

MANITOBA'S COMMERCIAL FISHERIES: A STUDY IN DEVELOPMENT



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ABSTRACT

This thesis is a study of the development of fish resources of Manitoba during the period of commercial fishing. Staples and dependency paradigms constitute the theoretical background for this study. A political economy approach to resource issues locates this particular hinterland economic activity within the broader economic system. A computer based data set provides a statistical framework to evaluate the performance of the industry. Historical records support a reconstruction of the development of a commercial fishing industry. Ultimately, geographical, environmental and economic questions, such as depletion, incomes and foreign control help to define the changing pattern of resource development. The spatial development of the industry indicates certain structural weakness. Resource management policies do not reflect a desire for conservation as much as the inability of the government to deal with the distorted organization of the industry. Finally, staples and dependency theories provide a new geographical approach to the development problems of the fishing industry.

RÉSUMÉ

Cette thèse est une étude sur le développement des ressources poissonnières du Manitoba pendant la période de pêche commerciale. Les paradigmes de les produits de base et de dépendance constituent le fonds théorique de cette étude. C'est en abordant les problèmes de ressources par l'économie politique que nous replacerons cette activité économique particulière d'arrière-pays à l'intérieur d'un système économique plus général. Une série de données informatiques nous offre une base statistique servant à évaluer les performances de cette industrie. Un développement de l'industrie de la pêche commerciale est reconstitué à l'aide de faits historiques. Enfin les questions d'environnement et d'économie telles que baisses de production revenus et réglementation étrangère contribuent à définir les modifications subies par le système de développement des ressources. Le développement en espace de cette industrie décèle quelques faiblesses dans ses structures. Les règles d'exploitation des ressources reflètent moins un désir de préservation que l'incapacité du gouvernement à remédier à l'organisation défectueuse de cette industrie. Enfin les théories de produits de base et de dépendance permettent une nouvelle approche des problèmes concernant le développement de l'industrie de la pêche.

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ABBREVIATIONS USED

Canada, <u>Sessional Papers</u> , Annual Report for the Department of Interior, Indian Affairs Branch	C.S.P., Indian Affairs
Canada, <u>Sessional Papers</u> , Annual Report for Department of Indians Affairs	C.S.P., Indian Affairs
Canada, <u>Sessional Papers</u> , Annual Report for Department of Marine and Fisheries	C.S.P., Fisheries
Canada, <u>Sessional Papers</u> , Annual Report for Department of Fisheries	C.S.P., Fisheries
Canada, <u>Annual Report for Department of Marine and Fisheries</u> , Fisheries Branch	Canada, Annual Report, Fisheries
Dominion Bureau of Statistics, <u>Fisheries Statistics</u>	D.B.S., <u>Fisheries</u>
<u>Freshwater Fish Marketing Corporation Annual Report</u>	F.F.M.C. <u>Annual Report</u>
Manitoba, <u>Annual Report Mines & Natural Resources</u>	Manitoba, Annual Report M.N.R.
Manitoba, <u>Annual Report Renewable Resources and Transportation Services</u>	Manitoba, Annual Report R.R.T.S.
Public Archives of Canada	P.A.C.
Public Archives of Manitoba	P.A.M.

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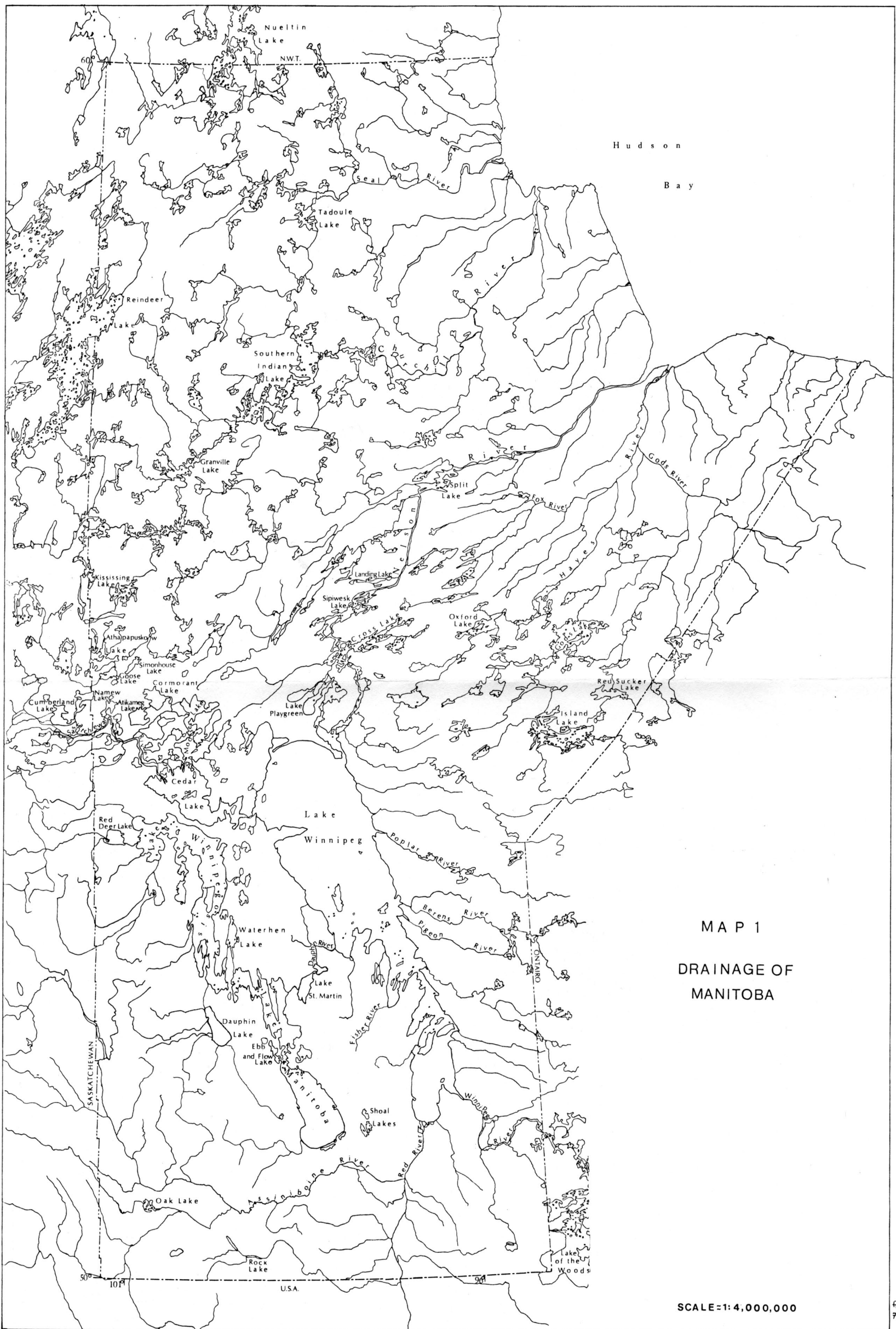
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PREFACE

In the early 18th century, one of the earliest white inhabitants of Manitoba, Nicolas Jérémie, a French fur trader at Fort Bourbon (York Factory) remarked that the local whitefish was "the best fish in all the world."¹ In spite of such qualities, the whitefish and other fish of Manitoba as a commercialized resource have not brought the significant benefits that would have been expected from such a high quality and once abundant resource. Manitoba boasts some hundred thousand lakes, a perfect geographical base for a natural endowment of various fish species. The qualitative and quantitative attributes of the resource in the physical sense have not been matched by any equivalent social benefits to either the fishermen or the people of Manitoba in general, the owners of the resource.

Conventional knowledge in Canada has classified and viewed Manitoba as a prairie province, which in fact does not reflect the geographical reality; only the southwest portion of the province supports a grain economy. Many people, especially central Canadians, are surprised to learn of an inland commercial fishing industry in Manitoba. In the contact zone between the Precambrian Canadian Shield and the sedimentary rock of the western Interior Plains is found a chain of 'great' lakes. Lakes such as Winnipeg, Manitoba, Winnipegosis, Reindeer, Athabasca, Great Slave and Great Bear have supported significant natural fisheries. In Manitoba, the draining of glacial lake Agassiz some 8000 to 9000 years ago left behind the large lakes of Winnipeg, Manitoba and Winnipegosis. These lakes along with the smaller lakes of northern Manitoba have been the main resource base of a commercial fishing industry. As well, much of the drainage of the Hudson Bay basin is carried by the Churchill, Nelson, Saskatchewan, Assiniboine and Red rivers. These rivers are the main network of Manitoba's drainage system which includes streams in various stages of morphology (see Map 1). The numerous small and large lakes of the Canadian Shield provide Manitoba with most of its hundred thousand lakes. The great variety of Manitoba's water resource--streams, rivers,



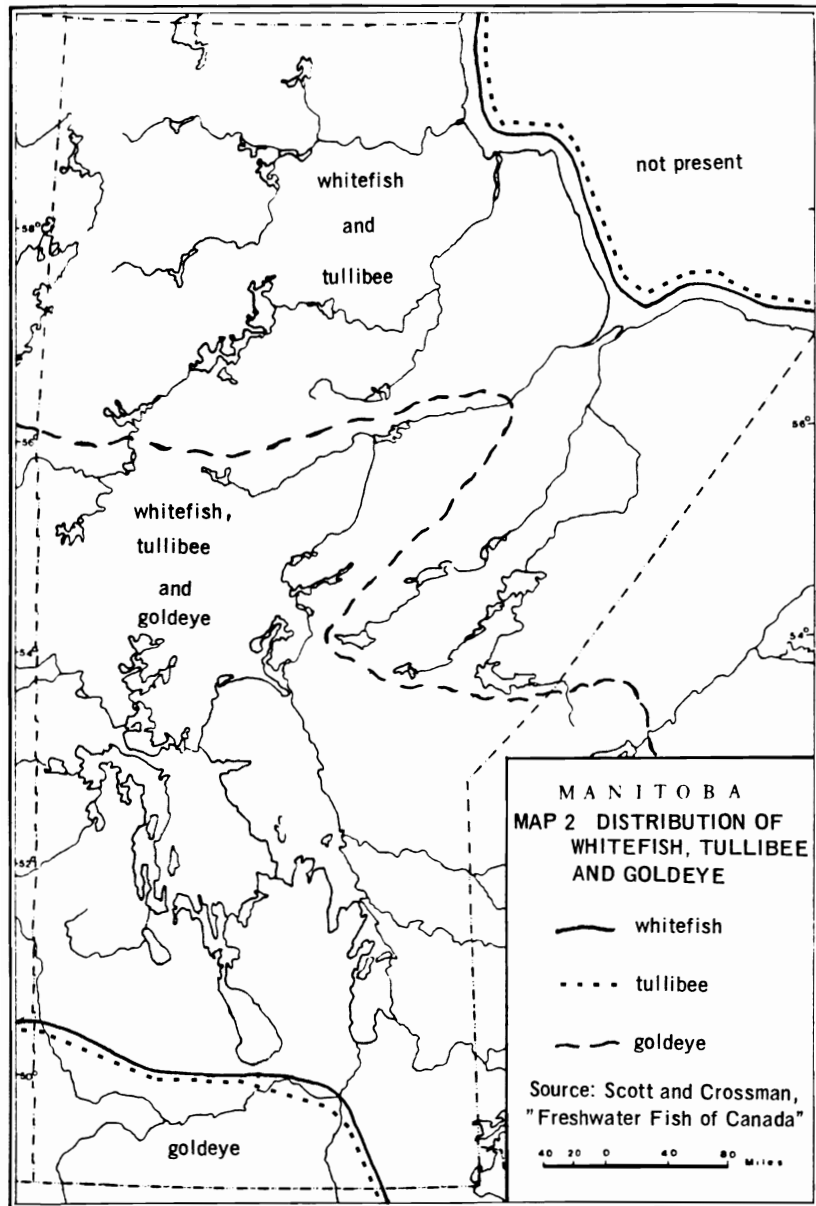
MAP 1
DRAINAGE OF
MANITOBA

SCALE: 1:4,000,000

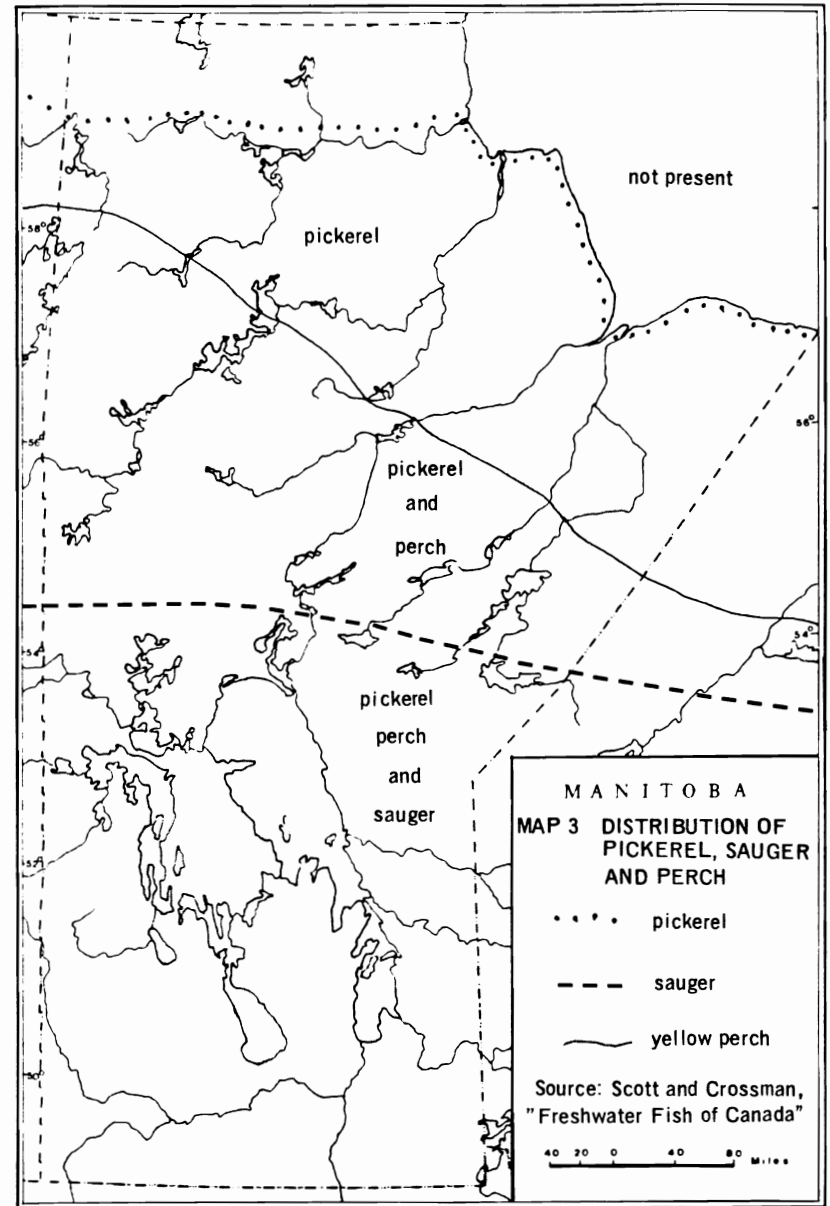
small and large lakes have created a favourable geographical and environmental situation for a number of fish species.

In the Hudson Bay drainage basin there are some 94 species of freshwater fish of which 79 species can be found in Manitoba.² The main freshwater fish of importance to human populations are lake sturgeon (Acipenser fulvescens), lake whitefish (Coregonus clupeaformis), tullibee (Coregonus artedii), lake trout (Salvelinus namaycush), goldeye (Hiodon alosides), northern pike (Esox lucius), white sucker (Catostomus commersoni), common catfish (Ictalurus nebulosus), yellow perch (Perca flavescens), sauger (Stizostedion canadense), pickerel (Stizostedion vitreum) and arctic char (Salvelinus alpinus).³ The distribution of these species are presented in Maps 2 to 5. As expected these maps generalize the distribution of these fishes and one would only find particular species in the appropriate habitat. The most enduring of commercial species have been the lake whitefish and pickerel. However, sturgeon, because of its high commercial value, represented the clearest case of overfishing as a result of commercialization. Similarly, northern pike, tullibee, sauger, perch and goldeye have had significant roles in the commercial fishing industry. The lake trout represented a special place in the commercial fishing of northern lakes. Arctic char, sucker, catfish along with whitefish, sturgeon, pickerel, goldeye and northern pike were important in pre-commercial fishing by native peoples, fur traders and settlers.

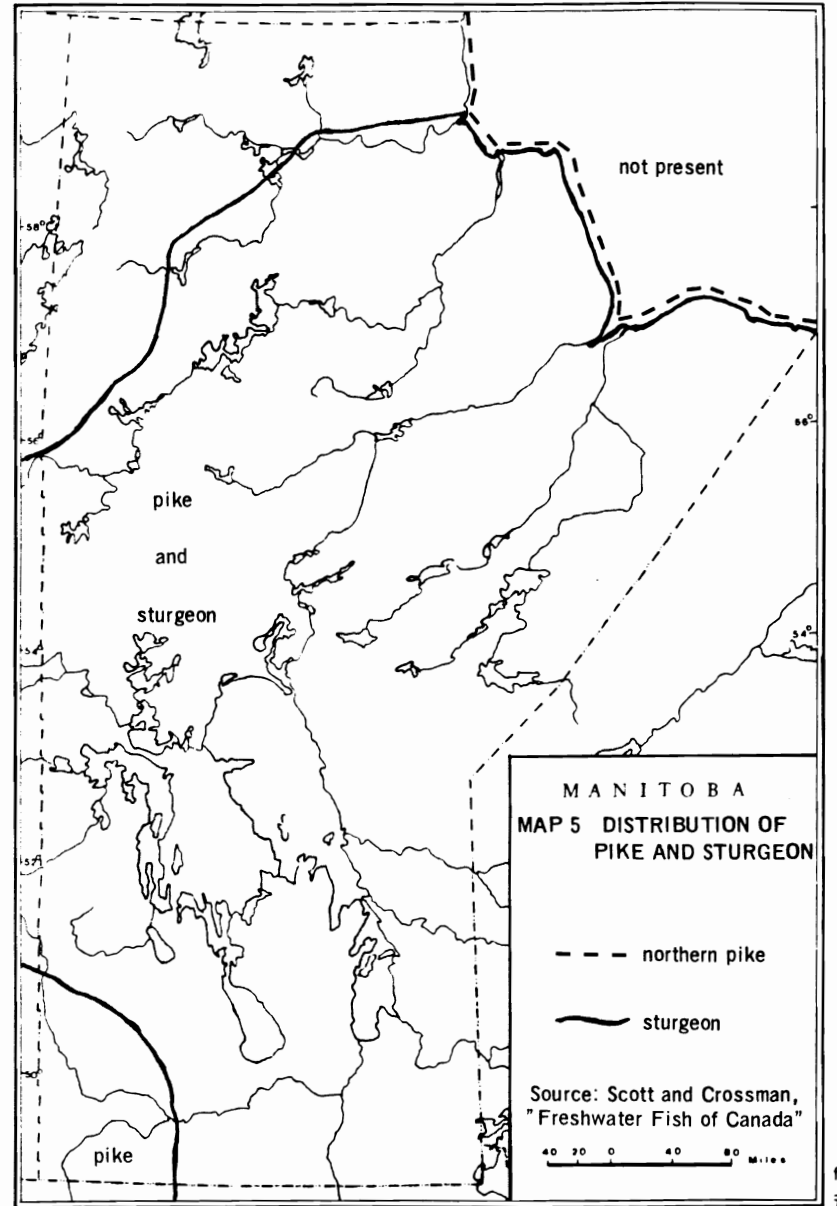
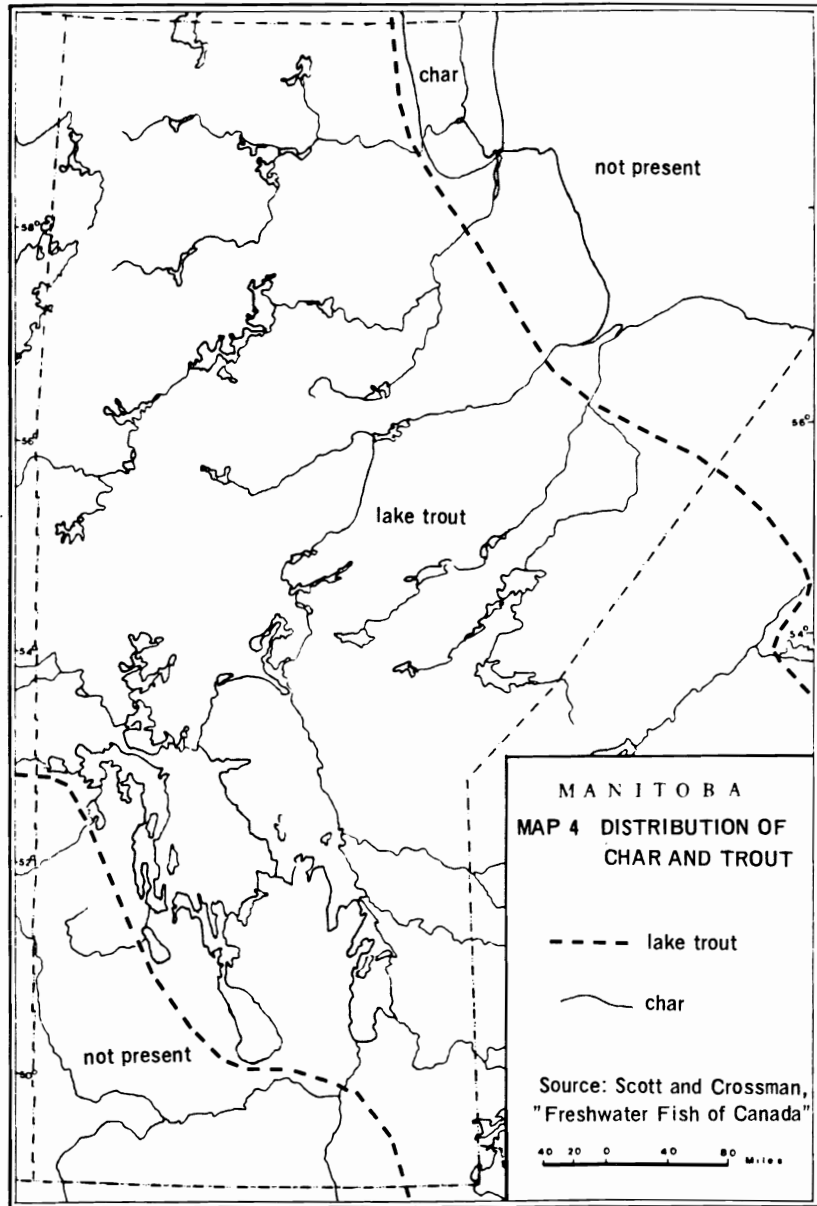
A simple note on method employed in this study suffices to establish that the historical approach is adequate to the fundamental concerns of the industry. Clearly, changing fish yields as demonstrated by production trends, incomes and production for external markets all share an important temporal dimension. The method has focused on the industry with a political economy approach, relying on data collected from archival sources, annual reports and secondary materials. The use of high speed data processing has meant that an entire period can be easily examined, although considerable preparation of the data was required before computer processing.



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The data from all periods is not ideal; in part this is the result of the nature of the topic and partly the lack of foresight in the administrative organization of statistics. One of the biggest problems is the total inconsistency in defining administrative reporting units for different periods. Different small lakes are recorded with large lakes, hence the data base is not uniform.⁴ The absolute value of the figures is not of immediate concern, and may be deceiving anyway. What is the true weight of a load of fish--if it is frozen it takes on weight; does it include culled fish (if not, production is not fully stated); or does it include fish that have been dressed prior to their arrival at the station? Data sources seldom make this clear. What is important is the relative change through time of production, value, and capital invested. It is difficult to arrive at annual income statistics because employment figures are often subdivided by season--winter and summer. Some men fish both seasons, others do not. Presently, fishermen have other sources of income--trapping, logging, farming or welfare--so an annual income from fishing may not be representative of the true income.

Nonetheless, the data that has been published by the Fisheries Branch has been worked up into a series of data sets for a computer. The Statistical Analytical System (S.A.S.) with its PROC PLOT routine has been used to display the data. As trends through time are of key interest, simple line graphs have been used to present what would otherwise be lengthy tables. The statistical data is found in an appendix following the text. Line graphs, sometimes displaying data by major fisheries help to explain the fundamental problems of the industry and at the same time makes for a more readable text. Economic historians may suggest that the presentation of data by fisheries is unnecessary detail. However, historical geographers consider that both temporal and spatial changes need to be reconstructed. Therefore, the displaying of data by major fisheries provides a spatial context.

The complex interface between biological and economic questions raises a large number of issues, many of which are worthy of any number of case studies. Questions such as the effect of net mesh size, the effect of fishing on fish populations, the lengths of seasons, the most

efficient number of net lifts to make in a time period, quality control problems, fish parasites or the optimum prices and other concerns in the same vein are important tangential questions. For the present, it is not feasible to consider all of the economic or environmental implications of the numerous regulations and their modifications implemented since the start of commercial fishing. Nonetheless, some questions of environmental and economic nature are examined in the following study.

In this thesis, qualitative library research accompanies the presentation of statistical data. Primary sources include annual reports of various government agencies such as Indian Affairs and Fisheries Branch. Archival materials, especially public records, held by the Public Archives of Canada and Public Archives of Manitoba are essential elements of the study. These proved to be valuable in reconstructing the early period of the fishing. Unfortunately in 1895 a fire destroyed some of the Department of Fisheries records. Additionally, the Hudson's Bay Company Archives have been extremely useful in providing insights on the pre-commercial use of fish. The fishermen of Manitoba have witnessed a number of Royal Commissions--in 1910, 1933, 1954 and 1956. The minutes of meetings and sessions for all of these royal commissions have been examined and they are extremely valuable sources as commissions usually were established during a period of crisis. These royal commissions present a cross-sectional view. Not only do commissions provide considerable information on the various methods of production, but they present a forum for the various conflicting interests to argue their positions.

One of the data bases for this study is the set of published figures concerning production, value and capital. Clearly, one aspect of the problem concerning the incomes of fishermen is the availability of the resource, and the need to invest greater amounts of capital to catch relatively diminishing amounts of fish. The strength of fish stocks is a complex question involving biological approaches and economic interpretations. Although Hartshorne has suggested that "geography is a field whose subject matter includes the greatest complexity of phenomena ..." ⁵ not all dimensions of the depletion problem can be considered in this thesis. The problems of interpreting

resource availability from production figures are understood--and raises some questions. For instance, how accurate is the data; to what extent did prices and market factors influence the level of productivity; and did the availability of capital have an effect on production of fish in any given year? The absolute accuracy of the data in any given year is not as important as the utility of relative changes through time. The possible influences of markets and capital on fish production only emphasises the need to examine and analyse the economic structure of the industry. It is important to distinguish between short-term trends which might reflect the impact of capital, prices and market factors (wars, depressions), and long-term production and economic data is the first basic step in considering these problems.

