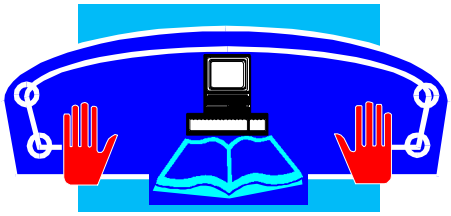


Final Report; Inuvik Htc 1989-test Fishery
Pilot Project Fisheries, Inuvik
Date of Report: 1989
Author: Gnwt-ed&t
Catalogue Number: 3-9-1

Financial assistance provided by the NWT EDA, Inuvik Regional Office of ED&T and DIAND, Indian and Inuit Services.

INDEX

EXHIBITS

This report has been prepared as a summary document for the test fishing project which occurred in the Mackenzie Delta in August and September of 1989. The report has been constructed in three main parts. These three parts will summarize the project activities in the areas of "Operational", "Biological", and 'Financial" activities. Each of these three topic areas was the responsibility of a different member of the project team. These members were, Ken Mackay for the operational report, Dave Polakoff for the biological report, and Anne Kasook for the financial report. These three team members should be acknowledged for their efforts.

It is concluded in this report that this project was very worthwhile and that much was learned and documented for future years. It is felt that many of these positive results were directly attributable to the planning function and the communication between the persons involved in project activities. This will become more apparant as the report is studied in more detail.

Planning:

In the early portions of this project the idea of a test fishery project for the 1989 season was discussed between the president of the Inuvik Hunters and Trappers Committee, Billy Day, and Gerd Fricke and Sam Ransom of the Department of Economic Development and Tourism. After a presentation at the Annual General Meeting on June 20th., 1989 it was decided to precede with the project and Billy Day and Anne Kasook were named as H.T.C. representatives on the planning committee.

After this meeting it was decided to call a meeting of agencies and departments with direct involvement or interest in the project. The following persons now had an opportunity to input their views or suggestions:

Billy Day - President of the Inuvik Hunters and Trappers Committee
Anne Kasook - Bookkeeper and Secretary for the Inuvik Hunters and Trappers Committee
Gerd Fricke - Renewable Resource Development Officer for the Department of Economic Development & Tourism in Inuvik.
Sam Ransom - Director- Natural Resources for the Department of Economic Development and Tourism in Yellowknife
Pierre Lemieux - Fisheries Management Biologist for the Department of Fisheries & Oceans in Inuvik.
Vic Gillman - Regional Fisheries Manager for the Department of Fisheries and Oceans in Inuvik.
Pat Bobinski - Manager- Inspection Office of the Department of Fisheries and Oceans in Hay River.

Keith Alexander - Zone Manager of Freshwater Fish Marketing Corporation in Edmonton.
Randy Forsythe - Conservation Education Officer of the Department of Renewable Resources in Inuvik

From these persons it was decided to form a working group which included, Billy Day, Anne Kasook, Gerd [illegible] Pierre Lemieux, and Randy Forsythe for purposes of ongoing planning, monitoring, and communications. This working group met on a needed [illegible] to and deal with all matters that required action or major decisions. On occasion not everyone was available so the remaining members made the decisions required.

From discussions at these meetings various members of this working group were required to obtain information and documentation for presentation in the funding proposal to the Economic Development Agreement Secretariat. Both the Fisheries Joint Management Committee and the Game Council prepared [illegible] of support for this proposal. On 28th., 1989 the E.D.A. Management Group met and approved $88,150.00 worth of funding on expected costs of $207,450.00. Of this amount $30,000.00 was for [illegible] purposes only which effectively gave the project an operational budget of $177,450.00. The estimated project costs on the 'Project [illegible] and actual operational budget used according to the [illegible] are shown as Exhibit "A" and [illegible] Some of the funding commitments had been made by other departments and agencies in the form of contract funding, use of equipment, capital equipment purchases, [illegible] These commitments are below.

A) Economic Development and Tourism.

Contract - $25,000.00
ii) Ice Machine Capital Purchase -
iii) Repairs on [illegible] as
iv) Use of new nets purchased for test fishing

B) Renewable Resources

i) Use of the $5,000.00 / month for two months -
ii) Use of the fishing nets from the warehouse - $5,000.00
iii) Use of two radios for the and at the fish plant.- $2,000.00

C) Fisheries [illegible]

i) Fisheries Biologist to gather fishery data and to instruct fishermen how to gather the data. - $2,000.00
ii) Use of the as a backup collector vessel to the

iii) of the yawl for data collection use.

D) **Freshwater Fish Marketing Corporation**

i) Use of the plastic fish tubs for the fishcamps and for use in the transporting of the fish to
ii) The freight costs on the transportation of the tubs to
iii) The waxed cardboard boxes for transportation method

iv) The and reporting on product quality at fish plant.
v) Market assessments between and Whitefish.

E) Hunters and Trappers Committee

i) Agency fees to go back into project.- $5,200.00
ii) Revenues from the sale of the would be directed back into the fishery. - $21,600.00
iii) Administrative control of project.

It is felt that on the whole the project and commitments preceded on the basis stated above. It should however be noted that some alterations were required in the commitment levels based on the operational requirements and decisions made. In general the amount of expenditures required were not as high as expected and therefore the amount committed could also be adjusted downwards. We feel that this control of spending to production levels shows the amount of financial control maintained by the project. This will be demonstrated to a greater degree in the financial portion of this report.

This portion of the report will describe the activities undertaken by the project, the production levels acheived, the operational decisions made, and the primary positive and negative findings of the project on an operational basis. It will also deal with some findings which will be considered for future projects in this area.

On July 27th. Ken Mackay an experienced commercial fisherman from Manitoba arrived in Inuvik to take on the role of co-ordinator of the fishery.

On August lst. we received written documentation on the quotas we were allowed for the test fishery. It allowed the harvesting of 16,000 kg. round weight of whitefish and 6,000 kg. round weight of northern pike and inconnu combined. (see exhibit "C")

On August 4th. the first project worker was hired to start on August 8th. Accounts were also established at several local businesses for this project with all bills being directed to the Inuvik H.T.C.

On August 8th. Vic Gillman of D.F.O. informed Sam Ransom that a fisheries biologist needed to be hired as regional staff were to be fully utilized during this fishing period. He also informed Sam of the data collection requirements. Sam Ransom agreed that E.D. & T. would prepare a contract for this purpose. (see exhibit "D")

On August 10th. the ice machine and associated equipment was sent from F.F.M.C. with the invoices being directed to E.D. & T. On this day we also set up an account with Lakefish Net and Twine Ltd. of Winnipeg.

On August 11th. we made contact with Don Begalki of F.F.M.C. who was to insure the installation of the ice machine was as required. He subsequently arranged for a visit to Inuvik to inspect the location and to work with Ken and the local refrigeration mechanic. On this same day a contribution agreement for the E.D.A. contribution was recieved from the Department of Renewable Resources in Yellowknife (who were made implementing agency) .

The fish plant was being prepared for use with the removal of equipment and supplies not required and the facility was cleaned up. The supplies such as nets, tools, and supplies were ordered.

On August 14th. the contribution agreement was signed and forwarded to Yellowknife.

The Northwind was being examined and prepared for the fishing season by the Department of Public Works mechanics.

The Bank account for the project was opened after all the documentation for it was signed.

The bookkeeping system was set up and initial instruction in its use occurred.

The ice machine was installed, tested, and ice was stockpiled for preparation for the fishing season.

The renovations required to the fishplant were completed.

The "Northwind" crew was hired. And the boat was tested in the water.

The fishplant *crew* was hired

On August 25th. the E.D.A. contribution advance cheque was received.

On August 30th. the test fishing started at the fishcamps and the first loads of fish were brought into the fishplant. Keith Alexander of F.F.M.C. was available to show fishplant workers the proper fish handling and packing techniques. Fishing continued to September 1st. .

On September 1st. the "Northwind" encountered severe mechanical problems and had to be towed into Inuvik by the "Plover". It was found that a new leg was going to be required prior to continued use thereof. The fishing operation was halted as the new leg was ordered and was transported to Inuvik. E.D. & T. agreed to pick up the bill for this major repair.

In the period from August 30th. to September 1st. the project had seen 4777.5 kg. caught at six fishcamps (as located on the map identified as exhibit "E") of which 93% were whitefish. This equals approximately 5495 kg. round weight or about 25% of the total allowable test fishing quota. These fish were shipped to F.F.M.C. in La Ronge in the early morning of September 2nd. It should be noted that the fishermen could have caught more fish but the "Northwind" would have had difficulty hauling much greater volumes.

On September 1st. our biologist Dave Polakoff of Sundog Consulting of Inuvik was on strenght and ready to do the biological testing required.

On September 6th. the new leg for the "Northwind" had been recieved and installed and the "Northwind" was again ready for use.

On September 7th. the fish plant operation was inspected by the inspection branch of Fisheries and Oceans. The report is attached as Exhibit "F"

On September 7th. fishing and operation of the fishplant continued after the delay caused by the collector vessel breakdown.
On September 7th. we first discovered that the cyst count in the lake whitefish was too high and that they would be classed as cutter whitefish in the future. We asked our biologist to verify these findings of F.F.M.C. and they were soon verified.

After meetings and discussions with the various parties involved it was decided that the gill net fishery would end on September 9th. to allow the testing of a trapnet which was available and to try the gillnet on the "Northwind" to see if more species specific fishing could be done. The fish caught on the three days of September 7th. to the 9th. were 6503.5 kg. or 7480 kg. round weight which equals 34% of the allowable quota. Of these fish 78% were made up of whitefish. It was concluded from the data collected at the various camps that the percentage of lake whitefish was decreasing while the percentage of pike were increasing. It was also seen that the more northern fishcamps were having a better percentage of the higher value fish. This data is more thoroughly documented in Exhibits "G" to "I".

On September 9th. the test fishery using the fishcamps came to an end with approximately 59% of the test fishery quota having been caught in six days using a total of only seventeen nets. It is beleived that substantially more fish could have been caught at the camps with more nets in the water. The collector vessel would not have been able to handle any more fish. At the present rate it is beleived the entire allowable quota could have been harvest in a total of 10 days. It is also beleived that with more equipment a six day fishery would have fully utilized the quota.

The fish from the period September 7th. to the 9th. were shipped out.

The preparations were made to test the trapnet and the gillnet using the bowpicker on the "Northwind". This required the location of additional equipment such as floats and the construction of proper anchors.

On September 18th. the "Northwind" left for the fishcamps to test out this equipment. The location was not changed because we had heard from the fishermen that the fish numbers had taken a large turn toward the broad whitefish and northern pike. We feared that if this was the case then our originally planned site near Holmes Creek would have already seen the passing of the main run.

On September 21st. the "Northwind" returned with disappointing results due to the lack of correct equipment. The catch this time was only 1809.5 kg. or 2081 kg. round weight which equalled only 9% of the allowable catch. 85% of the catch was whitefish.

The fishery was then shut down and the last shipment of fish were sent to La Ronge. The plant was cleaned up and all the documentation was collected for the report. All the remaining equipment was also stored away for use in future years.

Findings:

A) The project may have started too early in the season as it was found that the species mix was changing during the duration of the project.

B) It was found that the fishcamps located further to the north had a better species mix (more valuable species mix) . (see exhibit "H")

C) The collector vessel does not have the capacity to increase fish volumes transported to the fish plant.

D) It is essentual to have a good quality backup vessel and a supply of basic parts on hand.

E) Greater catch volumes are very possible without a great increase in the number of fishermen active.

F) The price for fresh lake whitefish is too low, due to the high cyst count to make transportation to southern Canada economic.

G) The runs of fish in the delta are not easily predictable and factors such as the water temperature could greatly alter run timing.

H) The ice maker at the fish plant is not large enough to allow for increased fish volumes to be processed here without increased ice capacity.

I) The quality of the labour pool varies to a great extent and it will take several years to define the good employees in the labour force.

J) The facility we used as the fishplant has a good potential for use in the future for this purpose. The inspection report does not require dramatic changes in the layout or design but does make some suggestions for improvement or next year. These changes can be complied with if the building owners agree and the funding is made available. (see exhibit "G")

K) The drum on the northwind should be made operational and used or should be removed. It is using valuable space which could be used to increase carrying capacity.

L) The trapnet idea was not adequately tested but it was clear that the lead net was too large in size and did not serve the intended purpose. It was also found that makeshift trap equipment (ie. floats, anchors, etc.) causes undue problems which would not happen with the proper equipment.

M) The equipment (especially the boats) will have to be properly tested prior to the season start.

N) The "Northwind" should be improved by the installation of trim tabs, and repairs should be made to cabin heater, stove, fridge, bow controls, valve connection for reel foot pedal, and the hose on the deck wash system.

O) Docks should be in place at every fishcamp.

P) Lake whitefish processing should be examined for both the local and export market in future years.

Q) Future test fishing should include the testing of fishing locations further to the north. (ie. Holmes Creek, Lucas point, or Pete's Creek) .

R) The broad whitefish from the Inuvik region are not considered to be superior to lake whitefish when they reach the F.F.M.C. fish plant but it is clear that they are far superior to the lake whitefish in the delta.

S) It was felt that the fish which arrived at the F.F.M.C. plant was of acceptable quality but was starting to go soft. It was felt that through improved packaging and timing methods that the fish could arrive in improved condition.

T) The boxes used for shipping got mixed reviews. The fishermen were content with the use of the fish tubs but it was felt that the cardboard boxes would not hold up as well at the fishcamps. The plant and boat workers preferred dealing with the plastic tubs as they did not have to construct them and they did not take as much room in the constructed form but F.F.M.C. found that the cardboard boxes were better in that it prevented the freezing of the top fish, preserved the ice better, and was cheaper for transportation purposes.

U) It was felt that volumes of fish, per load, sent to the south would have to be maximized if the economics of the freight hauling was to be maximized.

Below is a summary of some of the major findings of this test fishery. This information is primarily from the reports from Sundog Consultants Ltd., Kieth Alexander of Freshwater Fish Marketing Corporation and from the daily catch records. For the details please see Exhibits "J" and "K".

***** The fishcamp sites are listed from north to south.*****

Sweeny **Loreen**

	Aug 30, Sept 1			Sept 6,7 &8		
	%	Weight	$	%	Weight	$
Broad Whitefish	54	83kg	96.80	53	378kg	437.80
Lake Whitefish	37	57kg	66.81	22	155.5kg	170.24
Northern Pike	5	8kg	7.15	19	138kg	106.26
Inconnu	4	6.5kg	13.59	6	43kg	89.87
	100	154.5kg	184.33	100	714.5kg	804.17

Total Earnings from fishing $988.50.

Ed Dillon

	Aug 30,31 & Sept 1			Sept 6,7 &8		
	%	Weight	$	%	Weight	$
Broad Whitefish	46	536kg	620.70	43	427kg	489.59
Lake Whitefish	47	550kg	632.82	16	158.5kg	171.68
Northern Pike	5	64kg	64.46	36	351.5kg	341.61
Inconnu	2	25kg	52.25	5	46kg	96.14
	100	1175kg	1370.23	100	983kg	1099.02

Total Earnings from fishing $2,469.25

George Dillon

	Aug 30,31 & Sept 1			Sept 6,7 & 8		
	%	Weight	$	%	Weight	$
Broad Whitefish	38	267kg	308.78	39	320.5kg	371.69
Lake Whitefish	47	326kg	375.90	35	293.5kg	316.98
Northern Pike	13	94kg	98.12	22	180kg	172.10
Inconnu	2	12kg	25.08	4	33kg	68.97
	100	699kg	807.85	100	827kg	929.74

Total Earnings from fishing $1,737.59

Billy Day

	Aug 30,31 & Sept 1			Sept 6,7 &8		
	%	Weight	$	%	Weight	$
Broad Whitefish	41	578kg	672.30	35	581.5kg	675.14
Lake Whitefish	51	719kg	752.96	47	765.5kg	834.03
Northern Pike	6	89.5kg	83.93	12	193.5kg	172.09
Inconnu	2	25.5kg	53.30	6	98.5kg	205.86
	100	1412kg	1637.45	100	1639kg	1887.12

Total Earnings from fishing $3,524.57

John Harrison

	Aug 30,31 & Sept 1			Sept 6,7 & 8		
	%	Weight	$	%	Weight	$
Broad Whitefish	39	188kg	218.15	39	324.5kg	377.22
Lake Whitefish	54	261.5kg	305.47	41	340kg	369.63
Northern Pike	6	30.5kg	31.57	15	123.5kg	118.03
Inconnu	1	8kg	16.72	5	41kg	85.69
	100	488kg	571.91	100	829kg	950.57

Total Earnings from fishing $1,522.48

Michael Harrison

	Aug 30,31 & Sept 1			Sept 6,7 & 8		
	%	Weight	$	%	Weight	$
Broad Whitefish	34	286kg	331.30	38	562kg	650.99
Lake Whitefish	65	558kg	647.94	52	753kg	849.51
Northern Pike	1	5kg	5.50	8	121kg	115.28
Inconnu				2	29.5kg	61.66
	100	849kg	985.28	100	1465.5kg	1677.45

Total Earnings from fishing $2,662.73

On the next three pages are some graphic representations of the above stated figures. The follow items should be noticed.

1) The fishcamps further north have the larger percentages of Broad Whitefish in both periods along with having the lowest-percentages of Lake Whitefish.

2) The northernmost fishcamps appear to get a larger percentage of Northern Pike than do the southern located ones.

3) In the second period the percentage of Lake Whitefish had decreased significantly while the decrease was balanced by increases in the Northern Pike and Inconnu percentages.

4) Broad Whitefish percentages did not vary significantly.

When weight data is examined we find that the average Broad Whitefish caught by the fishery was 2.02kg. This compares with 1.64kg for Lake Whi-tefish, 3.68kg for Northern Pike, an-d 2.29kg for Inconnu.

However when the biologist took samples he found the average weight of broad whitefish to be only 1.71kg. with the larger fish (by weight) being further to the south.

The only species of fish for which length measurements were taken were the Broad Whitefish which showed an average 51.5cm of length to be average.

A small sample of the fish (40 fish) were used for sex determination and it was found that 60% were females.

If the data collected is evaluated to determine catch per unit effort the following would result.

Sweeny Loreen

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	C Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F Kg per Net per Hour (A / B / D)
966.4	42	23.0	3	322.1	7.67

Ed Dillon

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	C Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F Kg per Net per Hour (A / B / D)
2534.0	67	37.8	4	633.5	9.46

George Dillon

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	C Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F Kg per Net per Hour (A / B \ D)
1365.6	55	24.8	2	682.8	12.41

Billy Day

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	C Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F. Kg per Net per Hour (A / B / D)
3443.2	104	33.1	4	860.8	8.28

John Harrison

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	C Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F Kg per Net per Hour (A / B / D)
1517.7	66	30.0	2	758.8	11.50

Michael Harrison

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	C Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F Kg per Net per Hour (A / B / D)
2669.5	72	37.1	2	1334.7	18.54

Totals

A Kg of Fish Caught Exhibit "K"	B Hours Employed Exhibit "K"	c Kg per Hour Employed (A / B)	D Number of Nets Exhibit "K"	E Kg per Net (A / D)	F Kg per Net per Hour (Average)
12496.4	406	30.8	17	735.1	11.31

This portion of the project report will give a monthly budget summary for the months of August, September, and October & November (combined) . It was necessary to delay the finalizing of this report due to the delays in some of our suppliers invoicing and because of the lengthy delays in the receiving of the monthly bank statements with our cancelled cheques. Examples of these are that we were still required to write eight cheques which totalled over $2,000.00 in November and we still had cheques outstanding on the October 31st. bank statement.

