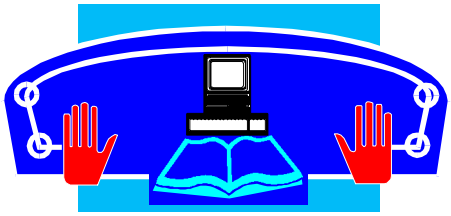

Final Report On Ways Of Expanding The Winter Fishery In The Nwt; Opening Of Inland Lakes Phase Ii

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CHAPTER I

INTRODUCTION

This report follows our initial report issued January 17, 1979. It was our initial intention to issue a final report that would encompass the analysis presented in our initial report and the results of our subsequent research. However, the results of our research subsequent to issuing the preliminary report simply support the analysis, recommendations, and conclusions of our preliminary report. As a result, in this report we are reporting on only the additional data. The reader should consider the report as being in two volumes and read it sequentially.

CHAPTER II

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of the report are those listed on pages 2 and 3 of the preliminary report. In addition to point 2 of the recommendations and conclusions we conclude the following:

1. Re: Hjalmar, Nonacho, Thekulthili, Sparks, and other lakes northeast of Hay River

   Because of high freighting costs, and the low proportion of large and jumbo whitefish it is only marginally feasible for individual fishermen to fish these lakes and freight via commercial carriers at tariff rates. However, commercial air carrier may be enticed to fish the lakes with their own crews, or enter into special freighting arrangements. The operation may be attractive to carriers "because it would provide work for their aircraft during an otherwise slow season.

2. Re: Kakisa and Tathlina

   As stated in the preliminary report, these lakes are commercially viable because they are pickerel producers. Kakisa has the added advantage of being accessible via an all seasons road.

3. Re: Lac La Martre, Grandin, Keller, Ingray, Hottah, and Gordon

   By combining air freighting with trucking, it is possible to have a viable fishery on these lakes. However, Hottah and Keller, because of distance, would only by marginally viable.

   The fish would be flown to Fort Rae and trucked from Fort Rae to Hay River or Edmonton. Freighting fish by this route will necessitate

the establishment of a packing or re-icing station at Fort Rae. Furthermore, the freighting activities will require a great deal of organization.

Funds for upgrading an existing building would have to be supplied by grants from Special Arda or other sources. The organization and management of the Fishery could be undertaken by the Freshwater Fish Marketing Corporation with assistance from the Government of the Northwest Territories.

4. Re: Lac La Martre

A viable fishery could be established at Lac La Martre by itself. Freighting costs from the La Martre fishery would be minimized by transporting fish to Yellowknife via Dash 7 aircraft and from Yellowknife to Hay River via highway transport.

5. We do not recommend freighting fresh fish via winter roads. Local carriers have stated emphatically that these roads (to Lac La Martre and Hottah Lake) are not reliable enough to guarantee delivery of fresh fish over them.

6. A frozen fish fishery could be considered for Hottah Lake provided that the Freshwater Fish Marketing Corporation would accept delivery and pay its current frozen rate which is equivalent to 80% of the fresh rate.

7. If a cannery were built at Hay River lake frozen fish from these lakes could be used for canning. However, we cannot compare the returns

from canning frozen fish to delivering fresh for the fresh fish market for the following reasons:

a. A report by the Freshwater Institute has stated that input volumes of 2 million to 3 million pounds per year would be required to operate a cannery efficiently. The total quotas of lakes included in this study amount to less than .5 million pounds.

b. We do not have adequate marketing information to assess the potential returns from a cannery.

CHAPTER III

TRANSPORTATION COSTS AND PROFITABILITY ANALYSIS

A. TRANSPORTATION COSTS

1. Optimum routes to minimize transportation costs

In Table VI of the preliminary report, we list possible alternatives for transporting fish. We have communicated with various carriers in the area and examined the cost of transporting by each of the possible routes. We list below the transportation routes that based on our analysis would minimize the costs of freighting.

1. Re: Lac La Martre, Grandin, Keller, Hottah, Ingray, and Gordon

   Our analysis indicates that the most economical method of freighting fresh fish from these lakes would consist of flying fish from the lakes to Fort Rae and trucking from Fort Rae to Hay River or Edmonton.