Numerous other influences and interpretations have relevance to the question of fish populations. Unfortunately, time will not permit more than a cursory examination of these topics. For example, it has been suggested that fish populations may have a natural cycle incidental to fishing.⁶ Environmental factors such as water quality and drainage patterns denote importance to the strengths of fish populations. The dropping of water levels affects the ability of certain fish species to reach spawning grounds. Brood years eventually influence production in another year. Changes in drainage, such as the damming of a stream could alter fish behaviour. Changes in drainage systems such as the development of hydro-power has affected fish populations in Southern Indian Lakes.⁷ Water quality influences the survival of fish and the disappearance of whitefish, goldeye and sturgeon from the Red and Assinboine rivers can be as much attributed to the deterioration of water quality as to overfishing. Additionally, when lakes were closed due to mercury pollution (early 1970's) production figures are not available to indicate the trend of fish populations. Presently, concerns over the recent phenomena of acid precipitation will no doubt have an increased relevance to Manitoba fishermen.⁸ However, the increase in turbidity of the southern lakes as a result of agricultural settlement may have been significant to fish survival. Regrettably little historical data exists on these topics. Weather in a particular year can have an adverse effect on

fish production (storms, breaking of ice). It has also been suggested that climate change, such as a gradual warming had changed fish populations.⁹ The lack of existing research on these environmental variables had meant that their exact significance was difficult to evaluate in the present study.

However, production figures are a useful approach to considering the question of fish stocks since it provides an initial data framework in which certain environmental influences can be scrutinized by future researchers. For example, possible genetic responses by fish to fishing pressures can be assessed from an examination of production data through time.¹⁰ Thus, the fact that in the 1880's commercial fishing companies practised gill net fishing on the approaches to whitefish spawning grounds would partly explain declining weights of whitefish if the gill net functioned to the advantage of fish which matured at a smaller size. Similarly, production figures indicate the species which are most sought after by commercial fishing and the changes in balances between fish species as a result of the non-selection of a competitor. Once the population of one fish has decreased, an increase in available food may cause a rapid increase in another species, which in turn may be exploited by commercial fishing. The phasing and peaking of different species as represented by production figures may suggest such a process. The specific knowledge of the biology of fishes and their habitat should be linked to such trends as indicated by production figures. In other ways, environmental influences may be demonstrated in production figures; for example, an increase in turbidity may be a partial explanation in the rapid increase in sauger production. Such influences may work to the advantage of one fish over another. For instance, a possible warming of water may be advantageous to yellow perch over lake trout. In conclusion, then, although production figures themselves do not account for all influences on fish populations, the construction of such a long term production data set will be useful when environmental and management variables are examined.

The limitations of production figures somewhat simplify the complex problem of the human use of a resource. Nonetheless, the approach is not simply quantitative and the examination of available

historical materials can be used to verify the production and economic data. It is hoped that this approach does 1) provide a statistical base that has neither been assembled before nor been extensively presented in a graphical form, 2) permit a concentration on understanding the economic aspects of depletion and, 3) provide a statistical and historical context from which environmental influences on commercial fish production can be considered in future research.

Previous academic research on Manitoba's commercial fishing include a thesis by D. Forcese in the field of sociology on the nature of leadership among Lake Winnipeg fishermen,¹¹ and a study in the interdisciplinary field of natural resources by D. Thomasson on the whitefishery of Lake Winnipeg.¹² The most extensive academic research is a Ph.D. thesis in economics by T. Judson on the inland commercial fishing industry.¹³ However, Judson's work ends in the early 1950's and some twenty five years of change has occurred. Considerable writing and research have been generated by biologists and employees of various government agencies. No contributions have come from geographers explaining the nature of this hinterland resource development during the period of commercialized fishing. As Ackerman has suggested geographers are concerned in part with observing and understanding processes.¹⁴ In this thesis, the process studied is the process of development of a particular commodity. Thus, a study of commercial fishing is a contribution to the regional geography of northern Manitoba because this resource activity has been important to these hinterland communities. Given the existing academic research on this region, Sauer's statement that "our obligation is to glean classified data on economy and habitation so that a valid filling of gaps of area and of time can be made" is particularly relevant.¹⁵ Additionally, the geographers de Souza and Porter suggested that some geographers should "... broaden the basis of inquiry to include dialectical and more explicit historical approaches ..."¹⁶ In fact Darby has recognized that some types of "... historical geography can be criticized, on methodological grounds, because they lack an historical approach."¹⁷ A major consideration of this study has been an historical and dialectical approach. With increasing interest in the area of development

geography de Souza and Porter have suggested a direction:

Geographers can help greatly to describe and explain past and present relationships between people and resources, and the ways in which various sectors of society continue to use a disproportionate share of the surplus value created through the use of resources.¹⁸

Finally, this thesis can be seen as a contribution to development geography because of its historical examination and analysis of the commercial development of fish as a resource.

Although much of the present day commercial fishing is carried out in what is clearly northern Manitoba and by mostly native labour, the existing studies and the historical treatment of this topic has not focused exclusively upon native fishermen. It is hoped that a development geography of fishing will provide some insights into the long-term evolution of the native economy. In this sense future plans for the native economy might be better understood after an evaluation of its past performance and developments. Consider Justice Berger's suggestion:

... the economic development of the North hinges on the modernization of the existing native economy, based as it is on the ability of the native people to use renewable resources to serve their own needs. Productivity must be improved and the native economy must be expanded so that more people can be gainfully employed in it. In my judgment, therefore, the renewable resource sector must have priority in the economic development of the North.¹⁹

Clearly, this judgment was of more interest to native peoples than a pipeline. This study has partly undertaken the question of just how "native" the renewable resource sector is when production is orientated for exchange and that exchange is situated in a market which is controlled by external forces. The well known Garrison Diversion of North Dakota presents a new threat to the fish stocks of Manitoba lakes and the incomes and livelihood of natives and non-natives fishermen. The possibility of the reduction of present fish stocks in Lake Winnipeg by fifty percent is real.²⁰ Recently, native organizations have become politically involved in this issue.²¹ Historical geography has displayed an interesting potential by explaining the experiences of native peoples. The situation of Natives in Canada is not unlike that of many people in Third World countries. Therefore, the use of dependency

theory in describing the importance of fish to the regional geography of northern Manitoba is appropriate. Finally, the methods of historical geography employed by this study contribute to an understanding of the geography of native peoples.

Notes and References

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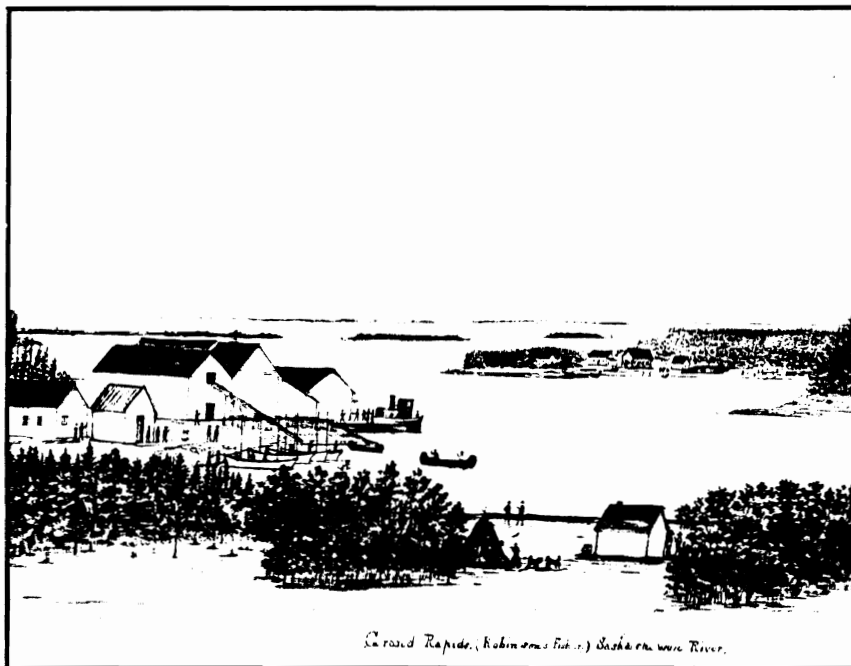


Plate 1: Robinson's Fish Station, Grand Rapids. Photograph copy of Water Colour by J. Settee, October 1891. P.A.M.



Plate 2: Maintenance of Gill Nets at Warren's Landing, 1907. P.A.M.



Plate 3: Spreading nets in preparation for the next day, 1939.
P.A.M.

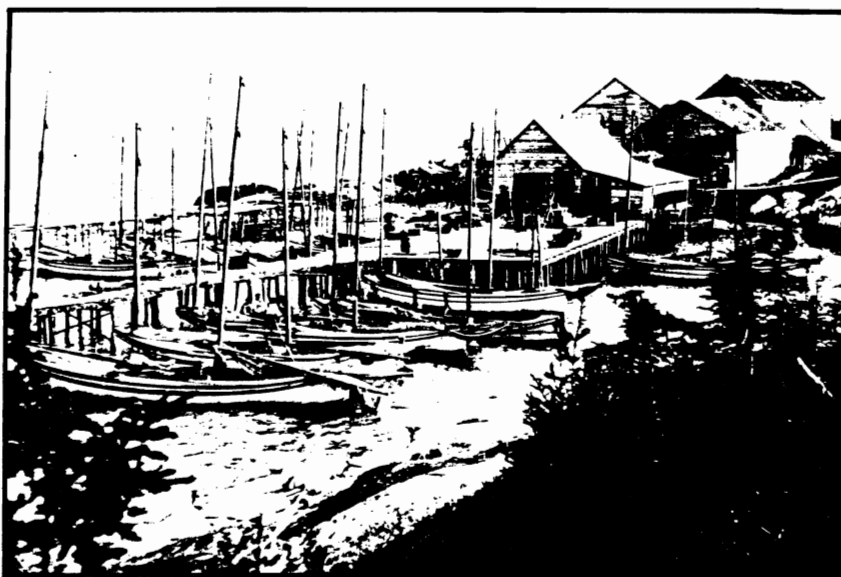


Plate 4: Fishing station and sail boats on Lake Winnipegosis, c1920.
P.A.M.



Plate 5. Fishing station at Matheson Island, Lake Winnipeg, 1924.
P.A.M.

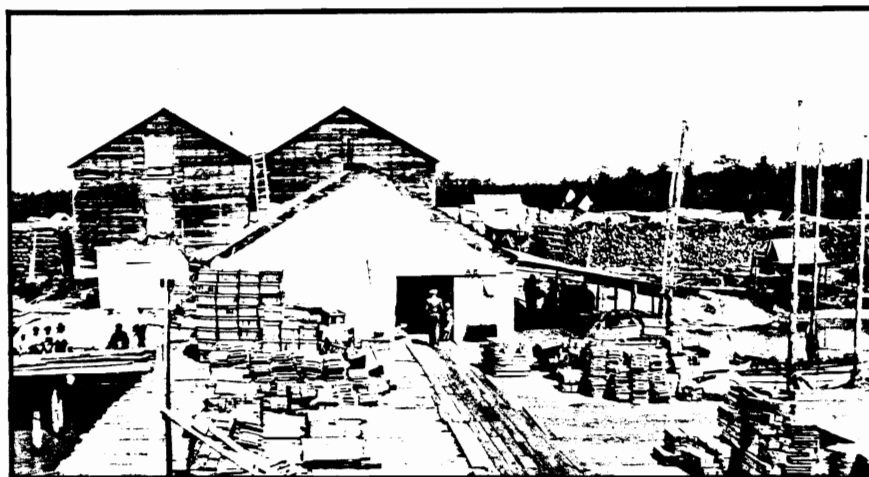


Plate 6. Fishing station at Black River, Lake Winnipeg, 1929. Note
cord wood, gill net racks, sail boats and fish boxes.

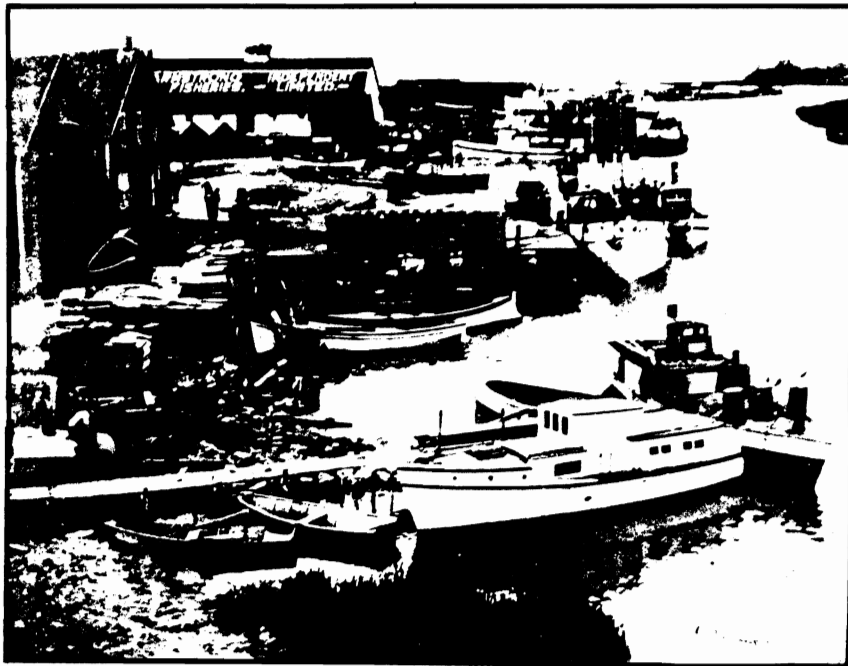


Plate 7. Armstrong Independent Fisheries Limited Fishing Station, c1920.
Note gas boat. P.A.M.

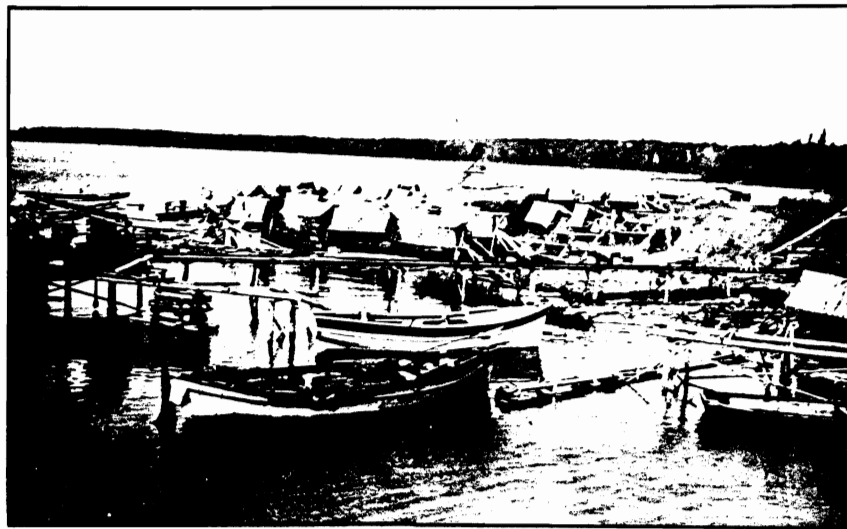


Plate 8. Fishing Station, 1933. P.A.M.



Plate 9. Fishing Fleet at Warren's Landing, August, 1920. P.A.M.

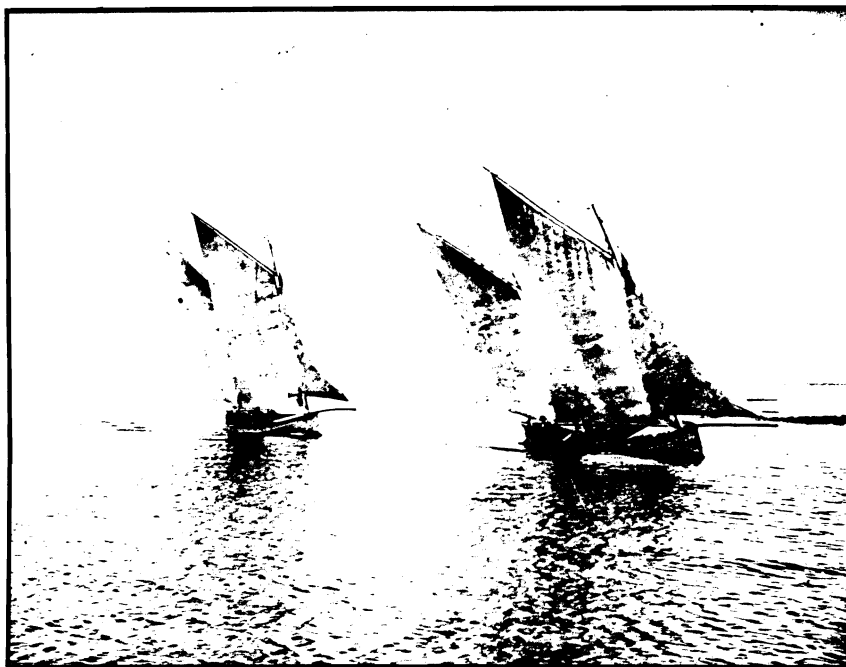


Plate 10. Fish boats under sail on Lake Winnipegosis, c1920. P.A.M.

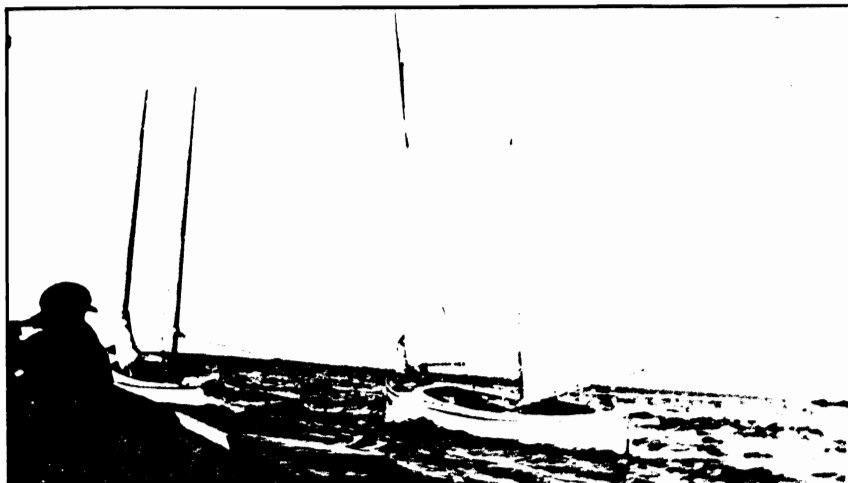


Plate 11. Sail boats on Lake Winnipeg, n.d. P.A.M.



Plate 12. Sail boats being towed en route to Whiskey Gap, 1920
P.A.M.



Plate 13. A view of an early fishing fleet on Lake Winnipeg being towed by a tug, n.d. P.A.M.

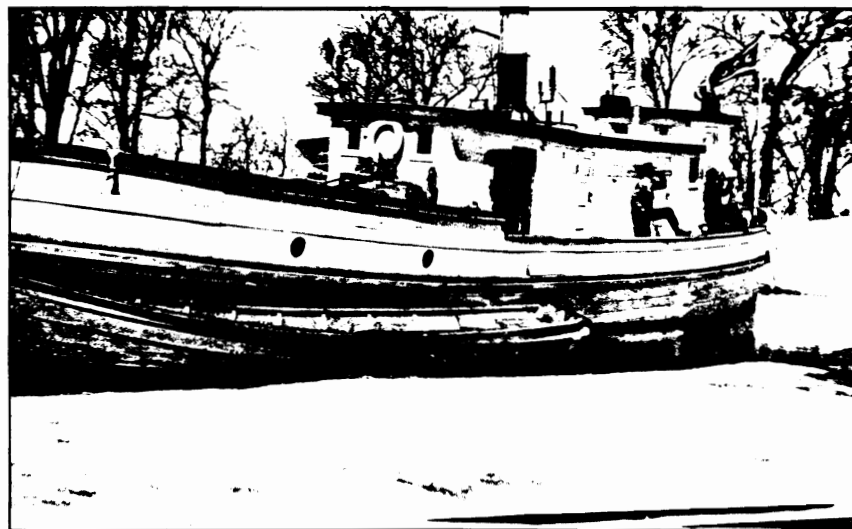


Plate 14. Steam tug used for fishing, c1920. P.A.M.



Plate 15. Smaller freight boats at Steep Rock, Lake Manitoba, 1922.
P.A.M.



Plate 16. Steamboat "Grand Rapids" at Black River, Lake Winnipeg.
Note sail boats, 1929. P.A.M.



Plate 17. Winter fishermen and sleigh at Riverton, Lake Winnipeg, February, 1924. P.A.M.

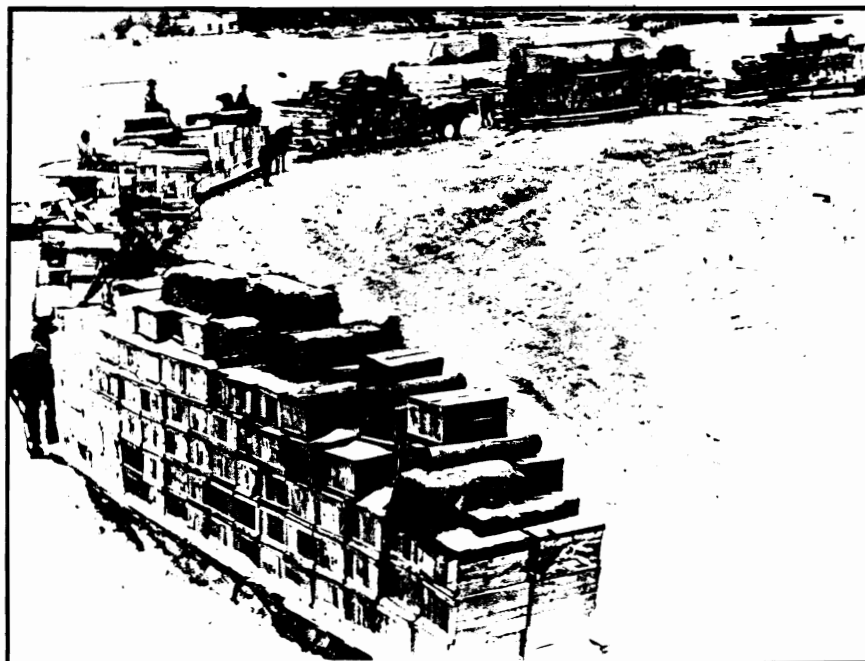


Plate 18. Freight gang hauling fish to Riverton, 1920. P.A.M.

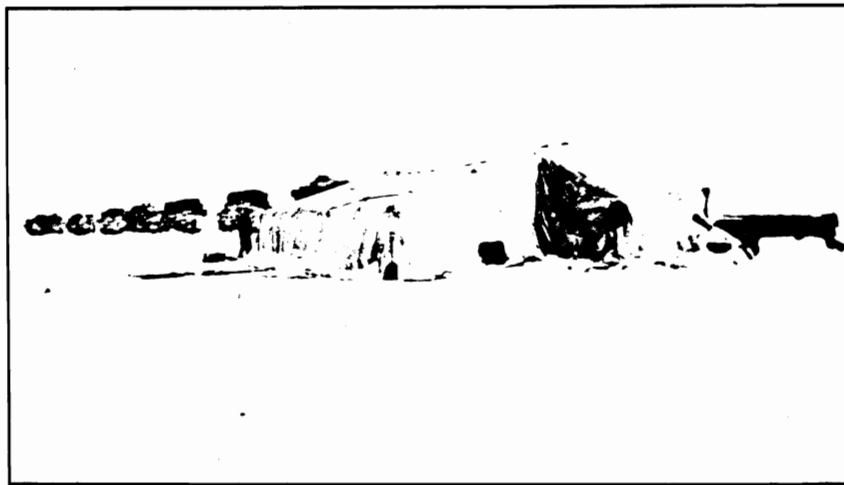


Plate 19. Setting down for the night. Horses are stabled around the caboose under canvas shelters, c1920. P.A.M.



Plate 20. The Mitchel fish camp at Black Island, Lake Winnipeg, n.d. P.A.M.



Plate 21. Resetting nets under the ice, Lake Winnipeg, n.d. P.A.M.



Plate 22. Lifting gill nets at Moose Island, Lake Winnipeg, c1940.
P.A.M.



Plate 23. Gimli harbour, 1935. P.A.M.

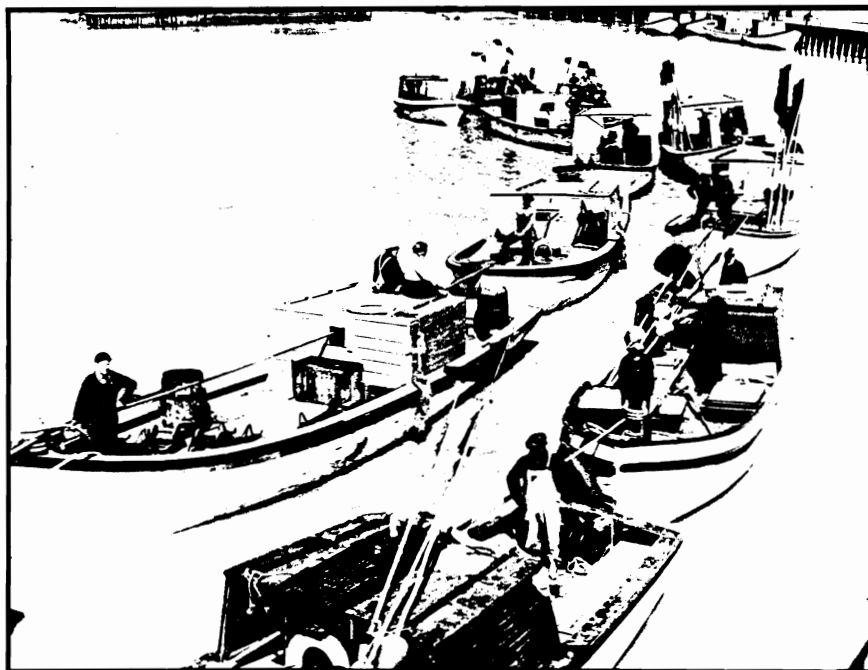


Plate 24. Commercial fishing boats leaving Gimli, 1956. P.A.M.



Plate 25. Processing at Gimli, 1956. P.A.M.



Plate 26. Processing at Gimli, 1956. P.A.M.



Plate 27. Processing at Booth Fisheries, Winnipeg, 1956. P.A.M.

CHAPTER 1 DEPENDENCE AND STAPLES: A THEORETICAL APPROACH TO
COMMERCIAL FISHING

Introduction

The commercial use of fish as a resource in Manitoba must be considered within a political economy framework. Dependency and staple theories provide a starting point in understanding the fishing industry given that the orientation of this industry has been directed towards the satisfaction of an external market. Dependency theory concentrates on explaining the relationship between the centre and the periphery. The particular paradigms that may be selected from a great variety of writings by dependency theorists are primarily concerned with the control that the centre or metropolitan economy exerts over the hinterland or periphery. It is the intention of this chapter to introduce the concept of economic surplus which will be broad enough in its scope to be of use in the particular situation of Manitoba's fishing industry. As well, the concept of unequal exchange between the centre and periphery will be defined in terms appropriate to this study. Orthodox or mainstream economic theory does not distinguish between growth and development. A major contribution of dependency theory is its examination of those countries and regions whose economic structure has been distorted and uneven. In doing so, dependency theory challenges the notion that economic growth has meant development. The spatial emphasis of dependency theory has not resulted in its widespread application by geographers even though as de Souza and Porter stated: "The center-periphery concept is one of the most geographical ideas presented by regional analysts."¹

This section of the study not only sketches dependency theory but also presents some basic concepts from the staple theory of Canadian political economy. This approach has regarded staples to be important commodities, (largely of raw material nature) which are of overwhelming importance in the national economy. In the past, staple theorists have examined such commodities as the cod fish, fur, lumber, wheat, pulp and paper, and minerals. For some Manitoba communities located on the shores of lakes, freshwater fish has been their staple, a staple which almost in its entirety was exported to an external market. Thus, the understandings of the staple theorists as to the nature of economic growth will be applied to the context

of Manitoba. The integration of staples and dependency theories provide the approach that this thesis will employ. The importance of providing a theoretical approach to a particular study is that it broadens the relevance of the specific findings of this study on commercial fishing beyond the borders of Manitoba.