In summary we underspent our cashflow projections by $63, 470. 97 in August because the invoices did not arrive as quickly as expected and that we did not pay for any fish purchases during this month. In September we overspent our cashflow by $8,447.84 which is generally the result of paying August expenses in September. The project at that time was still $55,023.13 underspent in total. As neither October nor November have a cashflow budget but invoices for the fishery were still arriving the variance for the October/November period became an overexpenditure of $19,105.73. This still resulted in the project being underexpended by $35,917.40. in total. See exhibit "L" for a detailed budget summary as broken down by revenue and expense categories. Exhibit "M" provides a cheque list.

Due to the Economic Development Agreement agreeing to supply 50% of project funding of the original application the following is our interpidation of the revised financial funding picture.

	Original Funding Approval	%	Revised Funding Formula	%	Actual Project Contrib.	Funding to Return
E.D.A.	$88,150	50	$70,766	50	$79,335	$8,569
E.D.& T.	$40,000	22	$31,137	22	$50,531	
Renew. Res.	$17,000	10	$14,153	10	$10,000	
D.F.O.	$2,000	1	$1,415	1	$0	
F.F.M.C.	$3,500	2	$2,831	2	$3, 500	
H.T.C.	$26,800	15	$21,230	15	$16,321	
	$177,450	100	$141,532	LOO	$159,687	

To be returned from project bank account		$8,569
Bank Account as of Bank Statement October 31st, 1989		$7,394
Add: Deposits outstanding	$13,222.50	
Less: Outstanding Cheques	$2,456.98	
Less: Expected Refund (E.D.A)	$8,569.00	
Less: Expected Bank S.Charge	$25.00	
		$2,171
Balance of Bank Account after the project		$9,565

Benefit Analysis:

believed that the economic impact this project to the Northwest Territories was substantial early closure of the gill net fishery.

Below is a clearly illustrates

(does not include use of contributed goods)

	$ to transp Residents	$ to Inuv	$ to Non-Resident Persons or Businesses
Ice Maker			$17,031
Nets			$4,582
Boat			$3,500
Building Improvements		$19, "5	
Vessel Improvements		$1, -.8	
Contract(note 1)	$5,000		$20,000
riod Rental		$2, wa	
nt for tl Contract		$5, p / c	
Utilities-			
- Power/Rent		:r - in	
ons to hc		$1,7 1.	
drains Plant	$4,671		
- Boat	$9,903		
- low the General	$1,500		
Fuel & epa		$6,850	
Freight		$4, 7	$3,000
Fish has not	$12,932		
Food for Crew			
Miscellaneous	$800		
	$34,806	two ,	$48,113

Note #1 **The contract included the** rned of th **and accommodation which was required for the duration of the p-eject.**

It is estimated that about 65% of seali **expenditures went to individuals and businesses in the These actual expenditures are estimated at approximately 380,000.00.**

Cost Analysis:

To undertake a cost analysis of this project during this stage of the fisheries development is misleading because of numerous factors the primary ones which are 1) the limited resource available to us by quotas not allowing maximization of facilities and manpower 2) The testing and reporting to document the fish resources requiring additional efforts 3) The training of new staff in the procedures to be used to maximize results and 4) The familiarity with machinery and equipment requiring time.

Based on the financial return of $16,320 (revenues from fish plus agency fees) for the project expenditure of $81,936 (this does not include capital costs) results in a cost to return ratio of 5 to 1. If this is calculated on the basis of poundage the project cost for a pound of fish was $2.85 ($81,936/28,800) .(The 28,800 is the approximate number of pounds taken) .

It is felt that the cost of the operation are overstated by about $20,000.00 as the Co-ordinator costs will be greatly reduced to about $5,000/ month when a qualified local person can be located for this task and tha biologist contract will not always be a project expense. This would reduce the cost by $.70 per pound.

The real reason why this project is felt to have some economic potential is that increased productivity would have the effect of decreasing costs per pound. This means that a breakeven chart should be produced which demonstrates this potential. Unfortunately at the present time we only have the expense figures for one production level and drawing cost/quantity trends using these figures alone would be unreasonable. It is however beleived that if greater production can be acheived next year we will find that the cost per pound will be reduced. We also beleive that employment incomes by fishermen can increase even if the price per pound paid is reduced for lake whitefish. It is hoped that this can be shown more effectively when we have two years of financial analysis.

CANADA-NORTHWEST TERRITORIES ECONOMIC DEVELOPMENT AGREEMENT

RENEWABLE RESOURCE DEVELOPMENT

PROJECT AUTHORIZATION

Project Name:

Inuvik Hunters and Trappers
Committee
General Delivery
Inuvik, NT
XOE 0T0

Management Group Decision and Conditions: (Cont'd)

Estimated Project Costs:

Co-ordinator	$25,000	Economic Development	
Building		& Tourism	
Improvements	30,000	(Co-ordinator)	$25,000
Vessel		(Ice Machine)	15,000
Improvements	2,000	Renewable Resources	
Machinery &		(Vessel)	10,000
Equipment	42,500	(Nets)	6,000
		(Radios)	2,000
SUB TOTAL	99,500	Dept. of Fisheries&	
		Oceans	
		(Biologist)	2*000
O&M	30,000	Freshwater Fish	
working Capital	3,000	Marketing Committee	
Truck Lease	9,000	(Tubs)	3,500
Fuel & Oil	4,000	(Loan)	30,000
Wages-Plant Staff	10,500	Hunter's & Trapper's	
Wages-Boat Crew	11,000	Committee	
Food for Crew	750	(Agency Fees)	5,200
Freight	13,600	(Revenues)	21,600
Fish Purchases	21,600	EDA Contribution	
Cardboard Fish		Approved	88,150
Boxes	3,000		
Miscellaneous	1,500		
SUB TOTAL	10?.950		
TOTAL	$207,450		$207,450

- for the Territories -	- for Canada -
Approved by: [signature]	Approved by: [signature]
Date: aug. 10/89	Date: 9 Aug 89

The terms of the Economic Development Agreement between the Government of Canada and the Government of the Northwest Territories, made on the 30th day of April 1 1987, shall subject to any modification thereof as the signatories or their designates agree upon, apply and

AND COMMITTEE

oɪ tne RESOURCE DEVELOPMENT

YEAR (1989-90)

	AUGUST	SEPTEMBER	‘ppl‘
SOURCE OF FUNDS			
EDA	ut strc	22,037.50	88,150.00
sea T.	27,500.00	12,500.00	to opp
Renewable Resources	**12,000.00**	5,000.00	ercury
ations	**1,000.00**		
- Revenues from fish		21,600.00	
- Agency **Fees**		5,200.00	
- Tubs	**3,500.00**		from s
TOTAL SOURCES	**110,112.50**	67,337.50	in tne

APPLICATION F(IR iat

Capital Purchases:			
Ice Maker	15,000.00		a to
Nets	9,000.00		
Radios	2,000.00		
Boat	5,000.00	5,000.00	10,UUU.UU
Fish Tubs	3,500.00		ested
Building Improvements	30,000.00		ome oi
Vessel Improvements	so en		a flo
TOTAL CAPITAL PURCHASES	66,500.00	5,000.00	
Rentals and Contracts:			
Coordinator	12,500.00	12,500.00	to mov
Truck Rental			the
TOTAL RENTALS AND CONTRACTS			
Expenses:			
Utilities - Water			
- Power			
Fish Boxes			
Wages - Plant			
- Boat	5,500.00	5,500.00	capaci
Boat Fuel and Oil	1,000.00	3,000.00	
Freight		13,600.00	ood
Fish Purchases	10,8UO.OO		to
Food for crew	750.00		sors
Miscellaneous			
TOTAL EXPENSES			

[10

Government of Canada / Gouvernement du Canada

Fisheries and Oceans / Pêches et Océans

01 August 1989

Your file *Votre référence*

Our file Notre *référence*

Mr. Gerde Fri cke
Economic Development Officer
Economic Development and Tourism
Government of the Northwest Territories
Bag Service 001
Inuvik, NWT XOE OTO

Dear Mr. Fricke:

Enclosed is Test Fishery Licence TF-89/90-16 to take broad and lake whitefish and northern pike and inconnu from the Horseshoe Bend and Holmes Creek areas of the Mackenzie Delta. The test quota is 16,000 kg combined broad and lake whitefish and 6,000 kg combined northern pike and inconnu. Please note special restrictions on daily and weekly quotas for broad and lake whitefish specified in Section 1 and collection and sampling conditions specified in Section 2 b), **c), d)** and e). For more information on sampling contact P. Lemieux, Area Biologist, DFO Inuvik, NWT (403) 979-3314. In addition, please note the requirements under the Fish Inspection Regulations (Section 3) and Financial and Operating Information (Section 5c).

If you have any questions, please contact DFO in Inuvik or DFO in Winnipeg.

Sincerely,

Robert W. Moshenko
section Head
Fish and Marine Mammal Management

RWM/kd

Enclosures

cc: R. Peet, DFO, Yellowknife
A. Kristofferson, DFO, Winnipeg
M. Roberge, DFO, Winnipeg
P. Bobinski, DFO, Hay River
D. Topolniski, DFO, Winnipeg
G. Parrott, DFO, Edmonton
D. McGowan, DFO, Winnipeg
R. Colosimo GNWT, Yel lowknife
V. Gillman, DFO, Inuvik

Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T2N6
(204)983-5000

Institutdeseaux deuces
501 University Crescent
Winnipeg (Manitoba)
R3T2N6
(204)983-5000

Government of Canada / Gouvemement du Canada
Fisheries and Oceans / Pêches et Océans

01 August 1989

Your file Votre référence

Our file Notre référence

Mr. Gerde Fricke
Economic Development Officer
Economic Development and Tourism
Government of the Northwest Territories
Bag Service 001
Inuvik, NWT XOE OTO

Dear Sir:

TEST FISHERY LICENCE TF-89/90-16

Permission is hereby granted under Section 7 of the Fisheries Act to take fish from waters designated in Section 1 in accordance with further conditions specified in Sections 2 to 8, inclusive, below.

It is understood for the purpose of this Licence that fish are to be taken during test fisheries which are intended to determine the feasibility of conducting future commercial fisheries in the areas specified in Section 1 and that a proportion of the fish caught are to be sampled to obtain scientific information regarding the species caught as detailed in Section 2.

Section 1 Waters, species and limitation of effort included in the Licence:

Fish may be taken for test fishery purposes from the following waters in the Northwest Territories:

Waters	Test quota (kg round weight)	Species*
Horseshoe Bend (68-15 N, 134-15 W) and upstream of mouth of Holmes Creek (69-05 N, 134-20 W), Mackenzie Delta area	16,000	combined broad and lake whitefish
	6,000	combined northern pike and inconnu

NOTE: Daily quota of broad and lake whitefish (combined) is not to exceed 2,500 kg, and the weekly quota for said species is not to exceed 6,000 kg.

* It is understood that broad and lake whitefish, northern pike and inconnu are the main species of interest. Other species must be noted if encountered and the total weight landed must be recorded.

Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T2N6
(204)98S5000

Institut des eaux douces
501 University Crescent
Winnipeg (Manitoba)
F13T2N6
(204)983-5000

Section 2 **Methods of collection and sampling:**

a) Fish may be taken only by means of gill nets (139 mm mesh).

b) Harvest statistics must be recorded separately for each of the two whitefish species (broad and lake) as well as for northern pike and inconnu.

c) At least 100 fish of each species sought for commercial purposes are to be sampled following the provisions of the" "Test Fishery Instructions". As noted above, fish species other than the species of interest are to be noted and the total weight landed is to be recorded.

d) An experimental gillnet (stretched mesh 38 mm to 139 mm) is to be set at a suitable location in the Horseshoe Bend area during the test fishery and all fish captured by this net must be measured and weighed. Catches must be recorded by mesh size.

e) A sample of 50 whole specimens of broad whitefish is to be taken from the Horseshoe Bend area in mid-September, frozen as soon as possible and shipped to DFO in Inuvik for genetic analyses.

f) The use of explosives, chemicals or other methods for the taking of fish under the conditions of this licence is forbidden.

Section 3 Disposal of fish caught:

Fish taken under this Licence to the catch limits specified under Section 1 may be sold commercially within the Northwest Territories. All fishermen involved in this test fishery must be in possession of a valid NWT commercial fishing licence.

Note: Any fish taken under this Licence for export out of the Northwest Territories requires authorization under the Fish Inspection Regulations.

The Licensee should contact the Officer-In-Charge, Northwest Territories, Inspection Services Branch, P.O. Box 1008, Hay River, N.W.T. XOE ORO
Telephone (403) 874-2331

In addition to the above information, included is a copy of the handling, holding and transportation requirements at winter test fishery harvest sites if product is to be lake frozen. This attachment is an addendum to the test fishery licence informing all participants clearly as to the inspection requirements for product to be exported out of the N.W.T. (see **Attachment A**).

Section 4 Consultation with Hunters and Trappers Associations, Settlement or Band Councils:

It is understood that this Licence is let for the purpose of collecting scientific and fishery information that is required to determine the feasibility of and the size of quotas for commercial fisheries on behalf of the people of the area(s) concerned. It is a condition of this licence that such test fisheries should be done with the agreement and by request of the relevant Hunters and Trappers Associations, Settlement or Band Council in the area(s) involved.

Section 5 Report of the work:

By accepting this Licence, the Licensee agree to supply the Regional Director, Fisheries and Habitat Management, Central and Arctic Region, Fisheries and Oceans, Winnipeg, Manitoba, with:

a) Copies of the Test Fishery Data Sheets, Catch and Effort records and Questionnaire within 2 months of completion of the relevant test fishery, as per the "Test Fishery Requirements" and a map identifying the locations where each test fishery was carried out.

b) Copies of financial and operating information to enable an analysis of the potential for financial and economic viability in the fishery.

Please send all copies of any test fishery data, maps, etc. to:

Department of Fisheries and Oceans
Box 1871
Inuvik, N.W.T. XOE OTO
Attention: P. Lemieux, Area Biologist

Section 6 **Licence** available for field inspection:

a) The Licensee must have a copy of the **Licence** available for inspection when carrying out the test fisheries.

b) The onus of proof lies with the Licensee to supply such evidence and information as deemed necessary to indicate the conditions of the **licence** are being met.

Section 7 **Licence** null and void:

This **licence** is null and void if any part thereof is violated. Renewal may be granted at the discretion of the Director-General, Central and Arctic Region, Fisheries and Oceans, Winnipeg, Manitoba, subject to reasonable grounds being submitted.

Section 8 Period of this **licence:**

This **licence** is valid for the area(s) stated in Section 1 for the time period 20 August, 1989 to 20 **September,** 1989

Mr. P. Sutherland
Director General,
Central and Arctic Region

August 4/89
(Date)

for the Minister of Fisheries and Oceans for Canada under Section 7 of the Fisheries Act.

Government of Canada / Gouvernement du Canada
Fisheries and Oceans / Pêches et Océans

August 8, 1989

Your file Votre référence
Our file Notre référence

Fisheries & Oceans
Western Arctic Area
Box 1871
Inuvik, NT
XOE OTO

Mr. Sam *Ransom*
Director, Natural Resources Business Development
Economic Development and Tourism
Government of the N.W.T.
Box 1320
Yellowknife, NT
XIA 2L9

Dear Mr. Ransom

RE: MACKENZIE DELTA TEST FISHERY

As per our discussion attached please find confirmation of D. Polakoff's willingness to conduct the monitoring and sampling program for the above test fishery. Unless' you have other requirements I would suggest that 30 days at 7 hours per would be sufficient to provide the following:

1. A written report detailing the development of the fishery, resources applied, results obtained, and recommendations section,

2. Data collections and *analysis* suitable to the requirements of the test fishery permit and of any additional requirements that P, Lemieux may have.

3. On-site assistance to the fishery coordinator where practical,

4. Direction and supervision of the Environmental Resource student assigned to the project,

Hope this is sufficient to your needs if not please call me.

Cheers

D.V. Gillman

MONITORING REQUIREMENTS FOR 1989 MACKENZIE RIVER WHITEFISH TEST FISHERY

1. The monitoring and sampling crew will consist of one contract biological technician and one Fishery Worker Trainee,

2. The monitoring crew will ensure that all conditions specified on the test fishery permit are respected.

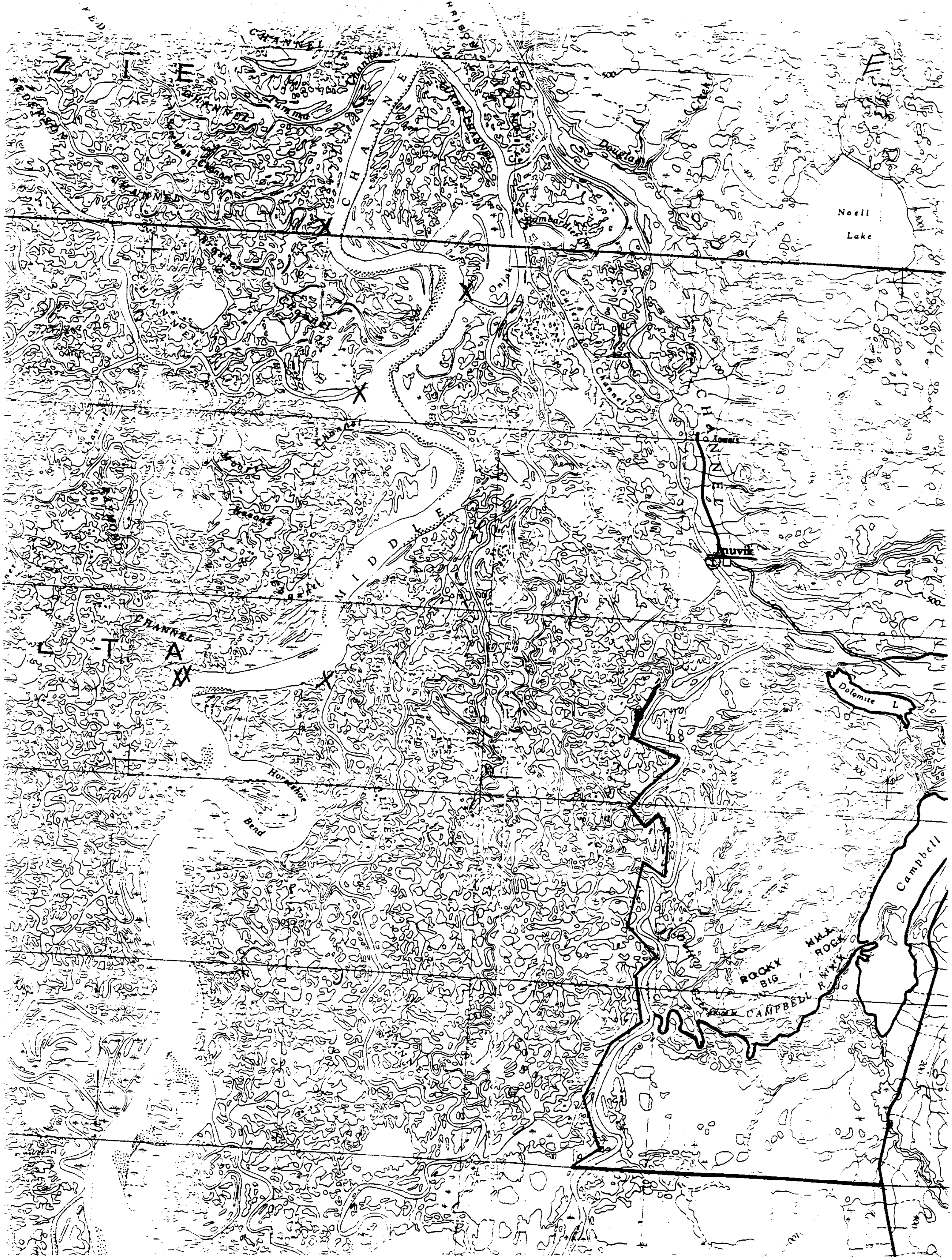
3. The monitoring crew will be at the harvest location everyday during the operation of the "NORTHWINDS".

