INDIAN COMMERCIAL FISHERIES

IN THE

PATRICIA DISTRICT OF ONTARIO

An Economic Analysis

by

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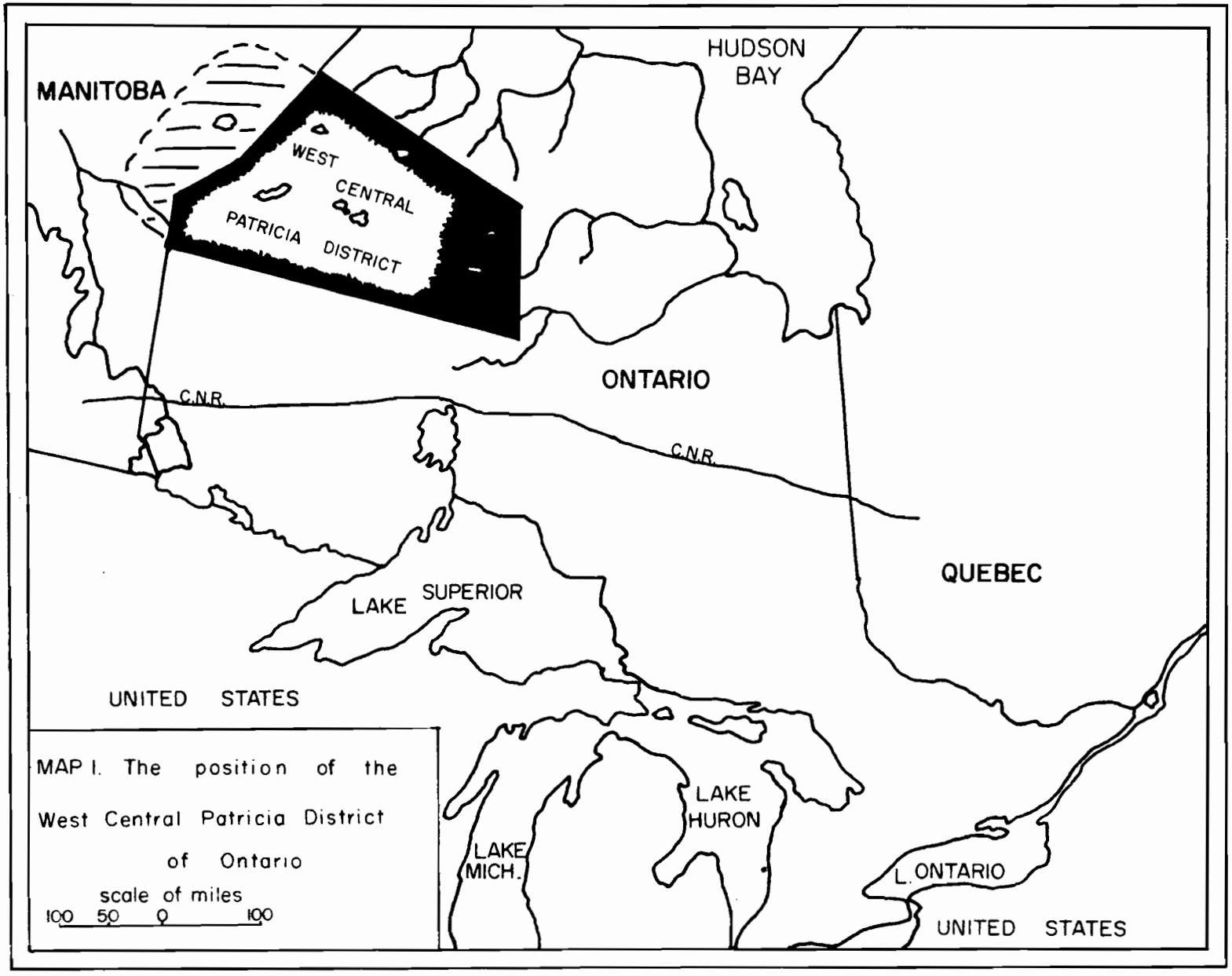
PREFACE

This thesis is based upon a study of the marketing of fish from the Patricia District of Ontario which I carried out during 1961 and 1962 while employed by the Ontario Resources Development Advisory Committee. I acknowledge, gratefully, the opportunity to work on this subject under the auspices of the Indian Affairs Branch, the willingness of the Governments of Canada and Ontario to allow me to use the data for a thesis, and the award of a Bronfman Fellowship from McGill University which enabled me to transform the study into the thesis submitted here.

The thesis is exploratory and empirical. It is particularly true of this study, as André Raynauld says it is true of his Croissance et Structure Economiques de la Province de Québec, that: "L'analyse proprement dite et les tentatives d'explication demeurent malheureusement encore à la surface des phénomènes parce que la majeure partie de notre temps a du être consacrée à la recherche des faits eux-mêmes." In advance therefore I apologise for the many untested hypotheses in the text and for the masses of statistics inflicted upon the reader.

I claim to have made an original contribution to knowledge by using the tools of economic analysis to examine the economic problems of the commercial fisheries in the central part of the Patricia District of Ontario. I present the first estimates of the net earnings of fishermen there and also the first estimates of the value of assistance given to the Indian fishermen by the Indian Affairs Branch. Finally I present the first detailed examination of the characteristics of an agency which would be suitable for marketing the fish caught by the Indians living in the central part of the Patricia District.

I acknowledge the receipt of help and information from many people: from people interested in the economic and social problems of the northern Indians, from people in the fish business, from people in the service of the Governments of Canada and Ontario, and from many friends and colleagues. In particular, I wish to thank Miss Margaret Robb and Dr.S.H. Lok for detailed criticism of an early draft, and Dr. D.E. Armstrong, my tutor since 1959, who has unfailingly given me encouragement and valuable advice. I alone however am responsible for the errors which remain. Finally I should like to thank Mrs. Paul Wiseblatt for the splendid typing job she has done.



MAP I. The position of the West Central Patricia District of Ontario

CHAPTER I

INTRODUCTION

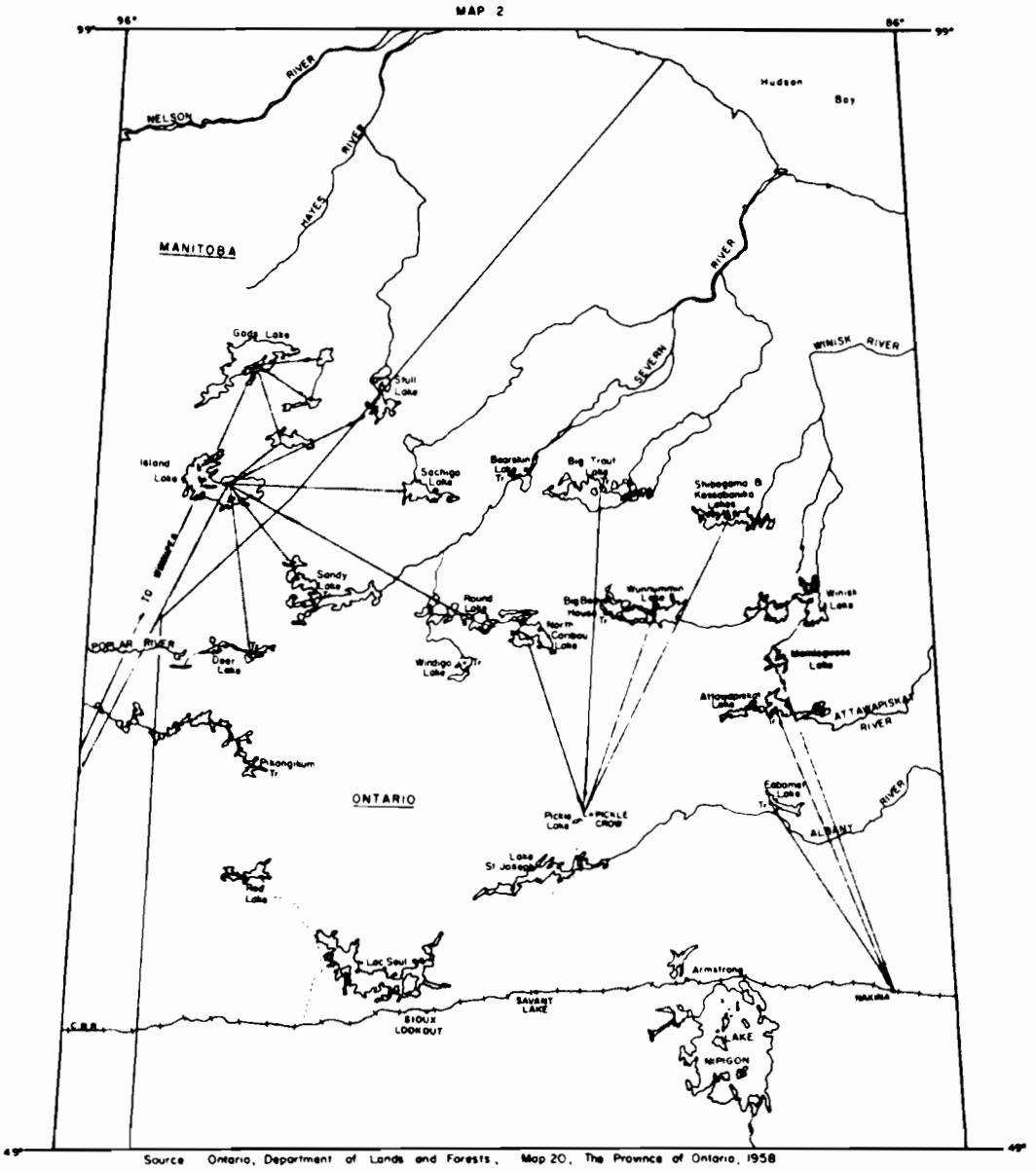
This study is an economic analysis of the commercial fisheries operated by Indians who live in the central part of the Patricia District of Ontario. The study is part of a broad investigation of the economic and physical characteristics of the Patricia District that is designed to help raise the incomes of the Indians and to improve the management of the regional resources.

The study is exploratory: the terms of references are to examine the utilization of the fish resources and the efficiency of fish marketing, in order to examine means by which the incomes of the Indian fishermen can be raised. The analysis is concentrated upon the commercial fisheries in the area identified in this report as the West Central Patricia District (See Map I).

Landforms and Climate

The West Central Patricia District is the area formed by the poorly defined upper drainage basins of the Severn, Winisk and Attawapiskat Rivers.[1] The western and southern borders are formed by parts of the upper drainage basins of

MAP 2



Source Ontario, Department of Lands and Forests, Map 20, The Province of Ontario, 1958

Map of West Central Patricia District and Surrounding Region

* Settlements or Trading Posts

Railroad Line

Road

Main air-freight routes for fish

Scale of Miles

0 50 100 Miles

the Nelson, Hayes, and Albany Rivers, and Map 2 shows that all of these rivers drain northward and eastward into Hudson Bay or James Bay. The area is part of a more extensive region that forms the southern Hudson Bay basin and which has peculiar economic and physical characteristics.

The West Central Patricia District is underlain by Precambrian rocks of the Canadian Shield that consist mainly of sedimentary and volcanic beds with later magmatic intrusions.[2] This rock structure favours the formation of mineral veins, and although the kinds and distribution of minerals are not well known the mining potential of the area is probably very great.[3] The area lies between 500 feet and 1,500 feet above sea level, with a gentle slope down towards the north east. The surface has low relief; is composed of rock, some gravel ridges, podzol soils, bog soils, muskeg, and water;[4] and is traversed by many lakes and streams which drain into the major rivers.

The climate is harsh.[5] Mean temperatures range between -10°F in January and 60°F in July. Because of the low temperatures and the resulting short growing season (140 days),[6] agricultural and horticultural possibilities are limited. Rainfall and snowfall are light: the mean annual total precipitation is 22 inches of rain and snow per year.[7]

Vegetation and Wild Life

The vegetation of the West Central Patricia District is primarily Boreal Forest, with some Low Arctic species. Most of the forest cover is classified as the Northern Coniferous Section of the Boreal Forest and consists mainly of stands of black spruce, with jack pine and tamarack and a few other species.[8] The vegetation to the north of the area has a "subarctic" appearance caused by an open cover of black spruce where the forest is classified as the Hudson Bay lowlands section. In general, trees in the northern parts of the Patricia District tend to be more stunted than trees further south. There is some evidence that trees near Sioux Lookout and Fort Hope grow more rapidly than trees in the central part of the Patricia District.[9]

Animal life in the West Central Patricia District is less abundant than further south. There are woodland caribou, moose, black bear, beaver, and other fur bearing animals. The lakes contain many species of fresh water fish, but the fish grow more slowly than fish in lakes to the south and west. The maximum sustainable yield of fish from the area is probably between 1,000,000 and 2,000,000 pounds of fish per year.[10] The potential annual harvest of native foods alone could support the resident population, but at a standard of living lower than that they now enjoy.

The People

Almost all the people who live in the West Central Patricia District are members of four Indian Bands: the Big Trout Lake Band, the Caribou Lake Band, the Deer Lake Band, and the Fort Hope Band. In 1959 about 3,200 of the 3,555 band members, and about 100 white people were living in the area.[11] Twenty years ago there were only 2,298 band members,[12] and probably fewer white people too.

In the past, high death rates kept the native population down to a level that the natural resources could support. Improved medical care in the last twenty years has preserved the lives of the very young and has prolonged the lives of the old. In consequence there has been a considerable increase in the native population, and the proportion in the population of all Canada. In December 1959 almost 23.0 per cent of the Indians of these four bands were under 16 years of age,[13] as compared with 12.0 per cent of all Canadians who were under 15 years of age in June 1960.[14] The age structure of the population ensures that the number of Indians resident in the Patricia District will increase rapidly, unless there are unexpected changes in the birth rate, the death rate, or in the rate at which residents migrate from the area.

The Indians are generally uneducated and unskilled in mechanical arts. The children do not learn the hunting and other bush skills as well and as willingly as their fathers did, because they know that they do not have to earn their living from hunting and fishing alone. Few of the Indians are fitted for life in the south of Canada, and the young people are becoming progressively less fitted for the traditional life in the Patricias.

In the past, few Indian families living in the Patricias had permanent homes; they went from place to place throughout the year seeking game and good fishing. During the past ten or fifteen years, the way of life in the Patricia District has changed significantly, and more and more Indians now live permanently in small settlements where some can obtain regular wage employment.

At present the Indians living in these settlements are almost isolated from the rest of the Canadian people and from the rest of the Canadian economy. Before 1945 the Indians were even more isolated: they had contact with the outside world only through traders of the Hudson's Bay Company, officials of the Indian Affairs Branch, and the missionaries. Since 1945 the Indians have much more contact with the outside world, particularly to the south, but neither the people nor the region is yet an integral part of the

Canadian economy. Even today, all goods exported to or imported from the rest of Canada must be moved by airplane, canoe, or tractor swing; most people travel by canoe and airplane.

The Natural Resources

The wealth and incomes of residents of an isolated community depend upon the use that the residents make of the natural resources at hand, and upon the wages and subsidies they receive from the members of other communities.

Because the Indians in the Patricia District lack technical skills they do not use their resources and employment opportunities as well and as efficiently as we should expect. Although most of them will start to work for cash income, cash earnings do not keep them working indefinitely, because regular and paid employment is not yet a part of their culture.

It is possible to raise incomes and wealth of the Indians of the Patricia District. Technical training can give Indians skills that they now lack and can improve those they now have. Better diets and medical care can raise their capacity for steady physical work. In time their economic wants will become more like our own, and their incentives to work steadily will become stronger.

But these changes do not occur overnight. In the

meantime the Indians are poor, the population will increase still more, the pressure on natural resources will become more severe than at present, and most of the Indians now alive will remain poor until they die.

There are natural resources in the Patricia District. Ore bodies are mined at Red Lake and at Pickle Crow, to the south of the West Central Patricia District, and it is possible that one day there will be mines within the area. But mining will not necessarily bring regular employment to the Indians.[15] It is true that some Indians are employed as labourers at the mines at Red Lake and Pickle Crow, but there and elsewhere in Canada few Indians have become miners. At present, very few Indians in the Patricia District have the training or the temperament to become full-time miners.[16]

There is enough power in the central part of the Patricia District to provide hydro-electricity for any probable mining development.[17] Even if no mining development occurs, improvements in power transmission techniques and the increasing demand for power in the south of Ontario may justify the construction of power-dams on the Severn and Attawapiskat Rivers. Indians could be employed if dams were to be built, but unless the Indians were to be trained for steady jobs at the power-dams, their continued employment

would depend on local use of the available power.

Although the forest reserves of the Patricias are suitable for pulping, and although there are huge supplies of timber,[18] cheap and adequate power in the area would not stimulate the development of a commercial lumber industry. The reasons are plain: local demand for lumber is small, the major lumber markets are far to the south, and all rivers in the area flow to the north or to the east. If lumber were to be moved south, logging roads would have to be cut through notoriously difficult country, and through the vast unexploited forests which lie in the south of the Patricia District.

The fur resources of the Patricia District are already extensively exploited and carefully managed. Restricted trapping and beaver transplantings have allowed a considerable increase in the beaver population. In certain parts of the Patricia District the populations of other fur bearing animals may also have increased. But because Indians now live permanently in settlements, because many trappers must make long journeys to distant traplines, and because trappers are encouraged to leave their families in the settlements so that the children may go to school, trapping is now a less attractive way of life than in the past. Possibly the fur resources could be exploited more

efficiently than in the past, but if Indians are to continue to trap regularly, incomes from trapping must be greater than incomes that can be earned or obtained in the settlements. As in other occupations based on the exploitation of fixed resources, there is a basic inconsistency between large numbers of trappers and high individual net earnings from trapping.

Fish are another resource which have been exploited for many years. The Indians usually eat or sell whitefish, yellow pickerel, trout, and sturgeon, and they usually feed marias, pike, and other coarse species to their dogs. (Greenwood estimates that in the summer of 1961 the Indians at Big Trout Lake used between two and three pounds of fish per person per day for themselves and their dogs.)[19] The increasing population will demand increasing quantities of some species of fish for human food, but at the same time, because more Indians are using snowmobiles and skiddoos instead of dogs to haul their sleighs, the demand for other species of fish will fall.

Employment and Incomes

There are few employment opportunities. Some Indians earn cash incomes by commercial fishing during the summer. A few men fish commercially in the winters, but

the Indian Affairs Branch does not usually encourage commercial fishing in winter because most lakes can easily be fished to the legal limit during the summer months when the fishermen cannot go trapping. Most men earn some cash incomes from the sale of pelts caught during the winter. Some men earn wages from regular or intermittent employment as janitors, fish station attendants, and as labourers for the Hudson's Bay Company, for other traders, for the Missions, and for the federal and provincial Governments. And usually most men earn some income during the summer by fighting bush fires.

Indians receive the allowances granted to all Canadians, and many receive extra grants of food and clothing if they can convince the Superintendent of their Agency that they are in need.

Earnings and grants together yield low cash incomes: Greenwood estimates that in 1961 the average cash income of Indians at Big Trout Lake was approximately $170.00 per person.[20] Dunning estimates that in 1954 the Indians at Pikangikum, just to the south of the West Central Patricia District, received average cash incomes of approximately $138.00 per person.[21] These incomes are lower than the average income ($200.00 per person) received during 1958 by Indians and Metis living in similar circumstances at

La Loche in Northern Saskatchewan.[22]

The Indians in the Patricia District receive a substantial part of their cash earnings from the sale of fish, but earnings of fishermen there are low in comparison with the productivity and earnings of fishermen elsewhere. It is estimated that during 1961, commercial fishermen on Three Lakes in the Patricia District received average net cash incomes of approximately $150.00 per man.[23] From July 1960 to June 1961, fishermen at Big Trout Lake received gross cash incomes that averaged approximately $260.00 per man.[24] Commercial fishermen at Island Lake (in Manitoba) earned average gross incomes of approximately $450.00 per man from April 1959 to March 1960:[25] these gross earnings probably imply average net earnings in the region of $150.00 to $300.00 per man.[26] Because the Indian fishermen received low earnings, and in the past their earnings were probably even lower, the Government has felt obliged to assist the Indians to catch and market fish.

During the past twenty years the Indian Affairs Branch has begun to intervene more and more in the commercial fisheries of the Patricia District. The Branch has tried to increase the numbers of fishermen and to raise their individual net incomes. To achieve these objectives the Branch has taught the Indians how to catch and handle

fish for the commercial market. It has provided fishing gear, free or at less than cost, and shore installations (ice houses, fish sheds, etc.) at no charge. It has bought commercial fishing licences from the provincial Government. It has organized fishing, and sometimes it has marketed fish on behalf of the Indians. In 1960 the Indians produced over 800,000 pounds of fish valued at over $107,000 (approximately 0.8 per cent of the value of all inland fish landed in Canada in that year).[27]

Even though the Branch has improved the fishing techniques, commercial fishermen in the West Central Patricia District generally use less gear and shore installations than fishermen elsewhere in the Northern Inland Waters of Ontario.[28] In 1960 they caught, on the average, fewer fish per person than fishermen elsewhere in the Northern Inland Waters of Ontario.[29] They do, however, produce more and better quality fish than they produced five or ten years ago.

Employment in fishing, and the aggregate and individual net incomes of fishermen, have increased recently. But fishermens' incomes are composed of earnings and subsidies, and although individual net incomes are now higher it is doubtful if this has been due to a <u>real</u> increase in

earnings. There can be no certainty, because we do not know what the level of earnings in commercial fishing would have been if the Indian Affairs Branch had not supplied gear and assisted in other ways.

Summary of the Problem

The economic problem of the West Central Patricia District is described, let us now summarize it. In recent years the population of the area has been increasing steadily, but the natural resources have not increased in quantity and they are not now exploited much more than in the past. More is known about the mineral and hydro-electric potential of the area than was known previously, but there has been no mining or power development. Changes in the levels of stocks of fish and fur resources are not reliably known.

Breeding stocks of animals and fish fluctuate naturally: they usually rise when hunting and fishing pressures ease, although under certain conditions intensive fishing can concentrate most members of a fish population into one or two year classes and may actually allow a sustainable increase in the annual fish harvest. However when animal or fish populations are concentrated into one or two year classes they are much more vulnerable to unfavour-

able natural conditions: a succession of poor breeding seasons or of very intensive hunting or fishing may reduce them to levels from which they will not naturally recover. Moreover changes in the breeding stock or in the annual harvest of one resource are not inversely correlated with changes in those of other resources, so that a decline in the annual harvest of fish is not necessarily compensated by an increase in the annual harvest of fur, and vice versa.

Increases in the sustained yield of wild animals and fish are limited by the natural rate of increase of the populations. Increases in the earnings of trappers and fishermen are limited by the physical harvest and also by the fact that fish and fur taken far from a settlement or railhead are usually less valuable than fish and fur taken near a railhead or settlement.

If the local Indian population continues to increase faster than the annual income from exploitation of renewable resources, it is inevitable that average annual net earnings (per person) from hunting and fishing will decline. Average net earnings from all sources (per person) will also decline unless unused resources are exploited, or unless employment in governmental, commercial, and religious institutions increases appropriately. The people who live in the West Central Patricia District are poor now, if their net earnings

per person fall, either they will become poorer or subsidies to their incomes must be increased.[30]

This study analyses the exploitation of one resource and it shows how the net earnings of the commercial fishermen can be raised. Two topics are examined: the efficiency of fish production, and the efficiency of fish marketing.

In this study, Chapter II is a brief history of commercial fishing in the Patricia District of Ontario. Chapter III is an examination of the economic forces that determine the quantities of fish caught and consumed, and the prices paid for fish. In Chapter IV some of the conclusions of Chapter III are examined in the light of an analysis of commercial fisheries in the Three Lakes in the Patricia District. Chapter V describes the costs of selling fish from the Patricia District in markets in Canada and the United States. Chapter VI describes the structure of the market for Canadian inland fish. Chapter VII outlines means by which fish from the Patricia District could be sold. Chapter VIII examines the profitability of marketing agencies, and compares institutions which might market fish from the area. Chapter IX summarizes the objectives of governmental policies, and outlines policy changes which would tend to increase aggregate earnings and incomes of commercial fishermen.

The thesis examines Indian fisheries in the Patricia District because few other people there do any commercial fishing. The federal and provincial authorities are forced to concert their policies towards commercial fishing because the federal government is responsible for the Indians and the provincial government is responsible for the management of the fish resources. In the northern Patricia District the division of authority is quite clear, for almost all the native population and fishermen are Indian. Elsewhere in northern Canada the native population includes many Metis, who are the responsibility of the provincial governments, and there the federal and provincial governments must harmonise their social and economic policies even more carefully.

Notes to Chapter I

1. Canada, Department of Mines and Technical Surveys, Atlas of Canada, (Ottawa: Queen's Printer, 1957), Map 33.

2. Ibid., Map 16, and D.F. Putnam, (ed.), Canadian Regions, (Toronto: J.M. Dent & Sons (Canada) Ltd., 1952, p. 293.

3. Putnam, 293.

4. Ibid., 294, and J.S. Rowe, Forest Regions of Canada, Bulletin 123, Canada, Department of Northern Affairs and National Resources, Forestry Branch, (Ottawa: Queen's Printer, 1959), p. 26.

5. The climate is classified as: Koppen, Dfc. Canada, Atlas of Canada, Map 30.

6. Ibid., Map 24.

7. Ibid., Map 27.

8. Rowe, 26.

9. Conversation with H.M. Babcock, Economics Division, Department of Forestry.

10. See Table 39, Statistical Appendix.

11. Canada, Department of Citizenship and Immigration, Census of Indians in Canada, 1959, (Ottawa: Queen's Printer, 1961), pp. 12, 13, 16, 17.

12. Canada, Department of Mines and Resources, Census of Indians in Canada, 1939, (Ottawa, Queen's Printer, 1940), p. 24.

13. Canada, Census of Indians in Canada, 1959, pp. 12, 13, 16, 17.

14. Canada, Dominion Bureau of Statistics, Canada Yearbook, 1961, (Ottawa: Queen's Printer, 1961), p. 167.

Notes to Chapter I, (continued)

15. cf. W.M. Hlady and B.R. Poston, The People of Indian Ancestry in Manitoba, Vol. III, under the direction of J.H. Legasse, Manitoba, Department of Agriculture and Immigration, (Winnipeg: 1959), p. 91.

16. Although they can probably adapt rapidly, cf. Elliot Lisbow and John Trudeau, "A preliminary study of Acculturation among the Cree Indians of Winisk, Ontario.", Arctic, Volume 15, No. 3, September 1962, p. 193.

17. Attawapiskat River, power potential estimated at 42,750 hp., Severn River, 56,451 hp. There are no estimates of the power potential on the Winisk River. Most of the power potential lies south of the Hudson Bay Lowlands.
Conversation with G. Kerr, Water Resources Branch, Department of Northern Affairs and National Resources.

18. Ontario, Department of Lands and Forests, Forest Resources Inventory, 1959, Report No. 23, of the Potentially Exploitable Area, (Toronto: 1959), p. 9.

19. M.H. Greenwood, Economic and Social Research, Department of Citizenship and Immigration, in conversation.

20. M.H. Greenwood, in conversation.

21. R.W. Dunning, Social and Economic Change Among the Northern Ojibwa, (Toronto: University of Toronto Press, 1959), p. 138.

22. H.L. Buckley, Trapping and Fishing in the Economy of Northern Saskatchewan, Report No. 3, Economic and Social Survey of Northern Saskatchewan, (Saskatoon: University of Saskatchewan, 1961), p. 6.

23. Chapter IV, Table 3 .

24. M.H. Greenwood, in conversation.

Notes to Chapter I, (continued)

25. Data obtained from Indian Affairs Branch, Manitoba Regional Office, Winnipeg.

26. Buckley estimates that annual fishing costs average approximately $150.00 per man per year. Buckley, 90.

27. Statistical Appendix, Tables 18 and 40.

28. Chapter IV, Table 1.

29. Ibid.

30. Aggregate subsidies, and subsidies per person.

CHAPTER II

HISTORICAL DEVELOPMENT OF THE INDIAN FISHERIES IN THE PATRICIA DISTRICT OF ONTARIO

The main part of the chapter consists of a brief history of the production and marketing of fish from the Patricia District. The chapter concludes with a description of current marketing methods, and an examination of the reasons why local fish dealers and the Indian Affairs Branch have been dissatisfied with marketing methods.

Developments before 1930

Inland fish have always formed an important part of the diet of the Indians of northwest Ontario. As long ago as 1762, Alexander Henry, watching the fall fishery at Sault Ste. Marie, commented:

> The fishery is of great moment to the surrounding Indians, whom it supplies with a large proportion of their winter provisions; for having taken the fish ... they cure them by drying in the smoke, and lay them up in large quantities.[1]

Fish were equally important as a foodstuff for the Canadiens and for the English fur traders. John Long, a fur trader whose area of operations extended northward and westward from Lake Nipigon,[2] makes it quite clear that he himself, his men, and his dogs, depended on the fish they were able to catch in order to survive through the winters.

Long writes that in two months fishing in the early winter of 1777:

> ....we had uncommon success, having caught about eighteen thousand weight of fish, which we hung up by their tails across sticks to freeze, and then laid them up for store.[3]

Even so, he and his friends nearly starved before the spring. And when Long describes the lakes of the region he usually reports their fishing potentialities; at Red Lake "Fish is caught here in great abundance", at Lac Sel "there are few fish except eels, catfish, and pike," and Caribou Lake "abounds with large trout, whitefish, pickerel, pike, and sturgeon."[4]

There has always been a domestic fishery in northwestern Ontario but commercial fishing began only when Indians started to sell fish to the fur traders. As early as 1753 Claude de la Potherie commented on the fact that Indians at Michilimackinac sold fish to the French,[5] and commercial fishing spread further northward and westward as the century progressed.

Indians used to catch fish using techniques that were substantially the same as those they use today. They used hand-made nets of animal tissue and vegetal fibers.[6] Sometimes they staked nets across rivers to catch fish.[7] In winter they used to set nets under the ice, and John Long's

description of the winter fishery and of setting nets under the ice with a primitive form of jigger,[8] is the first reference to the use of fishing nets in the area within three hundred miles to the north and west of Lake Nipigon.[9]

Some Indians living on the north shore of Lake Superior used to catch fish with scoop nets. Alexander Henry describes how the Indians at Sault Ste. Marie caught fish in the fall of 1762:

> The method of taking them is this: each canoe carries two men, one of whom steers with a paddle, and the other is provided with a pole, ten feet in length, and at the end of which is affixed a scoop net.... the fishermen....dips his net, and sometimes brings up, at every succeeding dip, as many as it can contain...a skillful fisherman, in autumn, will take five hundred in two hours.[10]

But sometimes fish were caught less easily: Henry describes how, at Michilimackinac in the first few months of 1763, he was obliged to spear fish through a hole he had made in the ice on the lake,[11] and D.W. Harmon notes that at Grand Portage on Lake Superior, "whitefish are sometimes speared".[12] John Long, when travelling, would set lines overnight and catch fish on hooks made from the thigh bones of a hare.[13]

Recent Developments (1930-1959)

At Bearskin, during the 1930's, there was a special kind of commercial fishing. During the summer men would catch

fish for commercial sale and the women would take the fish and smoke them, (fish can be stored for several months after they have been smoked). When the Indians had caught and smoked several batches of fish they would sell them at the Hudson's Bay Company Store, and in the Fall, when they outfitted themselves for winter trapping, they would buy their traps and some supplies with the credit they had built up from the sale of smoked fish. The Indians sold smoked fish because they kept no stocks of money to buy the gear and grubstake for trapping, and because the Hudson's Bay Company would rarely advance credit to them unless they had some collateral. During the winter they would sell pelts to repay advances and to buy more supplies - including smoked fish.[14] But in general there was no extensive commercial fishing in the northern part of the Patricia District until the end of the 1930's, when the dealers began to use airplanes to fly fish to the railheads and roadheads.

The fish resources of the northern part of the Patricia District were not heavily exploited for commercial fishing until after the second world war. Records maintained by the Ontario Department of Lands and Forests show that fish were caught commercially on Finger Lake and Sandy Lake from 1947 onwards, on Big Trout Lake and Wunniman Lake from 1951 onwards, and that commercial fishing was extended to other lakes in the

area throughout the 1950's.[15]

Statistics of production of fish in the northern Patricia District have been fragmentary and inaccurate until the last few years, but recently they have been improved. Estimates of fish production in the Sioux Lookout Forestry District (an area which includes much of the Patricia District) were first published in 1958. Before 1958 commercial production was certainly less than the annual average catch, of almost 2,600,000 pounds of fish, between 1958 and 1960. (See Table 27, Statistical Appendix.)

The Indian Affairs Branch has encouraged fishermen in the Patricia District to produce more fish for sale and for domestic consumption. Records show that as early as 1939 the Branch bought some fishing gear for Indian fishermen in the Patricia District.[16] Since 1939, the Branch has taken an increasing interest in the welfare of the Indian fishermen. Today the Branch assists many Indians in the north of the Patricia District to catch and to market fish. The Branch has provided shore installations and fishing gear, it has instructed fishermen in modern fishing and fish handling methods, and it has arranged the sale of most of the fish caught for the commercial market. As a consequence of this assistance to fishing and fish marketing, commercial fisheries now exist in places where, in the past, private fish dealers

did not consistently buy fish.

Although the Branch has instructed the fishermen in modern fishing techniques, and although it has provided them with modern fishing gear, there have been no great changes (during the past decade) in the fishing techniques. There have however been minor improvements in fishing gear and methods. Good quality canoes are now imported from elsewhere in Canada, and almost all fishermen now use outboard motors. The fishermen now use nets made of nylon thread; these nets last longer and are more productive than nets made of linen thread. Fishermen now raise their nets more frequently than they used to, they use more ice upon the fish, and they dress and handle fish more carefully than in the past. The improvements in gear and fish handling methods allow the Indians to produce and sell better quality fish than previously.

Marketing

Although there has been no great change in fishing techniques, there have been two great changes in the marketing of fish caught in the central part of the Patricia District. One change is the steady increase in the importance of the Indian Affairs Branch in fish marketing, and the other is the increase in the proportion of the catch that is eventually sold as frozen fillets. Until a very few years ago all of the

fish from the lakes in the Patricia District were sold on the fresh fish market or they were dumped. The sale of frozen fish from the central part of the Patricia District was usually unprofitable, and there was no plant nearby to fillet and freeze the fish. Since 1958 some fish from the central part of the Patricia District have been filleted and frozen in a plant at Island Lake, Manitoba, and in 1961 fish were first filleted and frozen in a plant at Pickle Lake, Ontario.

During the 1950's almost anyone: fish dealers, air transport companies, commercial fishermen, Indians, or Indian Bands, could obtain a licence to fish commercially in the Patricia District.[17] Fish dealers would sometimes buy licences for Indians or for Indian Bands. The licencees would arrange for fishermen to catch fish; sometimes a licencee would employ local Indians, but usually he would find that a fishing crew from outside the area would be more profitable than cheaper but less productive Indian fishermen.

Except at fisheries organized by the Indian Affairs Branch, fish dealers used to provide almost all of the gear used by fishermen. They rented some gear, and they advanced some gear on a repayable basis.

During the early 1950's at least one of the major buyers of fish from the Patricia District was owner of an air

haulage business, and, having contracts to fly equipment to government installations in the north of the Province he was anxious to secure south bound backhaul. Fish freight was satisfactory backhaul; it did not require scheduled flights, and a pilot could pick up fish if it was convenient to do so. In consequence fishermen at some lakes could sell their fish, fishermen on others could not, and dealers were prepared to invest capital in equipment only on the few lakes which were suitably located (e.g. Big Trout Lake, Sandy Lake, North Caribou Lake). Moreover dealers were not prepared to invest heavily, because they did not buy fish steadily, and therefore fixed investment on northern lakes was unused much of the time.

Fish dealers arranged for airplanes to carry supplies to fishermen and to fly fish to the packing stations. Communications between dealers and fishermen were often poor. Occasionally when an airplane would arrive at a lake to pick up fish, there would be no fish ready to be taken away. Conversely, fishermen would sometimes fish under an impression that an airplane would come to pick up the fish; but none would arrive. Fish have to be kept in ice if they cannot be flown to a packing station very soon after they have been caught. Until the Indians learned to fish steadily, until they learned how to

handle and ice fish for the commercial market, and until local dealers learned to organize regular fish flights, many fish used to spoil before they were received at the wholesale markets. Dealers do not buy spoiled fish; they dump them, and the Indians caught substantial quantities of fish for which they received no payment.

Partly because the fish from the central part of the Patricia District were of poor quality, partly because they bore high transportation costs, and partly because the Indians lacked strong bargaining powers, the dealers were able to pay lower prices for fish from the Patricia District than for fish from elsewhere in Ontario.[18]

The nominal price paid for fish by dealers may not be the average price actually received by fishermen. Dealers often provide some gear free or underpriced, in effect paying more than the nominal price, but they normally pay less than the agreed cash price for fish that have been badly handled or that are of poor quality. When the Indians delivered fish that were of poor quality and that had been badly handled, they were not paid the cash price agreed on for good quality fish. If dealers weighed fish carelessly, or if they paid in kind, fishermen found it difficult to estimate the average price they had actually been paid for fish they had caught.

For several reasons therefore, many Indians were

dissatisfied with the marketing of their fish, and some of them requested the Indian Affairs Branch to help them to sell their fish. In 1952 the Branch organized the sale of fish from Sandy Lake,[19] by 1953 it was financing investment in shore installations at Big Trout Lake,[20] and in 1954 it organized a commercial fishery at Round Lake.[21] In later years the Branch opened up commercial fisheries on other lakes in the Patricia District, where previously there had been no regular commercial fishing.[22]

The Indian Affairs Branch raised the gross value of sales of fish from the Patricia District, mainly because it financed new fisheries and sold more fish, and partly because it secured higher prices for fish. The Branch secured higher prices partly because it persuaded the Indians to handle fish more carefully, partly because it had more bargaining power than the separate Indian Bands, and partly because it was aware of alternative markets in which it could sell fish.

During the early 1950's the Indian Affairs Branch arranged the sale of relatively few fish from the Patricia District, but since then the Branch has gradually organized more extensive Indian fisheries and has been obliged to arrange the sale of more fish. Before 1959, the Superintendent of the Sioux Lookout Indian Agency, acting on behalf of the Indians, sold fish, daily or on contract, to dealers in

Winnipeg, Montreal, and Ontario.[23] Since 1959 the Branch has arranged the sale of most of the commercial production of fish from the central part of the Patricia District by public tender.[24]

Present Organization (1959-1961)

Production

At the present time the Indian Affairs Branch assists many Indians in the Patricia District to catch and market fish. The Branch provides shore installations, and fishing gear, it instructs fishermen in modern fishing and fish handling techniques, it arranges the packing and shipment of many fish, and it arranges the sale of almost all of the fish. It would be near the truth to say, as was once said of the Saskatchewan Fish Marketing Service, that the Government Agency "does everything but the actual fishing."[25] However the Indians themselves decide whether they should fish commercially, they decide who should fish, and they also decide whether or not to ratify contract sales made for them by the Indian Affairs Branch.

Intervention by the Indian Affairs Branch can be justified on several grounds. First, commercial fishing in the Patricia District is an important source of income and employment for the Indians resident in the area, and an active policy

to modify commercial fishing organization and to raise fishermens' incomes is consistent with the other welfare objectives of the Government. Second, dealers did not, in the past, invest enough capital in shore installations to enable the Indians to provide a steady supply of good quality fish, and the Indians themselves were too poor to make the necessary investment. Nor did the dealers instruct the Indians satisfactorily in modern fish handling techniques. And finally, the Indians were not the economic equals of the fish buyers: they were poorer, less well educated, less well aware of alternative markets, and dependent upon the dealers for much of their capital and most of their transportation services. In short they were less able to take advantage of the dealers than the dealers were able to take advantage of them.

By assisting the Indians to market their fish, the Indian Affairs Branch has raised local incomes and has succeeded in providing continual summer employment for many men in the Patricia District. Most commercial fishermen in the West Central Patricia District are fishermen equipped by the Branch, but some buy their own gear, and are equipped by fish dealers for whom they catch fish.

Marketing

Having enabled the Indians to catch fish, the Indian Affairs Branch was obliged to assist the Indians to market them. At present the Branch arranges the sale of fish by public tender. The Branch decided to sell fish by public tender in order to force fish buyers to compete more fiercely with each other, and in order to allocate fish among with them quite fairly. Each spring the Branch requests offers from fish dealers for the summer production of fish from the Indian fisheries in the Patricia District. The Branch then awaits the dealers' offers. It chooses between the tenders on the basis of the prices offered for the fish, and the degree to which the offers meet the stated conditions of sale.

The Indian Affairs Branch has not always found it easy to sell fish by tender. In 1961 the dealers bid prices for fish that did not satisfy either the Indians or the Indian Affairs Branch. The Branch was then obliged to negotiate sales with two of the companies that it had earlier invited to tender for the fish.[26]

Whether the Branch invites fish dealers to tender for fish, or whether the Branch negotiates with fish dealers over the sale of fish, the dealers consider that the Branch is

intervening in the inland fish market. And the fish dealers resent the presence of the Indian Affairs Branch in the market for inland fish. Some dealers feel that the Indian Affairs Branch increases the risks of fish dealing, some are dissatisfied because they cannot buy fish on the terms offered by the Branch, and some about the way in which the tender system is operated.

The feeling that the fish business is riskier now that Indian Affairs sells fish was expressed by one dealer at a meeting of the North West Ontario Fisheries Advisory Committee. He said that the fish dealers:

> ....feel that under the present policy or lack of a settled policy by the Department of Indian Affairs in the methods of selling fish produced by the Indian Bands they have not the sense of security necessary to build up the business.[27]

In the past, when the Indian Affairs Branch gave less attention to the fisheries of the Patricia District than it gives today, the fish dealers presumably had the security that they feel they now lack. At that time however, the Indians were so unsatisfied with the fish marketing that they asked the Indian Affairs Branch to help them to market fish.

Until 1961 the Indian Affairs Branch did not assist any Indians at Lake Nipigon, south of the Patricia District, to market fish. The fish marketing there in one dealer's words,

"is pretty well controlled by a very keen business firm".[28] It may be assumed that this company has had sufficient security to build up the fish business to its satisfaction. But the business that the company has built up at MacDiarmid has evidently not been satisfactory to the Indians there. These Indians are now considering whether or not they should set up fish packing facilities, and sell fish directly to wholesalers in the Toronto area.[29]

Whether the claim that the fish companies now have less security than in the past is justified or not, past experience in the Patricia District and present experience on Lake Nipigon do not indicate that the Indians gain if fish dealers have more security than they have today in the Patricia District.

Another dealer claims that the quantities of fish put out to tender were too great for many local dealers to handle, and for that reason some dealers failed to make bids for the Indians' fish.[30] This claim is valid, but if the Branch were to sell fish in smaller quantities it would incur greater marketing costs, and it is almost certain that the local dealers could not offer prices high enough to outweigh these extra costs. Local dealers cannot normally offer prices that are higher than those offered by the large wholesalers, for local dealers must sell the fish either to the larger

wholesalers or processors, or they must compete with them in selling to dealers in the United States or in eastern Canada.

Dealers have also expressed dissatisfaction with the operation of the tender system.[31] One dealer stated that although the Branch claims to sell fish by tender, in fact, it does not do so. He claims that in 1961 the Branch obtained advance estimates, from fish dealers, of the value of the Indian fish, and has then used these estimates as the basis for negotiations with the dealers over the final fish prices.[32] The events of 1961 may bear this interpretation, but the Branch would not be forced to negotiate prices if the dealers would offer prices which Indians were prepared to accept.

Some members of the Indian Affairs Branch have been dissatisfied with the commercial fishing operations in the Patricia District. They point out that: (1) the Indians regard commercial fishing as something they do for the Indian Affairs Branch instead of for themselves, (2) commercial fishing is still subsidized, (3) the Branch has been unable to market fish by tender as easily as had been hoped.[33]

Although these objections are valid, the Indian Affairs Branch has some real achievements to its credit. Fish dealers now buy fish regularly on some lakes where they

previously did not buy fish, and they pay higher average prices than they used to pay. The Branch has enabled the Indians to produce and to sell more fish, and it has raised the numbers and incomes of commercial fishermen above the levels they would otherwise have reached. These changes have occurred because: (1) the Branch has instructed the Indians in modern fishing and fish handling techniques, (2) the Branch has borne the costs of some of the equipment necessary to produce more and better quality fish, (3) the Branch has been able to use more bargaining power, in dealing with the local fish dealers and fish wholesalers, than the Indian fishermen could have used. In general, the Branch has been able to implement its policies because it has not been obliged to make the commercial fisheries in the Patricia District economically self supporting.

Notes to Chapter II

1. Alexander Henry, Travels and Adventures in Canada and the Indian Territories Between the Years 1760 and 1776, Ed. James Bain, (Toronto: George N. Morang & Company Ltd., 1901), p. 62.

2. John Long, Voyages and Travels of an Indian Interpreter and Trader, Ed. Reuben Gold Thwaites, in Early Western Travels 1748-1846, (XXXII, Cleveland: The Arthur H. Clark Company, 1904), II, p. 10. and
Cameron, Duncan, "The Nipigon Country", 1804, in Masson, Louis F.R., Les Bourgeois de la Compagnie du Nord Ouest, (II, Quebec: Coté, 1889, 1890), II, pp. 239, 240.

3. Long, 94.

4. Ibid, 118.

5. Claude Charles le Roy Bacqueville de la Potherie, Histoire de l'Amerique Septentionale, (Paris, 1753), trans. and ed. by Emma H. Blair, in The Indian Tribes of the Upper Mississippi Valley and the Region of the Great Lakes, (II, Cleveland: The Arthur H. Clark Company, 1911), I, p. 276.

6. Otis T. Mason , "Nets, Netting, and Network", Handbook of American Indians North of Mexico, ed. F.W. Hodge, Bulletin 30, Bureau of American Ethnology, Smithsonian Institution, (II, New York: Pageant Books Inc., 1959) I, p. 59.

7. De la Potherie, ed. Blair, 287.

8. Long, 94.

9. Almost all early references to fishing nets in the Great Lakes region and northwards, describe their use during winter.

10. Henry, 61.

11. Ibid, 66.

12. Daniel Williams Harmon, A Journal of Voyages and Travels

Notes to Chapter II, (continued).

in the Interior of North America, Ed. Daniel Haskell, (New York: Allerton Book Co., 1922), p. 16.

13. Long, 99.

14. M.H. Greenwood, Economic and Social Research, Department of Citizenship and Immigration, in conversation.

15. Letter from C.H.D. Clarke, Chief, Fish and Wildlife Branch, Ontario Department of Lands and Forests, dated 22 February 1962. Records of the Indian Affairs Branch show that Indians at Sandy Lake did some commercial fishing during the 1930's and the early 1940's.

16. Indian Affairs Branch, Confidential Files.

17. During 1959 licences to fish commercially in the Patricia District north of the C.N. railway line were held by all of these classes of licencees.

18. cf. Figures 10, 11, Appendix I. Even today fish caught in the West Central Patricia District fetch lower prices than fish caught further south.

19. Indian Affairs Branch, Confidential Files.

20. Ibid.

21. Ibid.

22. And it arranged the construction of more than 100 ice houses in the West Central Patricia District.

23. Indian Affairs Branch, Confidential Files.

24. Ibid.

25. A.H. Macdonald "Reasons for Change in Structure and Board of Directors of Fish Marketing and Trading", document dated 23 July 1958. Quoted in: Helen L. Buckley, Trapping and Fishing in the Economy of Northern Saskatchewan, Report No. 3, Economic and Social Survey of Northern Saskatchewan, (Saskatoon: University of Saskatchewan, 1962), p. 102.

Notes to Chapter II, (continued).

26. In 1961 first tenders for the purchase of fish from the commercial fisheries at Bearskin, Big Beaver House, Kassabanika, and Round Lake were not accepted. See Indian Affairs Branch, Confidential Files.

27. "Minutes of a Meeting of the North Western Ontario Fisheries Committee", Sioux Lookout, 20 November 1961, p. 4.

28. "Ibid.", 3.

29. Conversation with a member of the Indian Affairs Branch.

30. Fish dealer, June 1961.

31. Indian Affairs Branch, Confidential Files.

32. Fish dealer, in conversation, July 1961.

33. See footnote 26. Sales during 1961 were, admittedly, exceptionally hard to make.

CHAPTER III

A MODEL OF THE MARKET FOR INLAND FISH

The chapter begins with a description of a set of relationships which are thought to exist between the input of resources used to catch inland fish, the catch of fish, the wholesale and lakeside prices of fish, and the quantities of fish consumed. On the basis of these hypothetical relationships the chapter shows how governmental intervention in the organization of fishing and fish marketing can raise fishermens' incomes. The chapter concludes with an outline of means to raise the incomes and economic welfare of fishermen in an isolated market area.

A Model of the Market

The quantity of fish caught by fishermen during one period of time depends upon: (1) the supply of fish in the lakes, (2) the labour applied to fishing, (3) the amount of capital invested in fishing gear, (4) the techniques of fishing, (5) the area of lakes used by commercial fishermen.

