	n/A	WA	N/A	WA
1987	N/A	N/A	U/A	N/A	N/A	N/A	N/A	WA	N/A	N/A	N/A	n/A

[1] Includes test and commercial fisheries.

Source: DFO Annual Reports (1983 to 1985).
DFO "Commercial Harvests of Eight Fish Species in the N.W.T. 1945 to 1982".

Table 4.13

Commercial Harvests And Quotas[1]

For Region IV

(Central Arctic)

('000 kg. round weight)

Year	Whitefish and Lake Trout			Arctic Char			Total for All Species		
	Harvest	Quota	Surplus	Harvest	Quota	Surplus	Harvest	Quota	Surplus
1976	.3	-	-	so	·	·	50.3	-	·
1977	5	72	67	103	2S4	131	108	306	198
1970	.6	-	-	74	106	32	74.6	104	31.4
1979	.8	22	21.2	74	208	134	74.8	230	15S.2
1980	16.2	11	-	64	224	160	80.2	235	154.8
1921	6	18	12	65	143	7A	71	161	90
1982	-	16	16	56	102	46	56	118	62
1983	1.3	-	·	77	122[2]	45	78.3	122	43.7
1984	1	27	26	70	104	34	71	131	60
1985	1	7	6	52	106	%	53	113	60
1986	N/A	N/A	N/A	N/A	N/A	WA	WA	WA	WA
1987	WA	WA	WA	N/A	N/A	N/A	WA	WA	N/A

1 Includes test and commercial fisheries.

2 Includes some whitefish and lake trout.

Source: DFO Annual Reports (1983 to 1985).
DFO "Commercial Harvests of Eight Fish Species in the N.W.T. 1945 to 1982".

Table 4.14

Commercial Harvests And Quotas[1]

For Region V

(Keewatin)

('000 kg. round weight)

Year	Whitefish and Lake Trout			Arctic Char			Total for All Species		
	Harvest	Quota	Surplus	Harvest	Quota	Surplus	Harvest	Quota	Surplus
1976	20	-	-	39	-	-	59	-	-
1977	-	358	358	24	225	201	24	583	559
1978	-	31	31	16	141	125	16	172	156
1979	.1	35	34.9	24	135	111	24.1	170	145.9
1980	-	70	70	25	120	95	25	190	165
1981	-	27	27	46	117	71	46	144	98
1982	-	46	46	31	112	81	31	158	127
1983	-	-	-	26	157[2]	131	26	157	131
1984	-	-	-	12	136[2]	124	12	136	124
1985	.6	23	22.4	37	103	66	37.6	126	88.4
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1] Test and commercial fisheries.

[2] Includes some whitefish and lake trout.

Source: DFO Annual Reports (1983 to 1985).
DFO "Commercial Harvests of Eight Fish Species in the N.W.T. 1945 to 1982".

Table 4.15

Commercial Harvests And Quotas[1]

for Region VI

(Baffin High Arctic)

000 kg. round weight)

Year	Wh.fsh.sh and Lake Trout			Arctic Char			Total for All Species		
	Harvest	Quota	Surplus	Harvest	Quota	Surplus	Harvest	Quota	Surplus
1976	-	-	-	13	14	1	13	14	1
1977	-	2	2	32	190	158	32	192	160
1978	-	-	-	13	126	113	13	126	113
1979	-	-	-	194	105	86	19	105	86
1980	-	1	1	6	122	116	6	123	117
1981	-	23	23	26	114	88	26	137	111
1982	-	1	1	39	147	108	39	148	109
1983	-	-	-	20	40	20	20	40	20
1984	-	-	-	48	122	74	48	122	74
1985	-	-	-	40	-	-	40	-	-
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1] Includes commercial and test fisheries.

Source: DFO Annual Reports (1983 to 1985).
DFO "Commercial Harvests of Eight Fish Species in the N.W.T. 1945 to 1982".

harvesting as well. In the past few years, the char quotas have been harvested from 50 to 70 percent. There appears to be opportunity, then, to develop the commercial char fisheries. There has been heightened interest in developing these fisheries recently.

Region V: Region V commercial fisheries quota is also predominantly char. A small quota has been assigned annually to whitefish and lake trout as well. Most of the char quota has been unutilized, with small harvests sold locally. There would appear to be potential for further development of commercial char fisheries along the coast, although the remoteness of many quotas render economics and quality control difficult to manage. The whitefish and lake trout fisheries may also have some developmental potential, possibly for local sales.

Region VI: Region VI also shows under-utilization of char quotas. There are very few other freshwater species in abundance in this region. Some development work is currently underway for the char fisheries. For example, DFO is permitting, on a trial basis, lake frozen char to be sent to FFMC in Winnipeg for inspection and processing. It is hoped that this arrangement will assist in developing the char fisheries in Regions V and VI.

As the previous section indicates, the five fish species are commercially harvested mainly in two regions: Great Slave Lake and the coastal areas. The next sections highlight these fisheries.

4.4 Great Slave Lake

History: The Great Slave Lake commercial fishery was firmly established in the summer of 1945, when one fishing company set up operations on the lake. McInnes Products Corp. Ltd. moved its barge from Lake Athabasca onto Great Slave Lake and established a fish plant on the north shore, east of Yellowknife. For the next three years McInnes Products was the sole operator on the lake, as lack of road or rail access hindered further development of the industry. In

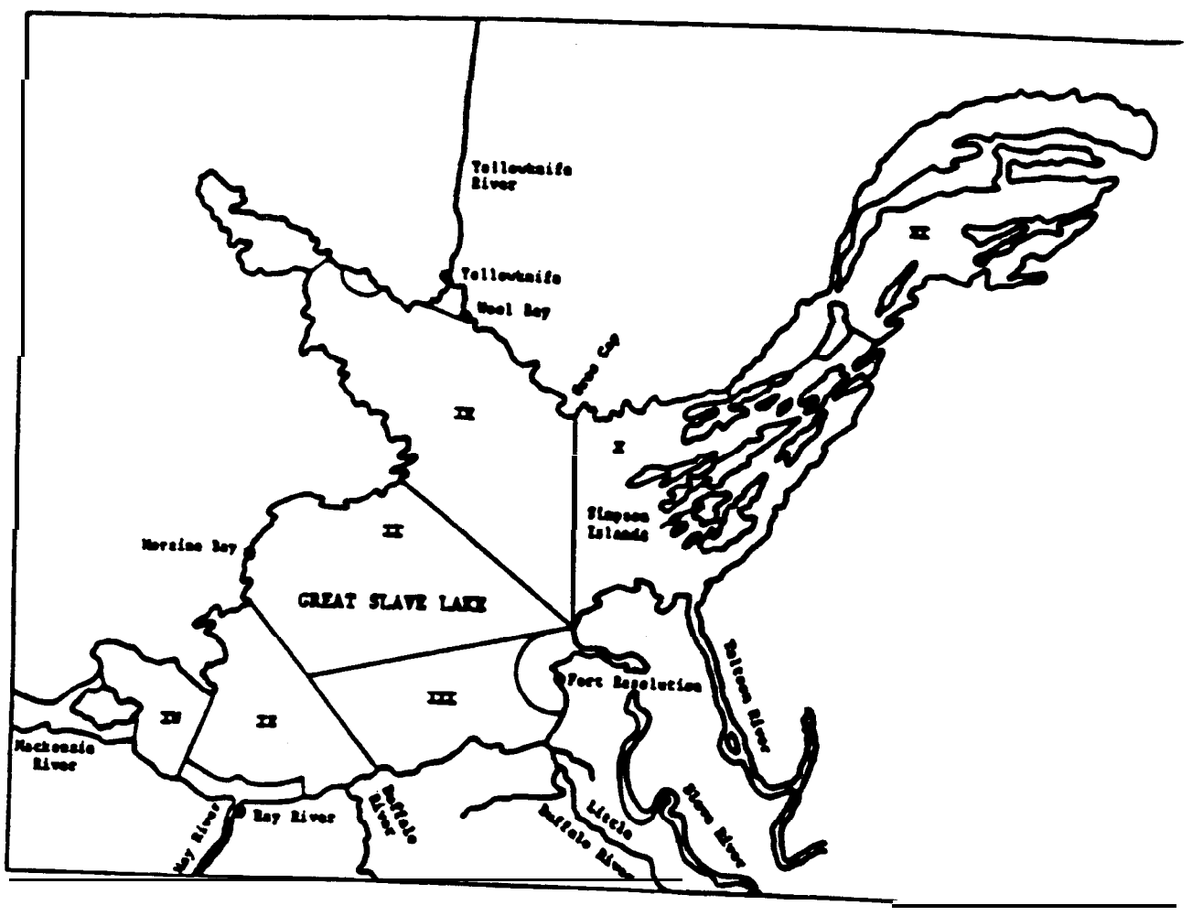
these early years, McInnes' production was primarily frozen lake trout and whitefish fillets which were shipped by barge up the Athabasca and Slave Rivers to the railhead at Waterways, Alberta.

In 1949, the lake was divided into four administrative regions to prevent localized over fishing. Some of these areas were eventually split into two (Figure 4.2). Each area is assigned its own portion of the total lake quota as determined in Schedule V.

In 1950, there were 249 licensed summer fishermen and 500 licensed winter *fishermen. From 1946 to 1950, the* Great Slave Lake fishery expanded rapidly. The 13 fish companies and buyers that were established and operating out of Hay River by this time were able to take advantage *of* lower transport costs brought about by completion *of* the Mackenzie Highway to Hay *River. These companies* also took advantage of the more profitable fresh fish market and established a winter fishery which *offered* prices *of up* to SO percent more than summer prices.

The Great Slave Lake fishery originally had a quota *of* 1.6 million kg of dressed lake trout and whitefish, as set by the Federal Department of Fisheries and Oceans. By 1950, this quota had increased to 4.5 million kg, and all of it was being harvested. This was the fishery's peak production, and it has declined steadily since. This is attributable partly to a decline in *fish* abundance, especially lake trout in the vest and. The overall catch *par* unit of fishing effort had also stabilized by the mid-1950s and has remained fairly steady since. This is due to the fact that it never became profitable to harvest the more remote areas *of* the lake, Therefore, the harvests of areas lying closest to Hay River have met the quotas, but the total lake quota has not been filled since 1949. By 1985, production on Great Slave Lake had reached 1.3 million kg. of the 1.7 million kg. quota.

Figure 4.2
Great Slave Lake Fishery



Great Slave Lake showing the Control Areas and locations of important commercial fishing activity.

Source: "A History of Commercial Fishing in the Northwest Territories." Government of the Northwest Territories.

Since 1979, Great Slave Lake fishermen have been licensed by DFO. The licensing policy introduced at that time restricts the number of operators to 26 Summer Class A (whitefish boats) and 80 Summer Class B (skiffs). For winter fisheries, 32 Winter Class A (Bombardier) and 30 Winter Class B (skidoo) certificates are allowed. New license applications are submitted to the DFO and are reviewed by the Great Slave Lake Advisory Committee.

Composition of the Great Slave Lake harvest has also changed substantially since 1945. Lake trout initially comprised 64 percent of the catch, with whitefish contributing 30 percent. Currently, whitefish represents 70 percent of the catch and lake trout, less than 10 percent. This shift has been attributed largely to a significant drop in the lake trout population.[45] Changes in market preferences, fishing locales and fishing methods have also contributed to this change in composition of the harvest.

Table 4.16 shows commercial harvests for Great Slave Lake from 1976 to 1985. Table 4.17 presents catch quotas for whitefish and lake trout.

Production Practices: The summer fishery on Great Slave Lake utilizes two main types of vessels: skiff and whitefish boats. Skiffs are open or partially decked boats, less than 24 feet in length, powered by an outboard motor and operated by one or two people. Canoes powered by outboard have also been classified as skiffs. The other type of vessel used - "whitefish" boat - is a type of gill net tug.

[45] Lake trout populations are extremely susceptible to exploitation and as such are more difficult to maintain in a water body that is fished regularly.

Table 4.16

Great Slave Lake Commercial Fisheries Harvest, 1976-1985

('000 kg. round weight)

Year	Whitefish	Lake Trout	Northern Pike	Inconnu	Total
1976	977	83	103	77	1,249
1977	1,175	108	119	87	1,499
1978	1,109	106	1S8	1s3	1,s39
1979	1,067	121	130	134	1,478
1980	1,180	122	200	6S	1,58S
1981	1,097	85	1s1	43	1,381
1982	1,124	81	138	18	**1,411**
1983	837[1]	.	129	.	966
1984	**1,331**[2]	57	130	47	**1,565**
1985	993	111	**154**	66	1,324
1986	**N/A**	**N/A**	**N/A**	N/A	N/A
1987	N/A	N/A	**N/A**	**N/A**	N/A

Source: North/South Consultants Inc. "Commercial Fisheries of the N.W.T.: An Historical Perspective" (1976 to 1982). DFO Annual Reports (1983 to 198S).

1 Includes lake trout.

2 Includes some lake trout.

Fishing gear includes: sinking gill nets, made of nylon; net lifters, depth gauges, two-way radios, and life boats. Mesh size and length of the gill nets are regulated by the Federal Department of Fisheries and Oceans.

The Great Slave Lake winter fishery employs two main types of vehicles: Bombardiers and Snowmobiles. The snowmobile is used in combination with a 'caboose-, or well-insulated shack on skids, that is towed from site to site.

Capture gear (gill nets) for the winter fishery is similar to that used in the summer fishery. Mechanical augers are used for drilling

bolos in the ice. A device called a "jigger" is used to run the nets under the ice.

Table 4.17

A Summary Of Total Catch Quotas Of Whitefish And Lake Trout For Great Slave Lake, Summer And Winter (1945-1986)

('000 kg. round weight)

Years	Total Quota
1945-1947	1,900.0
1948-1970	4,090.9
1971-1974	2,265.9
1975-1976	2,175.0
1977	1,545. s
1978	1,181.8
1979	1,613.6
1980	1,681.8
1981	1,681.8
1982	1,71S.8
1983	1,636.4
1984	1,681.9
1985	1,681.9
1986	N/A
1987	N/A

Source: North/South Consultants Inc. "Commercial Fisheries of the N. V. T.: An Historical Perspective".

Fishermen deliver their summer harvests to one of the three receiving stations on the lake: Simpson Island, Moraine Say and Wool Say. The fish are then transported by air to the FFMC plant at Nay River. Some harvests are delivered directly to the Hay River plant.

Costs of Production: Data on costs of production for the Great Slave Lake fishery are not readily available. Many fishermen keep accomts with the Freshwater Fish Marketing Corporation (FFMC) for supply purchases. These records are likely the most reliable ones for costs of production. However, these records were not made available to the consultant team. It is our understanding that Mr. Peter Thompson of the Freshwater Institute, Winnipeg, is currently engaged in con-

ducting an analysis of selected fishermen's records from the FFMC. This report, scheduled to be completed in late spring or early summer of 1988, will provide current costs of production data.

Two previous reports were obtained that discussed costs of production for the Great Slav. Lake fishery. "The Economic Performance of the Commercial Skiff Fishery in Western Canada" provided data for the Great Slave Lake and Kakiska Lake fisheries dating back to 1976-1977. This information is summarized in Appendix A. A Survey of the fishermen was conducted in 1978 and information was compiled into an economic analysis of the performance of the enterprises. The second source of data was the "Great Slave Lake Fishery Task Force". This information is presented in Tables 4.18 and 4.19. Selected fishermen's weekly statements of account and their estimates for 1982 and 1983 were used in the analysis. A comparison of the various estimates for costs of production is contained in Table 4.20.

From Tables 4.19 and 4.20, it would appear that in summer of 1983 and both winter fisheries, the fishermen were in a loss position. However, it must be remembered that the revenues include initial payments and N.W.T. subsidies, and not final payments. It should also be noted thst these records refer to an average for all species harvested. According to a DFO annual report, the fishermen were paid a total price of $0.9S per kg. (average of all species) for the 1983 summer harvest, FOB Hay River. This would put them in a profit picture. The range of prices for the species and sizes was $0.33 for headless jackfish to $1.75 for dressed headless pickerel. Total prices were not presented for the winter fisheries.

4.5 Coastal Char Fisheries

History: The Arctic char commercial fishery goes as far back as 1932 when 1,000 kg of the product were caught along the Keewatin coast and marketed. The fishing back then was done from a small, non-motorized #ailing vessel.

Great Slave Lake

Costs Of Prod

(

Total Fish Production (kg.)	Fuel and Oil	Maintenance and Repair	Camp Supplies	Wages and Benefits	Fishing Supplies	Fr
					Summer 1982	
138,353	9,664	4,302	18,915	34,981	3,336	1
Avg./kg.	$.07	$.03	$.14	$.25	$.02	
					Summer 1983	
168,356	15,383	6,624	19,798	47,404	4,143	2
Avg./kg.	$.09	$.04	$.12	$.28	$.02	
					Summer	
79,726	11,858	4,419	14,293	10,262	2,309	
Avg./kg.	$.15	$.06	$.18	$.13	$.03	
					Summer	
70,192	11,831	7,406	13,089	12,416	1,932	
Avg./kg.	$.17	8.11	$.19	$.18	$.03	

[1] Includes initial payment and N.W.T. subsidy. Note: Final payment not inc
The total N.W.T. subsidy for the five fishermen for 1983 was $33,437 ($.20
For skifts, it was $16,637 ($.24 per kg.)

Source: Great Slave Lake Task Force Report - Schedules of Operations For Sel

Table 4.19

Sleve Lake Winter Fisheries 1982-83 And 1983-84

Costs Of Production - Selected Fishermen

(simple averages)

Production (kg.)	Fuel and Oil	Maintenance and Repair	Camp Supplies	Wages and Benefits	Fishing Supplies	Freighting	Other Variable	Total Variable	Capital Cost	Interest Expense	Total Fixed	Total Costs	Total Revenue[1]
Winter 1982-83 (5 Cases)													
102,120	20,198	8,055	21,269	34,851	2,374	978	1,153	88,878	18,688	7,832	26,520	115,398	114,765
Avg./kg.	$.20	$.08	$.21	$.34	$.02	$.01	$.01	$ .87	$ .18	$ .08	$ .26	$1.13	$1.12
Winter 1983-84 (5 Cases)													
58,121	11,867	4,549	13,093	20,345	5,155	1,805	631	57,445	11,542	4,618	16,160	73,605	42,778
Avg./kg.	$.20	$.08	$.23	$ .35	$ .09	$ .03		99	20	08	28	27	08

[1] Includes initial payments and the N.W.T. subsidy. Note: Final payment not included. The total N.W.T. subsidy for 1982-83 for the five fishermen was 99,440 ($.09 per kg.). For 1983-84, it was $5,088 ($.09 per kg.).

Source: Great Sleve Lake Task Force Report - Schedules of Operations For Selected Fishermen, 1984.

Note: No distinction has been made in the original report as to Class A or B winter certificates.

Table 4.20

Comparison of Great Slave Lake Fishery

Costs of Production*

($/kg. nominal)

	Whitefish Boats	Skiffs	Bombardiers
1982	$0.81	$0.79	$1.13
1983	$0.94	$0.85	$1.27
1984	$0.98	$0.89	$1.33
1985	$1.03	$0.93	$1.39
1986	$1.10	$0.99	$1.48

Source: Tables 4.19 - 4.20 (for 1982 and 1983).
* Figures for 1984 to 1986 returns forthcoming in next report.

Figures for 1984 to 1986 were extrapolated using the Consumer Price Indices for Yellowknife.

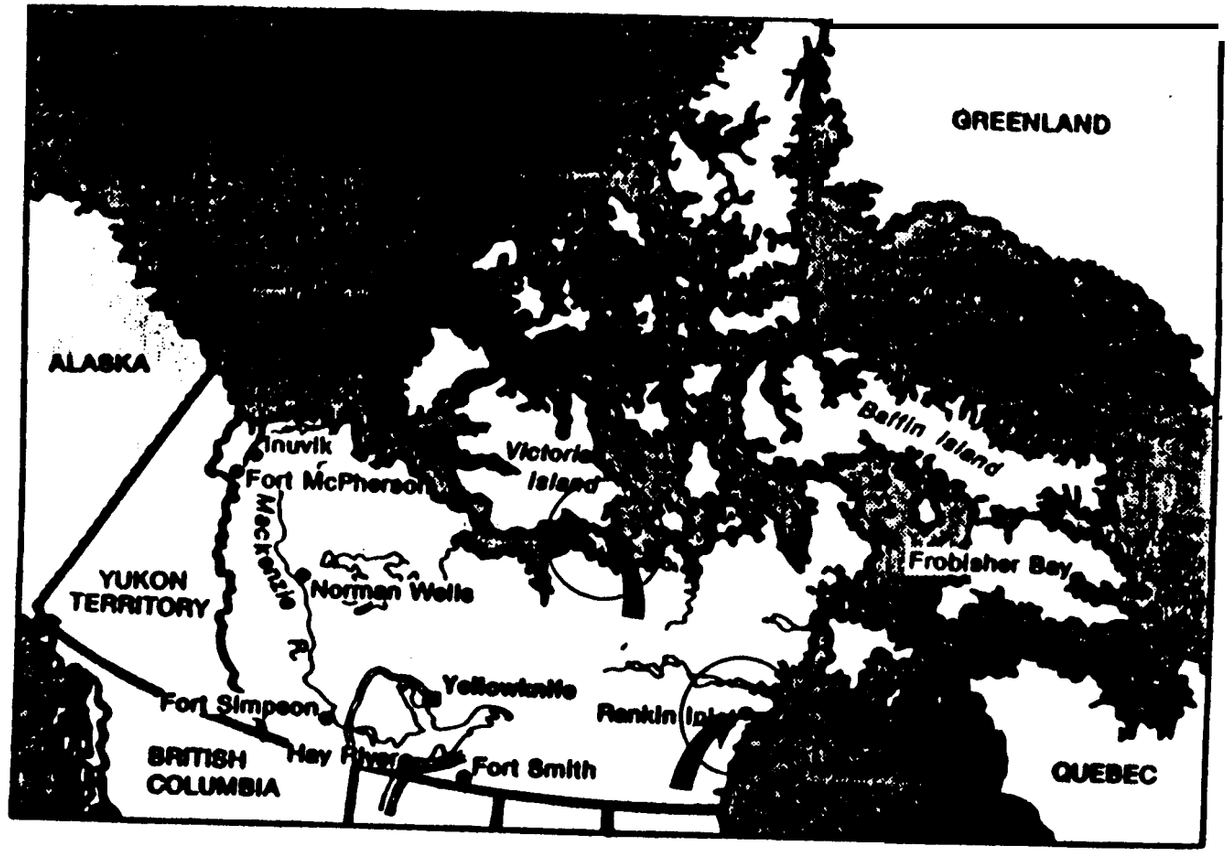
Another commercial fishery was started at Frobisher Bay in 1947, followed by ones at: Cambridge Bey (1960); Rankin Inlet (1961); Pelly Bay (1969); and Nettilling Lake (1974). The Rankin Inlet and Frobisher Bay *fisheries have since declined due to* over-fishing from domestic and sport as well as commercial operations. Figure 4.3 shows the main coastal char *fisheries.*

Currently, the char *fisheries* contribute *$300,000* to $400,000 in revenues annually. While the species represents a small amount of the total N.W.T. commercial fisheries in terms of volume, it accounts for *20 to 30* percent *of the* value.

The Cambridge Bay char fishery is now the most *successful* char operation in the N.W.T., marketing 55,000 kg annually. It has remained a viable operation due to the commitment by the community, the advantage of being able to use weirs for harvest, access *to* the fresh fish market, and sound management of the resource. The success of this operation has prompted the development of numerous other smaller fisheries in the coastal area. In the 1984-85 season, 8S sites harvested over 141,000 kg of landlocked and searun char.

Figure ⊂.3

Coastal Char Fisheries



Locations of areas commercia ly fished in the Artic coastal areas.

Source: North/South Consultants Inc. Comme cial Fisheries of the N.W.T.: An Historical Perspective."

Production Practices: Most of the char harvested is taken with standard sinking gill nets, with the exception of the Cambridge Bay fishery which uses weirs (or fish fences). Weirs are not yet recognized as legal fishing gear, although this gear has been under test recently by DFO at Cambridge Bay. It is expected that the gear will soon become an accepted practice.

Table 4.21
Commercial Harvests Of The Arctic Coastal Fishery
1976-1984
(kg. round weight)

Year	Searun Arctic Char	Mixed	Total
1976	80,438	·	80,438
1977	138,094	4,163	142,257
1978	107,809	·	107,809
1979	103,349	·	103,789
1980	105,465	·	10S,465
1981	102,563	·	102,563
1982	8S ,646	·	8S ,646
1983	84,748	·	84,748
1984	143,329	·	143,329

Source: North/South Consultants Inc. "Commercial Fisheries of the N.U.T.: An Historical Perspective".

The use of weirs has several advantages, including: higher quality fish without gill net marks; decreased spoilage rate; lower cost; allowance for the selection of marketable fish sizes; and allowance for proper assessment and monitoring of fish populations. These improvements mean the char will likely be able to capture more of the southern fresh fish market. Weirs have the potential to capture and subsequently destroy 100 percent of the migrating population. Therefore, strict management guidelines and conditions on the portion of the river allowed to be trapped will have to be developed before weirs can be used widely for commercial operations.

There are two major char processing plants located at Rankin Inlet, Cambridge Bay and Chesterfield Inlet. The Cambridge Bay plant, which is the largest, processes char from Coppermine, Pony Bay, Spence Bay, Gjoa Haven and Cambridge Bay. The char is caught, gutted, hung on gill racks, blast frozen, graded by size, packaged in cardboard containers and distributed. Export sales are transported to Winnipeg via Edmonton. Local sales are retailed by the plant or shipped to other areas of the N.W.T.

Two processing boats are also registered for use in the N.W.T. - a weir boat located in the Duke of York Bay and a longliner at Whale Cove.

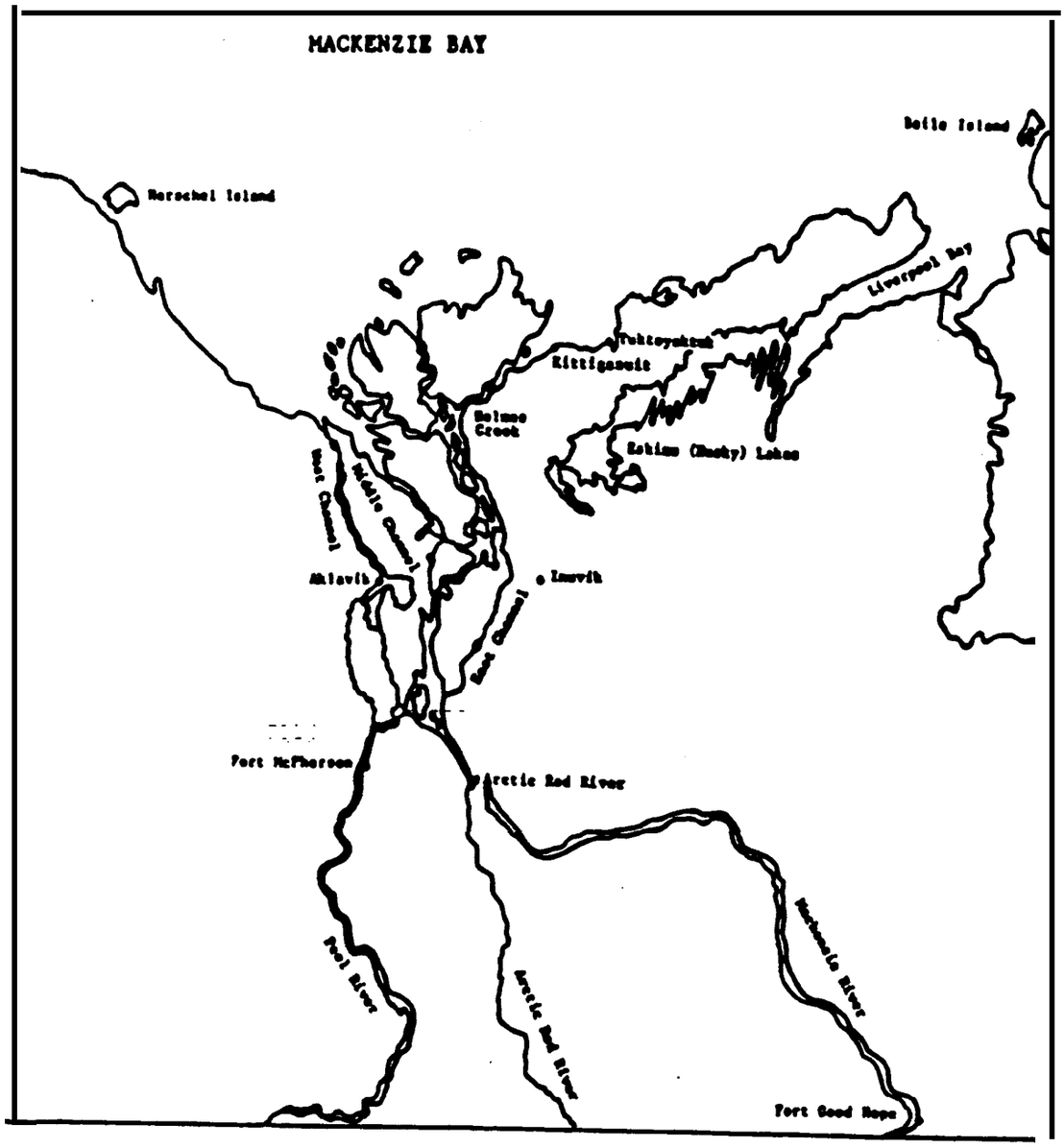
Costs of Production: A written request was made on March 1 to the Arctic Co-ops Ltd. for costs-of-production data for the Cambridge Bay Co-op, the largest char fishery in the N.W.T. As at March 30, nothing had been received.