2. Lac La Martre Only

   If a fishery were established only at Lac La Martre with none of the other lakes fishing then the optimum method of transporting fresh fish would be to Yellowknife via the Dash 7 aircraft, and from Yellowknife to Hay River via highway transport.

3. Hjalmar, Nonacho, Thekulthili, and Sparks

   The optimum method of transportation would be by air to Fort Smith and by highway transport from Fort Smith to Hay River or Edmonton.

4. Re: Kakisa and Tathlina

The optimum method of transportation from these lakes are via highway transport from Kakisa and aircraft from Tathlina.

1. Lac La Martre, Grandin, Keller, Hottah, Ingray, and Gordon

As stated above the transportation alternative that minimizes costs of freighting from the total of the above lakes is to fly fish to Fort Rae and then truck it from Fort Rae to Hay River or Edmonton. Table I illustrates the forecasted transportation costs of moving the fish via this route from the lakes to Hay River or Edmonton. Table II illustrates the forecasted net revenues to fishermen if their catch was transported via this route.

Based on our forecast, if the catch from these lakes was transported in this manner all the lakes in this group could be fished profitably.

Three factors in connection with movement of fish from these lakes require further discussion. These are: a) transporting fresh fish from Hottah and Lac La Martre via winter roads b) costs of operating a packing station or re-icing station at Fort Rae c) lake freezing the catch from Hottah and Lac La Martre and transporting it via winter roads.

a. Transporting fresh fish via winter roads

We discussed with Robinson Trucking of Yellowknife the possibilities of transporting fresh fish from Hottah Lake and Lac La Martre over the winter roads. They informed us that because

TABLES I - V

STATEMENT OF ASSUMPTIONS

1. Initial prices are those prices posted by the Freshwater Fish Marketing Corporation for the winter season of 1979 - 1980.

2. Final prices are estimated by ourselves.

3. The freight rate for the Otter aircraft is a special rate quoted to us by **Carter Air Service of Hay River.** The **rate is based on flying large volumes during a slack season.**

4. The load factor is the D. O. T. rated load factor (see page 21, preliminary report).

5. Trucking rates are rates quoted to us by Byers Transport.

6. Trucking loads are assumed to be full loads based on carrying 100 lbs. gross weight for 60 lbs. net weight.

7. We have assumed that production will be sufficient to fly full loads with Otter aircraft. Use of smaller aircraft at standard tariffs would result in significantly higher freight costs.

8. Except for the specific examples in Table V, it is assumed that fish would be flown in tubs without ice.

TABLE I

COSTS OF FLYING FISH TO FORT RAE

AND TRUCKING TO HAY RIVER

OR EDMONTON

	--------SINGLE OTTER TO FORT RAE-------				---TRUCK FORT RAE TO HAY RIVER--				------TRUCK FORT RAE TO EDMONTON----			
LAKE	MILES (2 ways)	RATE $/mile	LOAD (net weight)	COST/LB.	RATE $/load	LOAD (net weight)	COST/LB.	TOTAL COST/LB. LAKE TO HAY RIVER	RATE $/load	LOAD (net weight)	COST LB.	TOTAL COST/ LB. LAKE TO EDMONTON
LAC LA MARTRE	120	1.65	2.050	.10	350	24.000	.015	.115	800	24,000	.03	.13
GRAND[illegible]N	240	1.65	2,050	.19	350	24,000	.015	.205	800	24,000	.03	.22
KELLER	360	1.65	2,050	.29	350	24,000	.015	.305	800	24,000	.03	.32
INGRAY	190	1.65	2,050	.15	350	24,000	.015	.165	800	24,000	.03	.18
HOTTAH	360	1.65	2,050	.29	350	24,000	.015	.305	800	24,000	.03	.32
GORDON	180	1.65	2,050	.14	350	24,000	.015	.155	800	24,000	.03	.17