The supply of fish in the lakes is determined by the edaphic environment, the climate, and the rate at which fish have previously been caught. Man can influence the rate at which fish are caught, but for all practical purposes the two other factors are beyond his control. Labour is needed not only to catch fish, but also to maintain fishing gear and

equipment in good shape. The amount of labour that is supplied depends upon the relative earnings of fishermen and other men, and to some extent upon traditional occupation patterns. The level of fishermens' aggregate earnings of course depends upon lakeside prices and the quantity of fish that are landed. In general, the more labour that is supplied (or the more fishermen there are), the more fish can be caught. The amount of capital invested is the quantity and quality of gear that is used to catch fish. Within limits it is true that the more canoes and nets, etc. (in reasonable combinations) that are used, the more fish can be caught. Techniques of fishing also influence the quantity of fish caught. In general, the more advanced the fishing techniques, the more fish that a given number of men can catch with a given amount of gear, or the fewer men and the smaller the amount of gear needed to catch a given quantity of fish. The quantity of fish caught also depends upon the area of lakes used for fishing. Within certain limits, the greater the area used for fishing, the more fish can be caught.

In the West Central Patricia District of Ontario, the quantity of fish landed for sale depends upon these factors and also upon the quantity of fish that is required for domestic consumption. If the local population is large, if the supplies of other native foodstuffs are limited, and if

cash incomes are small, the Indians need large quantities of fish for themselves. The more fish that are needed for domestic consumption, the fewer the fish that fishermen are prepared to sell.[1]

Indians sell fish in order to earn cash incomes. When lakeside prices rise they can profitably spend more time fishing. But when lakeside prices have risen sufficiently to yield individual fishermen an acceptable net income from their average catch of fish, any further increase in fish prices enables them to maintain their accustomed standard of living by working less hard.[2] This adverse effect on the supply of labour to fishing is normally more than offset by fishermen who need greater cash incomes and who find it worth while to spend more time fishing, and by fishermen on less accessible lakes who find that they can fish commercially for the first time. Higher lakeside prices for fish therefore normally cause an increase in the quantity of labour available for commercial fishing. Since fishermen need boats and gear, any increase in the number of fishermen induces an appropriate increase in the capital requirements.

Capital is supplied by fishermen, fish dealers, and the Government. Most Indian fishermen have little or no cash savings and few capital assets, but they usually own their own canoes, outboard motors and some gear. The fact that

fishermen own some of the gear that they use indicates that they can and do save and invest some part of their incomes; it also suggests that the domestic investment in gear might be inhibited by the low returns to labour and to capital employed in fishing as well as by a cultural preference for present consumption as opposed to consumption in the future.

But whatever the expected returns from investment in fishing gear, fishermen can only buy their own if they have cash savings or capital assets; otherwise someone else must advance gear to them.

Fish dealers advance gear to fishermen and invest in shore installations if they expect fishing and fish marketing to be profitable. The profitability of fishing determines the extent to which fishermen can repay advances of gear; dealers are more likely to advance gear if they expect to be repaid than if they do not expect to be repaid. The profitability of fish marketing determines how much capital dealers are prepared to invest in shore installations, and how much of the advances they make to fishermen they are prepared to write off as bad debts. Generally, the greater the profits that dealers expect to obtain from fish marketing, the more capital they are prepared to invest in shore installations and fishing gear.

The Indian Affairs Branch invests in fishing gear and shore installations; nominally on a repayable basis, actually most investments are not paid for by the Indians. In contrast to fish dealers, the Indian Affairs Branch is more likely to invest in gear and shore installations when commercial fishing and fish marketing are unprofitable than when they are profitable.[3] Fishermen tend to be short of gear and dealers unwilling to invest when commercial fishing and fish marketing are unprofitable.

Because the level of wholesale prices of inland fish largely determines the input of resources which can be profitably used up to catch fish and because the input of resources largely determines the quantity of fish which is caught (allowance being made for natural fishing conditions), there is an effective relationship between different wholesale fish prices and the equilibrium quantities of fish supplied to the market. Such a relationship is termed a supply schedule: the relationship is reversible; changes in the quantities of fish supplied to the market usually cause changes in fish prices, and changes in fish prices usually cause later changes in the quantities of fish supplied to the market.

We may imagine a monthly (short term) supply schedule.

In the short term both the capital investment in gear and fishing methods are fixed: these two fixed factors, in conjunction with natural fishing conditions, determine the maximum quantities of fish which can be produced at all prices: they determine the position of the supply schedule. In the short run the response of fish supplies to changes in fish prices depends upon the induced changes in the number and activity of fishermen, and the extent to which fishermen are able to use their gear on previously unfished lakes.

Alternatively we may imagine an annual (long term) supply schedule. In the long term both capital investment in gear and fishing methods can be changed (i.e. over time the positions of consecutive short term supply schedules can be changed); changes in long run wholesale fish prices induce greater changes in equilibrium fish supplies than changes in the short run wholesale prices. The position of the supply schedule in the long run however depends upon the natural fishing conditions and the state of fishing technology. The elasticity of supply is greater in the long run than in the short run because changes in long run wholesale prices cause relatively greater changes in the input of resources into commercial fishing.

Both long term and short term supply schedules

represent the supply of a flow of fish over time: they represent in fact a sequence of instantaneous supply schedules. Given a particular market demand for inland fish, the position of the supply schedule determines the equilibrium price and sales of inland fish. But we have still to examine the determinants of demand.

Wholesalers' demand for inland fish is derived from the demand of their customers; their customers demand inland fish: fresh, frozen, as fillets, and in other processed forms. In general consumers will buy greater quantities of fish at lower prices than at higher prices.

The relationship between average wholesale prices of fish and the equilibrium quantities of fish that consumers demand at each price is known as the schedule of demand for inland fish. In general the quantity of inland fish demanded at the wholesale level, given a set of prices of fish and fish products at retail, depends upon: the time of the year (religious holidays are very important), the number of habitual consumers of inland fish, the prices of fish substitutes, and consumers' incomes and tastes.

At the time of the Passover and the Feast of the Tabernacles (Jewish religious holidays) demand for inland fish is usually high,[4] many Jews also eat inland fish - particularly whitefish and pickerel, on Fridays and Saturdays.

The habitual consumers of Canadian inland fish are almost all Jewish,[5] and most live in the United States of America. Gentiles frequently eat trout and sturgeon, but their total consumption of other inland fish is relatively insignificant.[6]

Total demand for inland fish depends to a large extent upon the degree to which younger Jews observe traditional eating practices. If younger Jews observe these practices less closely than their elders do,[7] then in time the average per capita demand for inland fish tends to fall. If this fall is not offset by an appropriate increase in the number of consumers then total demand for inland fish falls. If some consumers find frozen fillets of fish or commercially made gefilte fish more convenient to prepare than fresh fish,[8] then retail demand for fish shifts from fresh to processed fish.[9] Such a shift in demand has little effect upon the level of total demand for inland fish at the lakeside, but it does affect the demand for fish from particular lakes,[10] and it does affect the relative profitability of different branches of the fish business.[11]

Because Jews demand inland fish for religious and traditional reasons, few other foods, at equivalent prices, are ready substitutes.[12] Changes in the prices of sea fish and meat probably have relatively little impact upon the quantity of inland fish consumed, changes in the prices of

different species of inland fish however probably cause substantial substition between species. Very little is known about the income elasticity of demand for fish: Göben estimates that, in Germany, income elasticity of demand for fresh fish is 0.59.[13] Since Jews feel that inland fish is a specialty, income elasticity of demand for Canadian inland fish in the United States is almost certainly positive also.

We may imagine a short run and a long run schedule of demand for inland fish. In general, consumers demand more inland fish at lower prices than at higher prices, and the level of demand at all prices (i.e. the position of the demand schedule) depends upon the number of habitual consumers, the level of per capita incomes, and consumers' tastes. In the short run each of these factors can be regarded as fixed; the religious feasts however cause the short run demand schedule to shift upward at certain times of the year (i.e. cause consumers to be prepared to buy more inland fish at all prices) and induce seasonal changes in the prices of inland fish. Seasonal fluctuations in consumer demand then would cause fluctuations in short run fish prices even in the absence of fluctuations in the short run supply schedule. If fishermen can anticipate changes in consumer

demand, an increase in the quantity of fish supplied may reduce the short run price fluctuations.

In the long run the number of habitual consumers of inland fish changes, the average per capita income of consumers changes, and consumers tastes change. We hold a tentative hypothesis that there is a gradual downward shift in the demand for the species of inland fish exported from Canada,[14] but we believe the long run (annual) demand schedule to be steadier than the long run schedule of supply of fish.

We postulate unsteady short run supply schedules because fish catches are substantially influenced by seasonal and irregular changes in natural fishing conditions. We postulate also that the long run annual supply schedule has a marked tendency to fall over a period of several years because, as new fishing methods and gear are introduced, the unit cost of catching fish declines. We recognize of course that changes in natural fishing conditions (as for example on the Great Lakes during the last ten years) can shift the position of the long run supply schedule substantially; the shifts can last for several years.

Although we can make reasonable hypotheses about the likely steadiness of the annual demand and supply schedules we are far less able to estimate the elasticity of the demand

for fish or of the supply of fish. Empirical work suggests that in Canada the price elasticity of demand for fish is about 0.6;[15] thus any shifts in the short run supply schedule tend to cause substantial changes in the short run wholesale price of fish.

We have no estimates of the elasticity of supply of inland fish: we know that in the short run changes in the wholesale price influence mainly the labour input, but that long run price changes can cause substantial changes in capital investment in fishing and can bring marginal lakes into production or remove them from production. We postulate only that the long run supply schedule is substantially more elastic than the short run schedule.

One consequence of inelastic short run demand and supply schedules is that if one or both schedules should fluctuate, then no matter how well the long run supply of fish is adjusted to the long run demand for fish, there follows a substantial change in the short run wholesale price of fish.[16] If fishermen anticipate short run changes in demand they can adjust their labour input in order to adjust future fish supplies and to reduce short run price fluctuations. If the object of commercial fishing were to reduce short run price fluctuations fishermen could also adjust their labour supply to changed natural fishing conditions (i.e. work harder

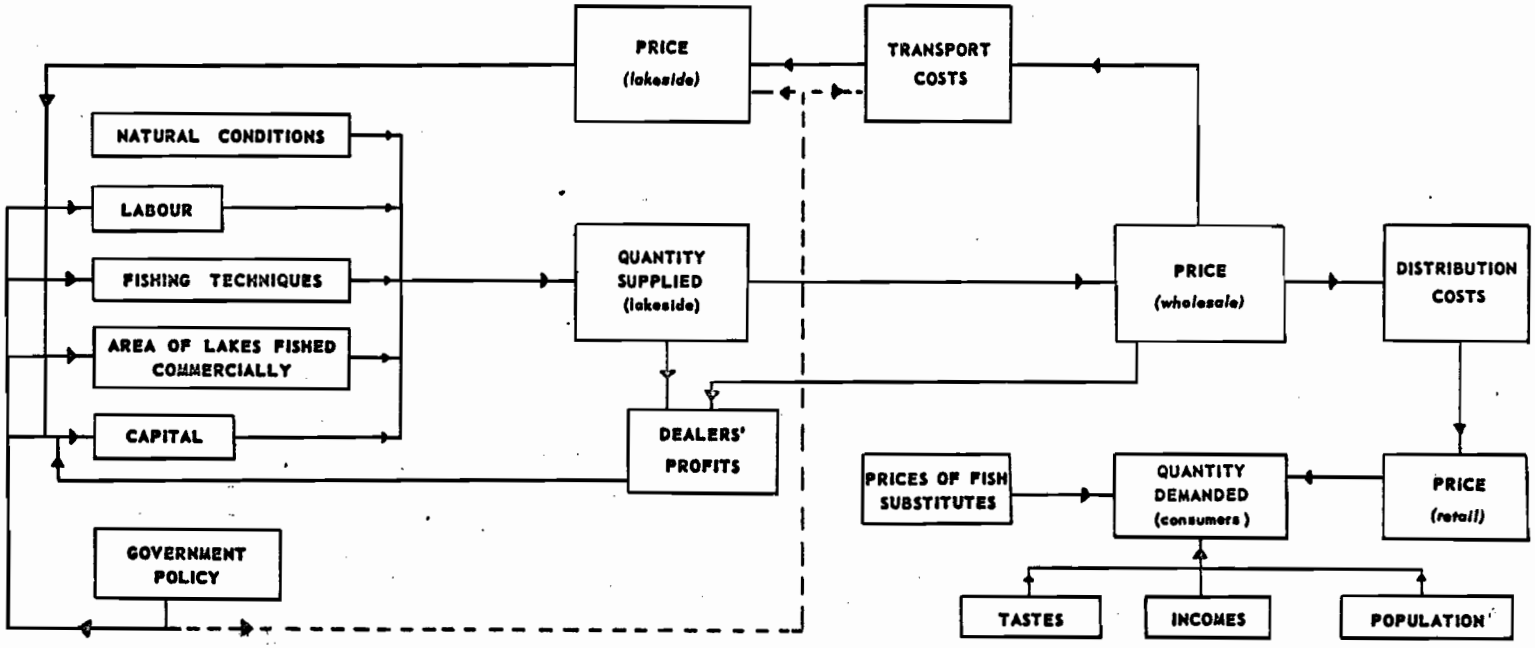
when fishing becomes more difficult) and reduce short run price fluctuations even further. But fishermen catch fish in order to earn incomes, not in order to minimize price fluctuations: there is no reason to believe that all fluctuations in the wholesale prices of fresh fish can or should be eliminated.

The wholesale prices of fish determine other variables. If marketing costs and profit margins are stable, then changes in wholesale prices of fish cause changes in the levels of lakeside and retail prices of fish. In fact, lakeside prices, retail prices, marketing prices, and marketing profits, all fluctuate from time to time.[17]

If the demand schedule for inland fish should rise, dealers can afford to buy more fish. They can buy extra fish on lakes already in production and some fish on lakes where previously there was no commercial fishing. But dealers cannot buy more fish unless fishermen are prepared to catch more fish; fishermen do not spend extra time fishing to catch more distant or more elusive fish unless they receive extra payment. Dealers therefore must pay more for the extra fish, and the extra payment for more costly fish implies higher prices for all fish they buy.

Dealers therefore have an incentive to pass to fishermen, at least some part of any long term increase in

Diag. 1 ECONOMIC FORCES IN THE MARKET FOR INLAND FISH *



NOTES: * ARROWS SHOW DIRECTION OF INFLUENCE. THIS DIAGRAM SUGGESTED BY S.H. LOK, INDIAN AFFAIRS BRANCH.

wholesale fish prices. The more severe the competition between dealers, the more rapidly and completely changes in wholesale prices are transmitted to lakeside prices. When dealers do not compete with each other changes in wholesale prices are not necessarily transmitted to lakeside prices and increases in lakeside prices may lag behind increases in wholesale prices.

To summarize, consider Diagram 1, where the structure and operation of the market for inland fish is shown diagramatically.

The boxes represent economic variables. Changes in one variable normally influence other variables; the lines between the boxes show the direction of major influences. The supply of inland fish means the rate at which quantities of inland fish are supplied to the wholesale market. The demand for inland fish means the rate at which consumers buy inland fish. The prices of inland fish are the prices of inland fish relative to the prices of substitutes for inland fish.

The diagram shows that the supply of inland fish is determined by: natural fishing conditions, the number of fishermen, the amount of capital invested in gear and equipment, fishing techniques, and the area of lakes fished commercially. The demand for inland fish is shown to depend

upon the prices of inland fish, consumers' personal incomes, the numbers of consumer, the tastes of consumers, and the time of the year.

The diagram shows that the wholesale prices of fish depend upon the quantities of fish landed for commercial sale, and upon the quantities of fish that consumers are prepared to buy at different retail prices. The wholesale prices of inland fish influence the lakeside and retail prices of fish, and the rate of marketing profits. The size of marketing profits depends also upon the quantity of fish that dealers sell.

A rise in the demand schedule for inland fish normally causes some rise in the wholesale prices of inland fish. If a small rise in wholesale prices causes lakeside prices to rise and thereby induces more men to catch more fish, then wholesale prices do not rise very far. If a rise in the demand schedule causes the differential between wholesale and lakeside prices to widen and thereby allows dealers to make higher profits, it will induce them to increase their investment in gear and equipment, which will raise the fish supply schedule, and thereby restrict the price rise. Seasonal increases in demand may induce a rise in the lakeside prices and encourage fishermen to catch more fish, but they rarely

justify a level of investment in gear sufficient to satisfy extra demand without any rise in prices.

A fall in the supply schedule of inland fish normally causes a fall in the wholesale prices of inland fish. If consumers' demand is inelastic, then wholesale prices fall substantially. If a small rise in retail prices of fresh inland fish induces consumers to buy more frozen fillets or other substitutes for fresh inland fish, (i.e. if the cross elasticity of demand is relatively high) then retail prices of inland fish do not rise substantially. Moreover, if there are substantial stocks of frozen fillets which can be supplied to market at no increase in unit costs, then a short run upward shift of the supply schedule of fish may be followed as much by a reduction in stocks of frozen products as by increases in wholesale prices of fresh fish. In fact seasonal changes in the demand for inland fish, and seasonal changes in the supply of inland fish often reinforce each other and create large short term changes in the level of all inland fish prices. (See Appendix I).

The Government can intervene in the market for inland fish to change the numbers of fishermen, their incomes, and the quantity of fish that they produce. The Government can instruct fishermen in modern fishing techniques, so fishermen can use their gear more efficiently, and it can instruct

fishermen in modern fish handling techniques, so that they can produce fish of a better quality and having a higher market value. Either form of assistance will improve the efficiency of fishing or fish handling and will tend to raise aggregate net cash earnings from fishing. The Government can also provide fishing gear and marketing services at less than cost. In the following section we shall examine the tools of governmental policy in greater detail.

Government Policy

Let us suppose that commercial fishing in the Patricia District does not offer as much employment and income to the residents as would be economically possible.

The Government can raise the numbers, and the incomes of all individual fishermen if it undertakes policies to increase the aggregate net income of fishermen. Given an increase in aggregate net income, then if the number of fishermen is fixed, the average net earnings per man can rise further than if the number of fishermen is allowed to rise too, conversely, if the average net earnings per man are kept stable, the number of commercial fishermen can increase more than if average net incomes per man are allowed to rise.

The Government can enable commercial fishermen to earn higher net incomes. It can teach fishermen how to use

modern fishing methods, so that each man can catch a greater number of fish with the same gear. It can show them how to handle fish properly, so that the quality of the fish they sell is improved and the lakeside value of the fish is raised. It can pay some of the costs of fishing, and thereby lower fishermens' costs, or it can pay some marketing costs and raise the lakeside prices of fish. Any of these policies will increase the aggregate returns to fishermen.

Fishermen can raise their aggregate earnings by selling more fish, assuming the landed cost per pound of fish to remain unchanged, only if the price elasticity of demand for their fish is greater than unity.

If sales from a particular area form a sufficiently small proportion of total sales, then any change in output from that area will have a less than proportionate influence upon the level of wholesale prices for the particular product. If wholesale prices decline proportionately less than any given increase in the quantity of sales from the area, then the total value of those sales rises. The demand for fish caught by a small group of fishermen is more elastic than the demand for the fish caught by all fishermen, and a small group of fishermen can readily raise their aggregate gross incomes by selling more fish on the open market.

The Government can also enable fishermen to sell

better quality fish by instructing them in modern fishing and fish handling methods. The costs of producing good quality fish are little greater than the costs of producing poor quality fish, but the sale prices of good quality fish are substantially higher than the sale prices of poor quality fish.[18] Improvements in fishing methods can be cost reducing improvements or output increasing improvements. A change in technique that allows a fisherman to catch an unchanged quantity of fish with the aid of less gear, or better quality fish with the same or less gear, is a cost reducing innovation.

If cost reducing or quality improving innovations occur in the methods used by a small group of fishermen, these fishermen can improve their aggregate net earnings. If these innovations occur in methods used by fishermen who live in an isolated area where labour and capital are locally mobile, then any increase in average net earnings per man will draw men into commercial fishing until average net earnings per fisherman fall to the level the same men could earn in other occupations in the area. Total net earnings from fishing however would be higher than before the change.

Changes in methods that allow individual fishermen to catch more fish have more complex results. (We assume

that the price elasticity of demand is greater than unity). If output increasing innovations require fishermen to use more gear or more expensive gear (and they usually do), and if there are effective limits to the size of the total local catch (and in the Patricia District there are), then, unless the number of fishermen is allowed to fall to an appropriate level, the average net earnings of individual commercial fishermen will fall after the successful introduction of an output increasing innovation. In certain circumstances output increasing innovations are not an unmixed blessing.

If the number of fishermen is allowed to fall, then more men are available for employment elsewhere. If the marginal product of labour in alternative occupations is positive and greater than the marginal disutility of effort, then an output increasing innovation can benefit the community. If labour is locally immobile, then the marginal product of labour in alternative occupations may be zero or negative (it may be in the Patricia District), and displaced labour can add nothing to the total regional product; an output increasing innovation may then reduce both regional income and employment.

To raise commercial fishing incomes and employment, the Government could encourage more men to fish commercially.

To do so it would have to supply more capital, and possibly it would have to open more lakes to commercial fishing. To offer to sell extra gear to commercial fishermen who could not produce more fish, or to offer to sell gear to fishermen who could not afford to catch fish at the ruling lakeside prices, would not enable either group of fishermen to raise their net earnings. Extra gear could be of value to the fishermen only if previously they had been unable to take the legally permissible catch or if the gear were to be sold to them at some price sufficiently far below the real cost of the gear. To sell underpriced gear or to provide free gear to commercial fishermen is to subsidize commercial fishing; and there are several ways to subsidize commercial fishing.

If commercial fishing is subsidized, then the net cash incomes of commercial fishermen can be raised above the economic optimum, the numbers of commercial fishermen can be increased above the economic optimum, fishermen can produce more fish,and fishermen require more fishing supplies. It is rational to decide which of these effects is the most important. In the following discussion it is assumed that the primary aim of economic policy is to raise the net aggregate cash income of commercial fishermen, for if the aggregate net cash income is increased, then either more men can obtain the previous level of income per man, or the net

incomes of individual fishermen can be allowed to rise. In the conditions ruling in the West Central Patricia District, the provision of free or under-priced gear raises the aggregate net income of fishermen at a higher cost in subsidy than direct cash payments to fishermen or a subsidy to the lakeside prices of fish (allowing Indians to buy their own gear).[19]

But economics is not everything. Unless the direct cash payment were to be made proportional to the individual catches of fish, cash subsidies might destroy the economic incentive which normally persuades men to go fishing.Moreover the direct cash payments would make the dependence of the Indian fishermen upon the Indian Affairs Branch quite explicit; at present this dependence is obscured by the way in which the subsidy is paid. There is there a clear case for paying the income subsidies in an expensive manner: but this case is based upon concepts of social welfare and not upon economics.

We have examined the three major ways in which the Government can subsidize commercial fishing operations in order to raise incomes of commercial fishermen. But fishermens' incomes are also influenced by lakeside fish

prices; market structure and market behaviour have a strong influence upon the relationship between wholesale and lakeside fish prices, and Government can try to reduce fish marketing profit margins.

If fish dealers must compete for fish at a lake, then their competition transmits changes in wholesale fish prices to the lakeside fish prices, but if they do not need to compete with each other, then changes in wholesale prices are not necessarily transmitted to lakeside prices. Dealers do not need to compete with each other if they divide a regional market into private market areas.

If a dealer has a private market area in which he is a sole buyer he can buy some fish at the minimum price at which fishermen will sell them. A dealer who is also the sole supplier of gear can outfit fishermen until the average cost of catching fish is minimum. The lower the cost of catching fish, the lower the prices at which fishermen can afford to sell fish. Where dealers divide up a market there is, therefore, a tendency for lakeside fish prices to be much lower than in a market where dealers are forced to compete with each other.

If there is a substantial measure of competition in a fish market, then normally the lakeside prices of fish

near a wholesale market are higher than the lakeside prices of fish far from a wholesale market. In a monopsonistic market the lakeside prices of fish on lakes near to the wholesale market would not lie above the prices of fish on lakes far from a wholesale market. A dealer who can sell fish at a single delivered price could make higher profits on fish he buys near to the market than on fish he buys far from the market. In general such a dealer will buy the quantity of fish(but at a lower average price) that he would buy if he were forced to behave competitively.

These extra profits can be reduced by competition or by taxation. The Government cannot tax fish dealers especially highly, but it may be able to force fish dealers to compete with each other, and it can force fish dealers to behave as if they are in competition with each other. The Government forces dealers to compete with each other when it invites dealers who do not normally buy fish from a particular area to start buying fish there. The Indian Affairs Branch used this policy when it arranged the sale of fish by public tender, for it invited tenders from dealers who did not normally buy fish from the Patricia District. These dealers were not obliged to provide a fish collection service in the Patricia District because the Branch invited tenders for sale f.o.b. a wholesale market as well as f.o.b. a lake or

railcar.

The Government can also compel dealers to buy fish at a higher average price than they would otherwise pay. The Government does this when it makes the purchase of some fish conditional upon the purchase of other fish. Thus if a dealer can make only a very small profit margin upon the purchase and sale of whitefish from a distant lake, he may prefer to buy more valuable fish only (e.g. trout and yellow pickerel). But if the dealer is obliged to buy whitefish, as part of a price for being allowed to buy other fish, then his total purchases can be substantially increased and the incomes of fishermen can be raised.

Alternatively, instead of forcing the fish dealers to buy fish under conditions they would prefer to be without, fishermen (or the Government) could form a sales agency. A sales agency could sell fish to local dealers, it could compete with local dealers, or it could supplant local dealers. It could either buy fish from fishermen and sell them, or it could market fish on commission. The type of marketing agency that would be appropriate would depend upon many factors: the relative profitability of sales in different markets, the optimum economic size of a marketing agency, the benefits that might accrue to the Indian fishermen, and the capital and management requirements. These factors are examined at length later in the report.

Notes to Chapter III

1. Some Indians at Big Trout Lake fear that continued commercial fishing will deplete local stocks of fish and imperil the supply of fish for domestic consumption.
   M.H. Greenwood, Social Anthropologist, Department of Citizenship and Immigration, in conversation, summer 1961.

2. This may already have occurred at Sandy Lake. Conversation with a member of the Indian Affairs Branch, 1961.

3. e.g. in 1961.

4. Rabbi S. Kass, Hillell House, Montreal, in conversation, 12 February 1963. Meals during religious festivals usually include fish dishes, meals at other times may or may not do so. A holiday of several days length then gives the opportunity for unusually great consumption of fish.

5. Fish dealer, Montreal, in conversation, 3 January 1962. We ignore consumption by Indians and Eskimos in Canada. Similarly when discussing U.S. demand for inland fish we specify mainly species caught in the Great Lakes and consumed by humans; we ignore many species (e.g. bullheads, catfish), caught and consumed in the southern U.S.A.

6. Fish dealer, Montreal, in conversation, 3 January 1962.

7. Rabbi Kass believes they do. In conversation, 12 February 1963.

8. Rabbi Kass suggests that many do. In conversation, 12 February 1963.

9. The trends in U.S. sales of fresh inland fish and commercial production gefilte fish support this hypothesis. c.f. Table 41, Statistical Appendix.

Notes to Chapter III, (continued).

Production of Gefilte Fish

Year	Quantity (standard cases)	Value ($)
1956	no special category	
1957	170,211	3,088,078
1958	240,140	4,024,750
1959	246,100	4,371,467
1960	234,937	4,396,000

Note: 1 standard case is the equivalent of 48 cans each of 16 oz.

Source: U.S., Bureau of Commercial Fisheries, E.A. Power , Fishery Statistics of the United States, 1960, Fish and Wildlife Service, Statistical Digest No. 53, p. 51.
Also 4 preceding years.

10. Because white-fish from some lakes are suitable only for processing.

11. The decline in sales of fresh fish on the Peck Slip in New York during the past 12 years has been accompanied by the exit of several fish dealers from the business.
Mr. A. Schorn, Market News Service, Bureau of Commercial Fisheries, U.S.D.I., New York, in conversation, 5 February 1963.

12. e.g. sea fish can be made into gefilte fish less easily than fresh water fish. Rabbi Kass, in conversation, December 1961.

13. Germany, Federal Ministry of Food, Agriculture and Forestry, H. Göben, "Die Elastizitäten der Nachfrage nach Fischen und Fischwaren", in Jahresbericht über die Deutsche Fischwirtschaft, 1958,(Berlin: Gebr. Mann, 1959), p. 291.

Notes to Chapter III, (continued).

14. Based mainly on discussions with fish dealers, government officials, in the U.S.A. and Canada, Rabbi Kass and other Jewish acquaintances, and examination of annual receipts of fresh inland fish in the wholesale markets of New York and Chicago.

15. W.C. MacKenzie, "The Demand Outlook for the Canadian Fisheries", in Resources for Tomorrow, (II, Queen's Printer, Ottawa, 1962), II, p. 761.

16. cf. Figures 10, 11, 12, 13, Appendix I.

17. Table 33, Statistical Appendix, shows that between 26 June and 13 July 1961 the wholesale prices medium of whitefish f.o.b. Toronto remained stable at 25 cents per lb. Between June 25 and July 14 the retail price of dressed whitefish in one Toronto store changed 5 times. See "Prices for Whitefish sold in two Toronto Retail Stores", data collected by the Commercial Fisheries Section, Fish and Wildlife Branch, Ontario Department of Lands and Forests, Ontario, 1961.

18. See Appendix I.

19. When output of fish and input of resources into fishing are chosen by administrative decree, subsidies to fish prices, gear prices, and fishermens' incomes cannot change the input of resources. If resource supplies are not perfectly inelastic then a subsidy raises the resource use above the economic optimum, but if relative input prices are unchanged then resources are used in the economically optimum proportions. A subsidy to capital prices cheapens capital relative to labour, and thereby raises the receipts of capital owners because more of all resources are used up and because more capital relative to labour is used than before. Thus gear suppliers receive more of a subsidy to gear prices than they receive of a subsidy to fish prices or fishermens' incomes. Thus the subsidy cost of a given increase in aggregate net income is higher when gear prices are subsidized than when fish prices or fishermens' incomes are subsidized.

CHAPTER IV

ECONOMIC ANALYSIS OF FISH PRODUCTION AND MARKETING IN PART OF THE PATRICIA DISTRICT (1961)

This chapter examines the reasons why fishermen in the Patricia District earn smaller incomes than fishermen elsewhere in the Northern Inland Waters of Ontario. The chapter also examines the value of assistance given during 1961, by the Indian Affairs Branch, to the commercial fisheries at Three Lakes in the Patricia District.

Production

In general, commercial fishermen in the central part of the Patricia District earn smaller incomes than fishermen elsewhere in Ontario because they receive lower prices for fish, and because they catch fewer fish for sale.

They receive lower prices for fish because of the high cost of transporting fish to market. They catch fewer fish for several reasons, and one of which is probably that the lower fish prices in the central part of the Patricia District make fishing there a relatively less attractive occupation than on the lakes further south.

Individual fishermen in the central part of the Patricia District catch fewer fish because: (1) the lakes in the central part of the Patricia District are generally

less productive than lakes to the south and the west, (2) relative to the amount of fish that may be caught for sale, there are more commercial fishermen on lakes in the Patricia District than on lakes elsewhere in Ontario, (3) some fishermen do not find the returns from commercial fishing in the Patricia District high enough to persuade them to catch as many fish as fishermen elsewhere. Fishermen in the area do not catch fewer fish because they use less gear than fishermen elsewhere, for even if each were to be supplied with as much gear as fishermen elsewhere in the Northern Inland Waters of Ontario, they could not together, and over a long period of time, catch significantly greater quantities of fish than they do at present.

Let us test these generalizations with an examination of commercial fishing on Three Lakes in the West Central Patricia District. These Three Lakes are chosen because extensive data upon the commercial fishing operations there are more readily available than similar data upon commercial fishing elsewhere in the Patricia District, and because there are no reasons to believe that commercial fishing on the Three Lakes is untypical of commercial fishing in the whole of the central part of the Patricia District, although it may be rather less highly organized.

In 1961 the Indian Affairs Branch equipped approximately

TABLE 1

SUMMARY STATISTICS OF COMMERCIAL FISHERIES ON THREE LAKES IN THE WEST CENTRAL PATRICIA DISTRICT, AND ON THE NORTHERN INLAND WATERS OF ONTARIO (1960)[a]

Fishery	No. of Fishermen	Value of Boats and Gear per man	Landings of Fish per man		Landings of Fish per $100 of Boats and Gear	
		$	lb.	$[b]	lb.	$[b]
Lake I	12	228.00	1,972	140.00	887	61.00
Lake II	28	181.00	2,947	186.00	1,625	102.00
Lake III	14	128.00	3,106	171.00	2,424	133.00
The Three Lakes	54	178.00	2,771	172.00	1,559	97.00
Northern Inland Waters of Ontario[c]	1,367	534.00	6,023	757.00	1,127	142.00

Notes: (a) Figures rounded.
(b) Gross earnings of fishermen.
(c) Northern Inland Waters of Ontario include the Three Lakes.

Sources: Tables 19, 22, 23, Statistical Appendix.

54 men to be full-time fishermen (full-time in the sense that they were expected to fish steadily while commercial fishing operations continued) on the Three Lakes. Some of these men fished steadily, but those who did not fish steadily were offset by a greater number of men who were not outfitted by the Branch but who, from time to time, did sell some fish through the Branch. It is estimated that during 1961 there were the equivalent of 54 full time fishermen on the Three Lakes.[1]

Table 1 shows that in 1961 these fishermen caught an average of 2,771 pounds of fish for sale, valued at $172.00 per man, as compared with fishermen in the Northern Inland Waters of Ontario who, in 1960, caught an average of over 6,000 pounds of fish for sale, valued at $757.00 per man. The fishermen on the Three Lakes do use government nets for private fishing, but they are expected to have their private nets for most private fishing. It is clear that their commercial production per man is far below the production of fishermen elsewhere in north western Ontario.

Why do commercial fishermen on the Three Lakes catch fewer fish for sale than fishermen elsewhere in the Northern Inland Waters of Ontario? We know that these lakes, in common with the lakes elsewhere in the central part of the Patricia District, are less productive than lakes to the

south and west.[2] Even if the number of commercial fishermen per square mile of the Three Lakes were the same as in the rest of the Northern Inland Waters, the catch per man there would still be lower. The basic reason why commercial fishermen on the Three Lakes catch fewer fish than other commercial fishermen in Ontario is that the ratio of commercial fishermen to the total permissible catch is higher at the Three Lakes than elsewhere in Ontario. In 1960 the legal catch limit was reached at Lake I and at Lake II, and in 1961, it was reached at Lake II and at Lake III.[3] Moreover, men who fish on lakes in the south of the Patricia District can usually sell all of the fish they catch (e.g. marias, mullet, etc.). The least valuable species of fish cannot be sold by fishermen in the north of the Patricia District, for the railhead prices are often less than the costs incurred to catch and pack fish, and to transport them to the railhead.

Moreover there is some evidence to support the hypothesis that the earnings of commercial fishermen on lakes on the Three Lakes are not high enough to keep the best fishermen working there. During 1961 some men at Lake I, who had been equipped with fishing gear by the Indian Affairs Branch, left the area to go fishing on lakes further south, near Armstrong, Ontario.[4] On these lakes, the fish dealer

provided the men with gear and paid them higher prices for their fish than they would have received had they fished at Lake I. The men who were left at Lake I were not the best fishermen, and they failed to take the full permissible catch of fish.

It is also clear that fishermen on the Three Lakes did not catch small quantities of fish because they had insufficient gear. Table 1 shows that the fishermen at Lake I used a greater value of boats and gear per man than fishermen in the other two of the Three Lakes, yet they did not catch greater quantities of fish per man. Indeed, fishermen at Lake III, who used less boats and gear then fishermen anywhere else on the Three Lakes, caught the greatest quantities of fish per man. The primary cause was the limitation upon the total commercial catch; in 1961 the fishermen on two of the Three Lakes could not legally have caught more fish for sale even if they used more gear.

Because the total catch of fish for sale from lakes of the Patricia District is limited by law, and because, relatively to the permissible catch, there are many fishermen, intensive commercial fishing operations do not extend for long periods of time. In the central part of the Patricia District, for example, the Indians usually fish commercially most of the time between the beginning of June and the end of

September, and occasionally they fish commercially for a few weeks between February and April.

In summary, fishermen in the central part of the Patricia District catch fewer fish for sale then fishermen elsewhere in northwestern Ontario, and they fish commercially for only a few months each year. Both of these characteristics of commercial fishing in the Patricia District can be attributed to the large number of fishermen relative to the total permissible catch of fish for sale.

Having substantiated the generalizations made at the beginning of the chapter, let us now examine the earnings and incomes received by fishermen on the Three Lakes, and make an estimate of the value of the assistance given during 1961 to commercial fishing and fish marketing.[5]

The accounts (Tables 2 to 5) show estimates of earnings of commercial fishermen on the Three Lakes. To make these estimates it has been necessary to define certain concepts which are not used in the Commercial Fishery Accounts compiled by the Indian Affairs Branch; it has also been necessary to analyse the data in a special way.

First, a distinction is made between fish production and fish marketing. Fish production is the operation of removing fish from the water and landing them at the lakeside; fish marketing is the operation of handling and

processing fish between the lakeside and the point of sale - assumed to be at the railroad in Northern Ontario. Accounts are set up to show the economic profitability of fish production (Tables 2 to 4), and of fish marketing (Table 5).

Second, a distinction is made between the imputed net economic earnings of fishermen and the imputed net cash incomes of fishermen. Imputed net earnings are the difference between the gross payments to fishermen (payments for fish valued at the lakeside) and the known and imputed non-labour costs of removing fish from the water and landing them at the lakeside: (they show the real economic profitability of commercial fish production). Imputed net earnings of fishermen are an estimate of the labour earnings of commercial fishermen (Table 2).

The Indians however do not bear the full cost of their gear, and do not pay for administrative and marketing services provided by the Indian Affairs Branch. The Branch, in short, subsidizes the commercial fisheries, and the net incomes of the fishermen are higher than their net earnings. The imputed net cash incomes are the difference between receipts of fishermen (actual and imputed) and the cash expenses (actual and imputed) which are incurred in order to catch and to land fish (Table 3).

TABLE 2

STATEMENT OF EARNED RECEIPTS AND DISBURSEMENTS FROM COMMERCIAL FISHING ON THREE LAKES (1961)

	Fishing Account I	
Receipts		$
Sales of Fish		9,267.68
Disbursements (Actual and Imputed)		
Licences	180.00	
Ice Harvest	712.00	
Boats and Gear		
write-off	4,800.66	
interest	480.14	
Gas and oil	935.55	
Royalties	23.37	
Repairs	204.59	
		7,336.31
Imputed net earnings from fishing		1,931.37

Assuming 54 full time fishermen, imputed net earnings are $35.77 per man.

Source: Table 20, Statistical Appendix.

Third, a distinction is made between the present level of net earnings and a level of net earnings which could be reached if commercial fishing were to be organized more efficiently. (Table 4).

Fishing Account I (Table 2) shows the imputed net earnings of the 54 full time fishermen on the Three Lakes in the West Central Patricia District. On this account 'Receipts' are the gross earnings of fishermen from sale of fish for the fish they deliver to the lakeside weighing station. (Although the fish actually remain in the ownership of the Indians until they are sold at the railroad line). 'Disbursements' are the known and imputed costs incurred to produce fish. The difference between receipts and disbursements is an estimate of the imputed net labour earnings of commercial fishermen. During 1961 the 54 fishermen, working 'full time' for approximately six weeks, made aggregate net earnings of about $1,900, or about $36.00 per man. Average individual earnings were so low mainly because of the very costly operations at Lake I; at Lakes II and III the average net earnings of fishermen were considerably higher.[6]

Most people, Indians and ourselves included, do not work unless they receive a net return great enough to compensate them for the time and effort they expend on the job. Because fishermen use their gear to catch fish for

TABLE 3

ESTIMATE OF NET INCOME RECEIVED BY FISHERMEN ON THREE LAKES (1961)

Fishing Account II

Receipts (Actual and Imputed)		$
Sales of Fish	9,267.68	
Licences	180.00	
Ice Harvest	712.00	
Gear[a]		
write-off	4,557.66	
interest	419.39	
Royalties	23.37	
Repairs	204.59	
		15,364.69
Disbursements (Actual and Imputed)		
Licences	180.00	
Ice Harvest	712.00	
Boats and Gear[b]		
write-off	4,800.66	
interest	480.14	
Gas and oil	935.55	
Royalties	23.37	
Repairs	204.59	
		7,336.31
Imputed net incomes of fishermen		8,028.38

Assuming 54 full time fishermen, imputed net incomes are $148.67 per man.

Notes: a. 'Gear' is nets and accessory fishing gear supplied by the Indian Affairs Branch.

b. 'Boats and Gear' are gear and the imputed value of the canoes and motors owned by fishermen and found chargeable to the commercial fishing operations.

Source: Table 21, Statistical Appendix.

domestic consumption their net real earnings are higher than their net cash earnings, but because the Indian Affairs Branch permits the fishermen to use the nets that it has provided only for commercial fishing, the domestic catch from these nets is relatively low. The level of average net real earnings is not high enough to persuade 54 men to catch fish for sale, and in order to maintain the number of commercial fishermen at this level, the Indian Affairs Branch has been forced to subsidize their incomes by helping them to catch and to market fish. The Indian Affairs Branch has helped the Indians by providing some fishing gear free or at less than the delivered market price,[7] by organizing the commercial fisheries, and by arranging the sale of the fish.

From gross earnings (payments for fish landed at the lakeside) the Indians are obliged to pay only the costs of gas and oil, the capital costs of the gear that they own (mainly boats and motors), and some of the costs of repair. Their imputed net cash incomes therefore are considerably higher than their imputed net earnings. Fishing Account II (Table 3) shows that during 1961 the 54 fishermen at the Three Lakes received aggregate imputed net cash incomes of about $8,000, or almost $150.00 per man. However even a

TABLE 4

ESTIMATES OF INCOMES OF COMMERCIAL FISHERMEN ON THE THREE LAKES (1961)

Fishery	Imputed Net Earnings of Fishermen		Imputed Net Incomes of Fishermen	
	Total $	Per Man $	Total $	Per Man $
Lake I	-800.00	-67.00	1,400.00	117.00
Lake II	1,660.00	59.00	4,550.00	163.00
Lake III	1,070.00	77.00	2,070.00	148.00
The Three Lakes	1,930.00	36.00	8,030.00	149.00

Note: Figures rounded

Source: Tables 20, 21, 22, Statistical Appendix.

net cash income of $150.00 per man for the summer is low by the standards of incomes received elsewhere in Canada.

Table 4 summarizes the estimates of the imputed net cash earnings and the imputed net cash incomes received by fishermen on the Three Lakes during the summer of 1961. The Table shows that fishermen at Lake I received lower incomes and made lower earnings than fishermen at the other two lakes. Their earnings were lower because of the uneconomically large quantities of capital invested in gear (compare Lakes I and III on Table 22, Statistical Appendix), because good fishermen at Lake I had access to more highly paid fishing employment near Armstrong, and because all fishermen at Lake I had easier access to other paid employment.[8] Residents near Lake I therefore were less in need of their cash incomes from commercial fishing than residents at Lakes II and III.

The difference between the aggregate imputed net cash income and the aggregate imputed net cash earnings is an estimate of the value of assistance given by the Indian Affairs Branch and received by the Indian fishermen. In 1961 the value of this assistance totalled $6,100, (or $8,000 - $1,900): approximately 76 per cent of the aggregate imputed net cash income of the commercial fishermen at the Three Lakes.

TABLE 5

STATEMENT OF HYPOTHETICAL EARNED RECEIPTS AND DISBURSEMENTS OF COMMERCIAL FISHING ON THE THREE LAKES ASSUMING ONLY THIRTY FIVE FISHERMEN[a] (1961)

Fishing Account III

Receipts		$
Sales of Fish (Gross Earnings)		9,267.68
Disbursements (Actual and Imputed)		
Licences	180.00	
Ice Harvest	712.00	
Boats and Gear		
write-off[b]	3,111.50	
interest[b]	311.20	
Gas and oil[c]	787.50	
Royalties	23.37	
Repairs	204.59	
		5,330.16
Imputed net earnings from fishing		3,937.52

Assuming 35 full time fishermen, imputed net earnings are $112.50 per man.

Notes: a. Assuming average catches per man of 4,565 lb. of fish, there need be only 6 fishermen at Eabamet Lake, 19 at Attawapiskat Lake, and 10 at Mamiegwess Lake.

b. $3{,}111.50 = \frac{4{,}800.66 \times 35}{54}$

$311.20 = \frac{480.14 \times 35}{54}$

(See Table 2).

c. Assume that these fishermen use more gas and oil than the less productive fishermen; say $45.00 per canoe and motor instead of $36.00 per canoe and motor.

d. Assume following costs remain unchanged: licence fees, ice harvest, royalties, repairs.

Source: Text and Table 2.

We observed in Chapter III that to expand employment and to provide free or underpriced gear is an unnecessarily expensive way of providing cash incomes: could this aggregate net cash income ($8,000) have been provided at a lower cost in subsidy? To answer this question let us suppose there had been only thirty-five full time fishermen on the Three Lakes. Thirty five fishermen could have caught all the fish caught during 1961 by fifty four fishermen if their average catch had been as high as the average catch of the best 20 per cent of fishermen (three men) at Lake III.[9] The total costs of fish production would have been much lower because fewer men would have needed fewer canoes, and less gear; hence the operating and capital costs could have been substantially lower than they were in 1961.

Fishing Account III (Table 5) shows hypothetical imputed net earnings of 35 full time commercial fishermen on the Three Lakes: assuming that the prices of gear and fish were the same as those ruling in 1961, that the value of marketing services given by the Indian Affairs Branch was the same as in 1961, and that fishermen sold the same total quality and 'mix' of fish as in 1961. Receipts are the gross earnings of fishermen (they include the imputed value of assistance to fish marketing). Disbursements are the total known and imputed costs of landing fish; they

do not include any payment for labour. The difference between receipts and disbursements is the hypothetical aggregate imputed net earnings of 35 commercial fishermen, and suggests an average return of $112.50 per man.

If the Indian Affairs Branch had outfitted only 35 fishermen and if these 35 men had caught the quantity of fish actually taken in 1961, they could have earned an average net cash income of approximately $112 per man, or $3,938 in total. If the Branch had paid those 35 men a sum of approximately $36 each and the remaining 19 men a sum of approximately $149 each, all fishermen would have received net cash incomes of approximately $149 (the per capita imputed net cash income during 1961, see Table 3) at a subsidy cost of only $4,090 instead of $6,100.

If the Indian Affairs Branch had distributed the subsidy in this way it would have saved $2,010, but simultaneously it would have incurred two social costs. First, a direct income subsidy would have severely weakened the incentives to persuade men to go fishing because each of the 54 men would have received the same net cash income whether he went fishing or not. If the incentives had been very much weakened, fishermen would have caught fewer fish, and the value of sales would have been less than $9,268. Second, some Indians would have become very clearly dependent upon the Branch for part of their cash income. Clear and

excessive dependence upon the Branch does not encourage the Indians to assume more responsibility for their own affairs.[10] Either of these social costs is a valid reason for subsidizing the incomes of fishermen in an expensive manner.

However even if the Indian Affairs Branch does not wish to pay direct income subsidies it can still subsidize incomes more cheaply than at present by subsidizing lakeside fish prices or by paying more of the costs of marketing fish. The amount of the subsidy of course would depend upon the required increase in the aggregate incomes of fishermen and the costs that fishermen incur when they catch fish. But higher lakeside prices do not enable fishermen to buy their gear if they have no capital assets. Initially, the Branch, or some other agency, would be obliged to rent gear to fishermen or to sell it to them on hire-purchase terms.

A subsidy to lakeside prices can have desirable results only if two conditions are fulfilled. First, commercial fishing must be really worthwhile; i.e. the incomes of commercial fishermen must be substantially higher than the incomes of the unemployed. Second, the Branch should advance gear only to those fishermen who can pay the cost of gear; it must repossess gear advanced to those who do not make due payments.

In these circumstances the incomes that fishermen could obtain using gear carefully and productively would be plain; the income they would lose by owning or renting excessive gear would also be plain. Gear and supplies would be more expensive, relative to labour, than at present. Fishermen who wished to catch more fish would have an added incentive to use their gear more intensively (and profitably) rather than to buy or rent more gear. Fishermen would have a greater responsibility for their gear and for their cash incomes. And finally, the less gear the fishermen would use, the smaller the part of their gross receipts they would pay to suppliers of gear and equipment.

To have subsidized commercial fishing on the Three Lakes in the way described above, would have been cheaper than the methods actually employed. Not only would the incomes of fishermen have been raised more cheaply, but a consistent set of incentives would have been built into the organization of commercial fishing.

It is possible that for a few years the Indians might not respond to these newer incentives as we should expect them to respond. The incentives however are consistent with those that are gradually being used more and more in the north of Ontario. It is more sensible to encour-

TABLE 6

STATEMENT OF EARNED RECEIPTS AND DISBURSEMENTS FROM MARKETING FISH FROM THE THREE LAKES (1961)

Fish Marketing Account I

Receipts			$
Sales of Fish			29,561.77
Disbursements (Actual and Imputed)			
Payments to Indians		9,267.68	
Air transportation		9,810.26	
Packing		6,482.59	
Other		1,963.55	
Shore Installations:			
write-off	650.18		
interest	317.53		
Administration and Marketing		1,374.35	
			29,866.14
Imputed Marketing Losses			304.37

Source: Table 20, Statistical Appendix.

age Indians to adjust to the inevitable changes in economic organization rather than to attempt to delay changes, that intended or unintended, will occur at some time in the future.

Marketing

Now consider the marketing of fish from the Three Lakes. Indian fishermen caught the fish, dressed them, iced them, and loaded them without ice, aboard airplanes for the flight to Nakina. The fish were packed and re-iced at Nakina and were then sent to markets in Montreal and Winnipeg.