4.6 Mackenzie River Delta

History: The Mackenzie Delta region contains many interconnected lakes and channels covering almost 13,000 sq. km. and consisting of approximately 75 percent water. Whitefish, cisco, char and inconnu are fairly abundant in the region. Figure 4.4 shows the Mackenzie River Delta fisheries areas. There appears to be great potential in this area, but to date establishment of a commercial fishery has had limited success.

Commercial fishing can be traced back to the mid-1950's and early 1960's, when whitefish were harvested at Kittigazuit, Peel River and sites on the West Channel. Henries Fish Co., the only private company to attempt fishing in the area, operated a whitefish and Arctic char fishery in 1965 and 1966. A major fishing effort was also undertaken at Holmes Creek between 1972 and 1974. The various attempts at commercial fisheries in the Mackenzie River Delta area

Figure 4.4
Mackenzie River Delta Fishery



Locations of fished commercially fished in the Mackenzie River area.

Source: "A History of Commercial Fishing in the Northwest Territories." Government of the Northwest Territories.

failed due to: high production and transportation costs, recurring freezer breakdowns, and inadequate processing facilities, Unfavourable economics and declining local interest prompted the territorial government to shift its emphasis to domestic fishing and commercial fishing only for the local market in 1972.

Here recently, the potential for a Pacific herring fishery that would sell salt-cured roe into the Japanese market has been explored. Progress to date has been mixed.

Table 4.22

Commercial Harvests of The Mackenzie Delta Area

1970-1980

(kg. round weight)

Year	Whitefish*	Arctic Char	Inconnu	Others	Mixed	Total
1970						
1971						
1972	1,715					1,715
1973	22,273			409		22,682
1974	1s,909	-				15,909
1975						
1976	16,145					16,145
1977	523					523
1978	2,727	1,136				3,863
1979	6,198	639	2, 37s		182	9,758
1980	9,04s	4,723	2,388		3,4s9	19,615

* Includes broad whitefish and lake whitefish.

Source : North/South Consultants Inc. "Commercial Fisheries of the H.U.T.: An Historical Perspective".

Production Practices: In the early 1960s, the Mackenzie Delta fisheries were largely government-sponsored and utilized mobile barge mounted freezers for processing and storage. These freezers were a source of many setbacks, in the early fisheries. The Henries Fish Co., operating in the 1960s, used a collector boat to gather fish

from the various fishing sites in 196S. The next season, an aircraft was utilised for fish collection but this was found to be a very costly method.

Small fishing boats and gill nets similar to those used elsewhere in the N.W.T. have been used in the Region.

4.7 Inland Lakes

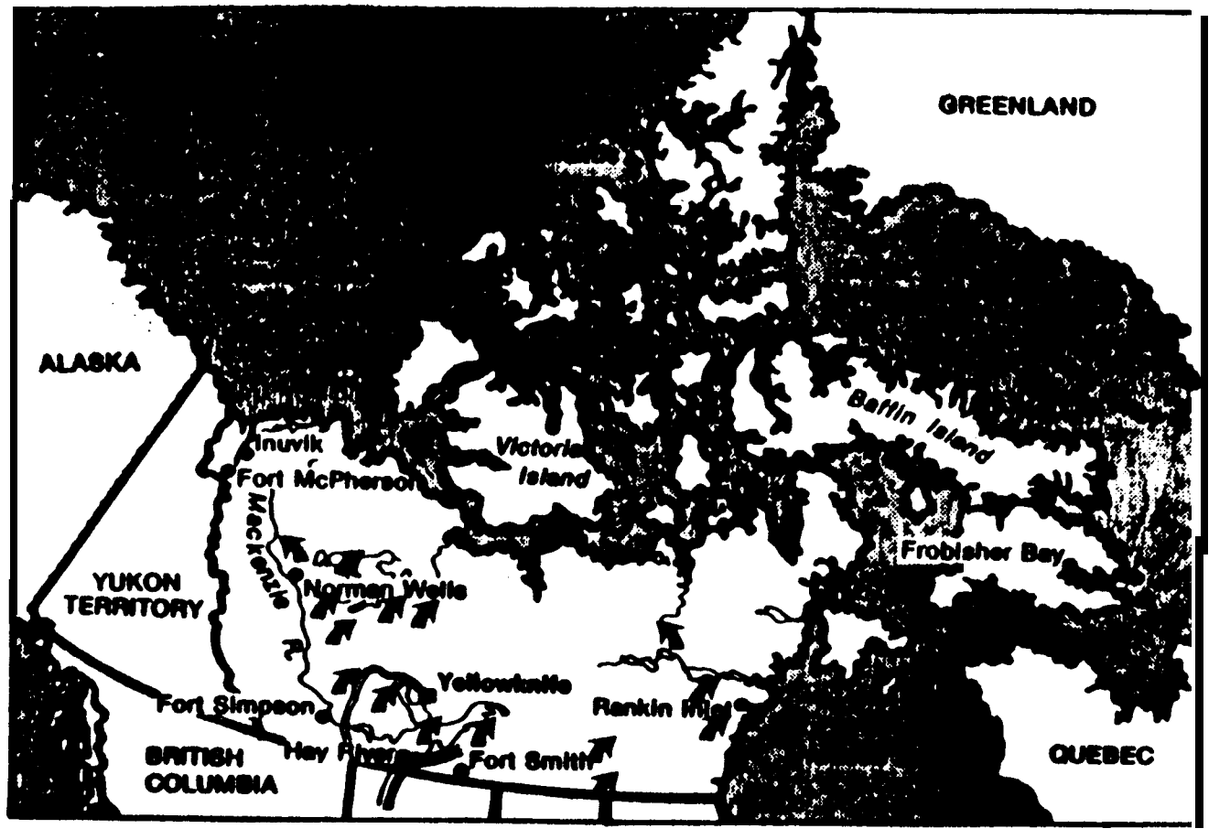
History: Many of the inland lakes (aside from the Great Slave Lake) of the N.W.T. have been fished with varying success over the years. The first commercial fishery was started at Kakisk Lake in 1946. An attempt was made, albeit unsuccessfully, In 1950 to establish a fishery for local Inuit on Mueltin Lake. Meanwhile, the Fisheries Board of Canada was conducting research on fish populations on these lakes and initiated development of them in the early 1960s.

Quotas were established for these lakes at 1/2 pound per acre of surface area. A cyclic or "pulse" fishery was also started on these lakes. Under this system, fishermen could harvest up to three times the annual quota each year for two years, at which time the lake was closed for four years. The main advantage of this system was that it offset the high costs of fishing; the fishermen could take more fish in a shorter time period. It was also believed to benefit the health of the fish populations. The major drawback to 'pulse" fishing was that the fishermen could not establish a residence on the lake and have a continual source of income.

Harvests from the inland lakes peaked in 1970 when over 30 lakes were fished and more than 540,000 kg were taken. Today, only Kakisa and Tathlina Lakes are fished, for walleye. Kakiska Lake has the advantages of road access and close proximity to the Hay River plant which have helped it to remain economically viable. The demise of the inland lakes fisheries has been due to: 1) increased production

Figure 4.5

Inland Lakes Fisheries



Locations of inland lakes where **commercial** fishing **has taken** place.

Source: **"Commercial** Fisheries of the Northwest Territories: A Historical Perspective." North/South Consultants Inc.

from Lake winnipeg and the Great Lakes; 2) low interest from fishermen; and 3) increasing ● ir freight costs.

Table 4.23

Commercial Harvests Of The Inland Lakes Fishery

1976-1984

(kg. round weight)

You	Lakes Fished	Whitefish	Lake Trout	Northern Pike	Mixed	Total
1976	4					23,123
1977	4	98	68	3	909	19,655
1978	4	1,048	683	78	888	4,582
1979	5	2,995	73	267		28,809
1980	10	14,130	7,639	5,102		60,256
1981	2	81	226			51,204
1982	5	2,850	8,457	1,308	6	59,310
1983	5	3,312	1,971	904		46,462
1984	2	53		92	200	26,674

source : North/South Consultants Inc. "Commercial Fisheries *of the* N.W.T. : An Historical Perspectives.

Production Practices: Airplanes are very important in the Inland Lakes fisheries for ● ccessing the lakes. Unfortunately, this reliance on ● ir travel has been detrimental to growth of the industry due to its high cost. Small outboard-powered boats● ro used on the lakes, end standard sinking gill nets are used for capture gear, Legal mesh sizes ● re 4.5 inches on pickerel lakes ● nd 5.S inches on ● ll other commercial lakes. Some inland lakes hsve had winter fisheries using Bombardiers on winter roads, but these *efforts* have not been highly successful due to high costs.

fisheries. The following sections provide a brief description of their activities.

Freshwater Fish Marketing Corporation: The Freshwater Fish Marketing Corporation (FFMC) was established in 1969 by the federal Freshwater Fish Marketing Act for the purpose of marketing and trading in fish and fish products. The following quota states the purpose and objectives of the FFMC:

> "The Corporation has the exclusive right to market and trade in fish in interprovincial and export trade and shall exercise that right, either by itself or by its agents with the object of:
>
> (a) marketing fish in an orderly manner;
> (b) increasing returns to fishermen; and
> (c) promoting international markets for and increasing interprovincial and export trade in fish."[46]

The FFMC holds these powers in the provinces of Manitoba, Saskatchewan, Alberta, Northwestern Ontario and the N.W.T. It is required to purchase all fish (regardless of demand) delivered, on grade, to its receiving stations.

Unlike a marketing board, the FFMC cannot set production levels. The corporation works instead with each jurisdiction in the N.W.T. in an attempt to set quotas and season openings to anticipated market demand.

The FFMC sets initial payment to fishermen at approximately 85 percent of anticipated market price. A second payment is made (after sales) if final price exceeded the (85 percent) initial payment.

The FFMC sells the majority (almost three-quarters) of its fish to the U.S.A. Other markets include France, Sweden, Finland, Germany and Canada.

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[46] FFMC Annual Report, 1986-1987.

FFMC activities in the N.W.T. include operation of a processing plant in Hay River and three fish receiving stations on Croat Slave Lake (Wool Bay, Simpson Islands and!40raina Bay). The FFMC also contracts aircraft for freighting fish from the stations to the plant. In the 1985-1986 DFO Annual Report, it states that flying costs were 40 cents per pound versus 35 cents for lake freighter. It vu believed that the better quality of fish from air freighting made it more economical.

The FFMC is based in Winnipeg, and also has staff at the receiving stations and Hay River plant.

Department of Fisheries and Oceans: The Central and Arctic Region of the Federal DFO has authority over fisheries research and management in the N.W.T. Its activities can b. divided into five main areas:

1. Fisheries Management - of sport and commercial fisheries. Programs include: inventory-taking; monitoring. of xplolta-tion; assessment of potential fisheries; setting seasons, quotas, licensing and restrictions.
2. Environmental Impact - monitoring of aquatic resources that may be affected by industrial development.
3. Enforcement - enforcing of regulations to conserve and protect the fish resources.
4. Inspection - inspection and certification of fish processing and handling facilities and fish products.
5. Smell Craft Harbours - administering and maintaining federally-funded harbours and related facilities utilized by commercial and sport fishermen.

DFO has personnel located throughout the N.W.T. The Central and Arctic Region headquarters is at the Freshwater Institute, Winnipeg.

Department of Economic Development and Tourism, G.N.W.T.: This department is involved in both the commercial and sport fisheries. It offers assistance to fishermen for local industry development.

The G.N.W.T. Commercial Renewable Resource Policy prepared in 1983 by the Departments of Economic Development and Tourism and Renewable Resources, has a program entitled "Commercial Fishery Assistance" which offers assistance to commercial fishermen for offsetting the high freight and production costs associated with operating in the Territory. The Renewable Resource Use Policy states that the G.N.W.T. should foster "the development of renewable resource potential by encouraging and supporting domestic/ subsistence, commercial, and outdoor recreational uses of renewable resources within defined management goals".[47] The program has three sub-programs: 1) Great Slave Lake assistance, 2) Arctic char assistance, and 3) Intersettlement trade assistance. In 1987, assistance was budgeted as follows:

1. Great Slave Lake Assistance
   - Summer - 15 cents per pound to support the price of export medium whitefish at 40 cents per pound. Budget - $165,000.
   - .. support to maintain fishermen's net lake freighting costs at 15¢/lb. Budget - $225,000.
   - Winter - 8.5 cents per pound to offset freighting from the N.W.T. to Winnipeg. Budget - $85,000..
2. Arctic Char Assistance
   - To offset 50 percent of the cost of shipping fish from a N.W.T. processing plant to Winnipeg. Budget - $85,000.
3. Intersettlement Trade
   - Provides 50 percent of freighting costs between producing and consuming communities. This sub-program was implemented to promote development of internal N.W.T. markets.

The G.N.W.T. Renewable Resource Business Enhancement Schedule "C" also offers assistance for the development of renewable resource businesses which have the potential to become financially self-sufficient within five years.

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47 Renewable Resource Use Policy, G.N.W.T.

Department of Indian Affairs and Northern Development: This federal department is responsible for ensuring that the development of commercial or sport fisheries will benefit native peoples socially and economically. It also offers assistance and subsidization, through northern development programs, for fish handling facilities, boats, fishing gear, and transportation. DIAND contributes to the fisheries through its Economic Development Agreement.

Department of Regional Industrial Expansion: This is also a federal department that is involved in economic development *program* for the N.W.T. The *department offers* assistance through two programs: Special Agricultural Rural Development Agreement and Native Economic Development Program.

Department of Renewable Resources, G.N.W.T.: Although all fisheries resource management is currently handled *by* DFO, it was indicated that *the* Department *of* Renewable *Resources* may become more involved in N.W.T. fisheries in the future.[48] In the near future the Department *of* Renewable Resources will assume responsibility for regulating inland *fisheries, i.e.,* devolving responsibility from DFO.

4.9 Main Species of Freshwater Fish in the N.W.T.[49]

There are several species *of* freshwater fish in the various water bodies *of the N.W.T.,* of which this report deals with five: whitefish, lake trout, inconnu, Northern pike, and Arctic char. The following sections provide a brief description *of these* species.

Lake Whitefish (Coregorius Clupeaformis): Whitefish are the most important commercial fish in the Territory and constitute around 70

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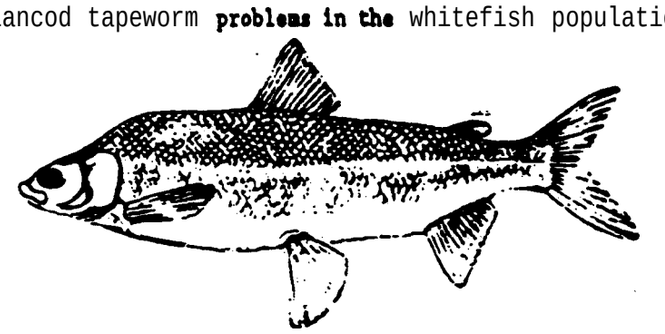
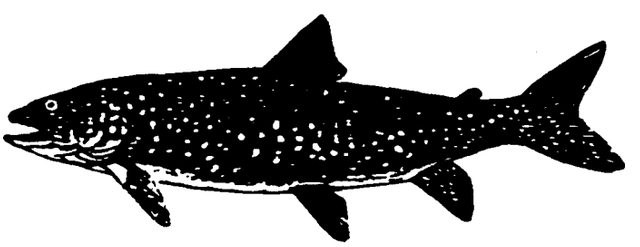
[48] Personal communication with the Department *of* Renewable Resources, G.N.W.T.

[49] The material in this section is taken largely *from:* "A History of Commercial Fishing in the Northwest Territories". Government *of* the Northwest Territories.

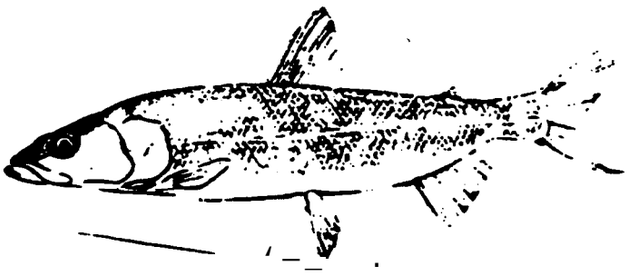
percent of annual harvests. The species can be found *fairly* abundantly throughout the territorial mainland, although Great Slave Lake accounts for all of the commercial harvest. Whitefish are also found in abundance in Lake Winnipeg, Lake Manitoba and the Great Lakes. Whitefish grow and reproduce quickly, relative to other northern species, and as such their populations have been able to sustain prolonged exploitation in the Great Slave Lake. Other fisheries in the N.W.T. (Mackenzie Delta and inland lakes) have experienced tapeworm problems in the whitefish populations.



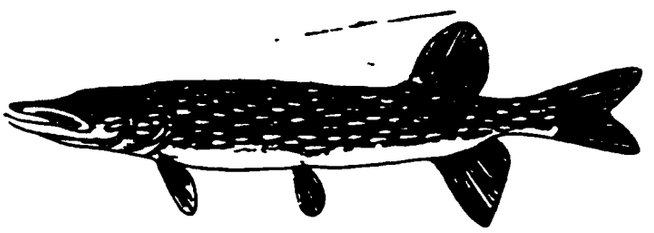
Lake Trout (Salvelinus Namaycush): Lake trout are the largest freshwater fish in the N.W.T. Populations can be found throughout the mainland and in lakes on some of the Arctic Islands. Lake trout are also *found* in many southern lakes. In the early years of the Great Slave Mka'fishery, lake trout comprised up to 64 percent of commercial harvests. They are very vulnerable to fishing pressures and in recent years have become less abundant. Lake trout continue to be the most important sport fish, and Great Bear Lake and the East Arm *of* Great Slave Lake are now managed specifically for lake trout sport fishing.



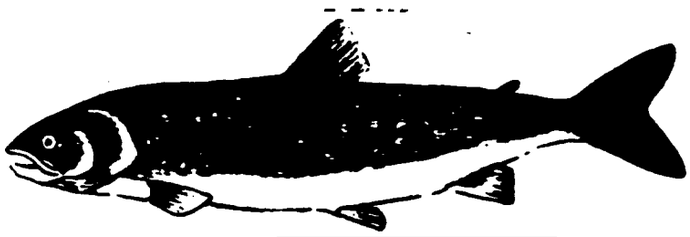
Inconnu (Stenodus Leucichthys Nelma): Inconnu, also known as 'cony", is the largest member of the whitefish family in the N.W.T. This species is found in the Mackenzie River drainage and Anderson River. In the Great Slave Lake area, inconnu support often harvested during their spawning runs up the Slave, Taltson and Little Buffalo Rivers. The harvests in the Great Slave Lake area represent almost all of the world's total commercial production of inconnu. The fish are quite fatty, making them well-suited for smoking, and there appears to be potential for this product in U.S.A. markets.



Northern Pike (Esox Lucius): Northern pike (jackfish) are found in lakes throughout the territorial mainland, as well as abundantly across southern Canada. They represent an important contributor to N.W.T. harvests, second in terms of weight caught only to whitefish. Markets for the species appear to be strong in European gourmet markets, while Canadian consumers are not as accepting of the product. Northern pike have become more important in the N.W.T. as a prized sport fish.



Arctic Char (Salvelinus Alpinus): The Arctic char Species occurs farther *north* than any other freshwater *fish.* It is *found* in most coastal streams and lakes and in the High Arctic Islands. Arctic char live in both landlocked and searun forms. The majority of commercial harvests in the N.W. T. are comprised of searun chsr. Commercial char fisheries have *been conducted* throughout the coastal regions over the *years,* but are now concentrated in the Cambridge Bay and Rankin Inlet areou. High prices *for the* fish in southern markets combined with the promotion *of* intersettlement trade in the N. W. T. have sparked renewed interest in developing char fisheries.



4.10 Summary

Development of the commercial fisheries in the B. W .T. has taken place over several decades, and with varying degrees of success in the *different regions.* Today, there are very few well established fisheries: Great Slave Lake for whitefish, lake trout, Northern pike end inconnu; Kakiska and Tathlina Lakes for walleye; and the coastal char fisheries. The G. N.W. T. has assisted in maximizing the economic *benefits* from the fisheries through the Commercial Fisheries Assis - tance Program which offers price support and freight assistance. Other *federal* government departments have also offered assistance to the fisheries via *numerous* progress and grants.

From a strictly resource availability perspective, potential exists to expand the commercial fisheries in several regions.

Region I: The Mackenzie Delta region has had quotas of whitefish and lake trout, Arctic char, Northern pike end inconnu ● sslgnad to it. *Thor.* has boon very little harvesting *of* these species, however. Development of commercial fisheries in this *region* have made limited progress to date. More work in thee reas of stock assessments and test fisheries is required to determine whether the fish population can withstand the pressures of ● commercial fishery.

Region II: The Fort Smith region includes the Crest Slave Lake fishery, which represents the largest commercial fishery in the N.W.T. *The* Kakiska and Tathlina Lake pickerel fisheries● re ● lso located in Region II. Since 1979, the quota for the Great Slave Lake fishery has been ● round 1.7 million kg. There is● smell quote ● ssigned to some of the inland lakes ● lso, but this potential remains untapped. Unutilized quotas of whitefish end lake trout on Great Sieve Lake heve been in the 30 to 45 percent range since 1981. Low returns to fishermen end the large travel distance to harvest ● dditional volumes heve provided little incentive to the fishermen *to* ●*ccess the* surplus ●vailsble.

[illegible]

Little opportunity exists to increase utilization *of* lake trout, u this species is very susceptible to ● xploitation. Because the trout end whitefish fisheries occur simultaneously, it is *difficult to reduce trout* catches without reducing the volume of whitefish harvested.

Almost all of the fish harvested on Crest Slave Lake is sold to the FFMC end ● xported out *of the* N.W. T. The FFMC hes been criticized from time to time on their selling tactics. They remain, however, the sole buyer of freshwater fish exported out *of the* Territory.

Region III: Region III has had minimal quotes available of whitefish end lake trout. There dots not ● ppear to be ● ny potential *for* developing commercial *fisheries* in the region ●t this time.

Region IV: The Central Arctic (or Kitikmeot) region also has large unused quotas of Arctic char. Whitefish and lake trout are found in smaller quantities. Char represents the most potential for development in this region, although opportunities to increase production are hampered by the large distance to sizeable markets and wide dispersion of fish populations. The introduction of weir fishing in the near future for more widespread use should aid in development of these fisheries.

Region V: The Keewatin region shows limited potential for developing whitefish and lake trout commercial fisheries. Baker Lake has an annual quota of 23,000 kg. for the two species; production has been sporadic, however.

The greatest potential for developing commercial fisheries in Region V appears to lie with the coastal char. Several areas south of Rankin Inlet have large volumes of chu. The quota for this area is 77,200 kg. - many times the current production level of the fish processing plant. The Chesterfield Inlet area has also been identified as having growth potential; the current harvest falls far short of quota levels.

Several initiatives have been (or will be) undertaken in the Keewatin region to develop commercial char fisheries. These include:

- use of a freezer/packer vessel at Duke of York Bay;
- establishment of a multi-purpose food processing plant in Rankin Inlet to replace the old facility;
- test fisheries in the Lyon Inlet and Chesterfield Inlet areas; and
- various feasibility studies, including a Regional Fishing Strategy.

There remains, however, several constraints to developing Keewatin fisheries such as high costs of production and quality control, particularly in the more remote areas.

Region VI: In Region VI (Baffin), a char test fishery was conducted in Steensby Inlet in 1985-1986 to determine the volume of fish available and the viability of harvesting in this area. A quota of 30,000 kg. was then established by DFO. The Department has allowed whole frozen char to be shipped from Igloolic to FFMC in Winnipeg for inspection and processing. This arrangement should assist in development of the industry.

Nettilling Lake has also shown potential for commercial char fisheries. It has a quota of *22,700* kg. *Resource use* conflicts with hunters and transportation constraints have hindered development, however.

Conclusion: Development of the commercial fisheries appears to be constrained by economic *factors rather* than resource availability. In all areas, quotas have exceeded harvests for most species. Several reasons have been cited as constraints to development *of the* N.W.T. commercial *fishery:*

- high production and freighting costs;
- slow growth, depressed productivity and low abundance characteristic of northern fish resources relative to southern;
- remoteness of stocks from markets;
- lover cost sources *of* supply end substitutes; end
- lack *of* expertise in production, processing and finances of commercial fisheries. [w]

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[0] G. N. W. T., "Review of the Northwest Territories (Commercial) Fishing Industry".

5.0 SALTWATER FISHERIES

The three main saltwater species examined in this study were Iceland scallops (Chlamys islandious), shrimp (Pandalus montagui and P. borealis) and Greenland Halibut (known as turbot - Reinhardtius hippoglossoides). The information gathered is, for the most part, reliable but is considered a "snapshot" as no historical data are available for cross-checking. Given the infancy of the industries involved, the lack of background research was expected:

> "In general, the marine resources of the Canadian Arctic are relatively unexploited and largely unknown."[51]

Production costs and returns were obtained through discussions with industry and government representatives. The most detailed information presented here outlines the northern shrimp industry and is outlined below followed by a discussion on scallop and greenland halibut fisheries *off the* N.W.T. tout. The focus of the saltwater fisheries has been and will likely continue *to be* in the Baffin region because it:

> "... appears to offer the best potential for marine commercial fishery development. Territorial interest in eastern Arctic fisheries for shrimp, scallops, and turbot is quite recent (since the mid-1980s) and has risen in response to favorable results from inshore test fishing activity (scallops and turbot in Cumberland Sound) and the existence of a large-scale commercial fishery in the offshore.. .032

However, *there is* interest in test fishing in the Beaufort Sea as well.

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51 Northern Perspectives, p. 9

52 Ibid

5.1 Shrimp Fishery

5.1.1 Background

The commercial northern shrimp fishery is dispersed from northern Newfoundland to the northern Davis Strait off Greenland. Geographically, the grounds in the eastern Hudson Strait near Resolution Island and the northern Davis Strait are located closest to the Northwest Territories (see Figure S.1) and are fished in concert with the balance of the northern shrimp grounds.

Little was known about potential shrimp concentrations in the Hudson Strait until recently. In 1977, the Government of Canada imposed a 200-mile fishing zone off Canada's shores and effectively had the power to eliminate access to these waters by foreign trawlers. The onus was then placed on Canadian interests to manage and harvest the species within the newly acquired zone.

It was soon realized that research had to be conducted to measure stocks and define total allowable catches (TACs). The Department of Fisheries and Oceans (DFO) contracted to have the research undertaken and, in so doing, included the eastern Hudson Strait and Ungava Bay areas in its terms of reference.