1.1 Dependency Theory

This study has chosen to test the relevance of dependency theory to the particular situation of commercial fishing in Manitoba. A widely respected definition of dependency has been formulated by Dos Santos:

By dependence we mean a situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected. The relation of interdependence between two or more economies, and between these and world trade, assumes the form of dependence when some countries (the dominant ones) can expand and can be self-sustaining, while other countries (the dependent ones) can do this as a reflection of that expansion ...²

This definition of dependence, then, is a major conceptual base for this study. The various mechanisms that define the relationship between the dependent and dominant economies have been discussed and applied in various ways to the underdeveloped regions of the world.³ Thus, a dependency analysis of commercial fishing would direct research towards determining the extent to which the metropolitan economy conditioned and subjected the fishing industry of Manitoba.

Paul Baran's early writings were an important contribution to early dependency theories. Of particular importance is his concept of economic surplus. Baran stated: "Actual economic surplus, [is] the difference between society's actual current output and its actual current consumption. It is thus identical with current saving or accumulation."⁴ What is important is that Baran differentiated between actual and potential economic surplus. He defined potential surplus as: "...the difference between the output that could be produced in a given natural and technological environment with the help of employable productive resources, and what might be regarded as essential consumption."⁵ The difference between actual and potential economic surplus is an important concept when attempting to understand the apparent stagnation in underdeveloped countries. Thus, the difference between actual and potential economic surplus and the fact

that the potential economic surplus is not realized in the dependent economy results from the removal of local control over the direction of the economy and society. Within this concept of economic surplus, Baran placed the problem of underdevelopment on the lack of local control due to the dominance of external forces. He maintained:

The worst of it is, however, that it is very hard to say what has been the greater evil as far as the economic development of underdeveloped countries is concerned: the removal of their economic surplus by foreign capital or its reinvestment by foreign enterprise.⁶

The presence of foreign capital in a region which has control over the production of economic surplus in a region can make decisions concerning a strengthening of the presence of foreign capital, or it can choose to invest elsewhere which invokes stagnation. Thereby blocking its growth.

However, Baran also pointed out two additional concerns which have proven to be significant in understanding the operations of foreign enterprises in underdeveloped regions. The economic activity of foreign enterprises creates conditions in which:

In sum, the income derived by the inhabitants of the so-called source countries from the activities of the export-oriented foreign enterprises, consisting primarily of wage payments to a relatively small number of wage earners, is everywhere very small.⁷

Baran then considered the actual employment and wages generated as somewhat marginal. However, the impact on other resources is more significant:

Indeed, there is no reason to consider the raw material resources of underdeveloped countries as a free good available in infinite supply. Even if the exhaustion of raw materials for the world as a whole is a boggy that can safely be disregarded, as far as individual countries and specific materials are concerned, the danger is far from minor.⁸

The creation of employment by export orientated activities has been one of the major defences of the proponents of dependence. However, with a lack of control over the rate of exploitation by the owners of the resources even wage employment cannot be maintained. Although the control over economic surplus, the misuse of resources and the insignificant creation of jobs are often popular present day challenges to the multinational firms, it was Baran's writings in the 1950's that broke much of the ground in explaining the stagnation and disparity which resulted from the incorporation of regions within the sphere of large scale monopolies.

An important contribution to dependency theory are the works of André G. Frank. Clearly, Frank has identified underdevelopment as a process: "Yet development and underdevelopment are the same in that they are the product of a single, but dialectically contradictory, economic structure and process of capitalism."⁹ Frank outlined certain contradictions within the process of the "development of underdevelopment". These contradictions provide a basic methodological framework for this study in understanding the development of fish as a resource in Manitoba. Frank's contradictions are:

- 1) The contradiction of expropriation/appropriation of economic surplus.
- 2) The contradiction of metropolis-satellite polarization.
- 3) The contradiction of continuity of change.¹⁰

These contradictions direct attention towards the importance of economic surplus, and the control that the metropolis maintains over the periphery (satellite) and the fact that this process displays certain changes which maintain a continuity of this process. The expropriation/appropriation of the economic surplus generated in the periphery and the polarization between the metropolis and satellite (periphery) describe some of the uneven and unequal process of development. Frank has drawn attention to the fact that the "monopolistic structure of the whole system" results in a "misuse and misdirection of available resources throughout the whole system and metropolis-satellite chain."¹¹ Not only is control largely a result of external forces, but it is monopolistic in structure.

Additionally, André Gunder Frank has applied his metropolis-satellite model to the situation of the Indians in Latin America. Frank argued that: "What Spain was for the colony, the latter was for the Indian communities: a colonial metropolis. From then, on, mercantilism penetrated the most isolated villages of new Spain."¹² Frank's articulation of the "Indian problem" is directly relevant to the Canadian Indians. He further stated that:

The "Indian problem" in Latin America is in its essence a problem of the economic structure as a whole. Contrary to frequent claims the problem is not one of the Indian's cultural isolation, still less one of economic isolation or insufficient integration.¹³

The lack of integration (sometimes used as polite expression for lack of assimilation), has often been cited as the source and cause of economic

and social problems for native people in Canada. Furthermore, efforts to by-pass the source of the problem are not likely to succeed. Frank concluded that: "Any attempt to solve it by administrative or police measures, through education or road building, is superficial and beside the point."¹⁴ It would seem that the effort to solve the "Indian problem" in Latin America corresponds in nature to those in Canada. The result after over a hundred years of Indian administration in western Canada has been superficial. Hence, a dependency theory approach to the integration of Indians with the commercial fishing would evaluate the ability that the industry could provide relative economic security. When attempting to understand the position of native peoples as commercial fishermen, the emphasis will be on the nature of economic integration and not on the problems of assimilation.

Main stream economics does not distinguish between growth and development and uses the terms interchangeably. Thus, larger scale capital intensive projects in northern Canada (pipelines, power projects) which obviously result in rapid economic growth, are therefore equated by their proponents with development. C.Y. Thomas, in contrast, maintained that it is important to make a:

... distinction between "growth" and "development". What this of course means is that increases in per capita material product may not mean improvements in the quality and the standard of living of the broad mass of the population, or equity in the distribution of income and wealth, or a sufficient degree of differentiation in the structure of output so much as to self-sustained increases in material production.¹⁵

Samir Amin argued that economic growth in the periphery or dependent economies, is very different from economic growth in the metropolis; for the dependent economy "... is jerky and made up of phases of extremely rapid growth, followed by sudden blockages."¹⁶ Furthermore, Amin stated:

None of the features that define the structure of the periphery is thus weakened as economic growth proceeds: on the contrary, these features are accentuated. Whereas at the center growth means development, making the economy more integral, on the periphery growth does not mean development for it disarticulates the economy--it is only a "development of underdevelopment."¹⁷

Thus, in attempting to understand the fishing industry, it will be necessary to consider whether economic growth has meant development or dependence.

Dominant among some dependency theorists is the notion of unequal

exchange. That is, unequal exchange is the difference in value and prices of products of the centre and periphery. This is one of the main characteristics of the relationship between the centre and periphery. Thus integration of the periphery with the centre is based on a relationship of unequal exchange. Amin described the process of unequal exchange:

Integration into the world market determines the essential price structure, that which defines the ratio between prices of exported products and internal prices. This structure makes possible a systematic transfer of value from the periphery to the metropolitan center.¹⁸

In real terms, the transfer of value would include the repatriation of profits from transnational corporations, transfer pricing and changes in the terms of trade between the centre and periphery. A precise definition of unequal exchange is not always forth-coming among the dependency theorists. Amin has defined unequal exchange as: "... the worsening terms of trade over a whole century, involving the exchange of increasingly unequal quantities of total labour ..."¹⁹ That is, the periphery must employ more and more labour in order to purchase commodities from the centre. Amin stated more succinctly that unequal exchange "means transfer of value, nothing more nothing else."²⁰ Arghiri Emmanuel has referred to unequal exchange as an imperialism of trade and that the difference in wage rates between the centre and the periphery provides the main basis for unequal exchange. He suggested:

Regardless of any alternation in price resulting from imperfect competition on the commodity market, unequal exchange is the proportion between equilibrium prices that is established through equalization of profits between regions in which the rate of surplus value is "institutionally" different--the term "institutionally" meaning that these rates are, for whatever reason, safeguarded from competitive equalization on the factors market and are independent of relative prices.²¹

More important than the exact definition of unequal exchange is the implication of this concept in explaining the uneven development process.-While Emmanuel recognized that unequal exchange only accounts for part of the difference in living standards in the periphery and centre he nonetheless maintained that "... unequal exchange is the elementary transfer mechanism, and that, as such, it enables the advanced countries to begin and regularly to give new impetus to that unevenness of development ..."²² Unequal

exchange is one of the mechanisms whereby the differences between the potential and actual economic surplus is drained from the dependent social formation by the metropolis.²³

Finally, peripheral social formations are continually changing in that they are constantly readjusting to the requirements of the metropolitan economy. This has meant that periods of growth and stagnation are largely conditioned by the metropolis. Amin, in a similar manner to André Gunder Frank, stated:

The historical geography of the Third World bears visible mark of this structural dependence on the center. Some regions that were prosperous at one time, because the export product they supplied was of interest to the center, later fell into hopeless decay when the center's interest shifted to a different product.²⁴

Although Amin may be overlooking the fact that regions within the 'centre' have also fallen into decay as a result of shifts to different products by the centre, the important point is that the development of a particular commodity may only have a relatively short-term interest to the centre. This then challenges the main stream economic policy that export-led growth is the appropriate road to follow. An important consideration, in addition to Amin's interest in the growth/decay nature of export-led growth is the social and economic dislocations that the development of an export commodity may impose upon a pre-existing social formation. Amin characterized the relationship between the centre and periphery by stating that "Permanent structural adjustment constitutes the background to this story--an adjustment always marked by inequality, asymmetry and domination, yesterday by Great Britain and today by the United States."²⁵

1.2 Staples and Canadian Political Economy

A great deal of Canadian economic history has been considered from the perspective of the staple thesis.²⁶ In the north this would seem to be particularly valid given the dominance of the fur trade, commercial fishing and whaling, as well as what has been termed the new staples of pulp and paper, hydro power, minerals and petroleum. The range of economic activity is associated with the expansion westward and northward in search of new sources of a staple (as in the case of furs) or for an entirely new staple (as evident by whaling). Similarly, the notion of a frontier is somewhat dominant in Canadian development. Consider McNaught's statement:

From the time of the earliest records Canada has been part of a frontier, just as in her own growth she has fostered frontiers. The struggle of men and metropolitan centres to extend and control those frontiers, as well as to improve life behind them, lies at the heart of Canadian history--and geography determines many of the conditions of that struggle.²⁷

For Innis, the mere existence of water-ways, as a geographical fact, would condition a certain type of economy.

In a region with the extensive waterways which characterize the northern part of North America economic development is powerfully directed towards concentration on staples for export to more highly industrialized regions.²⁸

This division of labour between highly industrialized and staple producing regions is in fact one of the major concerns of the dependency theorists. Staple theory then, as developed by Innis, has concentrated on explaining development in Canada by examining the geographical and technical conditions which influenced the production of a staple.²⁹ In turn, Innis has then assigned significance to the staple in understanding the political economy of Canada.

Innis has suggested that the staple, generally a product from the primary sector of the economy, would be dominant in any understanding of Canadian economic history.

The economic history of Canada has been dominated by the discrepancy between the centre and the margin of western civilization. Energy has been directed towards the exploitation of staple products and the tendency has been cumulative. The raw material supplied to the mother country stimulated manufactures of finished product and also of the products which were in demand in the colony.

... Agriculture, industry, transportation, trade, finance, and governmental activities tend to become subordinate to the production of staple for a more specialized manufacturing community.³⁰

Innis suggested that a spatial characterization could differentiate economies which are staple producers and those that are highly industrialized. Thus, Innis has provided a sketch of an international division of labour. However, Innis did not confine his interest in staple production to economic aspects. He stated:

Concentration on the production of staples for export to more highly industrialized areas in Europe and later in the United States had broad implications for the Canadian economic, political and social structure. Each staple in its turn left its stamp, and the shift to a new staples invariably

produced periods of crisis in which adjustments in the old structure were painfully made and a new pattern created in relation to a new staple.³¹

Innis and other staples theorists draw attention to the type of economic structure that has been created by a staple economy. In the case of Canada, the structure of the economy is weighted towards the primary and the service sectors--especially as transportation facilities are orientated towards the export of the staple. The shift from old staples to new ones has certainly been the dominant tendency in the economic history of hinterland regions of Canada.

The shift from one staple to another created crises. However changes in the way that particular staples were produced also engendered stress. In examining the cod fish as a staple, Innis stated:

The effects of the tragedy of the replacement of commercialism by capitalism call for a long period of expensive readjustment and restoration, and this cannot take place without policies which foster the revival of initiative under responsible government.³²

However, Innis stressed that the lack of political control (responsible government) made this process even more distorted. Similarly, the limitations of government machinery under such conditions cannot deal with the internal results of changes in international trade. Innis explained that:

Wide fluctuations in income, in the catch and price of fish, and the limitations of government machinery, together with the absence of a speculative market, involved that extensive use of credit which manifested itself in the truck system. Dependence on the disequilibrium of international trade, in the case of exports added to the internal burden put upon the truck system.³³

Innis revealed that the effects of this particular conjuncture of fluctuations in international trade are replicated in an internal credit system and: "... that standards of living could be forced down more sharply in Newfoundland than in Nova Scotia."³⁴ The particular insights that resulted from Harold Innis's study of the cod fish which are directly relevant to the inland commercial fishing industry are the use of credit to maintain the system and the inability of government to effectively deal with fluctuations in international trade.

The staple thesis of Canadian political economy which had been developed in the 1920's and 1930's was revitalized in the late 1960's and

early 1970's.³⁵ Drache has been particularly important in presenting the staple theory as an alternative to orthodox and American influenced social science which became dominant in the 1950's.³⁶ Drache expanded on the spatial and sectorial characteristics of a staple economy:

... the economy in a dependency is tied to the economy in a foreign industrial centre by market and trade relations; the development of production forces at the margin will follow the developments in the imperial centre; in short, the imperial power selects those staples which it requires on terms favourable to itself; the staple economy is invariably subject to crisis and disruption because it is neither self-generating nor self-regulating; the staple economy is distorted because of the demands of an external economy for resources and conversely remains underdeveloped with regard to industry.³⁷

This definition of a staple economy clearly reflects a conceptualization that is not unlike that of some dependency theorists.³⁸ The points of contact between dependency theory and more recent writings of staple theorists are numerous. For example, Naylor stated that economic growth is not necessarily development.

Economic domination by itself clearly does not preclude economic development in the sense of the growth of national income, population, and even per-capita income ... But what domination does imply is that the direction of economic development--that is, which sectors of the economy flourish and which stagnate--is dictated by the needs of the metropolitan economy ... The crux of the problem of domination inheres in the relationship between metropolitan capital and local capital in the hinterland.³⁹

However, a useful insight that Canadian political economy has produced is the relationship between metropolitan and local hinterland capital which has been absolutely crucial in understanding the development of the Canadian economy as a whole. Additionally, by considering the relationship between local and metropolitan capitalists, the theory is elevated from one simply of spatial relations between nations.

Naylor and Clement have directed some of the findings of the research on Canada's staples economy towards an understanding of classes in Canadian social structure. Naylor has argued that colonial relations at the time of New France prevented local capital accumulation in the fur trade.⁴⁰ Clement has drawn attention to the mercantile origin of Canadian capitalists.

Canadian merchants acted as intermediaries between Canadian resources (staples) and foreign markets. Supply was often

easier to control than demand, particularly when foreign "demand" was determined by other merchant capitalists abroad or by industrial capitalists who processed the resources. Because the exchange of commodities was predicated on the transportation of goods, it was easy for Canadian capitalists to make a transition into transportation, the basis of their commerce.⁴¹

Naylor indicated that Canadian capitalists were quick to replace Britain with the United States as their metropolis.⁴² Additionally, Clement has documented that the mercantile origin and nature of Canada's capitalists permitted foreign capitalists to enter the sphere of industrial production in Canada.⁴³ Thus, the popular concern during the 1960's over the penetration of branch plants in southern Canada generated an explanation based on the particular class formations that originated in a staple economy. The revitalization of this theory originated with a search for an explanation of the branch plant domination of the Canadian economy. It was an explanation which went beyond a simple characterization of transnational corporations in spatial terms because it sought an origin internal to Canada's social structure which promoted the penetration of the economy by branch plants. The importance of staple theory as developed by Naylor and Clement to the inland fishing industry is to draw attention to the role of local intermediaries and their relationship to metropolitan interests.

Drache has stated that outside of the industrialized areas of central Canada "the rest of Canada is overwhelmingly a staples economy."⁴⁴ The study area of this thesis is northern and Interlake regions of Manitoba. It is only recently that a political economy research has been directed towards northern Canada.⁴⁵ Kenneth Rea has stated that: "historically, the north has displayed a tendency toward 'growth' without development."⁴⁶ The problem of economic growth without development has been a major criticism by staple and dependency theorists of the metropolis-hinterland system. Frank's contradiction of continuity of change applies to the economic history of northern Canada. Rea stated:

One of the most remarkable things about the economic history of northern Canada is how little its essential characteristics have changed in three centuries. Until recently the economy of northern Canada was based mainly on the exploitation of primary resources, producing a few "staple" commodities for export. Consequently economic growth has been determined by external forces ...⁴⁷

Research on northern Canada, in particular studies directed towards the situation of native people, indicates that not only has there been growth without development, but that disparity and social deprivation are widespread.⁴⁸ Unlike orthodox economic theory, dependency and staple theories demonstrate some interest in directing research toward understanding the structures which maintain such social conditions.

Summary

Dependency theory explores the relations between the periphery and centre and focuses on the control that the centre exerts over the periphery. For the purpose of this study--a study not on the social formation of northern Manitoba but a study of the exploitation of a particular commodity (fish)--only certain concepts of dependency theory have been selected. In particular, the concepts of economic surplus (actual and potential), unequal exchange and a rejection of the notion that economic growth is the sole condition for development are especially important in the direction of this thesis. The dialectical orientation of Frank's contradictions provides a method of critically examining certain features of a process that produce relative disparity. Dependency theorists are opposed to development strategies that emphasize export-orientated growth. In the past such economies have been constantly readjusting to conditions created by changes in the metropolitan economy.

A review of the central concepts of Canada's staple theory indicates the value of the detailed research of Harold Innis in explaining the particular conditions of Canada's economy. Innis identified the external orientation of Canada's economy, and how that in turn stipulated the nature and technical conditions of production in Canada. Interestingly, Innis' study of the cod fish of Atlantic Canada established that disequilibrium maintained an internal credit system and that government machinery was unable to deal with such problems. Between staples and dependency theories, there exists considerable common ground on basic concepts. As well, staple theory has criticized the notion that economic growth means development, and that the economic structure of a staple economy is distorted as a result of external domination. In their survey of political economy the staple theorists have clearly indicated the importance of the relationship between local and metropolitan capital in the periphery. In Canada, local

capital has an origin in the structure of the staple economy and an historical orientation which was largely mercantile. Such an orientation encouraged the penetration of metropolitan capital (largely American) into the sphere of production (especially branch plants). The emphasis of recent staple research on internal structures has provided new dimensions to the orientation of the metropolitan-hinterland model. Again, not all important staple paradigms have been presented, as not all are relevant to a study of the commercial fishing industry. However, the political economy of northern Canada indicates that the general context is one which exhibits both a staple producing and dependent development. Finally, it should be realized that the use of dependency theory in a study of commercial fishing in Manitoba challenges the rigid spatial orientation of some theorists.⁴⁹

Notes and References

- 1 A. de Souza and P. Porter, The Underdevelopment and Modernization of the Third World (Washington, D.C.: Association of American Geographers, 1974). p. 60.
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- 3 C.Y. Thomas defines underdevelopment: "By underdevelopment we refer to the present peculiar conjunction of productive forces and production relations among the 'poor' countries, which at the prevailing levels of human technological development constitutes the objective basis of their poverty and of the growing inequalities of income and wealth which the world system of production and exchange naturally reproduces." Thomas, Dependence and Transformation: The Economics of the Transition to Socialism (New York: Monthly Review Press, 1974), p. 25.
- 4 Paul Baran, The Political Economy of Growth (New York: Monthly Review Press, 1962), pp. 22-23.
- 5 Ibid., p. 23.
- 6 Ibid., p. 18.
- 7 Ibid., p. 183.
- 8 Ibid., p. 188.
- 9 André Gunder Frank, Capitalism and Underdevelopment in Latin America: Historical and Case Studies of Chile and Brazil (New York: Monthly Review Press, 1967), p. 9.
- 10 Ibid., pp. 3-14.
- 11 Ibid., p. 147.
- 12 Ibid., p. 124.
- 13 Ibid., p. 123.
- 14 José Carlos Mariátegui, Siete ensayos de interpretación de la realidad peruana (Lima, Editorial Librería Peruana), p. 27, cited by Frank, op. cit., p. 123.
- 15 Thomas, op. cit., pp. 16-17
- 16 Samir Amin, Unequal Development: An Essay on the Social Formations of Peripheral Capitalism, trans. B. Pearce (New York: Monthly Review Press, 1976), p. 289.
- 17 Ibid., p. 292. Amin is ignoring the uneven nature of development in the economies of the centre.
- 18 Amin stated that "In reality, value is measureable, and the ratios between prices are homogeneous," S. Amin, The Law of Value and Historical Materialism, trans. B. Pearce (New York: Monthly Review Press, 1978), p. 11. Furthermore, on the question of foreign trade he stated: "the movement is always centripetal, that the transfer of value is always effected from the periphery toward the center, that the system always functions in that direction." S. Amin, Accumulation on a World Scale, p. 91.

19 Amin, Accumulation on a World Scale, p. 565.

20 Ibid., p. 599.

21 Probably the most concerted effort to explain the shortcomings of main stream economics and the nature of unequal exchange is demonstrated by Arghiri Emmanuel, Unequal Exchange: A Study of Imperialism of Trade, trans. B. Pearce (New York: Monthly Review Press, 1972), p. 64.

22 Ibid., p. 265. Emmanuel suggests that differences in organic composition of capital is not directly responsible for unequal exchange but only to the extent that difference in organic composition of capital is related to wages. Ibid., p. 177. Organic composition of capital has been explained by Joan Robinson: "The meaning of this concept is roughly the ratio to the labour time currently employed to the stock of capital, measured as 'labour embodied' i.e., the sum of all labour time used in producing capital in the past," Joan Robinson and John Eatwell, An Introduction to Modern Economics (Maidenhead: McGraw Hill Book Co., 1973), p. 32. Arghiri Emmanuel states that organic composition means "the ratio between that part of a capital which goes to pay wages (variable capital) and the total amount of capital in a given production $\frac{v}{c + v}$ " (where v = variable capital and c = constant capital). Emmanuel, op. cit., pp. 33-34. Thus branches with low organic compositions of capital reflect weak intensities of capital. The concept of organic composition of capital is relevant to the situation of fisheries to the extent that the fishing sector is forced to compete for capital and may not be capable of maintaining the same level of organic composition of capital as other sectors.

23 Amin has defined social formation as "the societies known to history are 'formations' that on the one hand combine modes of production and on the other organize relations between the local society and other societies, expressed in the existence of long-distance trade relations." S. Amin, Unequal Development, p. 16.

24 Amin, Accumulation on the World Scale, p. 178. Amin added "This structural readjustment is effected thanks to readjustment of the structure of relative prices, which is such that the export products that interest the center are at every stage the most profitable ones. ... This reorientation enables export activity to be developed further. Foreign capital itself, when it comes on the scene, moves, in accordance with immediate profitability, into activities that are bound up with the external market." Ibid., p. 561.

25 Ibid.

26 Classical contributions to staple theory are Harold Innis, The Cod Fisheries: The History of an International Economy (Toronto: University of Toronto Press, 1954, original 1940) and Harold Innis, Fur Trade in Canada (Toronto: University of Toronto Press, 1956, original 1930).

27 Kenneth McNaught, The Pelican History of Canada (Hammondsworth; Penguin Books, 1971), p. 7.

28 Innis, The Cod Fisheries, p. ix.

29 This attention to detail by Innis is clear in both The Cod Fisheries and The Fur Trade in Canada.

30 Innis, The Fur Trade in Canada, p. 385.

31 Harold Innis, Empire and Communication (Toronto: University of Toronto Press, 1972, original 1950), pp. 5-6.

32 Innis, The Cod Fisheries, p. 503.

33 Ibid., p. 494.

34 Ibid., p. 483.

35 Daniel Drache, "Staple-ization: A Theory of Canadian Capitalist Development," Imperialism, Nationalism, and Canada, ed. Craig Heron (Toronto: New Hogtown Press, 1977), p. 23.

36 Daniel Drache, "Political Economy," Journal of Canadian Studies, 11, 3 (1976), p. 5.

37 Ibid., pp. 7-8.

38 Girvan has noticed this similarity: "Best and Levitt were able to draw on the fruits of work on 'export-led' growth, based on Latin American and Canadian experience. Levitt's approach owed much to the influence of the Canadian economic historian Harold Innis." N. Girvan, "The Development of Dependency Economics in the Caribbean and Latin America: Review and Comparison," Social and Economic Studies (March, 1973), p. 16.

39 R.T. Naylor, "Dominion of Capital: Canadian and International Investment," Domination, ed. A. Kontos (Toronto: University of Toronto Press, 1975), p. 34.

40 Ibid., p. 44.

41 Wallace Clement, Continental Corporate Power: Economic Elite Linkages between Canada and the United States (Toronto: McClelland and Stewart, 1977), pp. 16-17.

42 Naylor, op. cit., p. 57.

43 Clement, op. cit., p. 17.

44 Drache, "Staple-ization: A Theory of Canadian Capitalist Development," p. 23.

45 An important introduction to political economy of northern Canada is found in K.J. Rea, The Political Economy of Northern Development (Ottawa: Science Council of Canada, 1976), and M. Watkins, ed. Dene Nation: The Colony Within (Toronto: University of Toronto Press, 1977).

46 Rea, op. cit., p. 25.

47 Ibid., p. 30.

48 Perhaps the best documentation of this process is, Justice Thomas Berger, Northern Frontier, Northern Homeland: Report of the MacKenzie Valley Inquiry, I (Ottawa: Ministry of Supply and Service, 1977).

49 Among dependency theorists who apply rigid spatial definitions of centre and periphery is Samir Amin. See Amin, Accumulation on a World Scale, p. 297.