To examine the economics of marketing fish from the Three Lakes one fish marketing account is presented, (Table 6). The account is a statement of earned receipts, and known and imputed disbursements incurred in 1961 to sell fish at Nakina. Some of the costs are known, but the annual costs of capital invested in shore installations, and the costs of administration and sales, are estimated.[11] The costs of working capital are excluded since the working capital needed to pay the fishermen for fish is provided free of charge by the Hudson's Bay Company.[12]

Fish Marketing Account I shows that during 1961 the

imputed cost of paying the Indians for 137,435 pounds of fish, transporting the fish, and packing them for sale at Nakina, exceeded the imputed gross value of sales of these fish at Nakina. The Indian Affairs Branch bore the imputed loss of $300 by providing shore installations, and marketing and administrative services without charge.

The imputed loss on fish marketing operations is indistinguishable from a subsidy to fish marketing and was incurred only to market fish from Lake II and from Lake III. The fish from Lake I were marketed at an imputed profit: that is the receipts from sales of fish at Nakina were greater than the total imputed costs of paying fishermen and preparing the fish for sale. The marketing of fish from Lakes II and III had to be subsidized because of the high cost of flying fish to Nakina. But at least a part of the imputed subsidy to the marketing of fish from Lake II can be attributed to the imputed high annual cost of the shore installations there.[13] Any extension of commercial fishing at Lakes II and III, unless accompanied by higher railhead prices or lower marketing costs, will certainly increase the cost of the subsidy to fish marketing.

Lakes II and III are both much closer to Pickle Lake than to Nakina. One would expect therefore that there could be considerable marketing cost savings if fish were

to be flown from Lakes II and III to Pickle Lake instead of to Nakina. However the air haulage company that bases airplanes at Pickle Lake does not offer freight rates on fish for the flight to Pickle Lake that are low enough to offset the extra cost of trucking the fish from Pickle Lake to Savant Lake.[14] Fish from Lakes II and III can be more cheaply placed aboard a railcar at Nakina than at Savant Lake.

These figures on the imputed subsidy to marketing and upon the imputed net earnings from commercial fishermen allow us to estimate the total value of the assistance given by the Indian Affairs Branch to support the commercial fisheries at the Three Lakes. Part of the value of the assistance to the commercial fisheries during 1961 was the imputed subsidy to fish marketing, estimated at $300 on Fish Marketing Account I. With the aid of this subsidy, commercial fishermen made an aggregate net cash income of $8,000, of which the value of assistance to commercial fishing totalled $6,100. In 1961 the total imputed subsidy to the commercial fisheries at the Three Lakes was approximately $6,400.

What did this subsidy achieve? We know that given the subsidy to fish marketing, 35 men could have made aggregate net cash earnings of $3,938: without subsidy their

aggregate net cash earnings would have been $3,634, ($3,938 - $304). Although an expensive way to distribute cash income, the subsidy did allow an extra 19 men to earn some cash incomes, the fishermen were shown how to catch and handle fish for the commercial market, and fishermen did have some responsibility for some decisions about fishing and fish marketing.

What conclusions can we draw from this analysis First, that to subsidize commercial fishing is an expensive way to distribute cash incomes. Second, that the means chosen to subsidize the commercial fisheries did not create the incentives to induce men to fish as economically as would have been desirable. Third, that the imputed cost of the subsidy was high because there was no clear criterion to decide when to stop subsidizing the fisheries. The annual subsidy cost is not clear in the Commercial Fishery Accounts, maintained by the Indian Affairs Branch. The only real measure of the success of the subsidy is the number of men at the Three Lakes who are actually employed as commercial fishermen, and this number can usually be used to justify further subsidies to the commercial fisheries. Fourth, the Indian fishermen have no great incentive to be particularly careful with their gear; they know that at the start of a new fishing season the Indian Affairs Branch will provide

them with at least some new gear and that they can acquire worn out gear for their personal use.

These conclusions are drawn from an analysis of commercial fishing at the Three Lakes. The economic problems of commercial fishing in this part of the Patricia District are very similar to the problems of commercial fishing on the lakes to the north and the west. The analysis and conclusion can be regarded as applicable to the commercial fisheries in the whole of the central part of the Patricia District of Ontario.

Notes to Chapter IV

1. All Indian.
   Estimated by a member of the Indian Affairs Branch.

2. R.A. Ryder, "Limnological Aspects of Patricia Lakes", pp. 20, 21. and A.E. Armstrong, "Age and Growth Studies on Five Northern Ontario Lakes", p. 14, in "Preliminary Report of Fisheries Inventory Work in the Patricias, 1959-1960", Ontario Department of Lands and Forests. Mimeographed.

3. Indian Affairs Branch files, 1960, 1961.

4. A member of the Indian Affairs Branch, April 1962.

5. Figures in the text are rounded.

6. Table 22, Statistical Appendix.

7. Fishing gear is supplied to Indians free of charge so that if commercial fishing operations are suspended they will not be burdened by debt, and so they can continue to catch fish for food.

8. A member of the Indian Affairs Branch, in conversation, April 1962.

9. Commercial Fishery Report for Lake III. Files of the Indian Affairs Branch.

10. The Indians in the West Central Patricia District however appear to feel little or no guilt about such dependence. c.f. J.J. Honigman, "Incentives to Work in a Canadian Indian Community", in Human Organization, Vol. 8, No. 4, Fall 1949, p. 27.

11. At 1.00 cent per pound of fish sold. See Chapter V.

12. A member of the Indian Affairs Branch, in conversation, August 1961.

13. Tables 20, 21, Statistical Appendix.

14. A member of the Indian Affairs Branch, April 1962.

CHAPTER V

THE COSTS OF MARKETING FISH FROM THE PATRICIA DISTRICT

This chapter describes the costs of selling fish from the central part of the Patricia District at railheads in Ontario and in wholesale markets in Toronto and New York. The chapter also examines the profitability of a hypothetical fish filleting plant in the Patricia District and the conditions under which fish should be sold fresh or as frozen fillets.

The Sale of Whole and Inland Dressed Fish

Sales at the Railhead

The costs of marketing fresh fish are: (1) costs of providing fishing gear and shore installations, (2) costs of buying fish, (3) costs of processing fish, (4) miscellaneous costs, (5) costs of administration and sales, and (6) transportation costs.

There are no reliable data on the costs that dealers incur to equip fishermen with gear. Each year some dealers advance gear to fishermen. If fishing is good, fishermen can repay their loans; if fishing is poor they can repay only a part of their loans. Dealers incur the costs of interest and of bad debts; but they do not explicitly charge interest on their advances.[1] The costs of interest and bad

debts are built into the prices they charge for gear and pay for fish. Dealers therefore force all fishermen to bear some of the high capital costs incurred by the unproductive fishermen.

Dealers provide shore installations (ice houses, fish sheds, and other equipment); they finance these investments from gross fish marketing profits. In 1961 the capital costs of shore installations on the Three Lakes averaged 0.71 cents per pound of fish sold at Nakina.[2]

The prices of one species of fish vary from time to time.[3] Sometimes dealers pay one lakeside price for each species and grade of fish during a fishing season. Sometimes they vary lakeside prices in response to changes in wholesale fish prices. Sometimes dealers accept going lakeside prices for fish, sometimes they can influence lakeside fish prices.

Fresh fish caught in the West Central Patricia District bear higher transportation costs than most fish caught elsewhere in Northern Ontario. The extra costs, for transportation from the lakes to the railway line, vary between 6.00 cents and 10.00 cents per pound.[4]

Packing costs are known. Boxes to take fifty pounds of fresh fish cost between 90 cents and $1.20 each; the delivered cost depends on the type of box and the place where boxes are used.[5] Fish boxes should be used only once;

the cost of fish boxes averages about 2.00 cents per pound of fish sold. Ice costs about 0.50 cents per pound of fish,[6] and handling and packing labour is estimated to cost 0.75 cents per pound of fish.[7] The remaining charges are for the capital costs of plant and equipment, and for overhead. The annual cost of write-off and interest charges on many fish sheds is negligible, on others it may rise to 0.25 cents per pound of fish packed.[8] The cost of overhead and the net return to management is the difference between the total cost of packing fish and the packing charge. The charge for packing is usually 4.5 cents per pound of fish packed.[9]

The structure of packing costs is shown on Table 7.

TABLE 7

THE COST OF PACKING FRESH FISH

Item	cents per lb.
Boxes	2.00
Ice	0.50
Capital costs	0.25
Labour	0.75
Management and overhead	1.00
Packing Charge	4.50

Source: Text.

There remain: miscellaneous expenses (including dressing and packing fish on lakes where they are caught),[10] the costs of administering the commercial fishery and of selling fish, and the costs of transporting fish to market.

When fish are landed at a place from which they may be sent to market by truck or by rail they need be packed only once. When fish are landed at a place from which they must be flown to a roadhead or to a railway line, they must be packed and iced twice. In the first packing fish are usually dressed, iced, and packed for storage until transportation is available. At the second packing, the fish are usually iced and packed in boxes for shipment to market (Table 7 refers to this second packing). It is estimated that during 1961 the cost of dressing, icing, and storing fish at the Three Lakes averaged 1.43 cents per pound of fish.[11]

The costs of administering fisheries and of selling fish are less clear; they cannot be separated satisfactorily. Between 1949 and 1959 the Saskatchewan Fish Marketing Service charged fishermen a marketing commission of 12½ per cent of the value of sales; this charge averaged 1.99 cents per pound of fish purchased.[12] The charge covered the costs of administering the marketing service and of selling fish. A fish dealer in Manitoba estimated that the costs of

administration, sales, and other overhead expenses averaged between 2 and 3 cents per pound of fish.[13] Let us assume that 0.50 cents per pound of fish purchased is a reasonable estimate of the cost of administering a commercial fishery, and that 2.00 cents per pound is a reasonable estimate of the cost of selling fish daily in wholesale markets in eastern Canada and the United States.

The Indian Affairs Branch, acting on behalf of the Indians, normally sells fish (by contract) f.o.b. a railcar in northern Ontario. Sales made in this way are certainly cheaper than sales made daily in eastern wholesale markets. One cent per pound of fish seems a reasonable estimate of the cost of time and effort incurred, by members of the Indian Affairs Branch, to administer the fisheries of the Patricia District and to sell fish, on contract, at the railway.

Fish lose weight after they have been caught: water, blood, and slime, drain from the corpses. Some fish in a shipment are usually unsalable. To compensate for fish shrinkage, dealers make a "shrinkage deduction". The Indian fishermen in the Patricia District are usually paid for 90 per cent of the weight of fish they catch. Because some shrinkage and deterioration of fish occur between packing stations and sale on the wholesale market, the

TABLE 8

THE COST OF SELLING FRESH FISH FROM THE THREE LAKES (1961).

	Lake I	Three Lakes[a]	
	Whitefish	Whitefish	Yellow Pickerel
	cents per pound[b]		
Shore Installations (write-off and interest)	0.25	0.71	0.71
Miscellaneous expenses	1.57	1.43	1.43
Airhaulage	6.41	7.14	7.14
Packing (Nakina)[c]	4.87	4.72	4.72
Administration and sales	1.00	1.00	1.00
Total cost of packing and transportation	14.10	15.00	15.00
Lakeside price	3.00	3.00	10.00
Total cost of fish, f.o.b. railcar	17.10	18.00	25.00
Price of fish, f.o.b. railcar	16.00	16.00	25.00

Notes: a. Average costs at Lakes I, Lake II, Lake III.

b. Costs are in cents per pound of fish sold to dealers.

c. 4.50 cents per pound of fish packed.

Sources: Text, Table 20, Statistical Appendix, Commercial Fishery Accounts: Lakes I, II, and III.

shipping agent packs an extra 5 per cent of fish in each load of fish sent to market.

These data on fish marketing costs enable us to estimate the structure of the cost of selling fish from the central part of the Patricia District f.o.b. a railcar in northern Ontario (Table 8).

During 1961, the average unit cost of buying whitefish at the Three Lakes, transporting them, and preparing them for sale, exceeded the price for which whitefish could be sold at Nakina. Even whitefish from Lake I were not delivered to the railcar at less than the price for which they were sold. At a railhead price of 16.00 cents per pound, whitefish from Lake I could support a lakeside price of 1.90 cents per pound. At a railhead price of 25 cents per pound, yellow pickerel from the Three Lakes could support a lakeside price of just 10.00 cents per pound. We know however, from Chapter IV, that even at 3.00 cents per pound for whitefish and 10.00 cents per pound for yellow pickerel, the imputed net earnings (labour incomes) of fishermen on the Three Lakes averaged only $36.00 per man. Unsubsidized lakeside prices would have implied much lower incomes.

The costs of marketing fish from other lakes of the Patricia District are not known; the Indians sold many fish

TABLE 9

HYPOTHETICAL COST OF MARKETING FRESH WHITEFISH FROM TWO LAKES IN THE PATRICIA DISTRICT

	Lake IV (1961)	Lake V (1962)
	¢ per lb.	
Shore Installations	0.71	-
Miscellaneous expenses	1.43	-
Airhaulage	9.09	5.75
Road haulage	1.00	0.85
Packing (road head)	4.72	4.72
Administration and sales	1.00	0.50
Total cost of packing and transportation	17.95	11.82
Lakeside price	3.00	5.75
Total cost f.o.b. railcar	20.95	17.57
Railcar price	12.00 - 30.00	- unknown

Source: Indian Affairs Branch: conversations and confidential files.

at the lakeside, and dealers incurred and paid some of the marketing costs. However the data on the costs of marketing fish from the Three Lakes allow us to estimate the cost of selling fish from other lakes in the Patricia District f.o.b. a railcar.

We know that there are large differences between the unit cost of flying fish from different lakes to the railheads, and that there are small differences between the average unit cost of shore installations and of miscellaneous expenses at different lakes. We know that there are negligible differences between the average unit cost of packing fish from different lakes, and that we assume an identical average unit cost of administration and sales for all fish from the Patricia District. With these qualifications we present estimates of the cost of marketing fish from Lake IV and from Lake V in 1962 (Table 9).

According to these estimates, whitefish from Lake IV could have been laid down (during 1961) in the railcar at Savant Lake at a cost of 20.95 cents per pound. During the summer of 1961 the railhead price of medium whitefish varied between 12.00 and 30.00 cents per pound. At these prices, the gross returns from sales of fish from Lake IV were often less than the gross costs of selling the fish. Since the costs of shore installations and of

administration and sales were met by the Indian Affairs Branch, the apparent cost of whitefish laid down at Savant Lake was only 19.24 cents per pound. At this unit cost, the sale of whitefish at Savant Lake appeared profitable at railhead prices well below 21.00 cents per pound.

The estimate of the cost of marketing fish from Lake V in 1962 refers to a special situation.[14] It is assumed that a dealer buys whitefish at Lake V, f.o.b. the aircraft, at a price of 5.75 cents per pound. The commercial fishery pays the costs of collecting fish, packing and icing fish, the write-off and interest on shore installations at the lake, and the costs of administering the fishery. The average cost of selling fish in markets in Canada and the United States of America is thought to approach 2.00 cents per pound, but the average unit cost of selling fish from Lake V by contract at Savant Lake might be as low as 0.50 cents per pound.

Table 9 suggests that a dealer who buys whitefish from Lake V at a price of 5.75 cents per pound, can lay them down at Savant Lake for 17.57 cents per pound. In fact, the dealer does not sell these whitefish at Savant Lake, but sells them more profitably delivered to eastern wholesale markets. Although he may make only very small profits on

sales of medium whitefish, he can make profits on sales of large whitefish, yellow pickerel, and lake trout.

At a lakeside price of 5.75 cents per pound of fish, and assuming unchanged unit costs of shore installations, administration, and miscellaneous expenses, whitefish could give fishermen gross earnings of only 3.11 cents per pound.[15] Even at a lakeside price of 5.75 cents per pound for whitefish fishermen could not earn adequate net incomes per man.

Sales in Wholesale Markets

These estimates of the cost of selling fresh fish at the railroad in northern Ontario, can be used as the basis of estimates of the comparative costs of marketing fish from the central part of the Patricia District in wholesale markets in Toronto and New York. The extra costs of selling fresh fish in wholesale markets in Canada, rather than on the railcar in northern Ontario are: (1) the cost of shipping fish to the market, (2) losses of fish that spoil en route to market and cannot be sold, and (3) the costs of delayed payments and bad debts. The costs of selling fish in the United States include these costs, and (4) the losses incurred when whitefish are not accepted by the Pure Food and Drug Administration as suitable for importation into the United States, and (5) the duty on the

fresh fish imported into the United States.

How large were these extra marketing costs? Fish are usually transported more cheaply by road than by rail but since there is no comprehensive network of roads in northern Ontario, all the fish from the Patricia District must be sent by rail some part of the way to market. The costs of transportation depend mainly upon the size of any shipment of fish; most fish from the area are transported at carload rates. Possibly because the railroad companies face little competition in northern Ontario, the costs of shipping fish by rail express from Winnipeg to Montreal and Toronto are the same as the costs of shipping fish from Nakina to Montreal and Toronto.[16] Wholesale prices of fish at Nakina therefore, are not higher than wholesale prices of fish at Winnipeg, even though fish at Nakina are 500 miles nearer to eastern wholesale markets.

The costs of fish spoilage, of bad debts, and of rejected whitefish are not clear and known. There is no certainty that any of these costs will be incurred in the marketing of one shipment of fish. If costs are incurred they may be very small, or they may range upwards to the full value of a shipment of fish. At the extreme, a fish buyer may go out of business owing payment on several shipments of fish he has received. A Canadian exporter

never knows in advance whether a particular shipment of whitefish will spoil en route to market, whether they will be dumped or sold at a disposal cost, or whether the Pure Food and Drug Administration will accept them for the American market. Over a period of time, the probability of loss becomes apparent, and a premium is implicitly charged as part of the margin necessary to cover the risks of shipping fish to wholesale markets. Moreover importers often delay making payments for fish, and an exporter often does not know how large an interest free "loan" he will be forced to make to a particular fish buyer. But again, the average "loan" outstanding eventually becomes clear, and hence an implicit part of sale costs.

Some of these costs are covered by the previous allowance for shrinkage on fish sales; they become extra costs only when they exceed the allowance. Other costs are not covered by the shrinkage allowance: e.g. losses on whitefish that are rejected as unsuitable for importation into the United States; in 1960, rejections by the American authorities totalled 2.76 per cent of exports.[17] The costs of fish that spoil en route to market, and of bad debts, are smaller on sales of fish in Canada than in the United States. Spoilage is less because fish can be shipped more quickly to market. Delayed payments are less, because

Canadian dealers have easier access to fish dealers in Montreal or Toronto than to fish dealers in New York or Chicago.

One fish dealer in Manitoba estimated that on sales in the United States, fish spoilage, dumpings, culls, bad debts, delayed payments, and rejections, ranged between 5 and 10 per cent of sales.[18] On a wholesale price (whitefish), of 24 cents per pound, a risk premium of 7½ per cent amounts to 1.80 cents per pound. If we assume that losses on Canadian sales amount to 5 per cent of sales, then the risk premium on a wholesale price of 28 cents per pound amounts to 1.40 cents per pound. The only remaining extra cost of selling fish in the United States is the duty on imports of fresh fish. At present the import duty stands at 0.50 cents per pound of fish.[19]

Table 10 shows the structure of the costs of marketing whitefish from northern Ontario. Columns 1 and 2 show the costs incurred by dealers who, in 1961, bought fish f.o.b. a railcar at Nakina. Column 3 shows the costs incurred by a dealer who might have bought fish at Kassabanika Lake. Column 4 shows the costs that might have been incurred by a dealer, who, in 1962, bought whitefish in Round Lake. Column 5 shows the costs incurred by a dealer who, in 1961, bought whitefish for 14.00 cents per pound f.o.b. a railcar at McDiarmiad.

TABLE 10

HYPOTHETICAL COSTS OF MARKETING FRESH WHITEFISH FROM LAKES IN NORTHERN ONTARIO

	The Three Lakes		Kassabanika Lake	Round Lake	Lake Nipigon McDiarmid[d]
Column	1	2	3	4	5
Wholesale Market	New York	Toronto	Toronto	Toronto	Toronto
	¢ per lb.				
Railhead price of fish (Cost f.o.b. railhead)	16.00	16.00	(20.95)	(17.57)	14.00
Freight rate (rail)	5.08	4.40	4.40	4.40	3.85
Risk premium	1.80	1.40	1.40	1.40	1.15
Import duty	0.50	-	-	-	-
Extra sales cost	1.50	1.50	1.50	1.50	1.50
Cost f.o.b. Wholesale market	24.88	23.30	28.25	24.87	20.50
Wholesale prices[a,b]	medium whitefish 24, and 28-32	large whitefish: 30-33 medium whitefish: 28	large whitefish: 30-33 medium whitefish: 28	large whitefish: 30-33 medium whitefish: 28	medium whitefish: 23

Kassabanika Lake is one of the most northerly of the Lakes in the West Central Patricia District (Map 2).

Table 10 (continued)

Notes: a. Price of "average type" medium whitefish (24 cents per pound) quoted by one fish dealer, Montreal, letter dated 2 October 1961. (Wholesale price in New York).

Price 28-32 cents per pound, (17 July 1961), See Table 33, Statistical Appendix.

b. Whitefish from Armstrong, Ontario, were consistently sold f.o.b. Toronto in the summer of 1961 at 30 cents per pound (medium whitefish), and at 33-35 cents per pound (large whitefish). The fish may not have been flown such long distances as fish from the central part of the Patricia District, and may have arrived on the market more quickly. Average prices of 28 cents per pound, and 30-33 cents per pound seem reasonable estimates of the average prices at which medium and large whitefish from the West Central Patricia District might have been sold during the summer of 1961.

Sources: Columns 1-4, Text, and Conversations with a member of the Indian Affairs Branch.

Columns 2-5 "Prices and Amounts of Fish Received - as Reported by one fish dealer, Toronto".

Column 5 Letter from J.M. Cullen, Fisheries Officer, Port Arthur, Ontario, dated 8 December 1961.

Column 5 Indian Affairs Branch, letter dated 11 September 1961.

The difference between the costs of fish, laid down in the wholesale market, and the prices of fish gives an indication of net profit margins that might have been taken by dealers who buy and sell fish from northern Ontario. The writer believes that the average net profit margins are somewhat lower.[20]

The Table suggests that in 1961, dealers who bought fish f.o.b. a railcar at Nakina or McDiarmid could have sold them profitably in Toronto. The table suggests that if dealers had been forced to pay all marketing costs, they could not have sold fish from the most northerly lakes of the Patricia District at a profit in Toronto.

The Table also suggests that in July 1961 sales of some medium whitefish in New York were unprofitable, for we know that in July 1961 one dealer sold medium whitefish from the Patricia District in New York at an average price of 24.00 cents per pound. This dealer would not have sold the fish unless the sale had been profitable, or unless he was obliged to supply New York dealers with fish when New York prices were low in order to retain their custom when New York prices would be high. It is more likely that the estimated risk premium is too high than that a Montreal fish dealer would make steady losses on sales of medium whitefish in New York.

These estimates of marketing costs indicate that fish dealers could usually make profits on the purchase and sale of fish from the Patricia District at prices ruling in 1960. The estimates do not indicate that commercial fishing at the existing scale in the Patricia District could be unsubsidized if the fish were to be sold in wholesale markets instead of at the railhead. There are two reasons for this negative conclusion.

The first reason is that fish dealers bought fish at subsidized prices; if they had been obliged to pay all the costs incurred to catch fish (shore installations, administration, etc.), their net profit margins on the purchase and sale of fish would have been substantially reduced. The difference between the margins on sales of fish bought at McDiarmid and at Nakina and sold in Toronto during 1961 gives an indication of the possible reduction. Unsubsidized fish marketing could not afford lakeside fish prices as high as those paid during 1961 on the Three Lakes. The second reason is that even at the lakeside prices of fish ruling in 1961, imputed average net earnings per fisherman were not high enough to retain the present number of men as fishermen.

Wholesale and Retail Distribution of Whole and Dressed Fish

Data on the costs of distributing inland fish to consumers were not collected.[21] There are no estimates on the net margins of wholesale and retail fish distribution. There are some data on gross margins of wholesale and retail fish distribution in Toronto. During the summer of 1961, whitefish were sold, at retail, at prices between 39 and 75 cents per pound.[22] Whitefish were sold at wholesale, f.o.b. Toronto, at prices which ranged consistently between 25 and 40 cents per pound.[23] Gross distribution margins could have varied between 14 and 50 cents per pound; they probably varied much less in practice, say between 20 and 40 cents per pound.

The Sale of Frozen Fillets of Inland Fish

Although it may not be profitable to sell fresh fish from the central part of the Patricia District, it may be profitable to sell fish from the area as frozen fillets. Sometimes dealers can afford to buy fish at a lake, fillet them there, freeze the fillets, and fly the frozen fillets to a railhead for sale, when they cannot afford to buy fish at the same lakeside prices and sell them fresh at the railhead. They can sell frozen fillets profitably, even

though the cost of filleting and freezing fish is greater than the cost of packing fish, if they make savings on transportation and sales costs that outweigh the extra costs of processing the fish and any fall in the gross returns from sales of fish.

Dealers can save on transport costs in three ways. First, the cost of hauling one pound of fish freight from a lake to the railhead is the same whether the fish is moved fresh or as frozen fillets. But the railhead price per pound of frozen fillets is usually higher than the railhead price of fresh fish, and hence transport costs are a lighter burden on sales of fish fillets than on the sale of fresh fish. Second, all frozen fillets shipped by air can be sold, but when fresh fish are flown part of the way to market, some are usually unfit for sale. Third, fresh fish must always be flown as soon as possible after they have been caught, and very often in small loads. Airplanes used to fly fresh fish should be small and always available. Frozen fillets can be hauled less often, in large loads in big airplanes.[24] The unit cost of flying freight in small loads in small airplanes is greater than the unit cost of flying the same quantities of freight in large loads in a big airplane.

These savings on transportation costs are reinforced by savings on sales costs. The costs of selling frozen fillets of fish are always less than the costs of selling fresh fish. A shipment of frozen fillets is very rarely spoiled, and packages of frozen fillets rarely have to be dumped. Frozen fillets can be stored for up to about two years without serious loss in quality, and they can readily be sold on contract or by sample.

In the north of Canada inland fish are made into frozen fillets in plants which usually cost between $40,000 and $80,000,[25] the actual amount depending, in each case, upon the size and location of the plant. The plants usually employ between twenty and forty people: most employees are Indian or Métis women but the Manager, the book-keeper, and the engineer are usually white.[26] The plants usually operate for five or six months each year, and in many isolated communities they are a useful source of income and employment.

The average cost per pound of frozen fillet varies from plant to plant: it is estimated that at one plant in Saskatchewan the average total cost per pound of frozen fillet (assuming a frozen fillet to be 50 per cent of the weight of the raw fish from which it was made) reached 19 cents per pound.[27] This estimate compares with a figure

commonly used in the trade: 12 or 13 cents per pound;[28] and with an estimate made by a dealer in Manitoba that the cost of fillets in his plant averaged 9.5 or 10.0 cents per pound.[29] The marginal cost of frozen fillets is unknown, but the management of the plant in Saskatchewan did made frozen fillets which could return only 8.78 cents per pound towards filleting costs;[30] this amount probably represents the marginal cost of fillets at that particular (under-utilized) plant.

These data on dealers' costs allow us to estimate the cost of marketing frozen fillets from the central part of the Patricia District. Consider first commercial fishing at Kassabanika.

Let us assume that whitefish are bought in Kassabanika Lake (Map 2) for 3.00 cents per pound, that they are packed at the lake at a cost of 1.5 cents per pound (shore installations and miscellaneous expenses),[31] and that they may then be shipped for fresh sale or for filleting. If for fresh sale: they are flown and trucked directly to the railroad line, at a cost of 8.0 cents per pound, they are packed in ice for shipment to market for 4.72 cents per pound, they are marketed at a cost of 0.50 cents per pound. Alternatively, if they are to be made into frozen fillets they are flown first to a filleting plant at North Caribou

Lake (3.00 cents per pound) there they are filleted at an average variable cost of 10.00 cents per pound of fillet. Then they are flown and trucked to the railroad at a cost of 3.00 cents per pound of fillet, and sold at a cost of 0.25 cents per pound of fillet.

TABLE 11

THE COSTS OF MARKETING WHITEFISH

	Frozen Fillets		Fresh Fish
	¢ per lb.	¢ per lb. fillet	¢ per lb. fish
Purchase	3.00	6.0	3.00
Shore Installations and Miscellaneous expenses	1.50	3.0	1.50
Transportation I	3.00	6.0	-
Filleting		10.00	4.72
Transportation II (Flight and road haulage)		3.0	8.00
Sales		0.25	0.50
Total Cost		28.25	17.72

Source: Assumptions in text, and Appendix II (p. 249).

Using this hypothetical data, Table 11 shows that fish from Kassabanika could profitably be sold as fresh fillets at Savant Lake for a price of 28.25 cents per pound if the filleting charge were only 10.00 cents per pound of fillet; a filleting charge at this level would be possible but

unlikely. Fish from North Caribou Lake however could be very profitably sold as frozen fillets at 28.25 cents per pound, for these fish do not have to bear the cost of Flight I which adds 6.00 cents per pound to the cost of the fillet. At the same time however, if the railcar price of fresh dressed fish were as high as 17.72 cents per pound, sales of fresh fish from Kassabanika would also be profitable. Clearly fish should be sold as fresh fillets if the savings in transportation costs exceed the extra costs of filleting and any decline in the gross return per pound of fish purchased from fishermen,[32] but equally clearly a new fish filleting plant should only be constructed if it could be expected to be profitable or if the social benefits would outweigh any losses.

The Profitability of a New Fish Filleting Plant

A new fish filleting plant in the central part of the Patricia District would be profitable if the management could sell frozen fillets at average prices which would exceed the average processing costs. Market prices for frozen fillets are beyond the control of any individual fish filleter; the average processing costs depend largely upon the scale of output and the efficiency of management. The appropriate scale of output of a filleting plant depends

partly upon the capital resources of the entrepreneur and partly upon the locally available annual supplies of raw fish. Let us assume that an entrepreneur can borrow adequate capital at ruling interest rates: what would be likely annual supply of fish to a new plant in the West Central Patricia District?

The annual productive capacity of the lakes in the West Central Patricia District is between 1,000,000 and 2,000,000 pounds of fish; one estimate places potential annual production at 1,720,000 pounds.[33] If fishermen are assumed to require 400,000 pounds of fish per year for domestic consumption there would remain 1,300,000 pounds of fish per year for commercial sale.[34] Some fish could be most profitably sold fresh: all the sturgeon and goldeye; some of the lake trout, yellow pickerel, and uninfested whitefish. At most, 1,000,000 pounds of fish per year would be available for filleting.

There are two reservations to this estimate of the fish supplies which could be filleted at a new plant. First, it is not certain that all 1,000,000 pounds of raw fish could be more profitably filleted in one plant (say at North Caribou Lake) than at Island Lake or at Pickle Lake. The relative profitability of each plant will be partly indicated by the lakeside prices that each can offer for fish.

Second, if a new filleting plant in the Patricia District were to process 1,000,000 pounds of fish annually, it is not certain that the filleting plants at Island Lake and Pickle Lake could continue profitable operations. A filleting plant at North Caribou Lake would utilize many fish that would otherwise be processed at Island Lake or Pickle Lake, and already the corporation with a plant at Pickle Lake claims that it cannot continue to fillet fish unless it has an assured supply of raw fish. Probably there are not enough fish in and around the West Central Patricia District that can profitably be sold as frozen fillets to permit three fish filleting plants to operate profitably.

Would a new plant to fillet fish in the Patricia District be profitable? On the basis of calculations presented in Appendix II it is estimated that, in present conditions and working at capacity, any plant capable of producing 500,000 pounds of frozen fillets per year would lose approximately 2.00 cents per pound: perhaps $10,000 per year. But the local fish supplies are limited, and if the annual input of raw fish should fall to (say) 500,000 pounds, then annual output would be only 250,000 pounds of frozen fillets and the plant would operate at an output well below the point of minimum average total cost. Assuming unchanged fixed costs and appropriately reduced total

variable costs, Appendix II suggests that losses on an under-utilized large plant might total $22,500 per year.

An alternative to a large plant would be a smaller plant producing nearer capacity (i.e. preferably beyond the point of minimum average total cost). Frozen fillets made in the smaller plant would be more costly than frozen fillets made in a large plant working at capacity but less costly than frozen fillets made in an under-utilized large plant. Appendix II suggests that the losses of a smaller filleting plant might total $11,000 per year.

Granted that a new fish filleting plant in the Patricia District would be unprofitable, would the social benefits from the operation of a plan exceed the social costs? The social costs are the annual subsidies, let us examine the possible social benefits.

First, a new filleting plant would provide six months' employment per year for perhaps twenty or thirty Indian women and five or ten Indian men. If commercial fishing were to be rationalized along the lines suggested in Chapters III and IV some redundant fishermen and the wives of some others could be employed at the plant.

Any subsidy to the filleting plant would be a substitute for at least some direct income payments to the

redundant fishermen. If commercial fishing were not to be rationalized, then employment in the plant would be a net addition to the regional employment, and any subsidy to the plant would be an addition to the current subsidy to commercial fishing operations.

Second, the social benefits would include the introduction of a new steady flow of cash income to Indians in the Patricia District. A consequence of a new steady flow of income would be a reduction in the need for traders to advance food, gear and other goods to some Indians. Indians then might pay lower interest costs when they purchase goods.

Third, other entrepreneurs might realize that Indians could be depended upon to work steadily, and they themselves might begin to employ Indians inside or outside the Patricia District.

But the most important social benefit would be the development of an employable work force used to wage labour, to "normal" standards of punctuality, and to regular employment. The economic benefit would be in the improvement of the Indian labour as a factor of production. Other entrepreneurs might be able to employ Indians who has been "trained" at the filleting plant, and the Indians themselves might find the "outside world" a more realistic alternative to life in the West Central Patricia District than at present.

It bears repeating that major benefits would be of two kinds: economic and social. The economic gains would arise through the improvements in the quality of labour as a factor of production. The subsidy would be justified if the expected increase in subsidy were to be exceeded by the expected increase in the net earnings of the Indians which could be directly imputed to their greater productivity. The social gains would arise from the greatly increased range of economic choice which the improvements to the quality of their labour would give to the Indians.

A subsidized fish filleting plant might also be justified if there were to be a change in fish marketing legislation. At present Indians sell many whitefish which are infested with cysts of the parasite Triaenophorus Crassus. These infested whitefish may not be exported to the United States, but they may be sold freely anywhere in Canada.[35] There has however been some governmental pressure to restrict inter-provincial sales (and even intra-provincial sales) of infested whitefish. If the Ontario Government should pass legislation to forbid the sale of any whitefish infested with Triaenophorus crassus then commercial fishing on many lakes in the Patricia District will cease if the fish cannot be sold as fillets.[36] Without commercial fishing the Indians would be even poorer than at present, and the federal

Government might be forced to make relief and welfare payments to offset the loss of earnings from fish sales. Depending on the extra welfare payments, a subsidy of $10,000 or $20,000 per year to a fish filleting plant would be quite an attractive alternative to direct payments to the Indians.

Conclusions

It is clear that in 1961 most fish from the Patricia District were sold in northern Ontario at prices that did not permit fish marketing to be carried on without subsidy. If fish from the Patricia District had been sold fresh on the open wholesale markets in Canada and the United States, instead of by contract, then fish marketing might have been economically self supporting and have paid lakeside prices as high as those ruling in 1961. But even if fish marketing had been economically self supporting, lakeside prices ruling in 1961 were not high enough to enable the present number of commercial fishermen to earn adequate net incomes per man.

However, the commercial fisheries can be rationalized to enable fewer commercial fishermen to earn higher net incomes than they earn now. If commercial fishing were to be rationalized and if the fish were to be sold fresh in wholesale markets in Canada and the United States, commercial

fishing in the Patricia District could probably be carried on without subsidy.

In the next chapter we shall examine the market in which inland fish are sold, and in the two following chapters we shall examine means by which fish from the Patricia District could be marketed.

Notes to Chapter V

1. S. Gross, fish dealer, Montreal, in conversation, 3 January 1962.

2. Imputed capital cost (1961), $967.71, sales (1961), 137,435 lb. Actually 0.7041 cents per lb., but rounded to 0.71 to clarify Tables 8, 9, 10.

3. See Appendix I.

4. (1961) Lake I - Nakina, 6.41¢ per lb.
   Lake IV - Pickle Lake 9.09¢ per lb.
   Pickle Lake - Savant Lake 1.00¢ per lb.
   Source: Files of the Indian Affairs Branch.

5. Fish boxes delivered at Nakina bear lower delivery costs than fish boxes delivered at Pickle Lake.

6. Montreal Lake, Saskatchewan, fall fishing, 1960. Co-operative Fisheries Ltd., "Statement of Settlement with Cooperators".

7. Fish dealer, Winnipeg, in conversation, June 1961.

8. Average annual capital cost would be 0.25¢ per lb. if a packing plant costing $3,000.00 had an annual output of 150,000 lb. of fish. (Assume 10 year write-off period, and interest at 5% per year.)

9. As at Nakina in 1961. In 1960 the cost of packing fish at Montreal Lake, Sask., averaged 4.37¢ per lb. Co-operative Fisheries Ltd., Settlement.

10. Miscellaneous costs also include rubber gloves, pails, nails, etc.

11. See Table 20. Statistical Appendix.

12. Letter from H.L. Buckley, University of Saskatchewan, dated 13 September 1961. Actual marketing charge 1949-1959 averaged 11.358% of gross sales.

13. Fish dealer, in Winnipeg, in conversation, June 1961.

Notes to Chapter V (continued)

14. Existing in the summer of 1962.
Quoted by a member of the Indian Affairs Branch.

15. Lakeside price of whitefish.....5.75¢ per lb.
Shore installations.....0.71¢ per lb.
Miscellaneous.....1.43
Administration.....0.50
2.64
Imputed gross earnings of fishermen. 3.11¢ per lb.

16. Letter from P.A. Robichaud, Agent, C.N.R. Express Dept., Ottawa, dated 28 September 1961, and telephone enquiries of C.N.R. and C.P.R. Express Depts. in Winnipeg, August 1961.

17. See Table 14, Chapter VI.

18. Fish dealer, Winnipeg, in conversation, August 1961.

19. See Chapter VI for further details.

20. If net profit margins were really 2.5¢ per lb., a dealer in northern Ontario would need to sell only 500,000 lb. of medium whitefish to obtain total net profits of $12,500. Although not impossible, this seems a little high, for sales of other fish would be even more profitable, and several companies have gross sales in the region of 1,000,000 lb. per year.

21. It was decided that the study should not be concerned with retail fish marketing.

22. "Prices of Whitefish Sold in Two Toronto Stores", Data collected by Fish and Wildlife Branch, Ontario Department of Lands and Forests, Summer 1961.

23. "Prices and Amounts of Fish Received". Reported by a fish dealer in Toronto. Data collected by Fish and Wildlife Branch, Ontario Department of Lands and Forests, Summer 1961.

24. Frozen fillets are regularly flown in Canso aircraft in Saskatchewan and Manitoba (5,000 lb. payload), in

Notes to Chapter V (continued)

Ontario fresh fish are normally flown in Norseman aircraft (1,850 lb. payload).

25. M. Miller, "In Search of a Fisheries Policy", Department of Natural Resources, Saskatchewan, p. 6, (Appendix X).

26. Observation, and discussion with J. Towne, Co-operative Fisheries Ltd., Prince Albert, Saskatchewan, August 1961.

27. Table 24, Statistical Appendix. Fillets of inland fish vary between about 35% and 55% of the weight of the raw fish.

28. H.C. Frick, "Whitefish Fillets and Dressed Whitefish", in Report of the Royal Commission on the Price Spreads of Food Products, (III, Ottawa: Queen's Printer, 1960), III, p. 561.

29. Fish dealer in Winnipeg, in conversation, August 1961.

30. Table 24, Statistical Appendix.

31. Reduced from (0.71 + 1.43) ¢ per lb. because a steady filleting operation would probably be better organized than the existing operation at the Three Lakes.

32. Formally, let:

w = lakeside price of fish, ¢ per lb.
x = cost of packing fresh fish, ¢ per lb.
y = cost of filleting and freezing fish, ¢ per lb. of frozen fillet.
z = air transport costs, ¢ per lb.
a = sale price of fresh fish at railhead, ¢ per lb.
b = sale price of frozen fillets at railhead, ¢ per lb. of fillet.
m = inverse of the weight of fillet as proportion of 1 lb. of fresh fish.
p_1 = profit per lb. on fish purchased from fishermen, sold fresh, ¢ per lb.
p_2 = profit per pound of fish purchased from fishermen, sold as frozen fillets, ¢ per lb.

Assume that unlimited sales can be made without any change in the prices of fresh fish or frozen fillets.

Notes to Chapter V (continued)

Then the dealer should clearly try to maximize the rate of profit on fish purchases, and he should sell fish fresh or as frozen fillets according to whether $P_1 \gtrless P_2$

$$P_1 = (a - w - x - z)$$

$$P_2 = \left(\frac{b}{m} - w - \frac{y}{m} - \frac{z}{m}\right)$$

Clearly, if $P_2 > P_1$ we sell fish as frozen fillets.

If, $\left(\frac{b}{m} - w - \frac{y}{m} - \frac{z}{m}\right) > (a - w - x - z)$

or, if, $\left(z - \frac{z}{m}\right) > \left(\frac{y}{m} - x\right) + \left(a - \frac{b}{m}\right)$,

That is to say, fish should be sold as frozen fillets instead of fresh if the savings on transport costs exceed the extra cost of processing,and any decline in the gross return per pound of fish purchased from fishermen.

33. 1,558,000 pounds from lakes in area of Wunniman Lake, (See Table 39 Statistical Appendix), plus 160,000 pounds, (licence limit on Attawapiskat, Eabamet, and Mamiegwess Lakes, for whitefish and pickerel, 1961).

34. Table 39, Statistical Appendix. Approximately 2.5 lb. per person per week; much less than Greenwood's estimate, Note 17, Chapter I.

35. At present the regulations of the U.S. Food and Drug Administration prohibit the importation of whitefish that are infested with cysts of the parasite Triaenophorus crassus. All shipments of whitefish that are exported from Canada are inspected: first by Canadian inspectors, and second by American inspectors situated at the international frontier. Shipments of whitefish that are uninfested may be sold in the United States, in fact whitefish which are lightly infested are also sold there. Shipments of fillets must also be uninfested; the cysts of the parasite are usually removed during the filleting process.

36. Some lakes in the West Central Patricia District contain fish which are lightly infested; these fish can be exported without difficulty. Other lakes contain fish which are heavily infested; most whitefish from these lakes must be filleted or sold whole and dressed only in Canada.

CHAPTER VI

THE MARKET FOR CANADIAN INLAND FISH

This chapter has three parts: first an outline of recent trends in the consumption of inland fish caught in Canada, second a description of the geographic and economic structures of the American market for inland fish, and third, an account of barriers to the importation of inland fish into the United States of America.

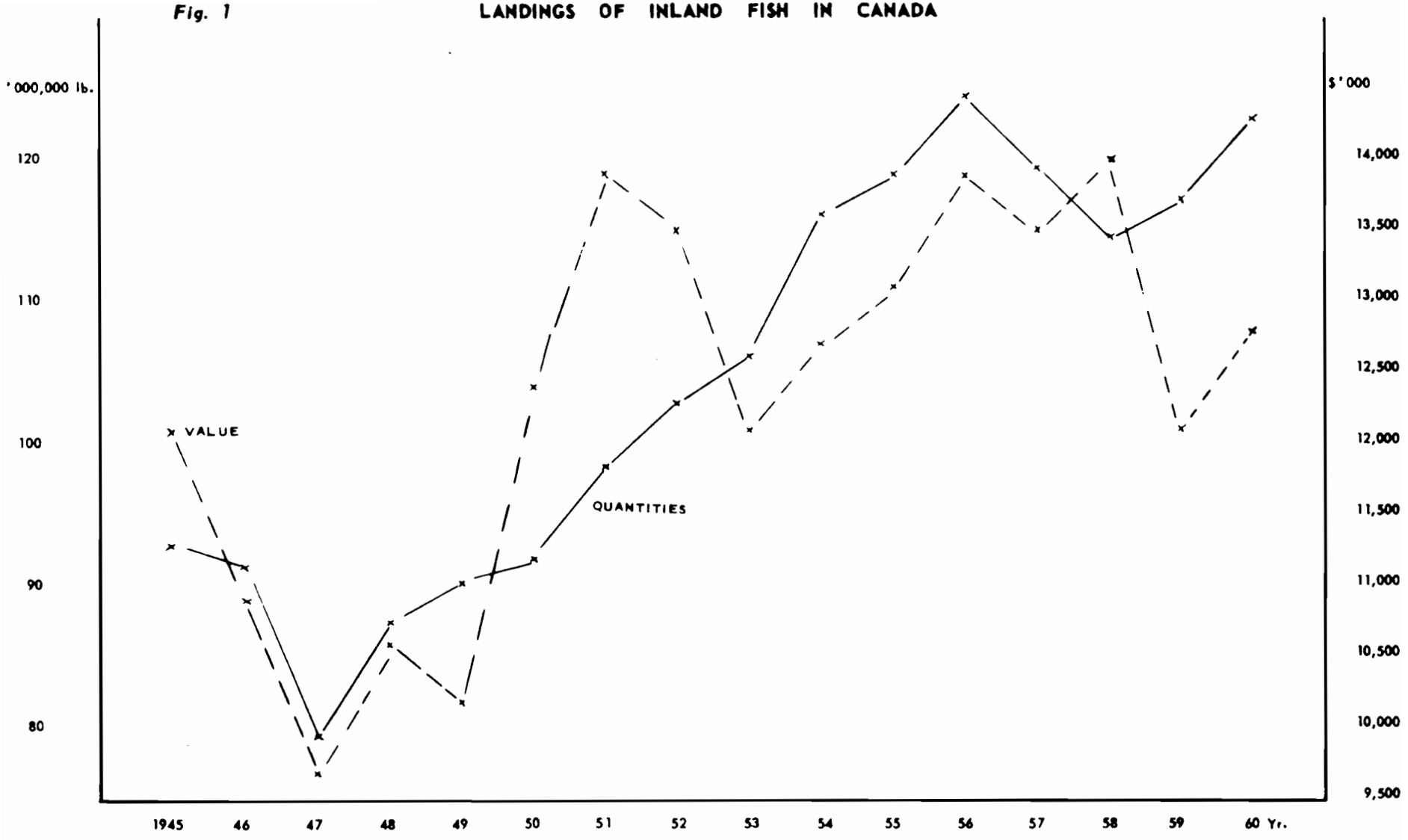
Recent Trends in the Consumption of Canadian Inland Fish

The emphasis of this chapter is upon the American market for inland fish from Canada. The emphasis is justified because the bulk of Canadian inland fish is exported to the United States of America,[1] and also because statistics upon the exports of inland fish to America are more reliable than statistics upon the consumption of inland fish in Canada.

Inland fish from Canada are exported to the United States in several forms: whole and dressed (fresh and frozen), and as fillets (fresh and frozen). Most of the high grade fish from the Great Lakes, from the rest of Ontario, from Alberta, and from the Northwest Territories, are sold whole and dressed (fresh) in the American market, but large quantities of fish from Saskatchewan and Manitoba are sold as frozen fillets.

Fig. 1

LANDINGS OF INLAND FISH IN CANADA

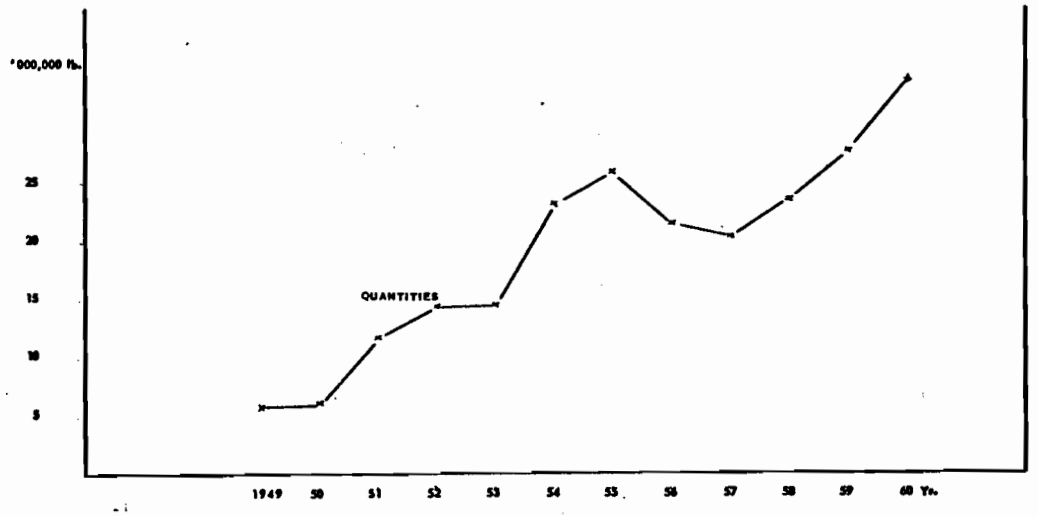


SOURCE: TABLE 25, STATISTICAL APPENDIX.