Subsequently, preliminary research indicated that populations of striped pink shrimp located west of Port Burwell and southwest of Resolution Island held commercial potential.[53] The Inuit of Northern Quebec undertook further study of the potential for a shrimp fishery in these areas. They proceeded to establish a fishing company and chartered two trawlers for exploratory fishing; ultimately, they purchased a freezer trawler of their own. Other northern trawlers also begin to harvest the shrimp, to the point where the DFO grew concerned about over-harvesting. During this period, the Inuit

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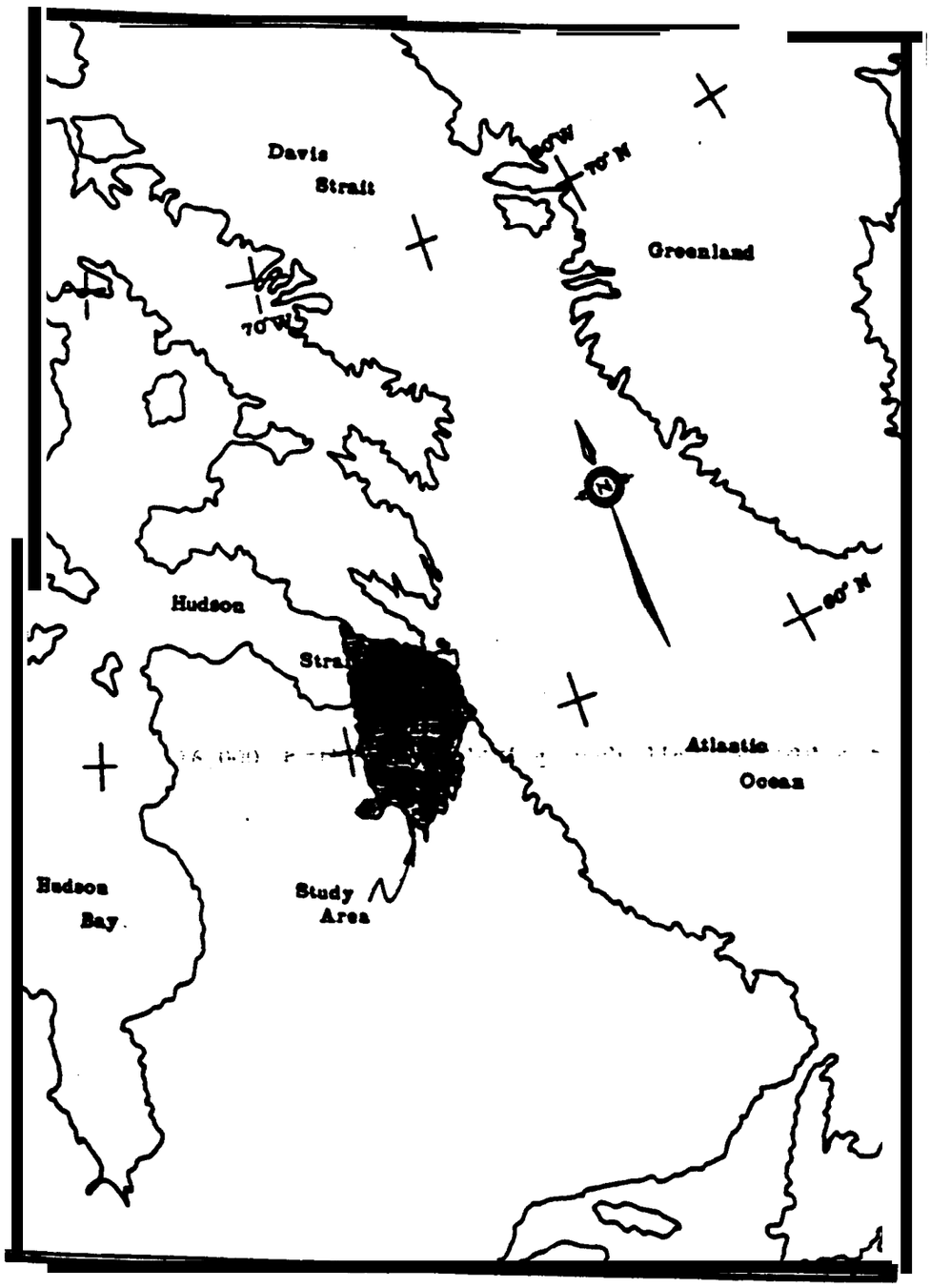
[53] *Sea-Borne* Resources, p. 3

Figure 5.1

Shrimp Fishing Grounds Off **N.W.T.**



Source: Sea-Borne Resources, R 6 D Ltd. "Report on a Feasibility Analysis for the Development and Operation of a Shrimp Fishery in the **Hudson Strait-Ungava Bay** Region."

fishing company ceased operations ● nd the DFO subsequently closed the area in 1981 until further data were collected.

The northern shrimp fishery has continually faced pressures from its participants to develop now grounds, ● specially in light *of* the declining U.S.A. catches being predicted ● lthough not greatly reflected in the catch data (see Table 5.1). Additional ● *ffort* has been placed on managing the shrimp fishery by DFO end industry participants (i.e., the development of an ● nterprise ● llocation (EA) program, the Northern Shrimp Management Plan and the ● stablishment of Northern Shrimp Advisory Committees) so that the resource could be fully end safely harvested. Subsequently, a TAC was set for shrimp in the Eastern Hudson Strait● rea of 1,000 t (see Table 5.2).

The ● nterprise allocation program currently in place● llows equal ●ccess by ● ll northern shrimp fishing license holders to shrimp grounds. There ●re 16 license holders (with little chine of additional licenses being granted in the near future%) with access to northern shrimp *stocks.* The shrimp TAC has been set ● tjustbelov 16,000 t thereby ● llovix ● ach license holder to fish 1,000 t of shrimp. The program does *specify* that each license holder must fish helf *of the* quota from southern *grounds* and half from northern grounds (both of which still lie within the overall northern shrimp fishery).

The 16 license holders ●re itemized in Table S.3. *It* is important to note that *four* new licenses *were* recently issued.

> "On March 19, 1987, ● *fter careful* consideration of the state of the northern shrimp stocks end industry requests *for* ● dditioml shrimp licenses, the Minister announced thet up to four new licenses would be permitted in the northern shrimp *fishery. One northern* shrimp license was issued to ● ach *of* the following: Qiqiqtaaluk Corporation of Baffin Island, N.V.T.; Pikalujak Fisheries *of* Labrador (a joint venture corporation of the Labrador Inuit end National Sea Products Limited); and Harbour Crate Fishing Company of

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54 See DFO, September 1987, p. 10

Newfoundland. The fourth license was reserved for a non-Newfoundland/Labrador based group or company to be operated in a joint venture arrangement with a northern native organization from Quebec or the Northwest Territories.[55]

Table 5.1

Cold Water Shrimp Landings for Selected Countries

1963-1986, 1987-1988 Projections

(thousand tonnes, live weight)

	1983	1984	1985	(Prel.) 1986	Forecast 1987	1988
Europe						
Iceland	13.1	24.4	24.9	35.0	32.0	34.0
Greenland	41.2	41.5	52.4	63.0	63.0	60.0
Denmark	10.1	7.3		6.8	6.0	6.0 7.0
Norway	78.2	84.0	91.1	57.7	41.0	47.0
Faroes	7.4	9.3	11.8	4.0	4.0	4.0
U.S.S.R.[1]	29.1	43.2	32.1	25.0	4.0	9.0
Total	179.1	209.7	219.1	190.7	150.0	161.0
U.S.A.						
Alaska	3.4	4.3		2.0	2.2	2.0 2.0
Washington	2.6	1.6		4.1	7.9	6.5 6.0
Oregon	2.9	2.2	6.7	1s.3	20.9	16.0
California	0.5	0.7	1.5	3.1	3.5	3.0
New England[2]	1.4	2.9	4.1	4.6	5.0	5.0
Total	10.8	11.7	18.4	33.1	37.9	32.0
Canada						
Atlantic	14.1	11.8	13.5	17.9	26.0	27.0
Pacific	0.7	0.9	1.1	1.0	1.2	1.4
Total	14.8	12.7	14.6	18.9	27.2	28.4
Grand Total	204.7	234.1	252.1	242.7	215.1	221.4

[1] Species "Crangon Crangon" and "Pandalus Borealis"
[2] New Hampshire, Maine, Massachusetts
Source: Cold Water Shrimp Market Review, DFO, 1988.

55 DFO, April 1987, p. 2

Table 5.2

Northern Shrimp Fishery TAC, 1987

Northern Grounds	1987 TACS (tonnes)
Davis Strait	6,120 t
Eastern Hudson Strait	1,000 t
Ungava Bay	200 t
2 G	500 t
sub-total	7,820 t (50%)
Southern Grounds	
Hopedale Channel	4,000 t
Cartwright Channel	800 t
Hawke Channel	1,500 t
3 K	1,500 t
sub- total	7,800 t (50%)
TOTAL TAC	15,620 t

Source: Taken from Northern Shrimp Fishery: 1987 Management Plan, p. 4.

Table 5.3

Northern Shrimp Licenses: 1987

1. Qiqiqtaaluk Corp. (Baffin Island Inuit)	- 1* license
2. Makivik Corp. (Northern Quebec Inuit)	- 1 license
3. Qiqiqtaaluk/Makivik (Joint license operated in joint venture arrangement with Clearwater)	- 1* license
4. Labrador Inuit Association (LIA) (Operated in joint venture with National Sea Products)	- 1* license
5. Torngat Co-Op, Labrador	- 1 license
6. Labrador Fishermen's Union Shrimp Company (LFUSC)	- 2 licenses
7. Harbour Grace Fishing Corp.	- 1* license
8. FPI	- 2 licenses
9. Mersey Seafoods, N.S.	- 2 licenses
10. 032683 N.B. Ltd. (Lameque Co-op, N.B.)	- 1 license
11. Carapro Ltd., N.B.	- 1 license
12. Pêches Nordiques, Que.	- 1 license
13. Ocean Marine Management Corp., Que.	- 1 license
TOTAL	- 16 licenses

* "New" licenses issued in 1987.

The emphasis on the new licenses being northom-based is consistent with government policy regarding resource ● xploration. The federal fisheries policy revolves around three fundamental principles: conservation, development ● nd distribution. Distribution, specifically, refers to:

> "...access to, and *the* sharing of, *different fish resources* among Canadians who benefit from *these* resources, with particular ● mphasis on the needs *of the* people and communities whose livelihood depends on the resources."[56]

It is Indeed ● condition *of* the license that local residents be involved in these fisheries.[57] This policy objective has led to recent successes in Inuit shrimp fishing training programs. Of note is the ● ffort devoted to training resulting from the recent licenses issued to the Qiqiqtaaluk Corporation in which the ultimate goal is to have the ships fully staffed by Inuit seamen by the year 2000. In 1987, the first year *of the* license, 17 Baffin Inuit trainees were employed and, with further assistance *of* ● *fisheries* training college in Nova Scotia, the staff ● ttended ● seven-week shrimp trawling course in April 1988. The immediate benefits to the Inuit have ● lready been felt - a total of about $250,000 in wages and an ● dditloml $130,000 *of* other expenditures have gone back to the Baffin Region.[58]

The continued Inuit employment and exploration *of the* northern shrimp grounds is dependent on the economics *of the* industry: the costs of production and future markets. The following Cost Analysis section chronicles the recent research conducted into the ● conomics of the northern shrimp fishery and highlights key findings. The section is

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[56] DFO, September 1987, p. 8

[57] Personal communication with Karl Laubstein, Director, Resource Allocation - Atlantic Fisheries, DFO

[58] Personal communication with Henry Copestake, President, Farocan Inc.

summarized by an overview of Opportunities in the Shrimp Industry as they relate to the N.W.T.

5.1.2 Costs and Returns Analysis

Recent studies have been conducted by both private companies snd DFO staff to ● =ine the economic feasibility of northern shrimp fishing. Voutier (DFO) updated ● 1980 study to 1983 conditions and derived ● break-even analysis for an ● verage domestic vessel, ● *30 m* Shrimp Trawler snd ● *56* ■ Factory Freezer. He concluded that:

> • . ..none of the options considered heroin vu capable of generating ● *profit in* 1983 based upon the assumptions provided. . . It must b. reiterated that highly optimistic revenue figures and, in some instances, catch rates were used and that the ● *ctusl* economic performance of ● ll thr ee vessels would, in ● 11 likelihood, have been much verse.'[59]

His forecast for the northern shrimp industry vu not favorable; industry catch rates were declining, costs were increasing, stronger competition was *being* ● xerted by European trawlers and market conditions were softening. His closing statement indicated that ". ..it is not ● dvisable to bring ● dditional capacity on stream snd thereby increase competition in a struggling and uncertain fishery".[60]

The Sea-Borne Resources (1986) study examined the shrimp stock levels in the Hudson Strait and Ungava Bay Regions, harvesting strategies, processing requirements snd operational options. The study was ● tid ● t assessing the opportunity for ● mployntnt of Inuit groups from Baffin Island, Northern Quebec and Labrador in ● shrimp fishery. The analysis provided financial assessments for four harvesting options:

1. Royalty Charter - selling the right to fish ● certain quantity of a stock to any vessel owner.

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59 Voutier, p. 10

60 Voutier, p. 10

2. Development Charter - as (1) but with active involvement by the license holder and designates.
3. Tim Charter - essentially leasing a vessel without crew or with supervisors only.
4. Vessel Purchase.

Sea-Borne provided detailed quarterly and annual expense statements and projections for each option given the common assumption of a 40 metre factory freezer trawler with a storage capacity of 250 tonnes. The results are summarized in Table 5.4 for the end of Years 1 and 3.

Table 5.4

1986 Projected Expense Statement - Freezer Trawler

Options	Income*	Total Disbursements	Initial Capital	Year 1 Final Costs	Year 3 Final Costs
1. Royalty Charter	$ 421,875	$ 99,053	$100,000	$322,822	*$1,319,424*
2. Development Charter	281,250	140,380	150,000	140,870	*832, 568*
3. Tim Charter	1,670,625	2,453,961	800,000	(783,336)	(1,711,503)
4. vessel Purchase	1,670,625	2,099,710	630,000	(429,085)	(483,783)

* Assumes a 25% account outstanding after year-end.

Source: Sea-Borne Resources.

Based on the research conducted, Options 3 and 4 continued to show negative returns after three years, and in the case of Option 4, continually worsening returns. Option 1 showed the greatest positive return from exploring the resource but would do little to develop the expertise of the Inuit.

A further breakdown can be conducted to show returns after accounting for salaries and benefits to local people after Year 3 (see Table 5.5).

Table 5.5

Total Benefits Retained From Shrimp Fishing, End Of Year 3

	1 Royalty Charter	2 Development Charter	3 Time Charter	4 Vessel Purchase
Fixed Cash	$1,319,424	$ 832, S68	$(1,711,503)	$(483,783)
Uncollected Receipts (25%)	1s5 ,039	144,375	613, 9S5	613,9SS
Sales Costs Owing			(190,158)	(190,158)
Crew Shares Diving			(127.139)	(127.139)
Cash Sub-to-l	1 474 463	976.943	(1.414.845)	(187.125)
Inuit Crew Shares:				
Paid		217,39S	258,236	258,236
Due		29.666	33.904	33.904
Crew Sub-total		247.061	292 .140	292 .140
Total Benefits	$1.474,463	$1,224,004	$(1,122 .70S)	$105,015

Source : Sea-Borne Resources.

The impact *of the* Inuit Crew Shares inclusion ● lters the ● conomics somewhat, narroving the differences between Options "1 end 2 "snd " ● *ffectiq* ● slightly better than break-even point for-option 4 ● fter three years.

In the final operational ● ssessment, recommendations were made:

> "Given the unknown *factors* in regard to stock biomass end pertinent biological parameters, investment in plant processing *facilities* ashore at this time 1s not considered a viable option. The only ● lternative is thus the use of ● vessel to do both harvesting end processing to final market form. "
>
> further
>
> • . ..the most ● cceptable option, appears to be the Development Charter, which shows ● final cssh position of close to $1 ● illion and Inuit crew shares of nearly $250,000 . . . The final cash position . ..at the end of three years, with the inclusion *of the* initial capitalization suggested for this option, would allow serious consideration *of* purchasing a

vessel at that time, when the stock and operating costs are better known."[61]

The most recant ● MAIYSiS which is generally ● ccepted by the industry wss conducted by DFO in 1987. The analysis begins with some assumptions:

- the analysis is conducted on two hypothetical freezer trawlers; one 42 m and the other 58 ● .
- ● ach ●ro ● ssumed to be 5 years old and purchased in 1986 for $4 million and $6 million, respectively.
- ● ach vessel has●crew on board of 17.

Aside from the remaining ● ssumptions of vessel specifications, steaming and fishing days, an important condition is built into the ● nalysis because *of* seasonality of the northern shrimp fishery.

> "Both vessels ●re assumed to spend the initial portion of the year, January to mid May, fishing northern cod. The vessels ●re then ● fitted and in June commence the *northern shrimp fishery.* ● [62]

Table 5.6 outlines the hypothetical *fishing* plains of the two trawlers while Tables 5.7 and S.8 outline the ● ssociated income statements. - - Table S.9 outlines the method of deriving en average shrimp price of $2. 71/kg. while an ● *verage of $0.50* per kg. is used *for* cod.[63]

The 42 m trawler, with assumed catch rates of 5 t/day ● nd 30 t/day for shrimp and cod, respectively, did not ● chieve ●profit *sufficient*

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[61] Ibid, p. 26

62 DFO, January 1987, p. 23

6₃ Costs and returns data were not ● vailable from Farocan Inc. who operates ships with the Baffin Island Inuit. However, discussion with the company president indicated that ●cost structure for their trawlers was likely comparable with the ●nalysis provided here as costs were split equally between labour, *other* variable costs and fixed costs. Similarly, ●price range for shrimp products produced *was* estimated at $2.00 to $8.00/kg. depending on the product. This is consistent with the ● nalysis in Figures 5.7 and 5.8.

to generate a 12 pert-nt return on investment. Also of note, the cod generated a return almost twice that *of* shrimp. Similarly, for the 58 m trawler, with its corresponding catch rates of 6 t/day and 36 t/day, respectively, a lSO shows a similar net loss.

Table 5.6

Hypothetical Fishing Plans

	Fishing Plan				Trip length		
	Fishing Days	Steaming Days	Days At Sea	Number Of Trips	Fishing Days	Steaming Days	Days At Sea
42M Trawler							
Shrimp Trips	90	30	120	3	30	10	40
Cod Trips	72	48	120	8	9	6	15
Total	162	78	240	11	N/A	N/A	N/A
58M Trawler							
Shrimp Trips	90	20	110	2	45	10	55
Cod Trips	90	30	120	5	18	6	24
Total	180	50	230	7	N/A	N/A	N/A

N/A - Not Applicable

source: DFO, 1987.

The author goes on to explain that the results are highly sensitive to the assumptions made and that profits are possible if higher prices (i.e., *average* 1986) were used.

An overall conclusion made about the northern shrimp fishery, however, underlies the fact that the trawlers must be fully utilized.[64]

> "The analysis indicates that *for an* operator in the seasonal northern shrimp fishery to be economically viable,

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[64] Mr. Henry Copestake, President - Farocan Inc. also stresses that trawling beyond the geographic boundaries of the waters adjacent to the N.W.T. is essential under current economic conditions.

without ●ccess to ●n ● ltorrutivo fishery such as northern cod, it would require ● dramatic [illegible]al better overall performance than that demonstrated. ..[65]

Table 5.7

1986 Annual Income Statement, 42M Trawler

($ 000)

	Shrimp Trips	Cod Trips	Total
Revenue	1.219	1.209	2.428
Variable costs :			
Repair ● nd maintenance	100	100	200
Gear	90	90	180
Fuel	236	243	480
Freight, shipping, *storage*	125	-	125
salt	9	-	9
Provisions	30	30	60
Other operating	36	30	66
Labour	414	411	825
Total Variable Costs	1,042	905	1,948
Contribution to Fixed Costs	176	303	480
Fixed Costa:			
Insurance	-	-	114
Opportunity cost of capital*	-	-	456
Other	-	-	80
Depreciation	-	-	200
Total Fixed Costs	-	-	850
Economic Profit	-		(369)

* Based on 12 percent

source : DFO, 1987.

Varying the assumptions, ●s noted earlier, can ● lter the profit-●bility of ●shrimp trawler. However, it is ● pparent that the high operating costs snd the associated capital investment can subject such an enterprise to great *risk.* Depending on catch rates, cost

[65] DFO, January 1987, p. 52

structure and product prices, opportunity exists to realize profits or losses.

Table 5.8

1986 Annual Income Statement, 58M Trawler

($ 000)

	Shrimp Trips	Cod Trips	Total
Revenue	1,463	1,814	3,277
Variable Costs:			
Repair and maintenance	120	120	240
Gear	90	90	180
Fuel	281	311	592
Freight, shipping, storage	150	-	150
salt	11	-	11
Provisions	28	30	58
Other operating	33	30	63
Labour	497	616	1,114
Total Variable Costs	1,211	1,198	2,409
Contribution to Fixed Costs	251	616	867
Fixed Costs:			
Insurance "	-	-	171
Opportunity cost of capital*	-	-	684
Other	-	-	80
Depreciation	-	-	300
Total Fixed Costs	-	-	1,235
Economic *Profit*	-	-	(367)

*Based on 12 percent

Source : DFO, 1987.

5.1.3 Opportunities in the Shrimp Industry

The performance of the northern shrimp industry is highly dependent on world market factors. The benefits to the Northwest Territories from the industry will come in the form of direct profits to the Qiqiqtaaluk Corporation and, perhaps most important, wages and training provided to Inuit crew members. It is unlikely that further

shrimp licenses will be issued in the foreseeable future so the greatest opportunity lies in capturing the benefits from the XiScing licenses.

Table 5.9

Derivation Of Unit Value Of Shrimp In Round Weight (RW)

size Composition	Daily Catch R.W./Kg.	unit Value of Product wt. Can. $/Kg.*	Less 9% Lost Yield	Less 9% Selling Expense	Less 12% Tariff	Unit Value R.W./Kg.
70-90/kg.	690	6.s6	0.59	0.59	0.76	4.60
90-120/kg.	2,364	4.53	0.41	0.41	0.54	3.17
120+/kg.	2,700	2.94	0.26	0.26	0.35	2.07
Discard	246	-	-	-	-	-
	6,000	3.86				2.71

*CIF Europe

Given the low returns in the industry, it is considered necessary for the G.N.W.T. to continue its training assistance.[66]

A cost considered u xcessive and being borne by the operator (Farocan Inc.) is the transportation and lodging of Inuit crewmen to and from their assigned vessels. It was indicated that one ship alone spent over $42,000 on such expenses. Such costs re considered much above normal because the Inuit crewmen reside in communities scattered across the Arctic. It vu pointed out that previous operator (under the Makivik license) lMnsted the Inuit crew as cost-cutting measure for this reason. Further sistme may be warranted for crew member lodging and transportation to and from duty to nable the Inuit license holders to remain competitive with other licenses relative to this cost rea. An alternative to direct cost subsidy My be through providing a seaman's hostel(s) or seaman's

66 Personal communication with Mr. Henry Copestake, President-Farocan Inc.

rats on ● lrlines similar to the program currently in place in Europe .

A final concern to the Inuit license holders regards the ongoing effort of DFO to force ● ll trawlers to land their products ● t Canadian docks . The concern over ● ppropriate dock facilities and locations ● re well -known to the decision-makers and will not be dealt with here.

5.2 Scallop Fishery

5.2.1 Background

The scallop industry of the N. W. T. is ● very sash infant industry. Currently, two inshore scallop boats ● re being operated off Pangnirtung by P & L Services and the local HTA. Both boats ● re still in test fishery stages, and will ● at-r their second year of tests in 1988. Apparently, ●bout five tonnes round weight (12,000 lbs.) of scallop were caught in 1987, equating to shout 1,200 lbs. of scallop meat ● f ter shucking. A quota of about 22,000 lbs. is available.

The scallops caught in 1987 were sometimes shucked on the boat while ● t other times the whole scallops (shell on) were brought to the plant ● t Pangnirtung. They vere then shucked and packed fresh or frozen in one pound plastic bags for sale. 67 P & L Semites caught the majority of the product in 1987 (about 1,000 lbs. of meat) end indicated that they hsd no difficulty selling the product locally. According to P & L, the local stores shoved interest in the product and interest was ● lso ● xpressed by Capital Fish in Ottava for 1,000 pounds per veek of product If it was available. However, some concern was ● xpressed by government representatives regarding ● ssured markets for the product.

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67 Discussion with Ks. Nancy Anilniliak, Manager, P & L Semites, Pangnirtung.

An offshore test fishery for scallops is also entering its second year of operation. 68 A 108 foot trawler operated by Clearwater Fine Foods was used to assess CallOp stocks in the Ungava Bay - Hudson Strait areas in 1987. Some preliminary results have just been received and, while an economic analysis was not yet conducted, the company plans to continue exploratory work in 1988. A total of $138,500 has been committed by the Native Economic Development Program to fund operations this summer.

5.2.2 Costs and Returns Analysis

To this point, DFO has not conducted any feasibility work for either inshore boat In the test fishery although they are planning to conduct analysis in 1988.[69] With the assistance of the DFO economists in Winnipeg, an effort will be made to design usable forms for ongoing data collection from ship captains this year. It was indicated that feasibility could not yet be determined for several reasons:

- stocks and catch rates are still uncharted
- crows are relatively inexperienced
- each boat will have to be analyzed separately because of their different ages and equipment on board
- weather variability impacts are unknown.

Some dets were obtained, however, from other sources which describes the inshore industry to the extent possible to date. The scallop boat purchased by P & L Services cost $158,000 in 1987. The boat is a 42 foot scallop dragger and was built in 198S. It is well equipped with sounding gear and radar and requires a crew of three. The HTA boat is about 20 years old, is of a similar size but is not u well-equipped. As a result, it did not achiave the same success that the P & L boot had in 1987. Average value of the product sold in 1987 ranged from $5.50 to $7.40 per pound. The local market was supplied

68 Discussion with Mr. Ralph Butterworth, Qiqiqtaaluk Corporation.

69 Discussion with Mr. Lothar Dahlke, biologist, DFO, Iqaluit.

with fresh scallops for $5.50 while the bagged product shipped to Ottawa would command a higher price. Transportation by airplane is a back-haul was estimated to average $0.50 to $0.65 per pound. There is concern that the local market could not absorb 10,000 kg (22,000 lbs.) of the meat and marketing outside the territory would be essential. P & L Services had few concerns about marketing the product as their maximum weekly catch is not expected to exceed 1,000 lbs. when the fishery is developed. Markets will be discussed in greater detail in a later section.

An analysis of the test fishing last year has permitted a general breakdown of costs and returns to yield a daily net return (see Table 5.9). The results, based on the assumptions used, show a return to labour and management of $956.00 per day for 80 days per year. This would amount to about $25,000 for each of the crew of three over the season.

5.2.3 Summary

The prospect of the estimated returns warrants further exploration and efforts to commercialize the industry. However, uncertainty still lies in the key feasibility areas: sustaining a catch of 324 pounds per day, obtaining commitment from a marketing outlet to sell the scallops for a price consistently in the $5.50 to $7.00 per pound range and managing to control production costs through increased efficiency.

Discussion with other Fisheries and Oceans personnel[70] yielded no additional information on the northern scallop operations.

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70 Discussions with Mr. Gary Brocklehurst, Staff Officer-Shellfish and Marine Mammals; Mr. Bob Huson, Senior Economic Analyst and Ms. Edith Dussault, Resource Allocation Branch.