4. All of the catch taken by the fishermen engaged in this test fishery will be recorded, Test Fishery Data Sheets will be filled out on a daily basis. All species to be recorded.

5. Catch and effort data for each of the capture locations will be recorded on separate data sheets,

6. An experimental fishing net consisting of five 10 m panels with stretch *mesh* sizes ranging from 1 1/2" to 5 1/6" will be set at Horseshoe bend during the fishery, The net will be set at four evenly spaced times during the test fishery. The net will be fished each time until 50 broad whitefish are captured so that a total of 200 are taken during the fishery, All fish taken in the experimental net will be sampled according to instructions outlined in the 'northwest Territories Test Fishing Requirements", Location, species, mesh size, length, weight, age, sex and maturity will all be recorded for each Fish caught. For age determination of whitefish, scales and dorsal fin rays will be collected, All this information will be *recorded on* scale *envelopes* to be transferred to sample record sheets. Catch and effort data will also be recorded for the experimental gill net sets,

7. All data will be presented in a neat and organized fashion to the Department of Fisheries and Oceans, Inuvik.


Z I E
E
CHANNEL
Douglas
Creek
Noell
Lake
Bombardier Chan
Oniak
Channel
MIDDLE
CHANNEL
Inuvik
L T A
Horseshoe
Bend
Dolomite L
Campbell
ROCKY
BIG
ROCK
CAMPBELL R.

Plant name [illegible] Location [illegible] Plant No. [illegible] Reg.# [illegible]

Operation type [illegible] Season JFson JFMAMJJASOND Photos (Yes)/No Time required [illegible] hours

Inspector No. [illegible] Inspection ☐ Followup inspection ☐ Exception ☐ Followup Team Survey

F.I.R. Section	Requirement	Comply	Not Comply	N/A	Description and Remarks
101	Floors - Wet work area		/		processing room and cool room
242	Floors - Clean	✓			
102	Floors - Dry work area			✓	
103	Drains - Adequate, Covered		✓		req. in cool room
104	Walls - Wet area		✓		caulking required
135	Ceilings - Processing area	✓			
115	Lighting - Adequate, Covered		✓		protective coverings req.
105	Ventilation - Adequate	✓			
106	Toilets - Types/numbers	✓			
107	Toilet room doors - self closing		✓		req.
206	Toilet facilities maintained	✓			
108	Handwash facilities - approved	✓			
202	Handwashing - each				
137	Hand covering dips - Provided				
240	Handcoverings clean and disinfected				
109	Process water - approved/pressure		✓		sampled (yes)/no PPM Cl2 [illegible]
136	Hot water - at least 43° c				sub. [illegible]
235	Fish washed - prior to processing			✓	
236	Ice - approved				sampled (yes)/no subject to lab analy
112	Offal containers - approved construction	✓			
208	Offal /refuse - removed daily	✓			
209	Offal containers - approved use	✓			
207	Sewage disposal - approved				
113	Conveyors - approved			✓	
142	Conveyor belts - spray/scraper			✓	
114	Fish flumes - approved/cleanable			✓	
110	Equipment frames - approved		✓		scale stand and roller stands
111	Tables - approved/cleanable		✓		grading table & bench
138	Processing boards - approved			✓	
139	Other fish contact surfaces	✓			
140	Containers/utensils - approved	✓			
141	Fish tubs/containers - approved				
243	Utensils - clean, disinfect., stored	✓			
244	Fish contact equipment - clean	✓			
201	Employee health - satisfactory	✓			
205	No smoking/spitting - work area	✓			
204	Garments - clean	✓			
241	Garments /headgear - worn/proper type	✓			
210	Animals - not allowed	✓			
211	Pest control - adequate/ materials	✓			
212	No unnecessary equipment - work area	✓			
213	Plant surroundings - clean	✓			
214	Cleaning equipment - available	✓			
245	General maintenance - satisfactory		✓		replace fluorescent lights
145	Contact freezer - adequate			✓	
146	Blast freezer - adequate			✓	
401	Cold storage - adequate temp.			✓	
149	ingredient storage - adequate				

OVERALL PLANT CLASSIFICATION RATING A (B) C D ACTION LEVEL

Corrective action (please print)

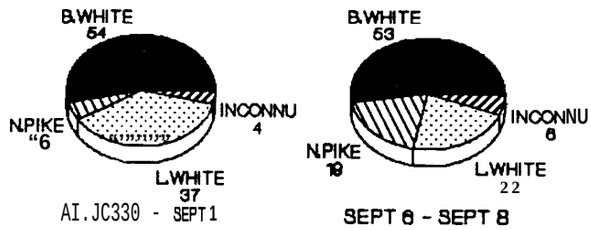
F.I.R. Section	Corrective action	Correction date YY/MM/DD
101	Floors - processing room and cool room not properly sloped	90 08 01
	to permit drainage. Floor in cool room constructed	
	of galvanized metal sheets - caulked between joints.	
103	Drains required in cool room	90 08 [illegible]
104	Wall joints require caulking	90 08 01
115	Protective coverings required [illegible]	[illegible]
107	Self closing doors required on [illegible] wash room	90 08 01
109	Chlorine levels to be increased to 5-10 ppm	[illegible]
110	Wooden scale stand and wooden roller stands to [illegible]	[illegible]
111	Wooden grading table and wooden bench to be replaced	90 08 01
245	Replace burnt out fluorescent light [illegible] door	90 08 01
	frame in cool room [illegible]	
37	Hand [illegible]	

ABOVE DEFICIENCIES ACKNOWLEDGED BY ______________________, POSITION ______________

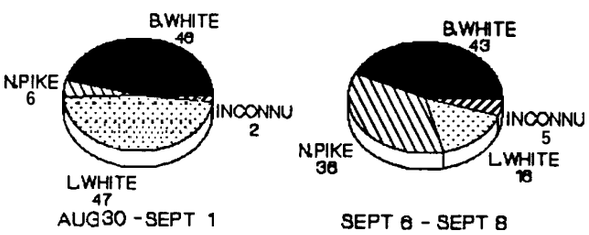
Form PS -100 (63/4/1) Inspection date [illegible] YY/ MM / DD

№ 4589

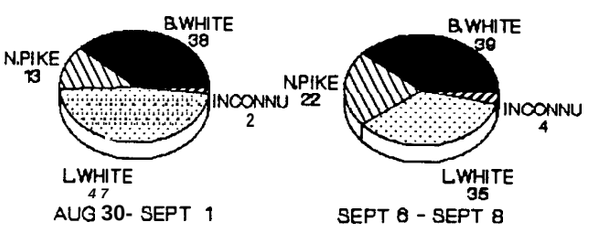
SWEENY LOREEN



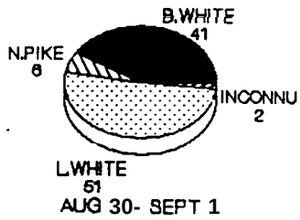
ED DILLON



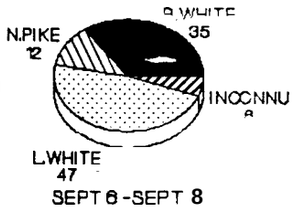
GEORGE DILLON



BILLY DAY

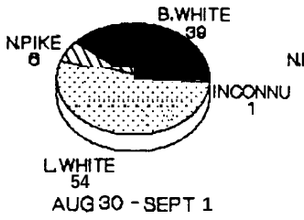


AUG 30- SEPT 1

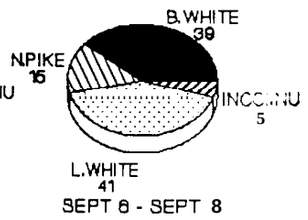


SEPT 6 -SEPT 8

JOHN HARRISON

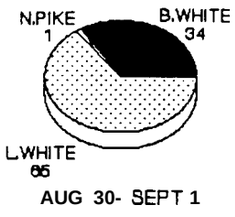


AUG 30 - SEPT 1



SEPT 6 - SEPT 8

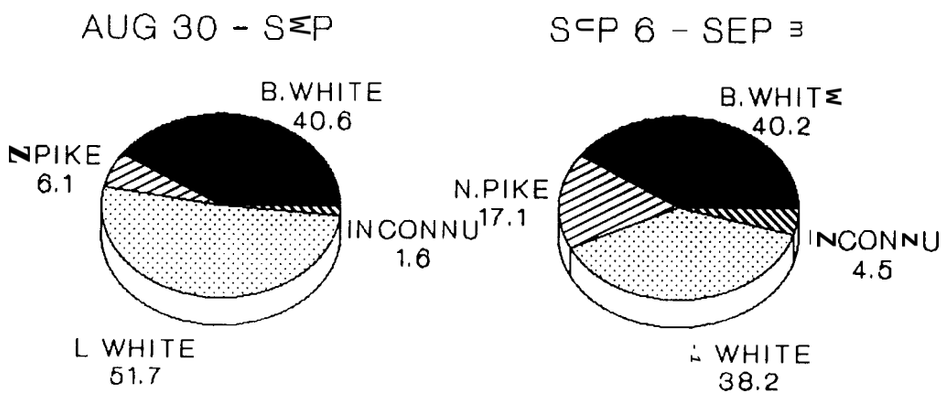
MICHAEL HARRISON



AUG 30- SEPT 1

SEPT 6 - SEPT 8

TOTAL FISH CATCH



1989 NORTHWIND TEST FISHERY

PREPARED FOR

MR. GERD FRICKE

ECONOMIC DEVELOPMENT AND TOURISM

INUVIK, N. W.T.

BY

DAVE POLAKOFF

SUNDOG CONSULTING

NOV. 3, 1989

TABLE OF CONTENTS

INTRODUCTION

On August 1, 1989, a Test Fishery Licence (TF-89/90-16) was granted to the Department of Economic Development and Tourism. The Licence carried test quota limits of 16,000 kilograms of Broad and Lake Whitefish as well as 6,000 kilograms combined of Northern Pike and Inconnu. The fish would be collected with gill nets by local domestic fishermen and trap netting by the crew of the Northwind.

To enable the fish to reach their southern destination in the best possible quality, a system of ice delivery and fish pick-up had to be developed for the fishermen on the river. Once in Inuvik the fish were delivered to the newly renovated and upgraded fish plant. At the plant the fish were classed (by size), weighed, and re-iced for transportation by refrigerated truck to the south. The fish were delivered to the Freshwater Fish Marketing Board's LaRonge, Sask. processing plant for further grading and quality assessment.

Although weather and mechanical breakdowns hampered the test fishery the final amount of fish taken from the region totalled 12,496 kg. The species composition of the fishery was as follows: Lake Whitefish 45%, Broad Whitefish 40%, Northern Pike 12%, Inconnu 3%. The total catch falls short of the allotted amount allowed in the Licence which was due to down time for the boat and shortage of stocked ice.

The fish arrived at their southern destination in good shape and top prices were paid for all species except Crooked Back. The fish initially were thought to be export class, but after examination by FFMB, they were demoted to cutter class. This was due to the high parasite count found in the flesh. This problem lowered the amount of profit that the fishery could produce.

With the completion of the fishery by the domestic fishermen, the crew of the Northwind continued to do some test netting with gill and trap nets. They received information that the catch in the Horsehoe Bend area had a high percentage of Broad Whitefish and few Crooked Backs were being caught. After fishing the area for a period of time it was found not to be the case, more Crooked Backs were caught than Broads. This trip was not futile though since equipment and fishing gear on the Northwind were tested and found to be operational and functional.

TEST FISHERY AREA

Location

The location for the 1989 test fishery was a stretch of the East Channel of the Mackenzie River, roughly 22 miles from the Town of Inuvik. The most southern camp was the Harrison's which is located just above Horsehoe Bend (Fig.1.). The farthest north the test fishery extended was 30 miles up the Mackenzie Delta terminating at Sweeny Loreen's camp.

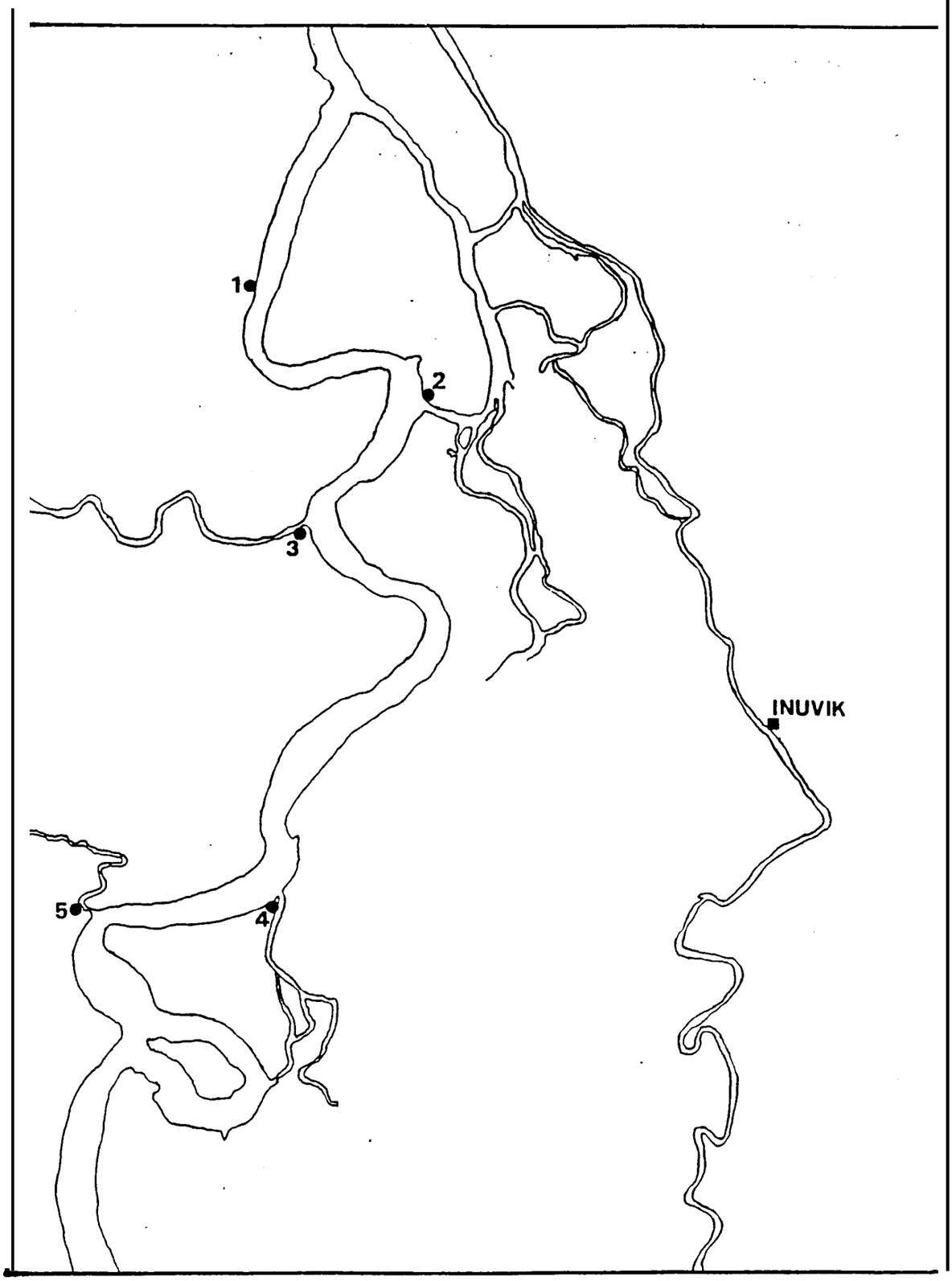
River Characteristics

The low lying Mackenzie Delta is fragmented to a great extent by the Mackenzie River and its many channels and tributaries. The channels are ever changing as destructive and constructive erosion takes place year round. Heavy, turbid, silt laden water, deposits its load in the slower moving delta area causing sand bars and mud flats to be created. These shallow areas which seem to always be in transition can prove to be hazardous to the river traffic.

The banks of the Mackenzie in the test area are characterized by highwater damage creating slumping of the rivers edge as well as undercutting which can be quite severe. As highwater recedes undercutting still continues with subsequent vegetation loss throughout the summer. With the occurrence of this undercutting the probile of the east channel in many of the test areas showed the rivers edge to drop off very quickly. Most nets were set from shore in about 0.6 m. of water and terminated in water exceeding 20 m.(Figs. 2 and 3).

Temperature and Weather

The air temperature during the fishery fluctuated from 20 C at the beginning and dropping to O C during the period. Water temperatures were found to have a high temperature of 15 C and dropped to 11 C by the end of the fishery. Heavy fog occurred many times during the fishery which hampered sampling and also delayed ice delivery and fish pickup. Rain also occurred which made traveling in open boats less favorable. The periods of snow and whiteouts towards the end of the fishery made movement along the east channel impossible.



MAP 1: Camp locations: Northwind Test Fishery 1989
1 - Sweeny Loreen **2 - Ed Dillon**
3 - George Dillon **4 - Billy Day**
5 **– John and** Michael. Harrison

METHOD OF FISHERY OPERATION

Fish obtained in the 1989 test fishery were targeted for the southern market. In order for a catch to be distributed in the south it must first be cleared through the Freshwater Fish Marketing Corporation's LaRonge processing plant (Fig.4). This distance by highway plus the distance covered by the Northwind to bring the fish to Inuvik could potentially degrade fish quality if not prepared for.