TABLE II

FORECASTED NET REVENUE TO FISHERMEN

		LAC LA MARTRE			GRANDIN			KELLER			INGRAY			HOTTAH			GORDON		
		md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.
Gross revenue, initial payment	$/lb	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65
Freighting costs	$/lb	.115	.115	.115	.205	.205	.205	.315	.315	.315	.175	.175	.175	.315	.315	.315	.155	.155	.155
Operating costs	$ lb	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
		.415	.415	.415	.505	.505	.505	.615	.615	.615	.475	.475	.475	.615	.615	.615	.455	.455	.455
Net revenue (loss) before final payment	$/lb	.085	.135	.235	(.01)	.045	.145	(.120)	(.065)	.035	.025	.075	.175	(.120)	(.065)	.035	.04	.095	.195
Estimated final payment	$/lb	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.30	.10	.10
Net revenue (loss)	$/lb	.185	.235	.335	.09	.145	.245	(.02)	.035	.135	.125	.175	.275	(.02)	.035	.135	.14	.195	.295

of the condition of the roads it would not be possible to maintain a regular schedule for transporting the fish. As a result they would not accept any liability if the fish froze in transit. Furthermore, backhaul rates from Hottah Lake could not be obtained because at present the mine at Hottah Lake fully utilizes the carrier's total capacity moving south. For these reasons it would not be feasible to transport fresh fish over winter roads from Hottah Lake and Lac La Martre.

b. Packing or re-icing station at Fort Rae

In the 1960's Alaska Fisheries operated a packing station at Fort Rae. We 'nave been informed that the building still stands at Fort Rae, but we are not aware of what condition it is in.

The station at Fort Rae could be used in one of two ways. The fish delivered to Fort Rae could be fresh packed in boxes and shipped from Fort Rae directly through to Edmonton. Alternatively the fish could simply be iced and shipped to the Hay River Plant for packing. The first could minimize the total handling and freighting costs. However, such a station would require more supervision and semi-skilled labour. For this reason, we believe that the second alternative is more feasible.

Even if the fish packing station is in good condition, a significant capital investment will still be required to upgrade the facilities to current day standards and for the purchase of an ice machine, conveyors and other equipment. Our preliminary discussions with representatives of the Department of Regional

Economic Expansion (Special Arda) indicate that they would consider incentive grants in support of this capital investment.

For the purposes of our projection, we have assumed that the operating costs of this station will be paid for by way of a packing allowance from the Freshwater Fish Marketing Corporation.

c. Lake freezing of fish and transporting via winter roads

Considerable cost savings could be obtained if fish from Hottah Lake and possibly Lac La Martre were lake frozen and then transported in trailer loads over the winter roads. However, in our preliminary report we recommended that this not be considered because the market value of the lake frozen fish is approximately 50% of the value of fresh fish. We are concerned that if large volume of whitefish were lake frozen the Freshwater Fish Marketing Corporation may withdraw its lake frozen price.

Later in this chapter, we briefly discuss the possibilities of lake freezing fish to be shipped to a canning plant at Hay River.

2. Transportation of fish from Lac La Martre to Yellowknife via Dash 7 aircraft and to Hay River via highway transport

The method of transportation discussed above would only be viable if most or all the lakes listed were fished. If the total fishery could not be organized, it would still be possible to fish Lac La Martre by itself. Table III illustrates the costs of freighting from Lac La Martre utilizing Dash 7 aircraft to Yellowknife and

TABLE III

COSTS OF FLYING FISH FROM

LAC LA MARTRE TO YELLOWKNIFE AND

TRUCKING TO HAY RIVER

	LAC LA MARTRE TO YELLOWKNIFE — DASH 7 TO YK			YELLOWKNIFE TO HAY RIVER — TRUCK			TOTAL COST LAKE TO HAY RIVER
	RATE $/LOAD	LOAD (net weight)	COST/LB.	RATE $/LOAD	LOAD (net weight)	COST/LB.	
CASE I - RETURN TRIP RATE, NO ICE	1,067	10,300	.10	350	24,000	.015	.115
CASE II - RETURN TRIP RATE, PACKED IN ICE	1,067	6,900	.15	350	24.000	.015	.165
CASE III - BACKHAUL RATE, NO ICE	534	10,300	.05	350	24.000	.015	.065
CASE IV - BACKHAUL RATE, PACKED IN ICE	534	6.900	.08	350	24,000	.015	.095

highway transport to Hay River. In this table we illustrate the costs of transporting under four assumptions. These assumptions are:

1. Return trip rate, no ice
2. Return trip rate, packed in ice
3. Backhaul rate, no ice
4. Backhaul rate, packed in ice.

If the fish were packed in ice at Lac La Martre it could be loaded in a reefer trailer and transported to Hay River without re-icing. If it were not packed in ice then it would have to be iced at Yellowknife.