Table 5.10

Daily Scallop Production Estimates Per Vessel - 1987

Landings Per Day = **0.1349 lbs. /min.** x 5 **drags** x **20 min. (average towing time)** x 3 **tows/hr.** x 8 **hrs.** - **324 lbs./day**

Landed Value = **324 lbs.** x $6.83 Can. (September/86 price in New Bedford, **Mass.)**			-$2,213
Less :			
Manufacturing costs (*$1.00/lb. **shucking** + **$0.80/lb.** ● ir freight + $0.30/lb. **packaging)** = $2.10/lb. x 324 lb. = $680 + **30%** profit **margin** (on production costs)			- (884)
Fisherman's Daily Gross			- 1,329
Less Fixed Costs (per day):			
Debt servicing $40,000 @ 11.758, semi-annual compounded = $6,741/80 **days**	$84		
Vessel insurance; $120,000 @ **5%** = $6, 000/80 **days**	7s		
Annual maintenance and **gear** replacement; $s **,000/80** days	**63**	**$222**	
Less Variable Costs:			
Fuel, ●verage **consumption** 4 gal. x $2.20 per **gal.** x 10 hrs.	$88		
Groceries, 3 crew **x** $25	**75**	**$151**	- (373)
Net Daily Return (shared between owners ● nd crew on **%'s)**			-$ 956

Sores basic assumptions used to ● rrive ●t these figures were:

(a) A minimum **towing time** *of 8* hours per day, an absolute **minimum** by most **fishermen's standards.**

(b) **Use** of ● **42' plus Cape** Islander, **sufficiently powered** to **tow** five **Digby** style **drags.**

(c) Average landings ● qual to 0.1349 lbs ./unit/min., u vu obtained **during quasi-commercial** explorations.

(d) Future scallop beds discovered will be **of** equal production levels.

(e) Design modifications and training to date will enable 3 tows *per* hour .

(f) Price **will** remain constant ●t the level indicated.

(g) Sixty-six percent of available days are fished, as considered available from 1986 field records.

(h) Price received will equal that paid for fresh sea scallops in Boston.

• This is about the average price paid in eastern Canada for shucking, however, this till likely require subsidization until this expertise is gained. Role modelling would be most useful in this area.

Source: Mr. Larry Simpson, Economic Development and Tourism, Iqaluit.

5.3 Turbot Fishery

5.3.1 Background

The turbot (also known as Greenland Halibut) fishery is also currently at test stage. An inshore commercial turbot total allowable catch (TAC) of 100 t is available in the Pangnirtung (Cumberland Sound) area although only about 10 t of turbot will be caught this tinter[71] while about 5 t were caught last year.

The method being employed is tinter long-lining. This method incorporates a series of hooks on a line that are baited and dropped through the ice. The line is then manually pulled although some work is being done to mechanically draw lines. This is the second year the fishery is being harvested in this manner and production cost estimates have only recently been attempted.

5.3.2 Costs and Returns Analysis

Mr. Larry Simpson has undertaken a preliminary analysis of the feasibility of this fishery and provided some results as shown in Table 5.11 helm.

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71 Discussions with Mr. Larry Simpson, Renewable Resource Development Officer, Iqaluit.

Table 5.11

Daily Turbot Production Estimates Per Fishing Unit - 1987

Estimated Landings Per Day - 0.1378 **lbs./hook/hr.** x 600 **hooks** (4 lines of 1S0 hooks) x 2 fishing hours - 165.36 **lbs. /day.**

Landed Value - 165 **lbs.** X $1.50 **(anticipated average price** to **the** fishermen)		= $248
Approximate Daily **Costs:**		
Fixed:		
Debt **servicing** $6,000 **@ 11.75% semi-annual** compounded **interest** for 3 **years,** ($2,400/80)	$30	
Annual gear replacement **@** $3,000, ($3,000/80)	38	
Variable:		
Supplies **@ $25/fisherman**	50	
Fuel **@** 12 liters $8.S0	6	124
Daily Net (to be shared between two fishermen)		= $124

Basic Assumptions:

(a) A minimum of 600 hooks per **day are fished by two** fishermen.
(b) Average landings ●re **consistent with** 1987 **data.**

(c) 80 **days** of fishing ●re **available** *per* **season.**

(d) Interest rates **and** fish prices **remain** the **same.**

(e) **Variable costs remain** fixed.

Note: This **estimate** does not **take** into ***consideration*** the benefits *of* **processing, marketing** or **local freight.**

Source: **Mr. Larry Simpson, Economic** Development ***end*** Tourism, **Iqaluit** .

There **are** ●bout 16 fishermen involved in **turbot** ***fishing*** this **winter and if total catch** does ● verage 83 pounds **per** person (165 pounds/2), ● profit Of **$5,000 remains** ***for*** each **participant** ● fter **the 80 day** season. This would result in **a** catch of just under 50 t ***of*** fish. However, **some estimates of** 1988 production **were only** in the 10 **t range,** which either reduces the ● verage **seasonal** return per **fisherman** to **about** $1,000 for the 16 fishermen **involved or greatly reduces the**

number of fishermen. Even if the total estimated catch wore to increase several fold, the industry is still very small with all the associated inefficiencies of the small scale. Coupled with this uncertainty are the markets, which are deemed to be erratic; the demand for turbot tends to be the last to rise end the first to fall. 72 This observation is supported by the most recent mass shift in turbot prices, as shown in Table S. 11. Turbot shows the greatest percentage price increase of the groundfish indicated but also the greatest fluctuation between 1986 and 1987. The price landed at the market still only quastes to just over $2.00 Canadian for whole turbot .

5.3.3 Summary

The economics of turbot fishing near Pangnirtung is uncertain at present. While return to labour may create interest among local fishermen, only a continued effort over at least three years will yield relevant conclusions. If indeed the returns equate a seasonal return of $1, 000 per fisherman, interest may not continue. However, an improved mechanism for pulling lines may increase daily catches per fisherman considerably.

5.4 Chapter Summary

The three saltwater fisheries examined are at different levels of development. The shrimping operations are operating in the eastern Hudson Strait as thay do in the rest of the northern shrimp fishery. The scallop end turbot industries are still very much experimental. Production methods, stocks end markets still remain to be tested.

A summary of these fisheries is useful to , give en overview of the industries relative to each other (see Table 5.12).

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72 Discussion with Mr. John Collins, Program Coordinator and Economics Brsnch, DFO.

Table 5.12

Summary Statistics From Saltwater Fish And Seafood Industry

	Shrimp	Scallops**	Turbot***
Production (t)	1,000	23.S	48
Price per kg.	$2.71	$15.00	$3.30
Estimated Returns	2,710,000	352,500	159,000
Estimated Costs	N/A*	$201,000	$79,000

* Estimated jointly with cod operations.

** Based on anticipated results for two vessels.

*** Based on 16 fishermen.

Table 5.13

Monthly Average Wholesale Prices of Groundfish Fillets and Blocks

	country of Origin	September 1986	August 1987	September 1987	% Change September 1987/86
		..... US $/Lb.			
Cod					
Blocks		1.481	2.000	2.010	36%
Minced		0.610	0.550	0.550	-10%
Fillet 1 lb.	**Canada**	**1.425**	1.750	1.750	23%
Fillet 5 lb.	**Canada**		1.850	1.850	
Fillet 5 lb. **bnls** (1/2)	**Canada**	1.8s6	2. 3s0	2.350	27%
Fillet 5 lb. **bnls** (1/2)	**Iceland**	2.010	2.475	2.47S	23%
Haddock					
Blocks		1• 450	1.725	1.785	23%
Fillet 5 lb.	**Canada**		1.850		
Fillet 5 lb. **bnls**	**Canada**	*1.97s*	**2.400**	2.420	23%
Fillet 5 lb. **bnls**	**Iceland**	*2.125*	*2.500*	2.650	25%
Flounder					
Blocks		1.350	1.700	1.720	27%
Fillet 1 lb.	**Canada**	1.850	2.150	2.150	16%
Fillet 5 lb.	**Canada**	1.8s0	**2.000**	2.000	8%
Ocean Perch					
Fillet 1 lb. "	**Canada**	1.940	-	-	-
Fillet 5 lb. '	**Canada**	**1.500**	-	1.625	8%
Fillet 5 lb.	**Iceland**	*1.389*	*1.675*	1.690	22%
Pollock					
Atl. blocks		0.89S	1.050	1.050	17%
Alaska blocks		0.913	1.050	1.050	15%
Fillet 5 lb.	**Canada**	-	-		
Fillet 5 lb. **bnls**	**Canada**	"1.200	**1.440**	1.483	24%
Fillet **5** lb. **bnls**	**Iceland**	1.160	1.470	1.458	268
Turbot					
Blocks		1.150	1• 575	1.575	37%
Fillet 5 lb.	**Canada**	1.519	2.300	2.300	51%
Whiting					
Blocks		0.735	1.000	1.000	36%
Fillet 10 lb.	S. Amer.	0.750	0.865	0.880	17%

Prices •re derived *from the* Boston Fishery **Market** News Report, **National Marine** Fisheries SewIce. Prices sre **FOB** Boston, Gloucester **and New** Bedford **as** quoted by producers, ***importers*** ● ***nd*** brokers to **primary** wholesalers **and** producers.

Source: **Groundfish Market** Review, **DFO.**

6.0 MARKET ASSESSMENT

Interviews were conducted with key restaurant, airlines and food suppliers in the Northwest Territories, Edmonton, Vancouver, Toronto and Montreal to determine market potential. Sales volume estimates were obtained from individuals interviewed where possible but were generally not detailed in the interview narratives. Rather, these data have been pooled and extrapolated to form the overall estimates outlined in Section 6.6. 'Potential Volumes". The information gathered was also supplemented by research recently conducted by Nark Webber[73] and Andrich Consultancy Group[74] into country food.

6.1 Southern Canada Restaurant Impressions of Country Food

Background: Executive chefs and purchasing representatives of fine restaurants in major Canadian cities were interviewed to obtain user-impressions of N.W.T. Country Foods. In most cases, those interviewed were exposed to country food through the recent trade mission sponsored by the Department of Economic Development & Tourism or had used game and northern-fish in the past.[75] It should be noted that only a few restaurants were surveyed in each city and the views stated may not represent all food service establishments. The purpose of the interviews was to gain an understanding of interest in country foods and identify supply conditions and concerns common to that geographic region.

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73 Country Food Marketing Survey - Iqaluit - June 1987.

74 Arctic Foods Promotional Trade Mission - November 1987-Summary.
Mackenzie Delta Fish Marketing Assessment.

75 A list of restaurants surveyed is included in Appendix B.

6.1.1 Montreal Market

Background: Typically, diners at *fine* restaurants in Montreal are upper business class and expect to be exposed to exotic, unique dishes. They will pay as much for these 'novelty" dishes as they would for other top menu items. *Restaurants* strive to meet this demand and showed great interest in discussing the possibility *of* obtaining products from the N.W. T. It is believed that the only way to market the products was through the fine restaurants and that any mass retailing would fail for both price and supply reasons.

Products *of* Interest: Interest was expressed particularly for muskox and Arctic char. There is interest in caribou but it is perceived to be similar to reindeer end top-quality *fresh* reindeer from New Zealand is already available on a regular basis. There 1s also a steady demand for seafood but northern seafood products are not perceived as unique and they would have to compete strictly on price. Most such product is currently being sourced from Atlantic or U.S.A. suppliers who have very large end efficient distribution networks. This is also true *for* most other northern freshwater fish (trout, whitefish, etc.) in thet they must compete with local Quebec and . . Ontario suppliers which is widely believed to be impossible. -

Conditions of Purchase: There 1s a very violent concern about product quality and consistency. Such restaurants have achieved their success through serving 'only the finest" products on s consistent basis end they will not compromise quality (and naturally product safety). The game meats are considered to be somewhat seasonal end are particularly in demand during the last quarter of the year (coinciding with hunting season). The chefs also believe tbet N.W.T. game meats are. in short supply end, es such, this limited supply could be best marketed during the fall. If stocks were available year round, the product could then be *offered over* a wider period of the year. The chefs are generally not interested in searching across Canada for a particular product. They rely greatly on their local suppliers *for* product end they believe greatest market

penetration would be obtained through approaching key local distributors or brokers.

There was concern over product price. The top cuts of the game animals were of greatest demand and the chefs compared them to beef tenderloin. They indicated that the purchase price should not exceed $16.00 to $20.00 per kilogram. This would allow them to charge their main courses in the $15.00 to $25.00 range, the most appropriate menu prices for such products. The chefs interviewed indicated that they and other Montreal *chefs* preferred fresh fish and *seafood* and they doubted the availability of competitively-priced *fresh northern* products year-round.

6.1.2 Toronto Market

Background: Toronto diners also tended to be the upper business class but chefs believed their patrons were less conscious *of* price than diners in other parts *of* Canada, except perhaps Vancouver. The economy in Ontario is regarded to be the strongest in Canada presently and this is likely affecting consumer attitudes. While it is believed that Quebec residents are somewhat more accustomed to game and seafood, Ontarions are also demanding more adventuresome dining *of* late.

Products of Interest: The chefs interviewed currently served New Zealand reindeer (often referred to as venison). Some also served *other game species on* special occasions or if supplies were available. All restaurants served a wide variety *of fish* and seafood. The greatest *interest* and *gain* appeared to be in muskox. Caribou and reindeer were desirable but were not viewed as uniquely Canadian and would compete directly with New Zealand product. Some restaurants served bison (or buffalo) but it was *not deemed to be* as exotic or unique as the other game. Game is viewed to be largely seasonal in Toronto as well, with chefs expecting the greatest promotion success to come in the late fall and winter months.

The demand for fish and seafood tends to be *for fresh* product on a year round *basis.* Salmon dominates the fish market because *of its* ready availability and price. Some interest was expressed *for* char but chefs tended to compare it to salmon when purchasing decisions are made. There vu little interest in the *freshwater* fish specifically produced in the N.W.T. The chefs purchased their *freshwater* fish and turbot locally and did not know where the fish came *from* originally. Similarly for seafood, there was little perception of northern shrimp or scallops being unique and the restaurants were satisfied with the product they were currently getting, regardless of its point of origin. There was consensus that *the* market was demanding more seafood, even with the recent mussel scare, and that freshwater fish demand was growing much slower.

Conditions of Purchase: The responses from Toronto *chefs were very* consistent with those obtained in Montreal. Of critical importance was quality snd consistency. Chefs are willing to *offer* game, on a seasonal basis if necessary, provided the product can be delivered as promised. Fish end seafood are generally preferred in fresh form on a you round basis. Many different sizes snd types of shrimp are purchased but chefs tend to prefer raw, peeled product. This 1s the general *preference* of the Canadian market and northern "freezer trawlers are generally able to cook and freeze only shell-on whole shrimp, necessitating their access to Japanese end European markets where such product is preferred. The northern shrimp grounds are generally too far from Canadian plants that could peel and further process the shrimp economically. Again, interest exists *for* char but there is concern *over* a regular supply. Chefs *were* not *able to* give estiutes *of* the prices they would pay *for* fish end *seafood* but indicated thet competition from local end U.S.A. products would determine their source. Little differentiation was made between northern end traditional sources of fish end *seafood.*

Game mat, particularly muskox, Is in demand and expected prices *were* consistently compared to those of New Zealand venison which ranged

from $15/kg (hind, bono-in) to $45/kg (boneless strip tender). Pot routs, shoulders and legs generally wholesale for about $30/kg. This price range is considerably higher than prices mentioned in Montreal and, in addition, some chefs indicated that price was not a concern as long as the product is of superior quality.

6.1.3 Vancouver Market

Background: The Vancouver metropolitan area, which includes the City of Vancouver plus 30 bedroom communities, represents the largest concentration of population in Western Canada. Its population of 1.4 million (1986 Census) -constitutes close to half of the total B.C. population, and five percent of Canada's population. This dense concentration of people, plus the attrwtion of the city for the tourist trade, makes it an important potential market for N.W. I. country Foods.

Market research was conducted in Vancouver through personal interviews with nine executive chefs, three fish/meat wholesaler/distributors, and one airline catering department. The restaurants and hotels were chosen for several reasons: 1) some of these chefs had been involved in previous research on N.W. T. country foods (ss identified by Mr. Don Anderson); 2) they represented some of the largest major hotels in Vancouver, and therefore were likely to serve a larger clientele; and 3) an attempt vu made to choose a sample thst represented several areas of the city i.e., downtown, close to airport, North Vancouver. It was believed that this approach would present a more balanced picture of the demand. It should be noted that the sample size for the survey is small and the results were intended only to indicate the level of interest and potential demand in this market for N.W. T. country foods.

The following sections highlight the findings of the restaurant survey in Vancouver.

Profile of the Restaurants: With the exception of two free-standing restaurants, all of the chefs interviewed were part of a large hotel. The chef at Cafe Splash had been there for less than a week and was formerly the chef at the Granville Island Hotel. His responses, therefore, were from his experiences at the hotel.

The hotels commonly had one or two "white tablecloth" restaurants, plus a coffee shop, room service and banquet facilities. Most of their clientele were either local business people or business travelers. Tourists made up the second largest clientele, and this portion increased during the summer months. All chefs indicated that December (with Christmas banquets, etc.) and summer were typically their busiest times.

In terms of total number of meals served, lunches represented anywhere from 30 to 50 percent; dinners, 20 to 70 percent; and banquets, 30 to 50 percent. Business people made up the largest clientele group for lunches, with dinners being a mixture of business, local residents and tourists. Banquets were seined primarily to local business groups, organizations and conventions.

Products of Interest: All of the chefs surveyed used some game and large volumes of fish and seafood on their menus. Game was used in three forms: as appetizers, pates or entrees. Some of the chefs had used reindeer from the N.W.T. previously, and some had been involved in the Arctic Foods Promotional Trade Mission in 1987.

Reindeer was the game meat served most often, followed by buffalo. Many of the restaurants in Vancouver have been using New Zealand venison for some time now, which they source through Briscoe's Fine Foods Ltd. or Continental Importers Ltd. The chefs who had used N.W.T. reindeer previously obtained it from Lambco at Innisfail, Alberta. A lot of enquiries about the N.W.T. reindeer were received during the course of the interviews. The chefs all indicated that venison had been a very good seller in the past. One chef said he

would prefer to use wild reindeer then the domesticated version from New Zealand, because "farmed" reindeer does not have the same true "game" flavour. This holds true for buffalo as well. One chef indicated that he had tried buffalo on the menu, but it was not a good seller. He believed that the difference between beef tenderloin and buffalo tenderloin was not *sufficient to* justify the price difference. This may relate to the previous comment regarding domestic game versus wild game. The chefs also indicated that game consumption displayed some seasonality; demand increased in the fall.

All of the *chefs* interviewed were also interested in muskox and caribou, although these products were not as familiar to sow of them as the reindeer and bison.

Overall, the chefs were very keen to seine more game meats, including the N.W.T. products. They indicated that game meat is a novelty to many people and they would therefore try it *for* a change. The European influence in Canada has contributed to this demand *for* game. Many indicated that they would put these products on their menus (including banquet menus) if the supply was readily available. Several of the chefs currently have buffalo and venison on their menus, and others indicated they would consider specialing the products or seining them for a "theme" dinner. The chefs also indicated that they change their menus periodically; some often as every month, others every six months. Some indicated that they would only have one game entree on the menu at a time, plus specials. It was also indicated that if one of these better restaurants started serving a particular product, the others would follow suit to maintain their market share.

Regarding competing products, the chefs believe that game could only replace beef to a small degree; it is considered to be more of a gourmet *Item.*

The chefs were also surveyed about the N.W.T. fish products. As Vancouver is a port city, fish and seafood are big sellers in the restaurants. Many of the chefs had used Arctic char, whitefish, lake trout, shrimps and scallops. There are two or three main fish Wholesalers in Vancouver that service these restaurants - Albion and Blundell are two of the largest. There appeared to be the greatest interest in the Arctic char. Several chefs had specialed it or put it on their menus, and it had been a good seller. Lake trout had also been a good seller. The scallops and shrimp that the chefs are serving are sourced from other countries. Almost all of the chefs said that they had good success in selling the Arctic char, although tourists want salmon when they are in Vancouver. Therefore, the market for char would probably lie with the local clientele. Some of the restaurants had put char and lake trout on their menus from time to time, while others had specialed the fish products. Overall, the chefs felt that fish and seafood products would always be big sellers in Vancouver; whether this demand is filled by N.W.T. product is not clear.

The chefs all indicated that if the products were available (particularly the game meats), the most effective method to introduce them into the market would be restaurant selling. One chef said that he trains the waiters daily on selling the products on the menu that day. Many of the chefs also do point-of-purchase selling themselves in the restaurants. Clientele often look to the waiters and chefs for suggestions on dishes to try.

Conditions of Purchase: The chefs were surveyed on several items regarding volumes, product specifications and price. Every respondent indicated that he preferred fresh over frozen product, and would use frozen "only in a pinch". This applied to both game and fish products. Several of the chefs also indicated that they preferred to feature local (Canada) products Instead of imported ones (such as the New Zealand venison). This, together with the fact that N.W.T.

products are perceived as unique Canadian gourmet *foods,* presents an opportunity to the N.W. T. industry.

The overriding concern of ● ll the chefs, with regard to game meats, was availability of supply. To b. ● blo to put these items on their menus, they must have ready supplies of the product, ●t ●consistent quality and price. until these conditions are met, the most the industry could hope *for 1s* to have the products featured for special ● vents, thereby limiting potential sales. The Mill cuts that the chefs would use include: loins, tenderloins, hind quarters, racks end hips . Some of the chefs indicated that they could utilize the cheaper cuts of the carcass as well as the prime cuts. Most *of the* chefs preferred to have their fish delivered dressed head-on. They & their own filetting.

With regard to price, most of the chefs indicated that this would not be ●problem in their establishments, as the clientele ●re prepsred co pay high prices for gourmet foods. It was indicated that game dinner entrees, which include five to six ounces of meat, sell for $18.00 to $22.50. . .

6.1.4 Edmonton Market

Background: Edmonton is typically viewed as the *"gateway* to the north' ● nd visiting business people and tourists from the south expect to see northern *foods* on the menus. With Edmonton's recently built Convention Centre and its renowned West Edmonton Mall, the city ● xpects to see an increasing volume of hotel and restaurant clientele in coming years.

Products of Interest: *Chefs* have used N.W.T. reindeer *in* the psst end some continue to use char as ● summer special (when it is available fresh) while others purchase it on ● year round basis *frozen.* It was indicated that reindeer, caribou and muskox were not 0v8i18blQ while bison *1s* ●vailable from Alberta sources . Strong interest was evident for ●consistent supply of northern game meat

and they ●*rc* willing to pay $20.00 to *$30.00 per* kilogram *for it.* It vu compared to ● ilk-fed veal when pricing and they are ● ware that supply is limited ● nd production tends to b. seasonal. The market is considered wide open and thy ● xpr.ss.d concern that northern *food* promotion has been successful but sourcing the product has not been possible.

Shrimp and scallops are sourced through local fish suppliers and the product is generally from the ●ast coast or southern U.S.A. Fresh fish is sold occasionally but saltwater *fish* tends to be the dominant demand.

Conditions of Purchase: The restaurants tend *to* buy their *products* in ●form that 1s ready to use. The char is purchased head-on and gutted and seafood is raw, individually quick frozen (IQF). Game has not been sourced to ●great●xtent recently but it would be preferred in ●pre-cut form as well. The game captured the greatest interest as ●unique concept and, while the *preference* tenda to be *for●year. round* supply, ●guaranteed seasonal supply of quality product My still hold potential.

6.1.5 Summary

The restaurants visited had●great deal in common. They perceived product quality to be their utmost strength and they would not take any chance on products that *were of* low or inconsistent quality. Most restaurants were very interested in learning more about N.W.T. country *foods* available but ● xpressed concerns about availability and location of suppliers. The restaurants vere confident in their local wholesaler and would be most open to buying these products if they knew that their supplier would *take* responsibility for assuring their orders were filled. The restaurants were ●ware of the limited supplies that could be offered to the market and would work ● round this problem ●s long ●their order was filled once they had committ-ment from the supplier. Some restaurants had ● xperienced cancelled

shipments even ● *fter* supply guarantees were made to them by other local fish ● nd game suppliers and this is an ● violent concern.

Interest was ● xprossod in Country Foods in varying degrees depending on the product. There is ● strong interest in muskox because of its uniqueness. There is also interest in caribou end reindeer but a competitive market exists because *of the* high quality products currently ● vailable through their local distributors. The N.W.T. game products were compared to top veal or New Zealand venison ● nd ● high price was ● nticipated. There was ● lso son optimism that the cheaper cuts could be utilized in other meals instead of high-priced dinner ● ntrees. Bison is also ●vailable end was not generally deemed in the same category of game se the forementioned. The *preference* was ● lmost unanimously for pre-cut portions with the standard ● lready set by the New Zealand venison currently being supplied. With regard to *fish end* seafood, Arctic char captured the greatest interest among the fresh fish. However, several restaurants ● re now serving salmon in place of the char they once used because of more reliable supplies.

6.2 Southern Food Supplier Interest

Major suppliers of food products were interviewed to ● scertain their perceptions and outlook for Country Foods supplied from the Northwest Territories. Some of these individuals had ● cmlly handled *or were* familiar with N.W.T. product (especially Arctic char end reindeer) while others had not been ● xposed to country food.

While an ● xhaustive survey of ● ll distributors was not carried out nor intended, their ● dvice on end interest In the products prove ● specially helpful *for* strategic development *of the* resources and their components.

6.2.1 Red Meat and Game Suppliers

Montreal: Canada Packers has ● bout 20 percent of the market in weakly rod meat sales to the Montreal market, amounting to several hundred tonnes. They carried N.W.T. reindeer when it vu ● vailsblo but they ●re noteowaro of any other game meats produced in the N.W. T. currently. They recently stocked New Zealand venison but their supplier had labelling problems (1... bilingual text and weight units) snd supplies were currently disrupted. CP is confident that demand is growing *for* lean products, ● specially ● xotic game like venison in the food service market. They ● lso believe that food service is the most ● *ff*icient method to ●nter a market●t present. , CP would be interested in 1 isting new products because they have● strong mandate to provide improved service and● broader product range to their customers. They●re conscious *of* their competition (especially the newly merged Provigo-Dellixo firm) and they believe *offering* ●wide range of unique products will maintain their competi - tive position. They indicated that the demand was very small relative to beef but ●consistent, high quality product would be able to penetrate the market in a similar fashion *to the New* Zealand product. It "-u'"- stipulated that the fine restaurants would demand the prime pre-cut " portions and that the cheaper cuts msy be successful in the institutional and processed meats trade.

The products could ●nter the food service market in two ways. The producer could continue to market directly to chefs (in-person, trade publications) and in turn, the chefs would request the product be ● vailsble through their local supplier. The other method would be to directly ● pproach suppliers and brokers and rely on them to market the product to their current food service customers. 'i'he CP repre - sentatives could not resolve which method would be the most successful ● lthough they were confident thst both methods could yield good results. A final indication of their interest in ● xotic Canadian game products came *from* their willingness to work with the producers to ● ttempt national distribution.

Montreal: T. Lauzon Ltee is another major meat supplier in Montreal and currently supplies many of the major hotels and restaurants with red meat and poultry. The representative agreed that the trend is towards leaner and health-wise products. However, the quality and availability of the products would ultimately determine market success. While the firm does not currently carry game products because of a lack of storage space, they do get calls for game products regularly. The fine restaurants typically vent Federally inspected prime cuts from a local supplier that they are used to dealing with. The cheaper cuts were thought to have potential in a smoked or processed form.

Montreal: La Maison du Gibier Inc. is a new supplier of game (gibier) in Montreal. They provide a variety of animals including rabbit, Quebec red deer, wild boar and buffalo. They also supplied reindeer when it was available from the N.W.T. The local farm raised red deer are marketed and the supply will be supplemented with New Zealand product shortly. The representative indicated that a competing firm had been supplying game to the Montreal markets for several years but the service provided to customers was unacceptable and set the market back considerably. La Maison is confident that the sales of all game meats will continue to increase rapidly. The problem they are currently facing, however, is that they generally only market quarters and halves of red deer at $18.00 per kilogram while the market is demanding specific cuts. It was indicated that the average selling price for the carcass was fair because the prime cuts alone would equal the value received for the larger portion. Buffalo meat is also local and is sold in several forms, including roasts, steaks, sausage, stew meat and ground, for up to $21.00 per kilogram ($10.50/kg. for a half or whole animal). No estimate of market size could be made although the company is very interested in obtaining any N.W.T. game that it can. They were, however, of the belief that N.W.T. caribou was contaminated and that this was the reason it was not available. This misunderstanding was cleared up.