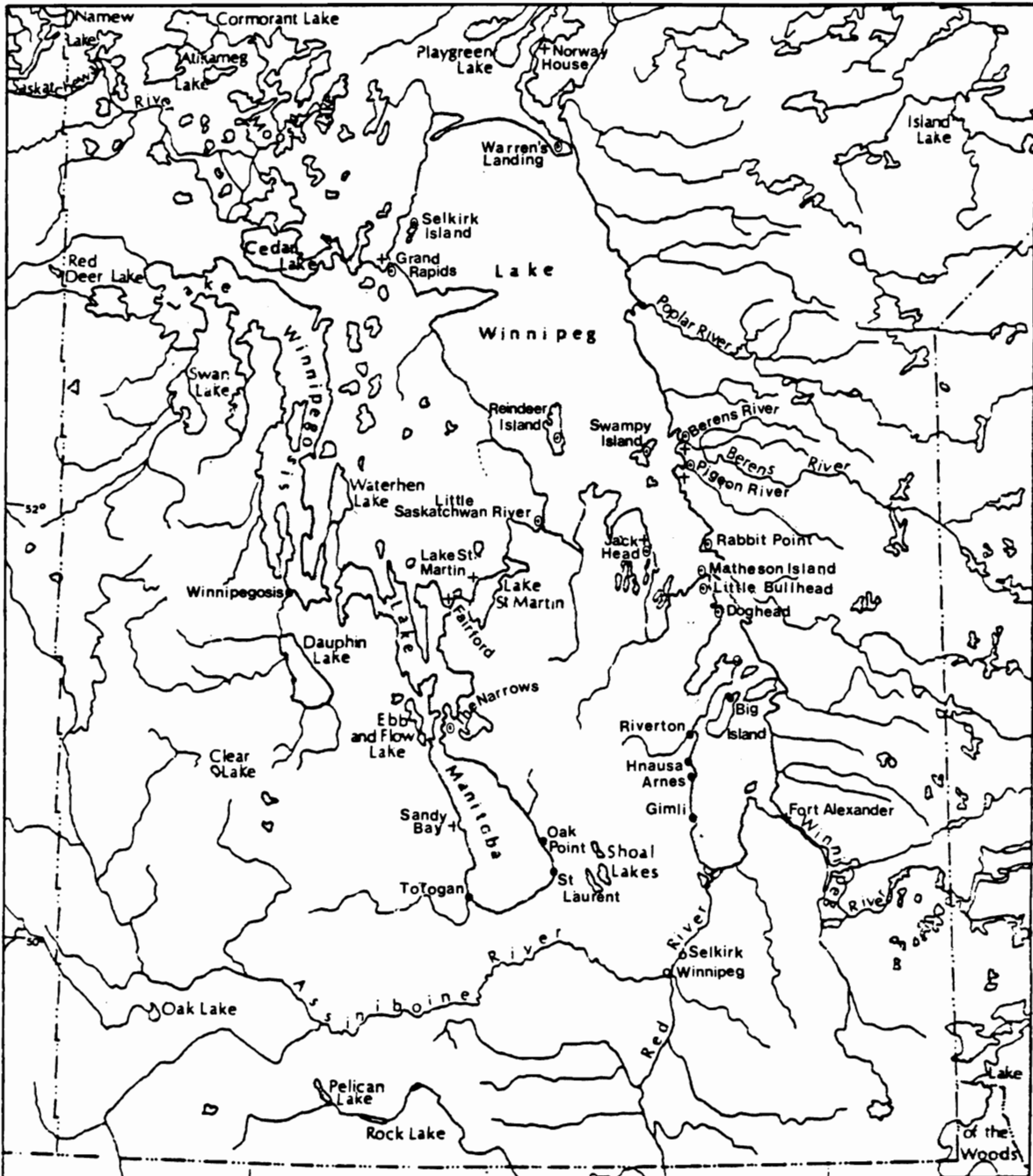
CHAPTER 2 THE ESTABLISHMENT OF A COMMERCIAL FISHING INDUSTRY AND THE DESTRUCTION OF NATIVE FISHERIES

Introduction

A major change in the use of fish resources occurred with the establishment of commercial fishing, that being the production of fish for exchange value. It began with the trading of fish surplus to what was previously produced and consumed by local settlers and natives. Thus, commercial production grew up alongside production for subsistence; however, in very short order, it became the dominant form of production. Additionally, this commercial type of production was not only production for exchange value as opposed to immediate needs, but production for an external market. That is, Manitoba fish were now consumed directly, for the first time, by urban centres in the United States. Prior to this, fish were consumed by small local markets, or by settlers, fur traders, Metis and Indians. That portion of production directed towards the external market expanded rapidly. As a result, the amount of fish available for local needs declined and the fishing efforts of the Indians had to be increased. What is truly remarkable about the first decade of commercial production is the rapidity by which fish stocks were changed. As a result of changes in fish catches by Indians, the later opposed any further development of commercial fishing. An investigation was held which attempted to reconcile the various conflicting interests which were engaged in fishing. Although this investigation may not have altered the process of commercialization of the resource, it did provide some valuable evidence concerning the early impact of commercial fishing.

2.1 The Origin Of A New Staple

The accounts of the Red River settlement indicate that well established fishing communities had grown up at St. Laurent and Totogan (on the White Mud River) on Lake Manitoba, and that settlers from the Red River area made seasonal trips to the fisheries of lakes Winnipeg and Manitoba.¹ (See Map 2.1 for locations.) It appears that petty trading occurred and a group of people became known as fishermen. In 1872, W. Urquhart, when reporting on Manitoba fisheries, recorded that "a large number of whitefish is also brought down from the lake, for



Map 2.1 Locations Associated With Commercial Fishing: 1880-1910

- o terminals and companies' headquarters
- + Indian communities
- o fish stations
- fishing communities

Note that not all fish stations operated continually

Scale
1: 4,000,000



Base Map: Economic Atlas of Manitoba, 1960

sale at Winnipeg,"² thereby suggesting a local demand. He also wrote that "whitefish are now bringing sixteen (16) shillings (English) per hundred at the places where they are taken."³ This tends to indicate that an exchange was made between fishermen, and the market in Winnipeg, that is a middleman or merchant purchased fish at the fisheries. This would suggest that in the early 1870's a class of fishermen was beginning to emerge and supply a local market with fish.

It is perhaps just coincidence that the first recorded effort at "large" scale commercial fishing occurred in 1872, when the Red River settlement was becoming incorporated with the world economy. A joint stock company, with a sizeable boat and a station located at the Little Saskatchewan River, attempted to supply the Winnipeg market with fresh and salted whitefish.⁴ Apparently, it failed; it is speculated that either the local market was too small for a profitable venture or that fish were readily available from the Red and Assiniboine rivers.⁵ D. Gunn, however, was not pessimistic about the future of the resource: "yet I am confident that fisheries in Lake Winnipeg and Manitoba cannot fail being highly remunerative, if carried on by parties who can command the requisite amount of capital, knowledge and enterprise."⁶ Nonetheless, some data is presented which suggests that fishing for a Winnipeg market emerged in the later half of the 1870's and that a group of people were heavily involved in fishing. (See Table 2.1, anywhere from 300 to 400 men were fishing by that time.) In 1877, the price of fish "rose from five to eight dollars per hundred at all stations," further evidence that a market for fish existed in Winnipeg.⁷

In the 1880's the nature of the fisheries changed, when traders came to exploit the fisheries of Lake Winnipeg on a larger scale. For instance Reid and Clarke, two traders, first started fishing at the south end of Lake Winnipeg in 1881, but soon moved to the fishery off the Little Saskatchewan River.⁸ Census data from the early 1880's (Table 2.2) suggests that a number of men were involved in fishing, and the production of whitefish in barrels indicates a fairly large market. The firm, C.W. Gauthier, seems to have started operations in the year 1886.⁹ Reid and Clarke and C.W. Gauthier were referred to as traders, but in fact they also fished, whereas on Lake Manitoba, there were large traders such as Hugh Armstrong who did not fish. The initial phase of

TABLE 2.1

MANITOBA FISHERIES 1876-1877

Station	FISHING MATERIALS						KINDS AND QUANTITIES OF FISH					Total Value
	Boats			Gill Nets			No. of fish caught					
	No.	Value	Men	No.	Feet	Value	Whitefish	Sturgeon	Gold Eyes	Pike	Coarse	
1876												
Lake Manitoba												
Oak Point	9	72	9	52	584	200	4175	--	7200	2700	4500	\$ 622.75
St. Laurent	20	160	20	120	1440	600	9500	--	16000	6000	10000	1395.00
Rocky Island	4	32	4	32	384	160	2560	--	--	--	--	128.00
Big Point	8	64	8	40	480	200	3500	--	18000	1200	5000	745.00
West side of Lake	10	80	10	60	720	300	4800	--	20000	5000	5000	1040.00
Lake Winnipeg	100	800	200	600	7200	3000	48000	500	60000	3000	37000 ¹	11610.00
Assiniboine & Red Rivers	200	800	200	600	872	600	1000	100	360000	20000	40000 ²	15050.00
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	351	2008	451	1504	11680	5120	73535	600	481200	37900	101500	30590.75
1877												
Lake Manitoba												
Sandy Bay	15	150	20	95	898	332	10000	--		200	500	835.00
Big Point	5	50	5	15	142	52	1200	--		300	600	141.00
Oak Point	8	80	9	110	700	310	7420	--	8000	450	1000	825.10
St. Laurent	19	190	20	133	824	365	12000	--	10000	1000	1500	1285.00
Lake Winnipeg	110	880	150	830	7251	2705	80000	520	35000	2500	36000	15375.00
Assiniboine & Red Rivers	90	720	100	370	1740	620	1200	150	20000	1300	25000	5561.00
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	247	2070	304	1553	11555	4384	111820	670	73000	5750	64600	24023.00

Source: Canada, Sessional Papers, 1877-1878, Annual Reports of Fisheries.

TABLE 2.2
MANITOBA FISHERIES 1885-1886

District	No. of Boats	No. of Men	Feet of Nets	Barrels of Whitefish	Barrels of Catfish	Barrels of Other fish
Selkirk ¹	4	4	600	-	2	56
Marquette ²	36	37	10,050	440	-	506
Pronvencher ³	1	2	1,200	15	9	215
Lisgar ⁴	328	368	257,778	3,168	92	4,693
	—	—	—	—	—	—
	369	411	269,628	3,623	103	5,470

Source: Canada, Census of Manitoba, 1885-1886 (Ottawa: 1887), pp. 152-157.

¹This is not the present community of Selkirk but a district of south western Manitoba.

²Includes communities such as Westbourne near Lake Manitoba.

³Includes communities in south eastern Manitoba.

⁴Includes communities on the Red River (St. Andrews), on Lake Winnipeg (Gimli), and on Lake Manitoba (St. Laurent).

the establishment of a commercial fishing industry involved small firms which obtained fish through trade with settlers and Indians while also engaging in fishing themselves.

The critical difference between the fishing in the early 1870's and 1880's, is that in the later period production began for external markets. In fact, the earliest fish production figures are devoted entirely to reporting the export of fish (Table 2.3). The market was located in the United States and remained there for over the next hundred years. The importance of this external market in the early years is demonstrated by its accelerated development in a short period of time. Although fish were still being retailed in Winnipeg, by 1885 Reid and Clarke exported to the United States 280,000 of their 334,000 pounds of fresh whitefish (83 percent).¹⁰ In 1886, exporters were faced with a tariff and it was reported that "traders, rather than pay this duty on some kinds of fish, sought a local market."¹¹ This strongly suggests that a local market still existed in the mid 1880's. But clearly, the emerging large scale fishing firms were primarily orientated towards external markets. Smaller operators were also affected. In 1886 it was stated that "there are many more fishermen whose catch is small, and who part with their fish either in the local markets or sell them to large dealers who export them to the United States."¹² In this sense, smaller traders and fishermen were drawn into exporting to the American market through the larger trading/fishing companies.

It has been argued that the arrival of the Icelanders provided labour for a commercial fishing industry.¹³ No doubt, Icelanders have been involved with the commercial fishing industry as long as many Manitobans can recall.¹⁴ However, in terms of direct employment, the two dominant fishing/trading companies on Lake Winnipeg (Reid and Clarke Co. and C.W. Gauthier Co.) employed in 1887: 80 white men, 40 'half-breeds' and 285 Indians.¹⁵ In 1889, the revealing comment was made that "most of the nets are supplied by the traders."¹⁶ From the above, it is clear that by the 1880's a transition had occurred in which production shifted from a local market orientation met by a combination of fishermen and small traders to accelerated production for export involving larger companies. The labour was drawn from white, Metis and Indian populations and traders supplied the means for fishing.

TABLE 2.3
MANITOBA FISH EXPORTED 1883-1888

	1883		1884		1885		1886		1887		1888	
	Quantity (lbs)	Value (\$)	Quantity (lbs)	Value (\$)	Quantity (lbs)	Value (\$)	Quantity (lbs)	Value (\$)	Quantity (lbs)	Value (\$)	Quantity (lbs)	Value (\$)
Whitefish	72,867	3,041	359,000	14,036	759,730	32,500	604,708	26,745	841,480		1,249,109	
" (salted)							224,000	6,720	314,500		223,600	
Pike	51,850	1,061	561,833	13,855	670,443	21,877	312,437	8,804	261,089		430,204	
Pickereel	2,400	480	---	--	33,515	1,340	126,226	4,888	149,582		142,325	
Tullibee	---	--	---	--	1,600	80	85,246	1,801	18,736		10,454	
Mixed	---	--	---	--	---	--	152,532	5,392	10,070		7,415	
Total	127,117	4,582	920,833	27,891	1,465,288	55,797	1,505,149	54,350	1,595,457	65,441	2,063,107	86,944

Source: Canada, Sessional Papers, 1884-1889, Annual Reports of Fisheries.

2.2 The Decline Of Indian Fishing: Production For Exchange

A consequence of the development of commercial fishing in the 1880's was the decline of the Indian mode of fishing for immediate needs. The earliest record of Indians fishing for exchange occurred in 1881 for the Lake St. Martin fishery, a main spawning ground for the whitefish. The destruction of whitefish was prompted by trade. Indian Inspector McColl recorded in 1881:

The reckless and improvident destruction of fish by Indians during spawning season, more especially for the manufacture of oil for traffic is gradually exhausting the supply and will eventually deprive them of their principal source of subsistence ...¹⁷

Previously, Indians at St. Martin had made fish oil for lighting homes and to mix with dried fish. Some production for trade had commenced during the 1870's. However, by 1882 "one thousand gallons were manufactured; and sold to traders."¹⁸ In the early 1880's numerous other reports indicated Indians were trading fish on lakes Winnipeg, Manitoba and St. Martin. In 1886, Fisheries Inspector Alex McQueen described the trade as follows: "There were upwards of one hundred Indians engaged in fishing, who traded their fish for flour, bacon, tea, tobacco, twine, clothing &c., supplied from two stores doing a thriving trade in this locality."¹⁹ As with the fur trade, Indians were drawn into the fish trade by the prospect of goods.

Despite these developments, when fishermen/traders first started to penetrate native fisheries, they were not entirely welcome. McColl reported in 1882 that the Little Saskatchewan band made "... loud complaints against David Clarke for wholesale traffic in fish ..."²⁰ The Indian Agent at Beren's River stated in 1884:

They resent that their fisheries are encroached upon by parties from Winnipeg, who, if allowed to continue the destruction of the whitefish and sturgeon at the present rate, will eventually exhaust the supply and deprive them of their principal source of subsistence.²¹

Two years later however, Indian Agent MacKay lamented that "during the winter many of the Indians caught great numbers of whitefish, which they sold to traders, thus helping to destroy the fisheries and means of subsistence."²² The fact that Indians appeared to oppose commercial fishing by white men, and then, reverted to selling fish to these same traders appears contradictory. However, it must be pointed out that exchange

provided some return and if the Indians themselves were fishing they would have some influence on the rate of harvesting. Nevertheless, Indian Agent H. Martineau for the St. Martin area, reported in 1886: "Fear is entertained by some [Indians] that whitefish will become scarce in consequence of the increasing fishing operations carried on by white traders and others, and the Indians express a desire that some check be placed on them ..."²³ Numerous requests were made by various Indian bands for exclusive fishing reserves.²⁴ Clearly, the natives recognized the importance of fish, and felt that the resource was theirs or at least believed that they had special claim to this resource.

The acquisition of goods, of course, promoted participation in the trade and in 1886 it was reported that at Sandy Bay on Lake Manitoba that: "in the winter time they get a ready sale at good prices for all whitefish and pike ..."²⁵ At Broken Head at the southern end of Lake Winnipeg (1884) trade was vigorous "as the fishing was good, men from Winnipeg came and bought the fish from them at their doors, giving fair prices, they were therefore comparatively comfortable throughout the year."²⁶ The motivation for participating in the fish trade was similar to that of the fur trade, and additionally cash was made available at times (at half the rate of trade goods). In 1888 the impact of trade on the Little Saskatchewan band was characterized as follows:

Some of the members forming this band are always absent from their reserve at a distance of fifty miles where they make an excellent living by the sale of whitefish ... Those who reside on the reserve do not live in such abundance but their means of livelihood are certainly more certain.²⁷

Population dislocations and general dependence of the Indian were characteristic of the fur trade.²⁸ Additionally, Indians may not have had much choice about participating in the fish trade. Inspector McColl reported in 1884 that the chief at Fairford:

... complained of the restrictions prohibiting the Indians from fishing on the Little Saskatchewan River, whereas speculators from Winnipeg had been scooping and dragging whitefish by thousands daily ... before they ascend to the upper lake and rivers to spawn.²⁹

When Indian agents attempted to prevent commercial fishermen from exploiting the spawning grounds, their jurisdiction was undermined by fishery officers in Winnipeg. Therefore, Indians may have engaged in the fish

trade, as one alternative to exclusive exploitation by white fishermen. It appears that Indian's involvement in the fish trade may have been motivated by trade goods, additional income from winter fishing, and some element of participation may have meant some control. This participation by Indians may have been a contradiction to their long-term interests (as in the fur trade).³⁰ Quite possibly there was no alternative to participating, aside from sitting on the banks and watching white fishermen scooping up fish.

In any event, in 1881, Indian Affairs officials reported:

The Agent reports to the north of Beren's River the Indians were able to catch a good number of fish, but that south of that locality very few whitefish were captured, and that in fact the portion of Lake Winnipeg extending south of Rabbit Point has almost depleted of whitefish.³¹

In 1889 it was reported that "whitefish are numerous north of Beren's River but southward there are very few taken," and that "the Indians are becoming much alarmed at the depletion of whitefish in Lake Winnipeg."³² It was also pointed out that "they however, obtain other smaller fish at all the reserves."³³ Commercial fishing at this time was specie specific (whitefish), and the fact that other fish could still be obtained strongly indicates that overfishing and not some other intervening factor was responsible for declining returns of whitefish. In 1890 it was reported that fishing was poor at Lake St. Martin, Fairford and Little Saskatchewan River and south of Beren's River.³⁴ In 1890, at the reserves at the south end of the lake it was recorded that:

Last year, during the fall fisheries, although some of the Indians had as many as twenty nets of thirty fathoms each in length, they only caught from one hundred to eight hundred apiece of small whitefish; whereas, the previous year they caught with two nets of equal length from ten thousand to twenty thousand each for their winter's supply, and during my inspection of the reserves in the first week of October last scarcely any whitefish were caught in the southern part of the lake.³⁵

In short, with a ten fold increase in nets, there was a decrease in catch by about 35 fold.

By the late 1880's the Indians and Indian agents were reporting serious declines in whitefish catches at a number of reserves. Declining productivity led to a breakdown in native fisheries that reached crisis

proportions in the late 1880's. In 1890 the Indians' views on this problem were presented to Samuel Wilmot of the Fisheries Branch during an Indian council meeting at the Little Saskatchewan River. The Indians made Wilmot aware of the social disruption caused by the collapse of native subsistence fishing and the uneven return of income associated with commercial fishing. They stated:

[We] can't catch enough whitefish for our families up river any more; all caught in mouth of river and in bay by white men traders for freezers. In old time plenty fish go up river and into St. Martin's; could then catch plenty fish for families all along banks of river with small scoop nets, easy, but now can't get fish that way anyhow--fish too scarce. ... but white men must be stopped killing all fish with big nets at mouth of river and bay. Some young Indians want to work for freezer men to get money and spend it; don't know what way; but old Indians, squaws and children get no good, no work, no fish. Indians want big fish traders kept away from mouth river and bay with big steamboat fishing; let trader fish in big water out in lake, where Indian can't go with small canoe. Young men and boy Indian get some good, but old men and families get nothing to make up for great loss of winter food, which came up river very plenty old time before. Not much whitefish caught any time before September; very plenty after that in old time, before white man kill so many ten thousands at mouth of river in September and October. Indians can't get fish plenty any more through ice; got too scarce.³⁶

Older Indians, women and children, who were not involved in the wage labour, could no longer obtain fish with the same effort.

Those associated with the Department of Indian Affairs noted other ill effects of the commercial fisheries. McColl reported in 1889:

Instead of the Indians being benefited by the fisheries, I find the very opposite to be invariably the case, for not only is the supply of fish, upon which they principally depend for subsistence becoming rapidly exhausted, but also the general condition of the Indians within this agency is getting apparently worse every year. Since the commencement of those fisheries their reserves are not properly cultivated, their gardens are frequently neglected and their houses often deserted. At the approach of winter, when the fishing season is over, they return to their homes empty-handed and heavy-hearted, to wander about in search of food to keep themselves and families from starving.³⁷

Ultimately, the penetration by commercial fishing of what had been previously mainly a stable native subsistence fishery represented relative

instability and longterm insecurity for Indians. Additionally, it was reported that the traders realized fifty times more for the fish than they paid the Indians.³⁸ Clearly there is an element of unequal exchange as indicated in the markup that occurred after the exchange between the trader and Indian. Added to this is the distraction from the agricultural development of reserves. The underdevelopment of native communities was conditioned, in part, by the development of a commercial fishery.

2.3 Opposition To Production For Exchange And Depletion

The prospect of depletion had been foreseen by Indians. Moreover, the social problems attendant with that depletion had also been foreseen. In fact, Inspector of Fisheries, McQueen stated in 1885:

A supply to foreign markets, from our by no means inexhaustible lakes, would in a few years, so deplete them that a great source of food supply for our present inhabitants and incoming settlers would be practically destroyed. The importance of the fisheries, as a source for food supply for the Indian population, can hardly be anticipated.³⁹

The St. Peter's band of Indians were also aware of this problem, as indicated in 1885:

The Indians complain that the exportation of fish to the United States is carried on so extensively, especially from Winnipeg and Manitoba Lakes, that unless restricted to Canadian consumption one of their principal sources of subsistence will ultimately become exhausted ...⁴⁰

In this instance, both fisheries inspectors and Indians anticipated that shortage would develop if production was orientated towards external markets. From the start of commercial fishing a distinction was made between production for local needs and production for an external market.

By the end of the 1880's, fishing Inspector McQueen changed his position to support commercial fishing and attempted to temper the impact of those who were concerned about the rate of exploitation of the fishing companies. McQueen rejected the claim that the decline of fish populations in the south end of Lake Winnipeg was related to the commercial companies. McQueen argued that commercial companies never really fished in the south end of Lake Winnipeg. He argued that the lakes were large enough to support commercial fishing.⁴¹ In 1889, McQueen also stated that "fully two thousand people directly and indirectly, have found this industry a means of assisting them to earn a livelihood."⁴² This statement clearly reflects

the degree to which commercial fishing established an employment dependency amongst people who had previously used fish for their own needs. Now they were dependent upon the income that commercial fishing provided by exporting production to a foreign market.

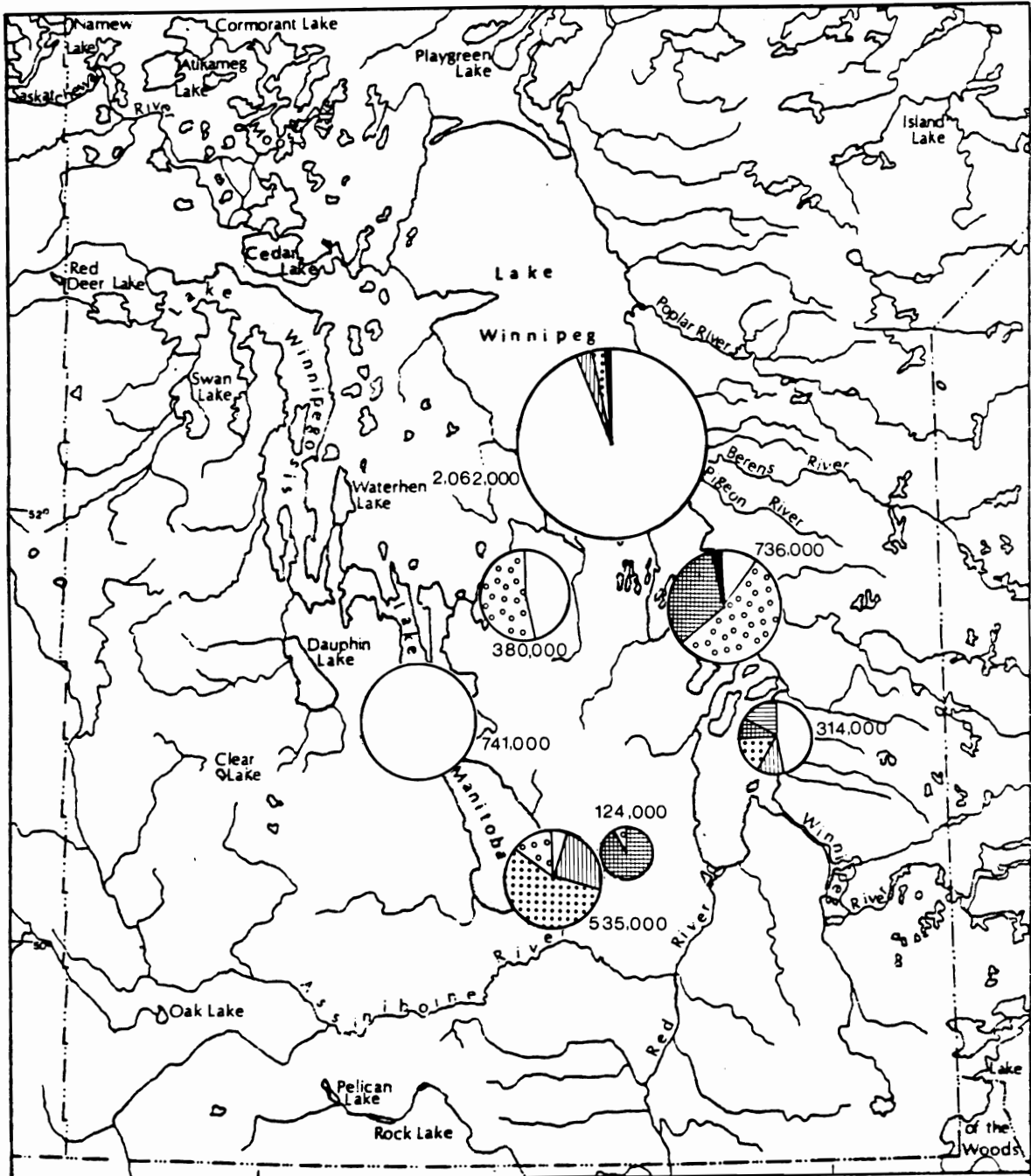
Nonetheless opposition to commercial fishing, especially by Indians or their agents, mounted. Indian fishing was reported to be failing while commercial fishing was expanding.⁴³ In 1889 McColl emphasized that "At every Indian council meeting I attended ... eloquent and pathetic appeals for assistance to prevent the destruction of their fisheries before they would be irretrievably ruined."⁴⁴ Although the commercial catches in the late 1880's proceeded the peak period of production, this does not mean that depletion or overfishing was not occurring. Indian fisheries were failing in part because the commercial fishing industry was better equipped (steam tugs).⁴⁵ Commercial fishing was interested primarily in whitefish, as a result, waste was the outcome. McColl documented this practice in 1888:

In consequence of the enormous quantities of whitefish exported annually from Lakes Winnipeg and Manitoba to the United States and the wanton destruction of other varieties of fish which are caught in large numbers along with the others in the nets and dumped into huge piles on the shores in the vicinities of the fisheries and left there to putrefy ...⁴⁶

Similarly, during this period J. Begin, with the North West Mounted Police at Grand Rapids, reported that of 10,000 pounds of fish that were landed in one day only 4,000 were fit for the market.⁴⁷ In 1887, in the area of the Little Saskatchewan River the fishing overseer reported that coarse fish were not kept by the fishing companies.⁴⁸ (See Map 2.2.) Thus, part of the explanation of the decline of fish stock relates to the waste and spoilage which were central to the commercial mode of fishing. Other evidence for resource depletion, aside from the number of fish caught, was reported. Muckle observed:

More whitefish were caught in the Winnipeg River, Fort Alexander Bay and at the mouth of the Red River last fall, than has been the case for some years past, ... These whitefish were nothing like the old Lake Winnipeg whitefish, being small, thin, flabby and seldom weigh three pounds.⁴⁹

Not only had the quantity declined but the quality was reduced in the process. McColl also pointed out that the continual movement northward of

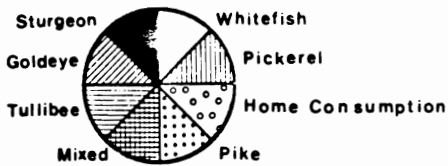


MAP 2.2
PRODUCTION 1887

Scale = 1:3,500,000

Production proportional to area

SOURCE: Canada, Sessional Papers, Fisheries.