Some preliminary work included the stock piling of ice and construction of insulated plywood holding boxes. These plywood boxes were used for both ice storage and storage of dressed fish while waitng for pickup. The boxes were very functional in keeping the fish protected from sun, rain, and the insect population. During the start of the fishery, daily temperatures were in the range of 25 C making it critical to start the icing process as soon as possible.

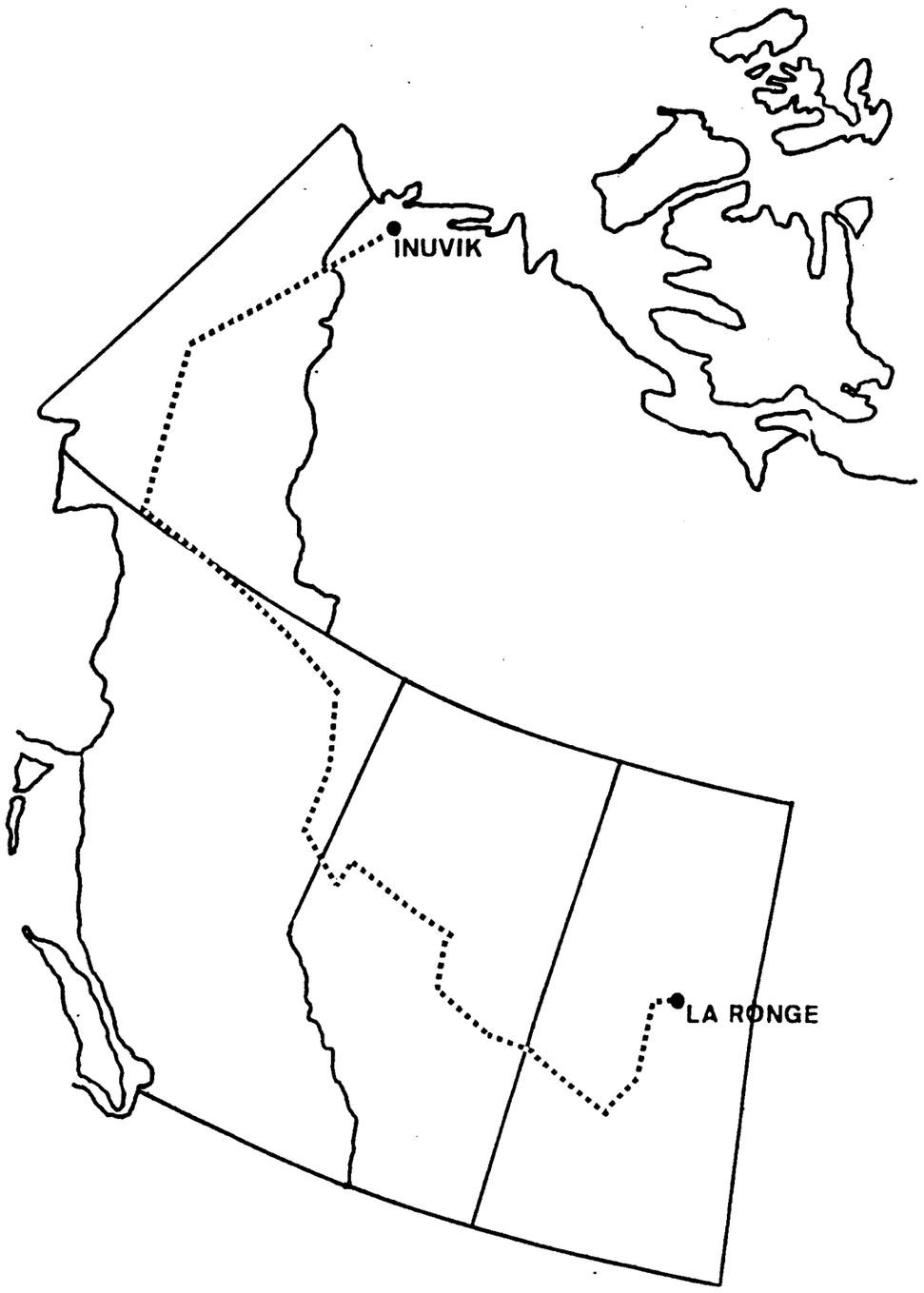
The fishermen were instructed by the on site FFMC representative to take some ice out with them during their net pulls. Fish would then begin cooling as soon as they were taken from the water. Body temperatures of fish collected from the nets at early stages of the fishery were found to be 16 C.

Once the fish had been collected from the nets they were delivered to the domestic fisherman camp where they would be dressed accordingly and re-iced. All Whitefish were dressed head on as well as Pike in the 3-9 pound range. Pike outside this weight class as well as all Inconnu were dressed with the head off. Once the fish were dressed and iced the tubs were loaded into the holding boxes to await the arrival of the Northwind. FFMC also directed the fishermen not to wash the fish since the slime provided a' protective covering for the fish during transport.

Transportation of ice and fish for the fishery was handled by the Northwind. The vessel would leave Inuvik with a full load of ice for delivery to the fishermen. Starting from the northern camp and working down to the south, the Northwind and crew would overnight in the area of Horsehoe Bend. The next day iced fish in tubs (supplied by FFMC) were picked up at the five camp sites and delivered to the Inuvik Fish Plant for further processing. During the first fish delivery the Northwind suffered transmission problems. Contingency boats Plover and Lady Catherine (supplied by DFO) were then brought into service to complete deliveries.

With delivery of fish to the Inuvik warf the load was then trucked a short distance to the fish plant. Here at the plant fish were graded, weighed, iced, and prepared for shipping to the south. Once a sufficient quantity of fish had been received for shipping the refrigerated trailer was loaded and sent on to LaRonge, Sask (Map 2).

Once in LaRonge the fish were graded by quality and size for delivery to the commercial market. At-the completion of the fishery three shipments were delivered to LaRonge totalling 12,496 kg for all species.

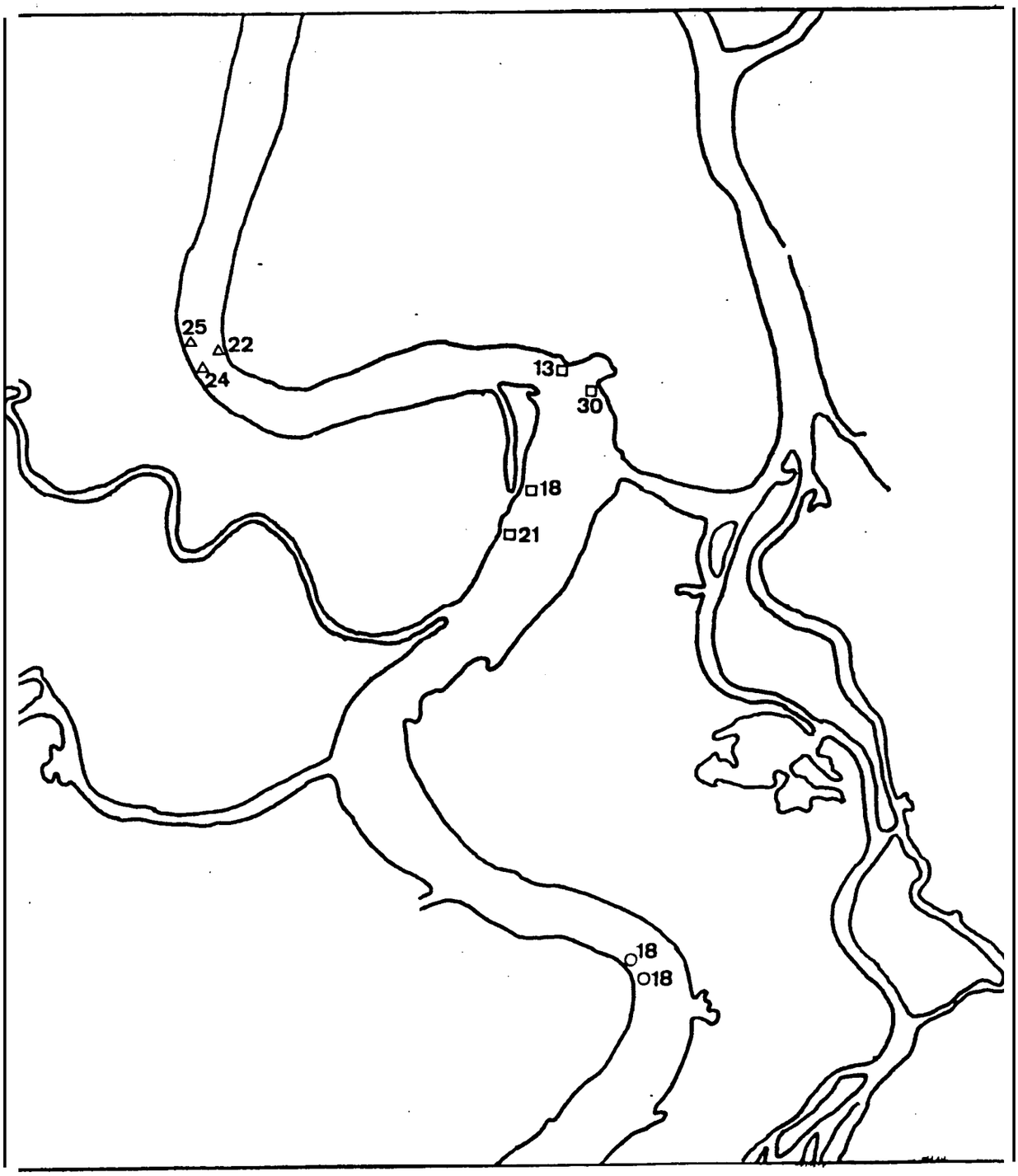


MAP 2: **Comparison of Locations: Inuvik Fish Plant and the Freshwater Marketing Board, LaRonge** Plant - total trucked distance = 4,225 km/2,625 m

Netting

Gill Netting

The Inuvik Department of Economic Development and Tourism supplied the gill nets used by the fishermen during the test period. Due to supply problems incurred by the southern distributor only ten nets of the total thirty were of the exact type ordered. These ten nets of 5 1/2 inch mesh were 24 meshes deep and 100 meters long. These nets were found to be strong and durable enough to withstand the currents and debris characteristics of the Mackenzie Delta. The remaining nets that were sent were the same size (5 1/2 inch mesh x 24 meshes deep x 100 meters), but were of the twisted monofilament type. Although used by some fishermen during the fishery, the majority of fishermen found this net style to be inadequate for their purposes. These nets proved to be much weaker than expected, resulting in tearing of meshes when the nets were lifted as well as when trying to remove fish, debris also caused tears and was more difficult to remove from the net. Fish removal caused sufficient damage and took more time that most fishermen opted not to use them. All fishermen's nets were the same size used by the test fishery (5 1/2 inch mesh x 24 meshes deep x 100 meters) with the exception that they were of nylon construction. Maps three and four show net locations and depths at the deep end of the set. Net depths close to shore averaged about 0.7 m. Net locations generaly stayed as shown with some minor variations during the test period.



MAP 3: Net Locations and Depths
Sweeny **Loreen** **Ed Dillon**
George Dillon
Note: number denotes deep end of net set in meters

T&GET SPECIES

Broad Whitefish

The main species of interest for the fishery was Broad Whitefish (Coregonus nasus). The market for Broad Whitefish has gained strength over the past year due to lakes in Alberta suffering winterkill. The most favored size of the commerical market is the jumbo class (over 1.8 kg). The delta region has an abundance of Whitefish of this class and the 89 Fishery produced 18% jumbos out of the total Broad catch. As seen on Table 1, Broad Whitefish (export class) has the highest price per kg. next to Inconnu. All Broad Whitefish were able to keep their export class even with the vast distance that had to be covered.

Lake Whitefish

At the outset of the Northwind Fishery Lake Whitefish (Coregonus clupeaformis), locally referred to as Crooked Back were expected to be marketed as export class. One of the main determining factors for class classification is the cyst count for the parasite Triaenophorus Crassus. These Cestode (tapeworm) cysts do not alter the flavour of the fish but do affect the quality. Table 2 shows allowable numbers of cysts for each FFMB classification. The table also shows the relationship of class to market prices.

With this drop in price for Crooked Backs they were no longer a valid commercial species. Incurred costs of shipping alone would result in a money loosing effort. If a local market for Crooked Back could be found it could be a profitable species once again.

Northern Pike

As seen on Table 1 Northern Pike (Esox lucius) dressed with the head on received a relatively high price of $1.10. Although Pike have a small market appeal here in Canada there is a strong export market to France. The large class (1.8-4.1kg) was the predominant size of Pike caught throughout the fishery. The abundance of this species in the Delta Region along with established export market makes the Pike potentially profitable for the fishery.

Inconnu

Inconnu (Stenodus ieucichthys) locally referred to as Cony, received the highest price per kg (Fig. 1) from FFMB. The Cony made up only a small percentage of the total catch by the camps, usually ranging from 2-4%. If the Cony can be caught in greater volume it has the potential to raise fishery profits. Discussion with the domestic fishermen revealed that Cony can be caught in greater numbers during peak runs which usually occur later in the fall.

TABLE 1: FRESHWATER FISH MARKETING CORPORATION
1989 SUMMER PRICES

SPECIES	CLASS	GRADE (kg)	PRICE/KG
Whitefish	Export	Small(0.45-0.7)	.66
		Med. (0.7-1.4)	1.08
		Large(1.4-1.8)	1.17
		Jumbo(1.8+)	1.19
Whitefish	Continental	Small(0.45-0.7)	.40
		Med. (0.7-1.4)	.44
		Large(1.4-1.8)	.44
		Jumbo(1.8+)	.44
Whitefish	Cutter	All Sizes	.40
Northern Pike	Gills Out	Med. (0.9-1.8)	.77
		Large(1.8-4.1)	1.10
Northern Pike	Headless	Small(0.35-0.9)	.77
		Other(over 0.9)	.77
Inconnu	Headless	All Sizes	2.09

TABLE 2: ALLOWABLE CYST COUNTS AND RELATED PRICES FOR WHITEFISH

CLASS	NO. OF CYSTS/ 100 LBS FISH	PRICE/KG
EXPORT	o - 40	1.17
CONTINENTAL	40 - 80	0.44
CUTTER	80 +	0.40

NOTE: Price per kilogram from Freshwater Fish Marketing Corporation's summer 1989 schedule.

DATA

The data has been compiled on pages A-1-A-11 (appendix) from information collected from domestic fishermen and also from daily catch records and fish purchase tickets available from the Inuvik Fish Plant.

A total of 102 Broad Whitefish were sampled during the fishery. Scales and dorsal fin rays were sampled from the fish and sent to the Freshwater Institute for age determination. Stomachs were sampled when possible with the majority of them being empty.

Weather conditions such as heavy fog and whiteouts hampered river travel throughout the test period. Many fish were sampled after they had already been dressed. Only 40 fish were sampled prior to dressing. With these 40, sex was also determined of which 60% of them were females.

Domestic fishermen were given test fishery data sheets to complete for each catch (A-12). From the data on these sheets, catch and effort per kilogram per hour could be determined (A-n). Test fishery sheets were returned from all but one camp. Estimates for this camp were made from other available data sources.

Species Composition

The fish species composition is expressed as a percentage of both the total number caught and total weight of fish caught during the fishery refer to A-3-A-10.

Species composition was dominated throughout most camps by the Crooked Backs. These fish were caught in greater numbers than the Broad Whitefish, on the average by 25%. The Broad Whitefish averaged 34% of the total catch for all six camps.

Referring to page A-3 Camps Three and Four show a greater percentage of Broad Whitefish than the Crooked Backs. These camps, which had the most northerly location on the Delta (Map 1: Sites one and two) show possible evidence with regards to the changes in population species percentage the farther north up the delta one attempts fishing.

Northern Pike and Inconnu made up 'only a small percentage of the total catch for any of the camps. The northernmost camps showed the largest percentage of Pike and Inconnu in relation to their total catch during the fishery. As was noted previously both Pike and Inconnu show a - healthy price per kilogram on the commercial market and show the potential of profitable species if caught in greater numbers.

Although information on fish populations in the delta area is not extensive, it is believed that the fish species are not of single stocks. The individual species of the Mackenzie Delta are they themselves comprized of a mix from various areas of the delta. This mixed stock of fish should be taken into consideration when interpretating data. Species percentages could fluctuate throughout the delta due to localized pockets of converging stocks. As more information is gained through these fisheries a better picture of species composition throughout the delta will evolve.

Catch Per Unit Effort

Crooked Backs were found to have the highest catch per unit effort (CUE) for all camps except during the test fishery. Catch per unit effort (CUE) is expressed as kilograms of fish per 100 m of net for a 24 hour period (A12-A16). Crooked Backs generally had the greatest CUE for all camps except the already mentioned northern camps. The greatest CUE for Crooked Backs was 28.3 kg. from Camp One compared to the lowest value of 9.0 kg. from Camp Three. Broad Whitefish had the second highest CUE overall with the highest figure being 22.7 kg. and the lowest at 8.7 kg. The two northern Camps, Three and Four (Map 1: Sites one and two) showed higher CUE for Broad Whitefish than for the Crooked Backs. Camps Three and Four had CUE values for Crooked Backs of 8.6 kg. and 9.5 kg. respectively. The CUE values for Broad Whitefish from these camps were 16.2 kg. for Camp Three and 12.9 kg. for Camp Four.

CUE for Pike and Cony were considerably lower than found for the two Whitefish species. Cony had the lowest range of CUE running from 1.7 kg. down to 0.6 kg. The highest Pike CUE was found to be 10.3 kg. with the lowest at 2.2 kg.

RECOMMENDATIONS

Northwind

The Northwind proved to be a suitable boat for the 1989 test fishery. Although underpowered and having a rather awkward hull for Mackenzie River travel, it handled the loads of fish and ice quite satisfactorily. The mechanical difficulties suffered by the Northwind were not unusual and almost predictable.

The lost time the Northwind had seen service previous to the 1989 season was in late 1982. This seven year sit, together with the short period in which the mechanics were given to get the Northwind operational and tested, contributed to the breakdowns of the Northwind.

The main breakdowns were the gear problems in the lower unit and problems of overheating due to a bad water pump. These are not out of the ordinary problems for a vehicle that has been out of service for seven years. For the next season a longer service and test period will result in a stronger more reliable fishing vessel.

Improvements that could be looked at for the Northwind next season are as follows:

Trim aid - this could be in the form of a cabin guage to show trim, a set of trim tabs for the hull or trim fins that are fastened to the lower unit.

Inspect water system on motor and fix in cabin heater.

Make functional the appliances on board (stove, fridge).

Service bow controls if possible, if not remove.

Fix valve connection for net reel foot pedal.

If setting nets, have on board proper floats, weights, anchors and net picks.

Replace hose on deck wash system with a thicker insulated style hose.

If net reel is not to be used, remove so weight and space can be utilized by fish tubs.

Docking facilities at camps would have helped in loading and unloading of the Northwind (only one camp was equipped with a dock).