Toronto: Honeyman Beef Purveyors Ltd. is the largest supplier of mat and game to the food service industry in Toronto. They deal with 50 to 60 percent of the restaurants in the city, supplying the domestic red moats, New Zealand venison and very small amounts of wild boar and buffalo . The company carried the N.W. T. reindeer when it was ●vailable but was not aware that any game products were being produced in the N.W. T. currently.

They indicated that game demand typically came from the "white tablecloth" restaurants who ordered the prime cuts most often. *They* currently import fresh ● nd frozen venison from New Zealand ● nd wholesale it for $15.00 to $45.00 per kilogram, depending on the cut. It was indicated that they would prefer to replace the product with Canadian game if quality, supply and price were consistent with what customers have now grown accustomed to from *New* Zealand (Appendix C contains copies of marketing material currently ●vailable on these products).

It was indicated that bison was ● vaildle from ● Manitoba supplier but that quality was inconsistent and supply was unreliable. There is occasional demand *for the* meat but it 1s not typically thought *of as* game *or* ● northern animal.

Calgary: Premier Meats is ● supplier of meat, poultry and seafood to the food ● e-ce industry in Alberta. The representative indicated *that* "white tablecloth" restaurants would pay any price *for* choice quality game meat but no supply has been ● vailable since Canadian Reindeer Company halted its slaughter. Currently, confusion surrounds game production and sales in Alberta although several farms are now gearing up to produce ● lk in anticipation that local production till be permitted. *If* this comes ●bout shortly, the N.W.T. products till likely miss being the first into the market. The N.W.T. producers were criticized *for not* being able to *offer the* steady supply of meat required to maintain a market *for the* products. The company was very interested in obtaining muskox samples to take

to Japan on their trade promotion tour in April. They believe exotic game could ● ntor the growing Japanese market from Canada.

Edmonton: Capital Packers is a Federally inspected meat facility ● nd it currently provides the storage ● nd processing services for muskox shipped out of the N.W.T. by ULU *foods.* The sales manager did not have ● xporionco in selling game meats and his only involvement with the muskox was to refer ● ll interested parties directly to ULU Foods. The muskox was processed into loins, ponderosa hips, rib steak, roasts, patties and trim; ●bout 1,000 kg. remain frozen in storage. The sales manager is optimistic ●bout the potential *for* game meat, particularly selling it to Japan, and is expecting to process more meat for ULU Foods this spring.

Vancouver: Briscoe's Fine Foods Ltd. is *the only* meat processing plant in the lover mainland of B.C. handling game meats● t present. Their products include: ●full range of beef cuts, including portion control cuts; pork cuts; smoked meat; sausages and wieners; poultry; prepared fish ●nd chicken products; Montreal white veal; local veal; New Zealand, Australian and U.S.A. lamb; game meats (rabbit, venison, buffalo, pheasants); smoked salmon; and a range "*of* other juices and vegetables. "The largest share of their business is in the beef trade (60 percent), followed by pork, poultry and lamb *(20* percent) and game (20 percent). Of the game meats, three percent *of* those sales ● re buffalo. *'l'he* majority of Briscoe's business is the hotel-restaurant-institutional trade in B.C. As the plant is only Provincially inspected, they ● re restricted to selling within B.C.

Briscoe's has been selling game meats *for less than* 10 years. They entered the market when they saw ● demand *for the* products. Mr. John Fowles, General Manager of the company, indicated that the impetus for this interest in gem meats came from heightened consumer awareness about health (game has ● lower fat content than most red meats), ● s well as the European influence in Canada. Some products have been widely seined *for many years* in Europe.

Briscoe's undertook several steps to introduce game meats into the market. They initially presented the products at the B.C. Restaurant and Food Services Show, where they had contacts already established. They then started to carry the products and promote them through promotional materials in the restaurants such as table tent cards, media coverage (magazines, newspapers and television), and one-on-one contact with potential buyers. They emphasized the hotel-restaurant-institutional (H.R.I.) trade rather than retail.

During Expo year, they sold one million buffalo burgers - 650,000 of these at the Expo Site. Briscoe's currently sells approximately 20,000 pounds per year of venison. Most of this is absorbed by the Vancouver market. Mr. Fowles estimated that he could sell 2,000 to 3,000 pounds per year of muskox if it was available. Following the promotion at Expo, he received many requests for it. He indicated that all game products are competitive; *therefore, some of the* buffalo and venison sales could potentially be displaced by muskox and caribou. Mr. Fowles also felt that the game meats will be a "big mover" in the next *few* years due to shifts in consumer preferences. He indicated that New Zealand has positioned its venison well for this *shift* by conducting *a very effective* marketing strategy and making the product available year-round in *different* cuts. This market for game meats will likely be a specialty niche and will not hurt the beef sales to any great extent.

Briscoe's has received requests for the N.W.T. game meats, from *the* H.R.I. trade, but supply has been a problem. To market *these* products into Vancouver, Mr. Fowles indicated that several things must happen:

- carcass must be broken down into a range of *box-ready* cuts;
- the plant must be Federally inspected;
- the product must be cryovaced and packaged and labelled attractively;
- supply must be consistent; and
- promotion must be undertaken.

Continental Importers Ltd. is an importer and distributor of specialty foods in the lower mainland. They also have distributors as far east as Manitoba. They carry a wide range of gourmet items, including game meats and fish (fresh, frozen and smoked). They are licensed to handle but not process fish. Their main business is in the food service trade - major hotels, top restaurants and airline flight kitchens . X2. Edwin Savage, Sales Manager, indicated that their business is tied at selling an overall package of goods to customers. Their sales are seasonal, with some increase in game during fall and winter months and seafood and fish in the summer.

The game products that Continental has dealt with include: bison and caribou from Quebec[76] and reindeer and venison from N. W. T. and New Zealand, The Quebec bison was only available for two months, but was well - received. It came in six ounce cryovaced steaks. Mr. Savage indicated that he could sell all the reindeer he could get. It is assumed that some of this demand could be passed onto the other game meats . Continental has also dealt with shrimp from the Oregon Coast and the Maritimes, scallops from the east coast, Japan and Singapore and whitefish. caviar from FFMC. Mr. -a~w7%?fdv4d~t-''$dfM product demand is based 100 percent on price. If the N.W.T. products were competitively priced, he could sell large quantities. Mr. Savage's main concern with all the N.W.T. products was availability of supply. He indicated that he has had requests for the products but been' t been able to fill them.

6.2.2 Fish and Seafood Suppliers

Key fish and seafood wholesalers were interviewed in the maj or centres. They were asked about their impressi ons and knowledge of N.W.T. products and the potential to further commercialize thu. Their views on the unique qualities of northern species were also solicited.

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76 At the time of the interview (early March), Mr. Savage indicated that Quebec caribou would be available later that month.

Montreal: Moderne Ltee - Seafood is one of the top five food service suppliers of fish and seafood in Montreal and has roughly 20 percent of the market.

Europeans tend to be the major purchasers of fish in Montreal although the greatest volumes and revenues are obtained from seafood (saltwater) species. The whitefish market tends to be dominated by the Jewish community and growth is minimal. Lake trout, rainbow trout, pike and walleye are sourced through the FFMC and other local suppliers. There are generally no supply problems and it was not known where the fish were actually grown. It was indicated that the price and assurance of steady supply were the most critical factors in the common freshwater fish purchases. Freshwater fish are not the preferred species of Moderne's customers; the market greatly prefers saltwater species.

The only fish identified as unique to the N.W.T. vu Arctic char. Fish peddlers and restaurants often request it over salmon. However, the preference is for fresh product and only a very limited supply is available. Apparently the FFMC contacts fish wholesalers when-supply is available and it is quickly sold. Moderne also believes that more cher could be sold if the public was more aware of the fish.

Turbot is currently sourced from both the east and west touts and is generally seined as steaks. It is not a big volume fish but supply and quality are reliable.

Shrimp and scallops are sourced world wide depending on the customer's preference. Both warm water and cold water scallops are stocked . Moderne believes they had shrimp from the N.W.T. over the lest two years and the quality was judged to be good. However, there are many companies and countries supplying shrimp and they must be price competitive.

Montreal: Canada Packers has a division which supplies frozen fish and seafood to the food service industry. The freshwater fish species carried are walleye, halibut and trout. The manager interviewed was not sure where the fish originally came from and indicated the price and quality gain were the main factors. There has been little demand for Arctic char and he does not carry any. CP sources their fish through a local broker and they find this to be the most reliable method of assuring consistent product. Saltwater species are purchased monthly from eastern Canada and the U.S.A. Shrimp are also supplied from Ecuador, Panama and Peru. CP was not aware of any N.W.T. fish or seafood currently on the market other than char.

Ottawa: Capital Fish is likely the most informal fish and seafood supplier on N.W.T. products. This is because Capital is a shareholder in Farocan Inc. (the firm operating the northern shrimp boats discussed earlier) and it tends to offer a market outlet for the Baffin area product.

Capital has handled turbot (caught longlining at Pangnirtung) and shrimp (shell-on) and indicated that the products were good. It was noted that very little of the N.W.T. shrimp entered the Canadian market because we are not accustomed to head-on product. The peeled shrimp we generally consume are warm water species that dwell closer to southern shores or are farmed close to large processing plants. The location of the shrimp grounds relative to Greenland makes it more feasible to prepare the products shell-on for the Danish and other European markets. The turbot supplied last year had a good demand in the winter, during the off-season for other several ocean fish. However, there is ongoing competition from West Coast and Greenland fish and consumers will not pay a premium for the N. W. T. turbot (likely a maximum of $3.00/lb.). Capital believes they are the only external outlet for the N. V. T. turbot and wants to continue to sell it, indicating that they sold 5,000 pounds in 1987 (equating to about 1/2 of the total production). The firm believes that

scallops may hold good potential and was aware that a test fishery was now underway.

Capital also carries char and other freshwater fish. It was indicated that char is a unique product and faces competition only from salmon. However, transportation of the fresh product was also expensive. Trout and other fresh fish can be supplied locally and Capital was not optimistic about the competitiveness of northern supplies. It was pointed out that inconnu had a very limited market and the Inuit themselves did not trade the fish commercially.

As a summary statement, the representative indicated that potential existed for the shrimp (which is showing reliable stocks) and halibut and scallops, provided the test fisheries are successful.

Toronto: Van Horne is the largest supplier of fresh fish and seafood in Toronto. The only N.W.T. product the firm was handling and familiar with was frozen char. They purchased it through the FFMC head-on gutted when it was available. They also buy fresh Labrador char. It was believed that Montreal restaurants were more aware of N.W.T. char and likely demanded more of it than Toronto. Freshwater fish are purchased locally because of both price and quality considerations. The general preference among fresh fish suppliers is to obtain the product as nearby as possible.

Saltwater species have a more established market and are still showing the greatest sales gains. Shrimp is imported frozen from the U.S.A. through a local broker and it is the preferred product because of its larger size. Turbot is purchased from Nova Scotia sources and the quality and price are deemed to be very acceptable.

The firm president indicated a guardad interest in N.W.T. fish, indicating that if a consistent supply of fresh product was available, he would be interested in discussing marketing it.

Toronto: St. Lawrence Foods is a large supplier of *fresh* and frozen fish and seafood to the food service industry. The manager of the *fresh fish* department was only aware of Arctic char as a unique northern *fish.* The company has not been able to obtain the product on a year-round basis. It was indicated that restaurants would not commit themselves to putting the fish on a menu if supplies were uncertain. The fish would continue to be marketed on a limited basis as daily specials only. Salmon was deemed to be a close and lower priced substitute that was steadily available.

Other freshwater fish are sourced locally. The manager indicated that they had carried turbot but are unable to source it currently. Cod, sole and snapper are often considered to be cheaper and superior fish by their customers and the firm was not trying very hard to *find* another supplier.

Seafood (shrimp. mussels, scallops) are sourced from many pieces, including Chile, Mexico and Florida. However, the company was not aware of any such product produced in the N. W. T. The manager was confident that both fish and seafood were [illegible] and consumers would continue to shift towards lighter, more health-conscious meals .

Edmonton: Billingsgate Fish Company Ltd. is a prominent fish and seafood supplier. The company also sells Alberta-raised buffalo. The market for traditional freshwater *fish* (whitefish, northern pike and trout) is considered to be level, with limited growth taking place . Inconnu is said to hold an insignificant market in the west.' The company sources freshwater fish from Alberta suppliers directly as the FFMC can be circumvented for fish sold within Alberta. The company is not aware of seafood supplied from the N.W. T. and indicated that its seafood came from east coast suppliers. The company sells various kinds of shrimp including whole cooked shrimp from Newfoundland (like those produced by the northern shrimp fleet) to the restaurants offering large seafood *buffets. The* turbot market

is believed to be extremely small in the west, with Montreal and Toronto believed to be the major consumers of the product. Arctic char is bought through the FFMC in its fresh form in August and September and frozen for the balance of the you. The fish is generally in good supply and the market is growing.

The representative is also knowledgeable about game meats. The firm carries Alberta buffalo and sells prime cuts and ground meat. They would like to see muskox and caribou but are critical of the recent N.W.T. promotion that has not yet put any product on the market. He believes that chefs will prepare meats from product that is made available to them and new game varieties would sell quickly. "There is no question that the market is there" if quality and supply are consistent. It is believed thet a primal wholesale price would be $30.00 - $40.00 per kilogram and the poorer cuts could get $10.00/kg.

Vancouver: Albion Fisheries Ltd. has been established u one of Western Canada's largest fish end seafood distributors for 25 years. It also has distribution centres in Victoria and Kelowna. Albion is affiliated with J. S. McMillan Fisheries Ltd., one of the largest production companies in B.C. The McMillans specializes in groundfish, salmon, halibut and herring. The company has an extensive listing of fresh, frozen and further processed products, as well as some game meats (buffalo, venison, alligator). They handle game items primarily for specialty orders. Albion also deals in char, northern pike, trout, whitefish, scallops and shrimp. It obtains much of these species from the FFMC.

The majority of Albion's salesare to the H.R. I. trade, including the airlines. They have approxiaetely 20 percent of the B.C. market. All of the chefs that were interviewed indicated that they obtained a lot of their fish from Albion. Host of Albion's salesare in B. C., with some in other Western provinces as well. Mr. David Athey, President, indicated that they are planning to target the retail salesmore in the upcoming years.

Of the fish Albion obtains from FFMC (char, whitefish, lake trout, Northern pike), whitefish is the best sailor. Mr. Athey ● atiaetod that they sell 150,000 pounds frozen per year. He also said that the char market is very dependent upon the salmon market - when salmon is ●vaileblo ●t reasonable price, they are less likely to sell large volumes *of* char. For ● XW1O, Mr. Athey indicated that salmon was in short supply in recent months because the timing *of* salmon *runs* was not as predicted. Therefore, they were promoting char on their March flyer. These flyers ● rc part *of* a three to six month program geared ●t *product* development.

Mr. Athey outlined their ● pproach to product development. The *first* step is on. of research ●nd sampling. The product is tried in their test kitchen end served to some *of* their best customers. If it has merit, it is then presented to the sales department. At this point, the *product* is rated ● ccording to its potential: "A" indicates ● product requiring lots *of* ● ttention in marketing, while *"C"* means the product will likely be ● fast seller. Products falling in the "A" *category ere* generally fresh, imported products (N.W. T. game meats ● ight be an example) . . . Mr. Athey indicated that fresh products are very dominant in Vancouver. One salesman is assigned to the product end he/she specializes in that product. It is then promoted to the H.R. I. trade by the salesman.

Although Albion is largely ● *fish end* seafood distributor, they ● ppeer to be interested in the game market u well. All of the N.W. T. fish that is ● xported must go through FFMC; this leaves no room for developing new marketing channels. However, the potential ● xtits with Albion *for* marketing of gems products.

6.3 Flight Catering

6.3.1 Air Cana& Dining Semites Department (Montreal) is responsible *for* developing menus end promotions *for the* ● irline across

Canada. The company sources 15 flight kitchens, with Cara Operations *Ltd.* providing the product sourcing ● nd preparation services.

Air Canada is interested in offering its clients new meals but is concerned that many diners are conservative about whst thay ● *at. A northern food* promotion would require ● t lout four weeks end possibly up to three months of guaranteed supply to make the marketing ● *ffort* worthwhile.

Cara would do the meal preparation but would require the product to be portion cut prior to purchase. Federal inspection and consistent quality ● re given requirements but cost is ● lso a critical determinant in the ● irline industry. It was indicated thst the current price competition and seat sales would limit food budgets. The First-Class end international flights tend to allow the most meal flexibility *for the caterers* and a fall promotion *of* northern *foods* could hold good potential.

6.3 *2* Canadian Airlines International (Vancouver) is one *of* Canada's largest ● irlines ● nd has an ● xtensive catering department. They hsve used whitefish, lake trout and Arctic char from the N.W.T. previously in their business class. Canadian Airlines became involved in these products through son promotional vork done by the N.W.T., who had supplied the products ● t no cost as en introductory special. They hsd used some Arctic char prior to the promotion as well. The ● irline ● lso uses scallops end shrimp, ● lthough these ● re not N.W.T. products. No game has been used to date.

Canadian Airlines flies to five continents end catering is contracted out to flight kitchens worldwide. 'The menu planning is done by Ms. Jane Ruddick, Manager of Catering Standards, who wss interviewed in Vancouver. They have three classes *of* travel: *first,* Canadian business, end ● conomy. Business class comprises 1S to 20 percent of their international business ● nd 25 to *30* percent of travel within Canada . Demand for business class travel typically increases in the

winter months. Most first class travel is on international flights. Ms. Ruddick indicated that for transcontinental travel, CAI has approximately 40 to 45 percent of the market share. Their main competitors are Air Canada and Wardair.

Use of N.W.T. products has been primarily for the Canadian business class travel. The airline is able to offer two meal choices to the passengers in this class. This presents the opportunity for N.W.T. products which are not as traditional fare as some meat and fish products. Ms. Ruddick indicated that to offer a "controversial" product, they must offer an alternative as well. This precludes the airline from using N.V.I. products in economy class, where it is only feasible to serve one choice and all passengers must be satisfied. They also use some Arctic char in first class within Canada, although most of their first class travel is overseas. When planning menus for oversees travel, "theme" approachae are utilized; for exqla, an oriental menu for trips to China. Therefore, it would seem that the main opportunity for N.W.T. products on CAI is in within-Canada business class travel.

[illegible]

Ms. Ruddick plans four menus for each of the seven stations within Canada (Vancouver, Calgary, Edmonton, Winnipeg, Toronto, Montreal, and Halifax), linking a total of 28 different menus. The four menus within a station are rotated on a weekly basis for six to nine months. After that, some of the menus will be changed. Overall, for business class menus, 60 percent red meat choices and 40 percent fish choices are offered.

Ms. Ruddick indicated that the N.W.T. fish products were well-received by their passengers. However, price is a definite constraint when serving an airline, and she thought the cost was somewhat high compared to competing products like salmon. The variety offered by the N.W.T. fish products is offset to a degree by the higher price. She was also concerned about supply of the products.

There would appear to be little opportunity on the airline for serving game *meats.* *It is their* policy in business class to make beef steak one *of* the choices. Ms. Ruddick indicated they would have difficulty in selling game meat to the passengers, and they are not in a position to exporimant on the *aircraft.* Product acceptability is a must, as the audience is captive and few alternatives are offered. This is not a concern with fish products, because fish is widely eaten.

In summary, Ms. Ruddick offered two comments on the N.W.T. products:

- availability is a major concern; and
- cost must be competitive.

6.4 N.W.T. Market

6.4.1 Yellowknife Restaurants

Yellowknife has the largest concentration *of* people in the N. W. T., with about 12,000 of the 52,000 residents. The city is also an important location *for* business travelers, tourists and conventions. Yellowknife has four main hotels and about a dozen restaurants.

Many Yellowknife restaurants are now serving Country Foods on their menus and for features and banquets. The larger hotels (Yellowknife Inn, Explorer Hotel) especially cater to numerous banquets and conventions throughout the year and often feature Country Foods.

The four main restaurants serving country foods - Explorer Hotel, Yellowknife Inn, The Office and Our Place - were contacted to assess *their* perceptions of the industry. Potential (or current) demand was also quantified, and this is reported in Table 6.1. Overall, the chefs indicated that Country Foods were well-accepted by consumers, and the local demand was on the upswing. Demand also increases in the summer months due to the influx of tourists. Some of the chefs had these products on their menus, while others featured them from time to time. The most commonly seined Country Foods were Arctic

char, caribou and muskox. Whitefish, lake trout, shrimp and scallops were also served occasionally. One chef indicated that his dining room menu was 35 to 40 percent Country Foods *now*, compared to 1 .s s thsn ton percent a few *years* ago. He *expects* this portion to increase even more in the next *year* or two.

Most of the chefs were obtaining their products from ULU Foods and Canada Packers. The chefs voiced concern over the availability of supply, fluctuating prices, and the form in which the product was available. There have also been problems with quality *of* supply occasionally. In general, however, the chefs *felt* that there is a growing demand for the products and they would like to purchase more then what has been available to date.

Table 6.1

Demand By Major Yellowknife Restaurants (1988)*

(3.388.)

	Yellowknife Inn	Explorer	Our Place	The Office	Total
Char	1,700	3,000 -5,000	1,000	1,000	7,700
Whitefish	500				*500*
Lake Trout	300				*300*
scallops	600				*600*
Shrimp	600				*600*
Muskox	5,000	1,000		200	*6,200*
Caribou	6,500	600	1,000	200	8,300
Total	*13.700*	*6,600*	2,000	*1.400*	*23,600*

* Estimated current sales, or else could sell if the products were available.

6.4.2 Yellowknife Fish and Meat Wholesalers[77]

Yellowknife: Northern Fancy Meats is a local Yellowknife meat retailer, and holds a large percentage *of the* N.V. I. market. The Manager indicated that at times they have 90 percent of the N.W. T.

77 Burns Meats was also interviewed but they only distribute fish and meat shipped from Edmonton.

meat business . In ● ddition to the retail store in Yellowknife, *they* ● lso s.11 to numerous out-of-town customers such as R. C.M. P. detachments, nursing stations, ● tc. Their business is year-round, with little seasonality. Northern cuts and wraps meat in the Yell-ffo outlet , end it ● lSO has● smokehouse with● capacity of 100 to 200 pounds ●very ● i@t hours. 'f'heir sales consist of: 70 percent beef, 25 percent pork, four percent poultry, and one percent deli. They get most of their beef from Calgary, end pork from Rod Deer and Edmonton. Northern ● lso did some custom cutting and wrapping *of* caribou previously. While they ● ro not currently handling game meats , they have the *f* ● *cllities to do so* and ● *ro* interested in the Country Foods industry.

The manager *of* Northern had several concerns about the *future* of the Country Foods industry :

. Federal inspection 1s very important and the logistics would be *difficult;*
. consumer safety;
. the role of FFMC in the fish market;
. need adequate training *for* cutting and preparing the meats; ● nd
. must have ● market for ● very part *of the* ● n-l.

<u>Yellowknife: The Seafood Outlet</u>, ● local fish wholesaler/retailer was interviewed as well. The store carries ● wide variety of fish and seafood products and indicated volumes of about 600 kg. per month of char were sold. About 550 kg. ● re in● frozen form with *the* balance being smoked fillets. The manager indicated that there are *frequent* problems in trying to source *whitefish* ● lthough monthly sales are only about 50 kg. Tourists were viewed as an important market for char but that year-round demand ● xisted. Most other fish are ● vaildle locally and many people in the community apparently fish their own.

Some N.W.T. fish prices were:

Arctic char fillets	$1s . 30/kg.
Arctic char steaks	$13.85/kg
Arctic char (whole)	$11. 65/kg.
Arctic char (cold smoked)	$35.20/kg.
Arctic char (hot smoked)	$24. 10/kg.
Whitefish	$ 6.03/kg.

6.4.3 Yellowknife Retailers

The two main grocers interviewed (Super A and IGA) indicated that they would like to carry northern *foods. They* could sell game in large quantities *if* the meat were ● vaildlo and Federally inspected. One *store* indicated ● potential volume *of* 6,800 kg. could be sold in ● year. It was indicated that tourists ● specially are a sking for the products but none are ●vailable. Arctic char is carried when its ●vailable and demand is thought to be steady. Tourist demand for char is high and price has not been ● concern; one store indicated that they could sell 1,800 kg. per year if it was ● vailable. Other *freshwater* fish (whitefish, pickerel, trout) is brought in from *various* locations in the N.W.T. but volumes are said to be small . . Both stores indicated - ● problem getting ● ' quality whitefish locally - and were bringing it in from Rankin Inlet or Coppermine. It is believed thst local product is generally ● vsilable ● nd that many residents do their own *fishing.* Son turbot is sold locally ● nd is sourced from High Liner. Billingsgate Fish supplies the frozen shrimp and scallop sold.

6.4.4 N.W.T. Institutional Demand

A recent C. N.W.T. initiative has placed ● requirement on ● ll institutions to provide three country food meals per week. This requirement could provide ● significant market for N.W. T. foods ● lthough there is *concern* about inspection *of the* products (especially game meat), price and supply.

If these obstacles can b. overcome, the potential volumes could reach 50,000 kg. per *you.* See Table 6.2.

Table 6.2
Potential Institutional Volumes Per Year

	Number of Meals	Kilograms
Gems	140,400	21,800
Freshwater Fish	140,400	21,800
Seafood	31. 200	4,800*
Total	312,00078	48,400

* Assuming test production proves profitable war time.

The volumes●re based on several ● ssumptions;

- 2,000 people ●re consumers in northern institutions (corrections -600, schools - 700, college - 150, other . 350);
- ●45% : 45% : 10% split on game, fish and seafood is ● pplied;
- 155 g (5.5 ox.) servings●re used.

An assured institutional market would ● now-suppliers to plan their harvests in ● dvence and possibly gain ● fficiency in production as Well. "However, it is not likely that institutions would be ● ble to outbid fine restaurants (within or outside the N.W.T.) for the prime portions. This may not be ●problem if the institutions are ● ble to use the less ● xpenslve products less in demand by restaurants (i.e., game shoulders, whitefish).

6.4.5 Other N.W.T. Demand

Little research has been done previously into regional markets and data on both intra-regional ● nd inter-regional shipment of country food is sparse. A recent study done in the Baffin Region is the only

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78 Estimated: 2,000 people x 52 weeks/year x 3 reals/week - 312,000 reals.

such regional *info-tion* that was *found. 79* A survey *of* the local country food market yielded the results shown below.

Webber summarized that 100, 000 kg. or more of country foods are required in Iqaluit each year (including muskox and seal). The writer noted that this was not a complete sample snd that several respondents indicated that demand could not yet b. assessed fully for smoked char, turbot and scallops . The local smoked char processor indicated to Webber that 7,000 to 9,000 kg. of char would b. required annually for smoking. The data in Table 6.3 are consistent with other information collected which indicated that caribou and Arctic char tend *to* face strong demand in the north. No other *research of* this *typo* is available but the general conclusion from reviewing the report is that a large potential market for some country *foods* exists in ths N.W.T.

Table 6.3

Potential Demand For Country Food In Iqaluit

Food Type	Kg./Yr.
Caribou . .	> 13,925
Muskox	> 1,814
Smoked Char	46
Char	> 41,555
Turbot	4,730
scallops	46
	> 63,800

Source: Derived from Webber, 1987.

6.5 Distribution of Country Foods Now Produced

6.5 1 Product Flow

Movement of country foods is difficult to trace, particularly for inter- regional shipments. Discussion with HTAs and government

79 Webber, 1987.

representatives yielded an impression that much of what is produced generally stays within the region. The main exceptions were found to be the game produced by ULU Foods and the *fish* marketed *through* FPMC.