1,000,000 Pounds of Fish



the operations of fish companies was additional proof that overfishing was occurring.⁵⁰ Those associated with the administration of Indians and the Indians themselves desired that some control be placed over commercial fishing. Perhaps the most cogent argument for the need of some kind of an investigation is recorded in this statement:

... that the apprehension of our Indian population of the destruction of their valuable fisheries upon which they chiefly depend for subsistence is not unfounded and that unless something is done to avert the impending calamity these self-supporting Indians of this superintendency will become as destitute and dependent upon the Government for support as their kindred in the North-West Territories have been since the disappearance of the buffalo.⁵¹

In the late 1880's the Indians were considered to be self-sufficient and fish were seen to be an important resource upon which this self-support was based. Fishing was considered to be a substitute for government support (welfare). The arguments concerning depletion could not be ignored any longer and in 1890 Samuel Wilmot from the Fisheries Branch in Ottawa was sent to Manitoba to investigate.

2.4 Wilmot's Investigation: A Pluralistic Solution To Social Conflicts

In the summer of 1890 Samuel Wilmot investigated the fishing conditions on Lake Winnipeg. The decision to hold the investigation was the result of pressure from Indians and Indian agents and "prominent officials and leading citizens of Manitoba [who] also resent that Lake Winnipeg is undergoing a falling off in many localities," and whose position was that "means should be instituted to stay this too rapid destruction of fish by jurisdictional regulations, which whilst protecting the fish, will not too seriously interfere with the fishing industries of the country."⁵² The arguments of the fishing companies rested largely on a comparison between the fishing potential of Lake Winnipeg and the rate of exploitation in the Great Lakes.⁵³ There was a similarity of interests and positions between the fishing companies, the Winnipeg Board of Trade and the local fisheries branch.⁵⁴ Wilmot largely viewed the problem of over exploitation as being limited to areas where whitefish congregated prior to spawning, and basically agreed with the Indians that "there is a gradual but steady depletion of the whitefish product of Lake Winnipeg going on, from the effects of the present system of fishing in certain parts of the Lake."⁵⁵ Apparently, the fish companies generally began the season fishing in the

north end of the lake, and then, at the end of August, moved their nets to the entrance of the Little Saskatchewan River. This, of course, prevented the passage of whitefish to the spawning grounds of Lake St. Martin.⁵⁶ Hence, Wilmot recommended closing off Sturgeon Bay (mouth of Little Saskatchewan River) and other parts of the lake to commercial fishing. Wilmot stated on no uncertain terms, "commercial fishing of any description should be wholly excluded from this bay [Sturgeon Bay]."⁵⁷

One aspect of the state's effort to resolve the conflict between Indians and settlers with the fishing companies, was a pluralistic harmonizing approach. Wilmot outlined this strategy thereby:

... that the Government should meet this subject in the spirit of reciprocity; as between the requirements of the Indians, the settler and the fish trader each have their rights and are entitled to full consideration as inhabitants of the country.⁵⁸

The effort by the state to harmonize the conflicts between antagonistic elements of the fishing industry is also characteristic of later periods. In this instance, Wilmot was agreeable to providing the Indians with an exclusive fishing grounds. (To a certain extent the restrictions placed upon where commercial operators could fish was a step towards this end.) On the other hand, when asked to report on the advisability of providing the Indian bands with more capital to fish he commented:

It would be undesirable that Indians should be supplied with large boats and longer nets in order to fish in open or deeper parts of the lake. If the Indians desire to fish in waters outside their reserves; or other waters set apart for them, they place themselves in competition with other fishermen, and should therefore make their own provision for such outside fishing.⁵⁹

Such a recommendation provided the basis of polarization between Indian fishermen and the American financed commercial companies. The control over capital would eventually determine who would control the fish resources.

The extent to which commercial companies were responsible for depletion is not easily quantified. Nevertheless, Wilmot strongly concluded that: "... if the improvident system of commercial fishing practised by fishing and trading corporations be allowed to prevail, as at present, the whitefish wealth of the lakes of the North-West will soon become exhausted."⁶⁰ In fact, depletion in the absolute sense that whitefish would become extinct was probably not the immediate problem. The more capital

intensive fishing companies were not facing this prospect. However, Indians had limited access and ownership of technology (capital) and as such could not move to new fishing grounds. The companies, on the other hand, equipped with steam powered tugs could move to new fishing grounds further out on the lake and to the north end of the lake. Map 2.2 indicates the importance of whitefish at the north end of the lake. Thus declining production had more of an economic and social effect since the Indian's available technology failed to yield the fish in the same quantity as previously. The prospects of depletion in the late 1880's and early 1890's contrasted with W. Urquhart's impression some twenty years earlier:

Yet nowhere, not even in those waters where the whitefish are most largely taken is there any sensible diminution in the supply. In some places in Lake Winnipeg, indeed, which have been fished year after year it has been found that the whitefish shifted their spawning grounds; but in no lake or river of the North West do I hear that they are becoming scarce, or that they are more difficult to obtain than they were years ago.⁶¹

The government's attempt to accommodate all of the various interests in a period, which marked the dominance of commercial use of fish over subsistence use, provided some limited protection to Indians. Some of Wilmot's suggestions became regulations (a commercial and domestic licensing system, restrictions of where commercial companies could operate). Although Wilmot attempted to regulate the fishing industry, and perhaps this may have aided Indians and settlers somewhat, he could not stop the process of commercialization of this resource.

Summary

The growth of a commercial fishing industry was conditioned by the demands of the metropolitan market. Prior to the establishment of a commercial fishing industry various fishes had been exploited by the Metis, treaty Indians and settlers. The penetration of a commercial fishery began with small firms who obtained fish from Indians and settlers through trade. On lakes Winnipeg and St. Martin Indians were rapidly drawn into a process where their efforts were directed towards production for commercial firms and an external market instead of production for direct utility. Assessments by Indian agents during the 1880's suggest that Indian involvement in commercial fishing provided little aside from trade goods and wages.

In fact it promoted an uneven development by distracting Indians from reserve gardening and related agricultural development. Moreover the commercial fishing of native fisheries challenged the native access to fish resources. Concern over the failure of native fisheries resulted in the first investigation of the industry. Wilmot's recommendations, while aspiring to maintain some fish resources for settlers and Indians, really attempted to harmonize the conflicts between commercial fishing and production for direct utility. The outcome did not restrict the development of this new staple.

Notes and References

- 1 C.S.P., 1875, Fisheries, VIII, No. 5, Appendix 21, pp. 172-173.
- 2 C.S.P., 1873, Fisheries, VI, No. 8, Appendix T, p. 194.
- 3 Ibid.
- 4 C.S.P., 1876, Fisheries, VIII, No. 8, Appendix 21, p. 225.

5 It is perhaps that the cost of whitefish from the Little Saskatchewan River could not compete with whitefish from the south end of Lake Winnipeg and not the size of a local market that resulted in the failure of this first commercial venture. Judson has also stated that fish in the Red and Assiniboine rivers would limit the success of a local market. Thomas Andrew Judson, "The Freshwater Commercial Fishing Industry of Western Canada," (unpublished Ph.D. thesis, University of Toronto, 1961), p. 24. However, it should be realized that the Red and Assiniboine rivers were never important suppliers of whitefish.

- 6 C.S.P., 1876, Fisheries, VIII, No. 8, Appendix No. 21, p. 225.
- 7 C.S.P., 1878, Fisheries, IX, No. 1, Appendix No. 19, p. 309.
- 8 C.S.P., 1890, Fisheries, XXIII, No. 17, Appendix No. 8, p. 234.
- 9 C.S.P., 1887, Fisheries, XX, No. 16, Appendix No. 9, p. 311.
- 10 C.S.P., 1886, Fisheries, XIX, No. 11, pp. 331-332
- 11 C.S.P., 1887, Fisheries, XX, No. 16, Appendix No. 9, p. 313.
- 12 Ibid., p. 312.
- 13 Judson, op. cit., p. 26.

14 Barbour stated "the Icelandic settlers had come to Lake Winnipeg in the years 1873 to 1880 and these together with the eastern fishermen insured an ample supply of experience." A.S. Barbour, "A Brief History of Manitoba Fisheries," Papers Read Before the Historical and Scientific Society of Manitoba, Series III, No. 12, (1957), p. 42.

- 15 C.S.P., 1888, Fisheries, XXI, No. 6, Appendix No. 9, p. 307.
- 16 C.S.P., 1890, Fisheries, XXIII, No. 17, Appendix No. 8, p. 241.
- 17 C.S.P., 1882, Indian Affairs, XV, No. 6, p. 88.
- 18 C.S.P., 1883, Indian Affairs, XVI, No. 4, p. 150.
- 19 C.S.P., 1887, Fisheries, XX, No. 16, Appendix No. 9, p. 318.

20 C.S.P., 1884, Indian Affairs, XVII, No. 4, p. 144. Additionally it was reported in 1885 that "large fisheries are carried on at Dog Head, and the Indians everywhere protest strongly against this wholesale slaughtering one of the principal source of their living." C.S.P., 1886, Indian Affairs, XIX, No. 4, p. 132.

21 C.S.P., 1885, Indian Affairs, XVIII, No. 3, p. 129.

22 C.S.P., 1887, Indian Affairs, XX, No. 6, p. 79.

23 Ibid., p. 59

24 C.S.P., 1888, Indian Affairs, XXI, No. 15, p. 54.

25 C.S.P., 1886, Indian Affairs, XIX, No. 4, p. 50.

26 Similarly the prospect of earning money from fishing and therefore a 'higher' standard of living was contingent upon the demand for fish, thus in 1899 it was recorded: "last winter--although it was very severe--owing to the high price paid to fish, the Indians lived better than for several years. This was particularly noticeable at Water Hen River and Ebb and Flow Reserves: an inspection of their homes disclosed many of the comforts of life in the shape of stoves, clocks, tableware, clothing, harness, &c., all new, and made from last winter fishing." C.S.P., 1900, Indian Affairs, XXXIV, No. 14, p. 95.

27 C.S.P., 1889, Indian Affairs, XXII, No. 16, p. 51.

28 See Arthur Ray, The Indians in the Fur Trade (Toronto: University of Toronto Press, 1974) and Russ Rothney, "Mercantile Capital and the Livelihood of the Residents of the Hudson Bay Basin" (unpublished Masters Thesis, Winnipeg: University of Manitoba, 1975).

29 C.S.P., 1884, Indian Affairs, XVII, No. 4, p. 144.

30 As in the fur trade the fish trade promoted divisions: it was recorded that: "the Little Saskatchewan band appears to be divided into two sections, viz, residents upon the reserve and non-residents, the latter being more numerous. They devote their time to catching white-fish; large numbers of which are secured by them at the mouth of the Little Saskatchewan, near Lake Winnipeg, and the fish are sold by them on the spot to fish dealers as soon as caught." C.S.P., 1888, Indian Affairs, XXI, No. 15, p. xlvii.

31 C.S.P., 1889, Indian Affairs, XXII, No. 16, p. liii.

32 C.S.P., 1890, Indian Affairs, XXIII, No. 12, p. 310.

33 Ibid. An indication of changes to fish populations is a decline in the size of fish, Indian Agent Muckle reported that "I observe that all fish in the southern part of Lake Winnipeg, with the exception of sturgeon, are smaller than they used to be, and the Indians at the mouth of the Red River had, in consequence, to make the mesh of their nets

smaller." C.S.P., 1887, Indian Affairs, XX, No. 6, p. 49. Also the substitution of one fish for another indicates depletion. In 1886 it was reported for Fort Alexander that only 20,000 whitefish were caught, but "they made up their catch, however, in tulippies [sic], a fish somewhat like a whitefish, but smaller, of which they caught over 90,000." Ibid., p. 50.

34 C.S.P., 1891, Indian Affairs, XXIV, No. 18, p. 33.

35 Ibid., p. 199.

36 Samuel Wilmot, Special Report on the Preservation of Whitefish Fisheries of Lake Winnipeg, C.S.P., 1891, Fisheries, XXIV, No. 8, Appendix No. 3, p. 58.

37 C.S.P., 1890, Indian Affairs, XXIII, No. 12, pp. 177-178.

38 Ibid.

39 C.S.P., 1885, Fisheries, XVIII, No. 9, p. 298.

40 C.S.P., 1886, Indian Affairs, XIX, No. 4, p. 128.

41 C.S.P., 1890, Fisheries, XXIII, No. 17, Appendix No. 8, p. 233.

42 C.S.P., 1890, Fisheries, XXIII, No. 17, Appendix No. 8, p. 234.

43 C.S.P., 1890, Indian Affairs, XXIII, No. 12, p. 176.

44 Ibid.

45 Ibid.

46 C.S.P., 1889, Indian Affairs, XXIII, No. 16, p. 160.

47 Judson, op. cit., p. 32.

48 C.S.P., 1888, Fisheries, XXI, No. 6, Appendix No. 9, p. 302.

49 C.S.P., 1890, Indian Affairs, XXIII, No. 12, p. 49.

50 C.S.P., 1891, Indian Affairs, XXIV, No. 18, p. 202. Additional evidence of waste by fish companies came during a Royal Commission of 1910 in which Capt. Robinson admitted "Oh yes, the first fifteen years fishing was a tremendous slaughter, but during the last six or seven years they are recovering, there has been no slaughter, no waste." P.A.C., RG-23, Vol. 366, 3216 (3).

51 C.S.P., 1889, Indian Affairs, XXII, No. 16, p. 160.

52 Wilmot, op. cit., p. 56.

- 53 Ibid.
- 54 Judson, op. cit., pp. 35-36.
- 55 Wilmot, op. cit., p. 61.
- 56 Ibid., p. 57.
- 57 Ibid., p. 60.
- 58 Wilmot, op. cit., p. 56.
- 59 Ibid., p. 62.
- 60 Wilmot, op. cit., p. 62.
- 61 C.S.P., 1873, Fisheries, XI, No. 8, Appendix T, p. 194.

CHAPTER 3 THE CONSOLIDATION OF COMMERCIAL FISHING 1890-1910

Introduction

In the 1890's the fishing industry became increasingly capital intensive. For commercial production to be profitable, it was necessary to increase production and this meant the exploitation of more distant fisheries such as the north end of Lake Winnipeg and the Saskatchewan and Nelson rivers. As fishing expanded more capital and effort were required. Not only did capital investment in the industry increase but the ownership and organization of this capital became more concentrated. Since this increased capitalization and resulting increased production was oriented towards the external U.S. market it favoured the penetration of American capital. Concomitantly, local marketing of Manitoba fish was reduced. Not surprisingly, then, the development of this industry--that is the expanded development of a commercial fishing industry, renewed the fear of depletion. The consolidation of a commercial fishing industry was largely conditioned by the needs of the metropolitan economy. Efforts by the government, through investigation and regulation, did not alter the various social crises that this staple production brought about.

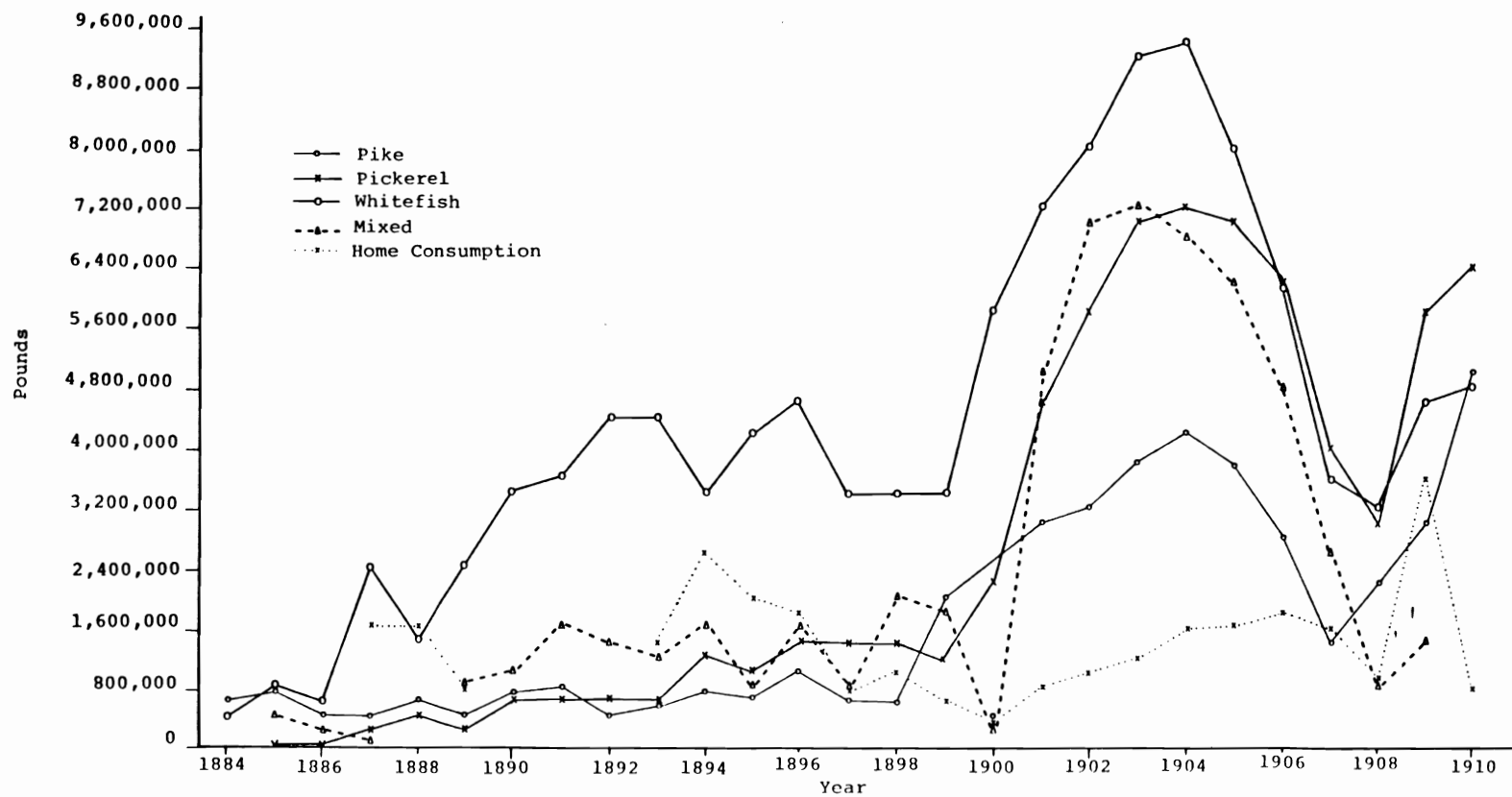
3.1 Aftermath Of The Breakdown Of Native Fisheries

3.1.1 Expanded Production 1891-1904

An examination of fish production data for the years 1891 to 1904 (Figures 3.1 and 3.2) suggests that the fear of depletion in the late 1880's may have been premature, or alternatively the regulations on commercial fishing instituted by the Fisheries Branch and the establishment of a hatchery at Selkirk (1893), may have put the industry on a sustained yield basis. However, realizing that these figures are at best crude in their absolute value, and considering that their only real value may be as clues to relative changes from year to year, a closer examination of the specifics of production and the forces of production is required.¹ Data on production are presented by species and lakes in order to provide a more accurate indication of the relative strengths of fish stocks (Figures 3.3 to 3.8). Used in conjunction with Maps 3.1 to 3.3, the spatial aspects of production figures indicates change. Lake Winnipeg clearly had the major fishery (Figure 3.3).

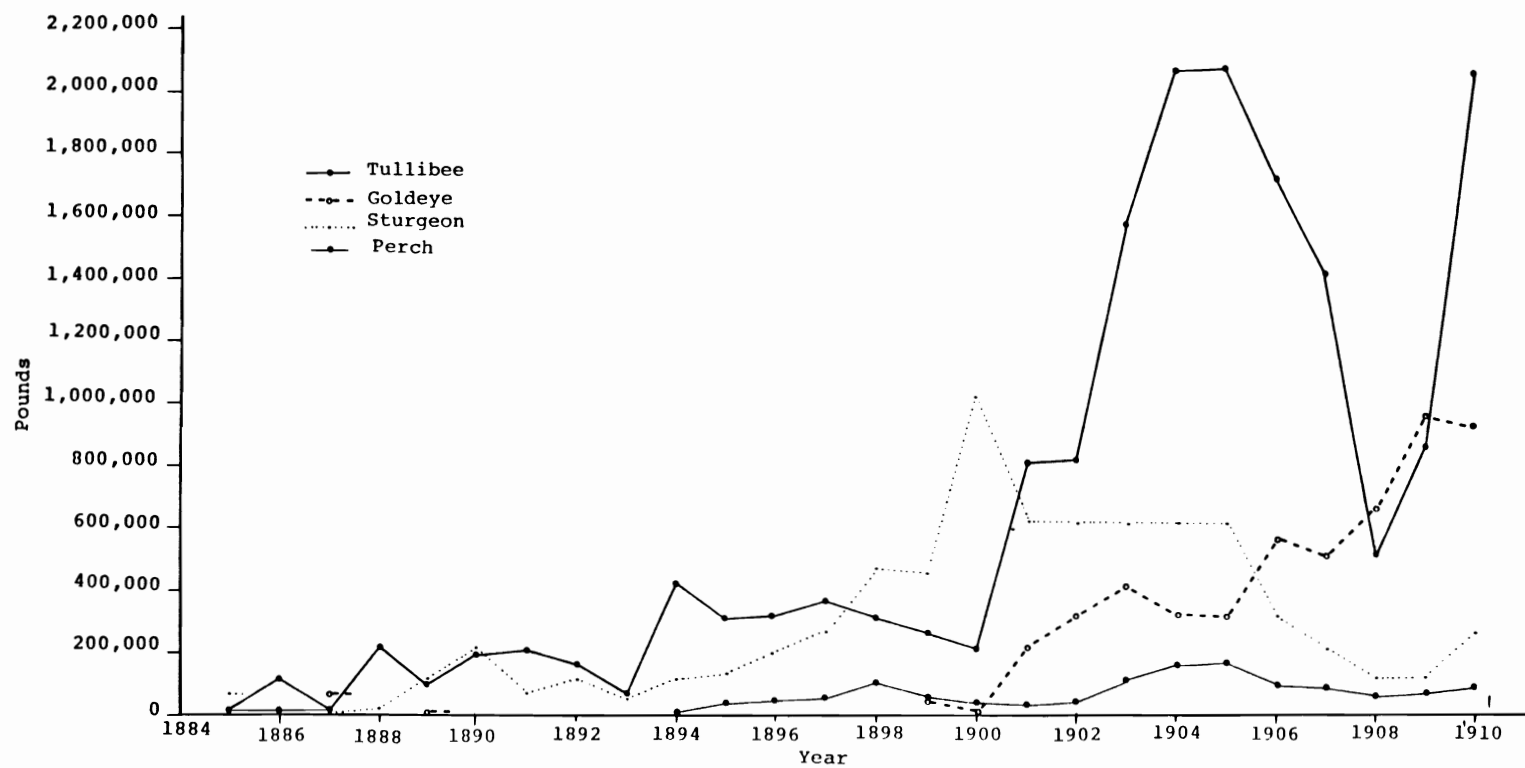
The expanded production of the 1880's was encouraged by the

FIGURE 3.1 ANNUAL PRODUCTION, MANITOBA, BY SELECT SPECIES, 1884-1910



Source: Canada, Sessional Papers, Fisheries.

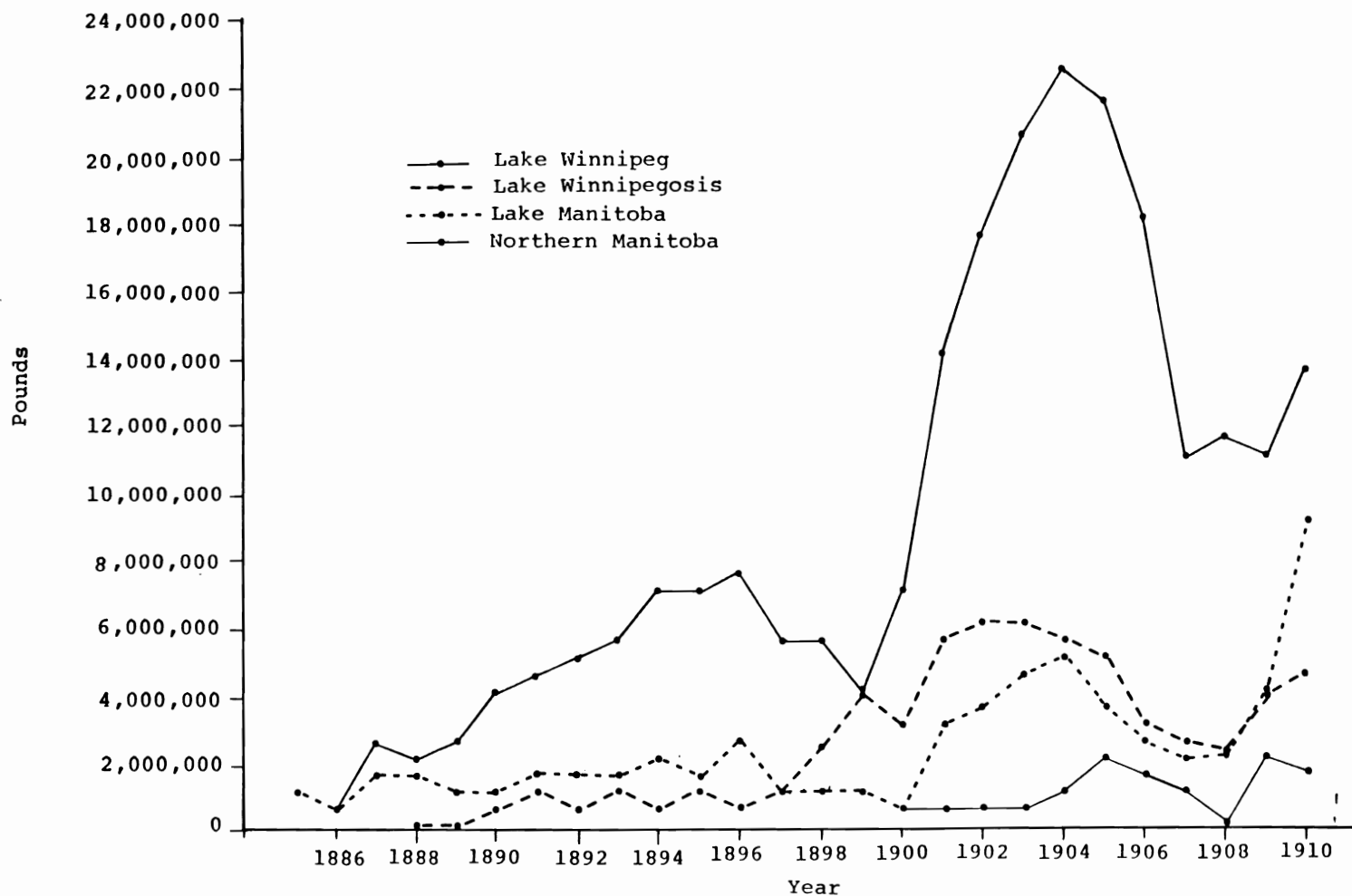
FIGURE 3.2 ANNUAL PRODUCTION OF MINOR FISH SPECIES, MANITOBA, 1884-1910¹



Source: Canada, Sessional Papers, Fisheries.