Contingency Boats

The Inuvik Department of Fisheries and Oceans were able to supply two contingency boats when the Northwind suffered mechanical problems. The Plover and Lady Catherine (20 ft. yawl) were used to make the ice/fish deliveries and proved invaluable to the fishery. For future fisheries other boats should be prepared and ready for back-up since the Plover is DFO's patrol boat. The fishery was lucky to have it available during the 1989 season, but priorities could have made it unavailable to the fishery.

Lake Whitefish

Crooked Backs with their low market value when they are sent south are not profitable. The Crooked Backs caught in future fisheries would be of more value if sold locally. One area of investigating would be local dog mushers and dog owners. Over the years Crooked Back have been the mainstay of many dog teams, here in Inuvik as well as other communities in the region.

Other methods of increasing profitability from the Crooked Backs may be in prepreparation of the fish. This could include drying, smoking or canning of the product.

Location and Method

The location of the 1989 fishery proved to be quite satisfactory in delivering sufficient volume of fish to satisfy the licence obtained. One problem not foreseen was the poor quality of the Crooked Backs in the area due to parasites. With the Crooked Backs no longer a viable species, the less time spent dealing with them, the better it is for the fishery. In order to get a lower percentage of Crooked Backs per net lift they could try fishing a more northerly region of the Delta. In discussion with the domestic fishermen involved and DFO Inuvik the population of Crooked Backs diminishes farther north up the Delta.

Any future fisheries could try locations around Lucas Point, Petes Creek and Helms Creek. These areas, although farther north, are about the same distance from Inuvik as the Horseshoe Bend area. Domestic fishermen reported that lower numbers of Crooked Backs had usually been caught. It is not known how many camps are available to support a fishery. This may require a change to the fisheries method of operation. If there are no camps to use in the area, the Northwind and crew could make daily runs to nets set by themselves. Testing of the net reel mounted on the bow of the Northwind showed that it could be used as a functional fishing boat as well as its delivery capability of fish and ice. Minor work over the winter on the Northwind would produce a more reliable vessel that could set and Pull the nets and deliver the product to the Inuvik Fish Plant in good condition.

Monitoring

With the continuation of a test fishery in the Delta Region a monitoring program should be set up. Any information gained on fish populations in the Delta are invaluable to agencies involved (ED&T, DFO, HTC). A program could be set up that is similar to the one in place for the Beluga Program. Here in the Western Arctic hunters do their own monitoring after attending a sampling seminar prior to the field season. For the fishery monitoring a one or two day seminar would be sufficient to outline the sampling program. Monitors could be the fishermen themselves or possibly obtained from the Technician Course at Arctic College.

Equipment required for the monitors is very basic and could be supplied by one of the backing agencies, at a very minimal cost. Having monitors on site at the different netting locations would result in a more thorough examination of the fishery. It would also get the fishermen more closely involved in the data process and have a better understanding of the fish population they are dealing with.

Pre-season Meeting

Prior to the 1989 Test Fishery a short meeting between ED & T, DFO, FFMB and other concerned parties was scheduled. For future fisheries a longer more comprehensive meeting (workshop) should take place involving all government agencies, plant workers, boat crew and all domestic fishermen taking part in the fishery. This exchange of information would help in the smooth running of subsequent fisheries as well as answering any questions or problems participants may have.

ACKNOWLEDGEMENTS

I wish to thank the following people and organizations whose efforts have made this report possible: The domestic fishermen for their data recording and their information on fishing in the region; Keith Alexander of Freshwater Fish Marketing Corporation for marketing and quality data; Inuvik Department of Fisheries and Oceans for the use of equipment and expertise; Inuvik Hunters and Trappers Committee for their interest and concern for the test fishery.

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APPENDIX

NORTHWIND FISH SURVEY

DEPARTMENT O? ECONOMIC DEVELOPMENT AND TOURISM

MACKENZIE RIVER 1989

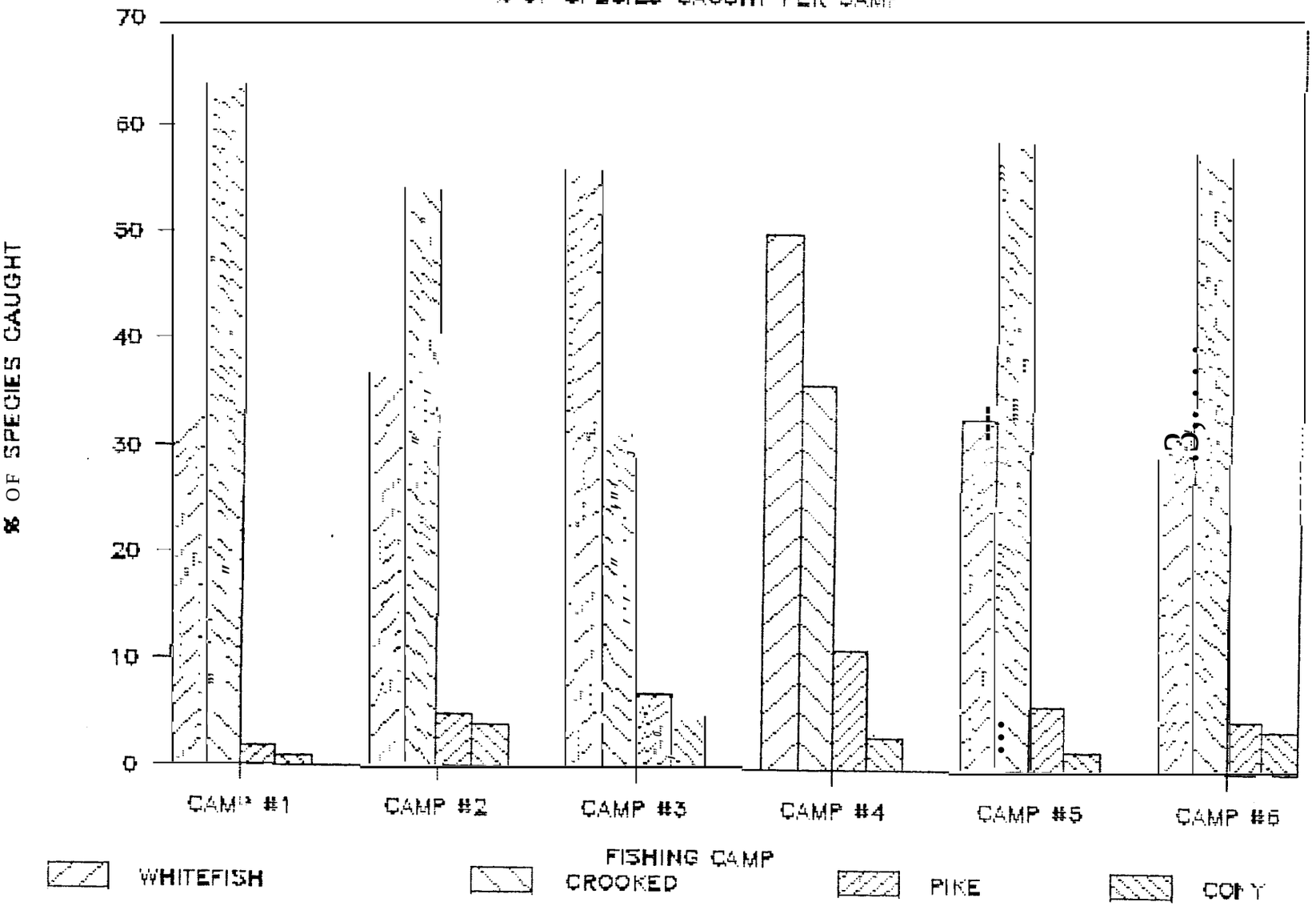
DATE	BROAD WHITEFISH	WEIGHT	CROOKED BACK	WEIGHT	PIKE	WEIGHT	COHY	WEIGHT	TOTAL CATCH	TOTAL WEIGHT	HOURS FISHED	NET DEPTH
AMP #1												
RECORDER: MICHAEL HARRISON												
08/30/89	52	103.5	59	95.5	2	5.8	0	0.	113	204.8	12	24.
04/31/89	64	126.5	200	326.	0	0.	0	0.	264	452.5	12	24.
09/01/89	50	9$.9	135	220.2	0	0.	0	0.	185	319.1	12	24.
09/06/89	122	242.7	153	249.	8	30.5	5	12.7	288	534.9	12	24.
09/07/89	92	182.3	177	288.7	7	27.	3	6.9	279	504.9	12	24.
09/08/89	111	221.4	223	364.	14	53.5	6	14.4	354	653.3	12	24.
	491	975s3	947	1543.4	31	116.8	14	34.	1483	2669.5	72	
AMP }2												
RECORDER: JOHN HARRISON												
08/30/89	7	13.8	14	23,	2	6,9	0	0.	23	43.7	6	24.
08/11/89	52	105.8	69	113.3	0	0.	0	0.	121	219.1	12	24.
09/01/89	48	96.6	101	164.5	7	28.2	4	9.2	160	298.5	12	24.
"Q/06/89	67	132,3	109	178.3	7	25.3	6	15.	189	350.9	12	24.
09/07/89	60	120.2	79	128.2	7	27.	10	23.6	156	299.	12	24.
09/08/89	61	120,a	52	84.5	20	77.6	10	23.6	143	306.5	12	24.
	295	589,5	424	691,8	43	165.	30	71.4	792	1517.7	66	
HP #3												
RECORDER: SWEENY LOREEN												
08/31/89	16	78,2	27	65.6	1	5.8	2	2.3	46	151.9	12	23.4
09/06/89	75	135.1	82	105.3	10	33.4	6	12.7	173	286.5	12	23.4
09/08/89	75	104.7	28	65.6	6	25.9	0	0.	109	196.2	12	23.4
09/09/89	139	194.3	27	35.1	21	65.6	18	36.8	205	331.8	6	23.4
	305	512.1	164	271.6	38	130.7	26	51.8	533	966.4	42	
HP #4												
RECORDER: ED DILLON												
08/30/89	120	265.6	82	177.1	3	24.1	4	13.8	209	480.6	6	21.8
08/31/89	100	204.7	100	196.7	3	15.	1	3.5	204	419.9	13	21.
09/01/89	88	192.6	120	258.7	10	34.5	4	11.5	222	497.3	12	22.
09/07/89	125	217.9	21	35.7	40	156.4	10	24.7	196	434.7	12	14.
09/08/89	54	107,5	45	73.6	30	117.3	8	19.5	137	317.9	12	11.
09/09/89	80	165.5	40	79.	50	130.5	4	8.6	174	383.6	12	11.
	567	1153.8	408	820.8	136	477.8	31	81.6	1142	2534.	67	
HP '												
CORDER: GEORGE DILLON												
08/30/89	57	124.8	125	134.5	4	13.8	4	13.8	190	286.9	10	18.
08/31/89	30	66.7	70	75.1	10	31.	0	0.	110	172.8	11	18.
09/01/89	30	103,	70	156.4	4	44.8	0	0	104	304.2	15	18.

DATE	BROAD WHITEFISH	WEIGHT	CROOKED BACK	WEIGHT	PIKE	WEIGHT	COMT	WEIGHT	TOTAL CATCH	TOTAL WEIGHT	HOURS FISHED	NET DEPTH
09/08/89	48	104.7	60	121.9	9	78.2	5	12.7	122	317.5	9	21,
09/09/89	63	111,	75	100.1	17	65.	3	8.1	158	284.2	10	21,
	22a	510.2	400	588.	44	232,8	12	34.6	684	1365.6	55	
CAMP #6												
RECORDER: BILLY DAY												
08/30/89	141	226.	257	187.5	10	20.1	10	5.8	418	439.4	24	20.
08/31/89	99	206.7	180	296.7	16	46.	3	5.8	298	557.2	19	20.
09/01/89	51	200.1	113	331.2	8	36.8	8	17.8	181	585.9	12	20.
09/06/09	134	248.4	194	345.	34	79.4	24	45.5	386	718.3	9	20.
09/07/89	115	265.1	211	269.1	15	89.1	13	36.8	354	660.1	24	20.
09/08/89	65	139.1	122	266.2	17	50.	9	27.	213	482.3	16	20.
	606	1207.4	1077	1695.7	100	321.4	67	138.7	1850	3443.2	104	
SURVEY TOTALS:	2492	5028.5	3420	5611.301	332	1444.5	180	412.1	6484	12496.4	406	

A-3

NORTHWIND FISH SURVEY 1989

% OF SPECIES CAUGHT PER CAMP



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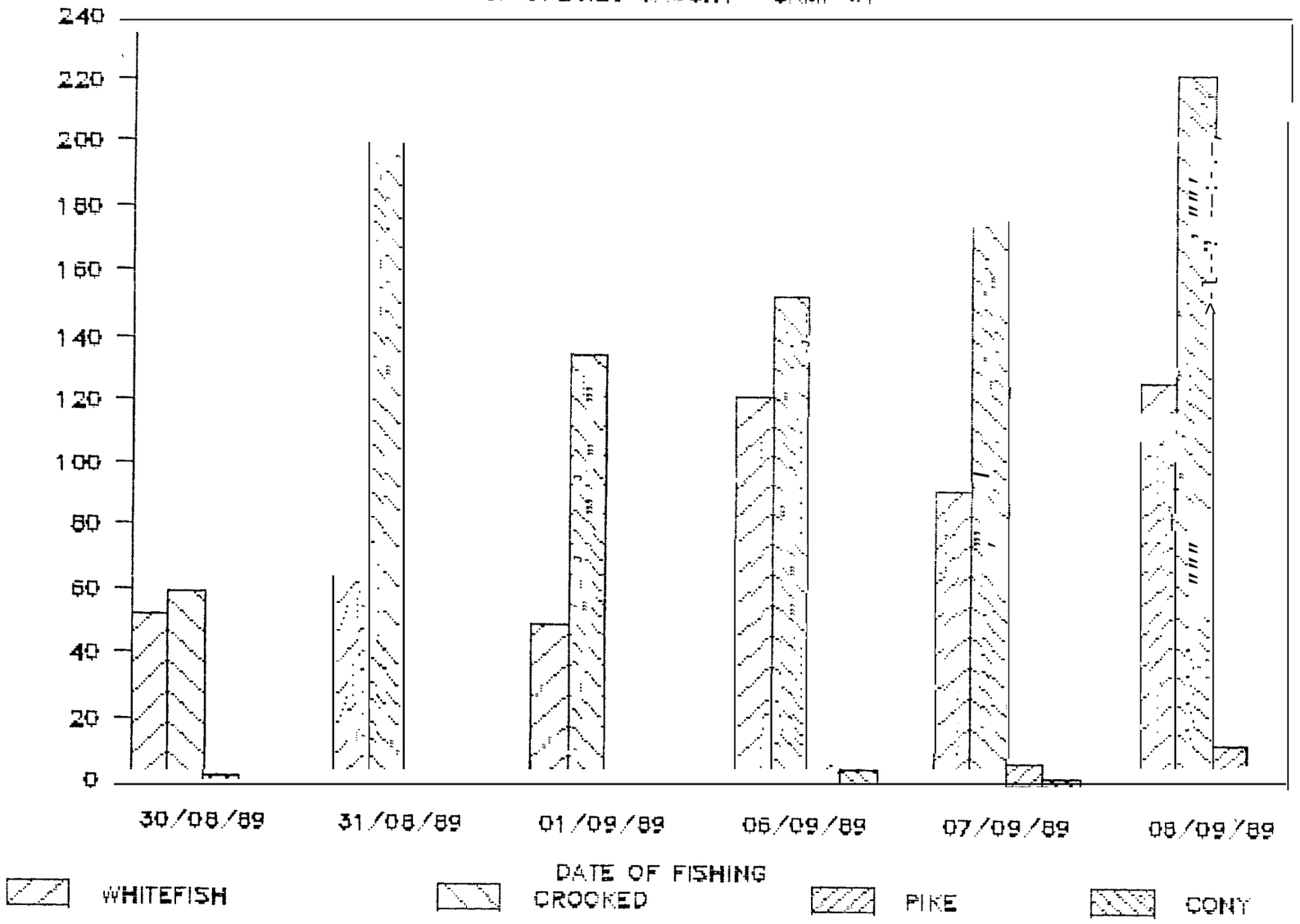

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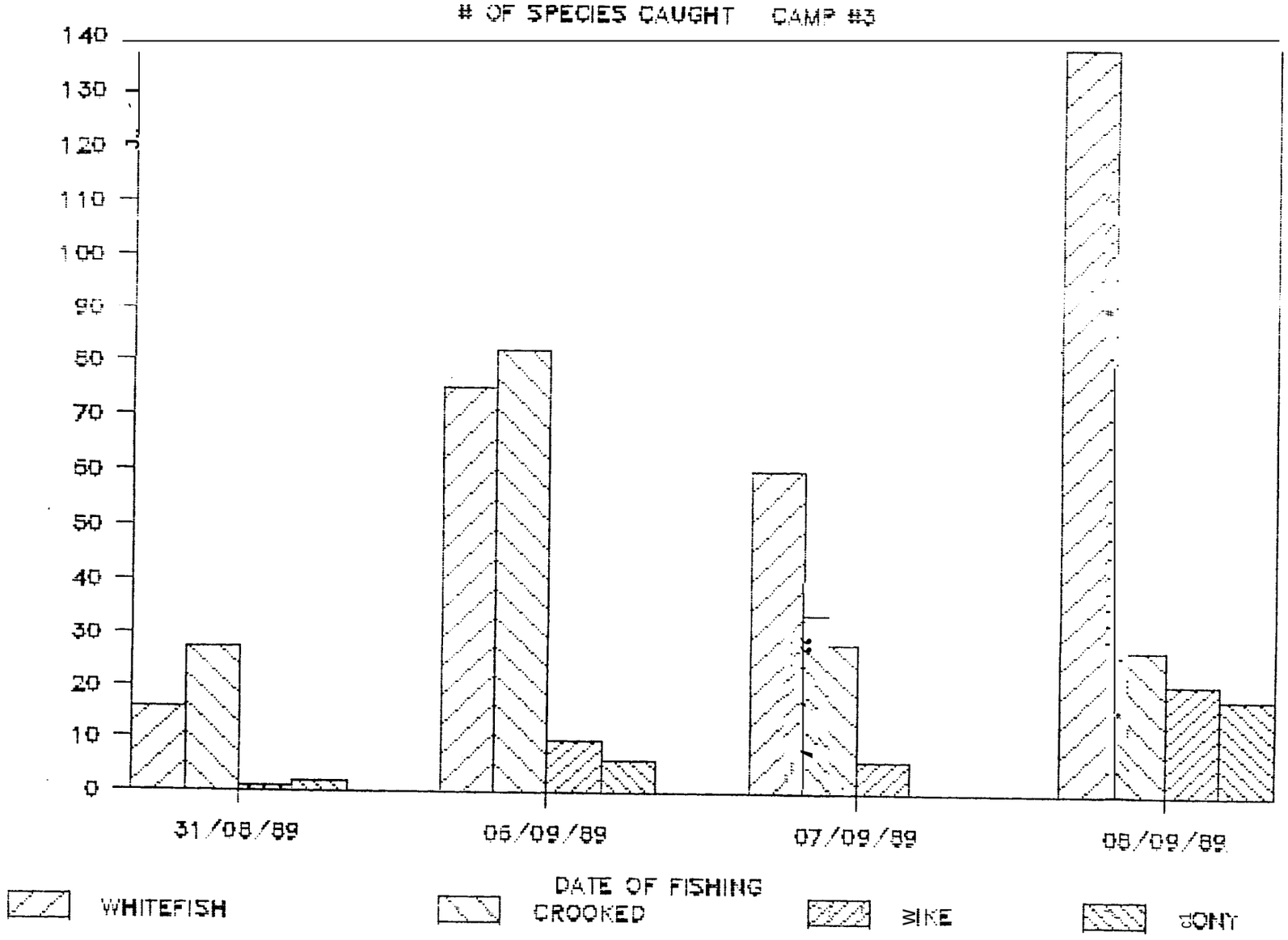