Prices of inland fish tend to be higher in the United States than in Canada (See Appendix I), and Canadian dealers normally prefer to sell fish on the American market rather than on the Canadian market. Because dealers normally sell in Canada fish that they cannot sell in the United States, inland fish on the Canadian market tend to be residual supplies.[2] There are no accurate data on Canadian consumption of inland fish, nor are there any accurate data on the regional distribution of consumption of inland fish. Estimates of landings of inland fish are therefore accepted as the measure of total consumption of Canadian inland fish, and exports of inland fish as the measure of consumption of Canadian inland fish in the United States. The difference between annual landings and annual exports (stocks of fresh inland fish at any one time are negligible in comparison with annual supplies) is accepted as an estimate of domestic disappearance of inland fish in Canada.[3]

Figure 1 shows that from 1947 until 1956 there was a steady rise in yearly landings of inland fish in Canada, and that since 1956 there has been no clear trend in yearly landings. We conclude that total consumption (American and Canadian) of Canadian inland fish has risen and fallen in the same way.

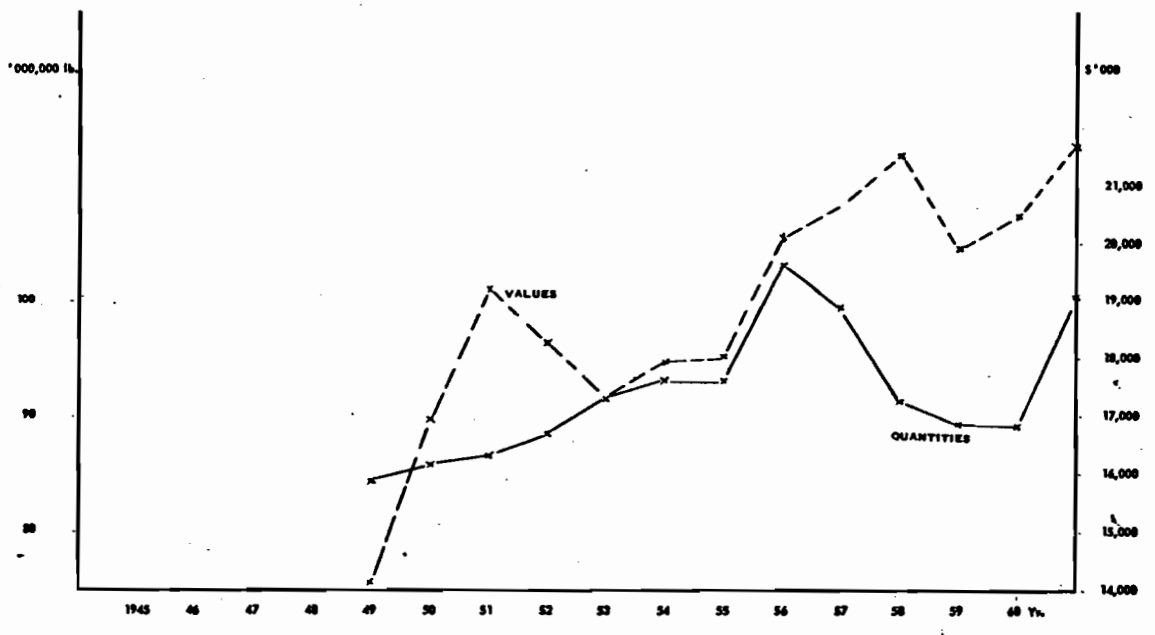
Fig. 2 **APPARENT CONSUMPTION OF INLAND FISH IN CANADA**



SOURCE: TABLE 25, STATISTICAL APPENDIX.

Fig. 3 **EXPORTS OF INLAND FISH FROM CANADA**

(Landed equivalent of whole, dressed, and filleted fish.)



SOURCE: TABLE 25, STATISTICAL APPENDIX.

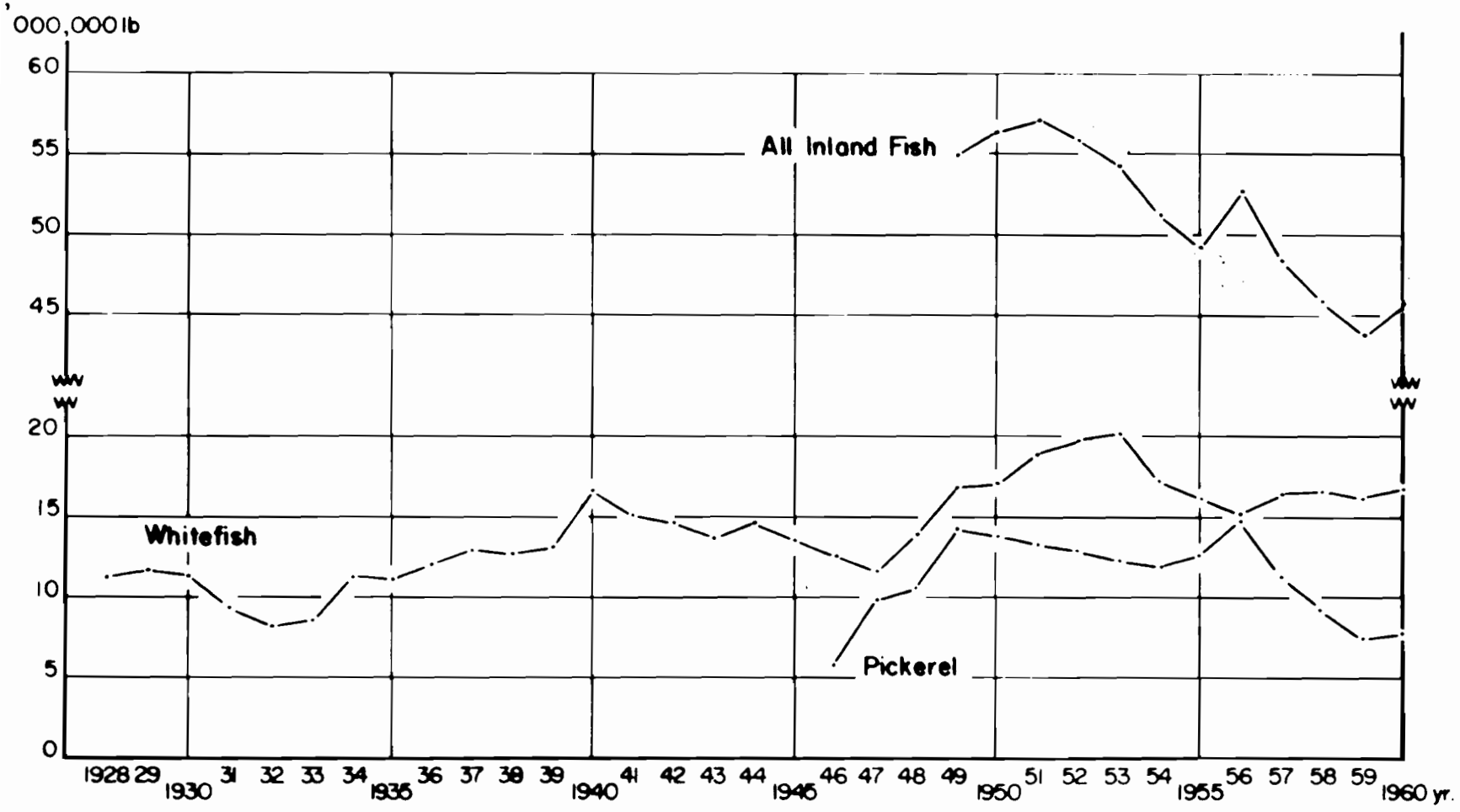
Consumption of inland fish in Canada is not accurately known. Figure 2 shows the difference between landings of inland fish in Canada and the landed equivalent of exports of whole, dressed, and filleted inland fish; this difference, domestic disappearance, is accepted as a measure of annual Canadian consumption and net stock changes. The figure suggests that annual consumption of inland fish in Canada has increased in most years since 1949. It is likely that at least a part of the increase has been due to improved statistics rather than to a real change in consumption.[4]

When we examine data on the volume of exports of Canadian inland fish (Figure 3) we find that annual consumption of Canadian inland fish in the United States rose steadily from 1949 until 1956 and has declined since then. The annual value of exports has not declined equally, and the different trends suggest that since 1956 there has been some increase in the average value per pound of inland fish exports. A part of the increase has been due to a change in the mix of inland fish exports; nonetheless it is true that the average marketed value per pound of some inland fish has increased in the past few years.[5]

The recent trend in the volume of annual exports of inland fish has consisted of two distinct changes. Figure 4 shows that from 1951 until 1960 exports of whole and dressed

Fig. 4 EXPORTS OF INLAND FISH.

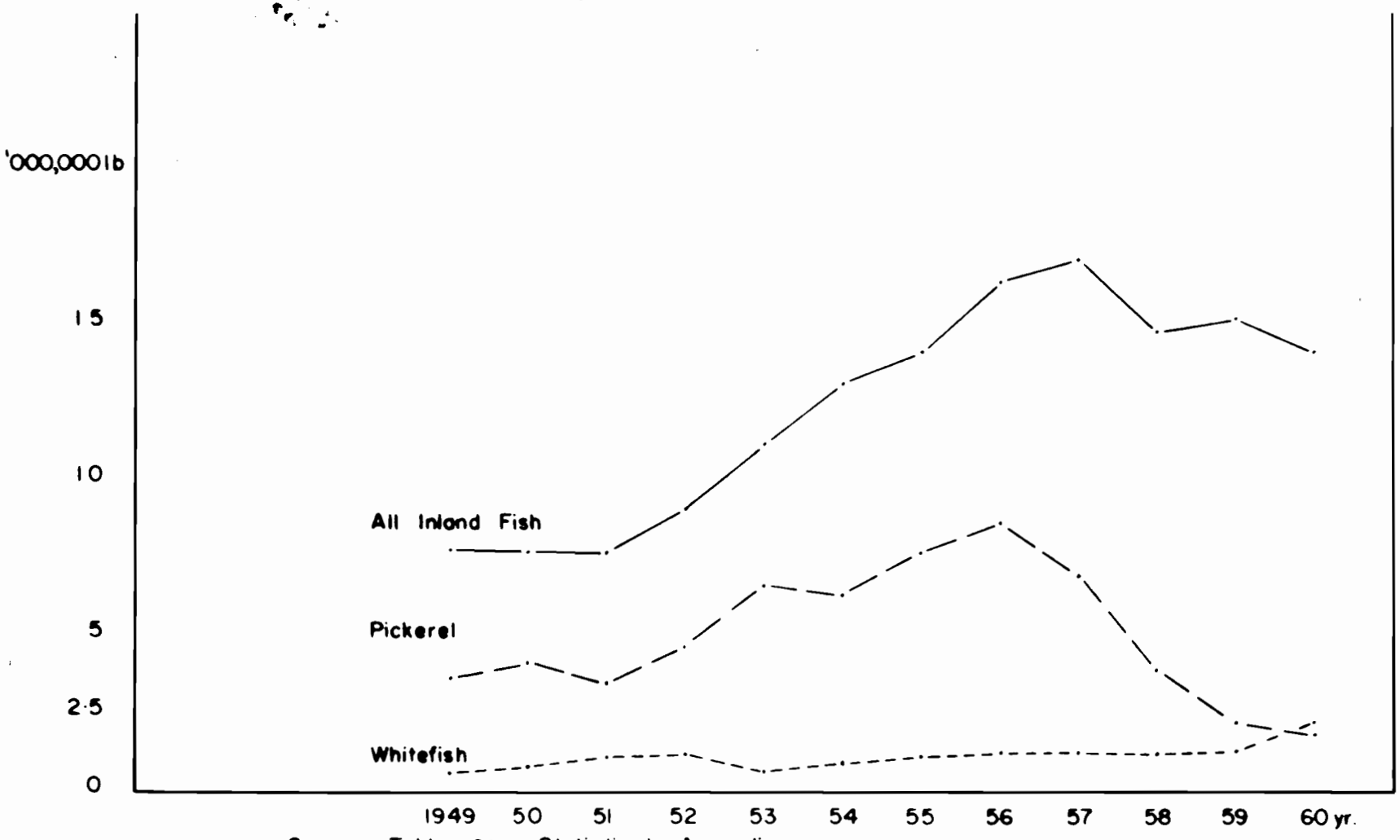
(Quantities; fresh and frozen, whole and dressed).



Source: Table 26, Statistical Appendix.

Fig. 5 EXPORTS OF FILLETS OF INLAND FISH 1949-1960.

(Quantities fresh and frozen).



Source: Table 26, Statistical Appendix.

inland fish fell in all but two years; the annual decline in exports averaged 1,000,000 pounds per year.[6] Almost 54 per cent of the fall was caused by a reduction in exports of pickerel,[7] and almost 20 per cent by a reduction in exports of whitefish.[8]

There has been a marked change in the trend of exports of fillets of fish. From 1952 until 1956 the annual decline in exports of whole and dressed fish was more than offset by the steady annual increase in exports of fillets of inland fish, but between 1956 and 1960 annual exports of whole and dressed inland fish and of fillets of inland fish have declined together. Figure 5 shows that the fall in annual exports of pickerel fillets (which includes exports of fillets of blue pickerel) exceeded the fall in annual exports of all fillets, and implies that annual exports of fillets of other inland fish increased from 1957 to 1960.

Most of the decline in exports has been due to a spectacular fall in the annual catch of certain species taken on the Great Lakes;[9] the decline has been caused by substantial and cumulative changes in natural fishing conditions.[10] Table 41 (Statistical Appendix) surely shows that the recent prosperity of commercial fishing in the north of Canada has been based upon the decline in supplies of certain species of fish caught on the Great Lakes, and not on an upward

shift in demand nor upon a significant reduction in northern fishing costs. If the Great Lakes' production of whitefish, pickerel, and trout, recovers to the levels ruling ten years ago, commercial fishing in the West Central Patricia District will once again become unprofitable.

The profitability of commercial fishing in the West Central Patricia District depends particularly upon the prices of whitefish, pickerel, and trout; these fish can bear the cost of transportation from this area whereas most other inland fish cannot. Commercial fish landings in Ontario exhibit this importance quite clearly. In 1960 whitefish, pickerel, and lake trout, formed only 16 per cent of the quantity of inland fish landed in Ontario,[11] 59 per cent of the quantity landed from the Northern Inland Waters of Ontario,[12] and 73 per cent of the quantity landed in the Sioux Lookout Forestry District.[13]

Now that we have discussed recent trends in domestic disappearance and exports of Canadian inland fish, let us examine in more detail the composition of inland fish exports during 1960. Table 12 shows that in 1960, sales of white-fish, pickerel, and lake trout accounted for over 60 per cent

of the value of exports of inland fish. Table 12 also shows that the bulk of exports were of whole and dressed fish.

TABLE 12

EXPORTS OF INLAND FISH FROM CANADA (1960)

Species	Whole and Dressed	Fillets	Per Cent of All Exports of Inland Fish
	----- $ '000 -----		
All Inland Fish	14,612	5,867	100
Whitefish Pickerel[a] Lake Trout	10,281	2,267	61.27
Not Specified and all other	4,331	3,600[b]	38.73
Per Cent of all Exports	71.35	28.65	

Notes: a. Pickerel exports include exports of blue pickerel.

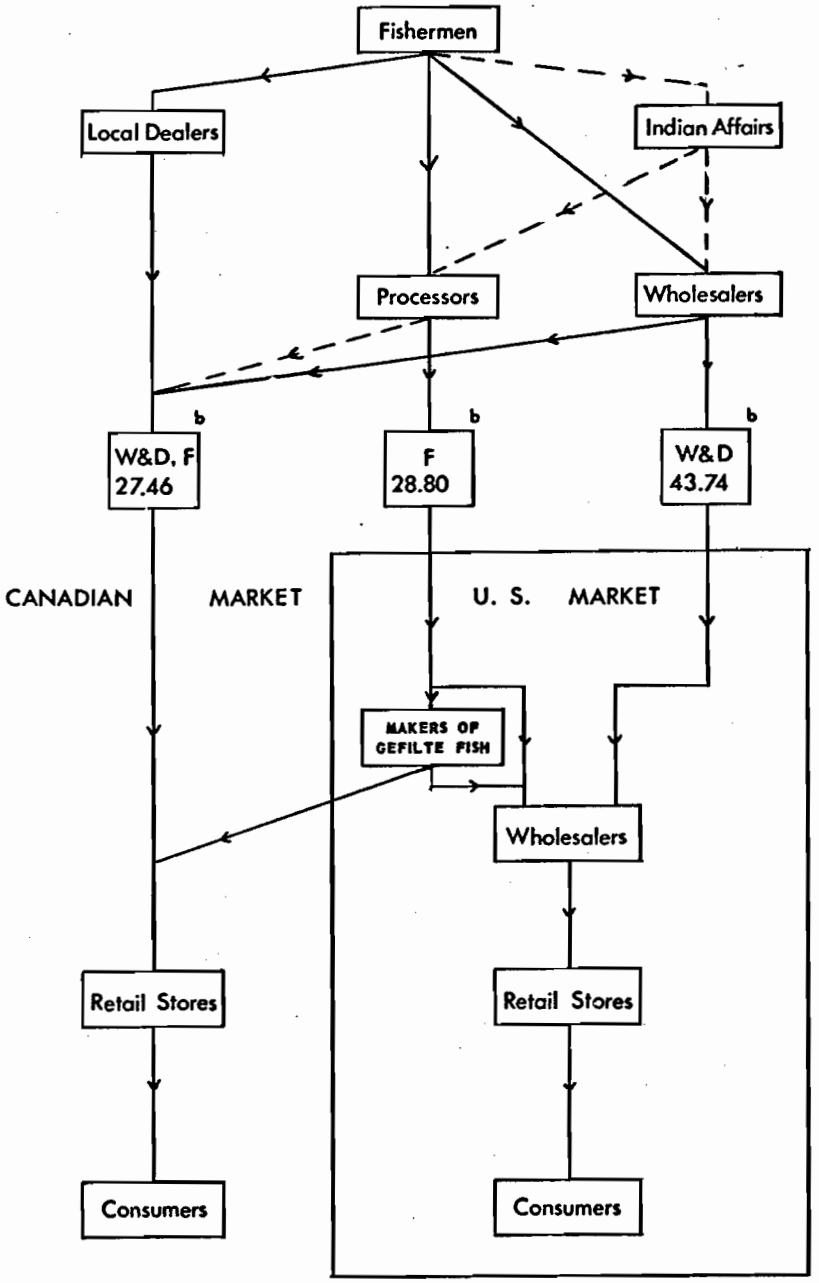
b. Includes fillets of lake trout.

Source: Canadian Fisherman, Canadian Fisheries Statistics, (Canadian Fisherman, Gardenvale, Que., 1960), Information supplied by the Department of Fisheries, and Dominion Bureau of Statistics, Ottawa.

Inland fish are exported whole and dressed, fresh and frozen, and as fillets. Some whitefish, pickerel, and lake trout from the Great Lakes are exported fresh and round, elsewhere in Canada most fresh fish are dressed. Fillets of inland fish are exported fresh and frozen; most are frozen.

Fish processors usually make frozen fillets of inland fish into three kinds of packs: 1 pound packs,

Diag. 2 CANADIAN INLAND FISH: FLOW CHART 1960[a]



NOTES: a. SOLID LINES INDICATE MAIN FISH FLOWS. DASHED LINES INDICATE SMALLER FLOWS.
b. LANDED EQUIVALENT, AS PERCENTAGE OF CANADIAN CATCH.

c. W & D = WHOLE & DRESSED..... F = FILLETS

SOURCES: FIELD WORK AND TABLE 25 STATISTICAL APPENDIX.

5 pound packs, and 10 or 15 pound blocks that are made up into packages of 50 and 60 pounds. The smallest packs are distributed to consumers through retail chain stores; a marketing channel that is not controlled by the fresh fish marketing interests. The 5 pound packs are sold to restaurants and to clubs by wholesale food brokers and fish dealers. The packages of block frozen fillets of 50 and 60 pounds are sold to the commercial manufacturers of gefilte fish.

The highest proportion of total exports of fillets of whitefish and northern pike are shipped to the manufacturers of gefilte fish. In 1960, at least 59.5 per cent of the exports of frozen fillets of whitefish (pounds) were shipped directly to Newark and to Vineland,[14] (New Jersey) where two of the largest gefilte fish plants are located. Frozen fillets of pickerel were exported in small lots to many destinations throughout the United States,[15] probably most in the 1 pound and 5 pound packages.

Geographic and Economic Structure of the American Market

Inland fish landed in Canada are distributed to consumers through several marketing channels. Diagram 2 shows that in 1960 almost 28 per cent of the quantity of inland fish landed in Canada was sold directly (whole, dressed, and as fillets) on the Canadian market. The remainder was exported:

almost 44 per cent of landings as whole and dressed fish, and 29 per cent as fillets.

The whole and dressed inland fish and fresh fillets of inland fish are exported to American fish dealers, who sell them to fish retailers, and to operators of clubs and restaurants. Frozen fillets are exported to American wholesale fish dealers, other food wholesalers, retail chain stores, and to operators of clubs and restaurants. Some frozen fillets are exported to the manufacturers of gefilte fish. Manufacturers sell gefilte fish to fish retail stores, grocery stores, and they export some to Canada.

Let us now examine the structure of the marketing channels in more detail. At present whole and dressed inland fish, and fresh fillets of inland fish are exported to the United States by approximately 28 Canadian companies, but a few companies probably handle most of the fish business.[16] Inland fish are imported into the United States by about 17 dealers, but three or four probably handle most of the business.[17] The trade in frozen fillets of inland fish is dominated by a different, but small, group of dealers. Both groups of fish dealers give each other some competition.

The American inland fish dealers serve the large Jewish populations of the New York, Detroit, Chicago, and other towns in the northeastern United States. Table 13

TABLE 13

EXPORTS OF WHITEFISH AND PICKEREL (1960)
CLASSIFIED BY PROVINCE OF ORIGIN AND CITY OF FIRST DESTINATION

Origin	Alberta	Saskatchewan	Manitoba	Ontario	Other	Total
Destination	---------- $ '000 ----------					
New York	589	53	1,175	627	541	2,984
Detroit	188	5	1,268	376	253	2,091
Chicago	1,887	171	1,199	36	24	3,318
All Other	85	193	2,157	614	96	3,143
Total	2,748	422	5,798	1,653	914	11,536

Notes: Values estimated from known quantities of fresh, frozen and filleted fish exported to each destination, valued at the average export values.

Source: Dominion Bureau of Statistics and Department of Fisheries, Ottawa. "Exports of Whitefish and Pickerel to a Selected Number of United States Cities, by Months, 1960."

See Tables 26 and 27 for the distribution of shipments from fisheries in the West Central Patricia District.

shows the estimated values of exports of whitefish and pickerel to the main markets in the United States.

In New York there are approximately eight important dealers in fresh and frozen inland fish; they buy fish directly from Canadian exporters and from fish brokers in Chicago and Detroit. The New York market is said to be a quality conscious market, and it certainly accepts most of the fresh and expensive fish landed on the shores of the Great Lakes. Any difference between the prices of inland fish in New York and Chicago (See Statistical Appendix, Tables 33 and 34) reflects these quality differences.

The gefilte fish manufacturers in New Jersey, geographically within the New York market area, do not compete on the New York market for fish. They compete near the sources of supply by offering fish processors in Canada a market that is not dominated by the fresh fish dealers.

In Detroit, two fish companies handle most sales of fresh and frozen inland fish. One of the companies is possibly the most important outlet for Canadian inland fish in the United States, and the other, is an important distributor of Canadian inland fish in the southeastern parts of the United States. One dealer claims to dominate the market for inland fish in Alberta and the Northwest Territories,[18] he acts as a fish broker and supplies the

fish wholesalers in New York City with fresh fish.

Chicago is the largest single market for Canadian inland fish. One major dealer there is said to be more important than any of the other five companies that handle Canadian inland fish, this dealer sells fish to retailers and wholesalers in Chicago and the mid-west of the United States;[19] he is said to have very close business ties with a fish dealer in Detroit. Chicago is not an important market for inland fish from Ontario; in 1960 only 880 pounds of whitefish were shipped directly from Ontario to Chicago.[20]

In 1960 Canadian inland fish were also shipped to other destinations: e.g. Duluth, Minneapolis, Vineland, and Newark. These other destinations received 27 per cent of the value of exports of whitefish and pickerel, and this included 76 per cent, by weight, of the exports of fillets of whitefish and pickerel.[21]

The importance of the American market for Canadian inland fish has led to close ties between Canadian and American fish companies. Some of the Canadian companies are subsidiaries of American companies (e.g. Booth Fisheries Canadian Corporation). One American producer of gefilte fish has purchased part ownership in a Canadian company that produces frozen fillets. The deal has given the Canadian company an assured market for fillets and the

American Company an assured supply of fillets. At the time the deal was made the Canadian company had plans for expansion in the north of Manitoba and some capital could have been provided by the American Company.[22] Links between American and Canadian companies that are based on capital needs and supplies are of long standing.

Van Vliet, writing in 1948, states:

> Originally all the capital extension for production and marketing came from the United States wholesaling interests...The last fifteen years have seen some shifts away from direct management by the United States interests and some tie in with the Canadian coastal fisheries, but the preponderance of financial connection still remains with the United States industry.[23]

Other American companies still control parts of the market. A dealer in Chicago and a dealer in Detroit together control the purchase of inland fish in the West of Canada. "We control [the buying in] Alberta and [on] the Great Slave Lake," said one of these two men during the summer of 1961.[24] And his opinion was shared by a competitor in Chicago who no longer buys inland fish from the prairie provinces.[25]

Fishermen or local fish dealers in Alberta and on the Great Slave Lake have no real alternative to selling fish to the dealers from Chicago and Detroit, or to their agents. The two companies have persuaded other American fish buyers

to accept allotments of fish from them instead of attempting to buy directly from local dealers,[26] and they have extended their influence to the Canadian fishermen and fish dealers by supplying capital.[27] Moreover there are no local fishermen and fish dealers who have the capital resources and the market contacts necessary to organize a steady shipment of fresh fish from the lakes to Chicago or to New York.

Most fish caught in Alberta are sold fresh. Local fish dealers have very limited filleting and freezing facilities, and there is no public cold storage on the prairies west of Winnipeg that accepts fish.[28] Fish caught in Alberta during the summers must be shipped immediately to market. Once the fish are in New York of Chicago it is almost always more profitable to sell them fresh than to freeze them and to sell them as frozen fish some weeks later.

East of Alberta however the Canadian fish dealers can sell fish as frozen fillets; as a product which does not deteriorate in quality each day if remains uneaten. Fishermen and local fish dealers on the Great Lakes do not have this alternative market for their production of whitefish, pickerel and trout. These fish can usually be sold fresh at premium prices in New York, and dealers would lose profits if they were to fillet and freeze them regularly.

Barriers to the Importation of Inland Fish into the United States of America

Regulations on the importation of inland fish into the United States of America have had a pervasive influence on the Canadian inland fish industry. All inland fish imported into the United States are subjected to import duties and quality inspections, and whitefish that are infested with the parasite Triaenophorus crassus may not be imported at all.

Imports of whole and dressed fish (fresh and frozen) bear duty of one half of one cent per pound of fish, [29] and fillets of inland fish (fresh and frozen) bear a duty of one and one half cents per pound of fillet.[30] Imports of processed fish however are more highly taxed; imports of fish balls, fish cakes, and fish puddings bear a duty of 25 per cent of the export value,[31] and imports of fish packed in other ways bear many different rates of duty.[32] These import duties have discouraged the construction of fish processing plants in Canada: Canadian dealers cannot successfully compete with American producers of smoked fish, and no Canadian dealer has yet invested in a large scale plant to make gefilte fish in Canada.

For Canadian exporters quality inspections are a far

less serious barrier than import duties. American fish dealers can request the Bureau of Commercial Fisheries to inspect shipments of fish received from abroad to see if the shipments meet their own quality requirements.[33] A few Canadian fish are classed as being unsuitable for importation into the United States, but these quantities are much lower than the quantities of fish rejected because they are infested with a parasite.

The United States Food and Drug Administration forbids the importation of foods composed wholly or in part of a filthy or a putrid substance,[34] and in practice the Administration regards cysts of the parasite Triaenophorus crassus as filthy and putrid. To prevent the export of infested whitefish the Canada Department of Fisheries began to inspect all export shipments of whitefish. The inland fish dealers have begun to make frozen fillets of infested whitefish; during the filleting processors the 'candlers' remove cysts of the parasite from the flesh of the fish. Commercial fish filleting has allowed some lakes in the north of Canada to be fished commercially, and has been stimulated by the demand, (from manufacturer of gefilte fish as well as from consumers), for frozen fillets of inland fish.

When inspecting shipments of whitefish, Canadian and American authorities take a sample from each shipment for export to the United States. If the Canadian authorities

find that the sample is infested with parasites at a rate of over 25 cysts per hundred pounds of flesh, they reject the shipment as unsuitable for export.[35] The American authorities then may inspect a sample from any shipment passed by the Canadian authorities. They should reject any shipment found to have any cysts in them, but in fact they seem to permit shipments if the sample is infested at a rate of less than 35 cysts per hundred pounds of fish.[36] In spite of the preliminary and more severe inspection by the Canadian authorities, the United States Food and Drug Administration has sometimes rejected shipments of whitefish previously passed by the Canada Department of Fisheries.

TABLE 14

EXPORTS OF WHOLE AND DRESSED WHITEFISH: CANADIAN AND U.S. REJECTIONS

Year	Exports of Whole and Dressed Whitefish	Rejections of Whole and Dressed Whitefish		Rejections as a Percentage of Exports of Whole and Dressed Whitefish	
		Canadian	U.S.	Canadian	U.S.
	'000 lb.			%	%
1956	15,282	432	65	2.83	0.43
1957	16,411	701	158	4.27	0.96
1958	16,507	765	273	4.63	1.65
1959	16,196	1,018	369	6.29	2.28
1960	16,769	914	463	5.45	2.76

Source: Canada Department of Fisheries, Winnipeg.

The data show that the proportion of whitefish, exported from Canada, that American authorities have regarded as unsuitable for importation into the United States, has risen considerably in recent years, even though there has been no change in the whitefish regulations. There is no independent evidence to suggest that relatively more infested whitefish have been caught recently, or that Canadian inspectors have become less strict.

In summary it is clear that American capital and American demand for inland fish created the inland fish industry in Canada. Even today American corporations dominate industry, and the structure of imports duties on fish and fish products prevents the Canadian companies from strengthening themselves by processing the fish more than they do at present. The major part of inland fish exports are, and will remain, whole and dressed fish and fresh frozen fillets of fish.

Notes to Chapter VI

1. From 1949-1960 approximately 1,324,000,000 lb. of inland fish were landed in Canada, and 1,095,192,000 lb. of inland fish (landed equivalent) were exported. Table 25, Statistical Appendix.

2. cf. MacKenzie W.C., "The Demand Outlook for the Canadian Fisheries", in Resources for Tomorrow, Conference Background Papers, (Ottawa: Queen's Printer, 1961), p. 764.

3. cf. H.C. Frick , "Whitefish Fillets and Dressed Whitefish", in Canada, Royal Commission on Price Spreads of Food Products, (III, Ottawa, 1960), III, p. 549.

4. H.C. Frick, in conversation.

5. Tables 31 and 32. Statistical Appendix.

6. Table 26, Statistical Appendix.

7. Ibid.

8. Ibid.

9. Table 41, Statistical Appendix.

10. U.S., Bureau of Commercial Fisheries, Fishery Statistics of the United States, 1960, Fish and Wildlife Service, Statistical Digest No. 53, p. 373.

11. 16.47%. Canada, Dominion Bureau of Statistics, Fisheries Statistics of Canada, Ontario, 1960, D.B.S. 24-209. Calculated from data on p. 8.

12. 58.63%. Ibid.

13. 73.13%. Calculated from data in letters from C.D.H. Clarke, Chief, Fish and Wildlife Branch, Ontario Department of Lands and Forests, dated 25 October 1961 and 15 November 1961.

14. "Canadian Exports of Whitefish and Pickerel to a selected

Notes to Chapter VI (continued)

number of U.S. cities, by months, 1960". Unpublished compilation by Dominion Bureau of Statistics. Total exports of whitefish fillets (1960) were 22,773 lb., of which at least 13,543 lb. were shipped to Newark and Vineland, N.J.

15. Inspection of export documents maintained by External Trade Division of Dominion Bureau of Statistics.

16. There are no data upon the size distribution of dealers in inland fish. Companies are those dealing in inland fish and named in "Directory of Fish Processors and Fishery Products", in Canadian Fisheries Statistics, 1959, (Canadian Fisherman, Gardenvale, Que.). Information supplied by Department of Fisheries, and D.B.S., Ottawa, pp. 88-101. Companies not named in the Directory, and estimates of the relative importance of various companies in Canada and the United States were indicated by a fish dealer in Montreal, in conversation, 3 January 1962, and by a member of the U.S. Bureau of Commercial Fisheries, U.S.D.I., New York, in conversation, 5 February 1963.

17. Canadian Fisherman, "Directory of Fish Processors and Fishery Products", pp. 88-101.

18. Department of Fisheries, Confidential Memorandum I, p. 3.

19. Ibid., 9.

20. "Exports of Whitefish and Pickerel for Ontario to a selected number of U.S. Cities, 1960", unpublished compilation by D.B.S., Ottawa.

21. "Canadian Exports of Whitefish and Pickerel to a selected number of U.S. cities, 1960", D.B.S., Ottawa.

22. Fish dealer, in Winnipeg, conversation, June 1961.

23. W. Van Vliet. "Preliminary Survey, Inland Fisheries of the Prairie Provinces", (Canada, Department of Fisheries, Mimeographed, 1948), p. 14.

24. Confidential Memorandum I, p. 3.

Notes to Chapter VI (continued)

25. Ibid., 9.

26. Department of Fisheries, Confidential Memorandum II, p. 3.

27. Ibid.

28. Ibid., 2.

29. U.S. Department of Commerce, United States Import Duties. Annotated for Statistical Reporting, (Washington: U.S. Tariff Commission and U.S. Department of the Treasury, 1960), Paragraph 717 (a).

30. Ibid., 717 (b).

31. Ibid., 718 (b). Full rate, but some imports allowed in at 5% ad. val.

32. Ibid., 720 (a) (b). Includes imports of smoked fish.

33. Confidential Memorandum I, p. 8.

34. ".....consists in whole or in part of any filthy, putrid, or decomposed substance", U.S. Federal Food, Drug, and Cosmetics Act and General Regulations for its Enforcement, U.S. Dept. of Health, Education and Welfare, Food and Drug Administration, (Washington: G.P.O., 1953), Section 402 (a). U.S., Committee on the Judiciary of the House of Representatives, United States Code, 1958, (Washington, G.P.O., 1959) IV, Title 21, Chapter 9, p. 3769.

35. C. Joyce, Fisheries Officer, Toronto, in conversation, June 1960.

36. C. Joyce, in conversation.

CHAPTER VII

MARKETING POLICIES

This chapter discusses the extent of area monopsony in the central part of the Patricia District, then it outlines regulations which could be used to control the marketing practices of dealers, and concludes with an outline of alternative marketing policies for a sales agency.

The discussion in Chapter III concludes that when some fish dealers can buy fish without meeting serious competition from other dealers, fishermen can probably obtain greater aggregate net returns if they sell their fish through their own sales agency, or if restrictions are placed upon the economic freedom of the fish dealers. The increase in aggregate net returns is obtained because dealers are forced to pay fishermen higher lakeside prices for their fish.

The prices at which fish of a given quality are sold are determined mainly by supply and demand, but other market forces are important. Among these forces are: the degree to which dealers can restrict competition, the degree to which fishermen and dealers are aware of alternative markets, the degree to which fishermen and dealers depend upon the sales of fish for their cash incomes, and the degree to which fishermen and dealers are aware of the economic and legal

complexities of marketing.

In the past, fish dealers were able to restrict competition in several ways. (1) Different companies tended to buy fish in different parts of the Patricia District in which each was a dominant buyer. (Even today dealers who buy fish from some points on the edge of the West Central Patricia District are protected from the competition of dealers who buy from other points: e.g. Armstrong Fisheries Ltd. and Austin Airways Ltd. cannot compete successfully for fish at Sandy Lake and Sachigo Lake where Northland Fish Ltd. normally buys fish.) (2) Some fish dealers owned commercial fishing licences, and other dealers could not buy fish caught on the authority of those licences.[1] (3) Some fishermen were outfitted by particular dealers, to whom they were therefore obliged to sell fish. Moreover the Government of Manitoba has restricted competition between fish marketing companies operating in the north of the province;[2] for example it has refused to permit a second fish marketing corporation to set up a fish filleting plant in an area already being exploited by one marketing corporation. Protection in northeastern Manitoba has given one corporation which buys fish in Ontario a competitive advantage in the Patricia District.

To some extent these controlled market conditions

exist today. If buyers and sellers are equally aware of alternative markets and dealers, if they are equally able to use them, and if they have independent sources of capital, then they do not need protection from each other. In the Patricia District the Indians are not the economic equals of the fish dealers, and there is good reason to help them to sell their fish.

Fishermen could be helped by conditions of sale that would prevent dealers from using their economic power to their own advantage. The Provincial Government could sell commercial fishing licences only to local residents (Indians or Indian Bands), the Federal Government could continue to help to market their fish, and both Governments could continue to invite fish dealers from other parts of Canada to buy fish in the Patricia District.

Alternatively fishermen could organize an agency to market their fish. If dealers now make some monopsonistic profits, then any equally well run fish marketing agency should be able to make similar profits.

But the main problems under review in this chapter are the selling policies of a single sales agency, not the buying policies. Fish could be sold directly to: consumers, fish retailers, American wholesalers, Canadian exporters and wholesalers, or to fish dealers in northern Ontario.

Consumers and Retailers

The author is unaware of any major fish buying company which finds it profitable to sell most of its purchases directly to consumers or to retailers. In general the body of marketing institutions can collect and distribute fish more economically than any single fish marketing company.

Fish Wholesalers and Importers in the United States of America

Since a large proportion of the fish from the central part of the Patricia District is eventually sold in America, an agency could sell fish directly to American fish wholesalers and importers. A sales agency could not export fish as frozen fillets unless the local fish processors were to fillet and freeze the fish to contract, or unless a new fish filleting plant were to be built. The fish processing companies prefer not to work on commission, although there is obviously some price at which they would fillet fish for a fishermens' marketing agency. A sales agency could export fresh fish or frozen fillets only if it were to act as a Canadian wholesale fish company. An agency to market fish from the Patricia District could offer to sell them directly to American fish wholesalers, and could share with the

Americans some normal profits that would otherwise have been made by private fish dealers.

The Indian fishermen themselves would be unable to found a sales agency; but the Indian Affairs Branch could provide capital and assistance, and assist them to market fish in the United States. The Branch, however, does not operate in a vacuum. Finance Minister Fleming, speaking in the Budget Debate on 20 June 1961 about Canadian commercial policy in the international field, said that the Government's objectives include:

> To recognize the legitimate needs of Canadian producers; to safeguard them against unfair trading practices.....[3]

Although fishermen are the producers of fish and need protection from unfair trading practices, the fish marketing companies would certainly and justifiably regard it as unfair if a Government sponsored agency, set up to market fish from the Patricia District, were to by-pass them and to sell directly to the American fish companies. They would consider it the more unfair if the agency were subsidized.

Nor would it be entirely advantageous for other Indians if fish from the Patricia District were to be sold directly to the American fish companies. The Canadian fish companies to whom other Indians sell fish would be seriously

weakened: they would lose control of about 800,000 pounds of fish per year, they would lose profits on fish sales (for they would incur higher overhead costs per unit of sales), and they would no longer be able to offer such a large and steady flow of fish. If competition from a sales agency were seriously to weaken the Canadian companies, they might buy fewer northern fish and reduce the returns to fishermen elsewhere in Ontario and Manitoba.

Fish Wholesalers and Processors in Canada

Chapter V shows that a sales agency could probably sell whole and dressed fresh fish and frozen fillets more profitably in eastern Canada and in the United States than in northern Ontario. Even if an agency had no filleting plant it could arrange to have fish filleted on contract and then sell frozen fillets. The choice would depend upon the relative costs of packing fish and filleting fish, and upon the relative prices of fish in different markets.

Instead of selling whole and dressed fish and instead of having frozen fish fillets made to contract, an agency could sell fish to a company prepared to fillet them. In general, sales at a filleting plant in northern Ontario would be less profitable than sales in eastern wholesale markets. Fish caught on some lakes cannot be sold profitably in

eastern markets; these fish might be sold to fish filleting companies in northern Ontario. But the fish filleting companies almost certainly could not pay lakeside prices for fish high enough to return adequate net earnings to each of the present commercial fishermen. The present subsidy to fishermens' incomes certainly allows the fish filleters to buy fish from the West Central Patricia District at less than their real production cost.

Local Fish Dealers

A sales agency could also sell fish to dealers in northern Ontario. Local dealers normally buy smaller quantities of fish at lower prices than the larger fish wholesalers. They buy smaller quantities of fish because they do not, in general, have the market contacts, know how, or capital necessary to sell large quantities. They offer lower prices because, having smaller volume of sales, they require higher gross profit margins, and because they must sell their fish either to the larger wholesalers, or in competition with them.

In conclusion, an agency to sell fish from the Patricia District should consider sales only on wholesale markets in Canada and the United States. If an agency could sell fish at an average marketing cost as low as that

incurred in 1960 by one marketing corporation in Saskatchewan,[4] it could make higher profits on sales in wholesale markets than on sales to local dealers. An agency could probably make even higher net returns on sales to dealers in the United States. It is doubtful however if an agency selling only 1,000,000 pounds of fish per year, daily, on wholesale markets, could market fish as cheaply as an agency selling the equivalent of almost 6,000,000 pounds of fish per year (See Chapter VIII). The higher the average unit cost of fish marketing, the lower the potential profits on marketing fish in wholesale fish markets in the east. An agency then should be more inclined to sell fish by contract in northern Ontario if it cannot obtain control of enough fish to bring average marketing costs down to 2.00 cents per pound. The minimum sales volume necessary to keep sales costs at this level appears to be in the region of 2,000,000 to 3,000,000 pounds of fish per year.[5]

Having considered the markets in which fish could be sold, consider how an agency could behave. The agency could offer a flow of fish during a fishing season; the maximum size of the flow is determined by catch limits, but neither the actual quantity of fish nor the mix of fish is known until the end of the season. Dealers' offers for fish

depend upon how many fish of each species and grade they expect to receive as well as upon the market conditions they expect to experience. Buyers and sellers may easily have different expectations about both groups of variables, and buyers may rationally offer prices much lower than those that sellers expect to receive.

An agency could sell fish to a single buyer or to many buyers, it could sell single shipments or a sequence of shipments. It could sell fish at the prices ruling in the market at the time of the sale, it could deal with buyers, it could invite tenders, or it could sell fish on commission. Fish could be sold on sight, by description, or before they have been caught.

A firm offer of a steady supply of fish totalling 1,000,000 pounds per year is a valuable bargaining counter in the market in Northern Ontario. If an agency should decide to sell fish to local dealers it should certainly exploit all the bargaining powers that it would possess.

Chapter V established the fact that local sales are less profitable than sales in eastern wholesale markets; the offer of 1,000,000 pounds per year in these markets is not a particularly valuable bargaining counter. Sales in eastern wholesale markets should be on the open market or by tender, rather than by negotiation.

A marketing agency which sells fish daily on wholesale markets can obtain higher net returns than an agency which sells fish by contract in northern Ontario. But these higher returns are risk returns. From time to time an agency selling fish in wholesale markets will make losses even if it can restrict purchases of fish at times when sales are unprofitable. If it cannot restrict purchases at such times, but must sell all the fish caught by the fishermen, then losses will be considerable. If an agency is to raise fishermens' aggregate incomes then it should be able to operate as a private fish company: it must employ a talented manager who is allowed to take marketing risks. If the policy of the Branch is to organize an agency that is merely to dispose of fish caught by Indians, then it would be appropriate for the agency to sell fish f.o.b. a railcar in northern Ontario.

In this chapter we have discussed the extent to which fish dealers can influence the market prices of inland fish in northern Ontario. We have indicated that fishermen can counter this influence by selling their own fish in wholesale markets where there is more price competition between buyers.

Notes to Chapter VII

1. If a fish marketing company owns a licence to fish commercially on a lake, it has a right (which it need not exercise) to a supply of fish from that lake.

2. See letter from a member of the Indian Affairs Branch, dated 8 December 1961. Indian Affairs Branch, Confidential Files.

3. Canada, House of Commons Debates, Official Report, Fourth Session, Twenty-fourth Parliament, 9-10 Elizabeth II, (VIII, Ottawa, 1961), VI, p. 6650.

4. 1.99¢ per lb. See Note 12, Chapter V.

5. See Chapter VIII.

CHAPTER VIII

A SURVEY OF MARKETING AGENCIES

This chapter shows that the profitability of a sales agency depends partly upon the quantity of fish that would be sold annually. The chapter then compares different types of agencies that could be used to sell fish from the Patricia District. The chapter compares the extent to which the fishermen could share in earnings, and the ease with which the agencies could raise capital and hire a manager.

The discussion of Chapter VII concludes that the Indian fishermen in the Patricia District could earn higher cash incomes if they were to sell their fish through a sales agency than if, individually or in small groups, they were to deal directly with fish dealers. The type of agency appropriate for the job of selling fish from the Patricia District depends upon the objectives that the agency is to serve, the quantity of fish to be sold, and the markets in which the agency is to sell fish.

Some marketing agencies are commercial undertakings: they are founded in order to make profits for their owners. Other agencies are not commercial undertakings: an agency may be set up to channel income to fishermen, or to dispose of fish as cheaply as possible. The quantity of fish to be sold is important because, given a market of suitable size,

an agency to market about 5,000,000 pounds of fish per year is likely to be more profitable than an agency to market 1,000,000 pounds of fish per year. Moreover, there are reasons to believe that an agency which would market only 1,000,000 pounds of fish per year could not sell them profitably in wholesale markets in the east of Canada or the United States.

The Profitability of a Marketing Agency

We know that at present the Indian Affairs Branch arranges the sale of fish from the Patricia District at a total, imputed and known, cost that exceeds the gross value of sales (Chapter IV). There is no cause for belief that another agency could market the same quantity of fish a great deal more cheaply. An agency to market 1,000,000 pounds of fish in northern Ontario would either have to be a subsidized business or a non-commercial marketing agency.

The next question is whether a marketing agency could profitably sell 1,000,000 pounds of fish per year in wholesale markets in Canada and the United States. If we make certain assumptions we can estimate the profitability of a marketing agency. We assume: (1) the Indian Affairs Branch supports commercial fishing operations in the Patricia District in the same way and to the same extent

as it supported the commercial fishing operations on the Three Lakes during 1961, (2) the agency can market fish as efficiently as Co-operative Fisheries, a marketing corporation in Saskatchewan, (3) sales total 1,000,000 pounds of whole and dressed fish per year.

The gross income of a marketing agency would arise from a charge, per pound of fish, to cover marketing costs. In Chapter IV the costs of administering a commercial fishery and of selling the fish in eastern Canada and the United States are estimated at 2.50 cents per pound of fish.[1] Assume that the agency obtains fish at 1961 lakeside prices, that the Indian Affairs Branch administers the fishery, and that the agency charges a marketing margin of 2.00 cents per pound of fish sold. The gross annual income of the marketing agency (at 2.00 cents per pound of fish) totals $20,000 per year, plus any marketing profits: perhaps $10,000 per year.[2]

The marketing agency would incur costs to be paid from this gross income: capital costs, general business and sales expenses, the salaries of two clerks, and the salary of a manager-salesman. Capital costs might total $9,000 per year,[3] general business and sales expenses would total $6,000 per year,[4] salaries of two clerks might total $8,000 per year,[5] and $7,000 would be available for the salary of the manager-salesman and for distribution among approximately

350 fishermen. If annual sales were less than 1,000,000 pounds, then the sum available for distribution would also be less. Top class managers and salesmen are expensive. One fish company on the prairies is said to pay its chief salesman an annual salary of $25,000.[6] It is clear that an agency to market fish from the West Central Patricia District could not employ a full time top class manager-salesman on annual sales of only 1,000,000 pounds of fish. An agency to market 1,000,000 pounds of fish per year would probably be an economic failure, and could not pay fishermen the lakeside prices they actually received in 1961. If the agency could market more fish however, the gross income of the agency could be raised proportionately to the increase in sales, but gross costs would not be increased proportionately.

How many fish then would an agency need to sell in order to be profitable? Consider an agency handling 2,500,000 pounds of fish per year. These sales would provide a gross earnings of $50,000 per year, and imply possible gross marketing profits of $25,000, a total income of $75,000 per year. Capital costs might total $18,000 per year.[7] General business and sales expenses would amount to

$15,000 per year, and salaries of three clerks, would total about $12,000 per year.

The salary of a full time, top class, manager-salesman would be $25,000 per year, leaving $5,000 to be distributed among approximately 875 fishermen ($5.72 per man).[8] On gross sales of 2,500,000 pounds of fish per year, an agency could have paid fishermen the lakeside prices they received in 1961. Annual sales of 2,500,000 pounds of fish per year appear to be near the minimum at which a marketing agency could be a profitable commercial undertaking.