¹The 1900 figure is the peak of sturgeon production during the entire history of commercial fishing in Manitoba. Note that goldeye increases in a period (1904-1908) when all other species were declining.

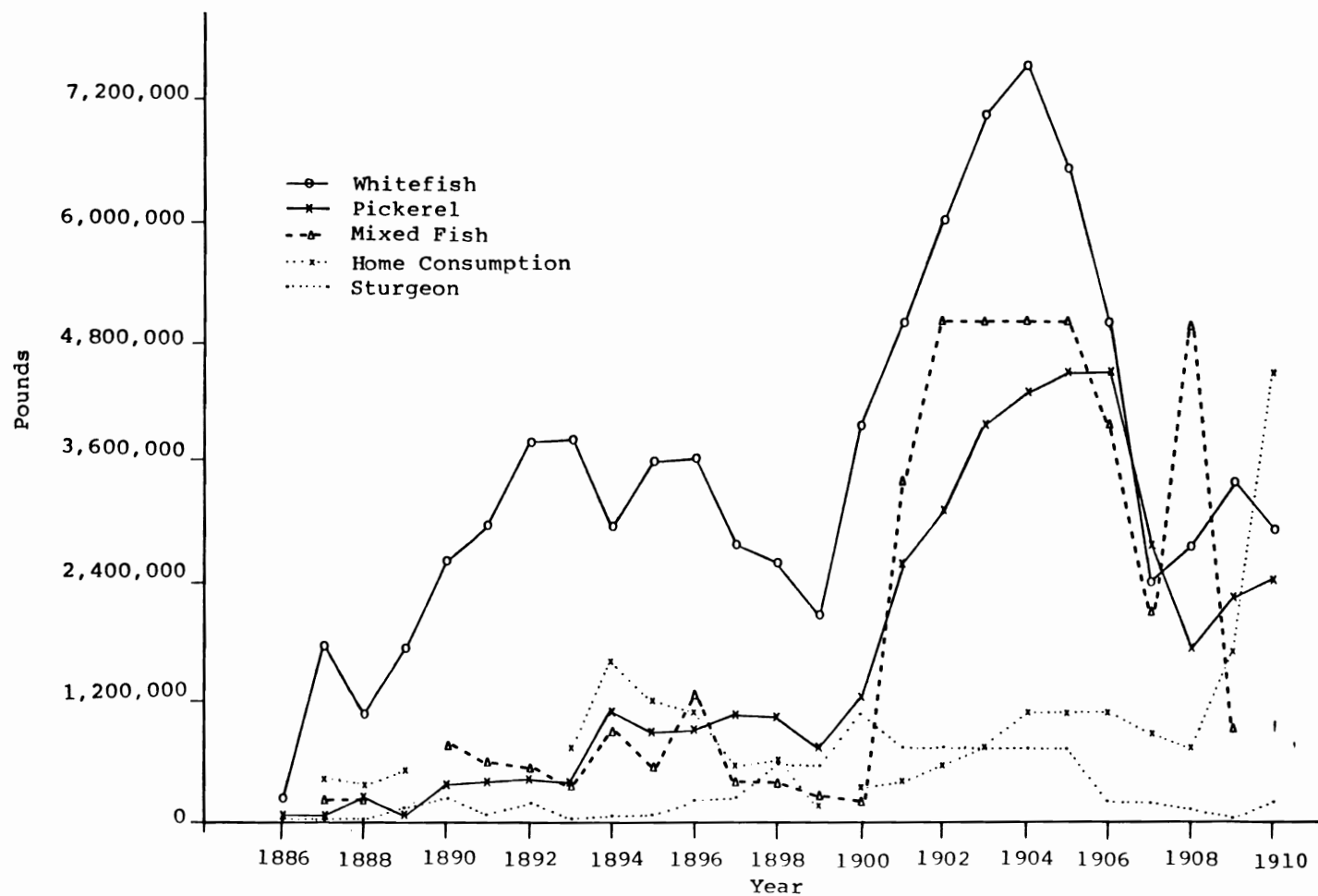
FIGURE 3.3 MANITOBA FISH PRODUCTION, BY LAKE, 1885-1910¹



Source: Canada, Sessional Papers, Fisheries.

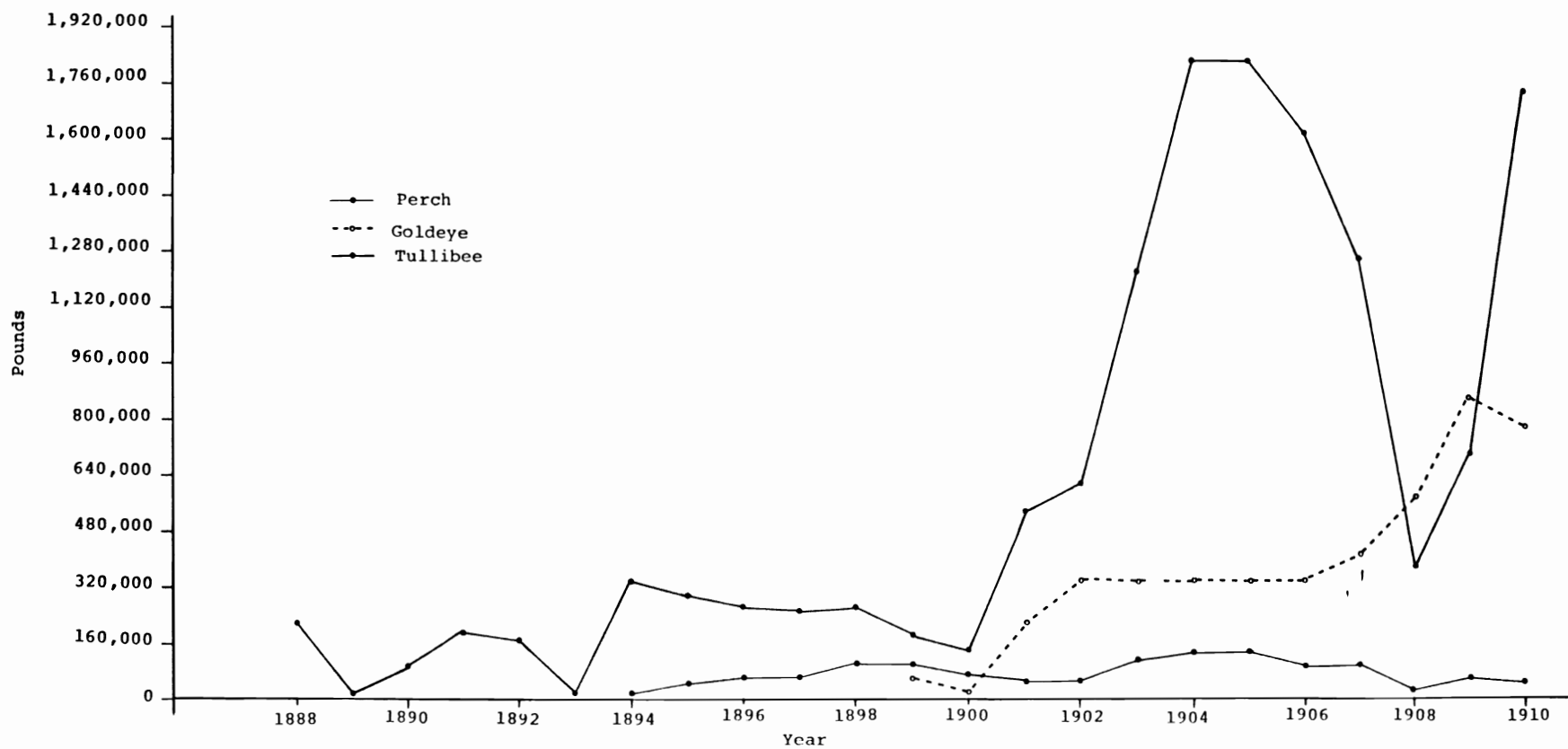
¹In 1905 Lake Manitoba was closed to summer fishing and in 1906 Lake Winnipegosis was closed to summer fishing.

FIGURE 3.4 ANNUAL PRODUCTION FOR LAKE WINNIPEG, BY SELECT SPECIES ,
1886-1910

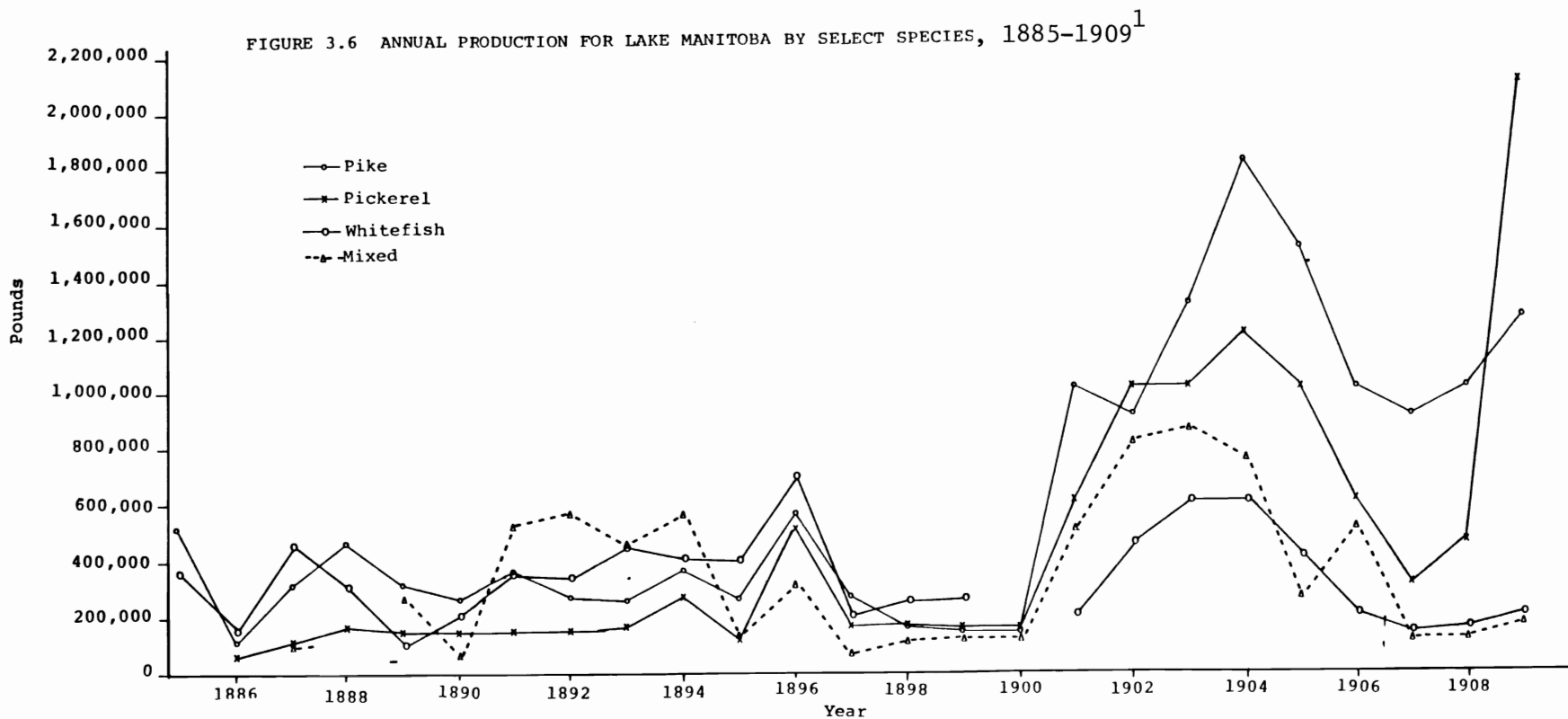


Source: Canada, Sessional Papers, Fisheries.

FIGURE 3.5 ANNUAL PRODUCTION OF MINOR SPECIES, LAKE WINNIPEG, 1888-1910



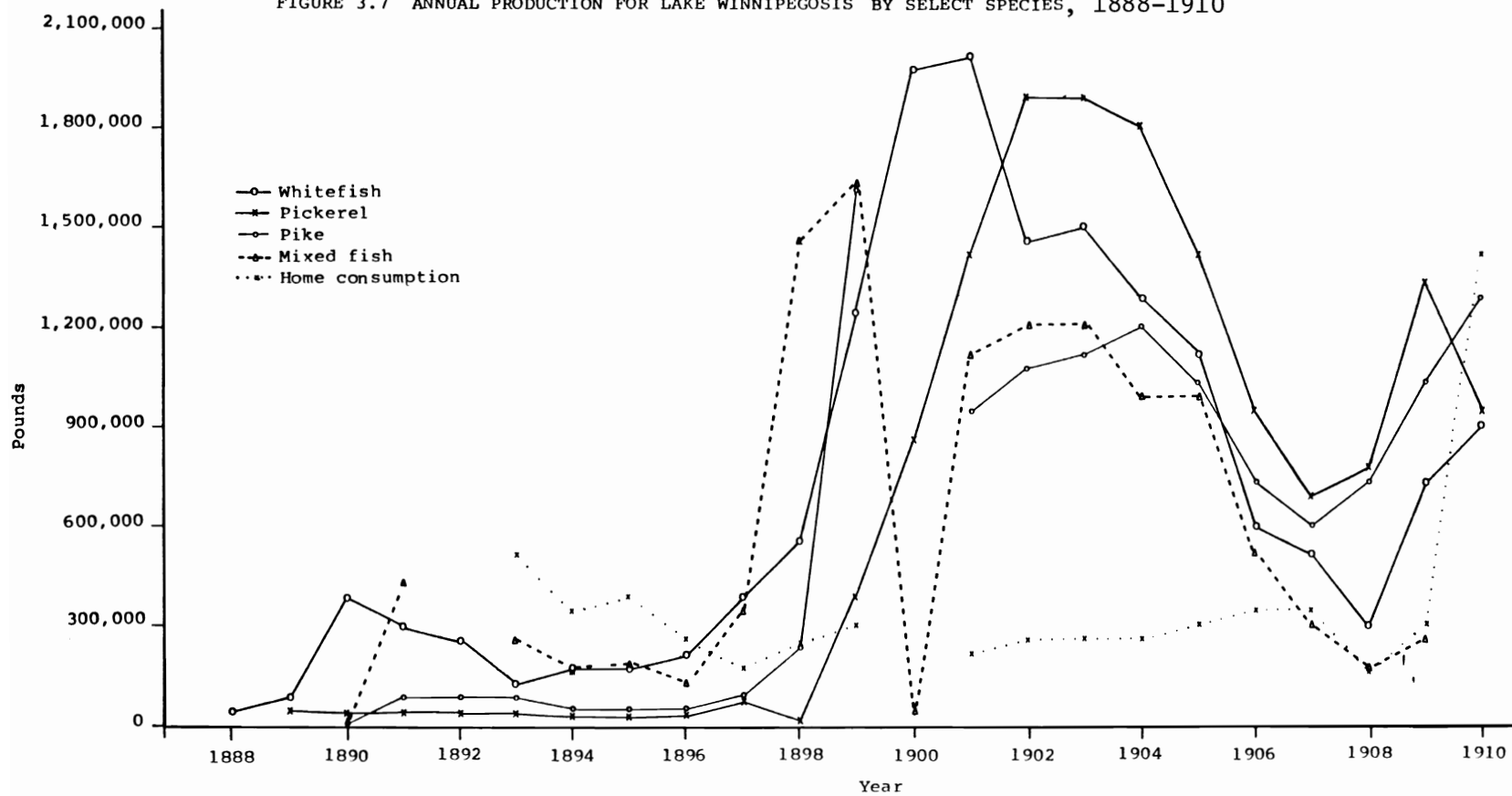
Source: Canada, Sessional Papers, Fisheries.



Source: Canada, Sessional Papers, Fisheries.

¹Note in the 1890's whitefish, pickerel and pike are relative similar until the intensification of commercial fishing, after which whitefish ceases to be significant. Summer fishing was closed on Lake Manitoba in 1905.

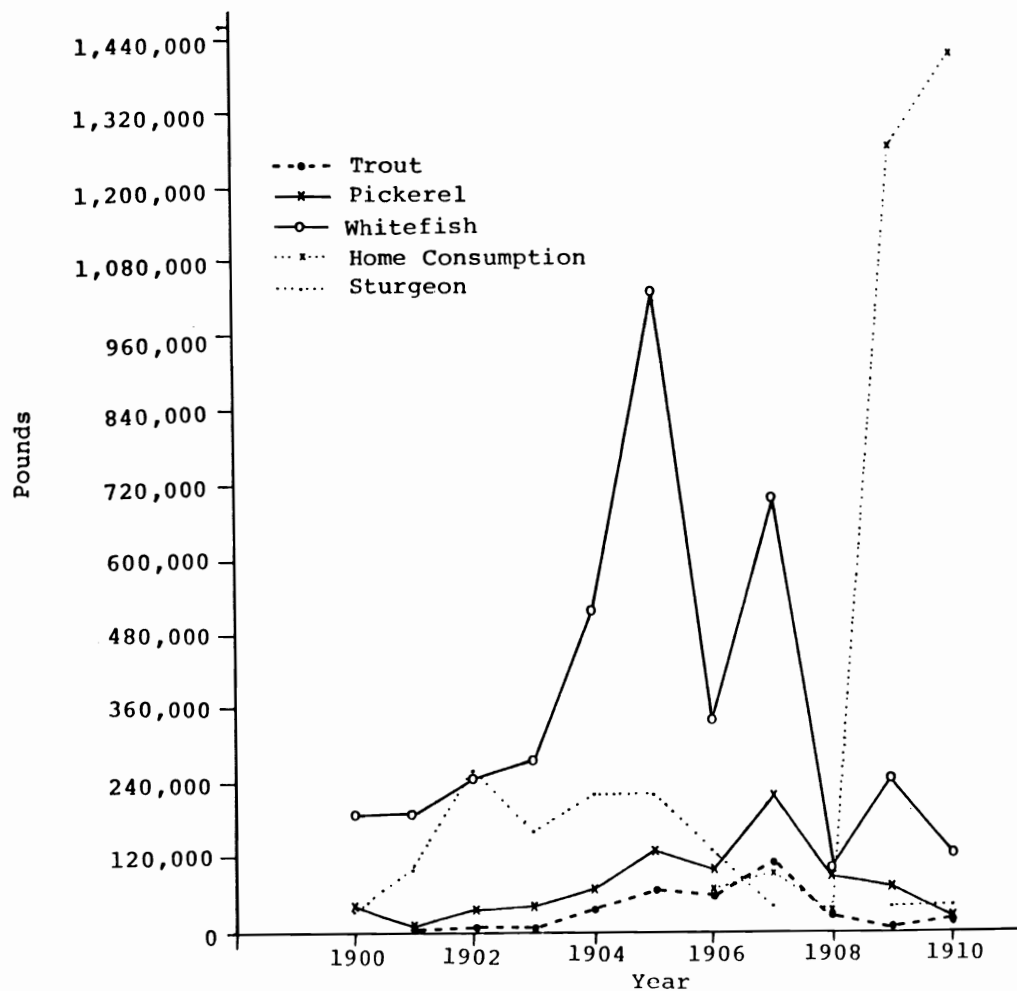
FIGURE 3.7 ANNUAL PRODUCTION FOR LAKE WINNIPEGOSIS BY SELECT SPECIES, 1888-1910¹



Source: Canada, Sessional Papers, Fisheries.

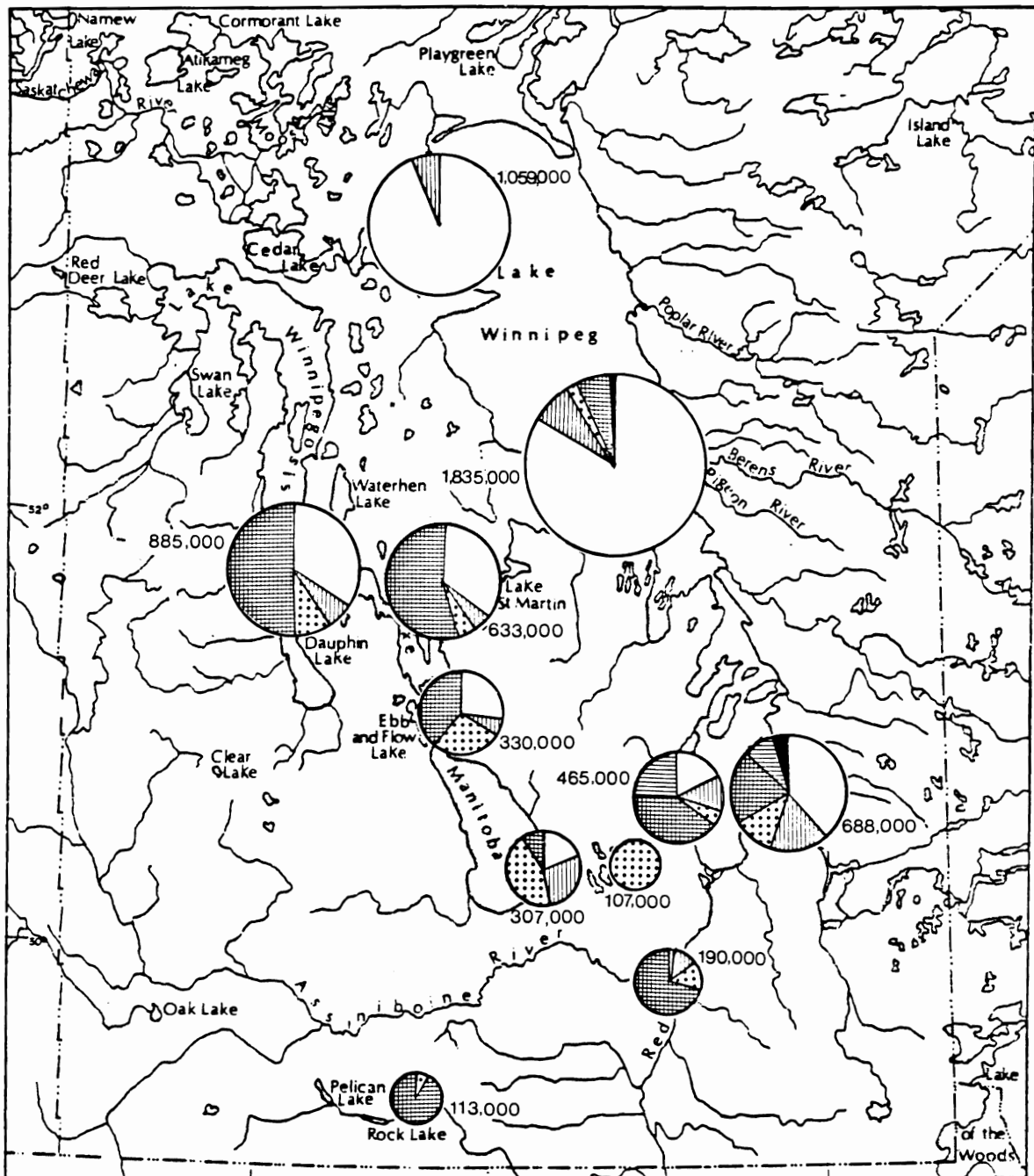
¹Note the rapid expansion of commercial fishing from 1896, however pickerel production surpasses whitefish in a few short years. In 1906 Lake Winnipegosis was closed to summer fishing.

FIGURE 3.8 ANNUAL PRODUCTION, NORTHERN MANITOBA,
BY SELECT SPECIES, 1900-1910¹



Source: Canada, Sessional Papers, Fisheries.

¹Note the increase in home consumption probably reflects a change in statistical recording.



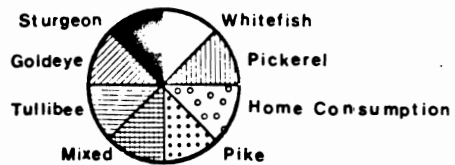
MAP 3.1
PRODUCTION 1891

Scale = 1:3,500,000

Production proportional to area

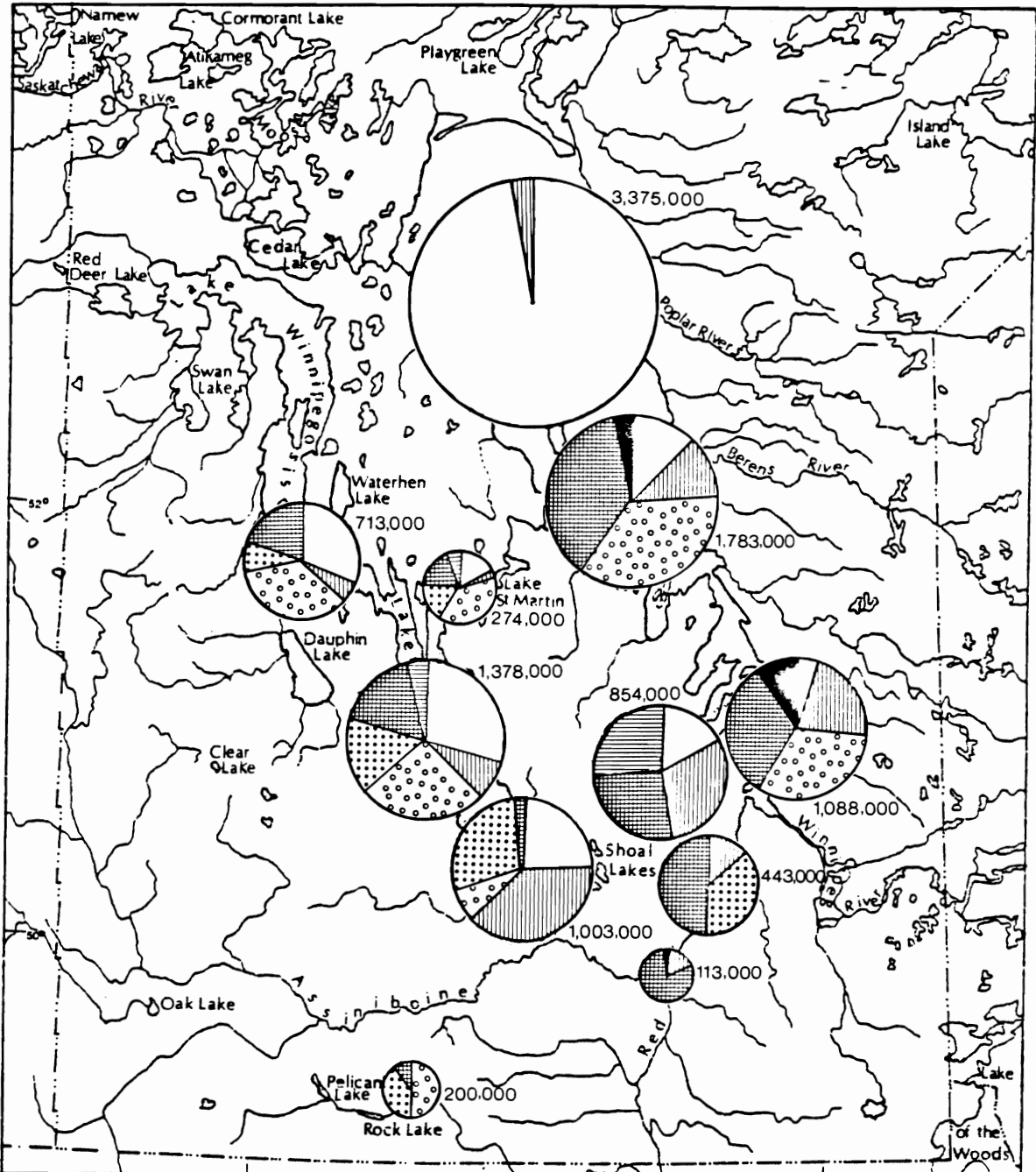
Note Mixed includes Home Consumption

SOURCE: Canada, Sessional Papers, Fisheries.