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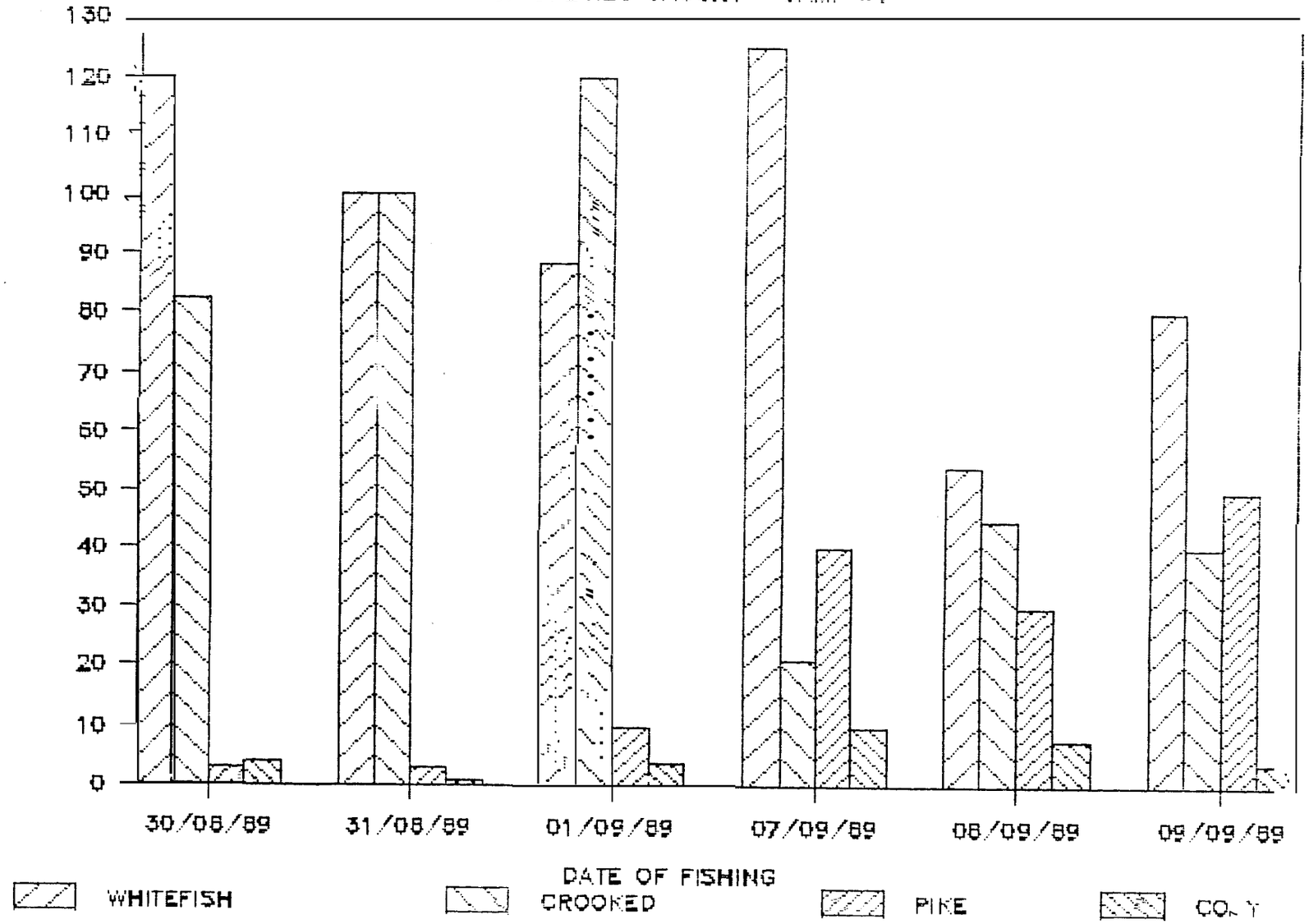
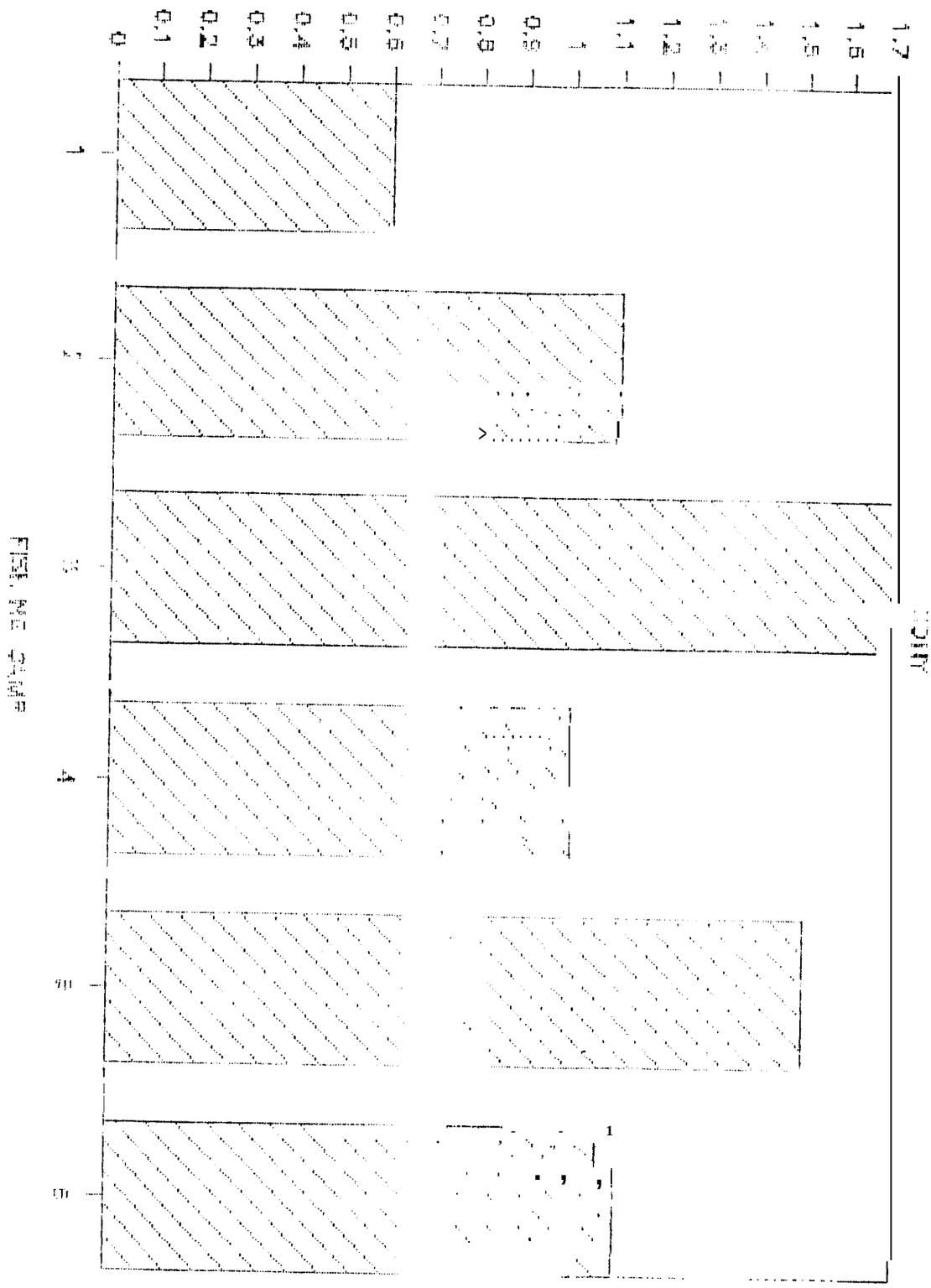


LB5 100m/24 HRS



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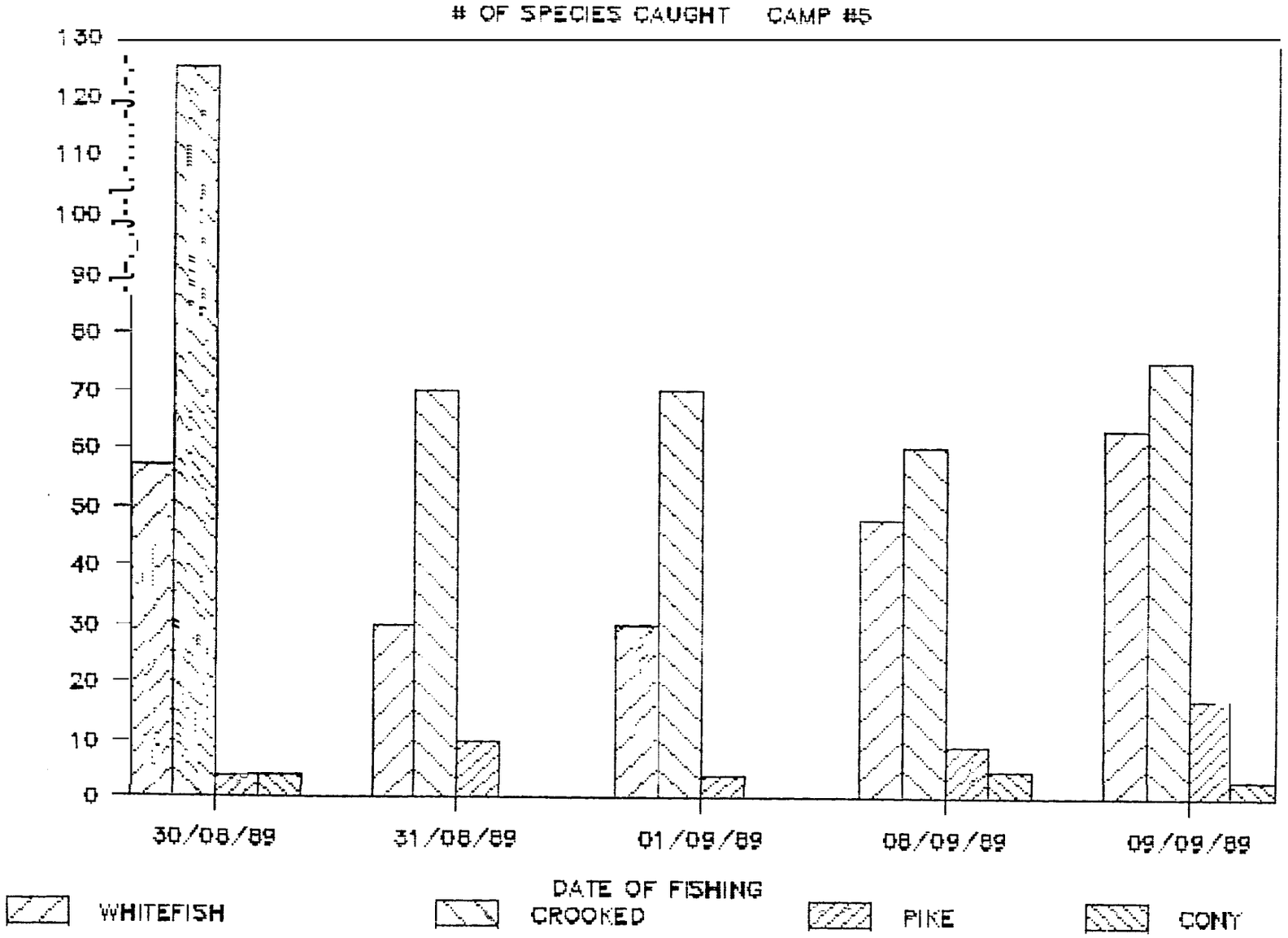
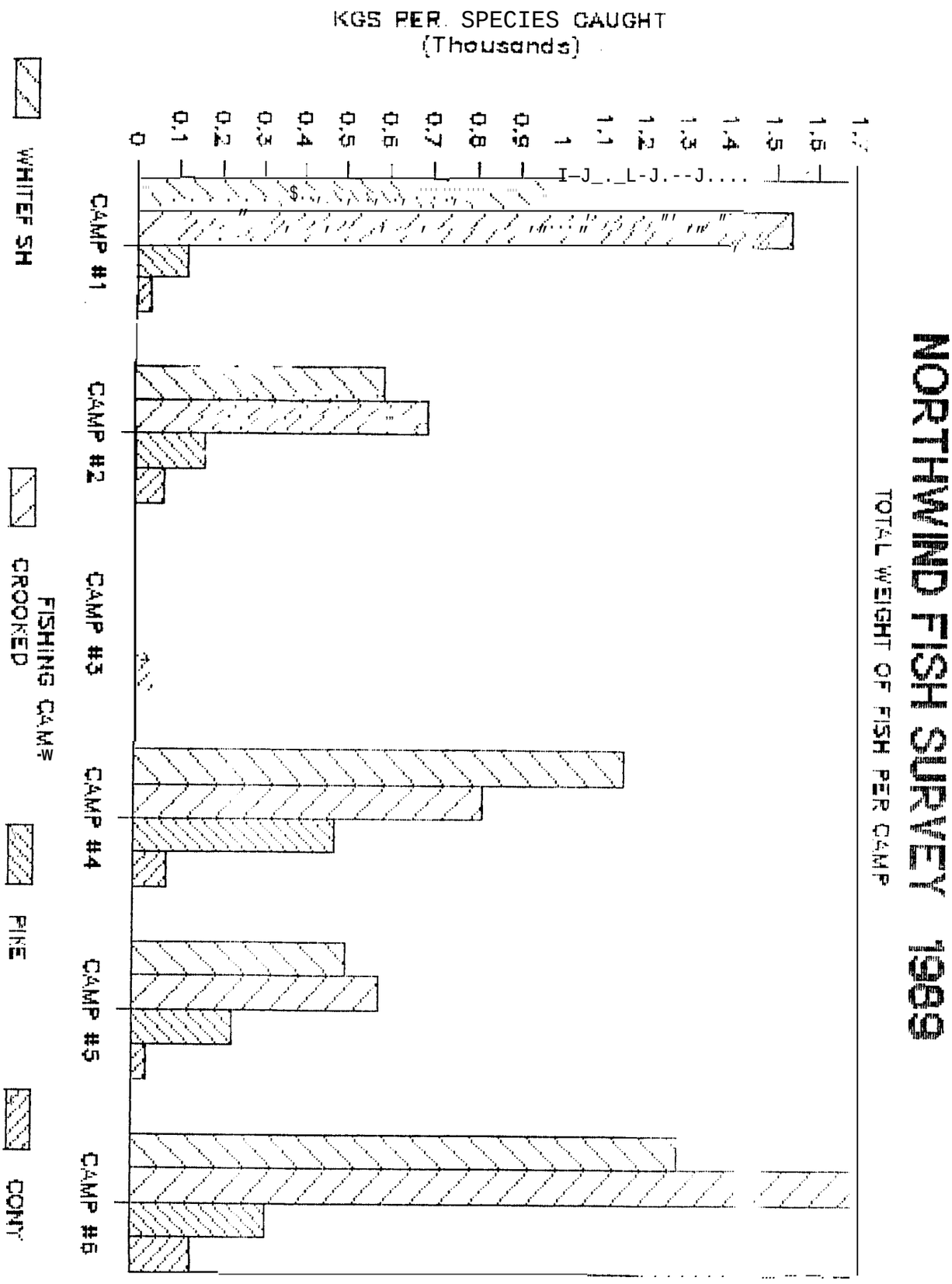
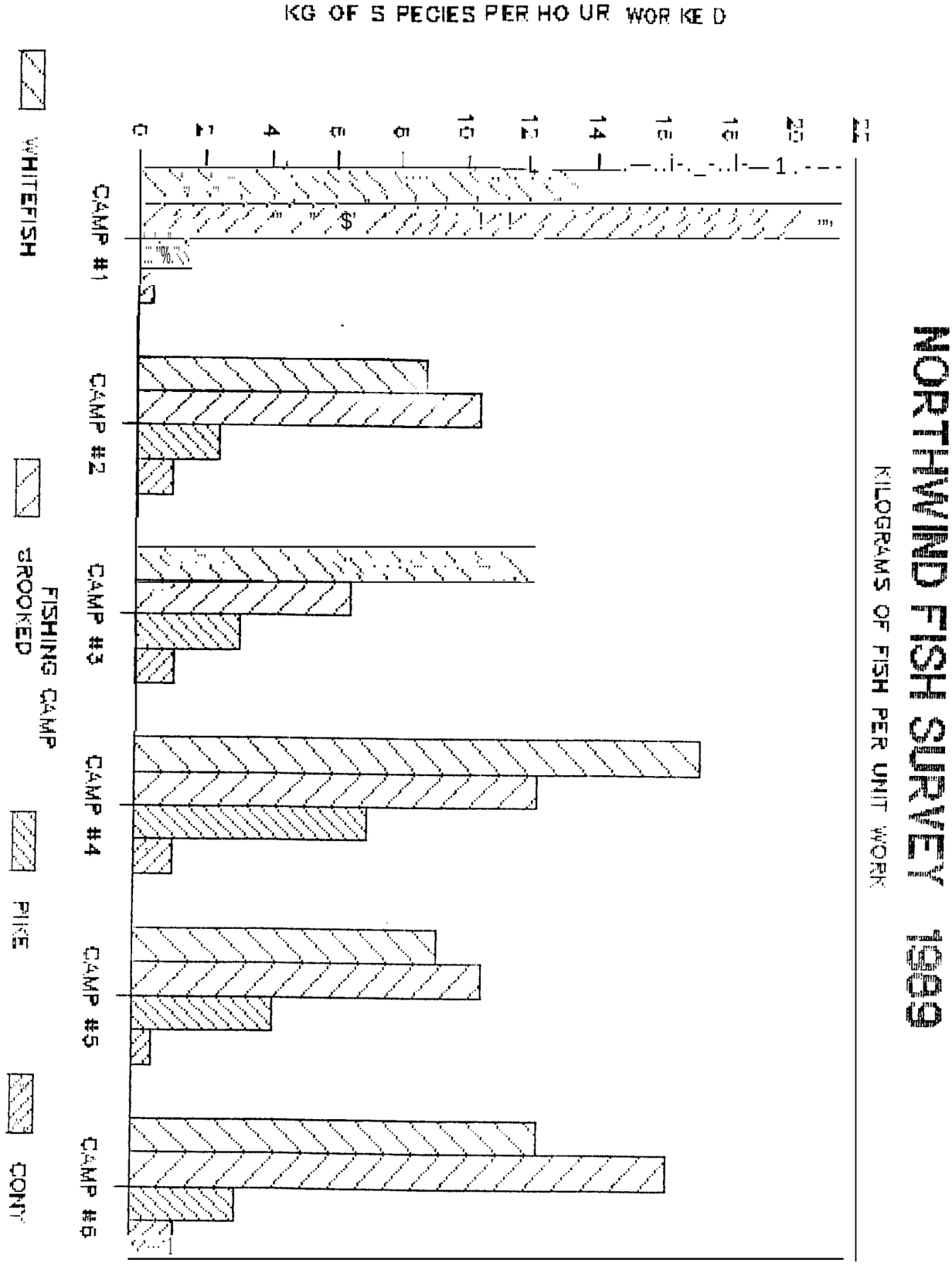
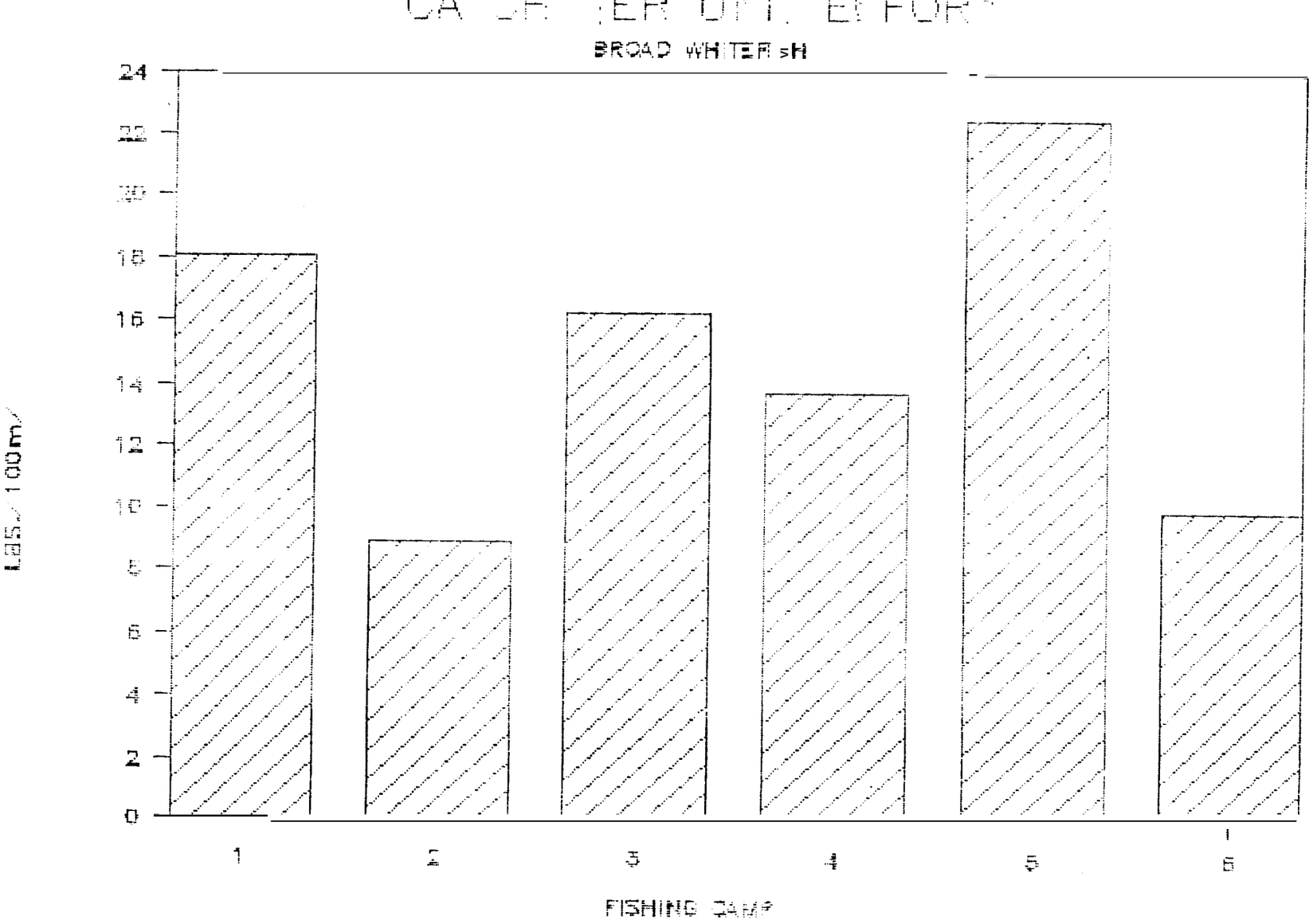