Instead of hiring a full time manager-salesman to head a marketing agency, the fishermen of the Patricia District could hire a team of expert negotiators to arrange the sale of fish, on contract, in wholesale markets in eastern Canada and the United States. Contracts could be let for each summer season, on commission or purchase terms. Sales made in this way would return little or no risk profits to the fishermen, but if fishermen were to own the packing facilities and working capital, they would obtain some extra income. A sales agency of this type could sell fish at a very low average cost, for the permanent staff need be little more than one manager to keep check on deliveries, to keep records, and to ensure that the terms of sale are maintained. An agency to sell fish in this way would obtain a relatively

low gross income, but it might break-even when selling only 1,000,000 or 1,500,000 pounds of fish per year.[9]

Let us summarize our conclusions. (1) An agency to sell 1,000,000 pounds of fish per year on wholesale markets in eastern Canada and the United States would probably be a commercial failure, (2) An agency to sell 2,500,000 pounds of fish per year in the same markets would have a reasonable chance of success, (3) An agency to negotiate contract sales might be a commercial success on sales little over 1,000,000 pounds per year. With these conclusions in mind, let us compare the different agencies that might market fish from the Patricia District. To compare agencies we must compare the extent to which the fishermen might share in any net earnings and profits, and the ease with which the agencies could raise capital and hire managers. We shall examine: (1) a single proprietorship, (2) a partnership or a corporation, (3) a cooperative marketing agency, (4) marketing boards, (5) the Fisheries Prices Support Board, (6) the Indian Affairs Branch, (7) the Indian Bands.

A Comparison of Marketing Agencies

An Individual Proprietorship

A single person could market all the fish caught

by the fishermen in the central part of the Patricia District. It is virtually certain that there are no Indians in the area who have the capital and business skill necessary to market, successfully, nearly 1,000,000 pounds of fish a year. It is unlikely that the Branch would be justified in organizing the production of fish, or in providing capital and management advice, for the particular benefit of one Indian. One Indian at the Three Lakes did market some fish for other fishermen; he sold fish to dealers who would otherwise have bought them directly from the fishermen.

If a single person, resident outside the Patricia District, were to market the Indians' fish, local Indians would not necessarily receive any of the fish marketing profits. The Indians might obtain some of the marketing profits if they were to rent, annually, the rights to be a sole buyer of their fish, or if an entrepreneur were to sell their fish on commission. The entrepreneur however, would be obliged to raise the necessary capital himself, and to hire a manager and other staff. The Indians would have no more claims than at present to any income arising from capital ownership, the provision of management, or to any profits arising from risk taking. In general, an individual proprietorship would be an unsatisfactory form

of business organization to market fish from the Patricia District.

A Partnership or a Corporation

If a group of Indians in the Patricia District were to form a corporation or a partnership in order to market fish, and if they could obtain adequate capital, there would obviously be some price at which it would pay other Indians to allow them to market their fish. The group might be able to sell fish to local dealers in northern Ontario, but Chapter V shows that these sales are normally not profitable. Almost certainly the group could not market fish in eastern wholesale markets unless it were to obtain management advice. Chapter VIII shows that on sales of only 1,000,000 pounds of fish per year, the group could not buy the first class management it would need.

Although native entrepreneurs are probably scarcer in the Patricia District than elsewhere in Canada, there is probably the normal amount of latent entrepreneurial ability. If it is accepted that economic development depends upon entrepreneurial activity then there is an excellent case for encouraging and assisting a few Indians to market fish, even at the expense of greater income inequality in the West Central Patricia District.

A partnership or corporation owned by people outside the Patricia District would not necessarily provide any extra incomes for the Indian fishermen. The Indians would have no legitimate claim to the income arising from capital ownership, nor to the profits made by taking the fish marketing risks.

Probably a corporation would not yield extra income to many fishermen, in any case and it would be less convenient to form a corporation in which all of the fishermen would own a very small shareholding then to form a cooperative marketing association.

A Cooperative Marketing Association

Fish could be sold by a cooperative association of fishermen. Perkins defines a cooperative as:

> ...a voluntary business organization owned by and controlled primarily by its patrons, to whom any earnings of the enterprise are distributed in proportion to their individual patronage.[10]

A marketing cooperative is a cooperative association which is formed to market goods on behalf of its members. In Ontario any group of three people, each person over 21 years of age, may form a cooperative which can be incorporated under the provincial legislation.[11] Members of a cooperative which is incorporated have a limited liability

for the debts of the business. A cooperative that is incorporated in Ontario cannot engage in inter-provincial trade unless it is incorporated in the other provinces in which it intends to do business, or unless it becomes incorporated under Federal legislation.[12] Most cooperatives are incorporated under provincial laws.

A cooperative, no less than any other form of business, requires adequate capital and first class management if it is to be a success. Marketing cooperatives usually obtain capital by making small cash levies upon each member, by deductions from the gross sales, and by withholding patronage payments.[13] In the past the Federal and Provincial governments have assisted agricultural cooperatives by making loans at low rates of interest and even by providing gifts of equipment and grants of money.[14] Established cooperatives have also loaned capital to newly formed co-operative associations.[15]

The Indian fishermen of the Patricia District do not possess enough capital resources to found a cooperative marketing association that would own and use its own fish packing facilities. They are even less able to provide the capital necessary to finance the construction and operation of a fish filleting and freezing plant.

The Indian fishermen of the Patricia District do not possess sufficient business skills to run a successful marketing cooperative; outsiders would be required to provide advice and management to any cooperative which might be formed. Cooperative associations often find it difficult to obtain adequate capital and competent managers; an association to market fish from the Patricia District would be no exception. A cooperative that would sell only 1,000,000 pounds of fish per year could not afford to hire a first class manager-salesman and would be obliged either to hire a part-time manager, a second class manager, or to obtain management assistance from the Indian Affairs Branch.

If a cooperative marketing association were able to obtain adequate capital and a competent manager-salesman, it might bring financial and non-financial benefits to the Indians. Financial gains would arise in several ways:

(1) Cooperatives can sometimes provide the same marketing services as a private marketing company, but at a lower cost to its members, or they can sometimes provide better marketing services at an unchanged cost, or some combination of the two.

(2) The members of a cooperative receive a greater gross income when they own marketing services and if the

yield from capital investment in marketing is greater than in any alternative open to them.

(3) A cooperative may be able to counter the monopsonistic powers of dealers.

(4) A cooperative may be able to exercise some monopolistic powers in the market.

These sources of benefit are discussed below:

Even if a cooperative were to have complete control over all the fish from the central part of the Patricia District, some of the potential gains it could make would be negligible. At present dealers probably transport fish as cheaply as possible, because if dealers are not also air transport companies looking for freight for their aircraft, then they face competition from such companies. Packing charges are probably as low as they can be, given the present techniques. Other marketing services probably can be improved to yield extra returns: some dealers have poorer sales contracts than others, they may not sell fish in the best markets because they do not know about them, because they do not control enough fish production, or because they do not have sufficient capital resources.[16] A cooperative marketing agency could improve on the performance of some of the less efficient companies, but probably could not improve on the marketing performance of the best

companies.

Sometimes a cooperative can provide cheaper services than its competitors because it can operate on a larger scale than private companies. The average size of fish packing plants in Ontario is small, any possible economies which may arise from large plants are off-set by the short term fluctuation in the quantities of fish to be handled, and by transportation costs which mount rapidly when fish must be flown long distances. Fish can be filleted and frozen more cheaply on a large scale than on a small scale, but even these economies are sharply offset by the costs incurred when fish must be flown long distances from many lakes to one processing plant.

Some lessons about the economies of processing plants can be learned from the experiences of agricultural cooperatives. Drummond and MacKenzie, writing for the Royal Commission on Canada's Economic Prospects, state:

> Farmers learned...that unless a particular type of economic activity happened to be in an expanding stage or unless the cooperative took over an existing plant to avoid adding to the number of plants in operation, there was a real danger that any gains resulting from price competition would be offset by a loss of operating efficiency. It became apparent that where there was only so much business to be done, an extra plant could not be added without increasing the overhead cost per unit of all plants and that this increase in costs would eliminate possibilities of price increases irrespective of the degree of competition.[17]

If a third plant were to be built to fillet fish caught in the West Central Patricia District, there would be a real danger that all of the plants there would be forced to operate well under capacity or that one of them would be forced out of business. There is a real danger therefore that a third plant would make all filleting of Patricia District fish unprofitable, or that it would make itself profitable at the expense of one of the other two plants.

Fishermen increase their net incomes when they own marketing services which they sell with the fish if they earn interest on the investment and profits from the entrepreneurial risks and uncertainties which they undertake. Indians in the Patricia District do not themselves have sufficient capital to found a marketing agency: they must borrow capital or obtain capital gifts. They can only pay the interest costs of borrowed capital and obtain marketing profits if they market fish efficiently. They can only market fish efficiently if they have talented management, and they can only afford talented management if they sell a large quantity of fish per year: approximately 2,500,000 pounds per year according to our estimates.

A marketing agency in control of all fish from the West Central Patricia District could counter the monop-

sonistic powers of dealers in northern Ontario, and could thereby compel them to buy greater quantities of fish than they would otherwise wish to take.[18]

A marketing agency in control of all fish from the West Central Patricia District would have some monopolistic powers in the northern Ontario market. But in the markets in Winnipeg or the east it would have no monopolistic powers at all.

Even if a cooperative did not have complete control over the supply of fish from the northern Patricia District it could offer its members some advantages. Assuming that a cooperative would be at least as efficient as its private competitors, and could hire a first class manager, it could provide the Indians with the entrepreneurial income from ownership of the marketing services, and to some extent it could counter the monopsonistic power of the dealers by compelling them to offer better or cheaper services to fishermen. The less efficient a cooperative, the smaller would be the benefits to be obtained by the Indians, and, of course, if it were to be very inefficient then fishermen would be better off without it.

Cooperative associations offer some non-financial advantages. If fishing and sales decisions were to be made

by the members of a cooperative they would have responsibility for their fish which at present they do not have. This responsibility would emphasize that the fish belonged to them and not to the Indian Affairs Branch, and might encourage more local initiative in the fishing organization. A cooperative could also ensure its members equal treatment: equal pay for equal fish.[19]

If it were decided to sell fish through a cooperative then there should be a central fish marketing cooperative to sell all the fish from the District, and at each lake or at each fishery there should be a local cooperative to decide upon when fishing should be carried on, how many fishermen there should be, who should obtain credit, at what mark-up the fishing supplies should be sold, and other decisions that must be made before commercial fishing can take place. The local cooperatives could also arrange to weigh, grade, and pack fish.

If the Indians of the different Bands or at the different Fisheries would not cooperate with each other to form a central sales agency, then it would be possible to have a marketing cooperative at each lake or fishery. Each local cooperative could then make its own sales decisions with the fish dealers, and could sell fish f.o.b. the lake. Dealers would probably be quite happy to accept this arrange-

ment since none of the local cooperatives would have any strong bargaining power. The Branch might feel obliged to negotiate with the fish companies the prices of different species and grades of fish, and conditions of sale.

Although a cooperative marketing association could offer the Indians some real benefits, it would create some sociological problems. If the fishermen try to obtain ownership of a marketing agency they must buy the assets that other people have invested in the agency. If fishermen pay for these assets out of current income, the decision to buy would clearly involve a loss of income in the present, in the expectation of higher incomes in the future and the possible profits and pleasures of ownership.

This loss of current income points up three reasons why the Indians may be less willing, than we expect, to buy ownership and control of their own marketing agency. First, the poor always sacrifice present consumption less willingly than the rich. Second, the Crees regard the present, relative to the future, to be more important than we do. Third, ownership of physical assets forms a less important unit in the value system of the Cree than in our own.[20] If the Indians do not wish to own a marketing agency, there seems little reason to attempt to persuade them to form a cooperative marketing association.

A cooperative would also meet antagonism from local entrepreneurs. Dealers might offer higher prices to fishermen who would be prepared to sell their fish individually. The local traders might feel that if the cooperative were successful the Indians or the sponsors of the cooperative would look for new fields to conquer.

It is almost certain that without external stimulus and guidance any cooperative association formed to market the fish from the northern Patricia District would fail. The Cree Indians are not noted for their propensity to cooperate with each other.[21] The economic unit of the Indians living in northwestern Ontario has traditionally been an extended family and not a group organization (even the Indian Band is not a traditional tribal unit), and there might easily be conflict between the authority structure in the Band and in the cooperative.

A community development officer, with a sympathy for the cooperative idea, could provide guidance and help maintain enthusiasm among cooperators. But if sociological obstacles to the existence of a cooperative marketing association are too strong, or if external stimulus cannot be provided, then a cooperative association would not be a suitable fish marketing agency.

A cardinal principle of the cooperative philosophy is that membership is voluntary. If a cooperative association to market fish caught by Indians in the Patricia District cannot be formed because Indians will not participate willingly, then their fish could be sold by a 'compulsory cooperative' or by a marketing board.

A Marketing Board

All marketing boards that exist in Canada regulate the sale of agricultural products; none exists to regulate the sales of fish. Marketing boards obtain their powers from Provincial legislation. By the Agricultural Products Marketing (1949) Act, the Federal Government permits marketing boards with powers within their own provinces, to exercise those powers in interprovincial and international trade.

> A marketing board is an organization of sellers or sellers' representatives. It is established to provide for collective bargaining in the disposal of their products. Because most marketing boards represent some form of monopoly control, they are either established by the Government or, as organizations of private individuals they are permitted to operate under public legislation.[22]

> The essential feature of the board method of marketing is that where the majority of the producers of a commodity are willing and anxious to market their product collectively the minority may be compelled by law to fall in line with the wishes of the majority.[23]

In Ontario there are two kinds of marketing boards for agricultural products. At the request of producers, the Ontario Farm Products Marketing Board may delegate to representatives of producers, the right to form a Negotiating Agency or a Marketing Agency.[24]

A Negotiating Agency is a group of sellers' representatives which negotiates with representatives of the buyers. Meeting together, the representatives can decide the minimum prices at which various grades of the product may be sold, they may define grade standards and other conditions of sale, and also the charges which may be levied for certain marketing services. Negotiations are often tedious, expensive, and if they are unsatisfactory to either party they may be a prelude to arbitration. A Negotiating Agency is appropriate when the negotiating committees can agree upon prices to last for a long period of time or for the major part of a crop; normally if product prices are stable or if a crop has a relatively short harvest season.

In their assessment of the activities of Negotiating Agencies, Poetschke and MacKenzie state:

> ...All that the presence of boards achieves is the collective negotiation of the price. But the presence of a collective body which does negotiate within certain very narrow limits,

> set by the nature of the product and area competition, does give the producers a more effective bargaining position.[25]

Normally a Negotiating Agency cannot obtain monopolistic profits, for it cannot limit the quantities of the product offered up for sale. However, if a Negotiating Agency to market fish from the Patricia District also were to have control over the supply of gear to fishermen and over the organization of fishing, it would have some supply control. Such an Agency could bargain with local dealers over prices and quantities of fish, and could thereby obtain some monopolistic profits; because it would be using some of the powers of a Marketing Agency. A Negotiating Agency would be a suitable marketing device if there were several cooperative or other groups of fishermen in the Patricia District who wished to sell their fish independently.

A Marketing Agency is a much more powerful organization than a Negotiating Agency.

> They [marketing agencies] can control the time and place of marketing, the quantity to be marketed, prices to be paid to producers, service charges to be levied by the local board and agency, and can receive all the money owing to producers for payment to them.[26]

Some Marketing Agencies may even decide to which dealer a producer may ship his product.

The monopolistic powers of a Marketing Agency would

give little benefit to the fishermen in the Patricia District because their fish would probably be sold in a market in which the agency would have no monopolistic bargaining power. But the Marketing Agency, by selling fish in a fluctuating market, and taking normal entrepreneurial risks would have potentially greater net earnings than an agency which successfully forced other dealers to shoulder the risks. But the Marketing Agency would benefit Indians only if these risks were to be taken successfully, and they would be taken successfully only if the Agency were to have adequate capital and talented management.

The Indians of the Patricia District could not supply enough capital and management for a marketing board any more than for a cooperative or another marketing agency. On gross sales of 1,000,000 pounds of fish per year, a marketing board would find itself unable to hire a full time first class manager and salesman, although it might be able to hire a team of skilled negotiators to sell fish on contract terms. In general, a board would have to choose between part time and second grade management.

Marketing boards of both types usually obtain capital from the same sources as voluntary cooperatives; all of these sources could be used to finance a board to market fish from the Patricia District.

A marketing agency could not obtain greater benefits for the Indians of the Patricia District than a single cooperative controlling the sale of all fish from the area. A negotiating agency would have fewer marketing powers and could obtain only smaller benefits. Both types of marketing board would obtain their gains for the same Indians, whether the Indians were organized in small cooperatives, in Indian Bands, or whether they would sell fish individually.

Each of these groups of Indians could be given some responsibility to make decisions about the organization of commercial fishing. Their responsibilities should be steadily increased, for unless the Branch expects that a marketing board or a cooperative can obtain underpriced management and sales advice for an indefinite period into the future, the Indians must be given instruction, and practice in making business decisions. They must also be given the opportunity to bear the responsibility for the decisions they have taken. If the suggestion that the Indians should receive instruction in business management seems naive, is it any less naive to believe that they can take these decisions without instruction and practice?

There are other agencies that could market fish from the Patricia District. None of these agencies could pass any marketing profits back to the Indians on grounds other

than that the fishermen need higher incomes. The Indians would provide no capital, no management, and they would have no right to any income arising from ownership or to any risk profits. These other agencies are discussed below.

The Fisheries Prices Support Board

The Indian Affairs Branch could request the Fisheries Prices Support Board to sell the fish caught by the Indians of the Patricia District. The Board was formed by the Fisheries Prices Support Act (1944-1945), and was endowed with powers which enable it:

> (a) To purchase at the request of any department of the Government of Canada any fisheries product required by such department.
>
> (b) To appoint Commodity Boards or other agents to undertake the purchase and disposition of fisheries products, but any Boards appointed under this paragraph shall include representatives of the primary producers.[27]

The Fisheries Prices Support Board would not lack capital or marketing skills, but the Board would be concerned to buy and to dispose of fish from the Patricia District as cheaply as possible. The Indian Affairs Branch could certainly arrange commercial fishing and allow the Board to dispose of the fish. But the arrangement would not be permanent, and eventually, alternative marketing arrangements would have to be made. Because the objectives of the

Fisheries Prices Support Board do not coincide with the more broader objectives of the Indian Affairs Branch, the Branch should be very reluctant to ask the Board to market fish caught by Indians of the Patricia District.

A Crown Corporation

A crown corporation could be formed, under federal or provincial authority, to market fish from the Patricia District.[28] Crown corporations are normally founded by Act of Parliament (in Saskatchewan, the Lieutenant Governor can form a crown corporation by Order in Council). It seems improbable that the federal Government would pass an Act to found a crown corporation which would have sales of only $150,000 per year and no great prospect of financial success.

In the past, crown corporations have marketed inland fish caught in Canada; the Saskatchewan Fish Marketing Corporation marketed fish successfully from 1949 until 1959. In 1959 the Corporation was superseded by a marketing cooperative in order to allow the fishermen to exercise more control over the activities of their marketing agency.

The Indian Affairs Branch

Recently the Indian Affairs Branch has had enough

influence upon the supply of gear to fishermen, the organization of commercial fishing, and the marketing of fish, to be able to act as a marketing board having powers intermediate between those of a negotiating agency and a marketing agency. The Branch has employed these powers and has arranged the sale of fish at higher prices than the Indians themselves could have obtained. The Branch could continue to use these powers in the future, and could continue to channel disguised subsidy payments to the fishermen.

If the Branch should wish to take an even more active part in fish marketing it could buy fish from the Indians and sell fish to dealers.[29] If the Branch were actually to buy and to sell fish, the Indians would have even more justification for their belief that they fish for the Branch rather than for themselves, and the dealers would have more justification for their belief that the Branch does intervene in the fish marketing business.

Alternatively, the Indian Affairs Branch could act only as an advisor, providing the fishermen with technical and marketing information on request. The Indians themselves would be responsible for the marketing of their fish. Without capital and active management assistance from the Branch, the Indians of the Patricia District would almost certainly be unable to market fish as satisfactorily

as the Branch has marketed them recently.

The Indian Bands

The Indian Bands of the Patricia District could arrange the sale of fish caught by the Indian fishermen. The Band Councils could also organize commercial fishing, they could decide when to fish, who should fish, and they could supervise the processing of the fresh fish.

The Indian Bands could not sell their fish satisfactorily unless they were able to acquire capital and assistance from the Indian Affairs Branch. The Indians would certainly be unable to sell fish in wholesale markets in eastern Canada and, in any case, sales of small quantities of fish in these markets would not be profitable to the fishermen. The Band Councils could not raise adequate capital from members, to finance commercial fishing as a Band project (although they could obtain loans from the Branch for the purchase of fishing equipment).[30] Alone, the Indians do not have the skills to market their fish satisfactorily.

TABLE 15

COMPARISON OF DIFFERENT MARKETING AGENCIES

	Individual Proprietorship		Partnership or Corporation		Cooperative	
	I	W	I	W	One	Many
Capital						
(a) Supplied by Owners or Members?	-	+	-	+	-	-
(b) Supplied from other sources?	=	-	=	-	+	+
Management						
(a) Supplied by Owners or Members?	-	+	-	+	-	-
(b) Supplied from other sources?	=	-	=	-	+	+
Benefits to all Fishermen						
(a) Marketing Profits?	-	-	-	-	+	+
(b) Income from Capital?	-	-	-	-	+	+
(c) Monopsonistic Control?	-	-	-	-	+	-
(d) Monopolistic Control?	-	-	-	-	+	-
Non Financial?	-	-	-	-	+	+
Cost to Government?	+	-	+	-	+	+

Note: I, means Indian ownership and Control. (Indian resident in West Central Patricia District.

W, means owned and controlled by Whitemen. (Whitemen not resident in West Central Patricia District).

+, means yes

-, means no

=, means perhaps

", not relevant

TABLE 15 Continued

Marketing Board		Fisheries Prices Support Board	Indian Affairs Branch		Indian Bands
Marketing Agency	Negotiating Agency		Present Methods	Agent	
-	-	+	+	+	-
+	+	"	"	"	+
-	-	+	+	+	-
+	+	"	"	"	+
+	+	"	+	-	+
+	+	"	+	-	+
+	+	"	+	-	-
+	-	"	+	-	-
+	+	+	+	+	-
+	+	+	+	+	+

Summary and Conclusions

Table 15 summarizes the comparison between different marketing organizations that could market fish from the Patricia District. The signs indicate, for example, that members of one single cooperative selling agency could not themselves provide sufficient capital, but that they might obtain capital elsewhere, and that the members would not have sufficient business skills, but that they might obtain these skills elsewhere (the Indian Affairs Branch). The signs show that the members of a cooperative would own the sales agency, they would have some ineffective monopolistic control over the supply of fish from the area, and they could counter the dealers' monopsonistic power. The signs show that Indians would have some real responsibility for their own fish, and that the creation of a cooperative would imply some money costs to the Government.

If the Indians are to receive a higher net return for their fish than they receive at present: they must own the marketing services and they must take marketing risks. If they are to own an agency, they must either provide capital or repay capital advanced to them. If they are not to lose income by a change in marketing methods they must be able to run an agency that will operate profitably. An

Agency to market fish at the railhead, and an agency to market 1,000,000 pounds of fish in eastern wholesale markets, have little chance of being profitable, even if sales are made, on contract, by a hired negotiator. An agency to market about 2,500,000 pounds of fish per year has a good chance of being profitable.

The balance of advantage rests with either a single marketing cooperative, or with a continuation of the present marketing system. A cooperative marketing association would be an appropriate sales agency if annual sales were to be over 2,500,000 pounds of fish per year, and if the Indians were to wish to own and control their own marketing service. If annual sales are to be in the region of 1,000,000 pounds of fish, or if the Indians do not wish to form a cooperative marketing association, then a cooperative will almost certainly fail. It may be an economic failure or a social failure, or both.

If annual sales are to be only 1,000,000 pounds of fish then a marketing agency must almost certainly be subsidized. Subsidies, disguised and direct, can be more conveniently paid under the present marketing system than through a new, nominally commercial, fish marketing agency.

Under the present system, the Branch can obtain, for the Indians, all the benefits which a marketing board

or a single sales cooperative could obtain, without facing the legal problems that would arise if a marketing board or cooperative marketing association were to be formed. But the Branch cannot market the Indians' fish forever, and if the Indians are not now capable of marketing their own fish they should be given instruction and practice in taking decisions that must one day be their own responsibility.

Notes to Chapter VIII

1. 0.50 cents per pound: commercial fishery administration.
   0.50 cents per pound: company administration and railcar sale.
   1.50 cents per pound: extra costs of marketing (daily) in eastern wholesale markets.

2. Estimated at 1.00 cents per pound: cf. note 20, Chapter V.

3. It has been estimated that Co-operative Fisheries Ltd. requires a sum of $150,000 as working capital to handle the purchase and sale of 6,000,000 pounds as fish per year. An agency to handle 1,000,000 lb. of fish might require $25,000 in working capital: at an annual interest cost (5%) of $1,250.
   A.A. Heidt, "A Financial Program for Cooperative Fisheries Ltd.", Saskatchewan: Department of Cooperation and Development, 1960. Mimeographed.

   A sales agency would also require fixed capital. In 1960 the annual cost of fixed capital at the Three Lakes (interest and write-off) totalled 0.71¢ per lb. of fish sold. Allowing for improved efficiency let us assume fixed capital requirements at 0.50¢ per lb.: on sales of 1,000,000 lb. a total of $5,000.

   A sales agency would also require a head office. The Head Office of Co-operative Fisheries Ltd. is valued (1961) at $37,000. A smaller agency would require a smaller office: say one valued at $20,000. The average annual write-off (over 10 years) and interest cost (at 5%) would total $2,500.

   Total capital costs of an agency required to sell 1,000,000 pounds of fish then might total $9,000 per year.

4. Estimated at 0.6 cents per pound on basis of costs incurred by Co-operative Fisheries Ltd., (1959-1960).

5. Annual salary $4,000 per man.

6. Conversation with G.R. Bowerman, Commercial Fisheries Branch, Department of Natural Resources, Sask. Annual Statement of Operation (1959-1960) of Co-operative

Notes to Chapter VIII (continued)

Fisheries Ltd. shows "Fish Sales Commissions" at $24,811.

7. Working capital: $(2.5 x 1,250) = $3,125.

   Fixed capital: $(2.5 x 5,000) = $12,500.

   Head office: say the same office: $2,500.

   Total annual capital costs $18,125 - say $18,000.

8. If 350 men catch 1,000,000 pounds of fish per year, 875 men are required to catch 2,500,000 pounds of fish. (Assume natural conditions, fishing gear, techniques, same in both cases).

9. The estimate is based on Table 6, where it is shown that contract marketing almost breaks even. The break even sales volume will certainly be less than 2,500,000 pounds per year.

10. B.B. Perkins, Cooperatives in Ontario, (Guelph: Ontario Agricultural College, 1960), p.v.

11. W.B. Francis, Canadian Co-operative Law, (Toronto: The Carswell Co. Ltd., 1959), pp. 30, 32.

12. Ibid., 17, 18.

13. Canada, Report of the Royal Commission on Co-operatives, (Ottawa; Kings Printer, 1945), p. 27.

14. Ibid., 28.

15. R. Lougheed, "How Farmer Owned Facilities have been Financed", in Proceedings of the Co-operative and Marketing Conference, (Guelph; Ontario Agricultural College, 1961), p. 77.

16. Fish dealer, Winnipeg, in conversation, August 1961.

Notes to Chapter VIII (continued)

17. W.M. Drummond and W. Mackenzie, Progress and Prospects of Canadian Agriculture, Study for Royal Commission on Canada's Economic Prospects, (Ottawa: Queen's Printer, 1957), p. 292.

18. By compelling dealers to buy the less valuable fish as part of the price of buying the more valuable fish upon which the wholesale margins are (in absolute terms) rather higher.

19. At certain places in the Patricia District today white-men are paid more than Indians for given species and grades of fish. The disparity is rationalized as being a reward for steady fishing habits and for good quality fish. Fish dealer, Hudson, Ontario, August 1961.

20. M.H. Greenwood, Sociologist, Citizenship and Immigration, in conversation.

21. This statement supported by Greenwood, Honigman, and certain members of the Ontario Department of Lands and Forests, is disputed strongly by two members of the Indian Affairs Branch. The dispute probably is due to different interpretations of the meaning of the word "cooperative".

22. J.B. Rutherford, "Marketing Organizations, with particular reference to Marketing Boards", Economics Service, Dept. of Fisheries, Ottawa, Notes for a talk, December 1962, p. 2. Photostat.

23. W.M. Drummond, "The Role of Marketing Boards in Canadian Food Marketing", in Report of the Royal Commission on Price Spreads of Food Products, (III, Ottawa: Queen's Printer, 1960), III, p. 38.

24. Ontario, Revised Statutes of Ontario, 1960, (Toronto:Queen's Printer), Chapter 137, Section 8, (1) 26, and Section 8, (5).

25. L.E. Poetschke and W. Mackenzie, The Development of Producer Marketing Boards in Canadian Agriculture, (Edmonton: University of Alberta, 1956), p. 74.

Notes to Chapter VIII (continued)

26. D.R. Campbell, "Voluntary and Compulsory Cooperatives", Canadian Journal of Agricultural Economics, Vol. V, No. 2, 1957, p. 28.

27. Canada, Revised Statutes of Canada, 1952, (VI, Ottawa: 1952), III, Chapter 120, Section 9, (1), (h), (i).

28. A crown corporation could be a departmental corporation, an agency corporation, or a proprietory corporation, (See Canada, Revised Statutes of Canada, 1952, (VI, Ottawa: Queen's Printer, 1952), c. 116, (Financial Administration Act), Part VIII, Section 76, (1), (2), (3).

    A departmental corporation would be bound by the Government Contracts Regulations, (Canada, Statutory Orders and Regulations, Consolidation, 1955, (IV, Ottawa: Queen's Printer, 1955) II, p. 1350, P.C. 1954-1971), which stipulates that purchases of goods and services must be made by public tender. An agency corporation or a proprietory corporation is not bound by these regulations.

29. Under Vote 70. Department of Citizenship and Immigration. Canada, Estimates for the Fiscal Year Ending March 31, 1963, (Ottawa: Queen's Printer, 1962), p. 66.

30. Canada, Revised Statutes of Canada, 1952, (VI, Ottawa: Queen's Printer, 1952), III, Chapter 149, Section 69.

CHAPTER IX

POLICY RECOMMENDATIONS

This chapter consists of two parts: first an examination of the objectives of present Government policy towards the Indian fisheries of the West Central Patricia District, and second, recommendations about fish production and marketing.

The Objectives of Policy

Before we can make any recommendations about the marketing of fish from the Patricia District we must define the objectives the recommendations should serve. The objectives of current policy are examined below.

When the Indian Affairs Branch began to support the commercial fisheries in the central part of the Patricia District, it had an apparently simple aim in view: "To proceed with the orderly development of commercial fishing in the Patricias, for the benefit and welfare of the Indians."[1] The broad aim included the intentions to:

> Develop and organize new or abandoned fisheries to provide as much employment to as many Indian people as possible...To bring the Indian fisheries to a position where they will all be self supporting and can be operated as a strict business proposition.[2]

After three or four years, during which the Branch became more deeply concerned about the commercial fisheries in

the Patricia District, several specific objectives of Government policy were clearly recognized:[3]

(1) To raise the aggregate cash incomes of fishermen.

(2) To stabilize the flow of cash income during the summers.

(3) To stabilize the number of commercial fishermen.

(4) To give employment to as many Indians as possible.

(5) To have an economic fishing operation. (This is taken to mean that the gross returns from fish sales should be greater than the gross costs of fish production and fish marketing.)

(6) To allow Indians to 'earn' cash income rather than to receive welfare payments.

Since it must now be recognized that all these objectives cannot be achieved unless commercial fishing is subsidized, there is a further, implied, objective of policy:

(7) That the policy objectives 1 through 4, should be achieved at some minimum subsidy costs, or, that for a given subsidy payment, as many of these diverse aims should be achieved and achieved as fully as is possible.

Some of the objectives are clear, and others are not. Consider the intention to raise the aggregate incomes of fishermen. The aggregate incomes to be raised could be either gross cash incomes or net cash incomes. If the Indians were to

fish all the lakes of the Patricia District they could raise their gross cash incomes, but at the same time they would lower their net cash incomes. Moreover the Branch wishes to raise the incomes of all fishermen, including the incomes of fishermen who catch very small quantities of fish but who must be outfitted, instructed, encouraged, and paid. If these unproductive fishermen were to be prevented from fishing, the gross returns from fishing would be scarcely influenced while the gross costs would be considerably reduced. In consequence, when the Branch attempts to raise the incomes of all fishermen it thereby restricts the increase in the aggregate net cash income from fishing that is compatible with other objectives. Thus an apparently unambiguous objective, to raise aggregate returns from fishing, has several meanings, and not all of them can be achieved at the same time.

The seven different objectives cannot be achieved at the same time. The inconsistency between giving fishing gear to all people who wish to fish and running an economically self-supporting fishery is discussed in Chapters III and IV. But there are other inconsistencies. Suppose that the Branch attempts to stabilize the monthly gross income received by fishermen in the Patricia District. Suppose that all the fish are sold on the fresh fish market, and that the 'mix'

of fish that are caught does not change from month to month. There are consistent seasonal changes in the prices at which inland fish can be sold on wholesale markets,[4] so that the value of gross sales can be kept stable from month to month only if larger quantities of fish are sold at times of low prices than at times of high prices. Such a policy tends to lower the gross value of sales rather than raise it, and thus tends to lower the aggregate net income received by fishermen.

To sell fresh fish at fixed prices throughout a season does not necessarily stabilize the level of gross returns each month, because more fish are caught during some months than during others.[5] Moreover, fishermen must pay dealers a risk premium to persuade them to accept the risks of buying fish at a fixed price and selling them at changing prices. The justification of contract sales at fixed prices is that they reduce marketing costs, not that they increase gross returns.

Finally there is the question of subsidy payments. The subsidy could be spend so that it would support employment and income more efficiently than at present, if the fishermen were to be discouraged from buying and using unnecessary gear and supplies, and if they were to be encouraged to use gear and supplies carefully, and productively.

Because the Indian Affairs Branch has been able to

subsidize commercial fishing operations in the Patricia District it has been able to raise the level of employment above the economic optimum. Subsidies and an uneconomic fishery are no answer to the long run economic problems of the Patricia District; the subsidies disguise the problems they do not solve them.

If subsidies to commercial fishing in the West Central Patricia District were to be reduced, then aggregate net incomes of fishermen would decline: and hence the numbers of fishermen or their average net incomes would decline. There would certainly be a need for more relief payments and probably there would be some reduction in employment. There would however be two clear advantages to a reduction of subsidy and the creation of an economic commercial fishery: first the size of the real employment problem would become strikingly apparent, second, unchanged cash incomes could be given at a lower cost in subsidy and thus leave more funds available for other projects in the area. A reduction in subsidy however would have two equally clear disadvantages: it would clarify the extent of Indian dependence upon the Indian Affairs Branch for cash incomes, and it would destroy a lot of the incentive to persuade men to go fishing.[6]

For this study it is assumed that the Indian Affairs Branch will continue to subsidize the commercial fisheries.

We do not quarrel with the policy: we do point out that if the intention of such a subsidy is to support the cash incomes of the Indians, then the method is unnecessarily expensive. Our recommendations are directed towards reducing the subsidy cost of income support, and to encouraging the Indians to fish more efficiently.

Let us briefly re-state how the subsidies could be paid:

1. The Indian Affairs Branch could pay each fisherman (and each redundant fisherman) a direct cash income subsidy (price of gear being unsubsidized and Indians allowed to purchase their requirements).
2. The fish dealers or a sales agency could pay fishermen the lakeside prices for fish they could afford to pay, and the Branch could pay the Indians an additional few cents per pound (prices of gear being unsubsidized and Indians allowed to purchase their requirements).
3. The cost of fishing gear and supplies could be subsidized, and Indians allowed to purchase their requirements.
4. The Branch could refund fish companies or a sales agency the costs of transporting fish from the lakes to the fish dealers' plants, or to the railhead (prices of gear being unsubsidized and Indians allowed to purchase their requirements).

5. Some combination of the above methods.

The direct payment to the Indians would be the most efficient form of subsidy but it would appear to be a direct Government handout (it would be), and might not seem very closely tied to commercial fishing. A direct subsidy to lakeside fish prices instead of to the lakeside prices of gear, would not disturb the relative real costs of gear and labour, and would encourage fishermen to economize on gear and supplies. If fishermen were to economize on gear and supplies , real fishing costs would be lower than if they were not to, and aggregate net earnings would be higher. A subsidy to the lakeside prices of fish would encourage fishermen to use their gear and supplies more economically than at present.

A subsidy on the costs of air transportation could be justified as development policy. The overhead capital costs of a transportation network in an economically under-developed region are often borne by the larger community of which it is a part: occasionally some of the current transport costs are also subsidized. In the northern Patricia District the air transport network has few overhead capital costs: the landing strips are lakes, in winter and in summer, and there are no extensive navigational aids. A subsidy on the cost of hauling goods from the north of Ontario

would be in line with development policy elsewhere in Canada.[7]

A social disadvantage of subsidizing fishermens' incomes, lakeside fish prices, or transportation costs, would be that the more productive fishermen would receive greater payments than fishermen who would be more in need of extra income. In the short run the better fishermen might fish less, for they could then obtain the traditional standard of living by a small outlay of effort; this response would spread income and employment amongst the needy fishermen. But in the long run the better fishermen would take most of the fish,[8] and receive most of the subsidy payments. The unproductive fishermen, poorer in income, would eventually receive less of the subsidy payments.

Recommendations

If Indian fishermen are to receive, from the sale of fish, greater net cash incomes than at present, they must reduce marketing costs, own at least some of the marketing capital, and successfully take some of the marketing risks. It is reasonable to assume that fish are always marketed as cheaply as economic conditions permit. Fishermen then can

increase their incomes if they own a profitable marketing service: thereby they can obtain income from capital ownership and profits from taking the marketing risks. A cooperative marketing association would allow all members to share in the extra income, most other forms of business would restrict the spread of income to a few individuals.

If fishermen are to own a marketing agency, either they must provide or borrow capital, or someone else must give them capital. Their fish must be marketed profitably if they are to benefit from the investment. An agency to sell at least 2,500,000 pounds of fish per year in wholesale markets in eastern Canada would almost certainly be profitable. An agency to negotiate contract sales of at least 1,000,000 pounds of fish per year directly to dealers in eastern Canada or the United States might be profitable. An agency to sell 1,000,000 pounds of fish per year in wholesale markets in eastern Canada would almost certainly be unprofitable, and so would an agency to sell fish in northern Ontario.

There is no guarantee that fishermen will raise their net incomes if they enter the fish marketing business; in certain conditions they may make losses. The fishermen in the Patricia District do not have the capital assets or the cash incomes to enable them to bear marketing losses; acting alone they cannot afford to take marketing risks.

If a marketing agency were to construct a plant to make frozen fillets of fish from the West Central Patricia District, and if the agency were to sell fish from that area only, it is highly probable that the filleting and marketing operation would be unprofitable.

And finally it must be remembered that the recent prosperity of the northern fisheries is based upon the annual decline in the annual catch of certain species of fish normally taken on the Great Lakes: let the Great Lakes fisheries recover, and the economic problems of the commercial fisheries in the Patricia District are multiplied many times.

Recommendations to improve the efficiency with which the fish resources of the Patricia District are now utilized, and to raise the net cash incomes of fishermen, should take certain factors into account. These factors are: (1) the aggregate net earned income of commercial fishermen is lower than it could be, (2) the subsidy to commercial fishing creates less employment than would be possible, (3) fish marketing could be organized more profitably, (4) the Indian fishermen cannot bear marketing losses, and (5) the Indians are not able to organize the sale of their fish without loans and assistance. The recommendations which follow take account of these factors.

It is recommended that:

(1) The Federal and Provincial Governments should consider a direct subsidy to lakeside fish prices.

(2) The Federal and Provincial Governments should consider charging fishermen the full cost of all gear that they use, and providing adequate credit facilities to enable fishermen to buy their gear.

(3) A charge should be made for all shore installations and services supplied, by the Indian Affairs Branch, to the commercial fishing operations.

(4) Marketing Agencies

(a) If marketing is to be unsubsidized, and if an agency can sell only 1,000,000 pounds of fish per year

A negotiator should be hired to sell fish, on contracts, to fish dealers in eastern Canada and the United States. Contract should be either for purchase or for commission sales. The negotiator could be hired by a cooperative marketing association or by a marketing board (negotiating agency).

(b) If marketing is to be subsidized, and if sales should total only 1,000,000 pounds per year

Sales should be made, as at present, by the Branch acting on behalf of the Indians. Other things being equal, sales should be made to Canadian dealers.

(c) If marketing is to be unsubsidized, and if sales should total at least 2,500,000 pounds per year

Sales should be made by an agency selling fish daily on wholesale markets in eastern Canada and the United States. The fishermen could afford to

hire first class management, to borrow adequate capital, and to take marketing risks. The organization could be cooperative, or a marketing board. The agency would have to sell fish from the West Central Patricia District and from other parts of Ontario.

(5) The Federal and Provincial Governments should not invest in a new fish filleting plant unless they are prepared to pay subsidies, of at least $10,000 per year, for the social economic benefits which a filleting plant would provide.

(6) Accounts should be kept to show the net earnings of fishermen, and of the fish marketing operations organized by the Branch.

(7) As much responsibility as possible should be given to the Indians. Selected Indians should be given instruction in principles of fish marketing and business management, and in fisheries biology and conservation problems.

These recommendations are no certain answer to the economic problems of the West Central Patricia District; they are not even a certain answer to the economic problems of the commercial fisheries. But they are an improvement on current policies, they are based on an analysis of the economic and biological relationships which underly commercial fishing, they are consistent with each other, and they do promise to improve the present situation. But more important than all

these recommendations is the demand for fish from the Patricia District. If the annual catches of whitefish, pickerel, and trout, taken on the Great Lakes remain at the present levels, then the fisheries in the Patricia District can supply the American market and they will prosper. If the annual catches on the Great Lakes recover to the levels of a decade ago, then the fisheries in the Patricia District will once again become unprofitable.

Notes to Chapter IX

1. Indian Affairs Branch, Confidential Files.

2. Ibid.

3. H.R. Conn, Indian Affairs Branch, in conversation.

4. Appendix I.

5. Because of licence regulations, break-up and freeze-up, and the habits of fish.

6. But cf. J.J. Honigman, "Incentives to work in a Canadian Indian Community", Human Organization, Volume 8, No. 4, Fall 1949, pp. 25 and 27.

7. Canada, Royal Commission on Transportation, (III, Ottawa: Queen's Printer, 1961), II, pp. 180-182.

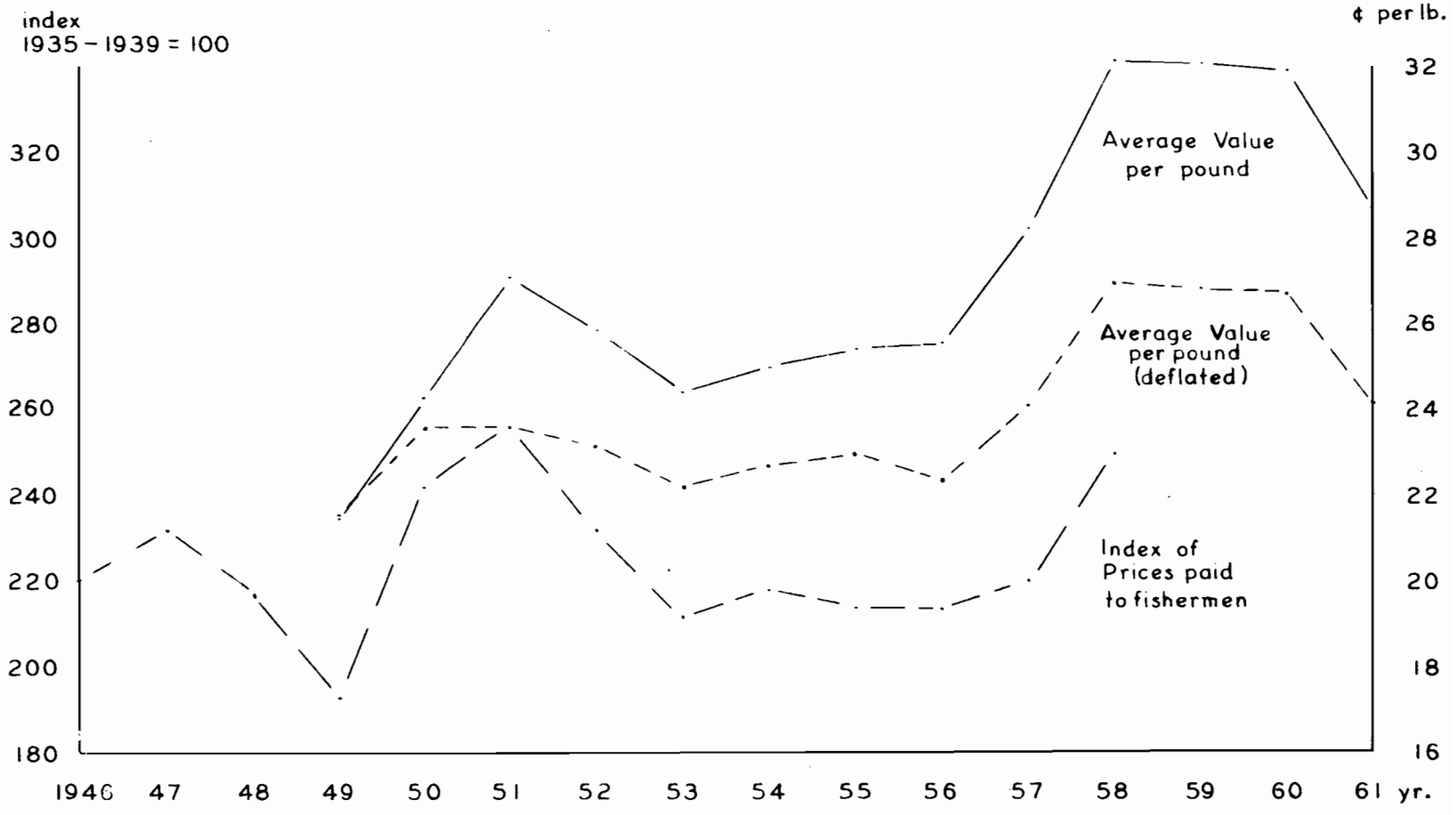
8. At Trout Lake this change has already begun.

	1959	1960	1961
percentage of weight of fish for sale taken by most productive 20% of fishermen	40.4	61.5	85.5

In 1961 there were 37 fishermen at Trout Lake, 10 of these men caught 65% of the total catch.

M.H. Greenwood, Department of Citizenship and Immigration.

Fig. 6 INDEX OF PRICES PAID TO FISHERMEN FOR INLAND FISH AND AVERAGE VALUE (PER POUND) OF EXPORTS OF WHOLE AND DRESSED INLAND FISH



SOURCE: Table 31, Statistical Appendix

APPENDIX I

THE PRICES OF INLAND FISH

The first part of this appendix describes recent trends in prices of inland fish. The second part explains why prices of fresh inland fish and frozen fillets of inland fish vary from time to time and from place to place.

Trends in Prices

Although the prices of all species and grades of inland fish have varied widely during the past fifteen years, they have, in general, moved upwards. The increase has occurred in lakeside and wholesale prices, and probably in retail prices. Figure 6 shows that although the average annual prices paid to fishermen have fluctuated, their prices in 1958 were higher than in six preceding years and higher than between 1946 and 1950.