A number of organizations and business are currently shipping product to the community at Lac La Martre via the Dash 7 aircraft or the winter roads. It is possible to organize the freighting such that supplies would be brought in to the community and fish would be shipped out. This would result in achieving freight savings of approximately $.05/lbs.

The highest freighting cost (return trip rate, packed in ice) is $.165/lbs. At this rate the fishery could still operate profitably.

As in the previous examples, we have assumed that the cost of packing would be offset from revenues generated from a packing allowance from the Freshwater Fish Marketing Corporation.

3. Transporting fish from Hjalmar, Nonacho, Thekulthili, Sparks to Fort Smith via aircraft and to Hay River via highway transport

Table IV illustrates the cost of freighting from the above lakes to Fort Smith via aircraft and Hay River via highway transport. Table V illustrates the forecasted net revenue to fishermen if the fish were transported from these lakes in this manner.

From Table V it can be seen that if our assumptions are correct these lakes can be fished profitably. However, fishermen who have fished these lakes, tell us that most of the whitefish population is in the meduim size range. Furthermore, the quotas on these lakes are relatively small. For these reasons this fishery would only be marginally viable for individual fishermen freighting via commercial carriers.

During the 1960's air carriers often organized fisheries or fished lakes with their own crews. This is a possibility for this Fishery. The carriers would obtain the advantage of utilizing their aircraft during a season when they would otherwise be idle. As a result, the carriers could fish the lakes profitably. Although this may not be as desirable as having fishermen fish for themselves, it will still generate employment.

The assumptions made with regard to packing or re-icing at Fort Rae would also apply to the operation at Fort Smith.

TABLE IV

COSTS OF FLYING FISH TO FORT SMITH

AND TRUCKING TO HA RIVER

	SINGLE OTTER TO FORT SMITH				TRUCKING	
LAKE	MILES (2 ways)	RATE $/mile	LOAD (net weight)	COST/LB	FORT SMITH TO HAY RIVER $/LB	TOTAL COST/LB LAKE TO HAY RIVER
HJALMAR	272	1.65	2,050	.22	.04	.26
NONACHO	288	1.65	2,050	.23	.04	.27
THEKULTHILI	192	1.65	2,050	.15	.04	.19
SPARKS	224	1.65	2,050	.18	.04	.22

TABLE V

FORECASTED NET REVENUE TO FISHERMEN

		HJALMAR			NONACHO			THEKULTHILI			SPARKS		
		md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.
Gross revenue, initial payment	$/lb	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65
Freighting costs	$/lb	.26	.26	.26	.27	.27	.27	.19	.19	.19	.22	.22	.22
Operating costs	$/lb	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
		.56	.56	.56	.57	.57	.57	.49	.49	.49	.52	.52	.52
Net Revenue (loss) before final payment		(.065)	(.01)	.09	(.075)	(.02)	.08	.005	.06	.16	(.025)	.03	.13
Final Payment		.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
Net revenue loss)		.035	.09	.19	.025	.08	.18	.105	.16	.26	.075	.13	.23

B. FISHERMEN'S OPERATING COSTS

For the purposes of our forecast, we assume that fishermen's operating costs would be $.30/lbs. This forecast is based on a cursory review of operating costs on Great Slave Lake. Should Phase III of this report be approved, these costs will be examined in detail.

C. FISH CANNERY

Mr. D. Iredale of the Freshwater Institute has informed us that for the purposes of canning fillets, fillets cut out of frozen fish have a better quality than fillets cut out of fresh fish. If a cannery were located at Hay River, fish could be lake frozen at Hottah Lake and Lac La Martre and transported via winter roads at a considerable freight saving. However, we cannot compare the returns from canning to the returns from fresh fish for the reasons listed in Chapter II.

One aspect that could be considered in a subsequent study would be the McKenzie Delta Fishery as a source of input for a cannery.

APPENDIX

COST OF FREIGHTING

FRESH FISH AND

NET RETURNS TO

FISHERMEN ASSUMING THAT

AIRCRAFT RATES ARE THE

STANDARD TARIFF RATES

TABLES VI - IX

STATEMENT OF ASSUMPTIONS

The assumptions are the same as for Tables I - V except that the rate for the Otter aircraft is $2.10/mile, the probable tariff rate for next winter.