Game Meat: Most caribou is used in the community of origin either *for* subsistence *us. or* traded or given away. Meat is sold locally in SODS communities . Some meat is also transferred intra-regionally as illustrated by the findings of the Country Food Marketing Survey (Iqaluit) .$0 Due to difficulties in meeting Federal inspection requirements, no caribou meat is currently exported from *the* N.W.T. Therefore, there may be limited potential to increase commercial sales of caribou meat beyond the present level, at least outside the native population who are now purchasing much of the meat.

Currently about 34 percent of available commercial muskox quota is being utilized. This is equivalent to 867 animals or about 130,000 lbs. of meat (muskox *dress at* about 150 lbs.). Sales *for* 1986 give a good impression *of* potential product movement although some changes heve occurred since then (i.e., ULU Foods no longer sell retail cuts in Inuvik). Approximately 4 percent (3.000 lbs.) of this meat was sold through ULU Foods retail outlet in Inuvik. An additioml 144 (12 ,000 lbs.) was sold wholesale within the R.W.?. Approximately 82 percent (67,500 lbs.) *of* the muskox harvested was exported outside the N.W. T. for use at Expo '86. It is unlikely that an alternste market *for* this amount of meat would be readily available within the N.W.T., although production could be maintained if alternative markets were *found.*

Figures 6.1 and 6.2 outline the flow of muskox end caribou, respectively from production through to *point of* sale. It is interesting to note that, in both cases, the price paid to the hunters is half *or* just *over* half of final price derived.

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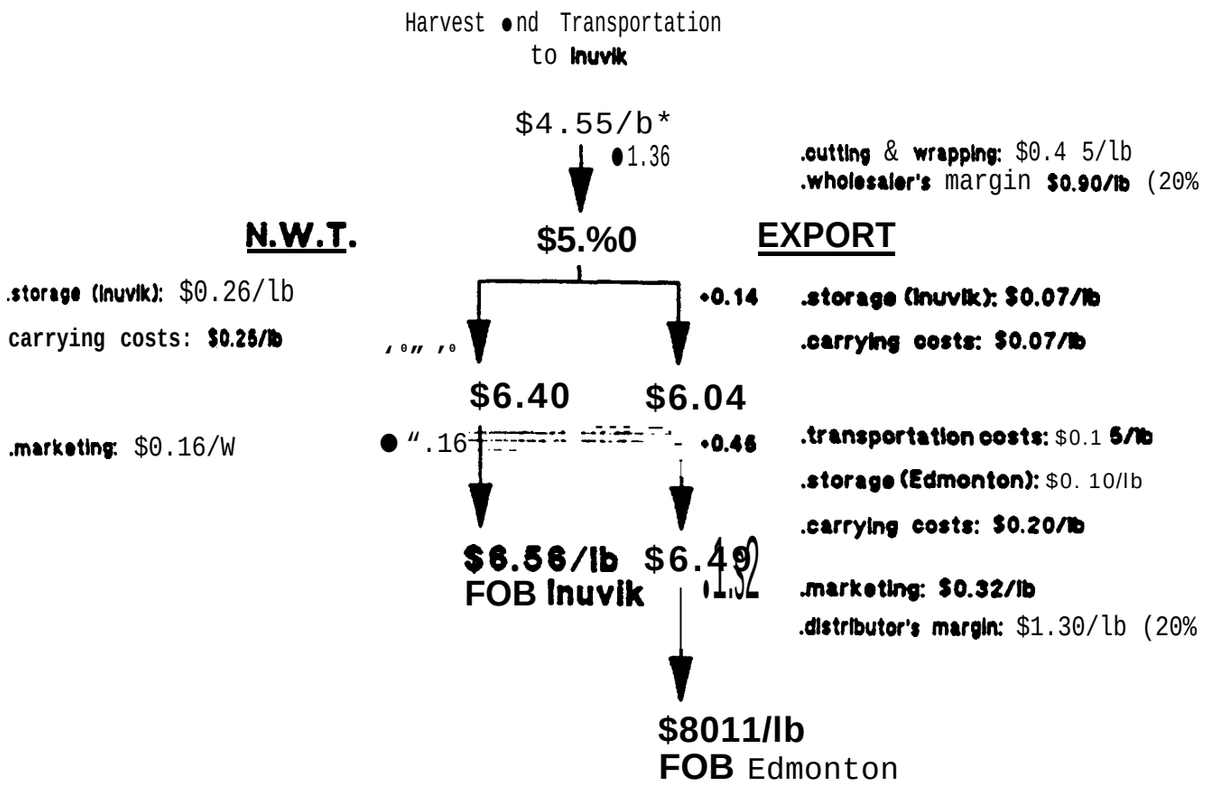
[80] Webber, pp. 16-17

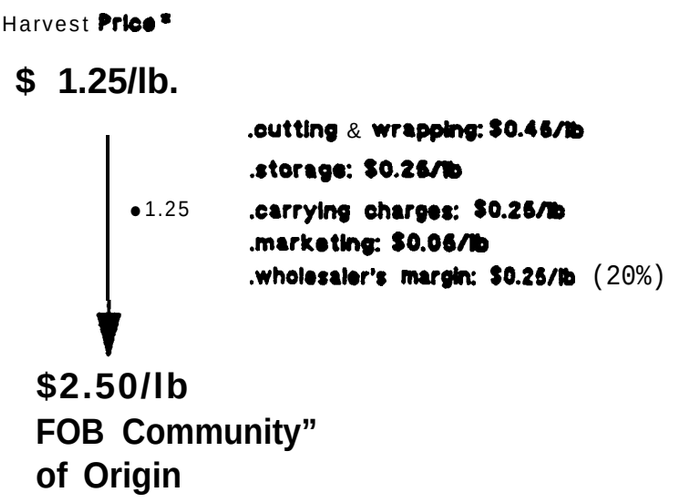
Figure 6.1
Muskox Cost - N.W.T. & Export



* Includes purchase price of $1.25/lb paid to HTA
Source: P.M. Associates Ltd. and DH&S

Figure 6.2

Cost of Caribou - N.W.T.Only

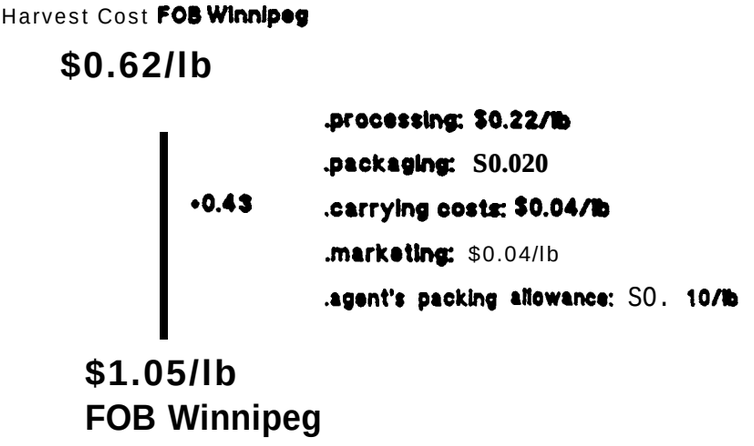


* Current price paid to hunters

Source: P.M. Associates Ltd. and DH&S

Figure 6.3

Cost of Fish - Whitefish Example



Source: FFMC and DH&S

Freshwater Fish: Commercial harvests *of* freshwater fish in the N.W.T. are marketed through two avenues: FFMC and local sales. All *fish* (listed on FFMC's Schedule) that are exported out *of* the Territory are required by law to be sold to the FFMC. Table 6.4 shows historical prices *for* the main species, FOB Winnipeg. Local sales may be conducted by the fishermen or Co-ops. Tables 4.3 to 4.7 in Chapter 4 outline the volumes of fish harvested for local versus export sales. The FFMC handles fish from two main fisheries: Great Slave Lake and the coastal char fisheries. Figure 6.3 outlines the cost breakdown to place whitefish into a marketable position, adding value *of* over $0.40/lb. to the final product.

The FFMC markets primarily whitefish and lake trout *from the* Great Slave Lake *fishery.* Northern pike and inconnu are also handled by the Corporation. Most *of* the whitefish and lake trout are sold to eastern and mid-western U.S.A. markets. Other destinations include western and southern U. S. A., European and Canadian cities. In recent years, there have been problems *of* oversupply *of* whitefish in North America, due primarily *to* heavy harvests from *the* Great Lakes. This supply-demand imbalance has resulted in sobs, inventory problems *for* FFMC. In an attempt to alleviate the problem, FFMC introduced a voluntary Whitefish Reduction Program *for the* 1987 summer fishing season to encourage decreased harvests of thst species. The FFMC has also encouraged Great Slave Lake fishermen to increase harvests in the winter, because the Great Lakes do not market fish in the winter.

Lake *trout* from *the* Great Slave Lake faces heavy competition from "farmed" trout in Idaho, where a large aquaculture industry has prospered. Lake trout has also had difficulty in competing with other species such as salmon. Sales of lake trout in North America are limited mainly *to the* mid-western areas of the U.S.A. and Canada. Most of the Northern pike marketed by FFMC is destined for France. There is a limited amount *of* whitefish, lake trout, Northern pike and inconnu sold in the N.W. T. These sales are primarily made in the *communities* close to the fisheries.

Table 6.4

Initial Price FOB Winnipeg Plus Final Payment

(¢/lb. Fiscal Year Ended)

	Export Whitefish[1]		Northern Pike[2]		Lake Trout[3]		Tconnu[4]		Arctic Char[5]
	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter and Summer
1970	38	25	16	16	U	32	14	14	-
1971	30	25	16	16	38	28	N/A	N/A	-
1972	28	25	16	16	38	29	21	21	-
1973	38	26	14	14	41	29	21	21	-
1974	41	29	19	19	47	32	21	21	125
1975	39	28	21	20	49	35	19	19	1%
1976	40	32	21	21	47	33	19	19	158
1977	u	39	21	21	43	33	19	19	217
1978	52	42	27	24	46	44	25	25	204
1979	81	51	39	32	65	50	24	24	190
1980	77	52	53	38	n	61	42	42	205
1981	76	44	49	33	65	55	56	56	248
1982	81	41	52	46	64	54	92	76	225
1983	75	37	44	40	65	45	66	59	225
1984	89	41	62	54	111	90	125	115	323
1985	100	54	71	63	115	88	125	100	341
1986	92	47	71	57	100	70	123	98	256
1987	m	43	97	77	110	60	139	114	302

[1] Medium Dressed Head On

[2] Large Dressed Head On

[3] Medium Dressed Head On

[4] Headless Dressed

[5] Dressed Head On

Note: Winter Prices Are Peak Prices

Source: Freshwater Fish Marketing Corporation.

Arctic char is marketed by the FFMC (export sales) as well as by th N.W.T. fish processing plants (local sales). In the late 1970s early 1980s, FFMC purchased most of the char produced. Since tha time, local sales have increased.

The FFMC markets most of the Arctic char to the Western provinces i whole dressed frozen fem. Marketing ● *fforts* have *boon* made *to sc]* char into the gourmet markets (finer hotels and restaurants versu retail). Commensurate with this ● *ffort* has been an a ttempt t increase *fresh* rather than frozen sales of char. The FFMC wa successful in selling *fresh* char into markets in eastern Canada an the U.S.A. There would ● ppear to be potential to increase sales o fresh char (and smoked char) into gourmet markets in the large cities of Canada and the U.S.A., where the product commands a premiu price. In ●ddition, there are local N.W.T. markets *for* thes products, ● specially in Yellowknife.

Seafood: The shrimp do not enter the N.W.T. market at all while th scallop and turbot test fisheries are in the early marketing stage at present and expect to be shipping the majority of the products ou of the territories ultimately.

Table 6.5 attempts to illustrate the flow of shipments. Figure 6. illustrates the movement graphically in percentages for the Countr Foods currently being produced.

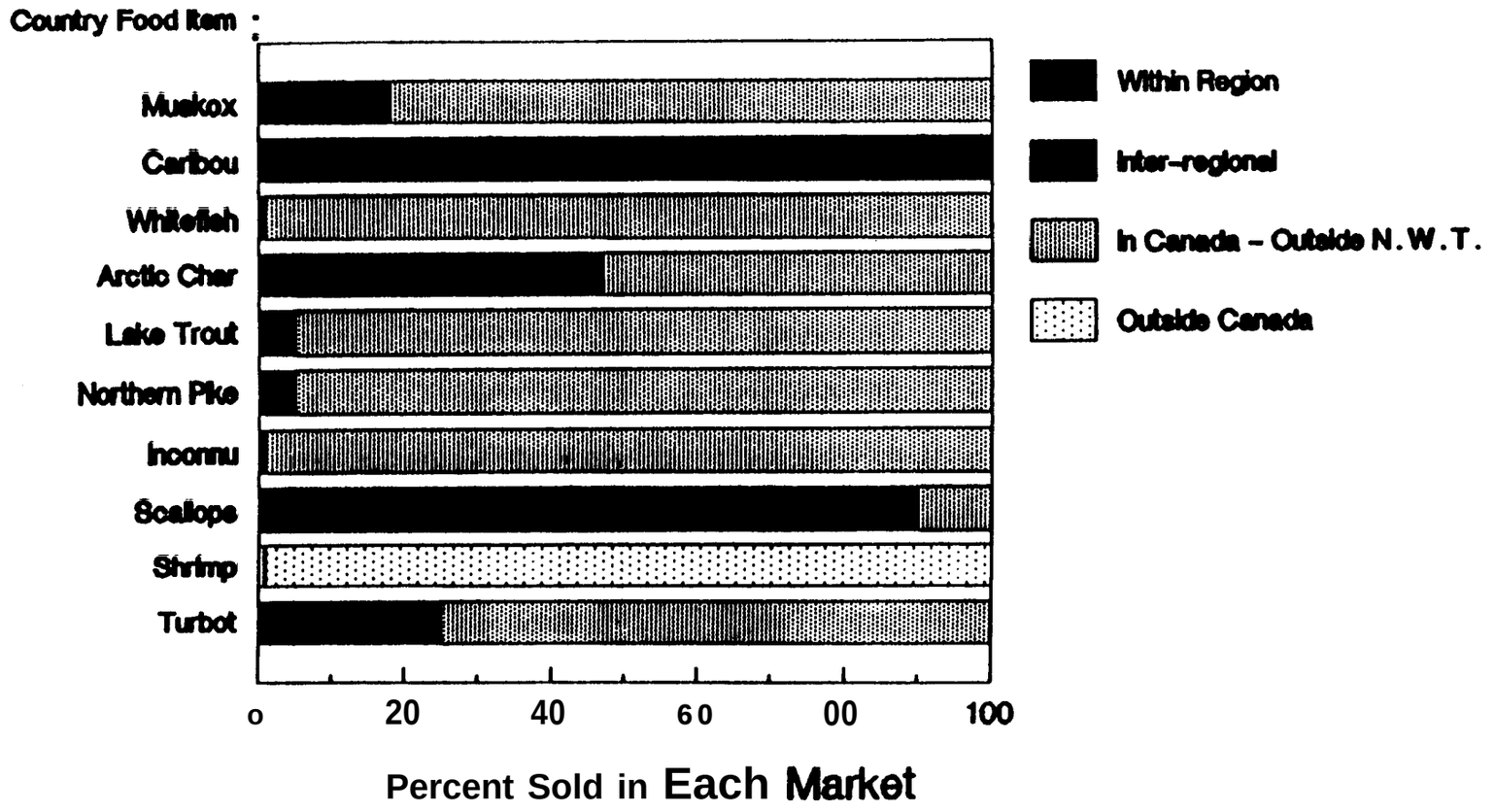
6.5.2 Meat Handling

Given current harvesting conditions and processing facilitie available, consideration must be given to the ● ppropriate method o handling the meat.

Carcasses of muskox ● rs currently frozen as halves *or* quarters ● t th slaughter sit., then wrapped and ● *ir* - freighted to Inuvik. From thi point the meat could be distributed in various ways. The plan out-

Figure 6.4

Movement of Country Food



Source: Table 8.6

Table 6.5

Movement of Country Food

Product	Product Destination (Volume and %)			
	Within Region	Within NWT (Outside Region)	Canada Outside NWT	Outside Canada
Muskox[a]	1.4 t (4x)	$.4 t (14%)	31 t (82%)[b]	-
Caribou[a]	5.9 t (65%)	3.2 t (35%)	-	-
Reindeer	-	-	-	-
Bison	-	-	-	-
Whitefish[c]	3.4 t (1x)	-	1,001 t (99%)	-
Arctic Char[c]	61 t (47%)	-	68 t (53%)	-
Lake Trout[c]	5.2 t (8%)	-	108 t (95%)	-
Northern Pike[c]	8.2 t (5%)	-	146 t (95%)	-
Inconnu[c]	1 t (1x)	-	74 t (99%)	-
Scallops[d]	0.5 t (90%)	-	0.05 t (10%)	-
Shrimp	-	-	27 t (1%)	2,875 t (99%)
Turbot[e]	1.25 t (25%)	-	3.75 t (75%)	-

[illegible] country [illegible] as [illegible]

[a] 1986 estimates of ULU Foods Sales by P. M. Associates.

[b] A large shipment of muskox was prepared for Expo '86 and this cannot be considered a typical sale.

[c] 1985 estimates; within N.W.T. also includes within region movement.

[d] Most scallops were said to be sold locally although some were shipped out for promotion. Southern markets are expected to eventually take most of the product.

[e] About 2,500 kg. were sold by one Ottawa wholesaler alone. Northern natives generally do not prefer turbot.

Note: All of the freshwater fish sales outside of the N.W.T. are sold to FFMC. They in turn market the fish to various countries. FFMC estimates that historically 70 percent of their total sales went to the U.S.A.; 20 percent to Japan and Europe; and 10 percent stayed in Canada. In 1987-88, however, these percentages shifted to 63 percent to the U.S.A.; 25 percent overseas; and 12 percent Canadian, in response to the decline in the U.S.A. exchange rate. This trend is expected to continue. This is an average of their total sales, and there is some variation between species.

lined is suggested in order to provide the best utilization of each carcass end to provide the ● rid-user with the product desired.

Game meat tends to be lean, end minimal trimming *of* fat from the carcass is necessary. This can likaly be a ccomplished ● t slaughter.

Frozen halves ● nd quarters can be broken down into primal cuts while frozen. This wuld ● ll= separation of various cuts *for* shipment. It would b. desirable if processing to this stage could occur in the N.W.T.

Some prime cuts could be sold to the hotel/restaurant trade in the N.W. T. and ● xportod to other locations. Much of the meat from the remainder *of the* ● nimzl could be sold to the institutional trade in the N.W. T. Separation *of* prime cuts would mean thst they could be shipped in ● frozen state to distributors in the south *for* further processing. When an order was placed the meat could be thawed end further processed to portions required by the purchaser and vacuum-packed. The unfrozen vat--packed meat could then be transported by refrigerated truck to the purchsser. Transport of the unfrozen meat would be ● a? ily , accomplished as large quantities of fresh beef are currently transported ● cross Canada.

The lack of ● Federally inspected processing facility is currently t h e limiting *f a c t o r* in a ccomplishing this type of product distribution.

6.6 Potential Volumes

After discussion with the key suppliers end fine restaurants wore completed, en ● sthte of potential sales volumes was made. Estimates by chefs and wholesalers, based on anticipated sales, ranged from potent ial annual sales *of* about 100 kg. *of* product per year *for some* hotels to ● substantial 5,000 kg. of game by another.[81]

[81] Harbour Castle Westin, Toronto.

The ● sthted sales potential is not necessarily tied to the size of the restaurant or wholesaling firm but more to the ● *nthusiasm of the* chef or salesmen involved. It was consistently believed that *if* a wholesaler or restaurant was committed to sailing the main northern products in demand (1... , muskox, r. indeer and caribou (if ● vail - able), and char), much greater volumes could be moved.

This discussion, therefore, is based on ● combination *of* information obtained from ● rid-users and Wholesalers, es well ● s previous marketing studies and industry participants ● =ployed in production end government.

6.6.1 Game Meat

Chefs and food distributors were generally unsure of the volumes thy could market. Many were optimistic that the demand was far *greater* than supply while *others* ● xpressed concern over disposing of the cheaper cuts. 82 *However, two* maj *or* ● *vents* have served to test the Canadian market *for* game meats in recent years: 1) the ● *fforts of* Canadian Reindeer Company to supply up to 3,000 animals (about 170,000 kg.[83]) to southern markets annually , And 2) the large scale ● ntry of New Zealand venison into the Canadian market (estimated ● t 30,000 kg. for Toronto ● lone in 1987).

Assuming that the N.W.T. reindeer was profi tably sold to southern Canada markets, ● large void was created when slaughter was discontinued. It is possible that this market has now been largely filled by New Zealand product. If Toronto restaurants are any indication, New Zealand venison is now consumed in amounts ● -l to ● bout 15 percent of a recent annual N .W. T. reindeer slaughter (or about 528 ● ni-ls). With the Canadian reindeer no longer on the market, it

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82 This is consistent with concerns of Mr. Tom Beaudoin, ULU Foods, Inuvik.

83 A recent study by P. H. Associates indicated that only ● bout 1,500 animals could be harvested annually on ● sustained buis.

would ● ppear that, from a volume standpoint, there are insufficient muskox to maintain the market ● lready *daf* ined. The problem now of course is *to* provide products that are equal *or* superior to the New Zealand venison ●t a comparable price. Fortunately, muskox (end N.W.T. caribou and reindeer) are generally considered as *substitutes for* New Zealand venison ● nd the industry would prefer to "buy Canadian" if possible .

A recent *study* (P. M. Associates, 1987) presented data illustrating New Zealand venison sales volumes (s.. Table 6.6). Based On ● discussion with a prominent game supplier in Toronto ●nd ● livestock statistician, it ● ppears that greatly increased volumes of venison have been brought in over the past year. It is conceivable that 75,000 kg. or more were shipped to Canada in total based on the growth rate between 1985/86 and 19 84/85. Table 6.6 ● lso shows the vut market for game on the world market with our closet neighbour, the U. S. A., consuming over S00, 000 kg. (or the ● quivalent of 9,090 animals) in 1985/86. This market has ● lso shown strong growth. If indeed we are concerned about market demand in Canada, the demand *of the* U.S.A. ● lone should ● lleviate our *fears.*

The ?. M. Associates study also provided ● five year projection of muskox and caribou demand. This is shown in Table *6.7* (Note: units ●re pounds).

The estimates did take into ● ccount the large international demand and show it to ultimately be one-third of our market. Muskox is given only ● slow local demand growth, likely because the northern *residents prefer* caribou meat over muskox *and because* of distribution problems from *the* main source (Sachs Harbour) ● cross the Arctic. The caribou market is predicted *to* remain largely within the N. W. T.

Table 6.6

New Zealand Exports Of Venison

(kg.)

	1982/83	1983/84	1984/85	1985/86	1986*	1987**
Australia	89,337	93,3s4	107,494	116,812		
Canada		1,973	13,039	19,404	46,500	75,000
U.S.A.	239,722	393,717	460,802	301,774		
Vest **Germany**	915,902	519,958	865,991	878,251		
Japan	102,742	116,783	104,435	186,058		
Switzerland	74,676	108,584	116,827	237,784		
Other **Countries**	169.408	144.238	207.613	298.524		
Total	1.591,787	1.378,607	1,876,201	2,238,607		
Price **Per Kg.** (**NZ** $)	5.39	7.05	10.16	9.39		

● **Alberta Agriculture, Statistics Branch.**
** **DH&S** ● stkte **assuming the** Toronto **market** is **40% of Canada.**

Source: ?. **M.** Associates Ltd. *for* **data** 1982/83 to 1985/86.

Table 6.7

Estimated Demand Forecast

(pounds)

	Year 1	Year 2	Year 3	Year 4	Year 5
Muskox Demand:					
Local	15,000	16,200	16,800	18,000	19,000
Canada	15,350	81,000	141,600	170,000	185,000
International	-	35.400	67.200	82.000	96.000
Total	30.350	132.600	225.600	270.000	300.000
Caribou Demand:					
Local	*20,400*	**24,000**	*28,800*	*32,000*	*36,000*
Canada	*1,700*	**5,100**	*6,700*	*7,500*	*8,000*
International	-	-	-	-	-
Total	22.100	29.100	35.500	39.500	44.000
Total Sales	52.450	161,700	261,100	309,S00	344,000
Number of Head	*350*	*1,078*	*1,740*	*2,060*	*2,300*

Source : P. **M.** Associates Ltd.

While it is *difficult* to predict markets *for* products not yet fully introduced or widely available, there is reason *for* optimism on the demand side. Looking at the import of New Zealand venison end put slaughter volumes of N.W.T. reindeer, the market appears capable of absorbing relatively large volumes *of* game.

Andrich Consultancy Group recently did a survey *of chefs across* Canada to determine their demands *for* Country Food. While the estimate provided is believed to be a minimum end obtained from the southern market, which has had limited exposure to N.W.T. country foods,[84] the results are still encouraging. The results are so encouraging that Mr. Anderson has opened a facility (Icicles) in April 1988 which will supply Country Foods *to* Vancouver *users.* His results indicate that chefs could sell a minimum of $96.00 of game monthly . Using an average of $15.00/kg., this equates to about 6.5 kg./hotel (80 kg./yr.). This estimate was considered low, but extrapolating it *to* include restaurants end hotels across Canada could consume more product than has been available.

The remaining problem for N.W.T. game suppliers is to provide a product to the market that can compete on quality and price characteristics with existing products. A price premium My be paid for N.W.T. muskox or other game if available but the purchaser's conditions must be met. Packaging, inspection, portion control, supply and a supply network are just son of the product specifications thst must be known and developed *for the* game meat.

6.6.2 Freshwater Fish

N.W.T. fishermen are required *to* sell all fish listed on the FFMC Schedule intended for export sales to the FFMC. The FFMC is then responsible for marketing the N.W.T. fish, u well a *fish* from Northwestern Ontario, Manitoba, Saskatchewan and Alberta. FFMC sells its fish to food wholesalers, brokers and distributors. As such,

[84] Discussion with Mr. Don Anderson, Andrich Consul-y Group.

except for Arctic char and inconnu, the freshwater *fish* sold into export (outside N.W.T.) markets are not differentiated as N.W.T. product. The restaurant and food wholesalers/distributors in the cities surveyed in this study did not in fact have any idea where their freshwater fish originated from. FFMC also indicated that its sales represent approximately 50 percent of total Canadian production, with the majority of the remainder coming from the Great Lakes.

To make an estimate of potential demand *for* freshwater *fish* outside of the V.V.I., it is useful to look at where FFMC sells its products. Table 6.8 shows volumes *of* N.W.T. fish sold to FFMC. From personal communication with the Corporation, it is estimated that in 1987-88 they sold approximately 63 percent *of* their total sales to the U.S.A., 25 percent to Japan, Europe, and the Middle East; and 12 percent to Canadian markets. These proportions vary, however, with individual species. For example, a large share *of the Northern* pike is sold to France. Therefore, although it would appear that 170,000 to 200,000 kg. of N.W.T. freshwater fish are consumed in southern Canadian markets. It should be noted that not all *of the* volumes of fish bought by FFMC are sold in the same year; whitefish and lake trout inventories have been troublesome in some years.

A survey done for the Mackenzie Delta fisheries interviewed several restaurant/foodservice facilitates, a fish/seafood wholesaler, a culinary arts college, and an airline caterer in Vancouver on their perceptions *of* whitefish, Northern pike and inconnu. The results indicated that on average, they would use a minimum of 109 kg. of whitefish and 77 kg. of pike per month.

Overall, fish consumption in North America is steady or slightly increasing. Markets are therefore firmly established for freshwater fish. The N.W.T. can likely take advantage of this opportunity, although other large fisheries in Canada present strong competition.

The greatest potential for developing a niche for N.W.T. product is likely with Arctic char.

Table 6.8

Total Export Volumes Of N.W.T. Freshwater Fish

('000 kg. round weight)

	Whitefish	Lake Trout	Northern Pike	Inconnu	Arctic Char
1976	930	81	10s	80	46
1977	1,293	115	122	91	125
1978	977	119	178	167	77
1979	1,099	134	143	130	78
1980	1,261	116	181.1	70	92
1981	1,030	92	13s	40	7s
1982	1,124	80	137.3	18	6a
1983	811	58	94.1	24	52
1984	954	53	120	70	61
1985	1,001	108	146	74	68
1986	1,315	114	137	75	67

Source : FFMC records stored at the Freshwater Institute.