Chapter III suggests the hypothesis that changes in lakeside prices are caused by changes in wholesale fish prices. Unfortunately there is no annual index of wholesale prices of Canadian inland fish, but there is some evidence that wholesale prices of inland fish have also risen. Figure 6 shows that the annual average value per pound of inland fish exports has risen steadily since the late 1940's. Much of the rise is caused by a real increase in

Fig. 7 AVERAGE VALUE (PER POUND) OF EXPORTS OF WHOLE AND DRESSED WHITEFISH AND TROUT

SOURCE: TABLE 32, STATISTICAL APPENDIX

Note: Whitefish are fresh only
Trout are fresh and frozen

fish prices, but the rise is certainly influenced by general price inflation and by substitution between grades and species of inland fish. However Figure 6 also shows that in real terms average value, per pound, of inland fish exports has risen since the early 1950's, even though the decline in the catches of whitefish, pickerel, and trout on the Great Lakes during the same period has seriously reduced the exports of these high valued grades and species.[1] Moreover, Figure 7 shows that the average values per pound of exports of whitefish and trout have increased substantially since 1949, and the prices of specific grades of whitefish and yellow pickerel sold in Chicago and New York are substantially higher now than they were during the late 1940's.[2]

It is likely that this increase in prices has been caused by an upward shift in the supply schedule for inland fish of the species exported from Canada: this hypothesis is based upon our argument for a relatively stable demand schedule and by the recent collapse of the whitefish, pickerel, and trout fisheries on the Great Lakes.[3]

Prices of Fresh Fish

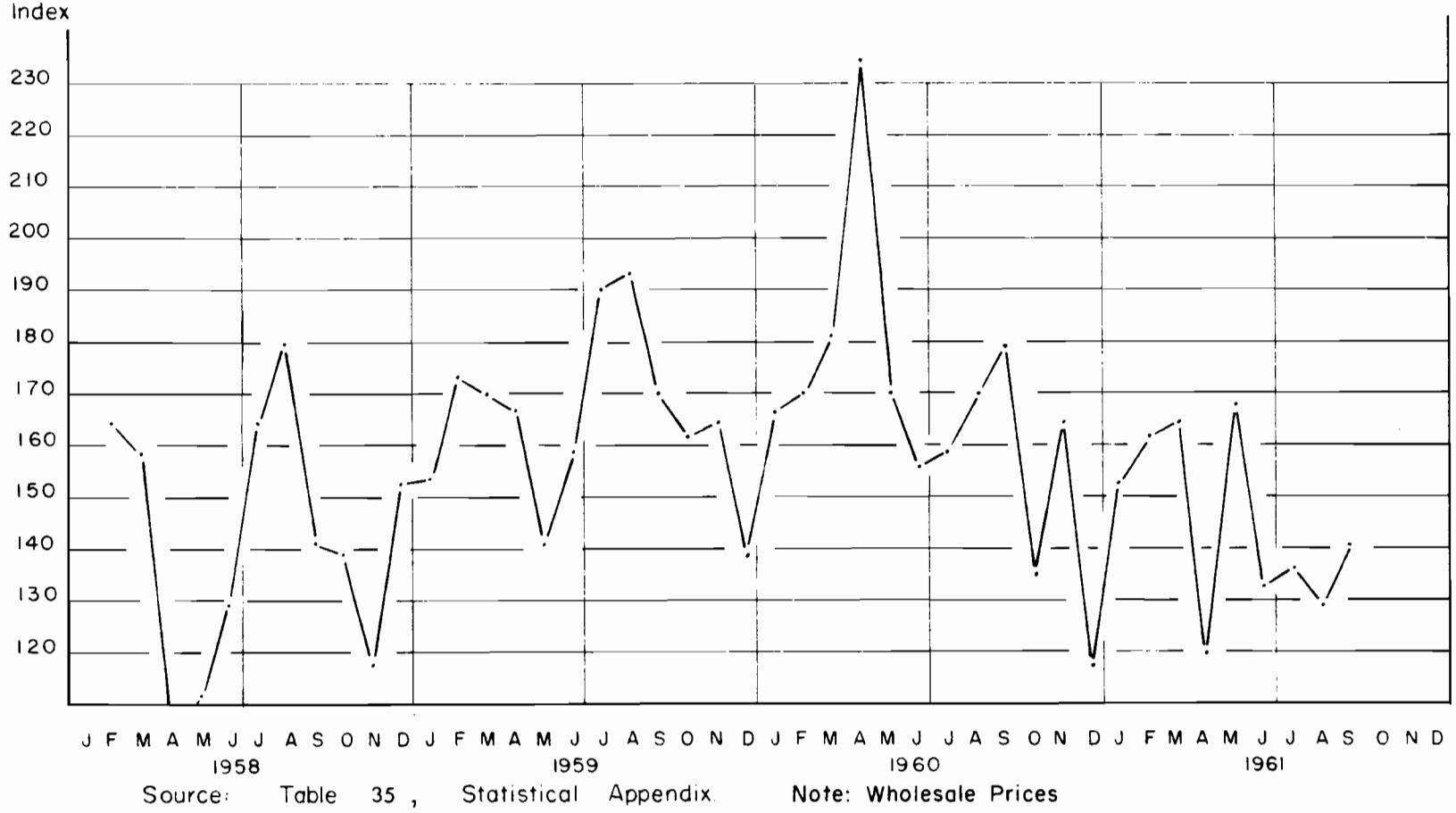
Seasonal Price Fluctuations

During the year, prices of inland fish fluctuate in response to changes in the quantities of fish supplied

to the market and in response to changes in consumers' demand for fish. Short run price changes occur from day to day, week to week, and month to month. The seasonal pattern of monthly prices is shown clearly on Figures 8 and 9. Figures 10, 11, 12, and 13 show the daily and weekly prices paid for whitefish and yellow pickerel in markets in Canada and in the United States of America. The fluctuations arise mainly because of seasonal variations in short run demand and supply schedules and partly because of changes in the quality of fish offered for sale. Changes in natural fishing conditions cause changes in the weekly quantities of fish that move to the wholesale markets, and the religious festivals cause short run changes in the quantities of fish that consumers demand. Given some inelasticity of demand and supply, then even small changes in the position of either schedule causes relatively large price fluctuations. In general, seasonal changes in demand and supply schedules occur at slightly different times in succeeding years; in consequence the seasonal price fluctuations are not identical each year.

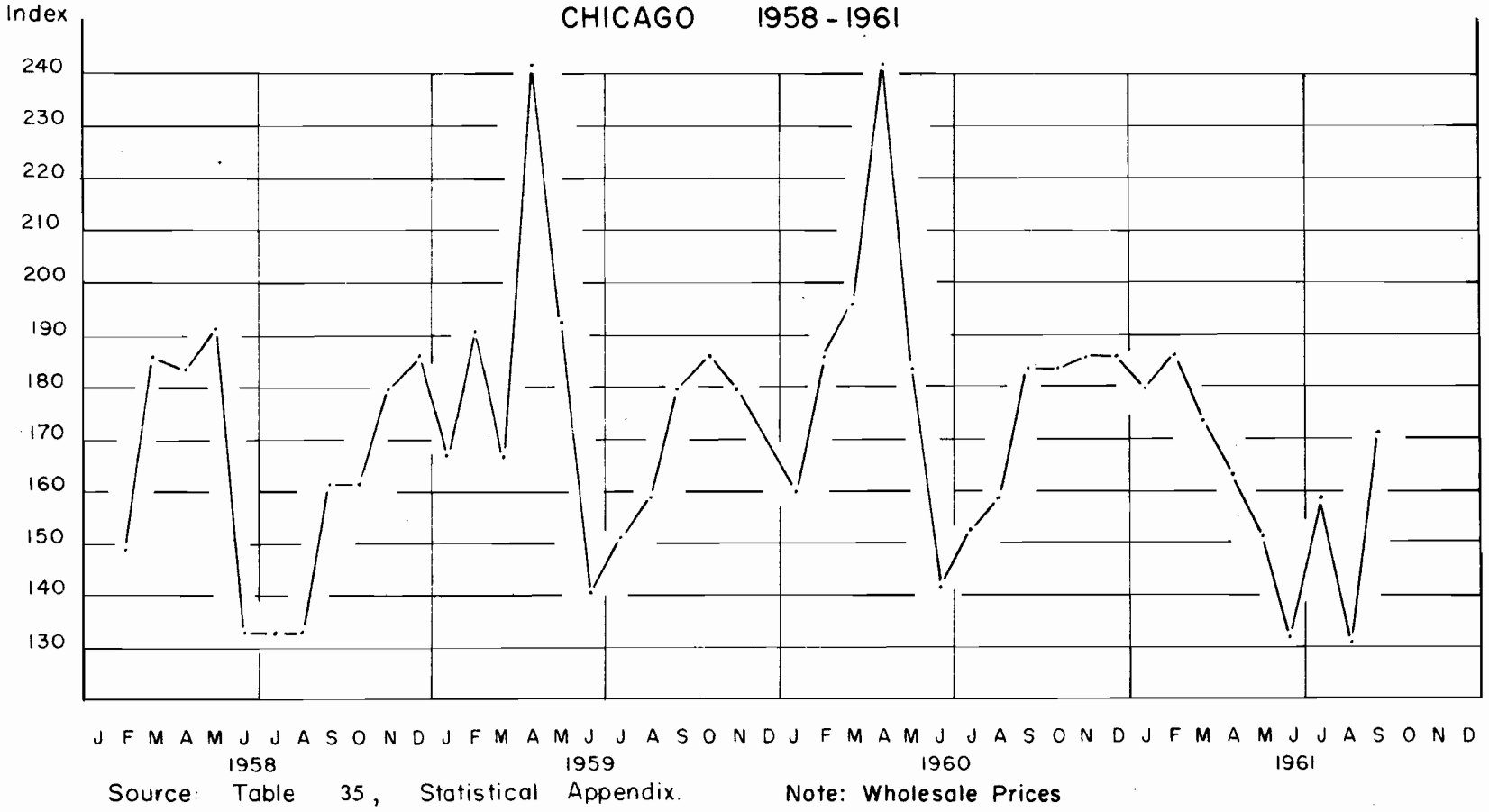
The prices paid for one species and grade of fish depend mainly upon the conditions of supply and demand for the kind of fish. But the prices also depend upon the prices of substitutes. Because different species of inland fish are

Fig. 8 MONTHLY PRICES OF WHITEFISH (FRESH) SOLD IN CHICAGO 1958 - 1961.



Source: Table 35, Statistical Appendix. Note: Wholesale Prices

Fig. 9 MONTHLY PRICES OF YELLOW PICKEREL (FRESH) SOLD IN CHICAGO 1958 - 1961

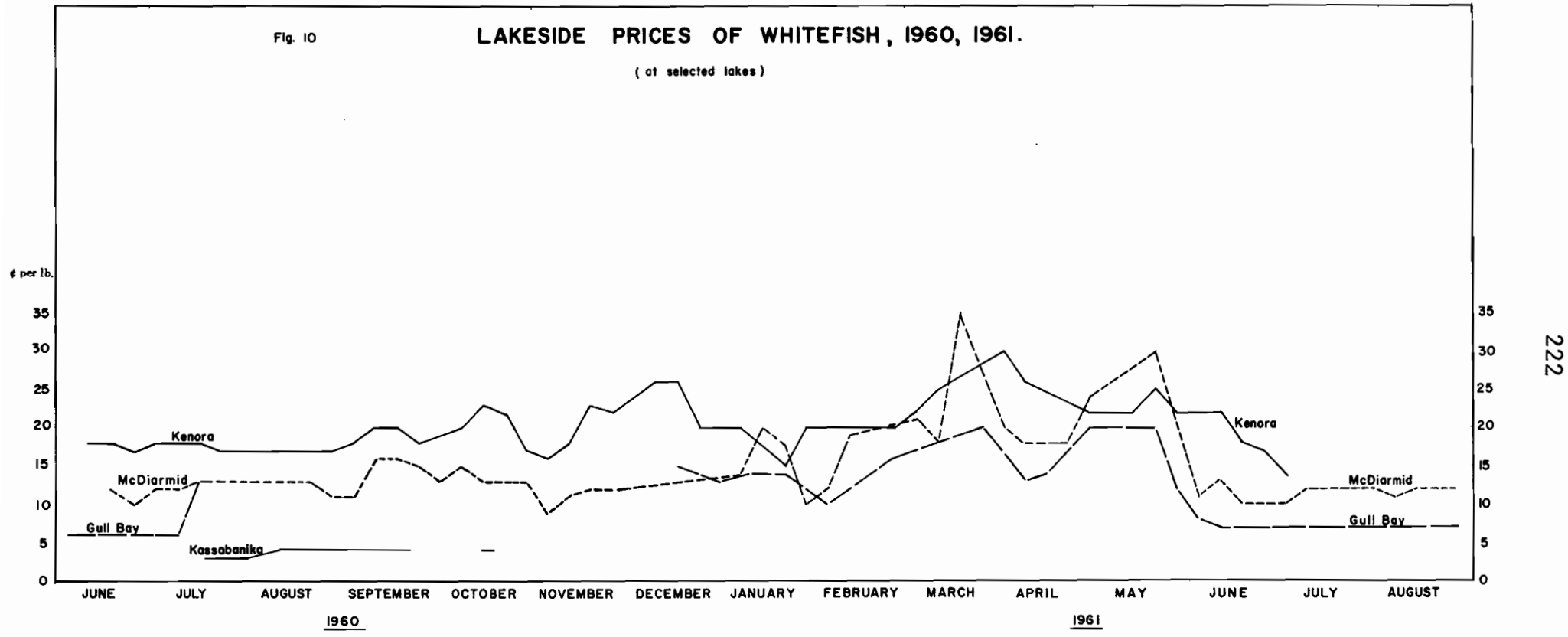


Source: Table 35, Statistical Appendix. Note: Wholesale Prices

Fig. 10

LAKESIDE PRICES OF WHITEFISH, 1960, 1961.

(at selected lakes)



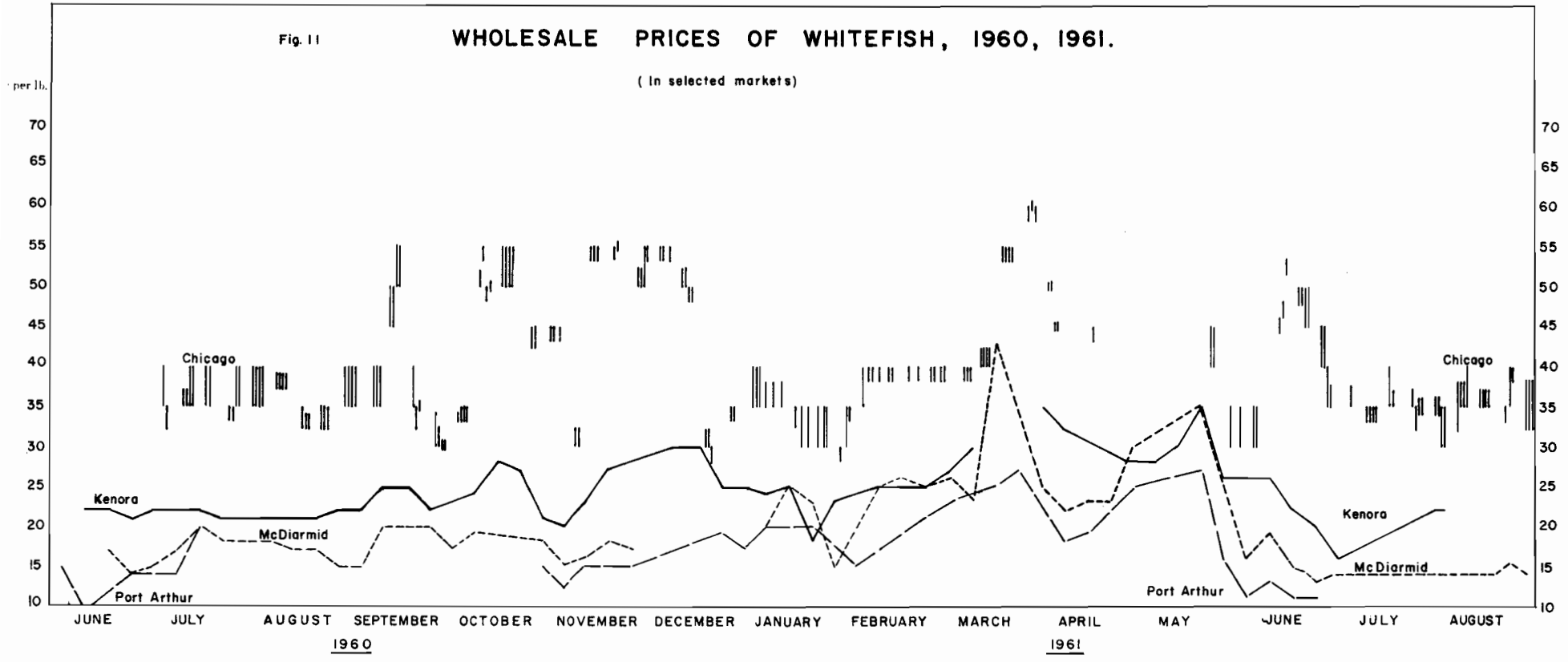
NOTES— Estimated weekly average prices.

Source— Table 33 Statistical Appendix.

Fig. 11

WHOLESALE PRICES OF WHITEFISH, 1960, 1961.

(In selected markets)



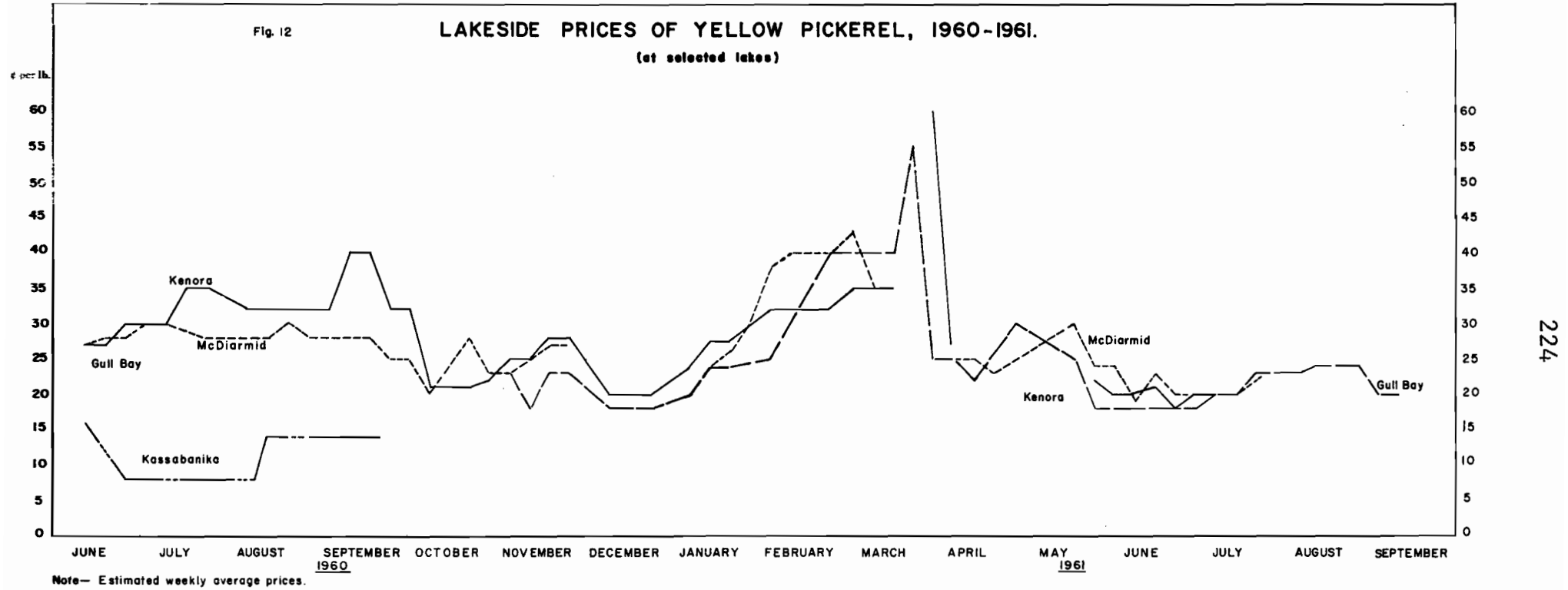
NOTES — Chicago, daily range of prices. Canada, estimated weekly average prices.

Source — Table 33 Statistical Appendix.

Fig. 12

LAKESIDE PRICES OF YELLOW PICKEREL, 1960-1961.

(at selected lakes)

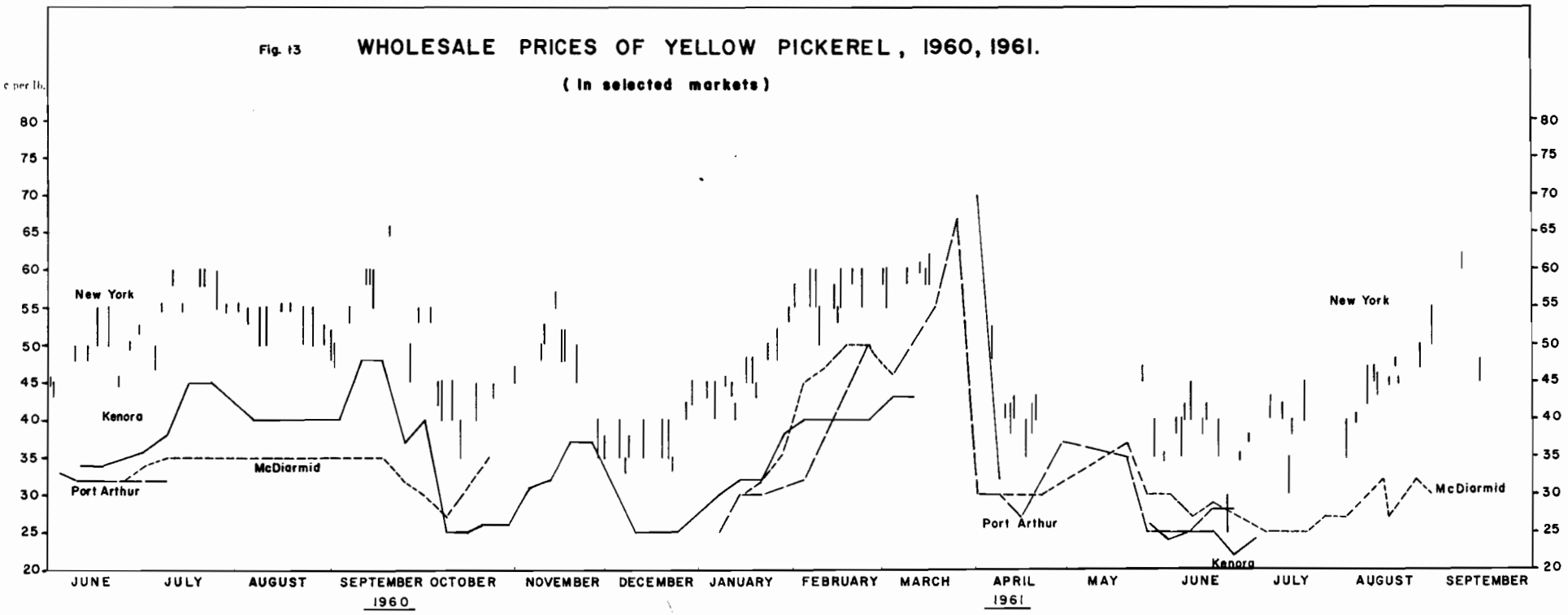


Note— Estimated weekly average prices.

Source— Table 34 Statistical Appendix.

Fig. 13 **WHOLESALE PRICES OF YELLOW PICKEREL, 1960, 1961.**

(In selected markets)



NOTES — New York, daily range of prices Canada, estimated weekly average prices.

Source — Table 34 Statistical Appendix.

fairly close substitutes for each other, changes in the price of one species tend to be followed by changes in the price of other species.[4] Figures 11 and 13 show the general similarity in the movements of wholesale prices of whitefish and yellow pickerel.

Geographical Price Differences

The prices of fish also depend upon where the fish are sold. Figures 10, 11, 12, and 13 show the gradual rise in prices paid at the lakeside to prices paid in wholesale markets in Canada and the United States of America. The wholesale prices of inland fish are determined in the major fish markets of the United States of America, and the prices in Canada are effectively the American prices less marketing costs and margins. Thus the highest price that a Montreal fish dealer would pay for whitefish at Hudson, Ontario, would be the price for which he could expect to sell the fish a few days later in New York, less transportation costs, marketing costs, and the premium he would require to offset the possibilities that his estimate of the New York price was too high and that the U.S. Food and Drug Administration would not admit the fish into the United States.

We cannot make a satisfactory comparison between prices paid for fish in different markets in Canada and the

United States. The recorded prices of fish in different markets rarely relate to identical grades of fish, and we are usually unaware when they do. An inspection of Tables 33 and 34 (Statistical Appendix) reveals that prices of inland fish in New York tend to be higher than in Chicago, but the differential is neither clear nor consistent.

Inspection of Tables 33 and 34, and 36 (Statistical Appendix), reveals that the prices of inland fish tend to be higher in Chicago, than in Winnipeg. Again, the differentials in prices reflect the differences between the grades, sizes, and origin of the fish. In general, fish sold in wholesale markets in the United States are better in quality than fish sold in wholesale markets for consumption in Canada.

Fish dealers can influence the prices of fish in some markets if they agree with each other to restrict competition. If dealers do not compete fiercely with each other they can pay fishermen lower prices for fish than they would otherwise have to pay. It is not possible to prove that fish dealers who collude with each other do in fact pay prices which are lower than they would be otherwise. Nevertheless, two fish companies are said to have restricted competition in Alberta and, together, to control the provincial fish market.[5] Their efforts to keep control of the market suggest that they obtain some advantages from their market position; these

advantages have presumably included relatively low lakeside fish prices.

Product Differences

In the market, fish of one species are not all perfect substitutes for each other. The physical characteristics of some fish differ from those of others: these characteristics are the weight of the fish, the skin colour, the quality of the flesh at the time of sale, and in whitefish, the degree of parasitic infestation.

Consumers prefer large whitefish because large fish are said to have a better flavour than small fish.[6] Other things being equal, large fish can be sold for higher prices than small fish. On the wholesale market jumbo whitefish usually obtain prices from 5 to 10 cents per pound higher than the prices obtained by large whitefish, which themselves carry a premium of 3 to 5 cents per pound over the prices of medium whitefish.[7]

The prices at which fish can be sold are also influenced by the colour of the fish skin, although skin colour has no effect upon the flavour of the flesh. Whitefish having skins which are nearly black are sold cheaper than whitefish with a light silvery gray skin,[8] and dark yellow pickerel are sold cheaper than yellow pickerel that are a fine golden

yellow.

Good quality fish fetch higher prices than poor quality fish.[9] Fish of the best quality are taken from the water while still alive, iced immediately, dressed carefully, re-iced, rushed to market and sold immediately; fish handled this way are much fresher in the market than other fish, an equally long time out of the water, which have not had such good treatment. Fish caught in gill nets often bruise themselves around the head and shoulders, and if their gills are held shut by the net meshes they may drown before being taken from the water; bruised or drowned fish are poor quality fish. If gill nets are not lifted regularly the proportion of bruised and drowned fish tends to be higher than if gill nets are lifted regularly. Fishermen who use small fishing boats often find it dangerous to lift their nets when the weather is bad and most commercial fishermen in the central part of the Patricia District use canoes and gill nets. On larger lakes further south most fishermen use bigger boats, and some fishermen catch fish in nets from which they can take the fish alive. Thus fish caught in the Patricia District tend to be poorer in quality than some fish caught further south.

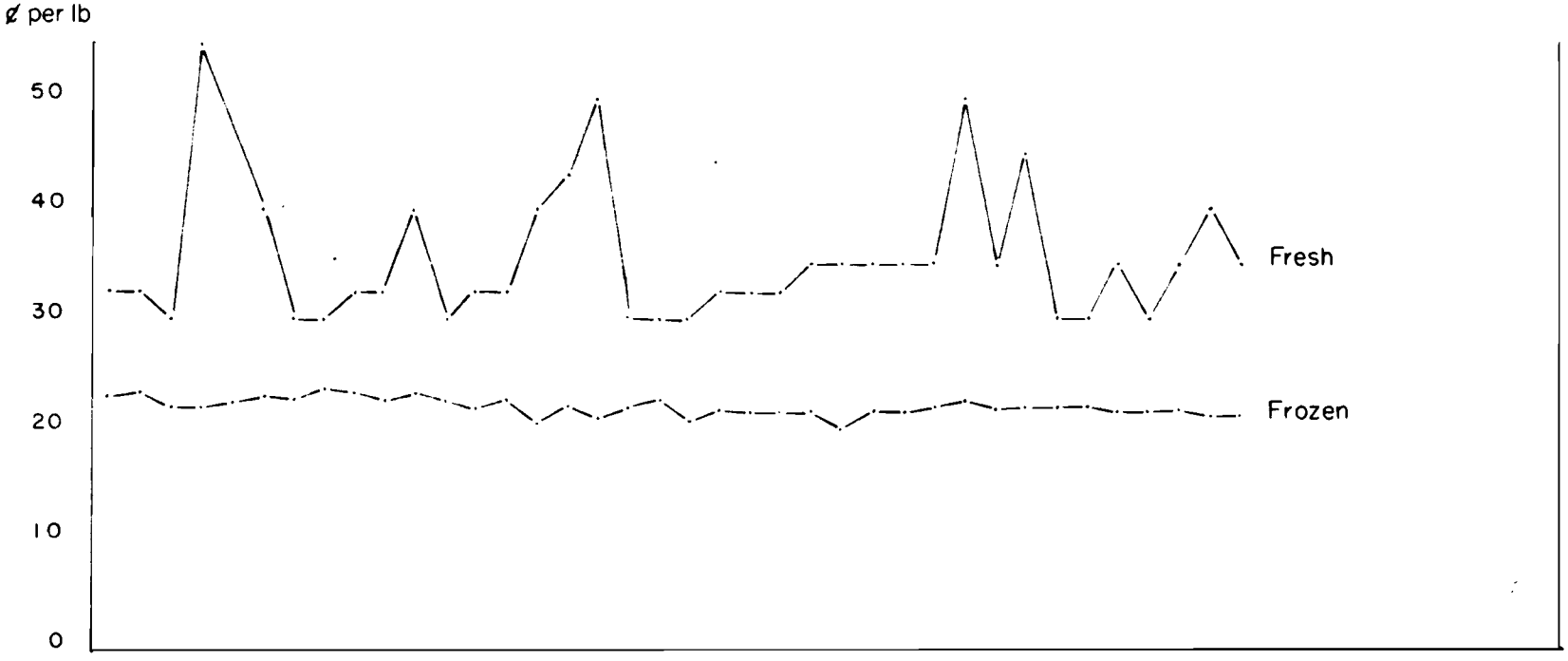
The prices of fish also depend upon whether fish are

sold round, dressed, or headless dressed. At McDiarmid, Ont., during the summer of 1961, dressed lake trout were consistently about 5 cents per pound dearer than headless dressed trout.[10] At the same time yellow pickerel were sold round, dressed, or headless dressed, but without any consistent prices differentials:[11] sometimes one kind and then another would be most expensive. Round whitefish are usually dearer than dressed whitefish; round fish spoil more quickly than dressed fish, and they are more costly to transport. The premium on round fish at the railhead has not been great enough at wholesale to justify the extra costs of flying whole fish from the lakes of the West Central Patricia District to the railhead and to the roadhead.

Whitefish that are infested with the parasite Triaenophorus crassus may not be imported in the United States of America. Whitefish that are uninfested can be sold in the United States for at least 10 cents more than infested, but otherwise similar, whitefish in Canada.[12] Uninfested whitefish which can be exported to the United States are sold in Canada at higher prices than infested whitefish.

Each product difference has some influence upon the salability of fish. Fish dealers use an informal grading system to classify fish on the market: fish are classified

Fig. 14 PRICES OF DRESSED WHITEFISH IN WINNIPEG.



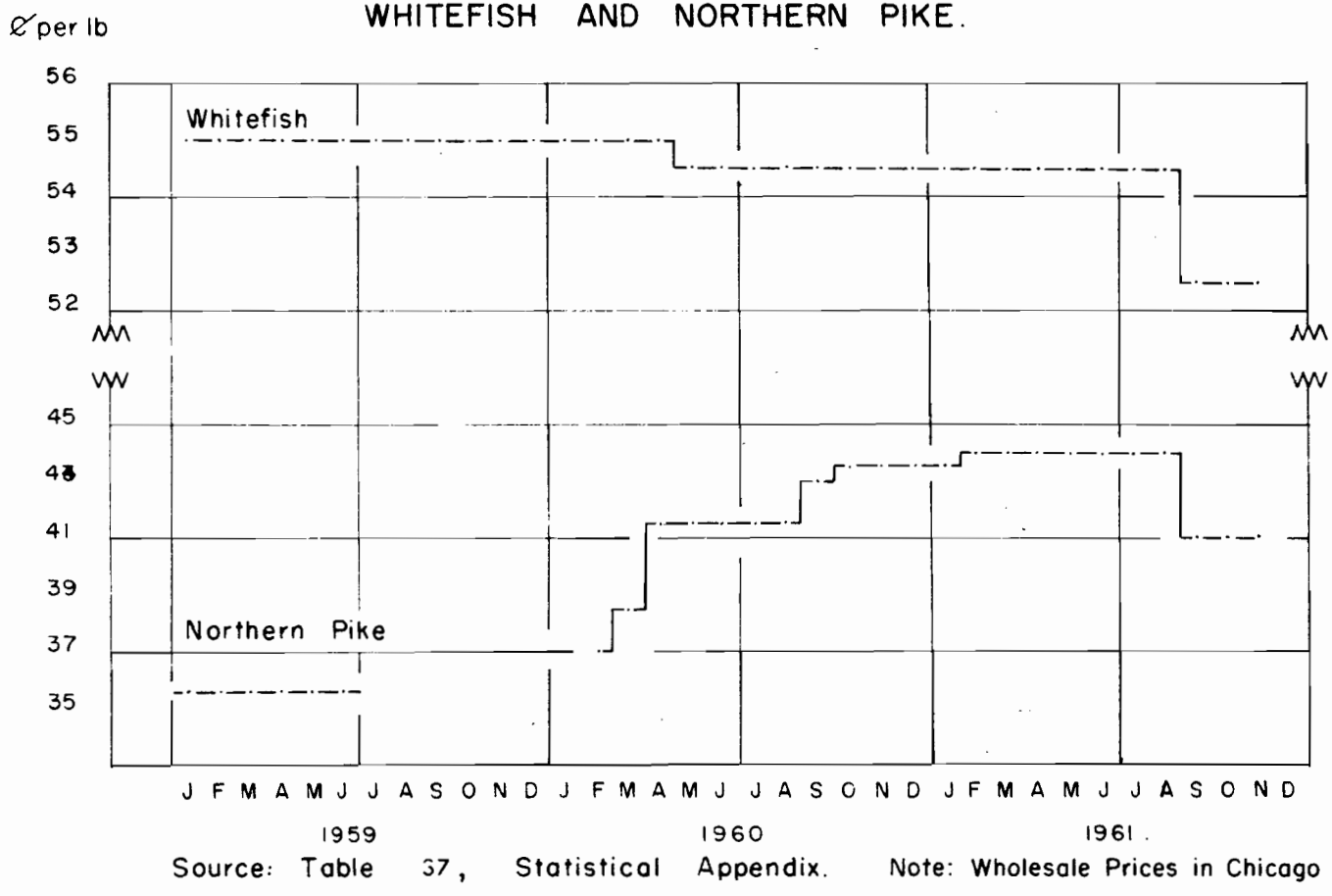
Source: Table 36, Statistical Appendix. Note: Wholesale Prices

by their species, by their weight,[13] by their skin colour, by the form in which they are sold, by their lake or origin, and occasionally by the name of the fish packer. Thus a fish dealer in Toronto might order a shipment of jumbo whitefish, round, lightskinned, from Lake Nipigon, at McDiarmid (this would indicate they had been packed by Mr. McKirdy). The Toronto dealer would know, that fish from Lake Nipigon probably are not exportable.[14] The system is cumbersome and is open to abuse, but it does take account of the important factors that influence fish prices, and it does work.

Price of Frozen Fish

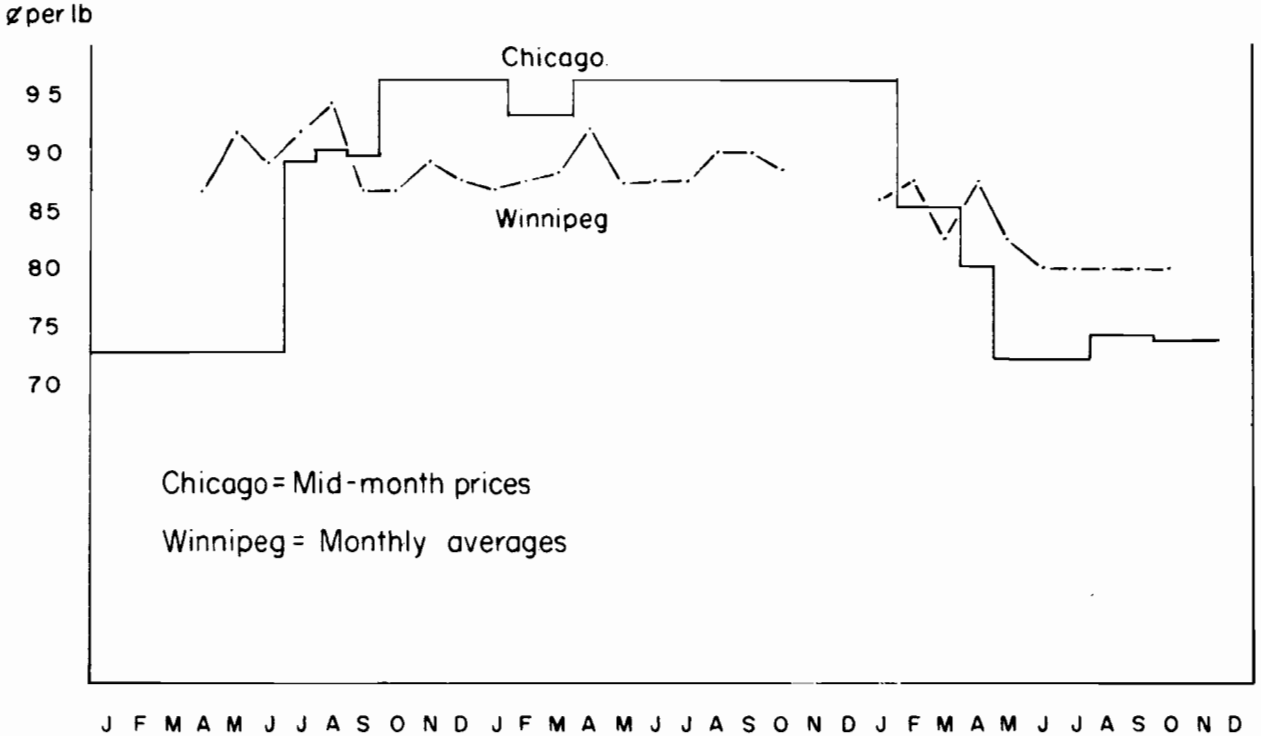
Whole and dressed inland fish are sold frozen as well as fresh. Frozen fish normally fetch lower prices than fresh fish. Figure 14 shows the comparative prices of fresh and frozen whitefish in Winnipeg since 1958; the differential is quite clear, so is the fact that prices of frozen fish are much more stable than prices of fresh fish. Fresh fish are frozen naturally in winter, and shipped from some northern lakes quite cheaply by tractor swing. In summer fresh fish are usually frozen only if they cannot be sold fresh and are in danger of deteriorating. The prices of frozen fish never justify flying frozen fish from the northern lakes of the Patricia District to the roadhead or

Fig. 15 MID MONTH PRICES OF FROZEN FILLETS OF WHITEFISH AND NORTHERN PIKE.



Source: Table 37, Statistical Appendix. Note: Wholesale Prices in Chicago

Fig. 16 PRICES OF FROZEN FILLETS OF YELLOW PICKEREL IN WINNIPEG AND CHICAGO.



Source: Table 37, Statistical Appendix. Note: Wholesale Prices

railhead.

Prices of Frozen Fillets of Inland Fish

The prices of frozen fillets of inland fish do not vary as widely as the prices of fresh fish. Figure 15 shows the mid-month prices of 1 pound packages of frozen fillets of whitefish and northern pike, from 1959 until 1961, in Chicago. Figure 16 shows the mid-month prices of 1 pound packages of frozen fillets of yellow pickerel in Chicago and the monthly average prices in Winnipeg.

Seasonal Price Fluctuations

The most remarkable feature of all the quoted prices of fillets sold in Chicago is the complete absence of any seasonal fluctuation. Although there is some downward movements in wholesale prices of the frozen fillets during the three years, the prices show very little short term movement. The prices suggest that dealers have allowed the quantities of frozen fillets they have supplied to the market to respond perfectly, in the short run, to changes in the level of demand.

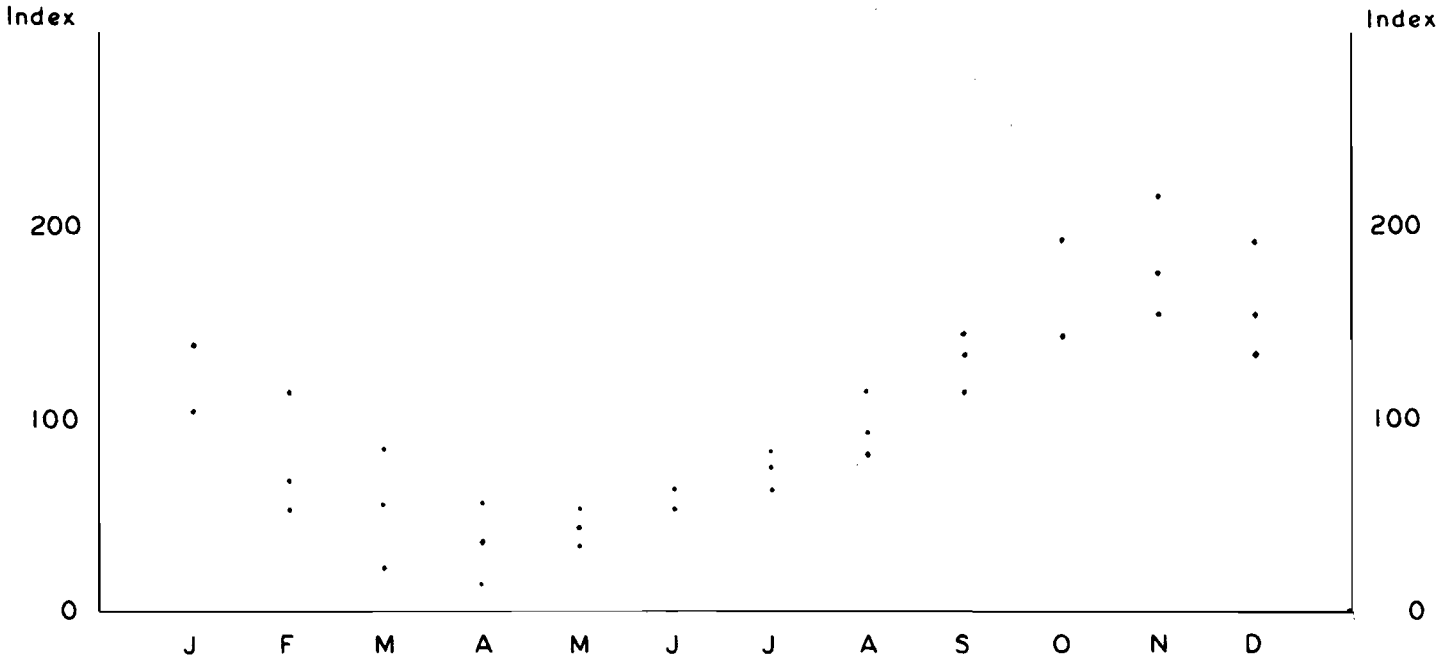
During 1961 the prices of blocks of frozen whitefish fillets at shipping points fell from 32 cents per pound to between 26 and 28 cents per pound.[15] Although the Figures

show some decline in prices of frozen fillets, this fall is much smaller. It would be extraordinary if similar changes had not occurred in the prices of all kinds of frozen fillets of inland fish, and it is possible that the quoted prices do not represent the real change in fillet prices.[16]

The prices of frozen fillets of whitefish, yellow pickerel and northern pike have shown no seasonal variation during the past three years (Figures 15 and 16). Seasonal changes in the prices of fish are normally explained by seasonal changes in the conditions of demand and of supply. It is likely that there is some seasonal variation in the demand for frozen fillets of inland fish; because frozen fillets are substitutes for fresh fish and it has already been established that there are seasonal changes in the demand for fresh fish. If it is accepted that there have been seasonal changes in demand for frozen fillets, then their wholesale prices could have been maintained stable only if the quantities of fillets supplied had been allowed to fluctuate in response to demand changes.

The quantities of frozen fillets supplied to the market may well respond perfectly to changes in demand. Dealers are able to store frozen fillets at constant monthly

Fig. 17 SEASONAL MOVEMENTS OF STOCKS OF FROZEN FILLETS OF PICKEREL 1958–60



SOURCE: TABLE 38, STATISTICAL APPENDIX

Note Stocks reported to Department of Fisheries, Ottawa.

charges per pound, and they can vary the flow of fillets onto the market at little or no change in unit costs. Figure 17 shows that fish dealers build up their stocks of frozen fillets when fish are plentiful and run them down when fish are scarce.

Geographical Price Differences

Frozen fillets are normally cheaper in Canada than in the United States of America: frozen fillets made in Canada must compete with identical products made in the United States whilst bearing import duties and higher transportation costs. Frick estimates the difference in wholesale prices of frozen whitefish fillets in Toronto and Chicago to have been between 3 and 7 cents per pound,[17] but perfectly comparable statistics are not available. Some statistics are even confusing: Figure 16 shows the prices of frozen fillets of yellow pickerel to have been higher in Chicago than in Winnipeg during 1960 but lower than in Winnipeg during 1959 and 1961.

Product Differences

Prices of frozen fillets also depend on the size of the fillet packages. Prices, per pound, of frozen fillets in one pound consumer packages are higher than prices, per

pound, of frozen fillets in larger packages. The unit cost of packing fillets in small blocks is relatively higher than the unit cost of packing fillets in larger blocks for the gefilte fish manufacturers, and a frozen fillet of whitefish for the consumer market must be a well cut fillet from a lightly infested fish, otherwise the fillet looks very unattractive when it is prepared for eating. The gefilte fish manufacturers are less fussy than consumers.

The price of one packet of frozen fillets is practically identical with the price of one packet of any other frozen fillet of the same species of fish packaged in the same way. Except for the wrapping around each package, the unpractised eye and tongue cannot distinguish between frozen fillets of whitefish made up in two different filleting plants. The same is true for frozen fillets of other species and frozen fillets packed by different dealers.

There are some quality differences that influence the prices of frozen fillets. Fillets which bear the label 'Canada Inspected' have been cut and frozen in plants which were built and operated according to standards set and approved by the Canadian Government Specifications Board. Fillets made in these plants were processed according to standards of hygiene probably higher than in plants not approved by the Board, and are certainly more costly than

fillets made in plants which are not approved by the Board. However since buyers are not prepared to pay higher prices on wholesale or retail markets for fish which have the Canada Inspected label on them,[18] producers have little incentive to increase their output of 'inspected' fillets.

Frozen fillets of fresh fish are said to have a better flavour than frozen fillets of old fish. Sometimes, a dealer who has unsuccessfully attempted to sell fresh fish has found the fish in danger of spoiling, and rather than sell them as culls or as frozen fish, he has filleted them and frozen the fillets.[19] These fillets would be salable in the trade only at times of great demand for fillets, or at a price discount. There is no guarantee that consumers would know the fillets were of poor quality until they had bought and eaten them.

In summary, the prices of frozen fillets show less variation than the prices of fresh fish: there is less seasonal change, and supply conditions, there are fewer quality differences between frozen fillets of one kind, and transportation costs are smaller.

Notes to Appendix I

1. See Table 41. Canadian landings follow a similar trend: see U.S., Bureau of Commercial Fisheries, Fishery Statistics of the United States, Fish and Wildlife Service, Statistical Digest, Annual.

2. See Table 35, Statistical Appendix.

3. See Chapter III, and U.S., Bureau of Commercial Fisheries, Fishery Statistics of the United States, 1960, Fish and Wildlife Service, Statistical Digest No. 53, p. 373.

4. There are no estimates of the cross price elasticities of demand for different species of inland fish, and the data available are not adequate for us to develop any reliable estimates. The statement in the text is based on discussion with fish dealers: in particular a discussion with two dealers in Montreal, 3 January 1962.

5. Canada, Department of Fisheries, Confidential Memorandum II, p. 3.

6. Fish dealer, in Montreal, 3 January 1962.

7. "Prices and Amounts of Fish Received" - as reported by one fish dealer in Toronto. Data collected by Fish and Wildlife Branch, Ontario Department of Lands and Forests.

8. Letter from J.M. Cullen, Fisheries Officer, Port Arthur, Ontario, dated 8 December 1961.

9. Ibid.

10. Ibid.

11. Ibid.

12. The differential varies a great deal - Inspection of Tables 33, 34, and 36 shows the differential, during several months, between wholesale prices in Winnipeg and in New York and Chicago.

13. Grades are normally specified by convention and vary slightly from time to time and from place to place.

Notes to Appendix I (continued)

14. In 1960 42,628 pounds of whitefish from Lake Nipigon were inspected by Canadian and U.S. authorities: 28,956 pounds were regarded as unsuitable for exportation. Inspection Results, Ontario Lakes 1960, Department of Fisheries, Canada.

15. Fish dealer, Winnipeg, in conversation, August 1961.

16. Frick, in conversation.

17. Frick, H.C., "Whitefish Fillets and Dressed Whitefish", in Report of the Royal Commission on Price Spreads of Food Products, (III, Ottawa: Queen's Printer, 1960) III, p. 561.

18. Canada, Department of Fisheries, Economics Service, Confidential Memorandum.

19. Fish dealer, Port Arthur, in conversation, 4 September 1961.

APPENDIX II

THE PROFITABILITY OF A FISH FILLETING PLANT

This appendix estimates the losses which will probably be incurred if a new fish filleting plant is constructed in the West Central Patricia District.

It is not possible to examine the profitability of a non-existent fish filleting plant but it is possible to estimate the likely profitability of a hypothetical plant with defined economic characteristics. The assumed economic and technical characteristics of the plant and of the marketing structure (of which the plant is a part) are based on data about fish marketing and upon reasonable assumptions and upon reasonable cost estimates. In this particular example, the closer the assumptions correspond to reality the more reliable are the profit (loss) estimates. In fact we shall estimate (and compare) the probable losses of three filleting operations. To compare the profitability of investments we should really compare the present value of the flows of profit (or loss) expected to accrue in the future. These flows differ in many respects: in the size of the total profit expected, in the distribution of the flow over time, and in the likelihood that the expectations will be realized.

The author knows too little about future prices of raw fish and frozen fillets, about future fish supplies, and too little about the reliability of his estimates to make this approach worthwhile. Therefore we assume: that present fish and fillet prices remain constant, that there are adequate supplies of raw fish, that the proportional time distribution of the expected profit is the same for all investments, that all profits (losses) are equally probable, and that all filleting plants are valueless at the end of the write-off period. In consequence we are to accept the relative profits (losses) which will accrue from any of the three filleting operations in a hypothetical typical year, as a good estimate of the relative profitability of each plant.