TABLE VI

COSTS OF FLYING FISH TO FORT RAE

AND TRUCKING TO HAY RIVER

OR EDMONTON

	--SINGLE OTTER TO FORT RAE-------				---TRUCK FORT RAE TO HAY RIVER---				------TRUCK FORT RAE TO EDMONTON----			
LAKE	MILES (2 ways)	RATE $/mile	LOAD (net weight)	COST/LB.	RATE $/load	LOAD (net weight)	COST/LB.	TOTAL COST/LB. LAKE TO HAY RIVER	RATE $/load	LOAD (net weight)	COST/LB.	TOTAL COST/ LB. LAKE TO EDMONTON
LAC LA MARTRE	120	2.10	2,050	.12	350	24,000	.015	.135	800	24,000	.03	.17
GRANDIN	240	2.10	2,050	.25	350	24,000	.015	.265	800	24,000	.03	.30
KELLER	360	2.10	2,050	.37	350	24,000	.015	.385	800	24,000	.03	.42
INGRAY	190	2.10	2,050	.19	350	24,000	.015	.205	800	24,000	.03	.24
HOTTAH	360	2.10	2,050	.37	350	24,000	.015	.385	800	24,000	.03	.42
GORDON	180	2.10	2,050	.18	350	24,000	.015	.195	800	24,000	.03	.23

TABLE VI*

FORECASTED NET REVENUE TO FISHERMEN

		LAC LA MARTRE			GRANDIN			KELLER			INGRAY			HOTTAH			GORDON		
		md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.
Gross revenue, initial payment	$ lb	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65
Freighting costs	$/lb	.135	.135	.135	.265	.265	.265	.385	.385	.385	.205	.205	.205	.385	.385	.385	.195	.195	.195
Operating costs	$/lb	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
		.435	.435	.435	.565	.565	.565	.685	.685	.685	.505	.505	.505	.685	.685	.685	.495	.495	.495
Net revenue (loss) before final payment	$/lb	.06	.115	.215	(.07)	(.015)	.085	(.19)	(.135)	(.035)	(.01)	.045	.145	(.19)	(.35)	(.035)	.00	.055	.155
Estimated final payment	$ lb	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
Net revenue (loss)	$/lb	.16	.215	.315	.03	.085	.185	(.09)	(.035)	.065		.145	.245	(.09)	(.035)	.065	.10	.155	.255

TABLE VIII

COSTS OF FLYING FISH TO FORT SMITH

AND TRUCKING TO HAY RIVER

LAKE	SINGLE OTTER TO FORT SMITH — MILES (2 ways)	RATE $/mile	LOAD (net weight)	COST/LB	--TRUCKING-- FORT SMITH TO HAY RIVER $/LB	TOTAL COST/LB LAKE TO HAY RIVER
HJALMAR	272	2.10	2,050	.28	.04	.32
NONACHO	288	2.10	2,050	.30	.04	.34
THEKULTHILI	192	2.10	2,050	.20	.04	.24
SPARKS	224	2.10	2.05@	.23	.04	.27

TABLE IX

FORECASTED NET REVENUE TO FISHERMEN

		HJALMAR			NONACHO			THEKULTHILI			SPARKS		
		md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.	md.	lg.	jbo.
Gross revenue, initial payment	$/lb	.495	.55	.65	.495	.55	.65	.495	.55	.65	.495	.55	.65
Freighting costs	$/lb	.32	.32	.32	.34	.34	.34	.24	.24	.24	.27	.27	.27
°perating costs	$/lb	.3°	.3°	.3°	.3°	.30	.30	.3°	.30	.30	.30	.30	.30
		.62	.62	.62	.64	.64	.64	.59	.59	.59	.57	.57	.57
Net Revenue (loss) before final payment		(.125)	(.07)	.03	(.145)	.°9	.°1	(.°95	(.04)	(.06)	(.075)	(.02)	.08
Final Payment		.1°	.1°	.1°	.1°	.1°	.1°	.1°	.1°	.1°	.1°	.1°	.10
Net revenue (loss		(.025)	.°3	.13	(.045)	.01	.11	.005	.°6	.16	.025	.°8	.18