1,000,000 Pounds of Fish

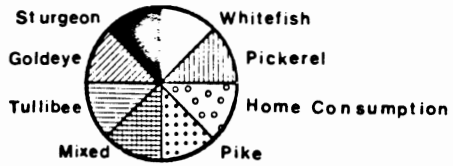




MAP 3.2
PRODUCTION 1896

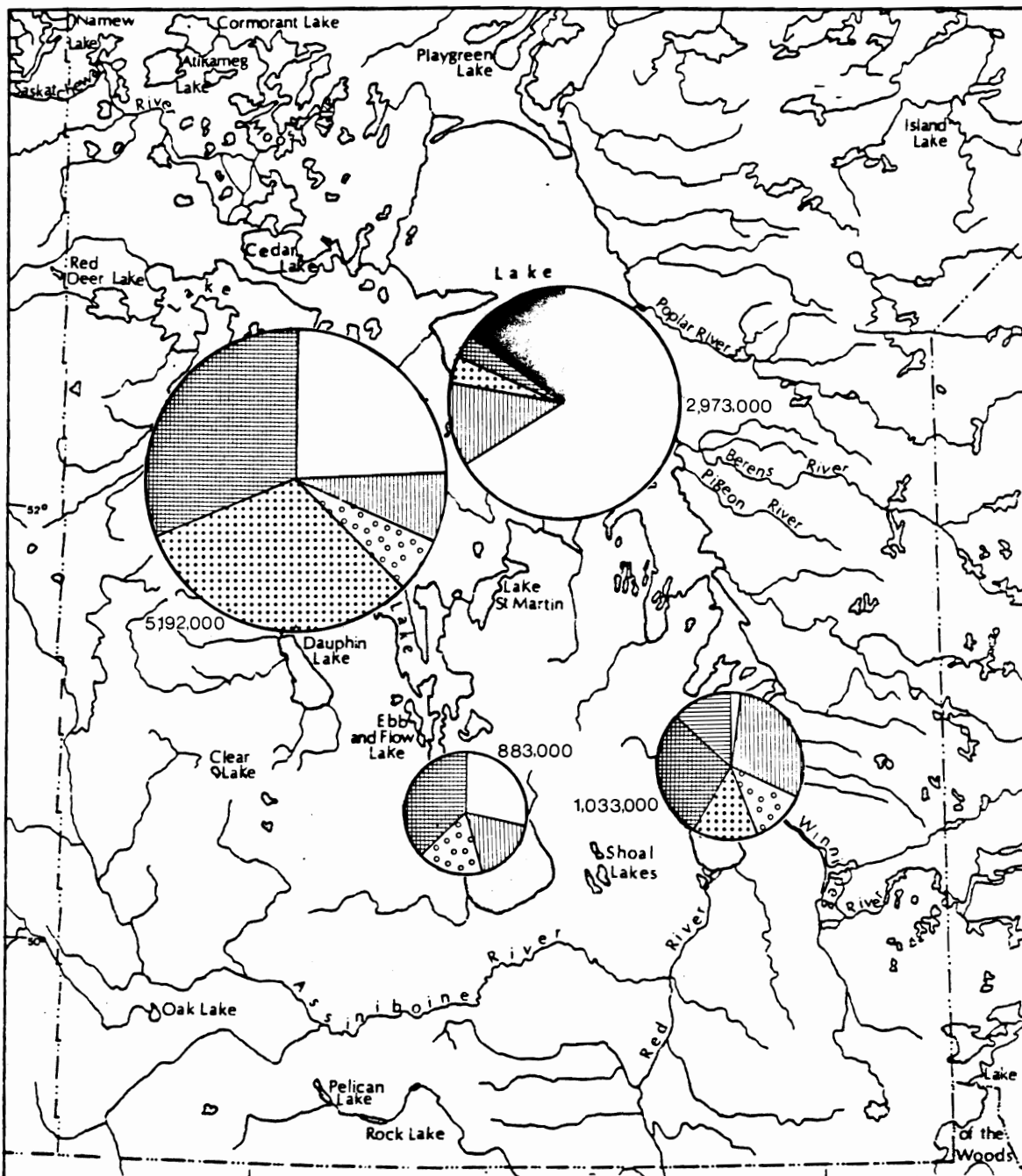
Scale: 1:3,500,000
Production proportional to area

SOURCE: Canada, Sessional Papers, Fisheries.



1,000,000 Pounds of Fish

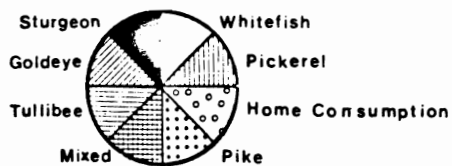




MAP 3.3
PRODUCTION 1899

Scale= 1:3,500,000
Production proportional to area

SOURCE: Canada, Sessional Papers, Fisheries.



1,000,000 Pounds of Fish



Winnipeg Board of Trade. In 1888, even the United States Consul at Winnipeg spoke of the importance of this commodity to the potential U.S. markets.² The positive outlook of the industry was well articulated by Fisheries Inspector McQueen who stated: "taking it altogether it is safe to say that fishing will in a few years be second only to farming in Manitoba ..."³ McQueen was determined to argue that:

The fishing industry in Manitoba is growing steadily in importance and if not hampered too much by unnecessary restrictions, promises to develop into one of the leading industries of the provinces. ... The trade is now affording employment to a large number of people in winter, who would probably be idle [otherwise] ...⁴

This enthusiastic perspective was rooted in the earlier period of production and articulated by the state regulatory agency. This position was repeated by the new Fisheries Inspector La Touche Tupper: "While the resources of the lake should be developed as much as possible ... I have no fear of the lake being injured by commercial fishing as carried on now..."⁵ At this same point Tupper argued that over-fishing could be prevented by restricting the entry of any new firms. This, of course, would promote conditions for monopoly. However, with the economic depression in the mid 1890's it became difficult to sell Manitoba fish at profitable prices. Hence, the problem was no longer simply a problem of production, but one of disposal. As the fisheries Inspector observed in 1896:

I am convinced more fishing might safely be allowed in the north end of the lake, but [I] certainly would not advise its extension until a market could be found for more than what is taken now. It is not now a question of the quantity to be safely taken without depletion, it is a question of only catching what can profitably be marketed.⁶

It is also suggesting that a local market would not support a rapid expansion of production.

Figure 3.1 shows that fish production in Manitoba expanded in the early 1890's, dropped in the late 1890's, and increased relatively rapidly after 1899. A detailed examination of the data and other sources is necessary to determine the factors that are responsible for these changes.

Between 1899 and 1904, whitefish production increased, and peaked in 1904 (Figure 3.1). This trend suggests that depletion of fish stocks had not yet occurred. Similarly, pickerel catches grew very rapidly after 1900 and surpassed whitefish and although tullibee and goldeye fisheries

never reached the production levels in this period of those for whitefish and pickerel, they too were exploited more intensively (see Figure 3.2). The category mixed fish (Figure 3.1) appears to be comprised of a group of unsorted fish, which at times may include the commercial fishes (whitefish, pickerel), but generally included coarse fish and fish that did not enter into commercial trade. Home consumption again blurs the actual species production and it represents an estimate of fish eaten by fishermen, settlers and Indians. Home consumption also represents noncommercial production.

Figures 3.4 and 3.5 indicates the production of various species on Lake Winnipeg. In the 1890's whitefish yields were dominant. However, in relative terms pickerel production increased after 1899. Whitefish production declined after 1904 while pickerel yields peaked in 1906. Sturgeon production on Lake Winnipeg increased rapidly but peaked in 1900 and declined afterwards. Tullibee production also increased during this period (Figure 3.5).

Figure 3.6 shows the catches of whitefish parallel those of pike, pickerel and mixed fish. In the late 1890's a decline in yields occurred. However production increased in the early 1900's. After 1900 the Lake Manitoba fishery demonstrated a capacity to support relatively higher yields of pike and pickerel.

Figure 3.7 indicates production on Lake Winnipegosis, which was not commercially exploited as early as lakes Winnipeg and Manitoba. In the late 1890's with the drop of whitefish production on Lake Manitoba and to a certain extent on Lake Winnipeg, Lake Winnipegosis was brought into production. Fishermen were encouraged to migrate to Lake Winnipegosis. In 1899 Lake Winnipegosis fishermen were paid 2½ cents per pound, considerably higher than Lake Winnipeg.⁷ (Whereas on Lake Winnipeg fishermen were paid 2½ cents per fish.) Additionally, pickerel yields surpassed whitefish after 1902.

At the turn of the century, records indicate that commercial production was pushed north into the Lower Saskatchewan drainage system. Sturgeon was the initial interest for commercial fishing and in 1897 a great many sturgeon were brought down from Cedar Lake through Winnipegosis or Grand Rapids.⁸ Also, production was expanded up into the Nelson River, chiefly for sturgeon, and by 1903 commercial production had reached up to

Sipiwesk.⁹ Figure 3.8 indicates that the industry was still in an expansive state in Northern Manitoba. Winter production was feasible by the use of horse freight teams whereby fish were hauled to the nearest railroad station.¹⁰ Whitefish production from Northern Manitoba peaked in 1905 when yields had declined on Lake Winnipegosis.

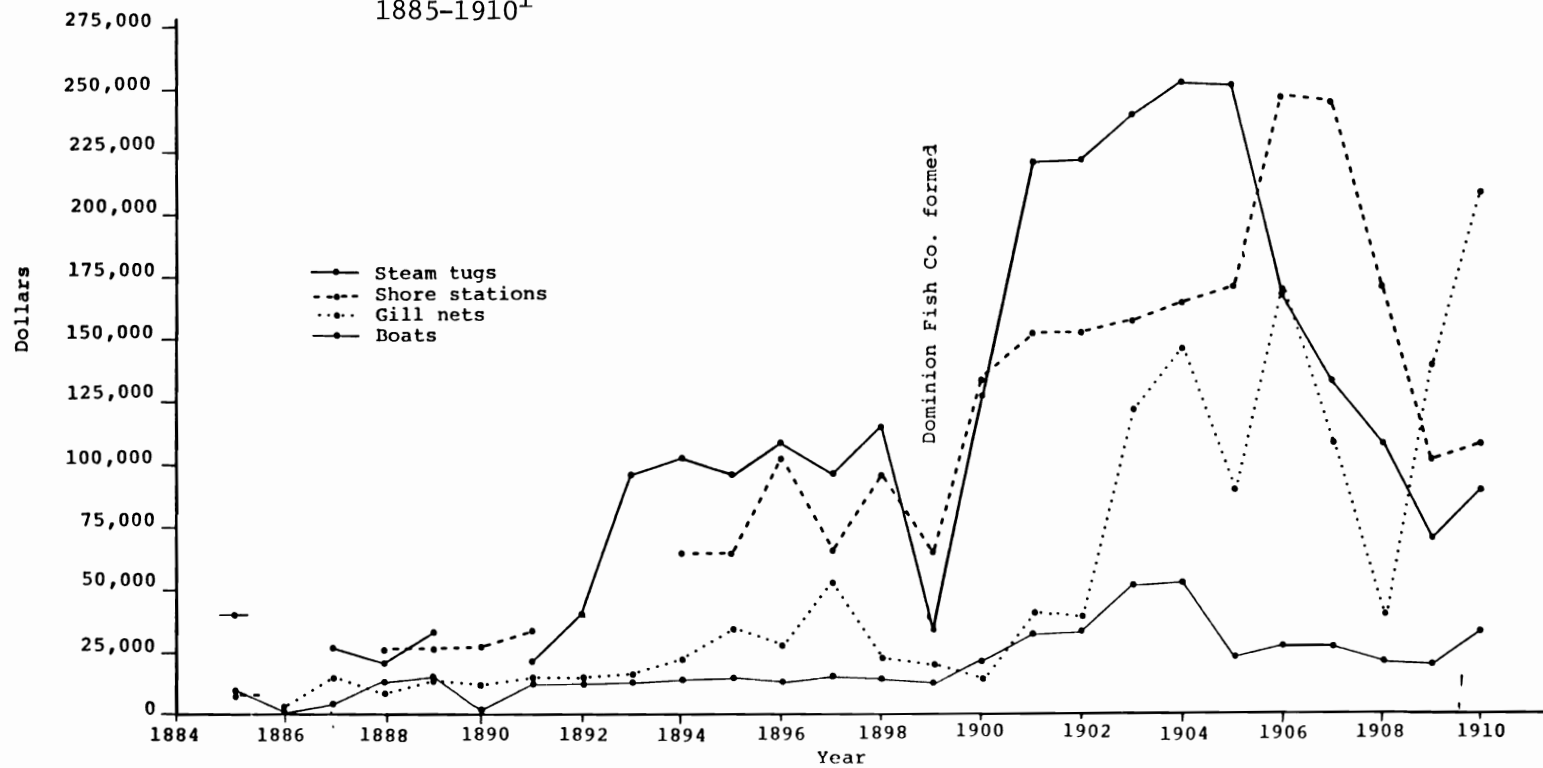
Maps 3.1-3.3 show the spatial character of fish yields by species in the 1890's. The decline of whitefish production from the southern portion of Lake Winnipeg is suggested by these maps. Additionally, the importance of Lake Winnipegosis fishery is indicated in 1899.

3.1.2 Capitalization, Oligopoly, And External Control

The expanded production from the 1890's was achieved by a similarly rapid capitalization process. Figures 3.9 and 3.10 demonstrate the growth of capital in the Manitoba fishing industry. Much of this is concentrated on Lake Winnipeg, however, steam tugs and fish stations--signs of capital investment--were eventually part of the process of fishing on lakes Manitoba and Winnipegosis. Additionally, tugs were used to haul fish out of the Lower Saskatchewan and Nelson river systems. Fishing on the north end of Lake Winnipeg was more costly than in the south. Consequently, capital became increasingly concentrated in the commercial fishing sector as opposed to the individual fisherman fishing under a domestic licence.

Figure 3.11 is a reconstruction of the development of commercial fishing companies on Lake Winnipeg, based on data from the Canadian Sessional Papers (Annual Reports of the Department of Indian Affairs and Fisheries Branch), public records of the Fisheries Branch located in the Public Archives of Canada and various secondary sources. Clearly, the trend towards a small number of firms (oligopoly) is the dominant characteristic of the period. Records of the numerous small traders become scant suggesting they were unable to continue as independent fishermen/traders. A formal monopoly is achieved in 1898 with the establishment of the Dominion Fish Company operated in Manitoba by Captain Wm. Robinson.¹¹ Thus, by 1899, the capital employed on Lake Winnipeg totalled 88,263 dollars and 80,610 dollars can be identified with the commercial firms.¹² In the same year, Lake Winnipeg produced 1,997,520 pounds of whitefish and 1,975,020 pounds (98.8 percent) were caught by commercial companies.¹³ On Lake Manitoba a similar process occurred with small traders being re-

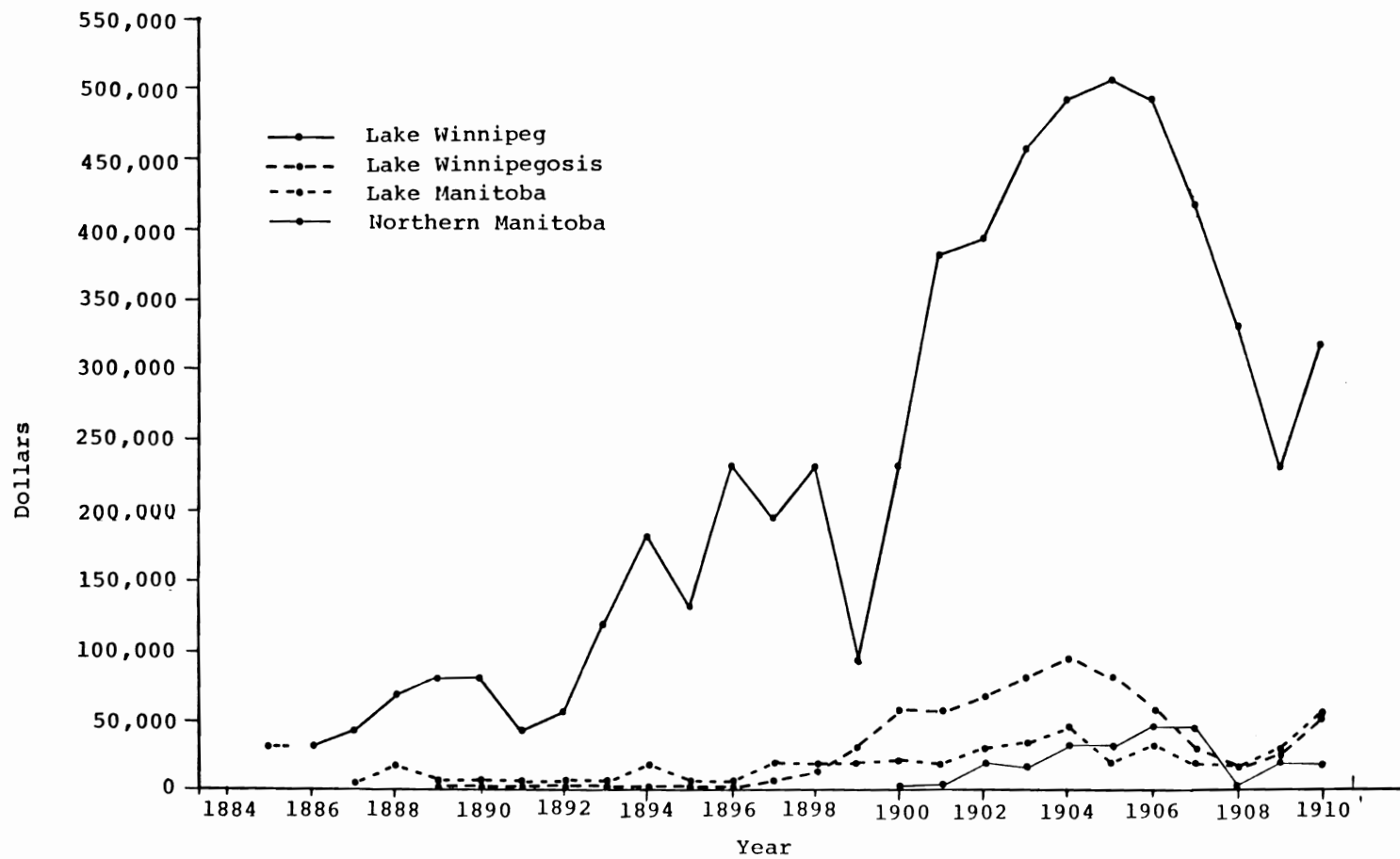
FIGURE 3.9 NATURE OF CAPITAL INVESTMENTS IN MANITOBA'S COMMERCIAL FISHING INDUSTRY, 1885-1910¹



Source: Canada, Sessional Papers, Fisheries.

¹Note that while steam tugs and shore installations are the major investments, this is more evident on Lake Winnipeg.

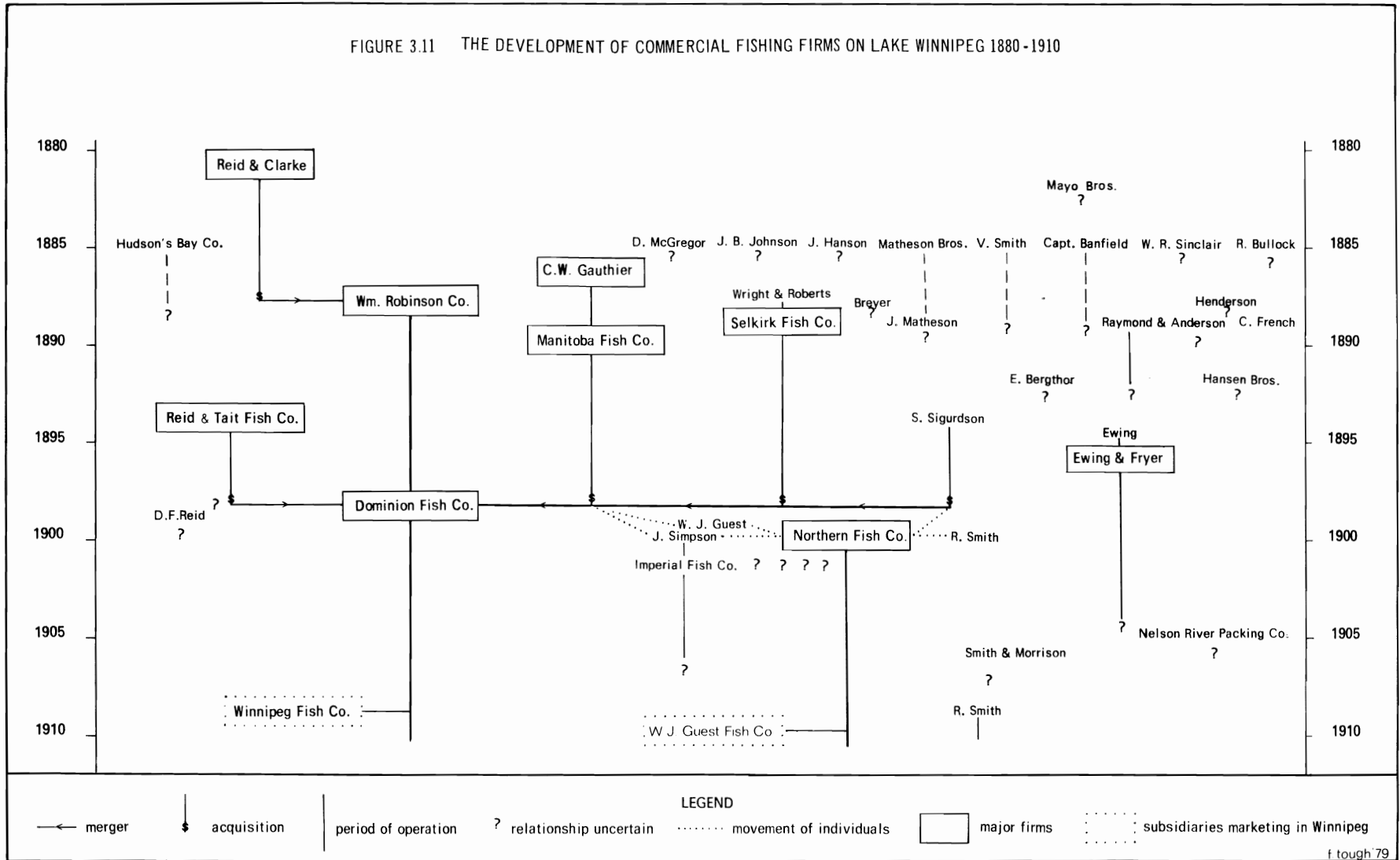
FIGURE 3.10 CAPITAL INVESTMENTS, BY LAKE, 1885-1910¹



Source: Canada, Sessional Papers, Fisheries.

¹The total dominance of Lake Winnipeg is clear in this period.

FIGURE 3.11 THE DEVELOPMENT OF COMMERCIAL FISHING FIRMS ON LAKE WINNIPEG 1880 - 1910



placed by Hugh Armstrong (eventually Armstrong Trading Company). Also this process extended from Lake Winnipegosis to the Lower Saskatchewan River with Captain Coffey and Merritts' fishing activities.

Figure 3.12 demonstrates that the rate of capital investment on Lake Winnipeg increased from 1892 onwards and increased momentum after 1900 (see Figure 3.10). Prior to 1892 the spread between the various components of capital--nets, vessels (steam tugs, barges), plant (wharves, ice houses, freezers) and boats was not great. However, the trend towards greater and greater investment in vessels and plants in the 1890's indicated the increasingly capitalist nature of the fishing industry. To a certain extent, the growing demands for capital on Lake Winnipeg were the result of the great distances that had to be travelled to reach the fisheries. Furthermore the exporting of fresh fish necessitated the development of cold storage facilities. Steam tugs were used with sail boats to facilitate their movement to the fishing grounds. Eventually (1906), the value of stations surpassed that of vessels.

The level of capital investments for lakes Manitoba and Winnipegosis is established in Figure 3.10 (see also Figures 3.15 and 3.16). The total investment of capital in these lakes is far less than in Lake Winnipeg, although the investment of capital on Lake Winnipegosis achieves higher levels than Lake Manitoba. In both these lakes, gill nets are a key component of capital. When comparing lakes Winnipegosis and Manitoba with Lake Winnipeg, it is apparent that intensive capital investment occurred where the greatest concentrations of whitefish were found, such as in the north end of Lake Winnipeg. Not surprisingly, smaller populations are exploited by considerably smaller portions of capital. Nonetheless, the production from these smaller fisheries finds its way into the commercial sphere of exchange.

Some information concerning the early leading capitalists of the fishing industry reveals certain structural aspects of the industry. Knox has stated that Reid, Clarke and C.W. Gauthier were all Georgian Bay Fishermen.¹⁴ More interesting are the experiences of Peter McArthur and Capt. Wm. Robinson who were for a long time involved in various staple industries of the Interlake region of Manitoba.¹⁵ Both McArthur and Capt. Wm. Robinson participated in steam boating with the North West Transportation Company. As well they participated in the lumbering industry of the Interlake. Fishing proved to be a stable venture for Robinson, and he remained involved in

FIGURE 3.12 NATURE OF CAPITAL INVESTMENTS, LAKE WINNIPEG, 1887-1910¹



Source: Canada, Sessional Papers, Fisheries.