First we shall make assumptions about the filleting plant, fish prices, sales, and the marketing structure. Then we shall estimate the maximum contribution which can be made towards filleting costs in present conditions, then we shall examine probable filleting and plant costs, and finally we shall estimate probable annual losses.

Let us assume:

1. A fish filleting plant is constructed at North Caribou Lake (Map 2). The plant makes frozen fillets from raw fish caught in the West Central Patricia District.

2. The plant has a capacity output of 500,000 lb. of frozen fillets per year (minimum average total cost per pound of fillet at, say, 450,000 lb. of frozen fillet per year).

3. A recovery rate of 50%:[1] one pound of raw fish is required to make one half a pound of frozen fillet.

4. Capacity input of about 1,000,000 pounds of raw fish per year:[2]

Whitefish	650,000 lb. per year.
Yellow pickerel	300,000 lb. " " .
Lake trout	50,000 lb. " " .

(From North Caribou Lake: 200,000 lb. of whitefish, 40,000 lb. of yellow pickerel).

5. Processing.

   (a) Shore installations and miscellaneous costs at 1.5¢ per lb.[3]

   (b) Haulage costs:

      (i) Lake to plant.

         None on fish caught at North Caribou Lake.

         3¢ per lb. on all other raw fish.[4]

      (ii) Plant to railhead.

         5¢ per lb. of frozen fillet.[5]

6. Sales

   (a) Output:[6]

	Form	Weight of sales
North Caribou Lake		
Whitefish	Block frozen	90,000 lb.
	consumer packs	10,000 lb.
Yellow Pickerel	consumer packs	20,000 lb.

TABLE 16

HYPOTHETICAL CONTRIBUTION TO FILLETING COSTS FROM SALES OF FROZEN FILLETS MADE IN THE PATRICIA DISTRICT

1	2	3	4	5	6	7	8	9	10	11	12	13[a]
Input of Fish	Purchase Price	Shore Installations & Misc.	Air Haulage Lake to Plant	Total Cost Per lb. Fish	Cost Per lb. Fillet	Sale Cost Per lb. of Fillet	Air Haulage Plant to Railhead	Total Cost of Fillets Excluding Filleting Cost	Rail Car Price of Fillets	Maximum Contribution to Filleting Costs	Sales	Return to Filleting Costs
'000 lb.	¢ per lb. raw fish				¢ per lb. fillet						'000 lb.	$
Whitefish												
450	3	1.5	3	7.5	15	0.5	5.0	20.5	28	7.5	200	1,500
									40	19.5	25	487.5
200	3	1.5	-	4.5	9	0.5	5.0	14.5	28	13.5	90	1,215
									40	25.5	10	255
Yellow Pickerel												
40	9	1.5	-	10.5	11	0.5	5.0	16.5	45	18.5	20	370
260	9	1.5	3	13.5	27	0.5	5.0	32.5	45	12.5	130	1,625
Lake Trout												
50	10	1.5	3	14.5	29	0.5	5.0	34.5	50	15.5	25	387.5
	Total Sales										500,000	
	Total return to filleting Costs											58,400,000
	Average return to filleting Costs										11.68¢ per fillet lb.	

Notes: (a) Column 13 = $\frac{\text{(Column 11 x Column 12)}}{100}$

(b) Average return to filleting costs is the maximum contribution (given assumptions 1-7) towards filleting costs.

Source: Assumptions 1-7.

	Form	Weight of sales
Other Lakes		
Whitefish	Block frozen	200,000 lb.
	consumer packs	25,000 lb.
Yellow pickerel	consumer packs	130,000 lb.
Lake trout	consumer packs	25,000 lb.

(b) Sales made by contract negotiations: average marketing cost 0.5 per lb. of frozen fillet.[7]

7. Prices.

(a) Purchase at the lakeside:[8]

Whitefish	3¢ per lb.
Yellow pickerel	9¢ per lb.
Lake trout	10¢ per lb.

(b) Sale prices at the railcar.

Block frozen whitefish	28¢ per lb.[9]
Consumer pack whitefish	40¢ per lb.[10]
Yellow pickerel (consumer pack)	45¢ per lb.[10]
Lake trout (consumer pack)	50¢ per lb.[10]

On the basis of these assumptions we can estimate the maximum contribution that can be made towards the filleting costs. Table 16 shows that the maximum return that can be made is 11.68 cents per pound, say 12.00 cents per pound. How does this amount compare with the probable hypothetical cost of making frozen fillets?

There are three estimates of the average total cost of making frozen fish fillets in plants which produce about 1,000,000 pounds of fillets per year. The first, and least

reliable, is 9.5 - 10.0 cents per pound; this estimate was made, in conversation, by a dealer in Manitoba.[11] The second 12.0 or 13.0 cents per pound is a rule of thumb figure used in the fish trade and by the Department of Fisheries.[12] The third, based on a detailed analysis of the accounts of an under-utilized plant in Saskatchewan (See Table 24, Statistical Appendix), suggests an average total cost of about 19.0 cents per pound, and an average variable cost of about 16.5 cents per pound. But these estimates are not entirely satisfactory; we wish to know the probable average total cost of making frozen fillets in a large scale plant - working at capacity and working well under capacity, and the probable average total cost of production in a small scale plant. We must there estimate the fixed and variable production costs: keeping the costs consistent with the estimates of average total cost shown above.

Let us consider first a large scale plant: the fixed costs are the same at all levels of output; let us assume a total fixed cost of $25,000 per year,[13] or an average fixed cost of 5.00 cents per pound at an annual output of 500,000 pounds of frozen fillets, and 10.00 cents per pound at an annual output of 250,000 pounds of frozen fillets. Let us also assume that at an annual output of 500,000 pounds of frozen fillets the average variable costs

are 9.00 cents per pound,[14] and at an annual output of 250,000 pounds of frozen fillets the average variable costs are 11.00 cents per pound[15] (or total variable costs of $45,000 and $27,500 per year respectively).

In a smaller scale plant total fixed costs will certainly be less: let us assume $16,000 per year[16] (or 6.4 cents per pound). Let us assume that average variable costs are 10.00 cents per pound[17] (or total variable costs of $25,000 per year).

Finally we know that the maximum contribution to filleting costs is 12.00 cents per pound: $60,000 at annual sales of 500,000 pounds of frozen fillets and $30,000 at annual sales of 250,000 pounds of frozen fillets.

Annual losses at both plants are:

Total Cost (fixed and variable) - maximum contribution to filleting costs.

The annual loss on a large scale plant producing 500,000 pounds of frozen fillets per year would be:

$ (25,000 + 45,000 - 60,000) = $10,000

The annual loss on a large scale plant producing 250,000 pounds of frozen fillets per year would be:

$ (25,000 + 27,500 - 30,000) = $22,500

The annual loss on a small scale plant producing 250,000 pounds of frozen fillets per year would be:

$ (16,000 + 25,000 - 30,000) = $11,000

It must be concluded that with existing methods of handling, filleting, transporting, and marketing fish, a new filleting plant in the West Central Patricia District would be unprofitable. A large scale plant with an output of 500,000 pounds of fillets per year might lose $10,000 per year. But if the West Central Patricia District could not produce 1,000,000 pounds of raw fish which could be filleted more cheaply at the plant than at any other now existing, it would be more economical to build a small plant to work at capacity than to build a large scale plant which would be underutilized.

Notes to Appendix II

1. Filleting recovery rates vary between 35% and 55% of the weight of the raw fish. The actual average recovery rate at any filleting plant depends upon the 'mix' of fish being processed, upon the lakes from which the fish are taken (because fish from different edaphic environments have different physical configurations), the degree of parasitic infestation, and the time of the year at which fish are caught and filleted. The figure of 50% is a reasonable, if generous, estimate; and has the advantage of simplifying all the computations.

2. Annual input based on approximate annual catch in the West Central Patricia District and upon an estimate of supplies available for processing. See Chapter V, p. 118.

3. Chapter V, p. 119, and Note 31.

4. Estimated average total cost of hauling, in Norsemen and Cessna 180 aircraft, and handling small loads of fresh fish. Estimate based on differential between lakeside prices paid by Co-operative Fisheries Ltd. for fish at Lac La Ronge and Pinehouse Lake, Sask.

5. Estimate of probable cost of flying bulk cargoes of frozen fillets from North Caribou Lake to Pickle Lake, and then trans-shipping them for truck haul to the railroad at Savant Lake.

6. Assumed that 90% of whitefish fillets from North Caribou Lake and 88.89% from other lakes are sold as block frozen whitefish: 10%, and 11.11% as consumer packs. In fact most whitefish fillets are sold block frozen, and most yellow pickerel and trout fillets are sold in consumer packages.

7. Chapter V, p. 98.

8. Prices actually paid in the Patricia District during 1961.

9. Appendix I, p. 235.

10. Based on Chicago wholesale prices, and import duties, railhaulage risk costs. Price estimates are generous.

Notes to Appendix II (continued)

11. Fish dealer, Winnipeg, in conversation, June 1961.

12. Frick, H.C., "Whitefish Fillets and Dressed Whitefish", in Report of the Royal Commission on Price Spreads of Food Products, (III, Ottawa: Queen's Printer, 1960), III, p. 561.

13. The fixed and variable costs estimate here are not comparable with estimate of Table 24, Statistical Appendix, but the average total costs are comparable.

    Total fixed cost in Table 24 includes only: Insurance, taxes, rentals, leases, and depreciation changes. Fixed costs in Appendix II include "Discretionary Fixed Costs": those basic to the operation of the plant but which are not incurred if the plant should be shut down.
    cf. Bob R. Holdren, The Structure of a Retail Market and the Market Behaviour of Retail Units, Ford Foundation Doctoral Dissertation Series, (Englewood Cliffs, N.J: Prentice Hall Inc., 1960), Chapter 3.

    Hypothetical annual fixed costs of a large scale plant, constructed at a cost of $60,000, to be written off over 15 years, with capital borrowed at 5 per cent per year:

	$
Write-off	4,500
Average interest	1,500
Salaries of skeleton staff[a]	16,000
Maintenance and repairs	1,500
Insurance, taxes, rentals	1,200
Miscellaneous	300
	25,000

    Note: a. Manager, Engineer, some labourers, 8 months. Caretaker, 12 months.

14. Average total cost of producing frozen fillets at Wollaston Lake is estimated to be 19.08 cents per pound (Table 24, Statistical Appendix). We know that this plant is operated well under capacity and we are therefore prepared to accept a figure nearer 12 or 13 cents per pound as the appropriate estimate:

Notes to Appendix II (continued)

(say) 14.00 cents per pound. At an output of 500,000 pounds per year average fixed costs are 5.00 cents per pound, average variable costs therefore are assumed to be 9.00 cents per pound.

15. At a lower output average variable costs are greater than at capacity output: but the average total cost per pound must be in the region of 19.00 cents per pound (Table 24). An average variable cost of 11.0 cents per pound is consistent with both requirements.

16. Hypothetical annual cost of a small scale fish filleting plant, constructed at a cost of $40,000, to be written off over 15 years, with capital borrowed at 5 per cent per year:

	$
Write-off	3,000
Average Interest	1,000
Salary of Skeleton staff	10,000
Maintenance and repairs	1,000
Insurance, taxes, rentals	600
Miscellaneous	400
	16,000

17. Average variable cost per pound is clearly higher than at the large scale plant working at capacity and may be lower than at the large scale plant working well under capacity. An average variable cost of 10.00 cents per pound is consistent with both requirements.

APPENDIX III

THE INLAND FISH INDUSTRY IN SASKATCHEWAN*

This appendix describes the economic organization of commercial fishing and fish marketing in Saskatchewan.

Commercial fishermen resident in northern Saskatchewan usually spend only a few months fishing each year, and they earn relatively low cash incomes.[1] In the past, fish production, fish prices, and fishing employment used to fluctuate very widely, so that fishermens' incomes, besides being low, were unstable from year to year. The fluctuations during the 1920's and the 1930's were so great,[2] that by 1944 the provincial Government began attempts to stabilize the industry and to raise fishermens' incomes. To carry out these policies the Government formed the Saskatchewan Fish Products Corporation. This crown corporation was the first of several Government controlled agencies set up to market fish. Today, as a result of Government intervention, the organization of commercial fishing in Saskatchewan differs from the organization of commercial fishing elsewhere in the interior of Canada.

* The appendix draws heavily on data supplied by Helen Buckley, Center for Community Studies, University of Saskatchewan.

The Saskatchewan Fish Products Corporation (the Fish Board) was a marketing board given the powers necessary to market all the fish caught by commercial fishermen in Saskatchewan. The Corporation later became a division of the Saskatchewan Lake and Forest Products Corporation, but retained the same marketing powers. The functions of the second Corporation included the supply of fishing gear and other supplies to residents of the north; thus "insuring fishermen their returns in terms of goods".[3] The marketing board set up a number of fish filleting plants in the north of the province (actually the plants were financed by the Department of Natural Resources), and provided a compulsory marketing service on lakes in the north of Saskatchewan.

Despite the good intentions of the Government and the real achievements of the Fish Board, compulsory fish marketing was not a success. Fishermen did not earn greater incomes than before, they did not make marketing decisions, and they and the dealers were bitterly opposed to compulsory powers being held by any fish marketing organization. In the face of antagonism from fishermen, the Government was forced to reconsider its policies.

Although the Fish Board was "a dead but hated" corpse within four years of its founding,[4] the Government was unwilling to return fish marketing to private control.

In 1949 the provincial Government formed another marketing organization: Saskatchewan Marketing Services, of which the Saskatchewan Fish Marketing Service was a division.[5] The Saskatchewan Fish Marketing Service was designed to provide a commission marketing services to fishermen or to groups of fishermen; it was not a compulsory marketing board. It was created to:

> to build or acquire and operate fish filleting plants...and other facilities required to provide processing...and, marketing services, as nearly as possible at cost, to fishermen and cooperative marketing associations.[6]

The Government specifically intended that, at some time after 1949, fishermen should take control of fishing and fish marketing.[7] When the Government had created the Saskatchewan Fish Products Corporation four years earlier it had had no such intention.

The Saskatchewan Fish Marketing Service concentrated its activities in the north-east of the province where the fish marketing was most difficult and expensive and where it met the least competition from private enterprise. The Saskatchewan Fish Marketing Service used fish packing and fish filleting plants previously owned by the Saskatchewan Fish Products Corporation and other packing and filleting plants owned by the Department of National Resources. In later years the Saskatchewan Fish Marketing Service borrowed

money from the Government Finance Office to construct its own fish filleting plants. By 1959 the Marketing Service owned two fish filleting plants, it shared ownership of a third with the Department of Natural Resources, it operated three owned by the Department of Natural Resources, and it had an interest in a plant owned by a fishermens' cooperative association.[8] In 1959 the value of the fixed assets used by the Marketing Service was appraised at almost $400,000.[9]

The Saskatchewan Fish Marketing Service operated a floor price plan instituted by the Department of Natural Resources. The floor price for fish at a lake was to be set so that it would: "be such that it will pay normal expenses of operation and provide a living while the fishermen are fishing."[10] The Department of National Resources financed the floor price plan, and between 1949 and 1959 it made total payments of $260,579.[11] These payments averaged just over one half a cent per pound on the 40,000,000 pounds of fish bought by the Saskatchewan Fish Marketing Service during the decade.[12]

The Saskatchewan Fish Marketing Service operated satisfactorily: it marketed fish regularly from lakes not previously served well by private enterprise, and it channelled considerable subsidy incomes into fishermens' pockets. The marketing service even appeared to have made

some profits, but these profits were approximately offset by hidden subsidies (interest free loans).[13]

Although the marketing service made a moderate success of its financial dealings, it made less of a success of its social responsibilities. Fishermen had little influence on marketing policies or day to day marketing decisions, and in the framework of a crown corporation there was no opportunity for them to gain control of the service. Indeed, in some places the marketing service was such a dominant force in northern fishing that it was said that the government agency "does everything but the actual fishing".[14] For several reasons then the provincial administration was not satisfied with the performance of the marketing service.

From 1957 the provincial Government intended to modify the Saskatchewan Fish Marketing Service in order to give fishermen more responsibility, and more control of their fish sales. Members of the Government believed that if the fishermen were given some instruction and encouragement they could own and control their own marketing agency. The Government therefore re-organized the Marketing Service as a cooperative (using as a basis several fishermens' cooperatives that had been formed in the north during the previous ten years), and transferred ownership of the physical plant to the fishermens' cooperatives. In 1959

the Government dissolved the Saskatchewan Fish Marketing Services and by the Act of Parliament set up in its stead Co-operative Fisheries Limited.

Co-operative Fisheries Limited was formed:

> ...for the purpose of acquiring, maintaining and operating fish filleting plants...other buildings and equipment needed for...processing...handling... marketing...fish and by-products of fish...and selling...or otherwise distributing goods and equipment needed by fishermen in their operations.[15]

The objectives of cooperative fish marketing were:

a) To give fishermen an increasing measure of responsibility for, and ownership of, the processing and marketing facilities which are necessary for their livelihood;

b) To secure a higher net return to the fishermen through greater vertical integration of production, processing and marketing;

c) To build into the control marketing organization a cooperative structure to facilitate.... building towards a democratically controlled co-operative marketing organization.[16]

In 1961 the Co-operative Fisheries Ltd. was neither controlled by fishermen nor managed by the fishermen of the north. Of five Directors present at the 1961 Annual Meeting at Lac La Ronge, two were civil servants, one was a Director of Federated Co-operatives Limited Saskatchewan,

and two were fishermen.[17] None of the actual management staff of the firm is a fisherman from northern Saskatchewan.

The Co-operative Fisheries Limited acquired the assets and liabilities of the Saskatchewan Fish Marketing Service. In particular, the cooperative acquired the filleting plants and other fixed assets formerly owned by the Saskatchewan Fish Marketing Service (at a cost of $225,000), and the fish processing plants formerly owned by the Department of Natural Resources at a cost of $1.00 (one dollar).[18] In this way the capital requirements of Co-operative Fisheries Limited were subsidized by the provincial Government.

Cooperative fish marketing in Saskatchewan is a two tiered organization. At many lakes there are local cooperatives that deliver fish to the central marketing agency, Co-operative Fisheries Limited. The central marketing agency processes and markets fish on behalf of the members of the local cooperatives. The local cooperatives, subject to the agreement of the Department of Natural Resources, regulate the number of fishing licences permitted on a lake, the dates on which fishing may be allowed, they certify the effective limits of the total catch from the lakes on which they have control, and they supply fishing gear and supplies to their members.[19]

The Co-operative Fisheries Limited makes a preliminary payment to fishermen when it accepts their deliveries of fish. The Co-operative would tend to lose the allegiance of its members if its first payments were significantly lower than the prices paid for fish by private dealers. Subsequently the Co-operative Fisheries Limited sells the fish, charges the fishermen a marketing fee of 12.5 per cent of the gross value of sales, deducts other marketing costs and margins, and distributes the remainder among the fishermen.

The marketing services provided by the Co-operative Fisheries Limited cost rather less than the charge of 12.50 per cent of sales,[20] and in 1959-1960 the cooperative made net profits of $64,055, a rate of return of 14.79 per cent of the net book value of current assets.[21] Co-operative Fisheries Limited accumulated this large profit in order to repay a loan of $225,000 advanced to the Saskatchewan Fish Marketing Service by the Government Finance Office. The easiest way for the cooperative to accumulate the necessary funds is to make a levy upon the gross fish sales; the local fishermens' cooperatives thereby can obtain ownership of the marketing agency without really feeling any out of pocket costs. From the point of view of fishermen as owners of the local associations and as potential owners of the

on their sales of gear. The Marketing Service used to charge a mark-up of 20 per cent on sales of gear to fishermen.[23] The local cooperatives at first advanced gear at cost, but they now charge 20 per cent mark-up to protect themselves against defaulting buyers.[24]

When private fish companies buy fish, the prices they pay and the distance they can afford to fly fish depend upon the level of wholesale fish prices. When fish prices are high they can pay higher prices for fish and they can buy fish on lakes more distant from their plants than is their custom. Co-operative Fisheries Limited on the other hand, operates the Government floor price plan, and is thereby refunded for some payments to fishermen if the lakeside price of fish would otherwise fall below some critical level. Thus the cooperative can afford to buy fish more steadily than a private company, and is in an advantageous competitive position. Fishermen control at least some of the policies of the cooperative and they are in the process of obtaining ownership of the assets. Fishermen do not control any policies of the private companies and have no prospect of obtaining ownership of them.

The private companies are probably more profitable than the Co-operative Fisheries Limited, but the reported net profits are not directly comparable. The cooperative

TABLE 17

LAKESIDE FISH PRICES IN SASKATCHEWAN (1960)

	Lac La Plonge[a]	Turner Lake[b]	Sandfly Lake[c]	Manowan Lake[d]
	cents per pound			
Prices[e]				
Whitefish	12	5½	19,11,7½[g]	5
Lake trout	25			
Yellow Pickerel		8	18	15
Northern Pike	5	4½	3	2
Fish Buyer	Private	Private	C.F.L.	C.F.L.
Lake Classification[f]	A	B	A	B

Notes: Transportation,

a. Lac la Plonge: fish packed at the lake on reefer vans and hauled directly to the market.

b. Turnor Lake; Hauled 70 miles by barge to a filleting plant, fillets hauled by reefer van to market or railhead.

c. Sandfly Lake: fish flown 60 miles to a packing plant, repacked, loaded onto reefer vans, to railhead or market.

d. Manowan Lake: fish flown 30 miles to a filleting plant, processed and flown 60 miles to a railhead for shipment to market.

e. Prices paid by Co-operative Fisheries Limited (C.F.L.) are first payments only.

f. Whitefish from 'A' lakes may be sold whole and dressed, 'B' lakes only as fillets.

g. Prices for Large, Medium, Small, whitefish respectively.

Source: Letter from G.R. Bowerman, Supervisor, Commercial Fisheries Branch, Department of Natural Resources, Saskatchewan, dated 6 September 1961.

received underpriced guidance from some Directors, and it has obtained fish processing plant at an unrealistically low price. The private companies should be more profitable than the Co-operative Fisheries Limited; they should be equally efficient, they have no Annual General Meeting expenses, they have no 'extension education' costs, and they operate lower cost filleting plants than the cooperative.

To compare the prices of fish on different lakes is very difficult; fish prices vary for very many reasons (see Appendix I) and prices of fish on two lakes are not really comparable. A crude comparison is made on Table 17, where it appears that in 1960 Co-operative Fisheries Limited made first payments as high as the prices paid by private companies for the same species of fish. Since Co-operative Fisheries Limited subsequently made second payments, the private companies may safely be said to pay lower prices than the cooperative.

The greatest benefit offered by the Co-operative Fisheries Limited and its predecessors is that they have provided a regular marketing service where previously there had been none.[25] On the eastern side of the province there was previously no consistent commercial fishing because the marketing costs were usually too high for private enterprise to bear. The Government has provided this marketing

service at a cost of approximately $890,000.[26] Of this sum, $260,000 were paid under the Floor Price Plan, and were not a marketing cost; the marketing board made net profits of almost $70,000 during the same period;[17] and the fishermen themselves paid the Government $117,000 in Royalties on the exports of whitefish.[28] The net cost of assistance to fish marketing from 1949 to 1959 then totalled approximately $445,000. If the loan of $225,000 is repaid to the provincial Government, then the total initial capital cash cost of marketing assistance from 1949 to 1959 will have totalled only $218,000. This sum, equivalent to a donation of approximately $18.00 per resident of northern Saskatchewan,[29] accounts for part of the generally higher level of prices paid by the Saskatchewan Fish Marketing Service.

Notes to Appendix III

1. Helen Buckley, Trapping and Fishing in the Economy of Northern Saskatchewan, Report No. 3, Economic and Social Survey of Northern Saskatchewan, (Saskatoon, University of Saskatchewan, 1962), p. 98. Actually Buckley refers to all native residents of northern Saskatchewan, but the statement is true of most native fishermen there.

2. W. Van Vliet, "Preliminary Survey, Inland Fisheries of the Prairie Provinces", (Fisheries Prices Support Board, Ottawa, 1948), pp. 2,3,9.

3. Annual Report, Saskatchewan Lake and Forest Products Corporation, 1947/48, quoted in [M. Miller] , "Fisheries Policy as of October 1958", (Sask. Dept. of Natural Resources), p. 2, Memorandum.

4. [Miller] , p. 2.

5. Under The Crown Corporations Act, 1947, Statutes of Saskatchewan, 1947, (Regina: The Queen's Printer, 1947).

6. Saskatchewan, Statutes of Saskatchewan, 1959, Chapter 86 - Preamble. (Regina, Queen's Printer, 1959), p. 1.

7. Saskatchewan, Department of Natural Resources, "Proposals Submitted by the Fisheries Policy Committee for the Establishment of the Co-operative Fish Marketing Service", Mimeographed, p. 2.

8. "Ibid", 3 and, [Miller] , Appendix X.

9. [A. Heidt] , "A Financial Program for Co-operative Fisheries Ltd.," (Saskatchewan, Dept. of Cooperation and Development, 1960), Mimeographed, p. 3.

10. [Miller] , 2.

11. Helen Buckley, University of Saskatchewan, Letter dated 13 September 1961.

12. Ibid.

13. $225,000 advanced by the Government Finance Office,

Notes to Appendix III (continued)

H. Buckley, letter dated 13 September 1961, and Buckley, Trapping and Fishing....., 101.

14. A.H. MacDonald, "Reasons for Change in Structure and Board of Directors of Fish Marketing and Trading", Saskatchewan, Dept. of Natural Resources, quoted in Buckley, Trapping and Fishing....., 102.

15. Saskatchewan, Statutes of Saskatchewan, 1959, Chapter 86, Section 7.

16. Saskatchewan, Proposals Submitted by the Fisheries Policy Committee....., 6.

17. Co-operative Fisheries Ltd., "Second Annual Meeting", (Prince Albert, 1961), p. 2.

18. Saskatchewan, Statutes, 1959, Chapter 86, Section 2.

19. J. Towne, General Manager, Cooperative Fisheries Ltd., in conversation, Prince Albert, August 1961.

20. Buckley, 109, 110.

21. Co-operative Fisheries Ltd. "Second Annual Meeting", 1961, Balance Sheet and Statement of Operation; 1959-1960:

Net Profit $64,055.14

Gross Assets	$809,614.08
Net Current Liabilities	$376,779.01
Net Current Assets	$432,835.07

22. Waite Fisheries Ltd.
Waite and Clarke Ltd.
McInnes Fish Products Corp.

23. Filleting contractor, Lac la Ronge, Sask., in conversation, August 1961.

Notes to Appendix III (continued)

24. Ibid.

25. Buckley, 112.

			$
26.	Fixed capital outlay 1949-1959[a]	approx.	400,000
	Working capital[b]	"	150,000
	'hidden' subsidies[a]	"	78,000
	Floor price plan[a]	"	260,000
			888,000

Sources: a. Buckley, 101, 112, and letter.

b. Heidt, 4.

27. Buckley, 101.

28. Ibid., 113.

29. Assuming a resident population of 12,000.

APPENDIX IV

NOTES ON STATISTICAL DATA

A mass of statistics describes the inland fisheries of Canada. Many of the statistics are unreliable, and some of the others are inadequate for detailed economic analysis. There are few statistics describing the commercial fisheries of the Patricia District; most of these statistics are unsuitable for analysis. These comments are true whether we consider data on (1) landings and disposition of Canadian inland fish, (2) costs of commercial fishing in the Patricia District, (3) the costs of marketing fish from the Patricia District, or (4) the prices of fish in the Patricia District.

Landings and Disposition of Inland Fish

Landings

Statistics describing the commercial landings of inland fish in Canada are unreliable, they almost certainly underestimate actual commercial landings. There are neither data nor estimates of landings of fish for domestic consumption.

Statistics upon commercial landings of fish in the Patricia District appear satisfactory, although there are some discrepancies between statistics recorded by the

Ontario Dept. of Lands and Forests and statistics, about the same subject, recorded by the Indian Affairs Branch. There are neither data nor reliable estimates of landings of fish for consumption by fishermen and Indians.

Disposition

There are reliable statistics of the annual exports of inland fish from Canada, and hence upon consumption of Canadian fish in the United States of America. The Canada Department of Fisheries and the Dominion Bureau of Statistics compile statistics which show the initial destinations of inland fish exported from Canada.

There are no data upon consumption of inland fish in Canada. Annual consumption of inland fish in Canada is estimated as the residual between landings and exports of inland fish. This residual includes annual dumpings and net changes in stocks of fresh and frozen fish. There are no data upon regional consumption of inland fish. Very little is known about interprovincial flows of fish, but there are statistics on exports of inland fish from Saskatchewan to other provinces and to the United States.

There are few data upon the retail market for inland fish in Canada. We know that large quantities of fish are consumed in Winnipeg, Toronto, and Montreal, and we believe

that most of the consumers are Jews. But we know little about consumption expenditures on inland fish in Canada.

The Costs of Commercial Fishing

(1) Although one object of commercial fisheries policy is to raise the net incomes of fishermen, we know little about the net earnings of people who fish with gill nets set from canoes. We do not know the minimum catch of fish at which men in the Patricia District, with or without subsidy assistance, can break even on their commercial fishing operations. Nor do we know whether two fishermen using one canoe and 10 gill nets can earn more or less than each of two fishermen using a yawl and 10 gill nets: we know nothing of the inland fish production functions.

Before making further investments in gear and equipment, hypothetical budgets should be constructed to show the expected net earnings of fishermen who are to be outfitted. The hypothetical budgets could be set up in the following manner:

HYPOTHETICAL OPERATING BUDGET

ONE COMMERCIAL FISHERMAN, PATRICIA DISTRICT

Receipts		Disbursements	
Sales of Fish (x lb. at y¢ per lb.)	$	Capital Costs of Motor and Canoe	$
		write-off	----------
		interest	----------
		Nets (annual cost)	----------
		Repairs	----------
		Share of licence fee	----------
		Share of cost or rental of shore installations	----------
		Gas and Oil	----------
		Royalties	----------
		Net Labour Earnings	----------
Total Receipts		Total Disbursements and Earnings	----------

(2) The present Commercial Fishery Accounts are presumably of value to the Indian Affairs Branch, but they do not show the real profitability (or unprofitability) of commercial fishing, nor can they easily be used to show the average net incomes and earnings of fishermen. It is important to

know just how expensive the commercial fishing operations are at any commercial fishery, such information can be used to indicate where further expansion of output or investment would be most useful.

A profit and loss account (actually a statement of Receipts and Disbursements if single entry book-keeping is used), should be set up for each commercial fishery. These accounts should be similar to the account shown on Table 20, and are the equivalent of an aggregation of the actual operating budgets of commercial fishermen.

(3) To set up accounts to show the real profitability of commercial fishing we require estimates of investment in fishing gear and shore installations (investments made independently by individual fishermen and also those made initially by the Indian Affairs Branch), and of the value of services provided by the Indian Affairs Branch (administration and marketing). Some data on investment are available from the Commercial Fishery Accounts and from the Indian Affairs Branch Expenditure Control Forms. There are no estimates of the value of gear owned by individual commercial fishermen, and only very rough estimates of administrative and marketing services provided by the Branch.

The Costs of Marketing Inland Fish

The costs of selling inland fish from the Patricia District f.o.b. a railcar in northern Ontario can be derived from The Commercial Fishery Accounts, and from estimates of the annual cost of capital investment and administrative and marketing services provided by the Indian Affairs Branch.

The costs of marketing fish in wholesale markets are derived from an analysis of the accounts of the Co-operative Fisheries Limited. This company may not be typical of others.

Processing Costs

The costs of packing fresh fish are clear.

The report uses three estimates of the cost of making frozen fillets of inland fish.

(a) An estimate derived from a detailed analysis (Table 23) of the accounts of the fish filleting plant at Wollaston Lake, Sask. in 1960. This plant is owned and operated by Co-operative Fisheries Ltd.

(b) An estimate made, by one fish dealer, in conversation.

(c) A rule of thumb estimate used in the fish trade and in the Dept. of Fisheries.

None of these estimates are suitable as a basis for a decision about the construction of a fish filleting plant. The plant

at Wollaston Lake is now used well under capacity and filleting costs appear very high.

The writer is not aware of any precise factual basis for the other two estimates.

Prices of Inland Fish

Statistics on wholesale prices of fish from the Patricia District are scarce and do not yield reliable estimates of fish dealers gross margins. In order to assess the profitability of fish marketing more carefully we require more price data.

The Dominion Bureau of Statistics publishes the monthly average wholesale prices at which inland fish of several species sold in Winnipeg, Toronto, and Montreal. These average prices are useless as a guide to the profitability of marketing fish from the Patricia District. The Market News Service of the Bureau of Commercial Fisheries, U.S. Dept. of the Interior publishes daily price ranges at which different species of fish were sold in New York and Chicago. The price quotations very rarely relate to fish from northern Ontario. There are no published data on the prices of fish in Detroit.

In order to collect some price data to indicate the

profitability of sales of fish from northern Ontario in 1961, the Ontario Dept. of Lands and Forests recorded the prices at which fish were sold f.o.b. shipping points and f.o.b. Toronto; these data provide some reliable and useful information.

APPENDIX V

STATISTICAL APPENDIX

LIST OF TABLES

Table page

Throughout Tables:

- , Means comparable data are not available, or no data available.

" , Means Zero.

TABLE 18

SALES OF FISH FROM INDIAN FISHERIES OF THE WEST CENTRAL PATRICIA DISTRICT (1960)[a]

Buyer / Fishery	Canadian Fish Producers Ltd.	Lake St. Peter Fisheries Ltd.[b]	Northland Fish Ltd.[b]	The Rest and Unknown[c]	(Lakeside Value of Fish)	Value of Sales f.o.b. point of purchase
	$	$	$	$	$	$
1. Fort Hope	"	))24,800)	"	))2,300)	(3,900)	8,000[d]
2. Lansdowne House	"	)		)	(9,500)	19,100[d]
3. Bearskin	5,400	4,400	"	1,500	(7,900)	11,200
4. Big Beaver House	200	17,700	"	1,400	(12,800)	19,300
5. Big Trout Lake	11,300	7,900	"	13,200	(20,500)	32,500
6. Kassabanika	8,000	4,800	"	1,200	(7,000)	14,000
7. Round Lake	"	2,000	16,100	"	(18,100)	18,100[e]
8. Sachigo and Border Lakes	"	"	17,400	"	(17,400)[f]	17,400
9. Sandy Lake	"	"	10,800	"	(10,800)	10,800
Total	24,900	61,600	44,300	19,700	(107,900)	150,400

Notes:

a. Columns and lines do not all add to totals because figures are rounded.

b. Two fish companies paid $105,843.25 for fish, or 70.38% of total sales.

c. Local Dealers (included in Rest and Unknown), paid $11,135,85 for fish, or 7.40% of total sales.

d. Higher than according to the Commercial Fishing Report, 1960, because bonus payments for whitefish are included.

e. Higher than Commercial Fishing Report, 1960, because payment of $181.00 for sturgeon included.

f. Estimated from licence returns and prices quoted by fish dealer.

Sources:

1. Files of Indian Affairs Branch, Commercial Fishery Reports, 1960.

2. Fishery Files, Indian Agencies at Nakina and Sioux Lookout.

TABLE 19

CAPITAL INVESTMENT IN FISHING GEAR ON THREE LAKES IN THE PATRICIA DISTRICT (1961)

LAKE I[a]

Equipment and Gear	Write-off time	New Investment		Total Book Value 1961	Interest[f] Charge 1961	Write-off[g] 1961
		1960[b]	1961			
	yrs.	$	$	$	$	$
Shore Installations and Other Equipment	10	152.11	181.17	318.07[c]	15.90	33.32
Boats and Gear						
Nets and Gear	2	1,454.99	1,732.91	2,460.41	123.02	1,593.95
Canoes and Motors[d,e]	5	-	-	270.00	13.50	54.00
All Capital Equipment				3,048.48	152.42	1,681.27
Boats and Gear				2,730.41	136.52	1,647.95
Capital Supplied by Indian Affairs Branch				2,778.48	138.92	1,627.27

LAKE I

Notes:

a. Before 1960 there was no commercial fishing at Lake I.

b. Capital invested in 1960 in shore installations estimated as 9.465% of all investment of $1,607.10. 9.465%: percentage of investment 1961 spent on shore installations etc. at Lake I. $1,607.10 is the value of investment in shore installations and gear during 1960.

c. This probably underestimates the value of shore installations considerably. cf. nearly $5,000.00 at Attawapiskat Lake and $1,200.00 at Mamiegwess Lake.

d. Canoes and Motors valued according to Note (d), Table 19, (Lake II).

e. Estimated 10-12 steady fishermen, 8-10 part-time fishermen. Assume steady employment for 12 men, and 6 canoes and motors.

f. Interest charged at 5% on the outstanding book value of Gear and Other Equipment.

g. Annual write-off: 1/10th, 1/5th, and 1/2 of the initial investment, depending on the type of equipment.

Source: Commercial Fishery Report, 1961, 1960, Files of the Indian Affairs Branch.

TABLE 19 (cont'd)

LAKE II[a]

Equipment and Gear	Write-off time	New Investment		Total Book Value 1961	Interest[f] Charge 1961	Write-off[g] 1961
		1960[b]	1961			
	yrs.	$	$	$	$	$
Shore Installations and Other Equipment	10	1,359.55	3,600.00	4,823.59	241.18	495.96
Boats and Gear						
Nets and Gear	2	1,679.92[c]	4,448.34	4,448.34	222.42	2,224.17
Canoes and Motors[d,e]	5	-	-	630.00	31.50	126.00
All Capital Equipment				9,901.93	495.10	2,846.13
Boats and Gear				5,078.34	253.92	2,350.17
Capital Supplied by Indian Affairs Branch				9,271.93	463.60	2,720.13

LAKE II

Notes:

(a) Before 1960 there was no commercial fishing at Lake II. It is assumed that there were no shore installations and no nets and gear at the lake until 1960. All investment valued at cost plus airhaul charges.

(b) Capital invested in 1960 in shore installations etc., estimated as 44.73% of $3,039.47. 44.73% is the proportion of all investment in 1961 spent on shore installations at Lake II.
$3,039.47 is value of investment in 1960 for shore installations and gear.

(c) Gear valued at $1,679.92 was burned in a fire. Strictly this amount is a charge on the fishery, but for our purposes we ignore the investment and loss.

(d) Estimated with D.H. Gimmer:

Purchase price:	Canoe:	$200 (includes airhaul costs)
	3½ hp. Motor:	
		$165 (includes airhaul costs)
		$365

Charge one-quarter to commercial fishing; say, an outlay of $90 chargeable to fishing.
Assume a steady rate of replacement: then average value of boats and motors is $45 per canoe and motor.

(e) Estimated 20 steady fishermen, 15-20 part-time. Assume steady employment for 28 men and 14 canoes and motors.

(f) Interest charged at 5% on the outstanding book value of Gear and Other Equipment.

(g) Annual write-off: 1/10th, 1/5th, or 1/2 of the initial investment, depending on the type of equipment.

Source: Commercial Fishery Report, 1961, 1960. Files of the Indian Affairs Branch.

TABLE 19 (cont'd)

LAKE III[a]

Equipment and Gear	Write-off time	New Investment		Total Book Value 1961	Interest[d] Charge 1961	Write-off[e] 1961
		1960	1961			
	yrs.	$	$	$	$	$
Shore Installations and Other Equipment	10	-	1,209.00	1,209.00	60.45	120.90
Boats and Gear						
Nets and Gear	2	-	1,479.09	1,479.09	73.95	739.54
Canoes and Motors[b,c]	5	-	-	315.00	15.75	63.00
All Capital Equipment				3,003.09	150.15	923.44
Boats and Gear				1,794.09	89.70	802.54
Capital Supplied by Indian Affairs Branch				2,688.09	134.40	860.44

LAKE III

Notes:

a. Before 1961 there was no commercial fishing at Lake III.

b. Assume 14 steady fishermen, 2 part-time. Steady employment for 14 men, 7 canoes and motors.

c. Canoes and Motors valued according to Note d., Table 19, Lake II.

d. Interest charged at 5% on the outstanding book value of Gear and Other Equipment.

e. Annual write-off: 1/10th, 1/5th and 1/2 of the initial investment, depending on the type of equipment.

Source: Commercial Fishery Report, 1960, 1961, Files of the Indian Affairs Branch.

TABLE 19 (cont'd)

COMMERCIAL FISHERIES ON THREE LAKES

Equipment and Gear	Total Book Value 1961	Interest Charge 1961	Write-off 1961
	$	$	$
Shore Installations and Other Equipment	6,350.66	317.53	650.18
Boats and Gear			
Nets and Gear	8,387.84	419.39	4,557.66
Canoes and Motors	1,215.00	60.75	243.00
All Capital Equipment	15,953.50	797.67	5,450.84
Boats and Gear	9,602.84	480.14	4,800.66
Capital Supplied by Indian Affairs Branch	14,738.50	736.92	5,207.84

TABLE 20

STATEMENT OF KNOWN AND IMPUTED RECEIPTS AND DISBURSEMENTS OF COMMERCIAL FISHERIES ON THREE LAKES IN THE PATRICIA DISTRICT (1961)

Commercial Fishing	Lake II	Lake I	Lake III	Three Lakes
Fish Marketing	$	$	$	$
Receipts				
Gross Sales of Fish	16,364.60	5,094.54	8,102.63	29,561.77
Disbursements				
Payment to Fishermen	5,196.99	1,678.48	2,392.21	9,267.68
Air Haulage	5,576.13	1,282.86	2,951.27	9,810.26
Packing (Nakina)	3,597.49	974.99	1,910.11	6,482.59
Other	1,316.38	315.14	332.03	1,963.55
Shore Installations:				
write-off[a]	495.96	33.32	120.90	650.18
interest[a]	241.18	15.90	60.45	317.53
Sales and Administration[b]	770.95	200.35	403.05	1,374.35
Total Disbursements:	17,195.08	4,501.04	8,170.02	29,866.14
Imputed Net Marketing Profits (Losses)	(-830.48)	593.50	(-67.39)	(-304.37)

TABLE 20 (cont'd)

Fishing Operations	$	$	$	$
Receipts				
Gross Sales by Fishermen (Gross Earnings)	5,196.99	1,678.48	2,392.21	9,267.68
Disbursements				
Licences (est.)[c]	80.00	60.00	40.00	180.00
Ice Harvest	300.00	272.00	140.00	712.00
Boats and Gear				
write-off[a]	2,350.17	1,647.95	802.54	4,800.66
interest[a]	253.92	136.52	89.70	480.14
Gas and Oil (est.)[d]	485.10	207.90	242.55	935.55
Royalties (est.)[e]	17.21	-	6.16	23.37
Repairs	50.00	154.59	-	204.59
Total Disbursements:	3,536.40	2,478.96	1,320.95	7,336.31
Imputed Net Earnings	1,660.59	(-800.48)	1,071.26	1,931.37
(Imputed Net Earnings per man)	(59.31)	(-66.71)	(76.52)	(35.77)
Imputed Net Profits (Losses) from Commercial Fishing and Fish Marketing	830.11	(-206.98)	1,003.87	1,627.00

Source: Files of the Indian Affairs Branch, and Table 19, Statistical Appendix.

Notes:

a. See Table 19, Statistical Appendix.

b. Estimated at 1¢ per lb. of fish sold. (See Chapter VI).

c. Estimated in conversation with a member of the Indian Affairs Branch.

d. Estimated: Gas and Oil f.o.b. Attawapiskat Lake, $1.10 per gallon. Assume a fisherman uses ¾ gal. per day. Assume each fisherman fished actively for 42 days.

e. ½¢ per lb. on all whitefish and pickerel taken in excess of the licence limit.

Source: "Commercial Fishery Reports, 1961". Files of the Indian Affairs Branch.

TABLE 21

ESTIMATED NET CASH INCOMES RECEIVED BY FISHERMEN ON THREE LAKES IN THE PATRICIA DISTRICT (1961)

	Lake II	Lake I	Lake III
	$	$	$
Receipts (Actual and Imputed)			
Sales of fish	5,196.99	1,678.48	2,392.21
Licences	80.00	60.00	40.00
Ice harvest	300.00	272.00	140.00
Royalties	17.21	-	6.16
Repairs	50.00	154.59	-
Boats and Gear			
write-off	2,224.17	1,593.95	739.54
interest	222.42	123.02	73.95
Imputed Gross Incomes	8,090.79	3,882.04	3,391.86
Disbursements			
Licences	80.00	60.00	40.00
Ice Harvest	300.00	272.00	140.00
Royalties	17.21	-	6.16
Repairs	50.00	154.59	-
Boats and Gear			
write-off	2,350.17	1,647.95	802.54
interest	253.92	136.52	89.70
Gas and Oil	485.10	207.90	242.55
Total Disbursements	3,536.40	2,478.96	1,320.95
Imputed Net Incomes of Commercial Fishermen	4,554.39	1,403.08	2,070.91

Note: Assume that all subsidies of equipment received as cash income; and deduct only costs of gas, oil, and capital costs (write-off and interest) of boats and gear owned by fishermen.

Source: Table 19, and Text.

TABLE 22

SUMMARY STATISTICS OF COMMERCIAL FISHERIES ON THREE LAKES IN THE PATRICIA DISTRICT (1961)

	Lake I	Lake II	Lake III	Three Lakes
Number of full time fishermen (approx.)[a]	12	28	14	54
Value of boats and gear[b] $	2,730.00	5,078.00	1,794.00	9,602.84
Value of shore installations[b] $	318.00	4,824.00	1,209.00	6,351.00
Landings of fish[c] lb.	23,663	82,505	43,487	149,655
Sales of fish (by Indians)[c] lb.	20,035	77,095	40,305	137,435
Value of sales of fish (by Indians)[c] $	1,678.48	5,196.99	2,392.21	9,267.68
Average net earnings per man[d] $	-66.71	59.31	76.52	35.77
Average net incomes per man[e] $	116.92	162.66	147.92	148.67

Note: Figures rounded.

Sources: a. Conversation with a member of the Indian Affairs Branch, and Indian Affairs Branch files.
b. Table 19.
c. Commercial Fishery Reports, Files of the Indian Affairs Branch, 1960, 1961.
d. Table 20.
e. Table 21.

TABLE 23

SUMMARY STATISTICS OF INLAND FISHERIES (1960)

	Value of Landings	Weight of Landings	Number of Fishermen	Average Catch per Fisherman	
	$ '000	'000 lb.		$	lb.
Northern Inland Waters of Ontario	1,034.9	8,234	1,367[a]	757	6,023
Northern Lakes of Manitoba	799.4	8,470	1,706[b]	468.58	4,965
Saskatchewan	1,367.2	14,530	1,700[c]	804	8,547
Alberta	1,158.6	15,852	-	-	-
Northwest Territories	701.9	5,543	360	1,950	15,397
Rest of Ontario	3,948.1	39,366	2,042[a]	1,933	19,278
Rest of Manitoba	3,067.3	23,474	3,583[b]	856	6,551

TABLE 23 (cont'd)

	Value of Capital Equipment[d]	Value of Boats and Gear	Capital per Man	Boats and Gear per Man
	$ '000	$ '000	$	$
Northern Inland Waters of Ontario	997.6	730.6	730	534
Northern Lakes of Manitoba	740.5	475.5	434	279
Saskatchewan	-	1,140.9	-	671
Alberta	-	-	-	-
Northwest Territories	656.4	-	1,823	-
Rest of Ontario	9,125.8	7,219.10	4,469	3,535
Rest of Manitoba	2,354.5	2,065.6	657	577

TABLE 23 (cont'd)

Notes:

a. Estimated from number of licences, corrected for duplication.

b. Estimated from number of licences, not corrected for duplication.

c. Estimated from number of licences.

d. Boats, Gear and Shore Installations.

Sources:

Canada, Dominion Bureau of Statistics, Fisheries Statistics of Canada, Ontario, 1960, Ottawa, D.B.S., 24-209.

Ibid., Manitoba, 1960, D.B.S., 24-210.

Ibid., Saskatchewan, 1960, D.B.S., 24-211.

Ibid., Alberta and Northwest Territories, 1960, D.B.S., 24-212.

TABLE 24

ESTIMATED COST OF PRODUCTION OF FROZEN FILLETS OF FISH (WOLLASTON LAKE, SUMMER 1960)

Sales of Fish[a]		
Purchased from fishermen	601,578 lb.	of fish:
Estimated sales:	269,000 lb.	of whole and dressed fish (fresh and frozen)
	309,200 lb.	of fish as frozen fillets.
Total sales estimated at	579,000 lb.	of fish (landed equivalent).
Weight of sales	423,600 lb.	of whole dressed fish, and frozen fillets.[b]

Cost of Frozen Fillets

a. Variable Cost of Production	$
Packing Contract[c]	22,747.56
Wages	4,293.04
Plant repairs and maintenance	2,905.19
Ice harvest	26.00
Fuel, light, power	3,910.85
Packaging, supplies	3,254.97
Miscellaneous	757.37
Operational supplies	377.05
Total variable cost of packing and filleting	38,272.03
Less: Variable cost of packing 268,000 lb. whole and dressed fish at 4.50 cents per lb.[d]	12,060.00
Variable cost of making 154,000 lb. of frozen fillets	25,212.03

Average variable cost per lb. of frozen fillet - 16.95 cents.