6.6.3 Saltwater Fish and Seafood

The market potential for N.W.T. seafood is segregated depending on the product being [illegible]. While it is commonly believed by restaurants and the food industry that the saltwater fish and seafood market is growing quickly, the products being produced in the N. W.T. have a very short track record.

The shrimp currently produced are almost all sent on to Europe or Japan in head-on form. The North American market still prefers peeled, deveined shrimp but the increasing number of smorgasbord meals offered and delis may place a greater demand on these products. All of the shrimp produced is being successfully marketed end the maximum 1,000 t quota is being taken. There is little gained from estimating a Canadian demand for 'shrimp" given that so msny different products are now on the market and that the most profitable N.W. T. shrimp outlet is deemed to be its current markets, Europe snd Japan. However, it 1s known that Atlantic Canada Shrimp landings for

1988 orc forecast to be 27,000 tonnes. The license holders have ossossod the domestic and export opportunities *for their* product end oro believed to b. supplying the shrimp to the most profitable marke *t.*

The scallop fishery is still in its test stages. Two inshore boats and one off-shore boat orc currently assessing stock and catch-rates. Again, the *seafood* market is thought *to be* strong and securing o reliable market outlet *for* the *product* is essential. At this point there is concern by some that o market till not be *found* to absorb the N.W.T. product. However, analysis showed that o profit did *ppear* possible given the costs nd returns assumptions made. Scallops, lthough prefixed by some as "Icelandic" or "N.W.T.", are still considered generic. Price, quality, supply and size tend to be the main determinants of market cceptance. If the product could be successfully differentiated (like Arctic char and muskox) o price premium may be captured. At this point there is interest from suppliers ven after very limited marketing *fforts* have *been* made. A positive impact of the market is that demand *is* great[85] and *the 2s* tonnes of potential production from *the* two inshore boats can obviously be sold if the market conditions are met. For comparison, total Atlantic coast landings, including product off-loaded t Greenland, were lmost 19,000 tonnes in *1986.*

Turbot (Greenland Halibut) production *ppears* to be the more risky of the group. The product is generally considered low value and, while many chefs end wholesalers have beard *of* it, it is still considered a low value *fish* with *substitutes* from *other* locations. The comic analysis done on the test *fishery to* dete shows o positive return but reliable data on costs and catch rates till not be vailable until more fishing is done.

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[85] Over 6,000 t of scallops were exported from Canada in 1986 (DFO) .

6.7 Elasticities of Supply and Demand

Elasticity is *defined* as the percentage change in the quantity of a good that is purchased or supplied associated with a one percent change *in some other factor.* It measures the responsiveness *of* consumers and producers to changes in prices and income. For example, a strong price increase for some commodities will prompt many producers to increase production, while other commodities may have a price increase with little reaction from producers. Elasticity estimates can be used to *anticipate the* direction and magnitude of the market impact of various sorts *of changes.*

6.7.1 Price Elasticity *of* Demand

There are several applications for elasticity measurements. The most common is the price elasticity of demand, which measures the responsiveness *of* the quantity of a product consumers will buy to changes in the price of that product.

To measure price elasticity *of demand, one* must *divide the* percentage change *in the amount* purchased by the percentage change in price along a given demand curve. The algebraic expression is:

$$E = [(Y_2 - Y_1)/(Y_2 + Y_1)]/[P_2 - P_1)/(P_2 + Pi)]$$

where Q is the quantity purchased and P is the price *of the* produce.

The formula gives an estimate *of the* change from *one* point on the demand curve to another. It *defines* a particular point on the demand curve. Once an elasticity has *been* estimated, the impact *of* price changes on total revenues from a product can be determined. For example, a price fall will cause total revenue to increase along an elastic demand curve, to be constant along a unitary demand curve, and to fall along on inelastic demand curve.

Several factors determine the price elasticity *of* demand *for* any product. In general, the price elasticity of demand *for a product*

increases as the number of available good substitutes is greater. It is also greater if the item represents a large expenditure in the consumer's budget. Demand is also likely to be more elastic if the item is considered to be a luxury rather them a necessity.

6.7.2 Price Elasticity of Supply

Price elasticity of supply is a similar concept to that of price elasticity of demand. It measures the responsiveness of quantity supplied of a product se the price changes. The formula is identical, except the algebraic sign for price elasticity of demand is typically negative while it is positive for supply. The factors influencing supply elasticity include: the shape of the firm's marginal cost curve, differences in the enterprise's cost structure, the time allowed for adjustments to take place, storability of the product, end alternative opportunities for inputs.

6.7.3 Cross-Price Elasticity of Demand

The cross-price elasticity of demand measures the adjus-nt thet consumers make in consumption of one product in response to a change in the price of another. In other words, it measures the way the demand for various commodities are related. In terms of the N.W. T. products, it csn be ass=d thst Arctic char hss a high positive cross-price elasticity of demand with salmon. Fish wholesalers interviewed during the study stated thst when the price of salmon goes up, they promote end sell more chu.

The formula for cross-price elasticity of demand is:

$$E_C = [(Q_{1B} - Q_{2B})/(Q_{1B} + Q_{2B})/(P_{1P} - p2P)/(pip + P_{2P})]$$

when commodities are substitutes (such u char end salmon), when the price of one increases, the quantity of the other commodity purchased will also increase. N. W. T. game meats may be considered to be substitutes of New Zealand venison, as well. In these instances, the cross elasticity will be positive. Commodities thst are complementary to each other have negative cross elasticities. An

increase in the price of one will decrease the consumption of the other.

with regard to N.W. T. Country Food products, use of ● stbtod supply end demand ● lasticities could be misleading because the products are just being introduced into the markets in question (retail and H. R.I.). This means that there are no historical records of dete on prices, ●vailablo supplies or market demand, thereby not permitting ●reliable generation *of* supply end demand functions. supply end demand functions *of course* form the basis for ● luticity ● stimstes. Several maj or a ssumptions would have to be made regarding market penetration, prices, ●tc. in order to make the ● stimstez. It is believed that the *Uncertainty* ● ssociated with both supplies *of* the products end the demand in the various markets would make the ●rror in these ● stiaetes too great to warrant the use of ● lasticity estimates. Therefore, ● lasticities have not been ● stimated.

7.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study examined the demand and supply of twelve designated Country Foods :

- Muskox
- Caribou
- Reindeer
- Bison
- Whitefish
- Arctic Char
- Lake Trout
- Northern Pike
- Inconnu
- scallops
- Shrimp
- Greenland Halibut

The main intent of the research was to quantify harvest levels, estimate costs of production, ● xuine markets and to make recommendations that would ● ncourage greater development of the N.W. T. Country Food industry.

The ● ppr=ch taken was to both consolidate end generate information relevant to the development of the industry. contact was made with key people in the N. W. T., in government end in private industry. Trips were - made. :to maj or Canadian markets (Toronto, Ottawa, Montreal, Winnipeg and Vancouver) to collect data end solicit responses from users and the food service industry. Analysis end interpretation of that data was then made by the consultants.

7.1 Summary

The study was divided *into* seven chapters, four of which report the main *research* undertaken. *This section reports the* main findings from ● *ach of* those chapters end closes with ● discussion *of the* opportunities and constraints facing the Country Foods industry in the N.W. T.

7.1.1 Game Animal Summary

The potential to develop caribou (barren-ground end woodland), muskox, reindeer snd bison (wood end plains bison) into commercial Country Food products was● xeminod.

7.1.1.1 Reindeer, Bison and Woodland Caribou: The Canadian Reindeer Company was *successful* in producing end ● xporting reindeer to southern Canada until unforeseen political problems● rose. Reindeer harvests● rc no longer taking place as the herd is now being sold off to southern interests. Wood bison ● rc listed es ● ndsngorod *species* ● nd only 20 bulls were ●vailable for harvest in 1987. Plains bison ● rc not being commercially produced in the N.W.T.● t present. There have been studies undertaken which indicated positive potential.

Woodland caribou ● *re found* in small numbers in the N.W.T. A recent ● stkte placed the population ● t 2,000 to S,000 animals with most of the slaughter being for domestic subsistence or outfitting. None of the ● nhl species mentioned show near term (within five years) commercial potential. Perhaps ● buffalo ranch will be developed in the future but at present there is no indication *of* any trade in these meats.

7.1.1.2 Barren-Ground Caribou and Muskox: Barren-ground caribou end muskox● re currently being traded commercially in the N.W.T. Muskox quote available is set ● t 2,539 a nimals with 2,072 of this quote a llocated to the Inuvik Region (Banks Island). ULU Foods has been able to ship muskox meat to ● xternsl markets on occasion. Only ● bout 500 animals per year● re being harvested on the island,● portion of which was slaughtered under federal inspection. The results of the interviews end research conducted indicates thet this slaughter could be increased to the maximum if the market would ● bsorb it. Cost of production ● stimstes indicate costs in Inuvik of $4.55/lb. of which the hunter's portion is $1.25/lb.

Barren-ground caribou ●r* important to the N.W. T.● conomy ● nd ●ro used *for* commercial end subsistence purposes. The by-products ●rc ● lSO valuable to the local people. Quotas are ● llocated by community, end, in one case, the total quote ● llot8ent is only 50 animals . The total quote of 4,200 is spread among 11 horde ● nd over much *of* the N.W.T. Such ●dispersion of bunting rights certainly impacts the ability to improve production and distribution ● *ffícienclos* . Sale *of* caribou is legally restricted to the N.W. T. because federal inspection (which is required for outside ● xport shipments) has not been possible as it has been with muskox and reindeer (prior to 1985).

Estimated cash costs *of* production for caribou meat ranged from $0.11 to $0.51/lb. *Of* the game ● vailable for commercial slaughter, muskox ● ppears to be the most feasible given flexibility *of both* N.W. T. and ● xport sales and the high concentration *of* animals in one ● lbeit relatively vast ●rea.

7.1.2 *Freshwater* Fisheries Production Summary

The freshwater commercial fisheries in the N.W.T. have declined since the 1970s in both production and areas fished (with the exception of the char fisheries). The main species harvested ●re: whitefish, lake trout, northern pike, inconnu end char. Pickerel is ● lso harvested commercially but 1s not dealt with in this report. Currently, there ●ro only two main commercial fisheries: Great Slave Lake *for* lake trout, whitefish, northern pike and inconnu; and the coastal char fisheries in the Cambridge Bay end Rankin Inlet ●reas.

Reasons for the decline in harvests include: heavy demands placed on the stocks *from* domestic, commercial end sport fishing; high costs of production; ● nd ● vaflabtlity *of* employment in other resource sectors (oil ● ndgas and mining).

7.1.2 1 Production Trends By Species

Whitefish: Host *of* the commercial harvests of whitefish come from Region 11 of the N.W. T. , *from* the Great Slave Lake fishery. Harvests have boon quite variable since 1976, although 1985 ● nd 1986 sav an increase. Most of the *whitefish* harvests ● ro ● xported out of tbe region by the FFMC.

Lake Trout: Lake trout harvests ● re also concentrated in the Great Slave Lake fishery in Region 11. Harvests were low *from* 1981 to 1984 (relative to 1977 to 1980), but increased considerably in 1985 end 1986. Most of the lake trout is sold to southern markets. It should be noted that lake trout ● re very susceptible to over-fishing, and maintaining populations is *therefore more* difficult than with the other species.

Northern Pike: Most of the northern pike is also fished from the Great Slave Lake. Harvest levels have been *fairly* static *since 1976.* Northern pike is sold primarily to ● xport markets, particularly in France .

Inconnu: Inconnu is also harvested mainly in the Great Slave Lake *fishery* . Harvests heve been quite variable since 1976. In recent years, virtually ● ll of the inconnu has been exported out of the N.W. T. There ● ppears to be ● growing demand for inconnu in U.S.A. markets es a smoked product.

Arctic Char: Char *fisheries occur* along the coastal regions. The largest char *fishery* 1s found In the Cambridge Bay area. Unlike the *other species,* chsr harvests are util ized ● lmost 50/50 export end domestic . It has been predicted that char fisheries till develop in other ● rea over the next few *years,* depending on stable/high prices end ● conomically ● ccessible stocks.

7.1.2 2 Production Trends By Region

Region I: Region I has had under-utilized quotas for whitefish, lake trout, Arctic char, northern pike and inconnu at various times since 1976. It ●ppears that adequate stocks ● xist, but ● conotic considerations present the greatest constraint to development.

Region II: Quota is ● ssigned to this region for whitefish and lake trout (primarily on Great Slave Lake). Northern pike and inconnu ● re harvested incidentally. Quotas have been under-utilized in Region II in ● very year since 1977.

Region III: There is ● bst no quota assigned to this region for any species, snd potential is therefore very limited for commercial fisheries.

Region IV: Region IV has primarily char quote assigned to it, with ● minimal amount of whitefish and lake trout quota u well. There has been ● large amount of unused char quote since 1977 (30 to 30 percent). There ●ppears to be opportunity for developing the commercial char fisheries.

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Region V: Commercial fisheries quota in Region V 1s ● lso predominantly char, end most of it has been under-utilized since 1977. Although the quotes ● re in place, many of the fishing areas sre in remote locations end this renders them uneconomic for commercial fishing.

Region VI: Region VI ● lso has a quantity of unutilized chsr quota. Some development work is currently underway for the char fisheries.

7.1.2.3 Cost of Production - Great Slave Lake: Cost of production data for Great Slave Lake fisheries in 1982 end 1983 was obtained from the "Great Slave Lake Fishery Task Force". Data for other fisheries were not ●vailable.

According to the Groat Slav. Lake data, in the summer of 1983 and winter of 1982 and 1983, the fishermen were in a loss position. However, the revenues reported included initial payments and N.W.T. subsidies, but not final payments. Inclusion of final payments may put them in a profit position for some of the seasons but the data are not available.

7.1.3 Saltwater Fisheries Summary

Shrimp, scallops and Greenland Halibut (turbot) were the three saltwater species researched for this study.

7.1.3.1 Shrimp: Shrimp are now being harvested in the Eastern Hudson Strait as part of the Northern Shrimp fishery. A total allowable catch of 1,000 tonnes has been allocated to the Strait and that amount of shrimp is being harvested. one of the conditions of some recent shrimp licenses was to provide employment and training for Inuit crew members. This has worked veil, bue transportation of crewman tends to be expensive.

7.1.3.2 Scallops: The scallop fishery is still in an early stage of development. There are two inshore boats and one offshore boat in the test fishery, near Pangnirtung, but very little data or economic analysis has been generated to date. One of the inshore boats is apparently quite modern while the other is about 20 years old.

The boats are expected to operate in 1988 to continue with their economic and stock valuations. The preliminary estimates of profitability were sufficiently positive to encourage the testing again in 1988. The underlying problems will continue to be maintaining a sustained catch and strong price.

7.1.3.3 Turbot: The turbot fishery near Pangnirtung is also in a test stage. Currently tests are being conducted using long-lining techniques under the ice to catch the fish. Only a few tonnes of fish were caught last year. The economic analysis has shown that

returns could fluctuate widely, due to price fluctuations or from production variability. At lout three years of fishing data will be required to ●scss the feasibility of the ● ffort.

The scallops ● nd shrimp hold great promise in the ● xte-1 markets. Currently, the shrimp ●re being sold directly to Europe end Japan.

7.1.4 Market Assessment Summary

Food wholesalers, ● irline representatives ● nd hotel/restaurant operators ● ll expressed interest in Country Foods produced in the N.W.T. Their level of interest varied widely depending on the product. However, it was quite commonly believed that the "exotic end unique" products like NkOX , reindeer, caribou ● nd Arctic char would capture the greatest interest from their customers.

However, several conditions of purchase ● ross from the interviews. All buyers wanted ● reliable supply and consistent quality; they assumed it would be inspected and safe. Reliable supply does not necessarily imply year round supply, but, rather ● guaranteed shipment end ● guaranteed price ● fter the order is made. There vere chefs who naturally wanted year round product to warrant any Country Food becoming ● menu item. Others preferred the food for specials or banquets . As well, there was concern that there were no local contacts snd ● common requirement was for ● ll product to be carried through reputable local wholesalers. Price was ● lso ● concern to some of those interviewed. Prices of game meat were compared to veal or New Zealand venison while Arctic char was most commonly compared to salmon. The interest in obtaining N.W.T. bison, freshwater fish or seafoods was not as high. While ● ll such products ●re on the market and in demand, they ●re not differentiated sufficiently to warrant preference over local products. Fresh fish were consistently preferred over frozen.

The recent G.N.W.T. purchasing program could greatly ● nhance the demand for ● ll N.W.T. - produced food. Controversy still ● xists

● bout whether the Country Foods industry should be developed ● o1.ly for import replacement or whe ther it should f ecus on maximizing economic benefits (which can imply ● xport sales instead of domestic use) . A balance of both obje ct ives may be most ● ppropriate because the demand for Country Foods varies by market. External markets prefer the high price prime meat cuts end typically the fresh fish products for the top ● nd of the food service trade (hotels, ● irlines, ● tt.). Local institutional demand may well be able to utilize much of the product ● xhibiting less .xPort potential. This does not imply that less desirable products ● rt of poor quality; rather, the local institutional demand (excepting the local hotel and fine restaurant market) ● ctuelly requires the lower-priced products to meet their clients' budgets.

7.1.5 Opportunities and Constraints

Based on the research undertaken, the opportunities end constraints associated vi th eech product have been outlined. Table 7.1 depicts the opportunities end constraints ● ssociated with ● ach product. Key issues ● rising from the research have been noted.

It 1s apparent that the products ● lready being produced commercially for outside markets show the highest potential for continued success. However, Table 7.2 more clearly illustrates the *growth* potential for the products ● xemined based on projected demand trends. The fresh-water fish (excepting char) ● re expected to remain stagnant *or* show modest demand increases depending on the degree to which consumers continue to shift away *from* domestic red meats towards fish and poultry.

Although no dete breakdowns ● re ●vailable to differentiate *freshwater* fish *from* saltwater species end *seafood,* industry repre-sentatives generally indicate that the greatest growth will come from shellfish species.

Table 7.1

Potential For Ongoing Commercial Production And Marketing

Product	Opportunities	Constraints
Muskox	. demand elastic . unique product identified closely with Northern Canada . strong interest from food service industry . willingness of suppliers to handle product . animals can be slaughtered under Federal supervision . under-utilized supply . Sachs Harbour HTA willingness to participate in slaughter	. greatest demand for prime cuts . long distance to markets . no Federally-approved processing facility in the N.W.T. . seasonal hunts (fall and spring) necessitate storage if year-round supply is attempted . poor infrastructure
Caribou	. surplus quota available for commercial slaughter . demand by food service industry for game meat	. no proven method to slaughter under Federal inspection \ export markets require inspection . N.W.T. markets are increasingly concerned about inspection \ lack of commitment from GNWT to commercialize caribou \ native resistance to selling or exporting caribou \ greatest demand for prime cuts \ production costs vary with herd migration pattern \ small local quotas
Reindeer	. consumer familiarity with product . relatively inexpensive back-haul rates to Edmonton . strong interest from food industry . willingness of suppliers to handle product . animals can be slaughtered under Federal supervision	\ no recent harvests; land claims problems \ herd currently being sold to outside interests \ provinces liberalizing game ranching laws \ competition from New Zealand \ greatest demand for prime cuts
Bison	. some demand in food service industry . can be slaughtered under Federal supervision if sufficient kill volume consumer awareness is high high dress weight	. no longer considered an exotic or true game meat . no significant supply of wood bison for commercial harvest \ no commercial production (ranching) of plains bison to date \ competition from other provinces \ distance to markets
Whitefish	government assistance is available for price support and freight costs under-utilized quotas established marketing infrastructure (FPMC) fish consumption in North America is steady	fishing equipment is old, needs to be replaced heavy competition from other Canadian fisheries (Great Lakes) over-supply problems in Canada high costs of production; heavily subsidized remoteness of some fishing areas from markets

Table 7.1 Continued

Product	Opportunities	Constraints
Arctic Char	. good potential in southern gourmet markets . under-utilized quotas . test fisheries in some areas - leads to more quota . several processing plants already built; have excess capacity . local sales are increasing . is a substitute for salmon; sometimes salmon is scarce or high-priced. . increased interest by communities in char fisheries . government assistance available for developing the fisheries . weir technology should be widely adopted soon; will facilitate more timely marketing of fresh char	. populations of fish widely dispersed . potential fishing sites located far from communities . declining productivity in some areas currently fished . conflicts with other resource usage (i.e., hunting on Baffin Island) . high costs of production and freighting . market prefers fresh to frozen product.
Lake Trout	. little opportunity except for sport fishing	. no big market demand specifically for lake trout \ heavy competition from "farmed" Idaho trout \ limited potential for development - hard to maintain stocks \ stocks have been over-fished
Northern Pike	. established marketing infrastructure (FPMC) into France	\ harvests tied to whitefish harvesting, which is declining
Inconnu	. fish is suitable for the U.S.A. smoked markets	\ harvests tied to whitefish harvesting
Scallops	. seafood demand is escalating . consumer awareness is high \ local interest and confidence in the fishery \ stated interest from Ottawa wholesaler	\ relatively high capital investment \ industry in Year 2 of test fishery stage - results unknown \ long-term production levels unknown . competing suppliers have larger products which are in greater demand
Shrimp	\ stable export demand \ fishery is being exploited fully by shrimp fleet \ providing training for N.W.T. residents seafood demand is escalating	\ high capital investment cost \ shell-on product is produced; generally only demanded by export markets . economics tend to be marginal for many in the Canadian shrimp industry . no new licenses or catch increases expected
Turbot	demand for saltwater fish is increasing local interest in the fishery strong support from Ottawa wholesaler winter fishing captures higher fish prices	industry in Year 2 of test fishery stage total output may remain low relatively low value fish product is not well-known to consumers or suppliers distance from market and competition with west coast halibut

Table 7.2

Anticipated Demand Trend Over Next Five Years

Product	Demand		
	Decreasing	Stagnant	Increasing
Muskox			◆ ◆
Caribou			◆ ◆
Reindeer			◆ ◆
Bison		◆	◆
Whitefish		◆	◆
Arctic Char			◆
Lake Trout		◆	◆
Northern Pike		◆	◆
Inconnu		◆	◆
Scallops			◆ ◆
Shrimp			◆ ◆
Turbot			◆

Note: ◆◆ indicates a greater magnitude than ◆

A strong demand potential exists for the three main game species. Muskox is unique, and this gives it an edge from a competitive standpoint. Greater market shares could likely be captured by all three products if production and supply constraints are met. Unfortunately, this is likely not possible for caribou and reindeer.

There is an indication that all products are showing an increasing demand although the demand varies greatly depending on the product. The overall consumption trend is towards seafood products but competing with southern operations will be difficult. Similarly, there is a market for lean meats and specialty game meats and success will depend strictly on the quality, availability and price of the products.

7.2 Conclusions and Recommendations

Conclusions and respective recommendations based on the research conducted are outlined in this final section.

7.2.1 Game Animals

Conclusion 1: Strong and growing demand exists for game meat, particularly muskox, caribou and reindeer, both within and outside the N.W.T.

Recommendations 1: Given the strong demand for game meat in Canada and the U. S. A., proposals to develop game meat production should receive higher priority.

Conclusion 2: Only muskox meat can currently be exported from the N. V. T., because it can be Federally-inspected.

Recommendation 2: Initiatives taken to offer a larger volume of Federally-inspected muskox meat to both Internal and external markets should be supported when feasible.

Conclusion 3: Caribou will likely continue to b. in demand in the N. V. T., ● lthou@ consumers may require inspection.

Recommendation 3: *Efforts* to develop game meat production should take into ●cco=t product needs in ● ach market sector and provide what is required (i.e., local lnstituciorul/retail needs versus ● xte-1 market needs, packaging, labelling, ● tc.).

Conclusion 4: The reindeer herd is being sold off to outside interests, thus there will no longer be ●supply.

Conclusion 5: External markets typically prefer only the prime cuts while the local institutional market would likely require the less expensive cuts.

7.2.2 Freshwe *ter* Fisheries

Conclusion 1: Harvests have declined in recent years ● *nd* quotas hsve becaunder-utilized in most regions snd for most species due to:

- heavy demands placed on the stocks from domestic, commercial and sport fishing;
- ● pparent high costs *of* production; end
- Ovailability of employment in *other* resource sectors.

There ● ppesrs to be● lack *of* costs of production data, however, to ● ccurately analyze production.

Recommendation 1: More complete costs *of* production data should be collected on the Great Slave Lake end coastal char fisheries in order to conduct ●more thorough ● conmic analysis.

Conclusion 2: The freshwater fisheries in the N.V.I. have been negatively impacted by several factors:

- relatively stagnant markets;
- cutbacks in whitefish production due to over-supply; and
- ●resultant decline In by-catch *of* northern pike and inconnu.

Arctic char is somewhat ● xo=ptod from these constraints because it has● unique northern identity that the other species lack.

Recommendation 2: Development ● fforts in the freshwater fisheries should b. directed● t the char fisheries. Those ● *fforts* could include: develop-nt of new fishing ●rou and ● doption of better production technology (such as weirs).

Conclusion 3: Although southern markets utilize whitefish ● nd lake trout, they do not typically identify these species u "N.W.T.". There are several other sources of these fish in Canada. Char, however, has● distinct N.W.T. Identity in southern markets ● *nd* there appears to be strong interest for the product in the H.R.I. end ● irline catering trade for *fresh* product. Char must ● lso compote with salmon in the southern markets, implying that they have● positive cross-price ● luticityofdeti.

Recommendation 3: Development of a steady supply and consistent quality level *of* char should be ● ncouraged to enable greater competition with salmon.

Conclusion 4: There appears to be growing demand in *the* N.W. T. *for* char in various forms such *u* smoked or fresh.

Recommendation 4: Marketing *of* char products should ● lso be encouraged within the N.W.T. through continued ● sistsnce by the G. N.W.T. A bettor infrastructure for distribution and marketing of char between regions needs to be developed.

7.2 3 Saltwater Fisheries

Conclusion 1: The N.W. T. shrimp *fishery* is providing opportunity *for* employment of northern residents.

Recommendation 1: To ● ncourage continued ● mployment *of* northern residents on the shrimp boats, training, lodging and transportation

● ssistenco to ● ithar the ● mploying company or the ● mployoe should be cons idered.

Conclusion 2: Iceland scallops and turbot are still in the test fishery stages but have had some successes.

Recommendation 2: Progress in the scallop end turbot fisheries should be monitored end further ● ncouraged if ● con-ic viability is shown ● fter additional test-fishery data ● re collected in 1988.

7.2.4 General Conclusions and Recommendations

Conclusion 1: Problems still ● rise when potential Country Foods users attempt to locate and take delivery of products.

Recommendation 1: A central Country Foods inventory should be developed ● nd distributed through ● mailing list within ● nd outside the N.W.T., particularly es ● dditional development initiatives are undertaken.

Conclusion 2: It is apparent from this study that several critical data gaps still exist and detailed commodity-specific research is required.

Recommendation 2: A reliable, ● fficient order-taking and distribution system should be set-up.

Recommendation 3: It is recommended that further research be conducted in the following ● rees:

- ● groo on Country Foods development objectives with the *northerners.* In particular, consult with the parties involved, including local HTAs end the native people to underspend their needs ● nd solicit their ● dvice. Rank Country Food development priorities ● nd set detailed schedules end costs for completion.

- ● xamine **Federal-inspection** requirements *for* ● xpanded **muskox** (and **caribou if** possible) **sales.**
- ● xamino potential ***for*** **caribou quota** ***transfers*** o r reallocation.
- ● xsmine complementary marketing of various products within and outside **the** N.W.T., particularly **in** light of new **N.W.T.** purchasing directives (i.e., ● xternal **sales** of **muskox** loin and steak; internal disposition ***of*** fronts and stewing **meat).**
- ● xamina methods to ● nablo broader and **more** ● ***fficient exposure*** ***of*** fresh char to the market.
- **examine means** to establish ● **more** orderly Country Foods sourcing **and** distribution system **within** ● nd outside the **N.W.T.**

Because ***of the*** **detail** and time required to ● dequately address the needs of ● ach topic listed (other research problems can likely be ● **dded to the** list), individual **studies** for ● ach **topic** may prove to be most ● ***ffective*** ● nd **timely.** In particular, individual development plans should b. undertaken ***for*** **muskox, caribou** ***and*** **Arctic char.** Reindeer **would** have **ranked highly** as **well** but **current supply** problems **have** negated its potential. . **The** economics ***of*** scallop and **turbot** production should also be monitored.