NORTHWIND FISH SURVEY 1989

TOTAL WEIGHT OF FISH PER CAMP


KG OF S PECIES PER HO UR WOR KE D
0
2
4
6
8
10
12
14
16
18
20
22
CAMP #1
CAMP #2
CAMP #3
CAMP #4
CAMP #5
CAMP #6
WHITEFISH
PIKE
CONY
FISHING CAMP
CROOKED
NORTHWIND FISH SURVEY 1989
KILOGRAMS OF FISH PER UNIT WORK


CATCH PER UNIT EFFORT
BROAD WHITEFISH
24
22
20
18
16
14
12
10
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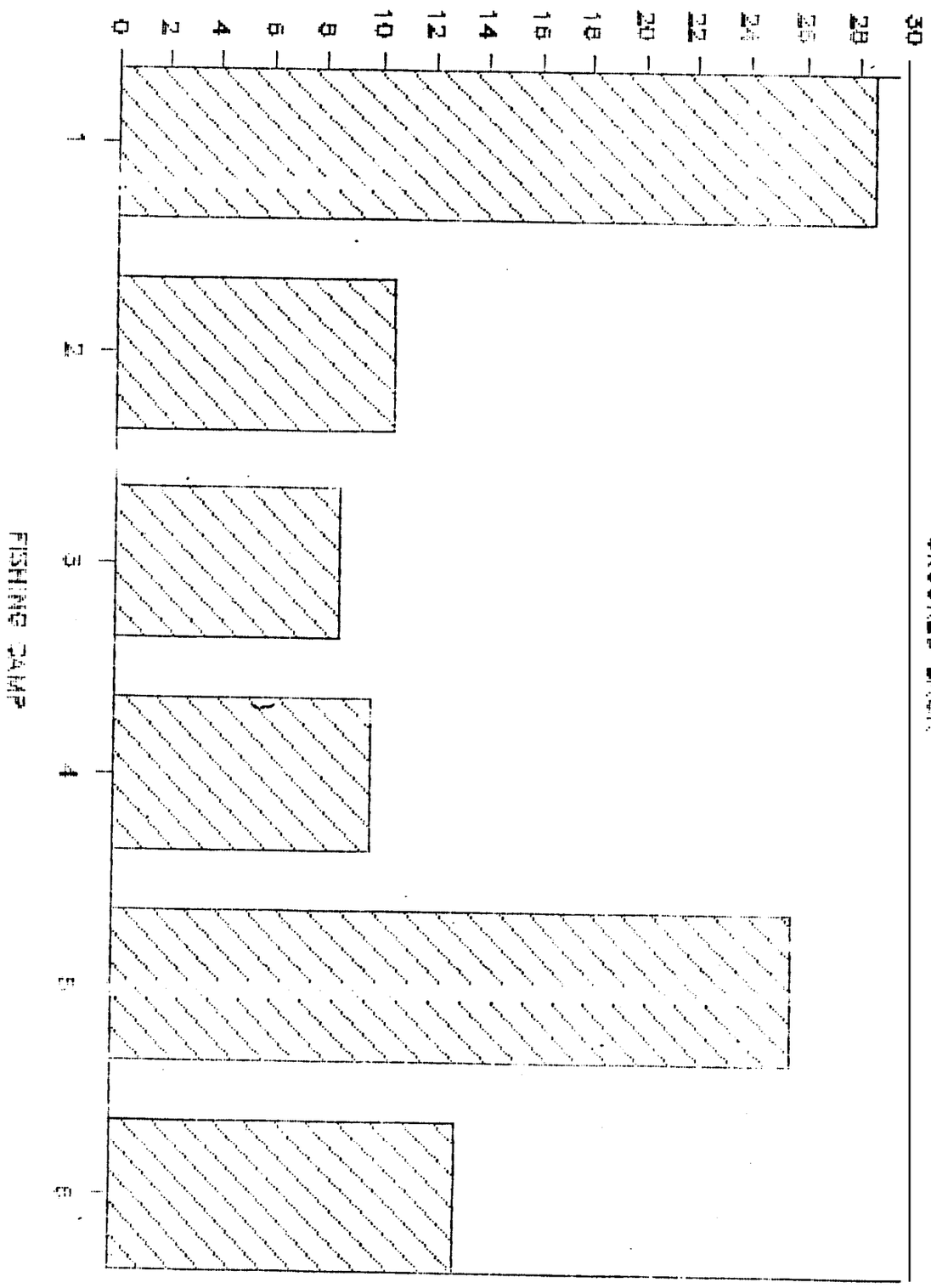
6
FISHING CAMP

LB5✓1 .CKlirv":24- HR5



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RECEIVED
OCT 24 1989
ECONOMIC DEVELOPMENT & TOURISM
INUVIK, N.W.T.

K

ASSESSMENT - MACKENZIE DELTA (INUVIK) FISHERY 1989

[illegible] -

- Containers - The waxed cardboard cartons with support liners stood up well for the long trip. The cartons preserved the ice better than the blue tubs, and prevented freezing of the top fish when the reefer was set low to preserve ice for the trip (as happened with some fish in blue tubs). Although more labor intensive than blue tubs at the packing station, they preserve fish better and are cheaper to freight up to Inuvik.

Fish - Due to the time factor (harvest site to processing site) and the travel distance, the whitefish arrived in a state where they were beginning to soften. The Broad Whites were acceptable for filleting but the firmness of the flesh was no better than the average whitefish received in Winnipeg. The Broad Whites had developed a slime coating similar to that found on Northern Pike [illegible] the time the fish arrived in Winnipeg and La Ronge. This had [illegible] [illegible] an interesting [illegible], as we had never encountered this [illegible] before. [illegible] the September [illegible] [illegible]

[illegible] it is possible that there may be some difference as the fish leave the water, but any edge in [illegible] [illegible] there is a quality difference between the two. [illegible] Broad [illegible] ever to obtain a superior price. [illegible]

FRESHWATER FISH MARKETING CORPORATION
11635 - 145th Street
Edmonton, Alberta, Canada T5M 1V9

OFFICE DE COMMERCIALISATION DU POISSON D'EAU DOUCE
11635, 145e rue
Edmonton, Alberta, Canada T5M 1V9

(403) 495-5103

Canada

The Lake Whitefish turned out to be cutter grade (115%), after a cut for the parasite triaenophorus crassis by D.F.O. staff in La Ronge. Given the abundance of cutter whitefish and the poor market, it is doubtful there could ever be a viable fishery for cutters in Inuvik.

I don't know what your cost of setup and operation was for this fishery, but I doubt that it would ever be viable based on the current quota for whitefish. Given the short time frame available for the fishery, it would be necessary to be able to fill a 45' trailor every three days (27,000 lbs) continually through a fishery. Less than a full trailor would likely boost transport costs. This would necessitate a quota for broad whites considerably larger than at present, plus an upgraded facility and ice production capability. Current lack of daily trucking echecs out of Inuvik would place limitations on such an operation.

Should you plan to try the fishery again next year, FFMC would of course be prepared to buy your fish at our regular prices at that time. I would emphasize that in order to minimize trucking costs, every effort should be made to consolidate the fishery to produce a full load (27,000 lbs) in three days fishing time.

FRESHWATER FISH MARKETING CORPORATION
11835 - 145th Street
Edmonton, Alberta, Canada T5M 1V9

OFFICE DE COMMERCIALISATION DU POISSON D'EAU DOUCE
11835, 145e Rue
Edmonton, Alberta, Canada T5M 1V9

(403) 435-7301

Canada

SOURCE OF FUNDS	TOTAL BUDGET	TOTAL ACTUAL	TOTAL VARIANCE
E.D.A.	$88,149.50	$79,335.00	$8,814.50
E.D. & T.	$40,000.00	$50,531.00	($10,531.00)
RENEWABLE RESOURCES	$17,000.00	$10,000.00	$7,000.00
D.F.O.	$2,000.00	$0.00	$2,000.00
F.F.M.C. - Revenues from fish	$21,600.00	$12,104.98	$9,495.02
Agency Fees (HTC)	$5.200.00	$4,215.79	$984.21
- Tubs	$3:500:00	$3,500.00	$0.00
TOTAL SOURCES	$177,449.50	$159,686.77	$17,762.73
APPLICATION OF FUNDS			
Capital Purchases:			
Ice Maker	$15,000.00	$17,031.00	($2,031.00)
Nets	$9,000.00	$4,582.36	$4,417.64
Radios	$2,000.00	$0.00	$2,000.00
Boat	$10,000.00	$13,500.00	($3,500.00)
Fish Tubs	$3,500.00	$3,500.00	$0.00
Building Improvements	$30,:::::	$19,:::.::	$10,545.00
Vessel Improvements	$2,.	$1,.	$471.77
TOTAL CAPITAL PURCHASES	$71,500.00	$59,596.59	$11,903.41
Rentals and Contracts:			
Coordinator Contract	$25,000.00	$25,000.00	$0.00
Truck Rental	$4,500.00	$2,409.26	$2,090.74
Biologist Contract	$0.00	$5,000.00	($5,000.00)
TOTAL RENTALS AND CONTRACTS	$29,500.00	$32,409.26	($2,909.26)
Expenses:			
Utilities - Water	$4,000.00	$265.00	$3,735.00
- Power	$6,500.00	$2,000.00	$4,500.00
Fish Boxes	$3,000.00	$1,759.64	$1,240.36
Wages - Plant	$10,500.00	$5,170.72	$5,329.28
- Boat	$11,000.00	$10,902.95	$97.05
Fuel and Oil	$4,000.00	$6,849.74	($2,849.74)
Freight	$13,600.00	$7,097.05	$6,502.95
Fish Purchases	$21,600.00	$12,932.23	$8,667.77
Food for Crew	$750.00	$473.46	$276.54
Miscellaneous	$1,500.00	$2,020.63	($520.63)
TOTAL EXPENSES	$76.450.00	$49,471.42	$26,978.58
TOTAL APPLICATIONS OF FUNDS	$177,450.00	$141,477.27	$35,972.73

BUDGET SUMMARY

SOURCE OF FUNDS	AUGUST BUDGET	AUGUST ACTUAL	AUGUST VARIANCE
E.D.A.	$66,112.50	$66,112.50	$0.00
E.D. & T.	$27,500.00	$&5&. 00	($, 031.00)
RENEWABLE RESOURCES	$12,000.00	, 00	$,,000.00
D.F.O.	$1,000 ●00	$0 :00	$1,000.00
F:F:M:C.- Revenues from fish		$0.00	$0.00
- Agency Fees (HTC)		$0.00	$0.00
- Tubs	$3,500.00	$3,500 ●00	$0.00
TOTAL SOURCES	$110,112.50	$104,143.50	$5,969.00
APPLICATION OF FUNDS			
Capital Purchases:			
Ice Maker	$15,000.00	$17 , 03*.::	($2,031. 00)
Nets	$9,000.00	$1	$7. 134.72
Radios	$2,000.00	$0.00	$2; 000. 00
Boat	$5,000.00	$5,	$0. 00
Fish Tubs	$3,500.00	$3,500.00	$0 :00
Building Improvements	$30,000.00	$1,093.43	$28,906.57
Vessel Improvements	$2,000.00	$0.00	$2,000.00
TOTAL CAPITAL PURCHASES	$66,500.00	$28,489.71	$38,010.29
Rentals and Contracts:			
C rdinator Contract	$12,500.00	$12, 50:.::	$0.00
Truck Rental	$1,500.00	$	$1,500.00
Biologist Contract		$0 :00	$0.00
TOTAL RENTALS AND CONTRACTS	$14,000.00	$12,500.00	$1,500.00
Expenses:			
Utilities - Water	$1,000.00	$0.00	$1,000.00
- Power	$2,250.00	$0.00	$2,250.00
Fish Boxes	$3,000.00	$1,674.09	$1,325.91
Wages - Plant	$5,250.00	$239.87	$5,010.13
- Boat	$5,500.00	$2,794.32	$2,705.68
Fuel and Oil	$1,000.00	$394.37	$605.63
Freight		$0.00	$0.00
Fish Purchases	$10,800.00	$0.00	$10,800.00
Food for Crew	$750.00	$400 . 00	$350.00
Miscellaneous		$86 . 67	($86 . 67)
TOTAL EXPENSES	$29,550.00	$5,589.32	$23,960.68
TOTAL APPLICATIONS OF FUNDS	$110,050.00	$46,579.03	$63 ,470.97

SOURCE OF FUNDS	SEPTEMBER BUDGET	SEPTEMBER ACTUAL	SEPTMBER VARIANCE
E. D.A.	$22,037.00	$0.00	$22,037.00
E.D. & T.	$12,500.00	$16,000.00	($3,500.00)
RENEWABLE RESOURCES	$5,000.00	$5,000.00	$0.00
D.F.O.	$1,000.00	$0.00	$1,000.00
F. F.M. C. - Revenues from fish	$21,600.00	$3,670.94	$17,929.06
Agency Fees (HTC)	$5,200.00	$1,288.71	$3,911.29
- Tubs		$0.00	$0.00
TOTAL SOURCES	$67,337.00	$25,959.65	$41,377.35
APPLICATION OF FUNDS			
Capital Purchases:			
Ice Maker		$0.00	$0.00
Nets		$1,002.62	($1,002.62)
Radios		$0.00	$0.00
Boat	$5,000.00	$8,500.00	($3,500.00)
Fish Tubs		$0.00	$0.00
Building Improvements		$17,781.77	($17,781.77)
Vessel Improvements		$1,440.20	($1,440.20)
TOTAL CAPITAL PURCHASES	$5,000.00	$28,724.59	($23,724.59)
Rentals and Contracts			
Coordinator Contract	$12,500.00	$12,500.00	$0.00
Truck Rental	$3,000.00	$0.00	$3,000.00
Biologist Contract		$0.00	$0.00
TOTAL RENTALS AND CONTRACTS	$15,500.00	$12,500.00	$3,000.00
Expenses:			
Utilities - Water	$3,000.00	$190.00	$2,810.00
- Power	$4,250.00	$2,000.00	$2,250.00
Fish Boxes		$0.00	$0.00
Wages - Plant	$5,250.00	$4,930.85	$319.15
- Boat	$5,500.00	$8,108.63	($2,608.63)
Fuel and Oil	$3,000.00	$3,087.46	($87.46)
Freight	$13,600.00	$1,851.01	$11,748.99
Fish Purchases	$10,800.00	$12,932.23	($2,132.23)
Food for Crew		$73.46	($73.46)
Miscellaneous	$1,500.00	$1,449.61	$50.39
TOTAL EXPENSES	$46,900.00	$34,623.25	$12,276.75
TOTAL APPLICATIONS OF FUNDS	$67,400.00	$75,847.84	($8,447.84)