TABLE 24 (cont'd)

b. Fixed Cost of Production	$
Insurance	668.68
Taxes	142.78
Rentals and Leases	423.00
Depreciation	2,059.81
Total fixed cost of making 154,600 lb. of frozen fillets	3,294.27

Average Fixed Cost per pound of frozen fillet - 2.13 cents.

c. Average total cost of production - 19.08 cents per lb. of frozen fillet.

d. Marginal Cost of Production		¢ per lb. fillet
Sale price: (block frozen whitefish)[a]		32.00
purchase of fish[e]	12.00	
airhaulage[e]	5.16	
freight, express[e]	3.50	
marketing commission[e]	3.56	
		24.22
Minimum contribution to filleting costs		8.78

Marginal Cost - 8.78 cents per pound of frozen fillet.

Notes: a. Estimated on basis of letter from J.M. Towne.

b. Assume a recovery rate of 50% of whole fish.

c. Packing and filleting, actually includes some fixed costs.

d. Estimated from charges at Nakina; actually includes some contribution to fixed costs.

e. Derived from Analysis of Wollaston Lake operations, Summer 1960.

Sources: "Co-operative Fisheries Ltd. Statement of Settlement - Wollaston Lake - Summer 1960."

And letter from J.M. Towne, Co-operative Fisheries Ltd., dated 19 January 1962.

TABLE 25

LANDINGS AND CONSUMPTION OF CANADIAN INLAND FISH

	Inland Fish Landings		Exports of Inland Fish[b]		Domestic Disappearance[d]
	Current $[a]	Weight of Landings	Current $	Landed Equivalent[c]	Landed Equivalent
	$ '000	'000 lb.	$ '000	'000 lb.	'000 lb.
1945	12,138	92,874	-	-	-
1946	10,914	91,275	-	-	-
1947	9,689	79,583	-	-	-
1948	10,641	87,527	-	-	-
1949	10,207.1	90,209	14,187	84,282	5,927
1950	12,372.5	91,960	16,995	85,948	6,012
1951	13,854.8	98,354	19,203	86,594	11,760
1952	13,466.3	102,929	18,288	88,530	14,399
1953	12,114.4	106,216	17,285	91,651	14,565
1954	12,723.4	116,187	17,978	93,161	23,026
1955	13,123.7	118,959	18,036	93,014	25,945
1956	13,891.9	124,596	20,153	103,041	21,555
1957	13,471.3	119,589	20,682	99,344	20,245
1958	14,023.9	114,613	21,536	91,031	23,582
1959	12,102.9	117,212	19,946	89,356	27,856
1960	12,766.3	123,024	20,479	89,240	33,784

TABLE 25 (cont'd)

Notes: a. Includes sea fish caught inland (17,796 lb. valued at $735,000 in 1960).

b. Almost all exports are shipped to the United States. In 1960, 581,000 pounds of inland fish, valued at $170,000, were exported to other countries.

c. Exports of whole and dressed fish taken as 85% of weight of landings. Exports of fillets of inland fish taken as 40% of weight of landings.

d. Domestic Disappearance = Landings (lb.) minus Exports (lb.).

Sources: Canadian Fisherman, Canadian Fisheries Statistics, 1940-1959, (published by "Canadian Fisherman", Gardenvale, Que.). Information supplied by Department of Fisheries, and Dominion Bureau of Statistics, Ottawa. And Canadian Fisheries Statistics, 1939-1958, and Summary Statistics of Canadian Fisheries,1936-1955, 1934-1953, and Summary Statistics of Fisheries of Canada, 1931-1950, (published by "Canadian Fisheries Annual", Gardenvale, Que.), information supplied by Department of Fisheries, and Dominion Bureau of Statistics, Ottawa.

Henceforth cited as: C.F.S., 1959, C.F.S., 1958, S.S.C.F., 1955, 1953, S.S.F.C., 1950.

Canada, Dominion Bureau of Statistics, Fisheries Statistics of Canada, Canada Summary, (Ottawa), 1945-1960. D.B.S. 24-201.

TABLE 26

EXPORTS OF INLAND FISH

	Whitefish[a]		Pickerel[b]		All Inland Fish	
	Fresh & Frozen Whole & Dressed	Fillets	Fresh & Frozen Whole & Dressed	Fillets	Fresh & Frozen Whole & Dressed	Fillets
	1	2	3	4	5	6
	'000 lb.					
1928	11,210	-	-	-	-	-
1929	11,684	-	-	-	-	-
1930	11,341	-	-	-	-	-
1931	9,444	-	-	-	-	-
1932	8,146	-	-	-	-	-
1933	8,632	-	-	-	-	-
1934	11,409	-	-	-	-	-
1935	11,272	-	-	-	-	-
1936	12,036	-	-	-	-	-
1937	13,142	-	-	-	-	-
1938	12,563	-	-	-	-	-
1939	13,140	-	-	-	-	-
1940	16,741	-	-	-	-	-
1941	15,001	-	-	-	-	-
1942	14,599	-	-	-	-	-
1943	13,823	-	-	-	-	-
1944	14,770	-	-	-	-	-
1945	13,686	-	-	-	-	-

TABLE 26 (cont'd)

	Whitefish[a]		Pickerel[b]		All Inland Fish[a]	
	Fresh & Frozen Whole & Dressed	Fillets	Fresh & Frozen Whole & Dressed	Fillets	Fresh & Frozen Whole & Dressed	Fillets
	1	2	3	4	5	6
	'000 lb.					
1946	12,654	-	5,977	-	-	-
1947	11,641	-	9,837	-	-	-
1948	13,391	-	10,514	-	-	-
1949	16,907	575	14,374	3,740	54,967	7,846
1950	17,008	821	13,963	4,223	56,489	7,796
1951	18,945	1,062	13,436	3,501	57,045	7,793
1952	19,768	1,225	12,966	4,647	55,971	9,073
1953	20,131	708	12,329	6,531	54,259	11,127
1954	17,134	901	11,957	6,355	51,250	13,147
1955	16,137	1,162	12,567	7,769	49,182	14,061
1956	15,282	1,180	14,811	8,618	52,699	16,417
1957	16,410	1,235	11,299	6,993	48,271	17,022
1958	16,507	1,161	9,234	3,907	45,820	14,851
1959	16,196	1,319	7,488	2,212	43,740	15,159
1960	16,769	2,277	7,563	1,810	45,734	14,174
1961	16,687	1,551	9,253	2,813	54,503	14,741

TABLE 26 (cont'd)

Notes: Before 1940 exports of whitefish (fresh and frozen, whole and dressed), include exports of whitefish fillets.

Sources: 1928-1948, Canada, D.B.S., Trade of Canada, Exports, Annual Summaries, (Ottawa), D.B.S. 64-005.

1949-1960

C.F.S., 1959, ("Canadian Fisherman", Gardenvale, Que.) Section 6.

C.F.S., 1958, ("Canadian Fisheries Annual", Gardenvale, Que.) Section 6.

S.S.C.F., 1955, " " " "

S.S.C.F., 1953, " " " "

S.S.F.C., 1950, " " " "

TABLE 27

LANDINGS OF INLAND FISH IN ONTARIO

	Ontario[a]		Ontario Northern Inland Waters[b]		Sioux Lookout Forestry District[b]	
	$ '000	'000 lb.	$ '000	'000 lb.	$ '000	'000 lb.
1945	6,484	34,275	898	5,040	-	-
1946	5,597	32,997	896	4,719	-	-
1947	4,803	24,920	777	4,802	-	-
1948	5,683	29,101	905	4,629	-	-
1949	5,492	34,061	764	5,254	-	-
1950	6,248	32,755	881	5,229	-	-
1951	7,035	30,969	1,035	5,728	-	-
1952	7,417	38,044	1,072	6,221	-	-
1953[c]	7,027	44,838	787	6,078	-	-
1954	7,013	47,680	789	6,081	-	-
1955[c]	6,783	45,634	732	5,628	-	-
1956[c]	7,927	59,710	823	5,878	-	-
1957	7,047	51,109	815	5,764	-	-
1958[c]	7,271	47,175	1,039	7,315	427	2,750
1959[c]	4,866	48,984	1,090	7,616	351	2,518
1960[c]	4,984	47,600	1,035	8,234	361	2,521

TABLE 27 (cont'd)

Note: From 1958 until 1960 landings of fish in the Sioux Lookout Forestry District were 35.998 per cent by value, and 33.621 per cent by weight, of landings of fish in the Northern Inland Waters of Ontario. Summary data on landings in the Sioux Lookout District before 1958 not available.

Sources: a. C.F.S., 1959, ("Canadian Fisherman"), Table 26.

b. Letter from C.H.D. Clarke, Fish and Wildlife Branch, Ontario Dept. of Lands and Forests, 15 November 1961, quoting Annual Reports, Ontario Dept. of Lands and Forests (Toronto).

c. Dominion Bureau of Statistics, Fisheries Statistics of Canada, (Ontario, Prairies, and Northwest Territories), D.B.S., 24-207.

And Fisheries Statistics of Canada, (Ontario), 1960, D.B.S., 24-209.

TABLE 28

FISH PRODUCTION OF THE LAKES OF THE WEST CENTRAL PATRICIA DISTRICT
ON WHICH THERE WERE INDIAN FISHERIES - 1960

Fishery	Whitefish	Yellow Pickerel	Lake Trout	Sturgeon	All Other
	lb.	lb.	lb.	lb.	lb.
Fort Hope					
Eabamet Lake	33,906	13,878	-	660	73
Lansdowne House					
Attawapiskat L.	51,032	35,428	-	271	150
Mameigwess	-	-	-	-	-
Bearskin					
Severn L.	2,194	17,278	-	1,858	-
Knife L.	500	1,000	-	-	300
Muskrat Dam	-	-	-	5,796	-
Misgaimebin L.	-	-	-	-	-
Big Beaver House					
Maria L.	4,258	8,654	-	-	443
Kingfisher	-	-	-	-	-
Wunniman	17,199	74,668	-	64	141
Big Trout Lake					
Big Trout L.	976	13,971	72,768	-	90

TABLE 28 (cont'd)

Fishery	Whitefish	Yellow Pickerel	Lake Trout	Sturgeon	All Other
	lb.	lb.	lb.	lb.	lb.
Kassabanika					
Kassabanika	23,526	7,227	-	36	-
Shibogama	6,747	24,121	-	755	-
Long Dog	-	-	-	3,193	-
Round Lake					
Evapamikama	75,564	7,825	-	25	5,899
Magiss	-	-	-	-	-
Nikip	-	-	-	-	-
North Caribou	193,594	43,586	1,128	-	12,169
N. & S. Windigo	3,937	277	-	-	30
Opakapa	9,309	4,389	-	-	-
Round	67,159	18,157	-	-	3,659
Seeseep	-	-	-	-	-
Sachigo & Border Lakes					
"East"	23,918	2,353	-	-	1,805
Pierce	37,650	11,688	-	-	5,261
Ponask	20,190	1,205	-	-	726
Sachigo	31,864	14,442	-	-	5,306
Stull	66,091	12,000	-	-	6,434

TABLE 28 (cont'd)

Fishery	Whitefish	Yellow Pickerel	Lake Trout	Sturgeon	All Other
	lb.	lb.	lb.	lb.	lb.
Sandy Lake					
Angekum	-	-	-	-	-
Finger	642	23,725	-	-	21,541
Opasquia	-	-	-	-	-
Sandy	-	7,110	-	-	8,067
Setting Net	-	-	-	-	-
West Central Patricia District	670,256	342,982	73,896	12,658	72,094
Other Lakes					
Deer	16,641	14,345	655	-	1,988
Makoop	7,759	6,237	-	-	-
McInnes	2,614	4,262	110	-	-
Sakwaso	34,362	-	-	-	-
	731,632	367,826	74,661	12,658	74,082

Source: Lake History Sheets, Ontario Department of Lands and Forests, Sioux Lookout. Data include catches by Indian Bands and others on all licences.

TABLE 29

SHIPMENTS OF WHITEFISH FROM THE INDIAN FISHERIES OF THE WEST CENTRAL PATRICIA DISTRICT (1960)

Fishery / Destination	Montreal	Winnipeg	Windsor	Island Lake	Pickle Lake	All Other not known, losses and errors	Production Total[d]	Quantities Inspected and passed for Export by Canadian and U.S. authorities
	lb.							
Fort Hope[a] / Lansdowne House[b]	31,077	"	34,531	"	"	14,537	80,145	26,664
Bearskin	1,639	"	"	"	"	"	1,639	44,952 60
Big Beaver House	5,359	"	"	"	1,302	"	6,661	1,855
Big Trout Lake	"	"	"	"	"	887	887	540
Kassabanika	23	23,407	"	"	610	3,038	27,078	22,146
Round Lake	3,658	"	"	164,751	15,407	17,451	201,267	28,208
Sachigo and Border Lakes	"	"	"	179,613	"	"	179,613	61,376
Sandy Lake	"	"	"	353	"	"	353	"
TOTAL[c]	41,756	23,407	34,531	344,717	17,319	35,913	497,643	185,801

TABLE 29 (cont'd)

Notes: a. Fort Hope = Eabamet Lake

b. Lansdowne House = Attawapiskat Lake

c. 386,473 lb. of Whitefish shipped to Montreal and Island Lake; 77.66% of production.

d. Production Totals are taken from Commercial Fishing Reports, 1960. Usually these totals differ slightly from the quantities reported as having been shipped to all destinations and from the production totals are regarded as total shipments, the compensating factors are put into the column "All Other, not known, losses and errors", which is a column of residuals. At Big Beaver House, the Commercial Fishing Report, 1960, shows production at 6,632 lb., while apparent shipments totalled 6,661 lb. Data on production of fish at Sachigo and Border Lakes recorded on licences are assumed to be correct.

Sources: 1. Files of the Indian Affairs Branch.

2. Ontario Dept. of Lands and Forests, Lake History Sheets, Sioux Lookout Forestry District, Sioux Lookout.

TABLE 30

SHIPMENTS OF YELLOW PICKEREL FROM INDIAN FISHERIES OF THE WEST CENTRAL PATRICIA DISTRICT (1960)

Destination / Fishery	Montreal	Winnipeg	Windsor	Island Lake	Pickle Lake	All Other, not known, losses and errors	Production Total[c]
	lb.						
Fort Hope[a] / Lansdowne House[b]	22,340	"	12,540	"	"	12,648	47,528
Bearskin	6,497	4,250	"	"	"	2,967	13,714
Big Trout Lake	1,111	6,464	"	"	1,425	5,231	14,231
Big Beaver House	46,299	591	"	"	2,039	"	48,929
Kassabanika	15,685	12,651	"	"	755	2,026	31,117
Round Lake	3,111	"	"	26,670	"	3,000	32,781
Sachigo and Border Lakes	"	"	"	37,478	"	"	37,478
Sandy Lake	"	"	"	15,382	"	"	15,382
Total[c]	95,043	23,956	12,540	79,530	4,219	25,872	241,160

TABLE 30 (cont'd)

Notes: a. Fort Hope = Eabamet Lake

b. Lansdowne House = Attawapiskat Lake

c. 174,573 lb. shipped to Montreal and Island Lake, 72.36% of production.

d. Production totals are taken from Commercial Fishery Reports, 1960. Usually these totals differ slightly from the quantities reported as having been shipped to all destinations, and from production figures reported on fishing licences. Production totals are regarded as total shipments, Compensating factors are put in column "All Other, not known, losses and errors", which is a column of residuals. Totals of apparent shipments from Big Beaver House and Big Trout Lake are slightly greater than the total production reported on the Commercial Fishery Reports. Data on production of fish, at Sachigo Lake and Border Lakes, recorded on licences, are assumed correct.

Sources: 1. Files of the Indian Affairs Branch.

2. Ontario Department of Lands and Forests, Lake History Sheets, Sioux Lookout Forestry District, Sioux Lookout.

TABLE 31

INDEX OF PRICES PAID TO FISHERMEN FOR INLAND FISH AND AVERAGE VALUE (PER POUND) OF EXPORTS OF WHOLE AND DRESSED INLAND FISH (1946 - 1960)

	Index of prices paid to fishermen for inland fish[a]	Value of exports whole and dressed inland fish[b]	Wholesale Prices All Commodities[c] (U.S.A.)	Value of exports (per pound) of whole and dressed fish (all species)	
	1935 - 1939 = 100	$ '000	1947 - 1949 = 100	¢ per lb.	
				Current $[d]	$[e] (1947-1949)
	1	2	3	4	5
1946	220	-	-	-	-
1947	232	-	-	-	-
1948	217	-	-	-	-
1949	193	11,755	99.2	21.39	21.56
1950	242	13,736	103.1	24.32	23.59
1951	256	15,451	114.8	27.09	23.60
1952	232	14,476	111.6	25.87	23.18
1953	212	13,257	110.1	24.43	22.19
1954	218	12,830	110.3	25.03	22.69
1955	214	12,498	110.7	25.41	22.95
1956	213	13,475	114.3	25.57	22.37
1957	220	13,664	117.6	28.31	24.07
1958	250	14,707	119.2	32.10	26.93
1959	-	14,011	119.5	32.03	26.80
1960	-	14,612	119.6	31.95	26.71
1961	-	15,656	119.1	28.73	24.12

TABLE 31 (cont'd)

Sources: a. Economic Service, Department of Fisheries, document dated 9 February, 1961.

b. Canadian Fisherman C.F.S., 1960, 1959, S.S.C.F., 1955, 1953, S.S.F.C., 1950.

c. U.S. Department of Commerce, Business Statistics, 1961, Biennial Edition, (Washington: U.S. Government Printing Office, 1961), p. 36.

d. $\frac{\text{Column 2}}{\text{Column 6, (Table 26)}}$

e. $\frac{\text{Column 5}}{\text{Column 3}}$

TABLE 32

AVERAGE VALUE (PER POUND) OF EXPORTS OF WHOLE AND DRESSED WHITEFISH AND TROUT

	Whitefish[a]	Trout[b]
	¢ per lb.	
1949	29.02	28.69
1950	32.87	30.97
1951	32.49	31.47
1952	30.85	31.13
1953	29.66	30.65
1954	33.05	31.59
1955	33.01	29.35
1956	36.01	35.33
1957	35.87	36.66
1958	37.53	38.30
1959	36.06	36.94
1960	37.53	39.10
1961	38.59	-

Notes: a. Whitefish: fresh fish only.

b. Trout: fresh and frozen fish.

Sources: a. Canada, Dominion Bureau of Statistics, Trade of Canada, Exports, Vol. II, (Ottawa), Annual, D.B.S., 65-004.

b. Canada, Dominion Bureau of Statistics, Canadian Fisheries Statistics, Canada Summary, (Ottawa), Annual, D.B.S.

TABLE 33

PRICES OF WHITEFISH IN SELECTED CANADIAN AND U.S. MARKETS

		Lakeside Fish Prices				Wholesale Fish Prices				
		Kassabanika[a]	Gull Bay[b]	McDiarmid[b]	Kenora[c]	Port Arthur[b]	McDiarmid[b]	Kenora[c]	Chicago[e]	New York[f]
1960		¢ per lb.				¢ per lb.				
June	4		6			15				
	11		6		18	8		22		
	18		6	12	18		17	22		
	20									40-45
	25		6	10	17	14	14	21		
	29									45
July	2		6	12	18	14	15	22		
	5								35-40	37-40
	6								32-35	
	9		6	12	18	14	17	22		
	11								35-37	38-40
	12								35-37	
	13								35-40	37-38
	14								35-40	
	16		13	13	18	20	20	22		
	18	3							35-40	
	19								35-40	
	22	3								
	23			13	17		18	21		
	25								33-35	

TABLE 33 (cont'd)

1960		Kassabanika	Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
		¢ per lb.				¢ per lb.				
July	26								33-35	
	27								35-40	
	28								35-40	
	30			13			18			
	31	3								
August	1								35-40	40-42
	2								35-40	
	3								35-40	35-38
	4								35-40	
	6			13	17		18	21		
	8								32-34	38-42
	9								32-34	
	10								32-34	
	11								32-34	
	13			13	17		17	21		
	15									35-40
	16								32-35	
	17								32-34	
	18								32-34	
	20			13	17		17	21		
	21	4								
	22								32-35	30-35
	23								32-35	
	24								32-35	
	27			11	17		15	22		
	28	4								

TABLE 33 (cont'd)

		Kassabanika	Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960		¢ per lb.				¢ per lb.				
August	29								35-40	30-35
	30								35-40	
	31								35-40	
September	1								35-40	
	3			11	18		15	22		
	4	4								
	6								35-40	33-36
	7								35-40	40-45
	8								35-40	
	10			16	20		20	25		
	11	4								
	12								45-50	45-50
	13								45-50	50-55
	14								50-55	50-55
	15								50-55	50-52
	17			16	20		20	25		
	18	4								
	19								35-40	
	20								32-35	50
	21	4							35	45-50
	24			15	18		20	22		
	26								30-34	25-27
	27								30-32	
	28								30	
	29								30	

TABLE 33 (cont'd)

		Kassabanika	Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960		¢ per lb.				¢ per lb.				
October	1			13	19		17	23		
	3								33-35	32-35
	4								33-35	
	5								33-35	
	6								33-35	
	8			15	20		19	24		
	10								50-52	
	11								53-55	
	12								48-50	
	13								50	
	15			13	23			28		
	16	4								
	17								50-55	
	18	4							50-55	
	19								50-55	
	20								50-55	
	22			13	22			27		
	24									35-38
	26								42-45	
	27								42-45	35-40
	29		9	13	17	15	18	21		
November	1								43-45	
	2								43-45	
	4								43-45	

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960		¢ per lb.					¢ per lb.		
November	5	7	9	16	12	15	20		
	9							30-32	
	10							30-32	
	12	7	11	18	15	16	23		
	14							53-55	25-30
	15							53-55	
	16							53-55	
	19	6	12	23	15	18	27		
	21							53-55	
	22							55	
	26	6	12	22	15	17	28		
	28							50-52	
	29							50-52	
	30							50-55	
December	1							53-55	
	5							53-55	
	6							53-55	
	7							55	
	8							53-55	
	10			26			30		
	12							50-52	
	13							50-52	45-50
	14							48-50	
	15							48-50	
	17	15		26	18		30		
	19							30-32	30-35

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960			¢ per lb.				¢ per lb.		
December	20							30-32	
	21							28-30	25-30
	24	14		20	19		25		
	27							33-35	35
	28							33-35	
	31	13			17				
1961									
January	3							35-40	38-40
	4							35-40	
	5							35-40	
	7	14	14	20	20	20	24		
	9							35-37	38-42
	11							35-37	
	12							35-37	
	14	14	20	20	20	25	25		
	16							33-35	25-33
	18							30-35	25-30
	19							30-35	25
	21	14	18	15	20	23	18		
	23							30-35	30-35
	25							30-35	
	26							30-35	30-35
	28		10	20		15	23		
	30							28-30	30-35

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961		¢ per lb.			¢ per lb.				
February	1							30-35	28-30
	2							33-35	
	4	10	12	20	15	19	24		
	6							35-40	33-35
	8							38-40	33-35
	9							38-40	30-35
	11		19	20		25	25		
	14							38-40	35-40
	15							38-40	35
	16							38-40	
	18		20			26			
	20							38-40	42-45
	23							38-40	40-42
	25	16	20	20	21	25	25		
	27							38-40	35-40
	28							38-40	
March	1							38-40	30-35
	2							38-40	30-35
	4	17	21	22	23	26	27		
	7							38-40	
	8							38-40	35-40

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961			¢ per lb.				¢ per lb.		
March	9							38-40	35-40
	11		18	25		23	30		
	13							40-42	43-45
	14							40-42	
	15							40-42	45-46
	16							40-42	45-48
	18	19	35		25	43			
	20							53-55	50-53
	21							53-55	
	22							53-55	53-55
	23							53-55	55-58
	25	20			27				
	28							58-60	55-60
	29							60	55
	30							58-60	45-50
April	1		20	30		25	35		
	3							50	35-40
	4							50	
	5							45	30
	6							45	
	8	13	18	26	18	22	32		
	10							28-30	25-30
	12							28-30	
	15	14	18		19	23			

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961			¢ per lb.				¢ per lb.		
April	17							43-45	
	22		18			23			
	29	20	24	22	25	30	28		
May	6			22			28		
	13			22			30		
	20	20	30	25	27	35	35		
	23							40-45	
	24							40-45	47-52
	27	12		22	16		26		
	29							30-35	33-35
June	1							30-35	25-27
	3	8	11	22	11	16	26		
	5							30-35	35
	6							30-35	
	10	7	13	22	13	19	26		30-35
	13							44-46	
	14							46-48	
	15							52-54	
	17	7	10	18	11	15	22		
	19							48-50	30-35
	20							48-50	

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Toronto[d]	Chicago	New York
1961		¢ per lb.			¢ per lb.					
June	21					14		25	45-50	
	22								45-50	
	23							30		
	24	7	10	17	11	13	20			
	26							25	40-45	35-37
	27								40-45	
	28								35-40	35-37
	29								35-37	
	30				14	14		25		
July	1	7	10	14			16			
	3							25		35
	5								35-37	
	6					14				
	8	7	12							
	10					14		25	33-35	
	11								33-35	
	12					14			33-35	
	13					14		25	33-35	
	15	7	12							
	17								35-40	28-32
	18					14			35-37	
	22	7	12							
	24							23	35-37	
	25								32-35	
	26								34-36	
	27								34-36	

TABLE 33 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Toronto	Chicago	New York
1961			¢ per lb.				¢ per lb.			
July	29	7	12							
	31					14	22		34-36	
August	1							35	34-36	
	2								30-35	
	3						22		30-35	
	5	7	11							
	7					14			32-38	
	8								35-38	
	9								35-38	
	10					14			35-40	
	12	7	12							
	14					14			35-37	30-32
	15							25	35-37	
	16								35-37	
	17								35-37	
	18					14				
	19	7	12							
	21							25-30		35-38
	22								33-35	
	23					16			35-40	32-35
	24							23	38-40	33-36
	26	7	12							
	28					14		23	32-38	40-45
	29								32-38	
	30								32-38	33-38
	31							23		40-42

TABLE 33 (cont'd)

Notes: Prices refer to Medium, Dressed, Whitefish when possible. Quotations of prices in New York usually refer to Round Whitefish from the Great Slave Lake, and occasionally from Alberta. Quotations of prices in Chicago refer to Medium Whitefish from Manitoba, Ontario, and occasionally from "Canada". Most refer to Dressed Whitefish.

Sources: a. Files of the Indian Affairs Branch.

b. J.M. Cullen, Fishery Officer, Canada Dept. of Fisheries, Port Arthur, Ont. "Prices and Amounts of Fish Received - as Reported by one Fish Dealer in Toronto, 1961", data collected by Fish and Wildlife Branch, Ontario Dept. of Lands and Forests.

c. B. Kippen, Fishery Officer, Canada Dept. of Fisheries, Kenora, Ontario.

d. "Prices and Amounts of Fish Received - as Reported by one dealer in Toronto, 1961", data collected by Fish and Wildlife Service, Ontario Dept. of Lands and Forests.

e. U.S. Dept. of the Interior, Chicago Daily Report, Market News Service, Bureau of the Commercial Fisheries.

f. U.S. Dept. of the Interior, New York Daily Report, Market News Service, Bureau of the Commercial Fisheries.

TABLE 34

PRICES OF YELLOW PICKEREL IN SELECTED CANADIAN AND U.S. MARKETS

		Lakeside Fish Prices				Wholesale Fish Prices				
		Kassabanika[a]	Gull Bay[b]	McDiarmid[b]	Kenora[c]	Port Arthur[b]	McDiarmid[b]	Kenora[c]	Chicago[e]	New York[f]
1960		¢ per lb.				¢ per lb.				
June	1									45
	2									43-45
	4		22			33				
	9									48-50
	11	16	22	27	27	32	32	34		
	13									48-50
	16									50-55
	18		22	28	27	32	32	34		
	20									50-55
	23									45
	25	8	22	28	30	32	32	35		
	27									50
	30	8								52
July	2	8	22	30	30	32	34	36		
	5								45-46	47-50
	6								45-47	
	7	8								55

TABLE 34 (cont'd)

		Kassabanika	Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960			¢ per lb.				¢ per lb.			
July	9		22	30	30	32	35	38		
	11								48-50	58-60
	12								48-50	
	13								48-50	
	14	8							48-50	55
	16				35			45		
	18								48-50	
	19								48-50	
	20								48-50	58-60
	21	8							48-50	58-60
	22	8								
	23			28	35		35	45		
	25								50-52	55-60
	27								48-50	
	28								48-50	55
	30			28			35			
	31	8								
August	1								48-50	55
	2								48-50	
	3								48-50	50-55
	4	12							48-50	53-55
	6			28	32	35		40		
	7	8								
	8	8								50-55
	9								45-50	

TABLE 34 (cont'd)

		Kassabanika	Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960		¢ per lb.				¢ per lb.				
August	10								40-43	
	11								40-43	55
	13			28	32		35	40		
	14	12								
	15								40-45	55
	16								40-45	
	17								38-42	
	18								38-42	55
	20			30	32		35	40		
	21	12								
	22								40-42	50-55
	23								40-42	
	24								40-42	
	25								40-42	50-55
	27			28	32		35	40		
	28	12								
	29								40-42	50-53
	30								40-42	
	31								40-42	48-52
September	1								40-42	47-50
	3			28	32		35	40		
	4	12								
	6								40-42	53-55
	7								40-45	
	8								40-45	
	10			28	40		35	48		

TABLE 34 (cont'd)

		Kassabanika	Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960		¢ per lb.				¢ per lb.				
September	11	12								
	12								40-45	58-60
	13								40-45	58-60
	14								45-50	55-60
	15								45-50	
	17			28	40		35	48		
	18	12								
	19								40-45	
	20								38-40	65
	21	12							38-40	
	24			25	32		32	37		
	26								35-37	45-50
	27								34-35	
	28								34-35	
	29								34-35	53-55
October	1			25	32		30	40		
	3								34-35	53-55
	4								34-35	
	5								34-35	42-45
	6								34-35	40-45
	8			20	21		27	25		
	10									40-45
	12								25-30	
	13								25-30	35-40
	15				21			25		
	17								30	40-45
	18								30	

TABLE 34 (cont'd)

		Gull Bay[b]	McDiarmid[b]	Kenora[c]	Port Arthur[b]	McDiarmid[b]	Kenora[c]	Chicago[e]	New York[f]
1960		¢ per lb.			¢ per lb.				
October	19							30-32	
	20							30-32	
	22		28	21		35	26		
	24							32	43-45
	25							32-33	
	26							32-34	
	27							32-34	
	29	23	23	22			26		
	31								45-47
November	1							36-38	
	2							40-42	
	3							40-42	
	5	23	23	25			31		
	7							40-42	
	8							40	
	9								48-50
	10								50-53
	12	18	25	25			32		
	14							45-50	55-57
	15							45-50	
	16							45-50	48-52
	17								48-52
	19	23	27	28			37		
	21							40-42	45-50
	22							43-45	
	26	23	27	28			37		

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1960			¢ per lb.				¢ per lb.		
November	28							38-40	35-40
	29							38-40	
	30							40	35-38
December	1							40	
	5							38-40	35-40
	6							38-40	
	7							40	33-35
	8							38-40	35-38
	10			20			25		
	12							36-40	
	13							35-40	35-40
	14							35-40	
	15							38-40	
	17	18		20	25		25		
	19							36-38	35-40
	20							36-38	
	21							36-38	35-40
	22								33-35
	24	18		20	25		25		
	27							35-37	40-42
	28							36-38	
	29								42-45
	31	18			25				

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961		¢ per lb.			¢ per lb.				
January	3							38-40	43-45
	4							38-40	
	5							38-40	40-45
	7	20		24	25		30		
	9							36-38	45
	11							40-42	43-45
	12							40-42	40-42
	14	24	24	25	30	30	32		
	16							40-42	45-47
	18							40-42	45-47
	19							40-42	43-45
	21	24	26	25	30	32	32		
	23							43-45	48-50
	25							46-48	
	26							46-48	48-52
	27		30	30		36	38		
	28							48-50	53-55
	30								
February	1							48-50	55-58
	2							50	
	4	25	38	32	32	45	40		

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961		¢ per lb.			¢ per lb.				
February	6							50	55-60
	8							50	55-60
	9							50	50-55
	11		40	32		47	40		
	14							45-47	55-58
	15							45-47	53-55
	16							45-47	55-60
	18		40			50			
	20							48-50	58-60
	23							48-50	55-60
	25	40	40	32	50	50	40		
	28							50-52	
March	1							50-52	58-60
	2							50-52	55-60
	4	40	43	35	46	50	43		
	7							51-53	
	8							51-53	
	9							51-53	58-60
	11		35	35			43		
	13							51-53	60
	14							53	

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961			¢ per lb.					¢ per lb.	
March	15							53	58-60
	16							55	58-62
	18	40	35		55				
	20							60	68-70
	21							60	
	25	55			67				
	28							70-72	
	29							73	
	30							73	80-82
April	1	25		60	30		70		
	4							55	
	5							48	
	6							48	48-52
	8	25	25	27	30	30	32		
	10							38-40	40-42
	12							40	38-42
	13							40	40-43
	15	22	25		27	30			
	17							40-42	35-40
	19								38-42

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Chicago	New York
1961			¢ per lb.				¢ per lb.		
April	20							43-45	40-43
	22		23			30			
	29	30			37				
May	20	25	30		35	37			
	23							43-45	
	24							40-45	
	25							40-45	45-47
	27	18	24	22	25	30	26		
	29							30-32	35-40
June	1							30-32	35
	3	18	24	20	25	30	24		
	5							30-32	38-40
	6							30-35	35-40
	7							30-32	35-40
	8							30-32	40-42
	10	18	19	20	25	27	25		40-45
	13							30-32	

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Toronto[d]	Chicago	New York
1961			¢ per lb.				¢ per lb.			
June	14								30-32	38-40
	15								30-32	40-42
	17	18	23	21	28	29	25			
	19								30-32	35-40
	20								30-32	
	21								30-32	35-40
	22								30-32	25-30
	24	18	20	18	28		22			
	26								30-32	35
	27								30-32	
	28								30-32	
	29								30-32	37-38
July	1	18	20	20			24			
	3								30-32	
	5								30-32	
	6					25			30-32	40-43
	8	20								
	10							40	35-37	42-44
	11								35-37	
	12								33-35	30-35
	13							35	33-35	38-40
	15	20	20							
	17								35-36	40-45
	18					25			36-38	

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Toronto	Chicago	New York
1961		¢ per lb.			¢ per lb.					
July	19								38	
	21							38		
	22	23	22							
	24					27		38	35-38	
	25								35-38	
	26							36	36-38	
	27								36-38	
	29	23				27				
	31									35-40
August	1								36-38	
	2								33-37	
	3								32-36	40
	5	23								
	7								30-32	42-47
	8								30-32	
	9								32	45-47
	10								32	43-46
	12	24				32				
	14					27			29-32	45
	15							40	29-32	47-48
	16							37-40	30-32	47-48
	17									45
	18									
	19	24								
	22								30-33	

TABLE 34 (cont'd)

		Gull Bay	McDiarmid	Kenora	Port Arthur	McDiarmid	Kenora	Toronto	Chicago	New York
1961		¢ per lb.			¢ per lb.					
August	23					32			30-33	
	24								32-33	47-50
	26	24								
	28					30		35	32-34	50-55
	29								32-34	
	30								32-34	
	31									50-55
September	2	20								
	7					30				60-62
	9	20	20							
	13									45-48

Notes: As far as possible the prices of yellow pickerel in one market refer to fish with constant market characteristics (e.g. large, round, Kenora). Sometimes the prices quoted in each market relate to different "grades" of fish: e.g. from 1 June 1960 to 15 November 1960; New York prices relate to 'Kenora' yellow pickerel; from 16 November 1960 to 29 March 1961 to 'Winnipeg' yellow pickerel, and from 30 March 1961, mainly to 'Kenora' yellow pickerel.

TABLE 34 (cont'd)

Sources: a. Files of the Indian Affairs Branch.

b. J.M. Cullen, Fishery Officer, Canada Dept. of Fisheries, Port Arthur, Ont.
"Prices and Amounts of Fish Received - as Reported by one fish dealer, Toronto, 1961", data collected by Fish and Wildlife Branch, Ontario Dept. of Lands and Forests.

c. B. Kippen, Fishery Officer, Canada Dept. of Fisheries, Kenora, Ont.

d. "Prices and Amounts of Fish Received - as Reported by one fish dealer, Toronto, 1961", data collected by Fish and Wildlife Service, Ontario Dept. of Lands and Forests.

e. U.S. Dept. of the Interior, Fishery Products Report, (Chicago), Market News Service, Bureau of the Commercial Fisheries, daily.

f. U.S. Dept. of the Interior, Fishery Products Report, (New York), Market News Service, Bureau of the Commercial Fisheries, daily.

TABLE 35

INDEXES OF MONTHLY PRICES OF WHITEFISH AND YELLOW PICKEREL, CHICAGO (1958-1961)[a]

WHITEFISH[b]

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958		164.1	158.3	72.7	111.4	129.0	164.1	179.4	140.7	138.4	117.3	152.4
1959	153.6	173.5	170.0	166.5	140.7	158.3	190.0	193.5	170.0	161.8	164.2	138.4
1960	166.5	170.0	181.8	234.5	170.0	155.9	158.3	170.0	179.4	134.8	164.1	117.3
1961	152.4	161.8	164.2	119.6	167.7	132.5	136.0	129.0	140.7	105.5		

YELLOW PICKEREL[c]

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958		148.7	185.9	183.4	190.9	132.6	132.6	132.6	161.1	161.1	179.7	185.9
1959	166.1	190.9	166.1	241.7	192.1	140.1	151.2	158.6	179.7	185.9	179.7	115.3
1960	159.9	185.9	195.8	241.7	183.4	141.3	156.2	158.7	183.5	183.5	185.9	185.9
1961	179.8	186.0	173.6	114.0	163.6	151.2	131.4	158.7	130.2	171.1		

Notes: a. 1947-49 = 100

b. Whitefish Prices in Chicago. Whitefish are from Lake Superior; fresh, dressed.

c. Yellow Pickerel Prices in New York. Yellow Pickerel are from Lake Huron, Lake Michigan; fresh, round.

Source: U.S. Dept. of the Interior, Bureau of Commercial Fisheries, Commercial Fisheries Review, Fish and Wildlife Service, Monthly. Feb. 1958 - Dec. 1961.

TABLE 36

WHOLESALE PRICES OF FRESH AND FROZEN WHITEFISH SOLD IN WINNIPEG (1959-1962)

	Fresh Whitefish[a]											
	J	F	M	A	M	J	J	A	S	O	N	D
	cents per pound											
1959	32.5	32.5	30.0	55.0	-[b]	40.0	30.0	30.0	32.5	32.5	40.0	30.0
1960	32.5	32.5	40.0	43.0	50.0	30.0	30.0	30.0	32.5	32.5	32.5	35.0
1961	35.0	35.0	35.0	35.0	50.0	35.0	45.0	30.0	30.0	35.0	30.0	35.0
1962	40.0	35.0	35.0	42.5	-[b]	47.5	40.0					

	Frozen Whitefish[a]											
	J	F	M	A	M	J	J	A	S	O	N	D
	cents per pound											
1959	23.0	23.3	22.0	22.0	22.3	23.0	22.7	23.7	23.3	22.7	23.3	22.7
1960	22.0	22.7	20.3	22.0	21.0	22.0	22.7	20.7	21.7	21.7	21.7	21.7
1961	20.0	21.7	21.7	22.0	22.7	22.0	22.0	22.0	22.0	21.7	21.7	21.7
1962	21.3	21.3	21.3	21.3	21.3	21.3	21.3					

Notes: a. Whitefish sold in Winnipeg. Mid-month prices.
b. No data reported.

Source: Canada, Dominion Bureau of Statistics, Monthly Review of Canadian Fisheries Statistics, January 1959 - February 1962, Table 12.

TABLE 37

MID-MONTH WHOLESALE PRICES OF FROZEN FILLETS OF SELECTED INLAND FISH (1959-1960)

	CHICAGO			WINNIPEG
	Whitefish median price[a]	Northern Pike median price[a]	Yellow Pickerel median price[b]	Yellow Pickerel[c]
	¢/lb	¢/lb	¢/lb	¢/lb
1959				
Jan.	55	35.5	73.5	-
Feb.	55	35.5	73.5	-
March	55	35.5	73.5	-
April	55	35.5	73.5	87.5
May	55	35.5	73.5	92.5
June	55	35.5	73.5	90.0
July	55	37	90	92.5
Aug.	55	37	91	95.0
Sept.	55	37	90.5	87.5
Oct.	55	37	97	87.5
Nov.	55	37	97	90.0
Dec.	55	37	97	88.3

TABLE 37 (cont'd)

	CHICAGO			WINNIPEG
	Whitefish median price[a]	Northern Pike median price[a]	Yellow Pickerel median price[b]	Yellow Pickerel[c]
	¢/lb	¢/lb	¢/lb	¢/lb
1960				
Jan.	55	37	97	87.5
Feb.	55	37	94	88.3
March	55	38.5	94	89.0
April	55	41.5	97	92.9
May	54.5	41.5	97	88.0
June	54.5	41.5	97	88.3
July	54.5	41.5	97	88.3
Aug.	54.5	41.5	97	90.8
Sept.	54.5	43	97	90.8
Oct.	54.5	43.5	97	89.3
Nov.	54.5	43.5	97	88.3
Dec.	54.5	43.5	97	88.3

TABLE 37 (cont'd)

	CHICAGO			WINNIPEG
	Whitefish median price[a]	Northern Pike median price[a]	Yellow Pickerel median price[b]	Yellow Pickerel[c]
	¢/lb	¢/lb	¢/lb	¢/lb
1961				
Jan.	54.5	43.5	97	86.8
Feb.	54.5	44	86	88.3
March	54.5	44	86	83.4
April	54.5	44	81	88.3
May	54.5	44	73	83.4
June	54.5	44	73	80.9
July	54.5	44	73	80.9
Aug.	54.5	44	75	80.9
Sept.	52.5	41	75	80.9
Oct.	52.5	41	74.5	80.9
Nov.	52.5	41	74.5	
Dec.				

Notes: Frozen Fillets in 1 lb. consumer packages. __, "means data not available".

Sources: a. Canada, Dept. of Fisheries, "Statistics of Groundfish Fillets", January 1961, January 1960, January 1959, quoting mid-month prices from Fishery Products, Market News Service, Bureau of Commercial Fisheries, U.S. Dept. of the Interior, (Chicago), daily.

b. Letter from H.C. Frick, Economics Service, Department of Fisheries, dated 22 January 1962.

c. Canada, D.B.S., Monthly Report of Canadian Fisheries Statistics, D.B.S., 24-002, Table 11.

TABLE 38

MONTHLY STOCKS OF FROZEN FILLETS OF PICKEREL

	(A) Monthly Stocks (actual data)[a] '000 lb.											
	J	F	M	A	M	J	J	A	S	O	N	D
1961	1,220	1,110	1,063	973	763	729	680	737	740	937	921	703
1960	337	301	220	200	174	267	297	487	745	1,110	1,272	1,274
1959	124	43	25	10	14	89	109	98	162	393	387	319
1958	309	289	122	157	70	150	181	202	359	391	386	226
1957	422	256	97	109	203	330	423	253	471	709	711	530
	(B) Monthly Stocks (adjusted to show seasonal movement)[b]											
	J	F	M	A	M	J	J	A	S	O	N	D
1960	143.2	116.9	74.6	58.0	42.8	55.9	54.2	79.5	110.2	150.4	160.9	153.3
1959	99.0	35.9	22.6	9.6	13.4	83.0	93.3	74.5	111.2	249.4	229.7	178.2
1958	86.1	83.6	36.1	49.1	24.0	56.9	74.8	90.6	172.5	198.2	204.9	123.3

TABLE 38 (cont'd)

Notes: a. Includes blue and yellow pickerel.

b. Three month moving average of the ratio of (Actual value: centered 12 month moving average). As is well known this is a common means of deriving the seasonal component of a set of figures showing seasonal and other fluctuations. cf. F.E. Croxton and D.J. Cowden, Applied General Statistics, (N.Y: Prentice Hall, 1955).

Source: Canada, Dominion Bureau of Statistics, Fish Freezings and Stocks, January 1957 to December 1961, D.B.S., 24-001.

TABLE 39

ESTIMATED PRODUCTION POTENTIAL IN THE WATERS OF THE WUNNUMMIN LAKE AREA

Name of Lake	Total Quota a thousand pounds per sq. mile	Estimated Indian Domestic Consumption	Water area in square miles	Estimated Quota allowable for commercial use
	lb.	lb.	lb.	lb.
N. Caribou	131,000	7,000	131	
Seecoop	12,000	1,000	(12)	
Eyapamikama	24,000	1,000	24	
Round Lake	48,000	35,000	48	
Opakopa	10,000	2,000	(10)	
Magica	23,000	1,000	23	
Nikip	23,000	"	23	
Petowakip	17,000	"	(17)	
Salmaco	24,000	2,000	(24)	
Sonia	7,000	"	(7)	
L. Windigo	33,000	1,000	(33)	
U. Windigo	28,000	"	(28)	
Makoop	39,000	1,500	39	
Minquamebin	18,000	"	(18)	
Severn	49,000	15,000	49	
Muskrat Dam L.	30,000	1,500	(30)	
Two Rivers	20,000	"	(20)	
Knife	20,000	"	(20)	
Bear (black bear)	10,000	"	(10)	
Swan	18,000	"	(18)	

TABLE 39 (cont'd)

Name of Lake	Total Quota a thousand pounds per sq. mile	Estimated Indian Domestic Consumption	Water area in square miles	Estimated Quota allowable for commercial use
	lb.	lb.	lb.	lb.
Sachigo	100,000	25,000	100	
L. Sachigo	50,000		(50)	
Sandy	208,000	40,000	208	
Finger	60,000	15,000	60	
North Spirit	28,000	25,000	28	
MacDowell	57,000	"	57	
Big Trout	238,000	150,000	238	
Kasabonika	33,000	25,000	33	
Shibogama	46,000	5,000	46	
Wunnummin	114,000	15,000	114	
Maria	14,000	1,000	(14)	
Kingfisher	18,000	1,000	(18)	
Long Dog	8,000	1,000	(8)	
TOTALS	1,558,000	371,000	1,558	1,187,000

Note: Water areas in brackets estimated from eight miles to the inch National Topographical Series. Other water areas as supplied by Sioux Lookout District Office. Total quota based on production of one thousand pounds per square mile, this is only slightly greater than the basis of one and one-half pound per acre suggested.
These estimates have been harshly criticized by Ed. Pine, of Ontario Dept. of Lands and Forests, Maple.

Source: D.H. Gimmer, Indian Affairs Branch.

TABLE 40

FISH PRODUCTION OF INDIAN FISHERIES IN NORTHERN ONTARIO 1960

Fishery	Whitefish	Pickerel	Pike	Trout	Sturgeon	Other
West Central Patricia District						
1. Attawapiskat Lake (Lansdowne House)	51,032	35,428	"	"	275	73
2. Bearskin	1,699	13,714	"	"	5,903	"
3. Big Beaver House	6,632	48,899	"	"	3,013	"
4. Big Trout Lake	887	13,973	"	72,779	5,557	"
5. Eabamet Lake (Fort Hope)	29,113	12,110	"	"	660	150
6. Kasabanika	27,078	31,117	"	"	884	"
7. Round Lake	201,267	32,781	12,764	834	2,056	"
8. Sachigo	25,201	26,424	"	"	"	"
9. Sandy Lake	353	15,382	"	934	2,475	27,287
10. Boundary Lakes	123,931	20,693	12,421	"	"	1,708
Total (West Central Patricia District)	467,193	250,521	25,185	74,547	20,823	29,218

TABLE 40 (cont'd)

Fishery	Whitefish	Pickerel	Pike	Trout	Sturgeon	Other
Rest of Sioux Lookout Agency	151,493	97,476	59,155	20,052	347	9,501
Rest of Nakina Agency	9,074	13,503	"	"	1,069	1,182
Kenora Agency	133,302	301,184	145,584	"	521	29,745
Port Arthur Agency	112,223	78,342	49,117	15,588	"	8,002
James Bay Agency	2,427	2,647	3,807	"	13,905	"
Combined Indian Fisheries	875,712	743,673	282,848	110,187	36,665	77,648

Notes: a. Fish caught on Indian Band licences. Figures do not all agree with records of total catches on these lakes (cf. Table 28).

b. Production in Fisheries 2,3,4,6,7,8,9,10 = 738,626 lb.
" " " 1,2,3,4,5,6,7,8,9,10 = 867,487 lb.

Total Production, All Indian Fisheries of Northern Ontario=2,126,733 lb.

Source: Files of the Indian Affairs Branch.

TABLE 41

U.S. AND CANADIAN CATCHES OF SELECTED INLAND FISH
GREAT LAKES AND INTERNATIONAL LAKES 1951-1960

	Blue Pike	Yellow Pike	Lake Trout	Whitefish (common)
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
1951	6,503	9,427	4,273	5,320
1952	14,705	9,336	4,323	6,926
1953	18,501	11,056	4,153	11,903
1954	14,594	10,609	3,705	7,743
1955	19,750	13,372	3,184	5,143
1956	18,887	18,217	2,395	4,224
1957	10,391	15,314	1,541	3,263
1958	1,414	11,060	1,443	2,356
1959	85	5,409	1,113	1,770
1960	17	4,210	514	2,491

Source: U.S., Bureau of Commercial Fisheries, Fishery Statistics of the United States, (1951 - 1960), Fish and Wildlife Service, Statistical Digest, Annual, Lakes Fisheries Section.

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Letters and Conversations

The author had informative conversations with over 40 people concerned with the commercial fisheries of the Patricia District, with the commercial fisheries of Canada, and with the social and economic development of Indians. He received letters from many people, including:

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