The **N.W.T. has** the opportunity to ● -o **its** Country Foods production, but not **without** difficulties. Competitive products and **prices,** regulatory requirements, supply problems, distribution **deficiencies** and social/political priorities will ● ll influence the **ultimate** success ***of*** ● ach initiative.

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APPENDIX A

Total Fish Production (lb.)	Fuel and Oil	Maintenance and Repair	Food	Labour	Fishing Supplies	
						Silin
64,077	1,162	115	1,745	6,826	530	
Avg./lb.	$.02	$.01	$.03	$.11	$.01	
						Ski
16,786	621	38	869	2,376	288	
Avg./lb.	$.04	$.01	$.05	$.14	$.02	
						Rankin
52,428	2,642	163	2,629	8,492	431	
Avg./lb.	$.05	$.01	$.05	$.16	$.01	
						Ski
14,156	615	22	2,000	4,800	373	
Avg./lb.	$.04	$.01	$.14	$.34	$.03	
						Kaki
6,791	221	5	401	1,398	101	
Avg./lb.	$.03	Sol	$.06	$.21	Sol	
						Great Sla
40,502	1,212	90	1,549	5,172	418	
Avg./lb.	$.03	Sot	s."	$.13	$.01	

Source: Mr. Peter Thompson, Department of Fisheries and Oceans, Freshwater I

APPENDIX B

LIST OF INTERVIEWS

Interviews in Vancouver

Restaurants

Mr. Kerry Sear, Executive Chef, *Four Seasons*
Mr. Wayne Woolrick, Executive Chef, Cafe Splash
Mr. Michael Schmidt, Executive Chef, Papillote Fish and Game House
Mr. Hervé Martin, Executive Chef, Pan Pacific Vancouver Hotel
Mr. Lars Jorgensen, Executive chef, Delta Place Hotel
Mr. Hans Schauv, Executive Chef, Park Royal Betel
Mr. Marcel Kauer, Executive *Chef,* Coast Hotel (by the Stadium)
Mr. Ron Gibb, Executive Chef, Delta River Inn

Food Distributors and Wholesalers

Mr. David Athey, *President,* Albion Fisheries
Mr. John Fowles, General Manager, Briscoe's Fine Foods Ltd.
Mr. Edwin Savage, Sales Manager, Continental Importers Ltd.

Others

Mr. Julius Pokomandy, President, B.C. Chef's Association
Dr. Jsns Ruddick, Manager, Catering Standards, Canadian Airlines International

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Interviews in Winnipeg

Mr. Al Fedirchuk, Food Service Buyer, Scott National
Ms. Laura Anderson, *Research* Assistant, DFO, Freshwater Institute
Hr. Peter Thompson, Economist, DFO, Freshwater Institute
Mr. Dan Topolniski, Economist, DFO, Freshwater Institute
Mr. Tom Dunn, President and General Manager, FPMC
Mr. Andrew Goussaert, *Chief* Executive Officer, Arctic Co-operatives Ltd.
Mr. Dal McCloy, Partner, P.M. Associates Ltd.
Mr. Lou Clement, Meat *Buyer,* Westfair Foods Ltd.
Mr. Robert Moshenko, Division Head, DFO, Freshwater Institute
Mr. Glenn McGregor, Manager, operations, DFO, Freshwater Institute
Mr. Frank Blisner, Director, Food Services, Sunspun
Mr. Lorne Anheliger, Food Services Manager, Sunspun

Interviews in Montreal

Restaurants

Mr. Simon Smotkowicz, Executive Chef, Delta
Mr. Anton Koch, Chef, Montreal Suisse

Food Distributors and Wholesalers

Mr. Gilles Beausoleil, Manager, Fish and Seafood, Canada Packers
Mr. Enzo Piccolo, President, Moderne Seafood Lt..
Mr. Claude Menard, Manager - Meat Sales, Canada Packers
Mr. Bernard C. Claudel, Manager Dining Services, Air Canada
Mr. Steve Scully, Sales, T. Lauzon Ltee
Ms. Aline Nadeau, La Maison du Gibier Inc.

Interviews in Toronto

Restaurants

Mr. Rudolf Blattler, Executive Chef, Harbour Castle, Westin
Mr. Gunter Gugelmeier, Executive Chef, Westbury Hotel
Mr. Peter Burge, Manager, Browne's Bistro
Mr. Fred Reindl, Executive *Chef,* King Edward Hotel
Mr. Richard Saines, Assistant Executive Chef, Sheraton Centre

Food Distributors and Wholesalers

Mr. Robert Martz, Sales, Honeyman's Beef Purveyors Ltd.
Mr. Nino Cicirello, President, Vsn Horns (Seafood)
Ms. Donna Clark, Manager, Fresh Fish *Department, St.* Lawrence *Foods*
Mr. Laurenz Harff, Just Game

Interviews in Edmonton

Restaurants

Mr. Peter Grassmuck, Executive Chef, Chateau Lacombe
Mr. Albert Hurle, Purchasing, Four Seasons

Food Distributors and Wholesalers

Mr. Brian Fallwell, Billingsgate Fish
Mr. Peter Lesko, Capital Packers

Interviews in Yellowknife

Restaurants

Mr. Ken McLeod, Executive *Chef,* Yellowknife Inn
Mr. Bob Hicks, *Chef, The* Office
Mr. Leslie Howell, Executive Chef, Explorer Inn

Food Distributors and Wholesalers

Mr. Ray Hussey, Seafood Outlet
Manager, Northern Fancy Keats

Interviews in Ottawa

Food Distributors and Wholesalers

Mr. David Encarnacao, Capital Fish

Interviews in Calgary

Food Distributors and Wholesalers

Mr. Bob Porter, Premier Meats

Others (All Locations)

Mr. Henry Copestake, President, Farocan Inc., Ottawa
Mr. Doug Stewart, Director, Condonation Education & Resource Development, Renewable Resources, Yellowknife
Mr. Bob Long, B.R.H.T.C., Renewable Resources, Iqaluit
Mr. Larry Simpson, Renewable Resources Development Officer, Economic Development end Tourism, Iqaluit
Mr. Ken Hudson, President, Fort Smith HTA
Mr. Kevin Lewis, Renewable Resources Development Officer, Economic Development end Tourism, Yellowknife
Mr. Ray Case, Wildlife Biologist, Renewable Resources, Yellowknife
Mr. Karl Laubstein, Director, Resource Allocation - Atlantic Fisheries, Fisheries and Oceans, Ottawa
Mr. Ron Livingston, Director, Policy and Planning, Renewable Resources, Yellowknife
Ms. Susan Bonnyman, Supervisor, Wildlife Population Management, Renewable Resources, Yellowknife
Mr. Brian Wong, District Biologist, Western Region, Fisheries end Oceans, Yellowknife
Dr. M.W.B. McKie, D.V.N., Regional Veterinarian, Meat Hygiene, Food Production end Inspection Branch, Veterinary Inspection Directorate, Calgary
Dr. G. E. Spencer, D.V.M., Regional Veterinary Supervisor, Meat Hygiene, Food Production and Inspection Branch, Veterinary Inspection Directorate, Calgary
Dr. Rex Copeland, D.V.X., Agriculture Canada, Grande Prairie, Alberta
Ms. Judy Wilson, Director, Regional Communication Services, Indian and Northern Affairs Canada, Yellowknife
Mr. Syd Kirvan, Director, Natural Resources, Economic Development end Tourism, Yell*if.
Mr. Ian Johnson, Economic Development and Tourism, Yellowknife
Mr. John Collins, Program Coordination end Economics Branch, Fisheries end Oceans, Newfoundland Region
Mr. Martin Fobert, Market Analyst, Commercial end Market Analysis Division, Fisheries and Oceans, Ottawa
Mr. Lothar Dahlke, Biologist, Fisheries and Oceans, Iqaluit
Mr. Altaf Lakhani, EDA, Yellowknife
Mr. Bob Huson, Senior Economic Analyst, Fisheries and Oceans, Ottawa

Mr. Gary Brocklehurst, Northwest Atlantic Fisheries Centre, Fisheries and Oceans, St. John's
Mr. Don Cadieu, North Country Foods, Yellowknife
Ms. Ann Gunn, Regional Biologist, Renewable Resources, Coppermine
Mr. Ralph Butterworth, Qiqiqtaaluk Corporation, Iqaluit
Ms. Nancy Anilniliak, P & L Services, Pangnirtung
Ms. Edith Dussault, Fisheries and Oceans, Ottawa
Ms. Sandy Mongau, Iqaluit Enterprises
Mr. Keith McLellan, Yukon "Super A" Foods Ltd., Yellowknife
Mr. Dave McCurdy, Yellowknife IGA, Yellowknife
Mr. Don Anderson, Andrich Consultancy Croup, Vancouver
Mr. Ken Bodden, Department of Forestry, Lands and Wildlife, Edmonton
Mr. John Sheehan, Superintendent, Economic Development and Tourism, Fort Simpson Region
Mr. Bill Tarr, Central Arctic Meat, Cambridge Bay
Ms. Barbara Tartak, Office Manager, Keewatin Wildlife Federation, Rankin Inlet
Mr. Paul Marks, ULU Foods, Inuvik·
Mr. Tom Beaudoin, ULU Foods, Inuvik
Mr. Doug Billingsley, Canadian Reindeer Company
Mr. Roger Binne, District Manager, Inuvik Region, Renewable Resources
Mr. Norman Warville, Renewable Resources Officer, Renewable Resources, Inuvik
Mr. Cliff Cook, Renewable Resources Officer, Aklavik
Mr. John Snowshoe, Renewable Resources Officer, McPherson
Mr. Ross Hagen, Renewable Resources Officer, Norman Wells
Mr. Don Vincent, Regional Superintendent, Renewable Resources, Kitikmeot Region
Mr. Keith Hickling, Renewable Resources Officer, Coppermine
Mr. Duane Smith, Renewable Resources Officer, Cambridge Bay
Mr. Joe Larose, Renewable Resources Officer, Spence Bay
Mr. Bill Mawdsley, Renewable Resources Officer, Fort Smith
Ms. Diane Grant Francis, Wildlife Harvest Analyst, Renewable Resources, Yellowknife
Hr. Peter Esau, Sachs Harbout HTA
Mr. Ed Killon, Inuvik HTA
Mr. Jack Heath, Inuvik HTA
Ms. Barb Herman, Economic Development Officer, Economic Develop-nt and Tourism, Norman Wells
Mr. Murray Cutten, Economic Development Officer, Economic Development and Tourism, Inuvik

APPENDIX C

92.002 Hind Leg, [illegible]

Hind Leg: Bone In

National Venison BRAND

Finest quality game meat prepared in New Zealand by Wrights

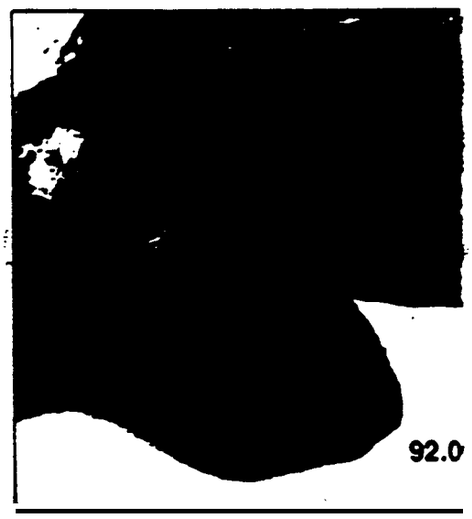
Item Code Product Description

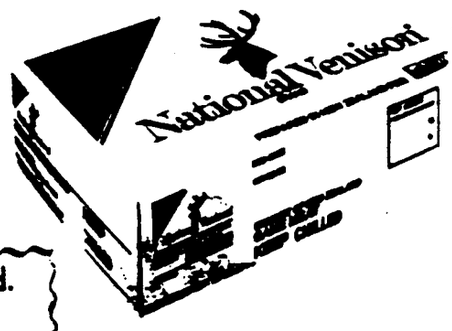
92.001 Hind Leg, Bone in, **Rump on.** Shank on. IVP
92.009 Hind Leg, Bone in. **Rump on.** Shank Bone out/Shank Meat attached. IVP

Other Options:

92.002 Hind Leg, Bone in. Rump on. Shank on. Polywrap
92.005 Hind Leg, Bone in. Rump on. Shank off. IVP

KEY:
IVP = Individually Vacuum Packed





Available From:

Honeyman's Beef Purveyors Ltd.
2576 Wharton Glen Ave.
Mississauga, Ontario 14X 2A9
Tel: (416) 275-8300
1-800-268-2820

THE CANTERBURY VENISON BRAND

MARKETED EXCLUSIVELY BY FORT EXPORT LTD..
800 COLOMBO ST. CHRISTCHURCH. NEW ZEALAND TELEPHONE (03) 793-244. TELEX NZ4694

BONELESS SHOULDER (14)*
This individually vacuum packed venison shoulder item ix trimmed to a consistent 95-99% viual Lean (VL). Each brand endorsed bag holds one shoulder.
Piece weight: 4-6 kg(8.8-13.2 lb)
(Other Shoulder and Forequarter specifications are available on request.]

BONELESS 'A'
Boneless Neck meat, bulk carton pack in polywrap. Meat VL is %-99%. Further pack specifications include 6 x 4.5 kg poly bags per carton (60 lb).
Piece weight: Bulk packed to 27 kg (60 lb).

BONELESS 'B'
Boneless meat trim from rib age, flap and breast. The minimum piece size is approx. 100 gm (or 3.s ox). The VL is 75-80%.
Piece weight: Bulk packed to 27 kg (60 lb). .

** **Numbers** refer to photo **position inside** fob.*

Specialized packaging ***options are available*** on ***request.***

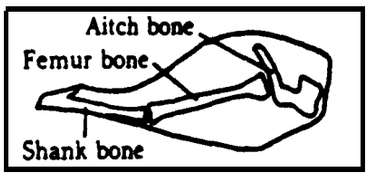
NEW ZEALAND'S 'FINEST QUALITY' FARMED VENISON BRAND

THE CANTERBURY VENISON BRAND

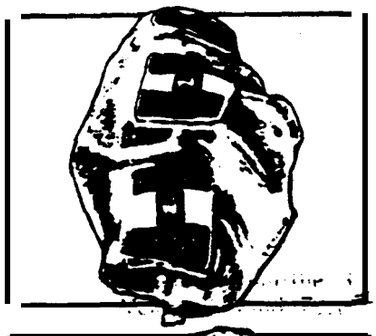
MARKETED EXCLUSIVELY BY FORT EXPORT LTD.
S00 COLOMBO ST. CHRISTCHURCH. NEW ZEALAND. TELEPHONE (03) 793-244. TELEX NZ4694

VENISON HINDQUARTER RANGE

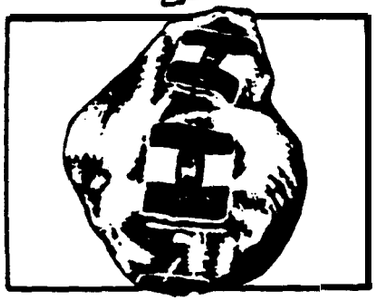
Offered in chilled/frozen or chilled/chilled form.



BASIC PROCESS DESCRIPTION
The Standard **Hindquarter Specification includes Rump on, Femur** bone in, **Aitch** bone in, **Shank bone out, Shank meat attached.** The Hindquarter may be processed to a Femur bone only, **Aitch** bone removed or a fully **boneless** Hindquarter.



BONE-IN HINDQUARTER (1)*
Piece weight: 8-12 kg **1(1-26 lb)** Shank **bone removed.**
Packing *specification:* Vacuum packaged
Carton specification: Packed in master **carton,** 2 **Legs** per carton.
Average weight **16-24** kg **net (36-55** lb)



BONELESS HINDQUARTER **(6)**.
Piece weight: 6-9 kg **(13-20 lb)**
Packing specification: **Vacuum packaged**
Carton specification: Packed in master carton, 3 Legs per carton.
Average weight 18-27 kg net (3%0 **lb).**

• **Numbers *refer to photo position inside folder.***

Specialized** packaging options are **available** on **request.

NEW ZEALAND'S 'FINEST QUALITY' FARMED VENISON BRAND

THE CANTERBURY VENISON BRAND

MARKETED EXCLUSIVELY BY FORT EXPORT LTD.,
800 COLOMBO ST, CHRISTCHURCH, NEW ZEALAND. TELEPHONE (03) 793-244, TELEX NZ4694

CANTERBURY VENISON

The Canterbury Venison slaughter and processing plant is situated 90 kms south of Christchurch, in New Zealand's South Island. The plat processes lamb and venison beneath the snow-capped Southern Alps in a pure rural environment from where N.Z. farmed deer are &rived.

Canterbury Venison Ltd presently slaughter and process for export, approximately 25% of the New Zealand farm venison production per annum.

Selected farm raised deer only, are slaughtered at the Canterbury Venison plant. These deer are purchased by Fort Export Ltd for slaughter under the "Canterbury Venison" brand. Fort Export and Canterbury Venison Ltd, associate companies, share considerable pride in their processing specifications and finest quality products. Canterbury Venison operates, probably, the most sophisticated plant of its kind in the world, being approved for important markets such as EEC, United States and Canada, for slaughter and processing of all meat products. Each of these markets impose the strictest standards of hygiene.

Fort Export, a farmers' co-operative marketing organization, holds the position as one of the leading exporters of better processed meat products to Europe. As such, Fortrt is well qualified to offer "Canterbury Venison" brand products to a large number of export markets.

With the "Canterbury Venison" deer products, the deer undergo accelerated conditioning and up to a 48 hour ageing alter slaughter to ensure maximum possible tenderness. The product may then be either boned in a chilled state and then frozen for export, or boned in a chilled state and then offered for export in chilled form.

Considerable research work has been undertaken in New Zealand, based on the chilled processing, chilled export, state of venison. Reports suggest that an 8-12 week minimum shelf life alter precessing is readily obtained. Further reports indicate that under ideal conditions shelf life could possibly be extended to 16 weeks from rime of slaughter.

If "Canterbury Venison" chilled products are airfreighted from New Zealand to your market, the shelf life of 12 weeks from time of slaughter would be achievable.

All "Canterbury Venison" products are vacuum packaged, with the exception of bulk manufacturing items. Packing reflects Canterbury Venison's pride and care in handling.

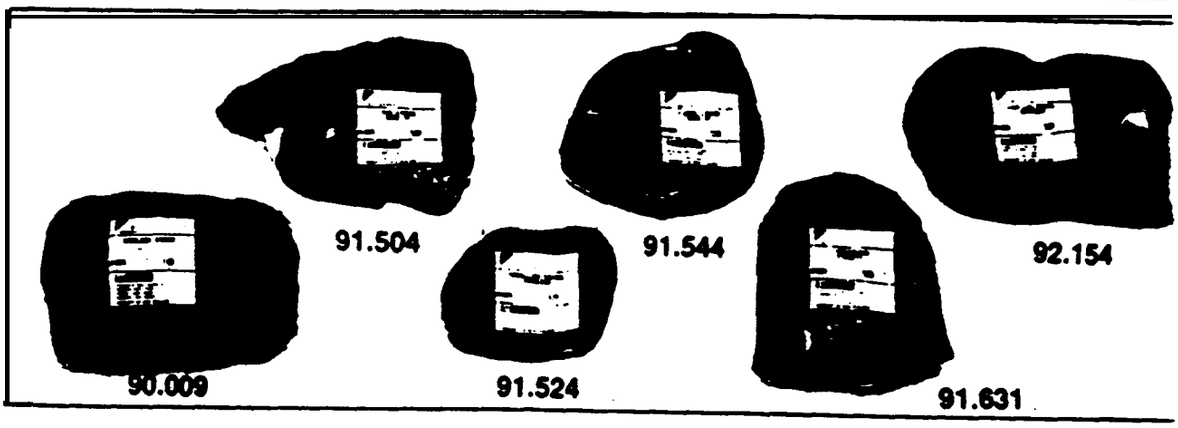
Fort Export see communication as essential in the servicing of overseas buyer requirements. The Company utilizes modern communication systems and regular personal visits by Marketing staff are made to maintain liaison and customer support. To this this, Fort Export ensure customer satisfaction is the primary component d a continued sales program.

NEW ZEALAND'S 'FINEST QUALITY' FARMED VENISON BRAND

Steaks

National Venison BRAND

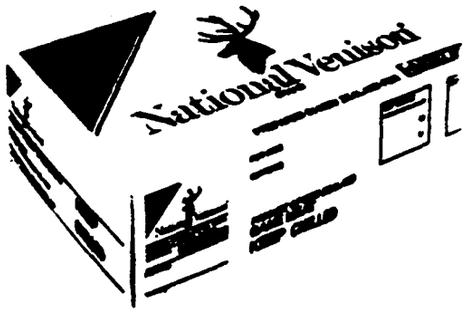
Finest quality game meat prepared in New Zealand by Wright's



Item Code	Product Description
90.009	Shoulder Steaks, Boneless, Oyster cut, Seamed, Deskinned, Shank removed, IVP‡
91.504	Rib Steaks, Bone in, 4 per Vac Pack
91.524	Medallion Steaks, Boneless, 4 per Vac Pack
91 .s44	T-Bone Steaks, Bone in, 4 per Vac Pack
91.631	Tenderloins (Fillets), 4 per Vac Pack
92.154	Hind Leg Steaks, Boneless, 4 per Vac Pack

Note: Steaks cut to individual client requirements.

KEY:
IVP = Individually Vacuum Packed
‡ denotes shoulder or weighed packs



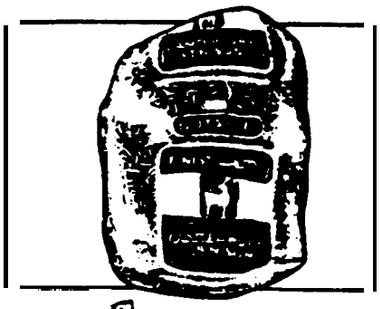
Available From:

THE CANTERBURY VENISON BRAND

MARKETED EXCLUSIVELY BY FORT EXPORT LTD
800 COLOMBO ST. CHRISTCHURCH, NEW ZEALAND TELEPHONE (03) 793-244. TELEX NZ4694

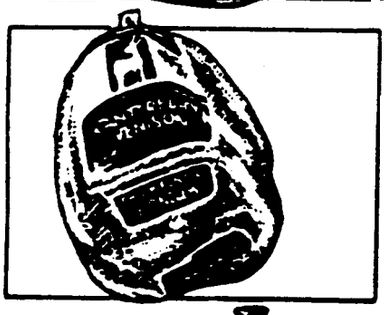
VENISON HINDQUARTER PRIMAL RANGE

Offered in ***chilled/frozen*** *or* ***chilled/chilled form***

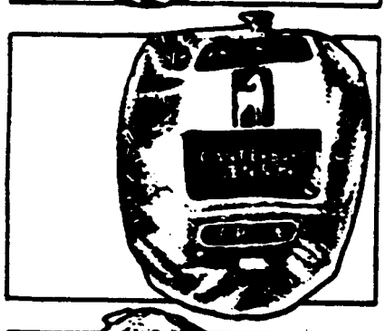


BASIC **PROCESS DESCRIPTION**
Hind **Leg seamed** to one of each of:

BONELESS ***VENISON*** **BOTTOM ROUND (OUTSIDE) (2)***
Piece weight: 1.5-3.S kg ***(3.3-8.0*** **lb)**
Packing Specification: Vacuum **packaged** in **brand** endorsed **bags** to highest **quality** trim.



BONELESS VENISON THICK PLANK **(KNUCKLE) 13)**
Piece ***weight:*** 1.2-2.5 kg (2.6-5.6 **lb)**
Packing **specification:** **Vacuum** packaged in **brand** endorsed **bags to highest quality** trim.



BONELESS VENISON TOP **ROUND (TOPSIDE)** (4)
Piece weight: 1.8-3.5 kg **(4-8 lb)**
Packing specification: Vacuum **packaged** in **brand** endorsed **bags** to highest **quality** trim.

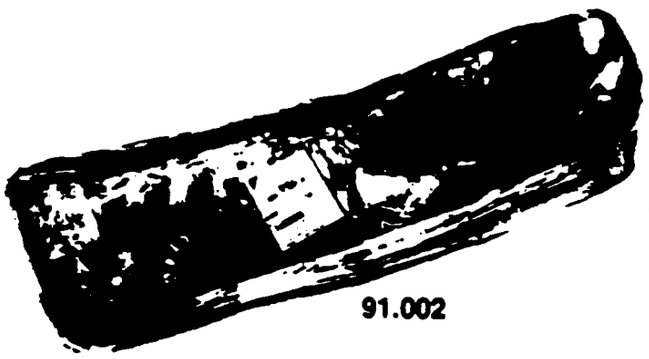
BONELESS VENISON RUMP ***(5)***
Piece weight: 1-2 kg (2.2-4.4 **lb)**
Packing specification: Vacuum **packaged** in **brand** endorsed **bags** to **highest quality** trim.

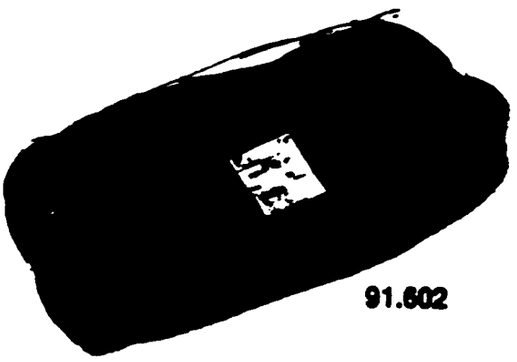
• ***Numbers refer to photo position inside folder.***

NEW ZEALAND'S FINEST QUALITY FARMED VENISON BRAND

National Venison

Finest quality game meat prepared in New Zealand by Wrights



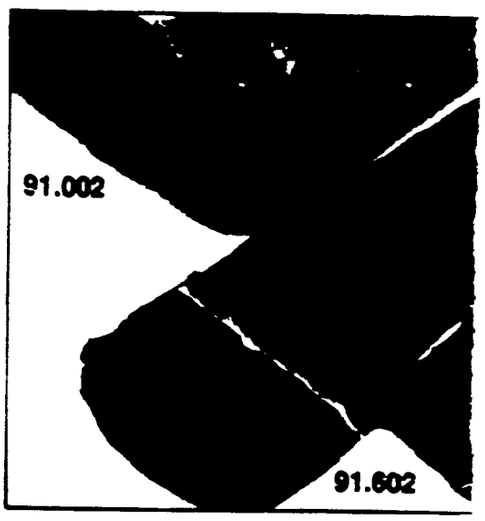


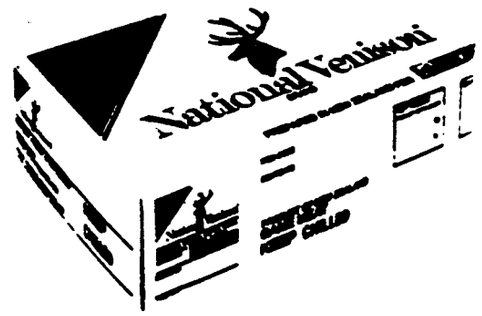
Item Code	Product Description
91.002	Saddle, Bone in. Rump off. Fillet in. 10 rib. IVP
91.602	Saddle, Boneless. Rump off. Fillet out. 10 rib. IVP

Other Options:

91.504	Rib Steaks, Bone in. 4 per Vac Pack
91.524	Medallion Steaks, Boneless. 4 per Vac Pack
91.544	T-Bone Steaks, Bone in. 4 per Vac Pack
91.631	Tenderloins (Fillets), 4 per Vac Pack

KEY:
IVP = Individually Vacuum Packed





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