SOURCE OF FUNDS	OCTOBER NOVEMBER BUDGET	OCTOBER NOVEMBER ACTUAL	OCTOBER NOVEMBER VARIANCE
E. D.A.		$13,222.50	($13,222.50)
E.D. & T.		$5,000.00	($5, 000.00)
RENEWABLE RESOURCES		$0.00	$0.00
D. F.O.		$0 :00	$0.00
F. F.M. C. - Revenues from fish		$8,434.04	($8,434.04)
Agency Fees (HTC)		$2,927.08	($2,927.08)
Tubs		$0.00	$0.00
TOTAL SOURCES	$0.00	$29,583.62	($29,583.62)
APPLICATION OF FUNDS			
Capital Purchases:			
Ice Maker		$0.00	$0.00
Nets		$1, 714.46	($1, 714.46)
Radios		$0.00	$0.00
Boat		$0 :00	$0 :00
Fish Tubs		$0.00	$0.00
Building Improvements		$579 .::	($579 .::)
Vessel Improvements		$88 .	($88 .)
TOTAL CAPITAL PURCHASES	**$0.00**	**$2,382.29.**	**($2,382.29)**
Rentals and Contracts:			
Coordinator Contract			4 & :
Dock Rental		$2,[illegible]	($2,[illegible])
Biologist Contract		$5,000.00	($5,000.00)
TOTAL RENTALS AND CONTRACTS	$0.00	$7,409.26	($7, 409.26)
Expenses:			
Utilities - Water		$75 .::	($75.00)
- Power		$0.	$0.00
Fish Boxes		$85. 55	($85.55)
Wages - Plant		$0. 00	$0.00
- Boat		$0 : 00	$0.00
Fuel and Oil		$3,367.91	($3,367.91)
Freight		$5,246.04	($5,246.04)
Fish Purchases		$0.00	$0.00
Food for Crew		$0. 00	$0.00
Miscellaneous		$484. 35	($484 . 35)
TOTAL EXPENSES	**$0.00**	**$9,258.85**	**($9,258.85)**
TOTAL APPLICATIONS OF FUNDS	**$0.00**	**$19,050.40**	**($19, 050.40)**

M

CHEQUE #	DATE WRITTEN	PAYEE	AMOUNT	MONTHLY BALANCE	PROJECT BALANCE
1	AUG.29TH.	PROPANE SERVICES	$83.00		
2	AUG.29TH.	ESSO PETROLEUM	$311.37		
3	AUG.29TH.	LECKIES	$1,865.28		
4	AUG.29TH.	NORM'S HARDWARE	$1,674.09		
5	AUG.29TH.	NORM'S HARDWARE	$1,093.43		
6	AUG.29TH.	NORTHERN STORES	$400.00		
7	AUG.29TH.	VOID			
8	AUG.29TH.	ERNIE DILLON	$1,397.16		
9	AUG.29TH.	GILBERT KASOOK	$1,397.16		
10	AUG.29TH.	RAY TINGMIAK	$239.87		
11	AUG.29TH.	NORTHWESTEL	$61.67		
12	AUG.30TH.	ANN KASOOK	$25.00	$8,548.03	
13	SEPT.1ST.	ESSO PETROLEUM	$1,706.26		
14	SEPT.1ST.	NORTHERN METALIC	$62.20		
15	SEPT.1ST.	HEMMING COMMUN.	$295.95		
16	SEPT.1ST.	MID ARCTIC TRANSPORT	$224.00		
17	SEPT.1ST.	INUVIK AUTOMOTIVE	$751.35		
18	SEPT.5TH.	NORTHWEST TRANSPORT	$165.19		
19	SEPT.5TH.	GIBERT KASSOK	$485.51		
20	SEPT.5TH.	JOHN ROLAND	$767.91		
21	SEPT.5TH.	ARTHUR SMITH	$423.76		
22	SEPT.5TH.	LINLEY DAY	$200.00		
23	SEPT.6TH.	DAVE POLAKOFF	$500.00		
24	SEPT.6TH.	LECKIES	$65.25		
25	SEPT.6TH.	JENSENS CONTRACTING	$75.00		
26	SEPT.6TH.	DAVE POLAKOFF	$100.00		
27	SEPT.6TH.	ERNIE DILLON	$674.50		
28	SEPT.6TH.	ED DILLON	$1,107.23		
29	SEPT.6TH.	GEORGE DILLON	$594.85		
30	SEPT.6TH.	JOHNNY HARRISON	$340.91		
31	SEPT.6TH.	SWEENY LOREEN	$38.71		
32	SEPT.6TH.	BILLY DAY	$1,551.45		
33	SEPT.6TH.	MIKE HARRISON	$726.28		
34	SEPT.6TH.	JENSENS CONTRACTING	$115.00		
35	SEPT.8TH.	NORM'S HARDWARE	$337.97		
36	SEPT.8TH.	KEN McKAY	$393.43		
37	SEPT.8TH.	RECEIVER GENERAL	$2,529.46		
38	SEPT.12TH.	GUIDED ARCTIC	$2,000.00		
39	SEPT.12TH.	ROCKY'S PLUMBING	$20.60		
40	SEPT.12TH.	JOHN ROLAND	$860.28		
41	SEPT.12TH.	GILBERT KASOOK	$767.91		
42	SEPT.12TH.	ARTHUR SMITH	$767.91		
43	SEPT.12TH.	DANIEL APSIMIK	$379.67		
44	SEPT.12TH.	BILLY OMILGOITUK	$134.76		
45	SEPT.12TH.	JIMMY OMILGOITUK	$311.97		
46	SEPT.12TH.	EDWIN KAGLIK	$160.83		
47	SEPT.12TH.	WILLIAM DAY	$150 .'00		
48	SEPT.12TH.	BILLY DAY	$1,753.17		
49	SEPT.12TH.	ED DILLON	$1,099.02		
50	SEPT.12TH.	JOHNNY HARRISON	$950.57		

51	SEPT.12TH.	GEORGE DILLON	$789.69		
52	SEPT.12TH.	MIKE HARRISON	$1,677.45		
53	SEPT.12TH.	SWEENY LOREEN	$402.09		
54	SEPT.12TH.	SANDY STEFANSSON	$402.08		
55	SEPT.12TH.	INUVIK AUTOMOTIVE	$26.00		
56	SEPT.14TH.	POINTS NORTH	$556.70		
57	SEPT.14TH.	BECKNORR	$12,392.00		
58	SEPT.14TH.	ARCTIC ESSO	$257.70		
59	SEPT.14TH.	ESSO PETROLEUM	$1,879.50		
60	SEPT.14TH.	VOID			
61	SEPT.14TH.	ROCKY'S PLUMBING	$4,745.00		
62	SEPT.14TH.	ED DILLON	$26.73		
		BANK CHARGES	$6.00		
63	SEPT.18TH.	JOHN ROLAND	$581.07		
64	SEPT.18TH.	JOHNNY HARRISON	$500.00		
65	SEPT.20TH.	NORM'S HARDWARE	$149.91		
66	SEPT.22ND.	GILBERT KASOOK	$752.46		
67	SEPT.22ND.	ARTHUR SMITH	$752.46		
68	SEPT.22ND.	GEORGE DILLON	$381.70		
69	SEPT.22ND.	MARY M. MACKENZIE	$72.00		
70	SEPT.22ND.	CHARLIE MEYOOK	$84.00		
71	SEPT.22ND.	JIMMY MEYOOK	$72.00		
72	SEPT.22ND.	DAVE POLAKOFF	$18.85		
73	SEPT.25TH.	JOHN ROLAND	$485.51		
74	SEPT.25TH.	VOID			
75	SEPT.25TH.	VOID			
76	SEPT.25TH.	GILBERT KASOOK	$581.07		
77	SEPT.25TH.	ARTHUR SMITH	$581.07		
78	SEPT.25TH.	BEN ROGERS	$120.00		
79	SEPT.25TH.	KEN McKAY	$73.46		
80	SEPT.29TH.	POINTS NORTH	$403.73		
81	SEPT.29TH.	NORM'S HARDWARE	$16.99		
82	SEPT.29TH.	HIRAM OSCAR	$48.00	$52,424.08	
83	OCT.10TH.	PLUIM CONTRACTORS	$2,409.26		
84	OCT.10TH.	ARCTIC ESSO	$375.95		
85	OCT.10TH.	LECKIES	$1,519.50		
86	OCT.10TH.	ROCKY'S PLUMBING	$129.80		
87	OCT.10TH.	INUVIK AUTOMOTIVE	$88.03		
88	OCT.10TH.	NORTHERN METALIC	$194.96		
89	OCT.10TH.	ARCTIC TIRE	$50.00		
90	OCT.10TH.	JENSEN'S CONTRACTING	$75.00		
91	OCT.10TH.	POINTS NORTH	$2,573.17	$7,415.67	$68,387.78

left Winnipeg on July 27th for Yellowknife and after a briefing session there, arrived in Inuvik on July 28th.

Sam Ransom and myself looked over the two proposed sites for the fish plant, Site #1, the old fish shed by the lagoon was in very bad condition, having been vandalized over the years since the last fishery approximately five years ago. It was also in a waste disposal area. Site #2 was the old Ulu Foods freezers on Distribution Street. This site had a number of advantages over the lagoon site:

1) not in restricted sewage area;
2) easier access for fish transportation;
3) by using freezer for holding the fish, fish quality could be much better preserved. Fish could be thoroughly chilled prior to shipping. This was particularly important during the hot weather (high 90's Fahrenheit) at the start of the fishing season.

The decision was made to renovate the Ulu Foods plant into a fish packing plant.

PREPARATION:

The period of time July 28 - August 28, 1989 was spent in preparing the plant for the fishery. All food processing machinery from Ulu Foods s moved over to the IDC warehouse in the next building.

cky's Plumbing installed a 750 gallon water tank as there were some objections to hooking up to the Utilidor system. They installed two floor drains, one from the fish packing area to the existing holding tank (400 gal.) and another in the ice room - this drains directly into the ground below the building. They also installed a 40 gallon hot water tank, repaired broken toilet and broken water lines. Apparently the liner had not been drained and had burst. (Screen for top of ice room drain has not yet been provided by Rocky's Plumbing at the time of writing) .

Walter Bebeck of Becknor Refrigeration installed the Dow ice machines in the attic above the ice room and installed two hatches, in the freezer rooms on both sides of the packing area. The second hatchway is for future expansion of the fishery. (It turned out that we used only the one freezer room for holding the fish but it was very congested - even with the small volume of fish handled. Walter Bebeck also scaled all the joints in the freezer room used with sealing compound as per DFO recommendation.

The Northwind was overhauled by DPW but this took considerable time (one month - mainly waiting for parts) . Two other boats - the DFO Plover and a 20 ft. Yawl with a 40 H.P. Mercury were also put in readiness. These were to be used in the event of Northwind breakdown. And as it rned out we had considerable use of their boats. (Northwind broke down on maiden trip) .

while waiting for the plant to be operational, I made a tour of the 'oposed fishing area. Some fishermen were asked to build docks for easy access for loading. Due to the hot weather and the anticipated week long fish haul to Winnipeg, I had the Northwind crew make up nine insulated plywood boxes (each capable of holding twelve fish tubs). Each of the five fish camps was provided with 1-3 of there boxes. Eight plastic ice coolers provided by FFMC were also distributed to the camps.

FFMC shipped 600 blue plastic tubs, 250 waxed paper boxes. Permission was obtained from FFMC to allow fishermen to use blue FFMC tubs at the camps as it was unfair to expect fishermen to buy tubs for a trial fishery only. Waxed paper boxes were used on a trial basis only (50 boxes of fish shipped out) to see how they would stand up to the long haul to Winnipeg. It was later found that the boxes provided better insulation for the fish and ice but are cumbersome to handle and time consuming. Any savings on freight rates would be offset **by** additional labour costs and are not recommended provided future shipm-ents of fish in tubs is of acceptable quality.

Upon arrival of the ice machine on August 19, it was realized that due to hot weather and the 2,000 lbs./day capacity of the machine we would need to stockpile as much ice as possible prior to starting the fishery. The ice machine was operational by August 22 but the water tank was still in transit. A garden hose line was strung (in shallow trench) om the plumbers shop next door. This also meant a considerable saving on water costs, as we used this buried line throughout the fishery.

About August 24th, it was discovered that the back up compressor for the freezers was knocking and a replacement was found at the old Beaufort Foods site.

On August 29th, thirty nets arrived from Leckies in Edmonton. Ten of these were 100 yd. monofilament Char nets and proved to be of exceptional quality in mount of fish caught, ease of handling, and strength. The other twenty were #1 x 3 ply 5½" x 24 MD x 100 yds. twisted mono nets. (I had ordered all mono nets as directed by fishermen at a previous meeting) . I was assured by Dennis Wiebe (Leckies) that the twisted mono nets were of comparable breaking strength as the Char nets and the nylon nets (210/6) previously ordered but this proved not be the case. There (twisted mono) nets were so weak, some fishermen flatly refused to use them. Fishermen that did use them also had trouble removing fish wrapped up in the line netting but this is probably because fishermen in Inuvik do not yet use net hooks when removing fish. It is estimated that the twisted mono nets may only last one or two fishing seasons and some thought should be given to returning the eight nets not used .

Twenty-four nets were loaned to the fishermen (all returned) and six were held back for test fishing by the Northwind crew.

At a (discussion with Sam Ransom, Tom Beaudoin (IDC), Gerd Fricke and self, it was decided that a trap net should also be tested. I made arrangements for a (used) 90 foot long trap net I had in Winnipeg to be shipped up. This trap is ten feet deep, two tunnels and tapers in

e sh si ze from 5" at the wings to 1½" at the trap end. I phoned Le... ies r or a thick cordage 4-5" mesh lead but all they had available was a " mesh 210-24 lead. As this was all that was immediately available this was ordered. The trap net was used in the test fishing at the end of the 1989 project.

The commercial fishermen (5 camps, 6 licences, about twenty people including helpers) commenced fishing on August 29th.

PRODUCTION:

1st Shipment

The fist load of fish was shipped out September 2, 1989 through Byers at a rate of 15¢/lb net fish weight. Three days fishing August 29 - Sept. 1) brought in 4773 kg. dressed weight or 10,600 lbs. in round weight 4773 kg. = 12,103 lbs. (4773 X 2.205 X 1.15).

The Northwind broke down on 1st trip bringing in fish (Leg gear case). Sent out DFO Plover to tow in. Plover and 20 ft. Yawl were used to haul fish and ice till Northwind was repaired. In the hot weather at the start of the fishing season (high 90's Fahrenheit) a minimum of thirty tubs of ice a day was required at the camps.

This is present ice machine capacity. None left over for packing if e had not previously stockpiled. Stopped fishing on September 1st to stockpile ice and wait for Northwind repair. New leg ordered from eaWest Engines in Vancouver.

2nd Shipment

Fishing commenced again September 6-9. Three days fishing produced 6503 kg. dressed weight or 16,490 lbs. round weight. This was shipped out through Points North at a rate of 12½¢/lb. Net fish weight.

At this time it was realized that Lake Whitefish were cutter class and not export quality as previously assumed. At a meeting between Gerd Fricke, pierre LeMieux (DFO) and myself, the decision was made to shut the fishermen down. The fishermen were being paid 1.00/kg. and the H.T.C. could only hope to realize 40+/kg. from Freshwater. At this point it must be stressed that the quota of 40,000 lbs. could have easily been caught by the fishermen with an additional 2-3 days fishing.

3rd Shipment

The final portion of the fishery was some combination test fishing with gill nets from the Northwind and the 20 ft. yawl and also some experimenting with the trapnet. The boat crew (3 men) and myself were involved in the test fishing.

From September 16-20 a total of 1809.5 kg. dressed weight or 4588 lbs. round weight. This again was shipped through Points North at 12%+/lb.

net fish weight. The remainder of the empty tubs and boxes were shipped out with the last load.

The site selected for the test fishery was Horseshoe Bend (Harrison's camp) as reports from fishermen indicated the broad whitefish run was up there and we might miss them if we went to Holmes **Creek as 'previously planned. This turned out not to be the case as we caught approximately 60% lake whitefish.**

Fishing with gill nets from the Northwind (string of four floating gill nets downstream) was successful but strong offshore winds and freezing conditions severely hampered fishing, perhaps moving fish t. Opposite shore. Icy boat decks and carburetor freezing in 40 H.P. Mercury also slowed operations.

The trap net was set in 16 ft. of water (bottom set) 250 yds. from shore. The 200 yd. 6" lead started in 3 ft. of water 50 yards from shore. I had originally planned to set the trap net (floating) in the deep eddies where the most fish seemed to be but the trap net wings did not have a bottom so I opted to go with a bottom set.

It was soon apparent that the Whitefish and Northern Pike" were swimming right through the lead as we were catching 200 lbs. a day of very big fish in the lead and only ten or so whites in the trap. Barbot seem to lead quite readily even with a coarse lead as we seemed to catch 6 a day in the trap compared to 1 or 2 in all the gill nets.

We attempted tying 5½" mono char nets the entire length of the lead but this only increased the gilling in the lead. It is suggested that next year a finer mesh (coarse cordage) lead be tried out. Some gilling of whitefish in the wings was also encountered. Perhaps a floating trap net (coarse cordage to prevent gilling) should also be dried.

At any rate it seems apparent some further test fishing next year is in order. Perhaps some gill netting closer to the coast where it seems likely there would be more broad whitefish. Broads seem to move in and out of the river system and ocean; Lake whitefish stay in the river system.

The 1989 Inuvik commercial fishery pilot project resulted in a total amount of fish caught in round weight of 33,171 lbs. Relative species percentages forth coming from report being prepared by Gerd Fricke.

RECOMMENDATIONS:

1) Ice machine from old fish plant be installed alongside new Dow ice machine. This would add 1,000 lbs. of ice a day to present capacity. Quote coming from Becknorr but will be in the neighborhood of $1,500-2,000.00. This is a water cooled machine as compared to air cooled for the Dow but it can be hooked up directly to compressors for freezer rooms.

2) A combination of a species selective (trap net) test fishing and size selective (gill net) test **fishing - perhaps at Petes and Holmes Creek. Standard trap net design would have to be modified for conditions on the Delta - Whitefish seem to run just below the surface in deep eddies.**

Try setting floating trapnet in different positions. Perhaps parallel to shore, facing upstream with short levels on wings to funnel fish in.

Although whitefish are a bottom feeder and we could expect to catch some at the bottom of eddies, the riverbottom is generally to deep for bottom sets.

3) For gill net fishery use strictly char nets or twisted mono nets of some breaking strength.

Ken McKay
Coordinator,
1989 Pilot Project