¹The dominant investments are made in steam tugs and shore installations.

the industry for decades. According to Barris:

Methodically, William Robinson worked his way up both lake-shores buying out the independent fishing interests and establishing a steam boat freighter system to relay fresh fish to new freezing plants at Selkirk. Similarly, the Robinson Lumber Company bought out weaker timber business adjacent to Lake Winnipeg and initiated a lucrative market steamboating lumber south to railway contractors ...¹⁶

It is not surprising that Robinson was known as the 'Fish King'. Apparently, Robinson's start in fishing began with his purchase of the plant of Reid and Clarke and Company. Eventually, as Figure 3.11 describes, Robinson bought out the firms of Reid and Tait, Manitoba Fish Company, Selkirk Fish Company and Sigurdson (in 1898). These early western Canadian capitalists, such as Robinson and McArthur, were orientated towards the extraction and transportation of staples (lumber, fish). Their transportation mode, the steamboat, left them out of the wheatboom, as the eastern Canadian capitalists controlled the Canadian Pacific Railroad. Steamboats, however, served the transportation needs of Manitoba's interlake and the north. Robinson, then, tended to dominate the fishing of Lake Winnipeg, while McArthur developed the lumber resources of Lake Manitoba and Lake Winnipegosis.¹⁷

Capitalization facilitated the rapid expansion of production for the U.S. market and shaped the pattern of commercial firms. Similarly, the organization of these firms can only be understood if the influences of U.S. financing are examined. The fishing industry was the first industry in Manitoba to be penetrated by U.S. capital. In 1959, Gundmundur Solmundson, having fished in Lake Winnipeg for 70 years stated his opinion about the fishing companies, "it [is] all I think Booth behind everything."¹⁸ In 1891, Muckle commented that "the Indians agents are deserving of the everlasting gratitude of the Indians for their faithfulness in reporting to the Department the improvident destruction of their fisheries by American fishermen, or their accredited agents ..."¹⁹ Secondary sources on the fishing industry also mention the American influence. Barris, for instance, discussed the situation on Lake Winnipegosis, (1890's): "the Booth Fish Company had gained control of the richest fishing grounds, had established a host of fish camps across the north end of the lake."²⁰ Barbour maintained that the Armstrong Trading Company "... in association with Booth Fisheries was instrumental in opening up a large portion of the Province to commercial fishing."²¹ Judson's academic treatment of the industry maintained that Gauthier and Company

"whose very close connections with a Detroit company provided financial resources for expansion."²² Additionally, Judson perceived the importance of trade on capitalization: "Associated with increased shipment of fish south to such markets as Detroit, Buffalo and Chicago, there was a flow of capital in the opposite direction. Accompanying these funds came control by U.S. dealers."²³

Unfortunately, none of these writers have presented little more than common knowledge concerning this penetration of U.S. capital. Yet, there is evidence to document the influence and penetration of American capital that has not been previously presented. For instance, in 1893 and 1894 it was apparent that some firms operating on Lake Winnipeg were avoiding U.S. customs duties of three quarters of a cent per pound on Manitoba fish by claiming it to be "American caught fish". Firms like the Manitoba Fish Company and Wm. Robinson evaded this duty by signing affidavits to the effect that:

They are the products of American Fisheries, or that they have been caught in the fresh waters of Canada by persons using American vessels, with American nets or other devices owned solely by citizens of the United States of America at the time the said fish were so caught.²⁴

Thus, what appeared to be American ownership of firms operating in Canada, not only facilitated the production of fish but also made entry into the American market cheaper. In fact, it appears that the A.G. Booth Packing Company of Chicago sent an experienced manager to facilitate the evasion of U.S. customs by Capt. Robinson's firm.²⁵ A difficulty was therefore presented to Canadian fisheries officials in that an Order in Council of January 14, 1892 stated that a commercial licence: "shall be issued to resident British subjects only, and who are the actual owners of the fishing gear included in such license."²⁶ Thus, the Canadian licencing conditions conflicted with the methods by which the American customs were evaded.

Canadian fisheries officials gathered some evidence which indicated that the Manitoba fish Company was American owned. Of the capital stock some 700 shares were owned by an attorney living in Detroit, and 300 shares were owned by two Detroit bankers, with 3 shares held by residents in Ontario.²⁷ In the case of Wm. Robinson Fish Company, Capt. Robinson was clearly a British subject; however "... it is believed that he is not the actual owner of the fishing gear ..."²⁸ Barris maintained that in the early 1890's, some of Robinson's fixed capital had been destroyed by fire (steam tugs, and

freezer plant) and he then linked up with Booth to recapitalize.²⁹ Barris argued that "the Booth-Robinson arrangement rejuvenated the North West Navigation boatyard as well, as new ships were continually being built to keep pace with a catch that exceeded three million pounds per-year."³⁰ In fact, Robinson's capitalization may have originated earlier than the 1890's, as he stated in an interview (in 1894):

That is the way all business is done there. When a firm starts business as a rule they go to some firm in the United States, as there is no market in this country, and they make arrangements, probably in the beginning, to get a certain amount of money, and as to the price of fish.³¹

Robinson's statement demonstrates that production for external market generated a dependence of the firm on the American buyer. In this way these early Manitoba capitalists who were engaged in a staple industry, required U.S. financing and obtained benefits from the association.

In contrast, the smaller Canadian fishing firms, whose link to the U.S. fishing establishment were not as solid, had to pay the American duty. Thus, the public records for the Fisheries Branch recorded in 1893 that "those two Canadian companies obeying the Canadian fishery laws have to pay \$7,500, and the two American companies or those under American influence, by violating the Canadian fishery laws, escape paying \$19,000."³² No doubt the loss of potential revenue by the small Canadian firms contributed to their inability to maintain a rate of growth comparable to that of the U.S. subsidiaries. A memo to the Deputy Minister of Marine and Fisheries expressed that:

... transactions of the kind carried on by the Manitoba Fish Co. and the Wm Robinson Fish Co. work against the Canadian fishermen or the Canadian capitalists, who may wish to enter into the fishing industry of the country.³³

Already, the industry which in its infancy was considered to be such an asset to the province, was truncating indigenous capitalist development. External market influences were clearly determining some of the conditions of production.

The influence of external markets also promoted the development of monopolistic conditions in Manitoba's commercial fishing industry. As noted Figure 3.11 indicates the merging of commercial fishing interests around the Dominion Fish Company. In 1899, Capt. Wm. Robinson informed the Fisheries Branch that the "Manitoba Fish Co., Reid & Tait Fish Co., Selkirk Fish Co.,

Sigurdson Bros and Wm. Robinson are desirous of doing business under one management, ... under the name of Dominion Fish Co."³⁴ Robinson argued that thereby "the business of fishing can be prosecuted at less expense," that one company could get a better price, and for "the Department-[Fisheries] it would be easier to look after the five concerns combined in one ..."³⁵ However, not all of the five concerns were actually desirous of merging. Fisheries Inspector F. Colcleugh explained:

... I learned, that the five fishing companies holding licenses, and fishing in Lake Winnipeg last year, sold out their entire plant to the A. Booth Packing Coy of Chicago, receiving one third cash, alike amount of preferred stock in the Dom Fish Coy Ltd, and the remaining thus in ordinary stock in the same coy, in which it is well understood that the said A. Booth Pckg Coy holds a controlling interest.³⁶

Colcleugh's information was based on interviews he obtained from some of the previous owners. Instead, the A. Booth Packing Company created a formal monopoly situation on Manitoba lakes. At this time Booth was actively combining in the Unites States as it was recorded that "this combination was so gigantic, and included nearly every fish concern of any magnitude in the United States."³⁷ According to Moody's Manual, the A. Booth and Co. was incorporated in August 1898 (Illinois) and was described as follows: "the company has about 50 branch houses in various parts of the United States, Canada and Cuba, and is probably the largest fish, oyster and poultry house in the country."³⁸ Furthermore, according to F.W. Colcleugh, the smaller firms "had to submit to the inevitable ... if they refused to join the syndicate and sell their plant, and business ... they would be 'frozen out' " additionally, "every member of the five coys were compelled to sign a bond not to enter the fish business again for a period of ten years."³⁹ The monopsony position of American fish purchasers not only provided for the expansion of its larger subsidiaries operating in Manitoba, but forced smaller firms to merge.

The formal merging of the commercial fishing production under the banner of the Dominion Fish Company was obstructed by fishing regulations which restricted the quantity of gill netting a single commercial firm could use. Therefore, the appearance of separate firms was maintained in order to facilitate the licensing of these commercial companies. It was, nonetheless, clear that Dominion Fish Company owned the tugs, this in turn prompted Fishing Inspector F.W. Colcleugh not to countersign the licences. Next year,

Colcleugh was replaced as a fisheries inspector. Furthermore, in 1899 the Dominion Fish Company and Ewing and Fryer, had monopolized all the freezer facilities on Lake Winnipeg. It appears that some of the people involved in the smaller fishing companies organized the Northern Fish Company in 1900. Although it can be argued that the Northern Fish Company provided some competition to Dominion Fish Company, the situation on Lake Winnipeg was oligopolistic.

The motivation behind the merging and capitalization process of the commercial fishing industry of Manitoba was part of the prevailing logic of the period of trusts and combines. Colcleugh commented on Dominion Fish Company:

The Company is looked upon as a huge monopoly created for the purpose of shortening the season, reducing wages and everything else which would tend to lessen the cost of production and widen the margin between costs and selling prices.⁴⁰

Thus in 1899, fish were selling for 4 cents f.o.b. Winnipeg (free on board), having a cost of $\frac{1}{2}$ cent freight to Winnipeg and $\frac{1}{2}$ cent freezing. Whitefish were purchased from the fishermen for $2\frac{1}{2}$ cents each or approximately 0.8 of a cent per pound.⁴¹ The control of fishing interests was designed to compress wages, and possibly to facilitate transfer pricing. Additionally, the wholesale price of the Detroit Fish Association (not the final consumer price) was 8 cents for whitefish.⁴² This indicates a change in value from fishermen to the U.S. market had swelled by ten times. In the case of sturgeon, the costs of production for the sturgeon were reduced for the companies after the organization of monopoly. Prior to merger fishermen were paid \$1.50 to \$1.75 for a dressed sturgeon and eggs were purchased for a dollar a pail (the caviare was sold by the companies at 75 cents per pound, of which there were 20 pounds to the pail).⁴³ Fishermen were allowed to keep the bladders and oil. After the combine was established, and with an oligopolistic situation involving Fryer and Ewing and Dominion Fish Company, sturgeon were purchased in the round (undressed) for \$1.25, which meant that the companies got the sturgeon cheaper and the eggs for nothing.⁴⁴ The net effect of the intensification of production for external market, capitalization and monopoly was in a compression of fishermen's income.

3.1.3 Value Of Production, Expansion Of Export Market And Truncation Of Local Markets

Data concerning the exact value of exports is not available from the annual reports of the fisheries department. Table 3.1 does provide some indication of the rate of the growth of fish exports. Figures 3.13 to 3.17 establish the value of fish production through time which, as expected, is related to actual production and capital invested. The data on export markets (Table 3.1) elucidates the relationship between the value of Manitoba fish production and the demand by the metropolitan market. Nonetheless, it is in this period that the first market difficulties are recorded. The annual report for 1894 recorded:

... fishermen were supplied with more nets, as they believed the price would be as high as it was last year; but unfortunately, the price dropped, and some lost quite big quantities of fish, the selling being lower than the cost of freighting them to the closest market.⁴⁵

By 1895 the situation had not improved: "... last season was not a prosperous one for the fishermen ... The depression in the western states, which is our principal market, prevented the purchase of fish there, and consequently prices were low."⁴⁶ In 1895, the first fresh Manitoba fish had been shipped to Chicago, and in 1896 it became well established as "this year all the companies have gone into the shipment of fresh fish with satisfactory results. The returns are quick. Interest on outlay, insurances and storage is avoided."⁴⁷ The fisheries of Manitoba eventually responded to difficult marketing conditions by altering the form in which the staple had been presented. This would also make more demands for capital to be invested in storage plants. It was anticipated that fresh fish could be frozen and stored during adverse fluctuations in the market.

Figure 3.15 shows the relationship between capital investment and market value on Lake Winnipeg; it indicates that the spread between value and capital widened after 1889. However, following the export of fresh fish after 1896 the rate of capital investment increased more rapidly than value, and in 1898 capital surpassed the value figure. In 1898 and 1899 the small firms merged into the Dominion Fish Company. (In 1899, capital appears to be depreciated, perhaps a condition of the transfer of assets.) Once the merger is concluded (and Northern Fish Company is formed in 1900) both value and capital quickly soared (as did yields). For about five years (1901-

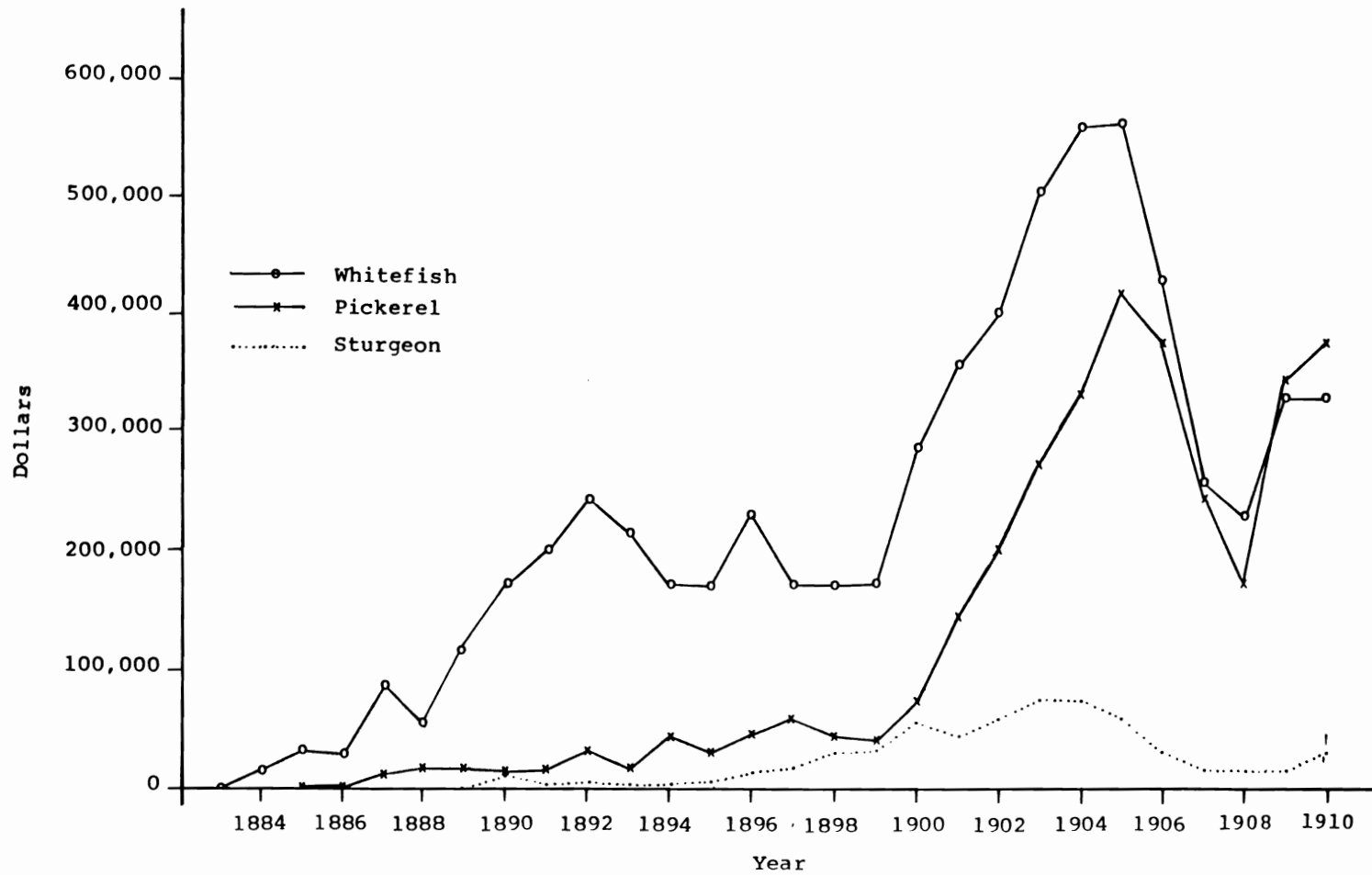
TABLE 3.1

VALUE OF MANITOBA FISH EXPORTS 1880-1896

Year	Value in Dollars	Percent Change From Previous Year
1880	2,300	-
1881	3,930	70.87
1882	3,178	-19.13
1883	4,051	27.47
1884	25,538	530.41
1885	54,153	112.05
1886	54,571	0.77
1887	54,852	0.51
1888	98,637	79.82
1889	71,264	-27.75
1890	97,857	37.32
1891	84,452	-13.70
1892	120,141	42.26
1893	197,536	64.24
1894	187,919	-4.87
1895	158,734	-15.53
1896	203,776	28.37

Source: Canada, Statistical Year Book of Canada: 1896 (Ottawa: Department of Agriculture, 1897), p. 95.

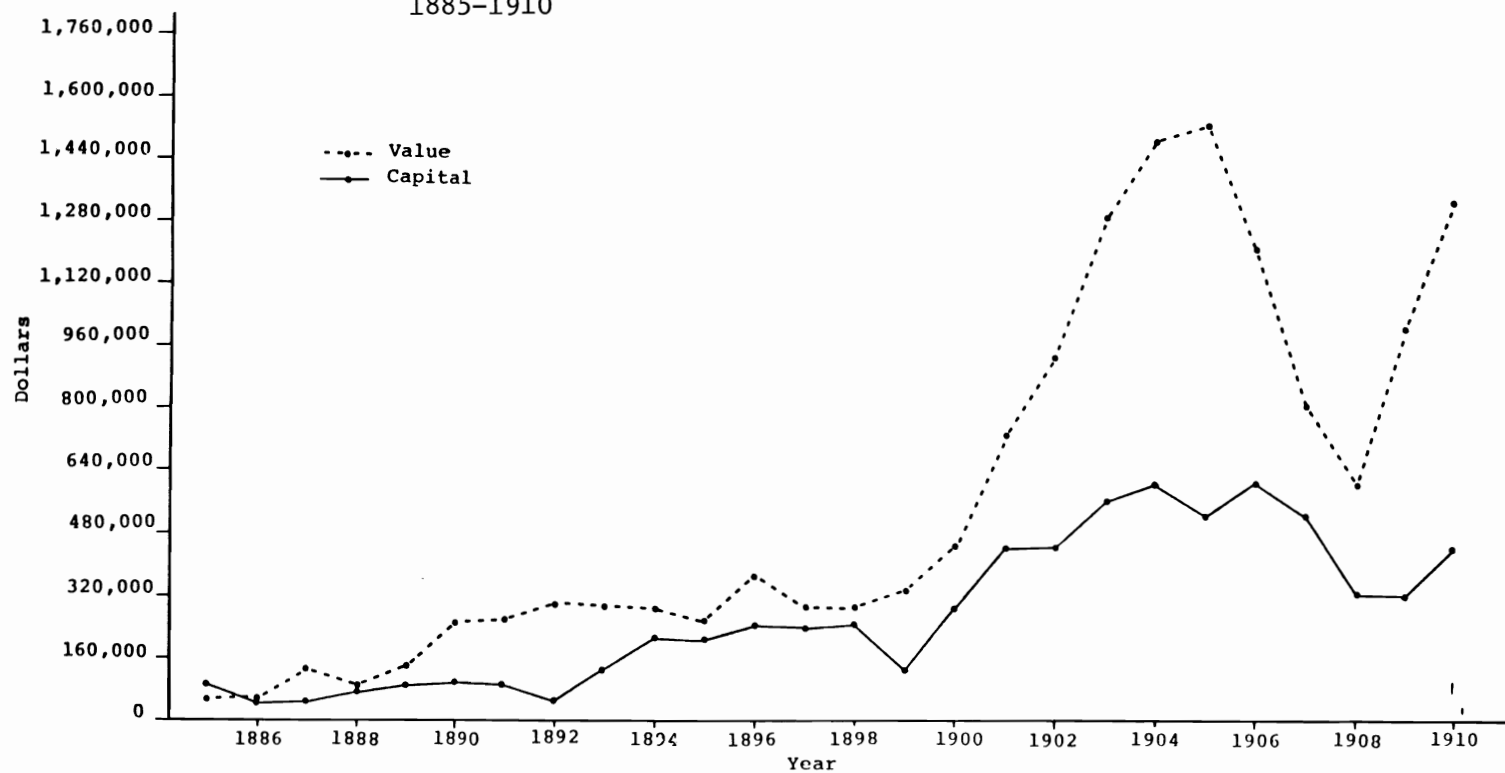
FIGURE 3.13 VALUE OF MANITOBA FISH, BY SELECT SPECIES, 1883-1910¹



Source: Canada, Sessional Papers, Fisheries.

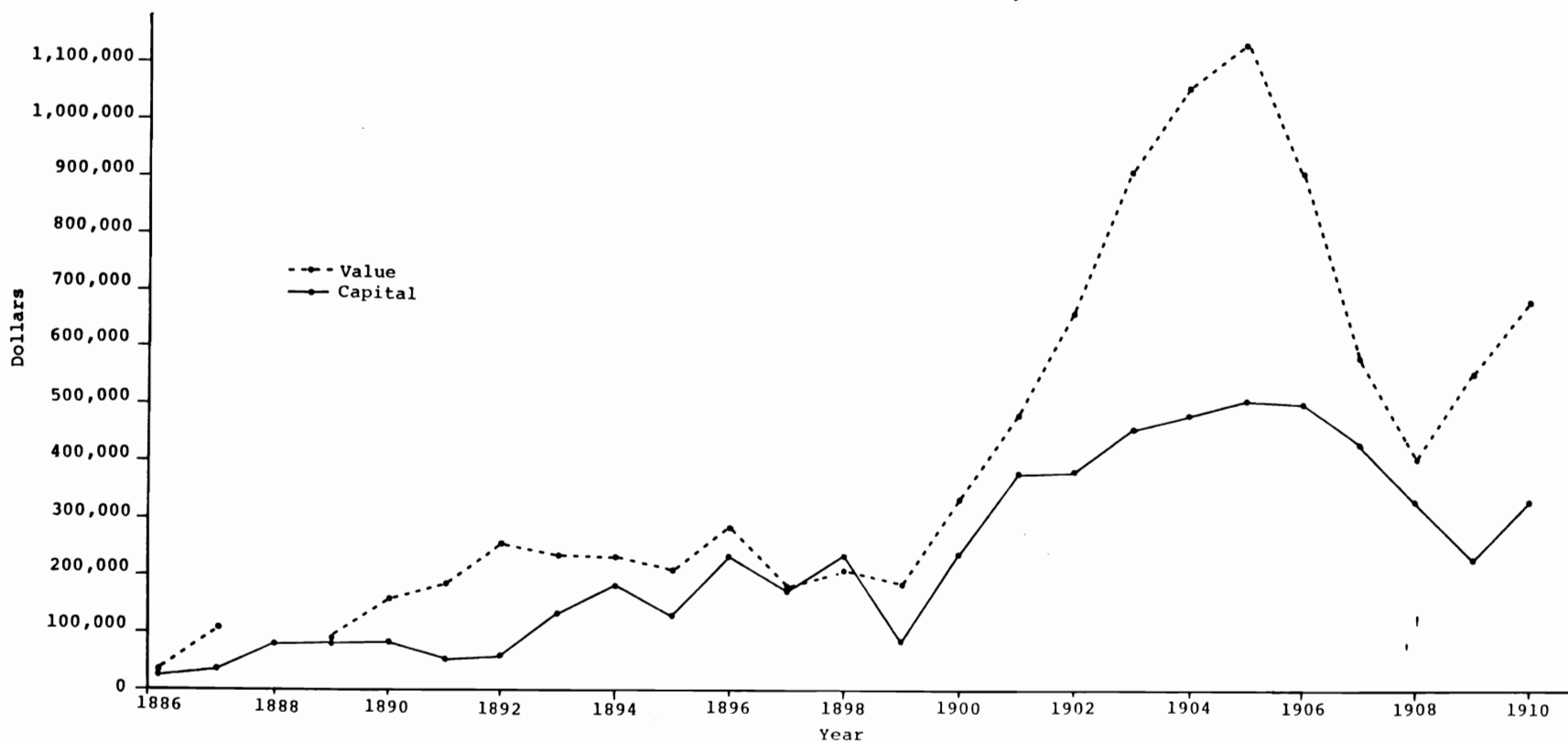
¹Note the relative insignificance of pickerel in the period 1890-1900, yet by 1906 pickerel has reached values similar to whitefish.

FIGURE 3.14 THE RELATIONSHIP OF CAPITAL AND VALUE FOR MANITOBA'S COMMERCIAL FISHING INDUSTRY, 1885-1910



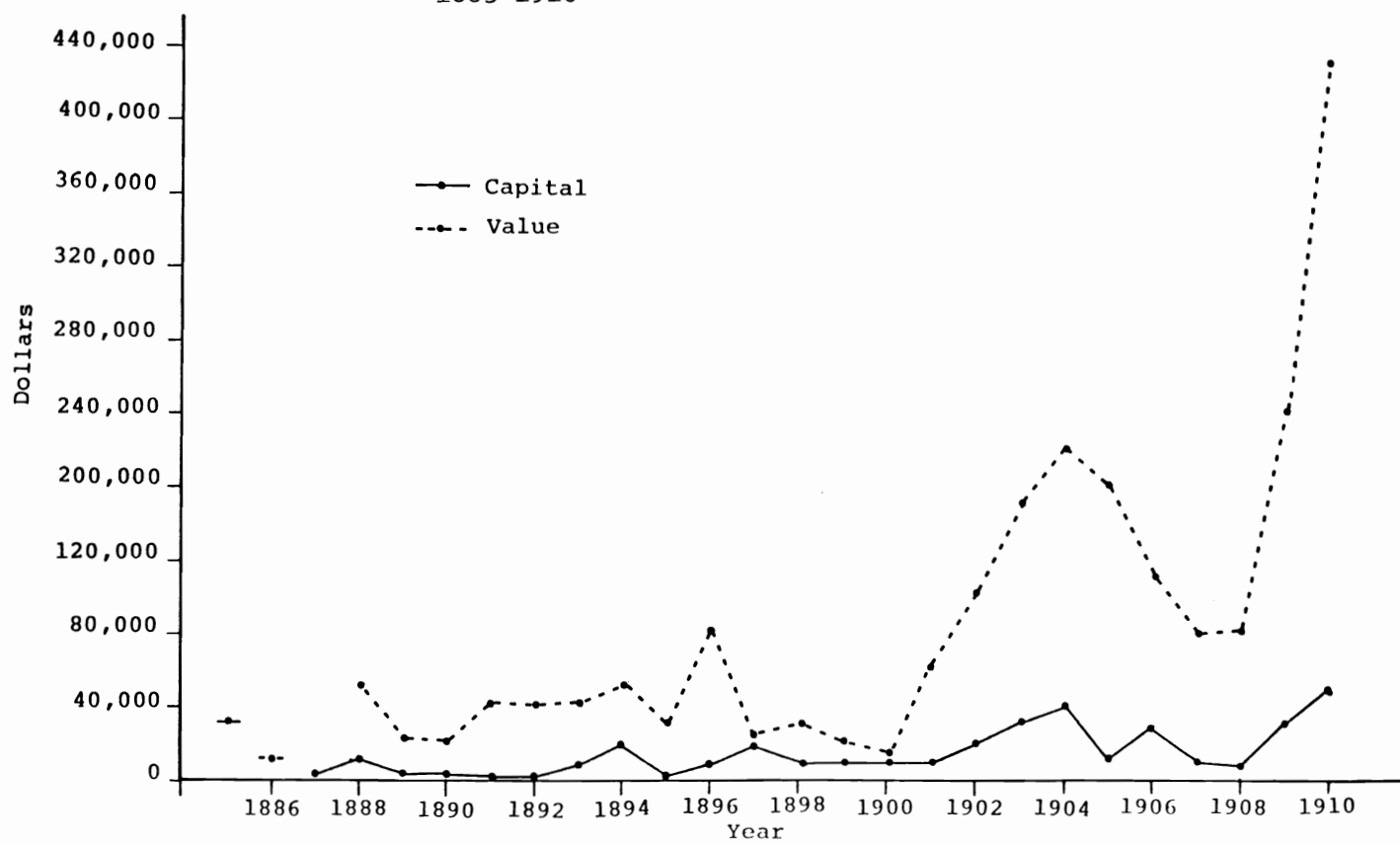
Source: Canada, Sessional Papers, Fisheries.

FIGURE 3.15 THE RELATIONSHIP OF CAPITAL AND VALUE ON LAKE WINNIPEG, 1886-1910



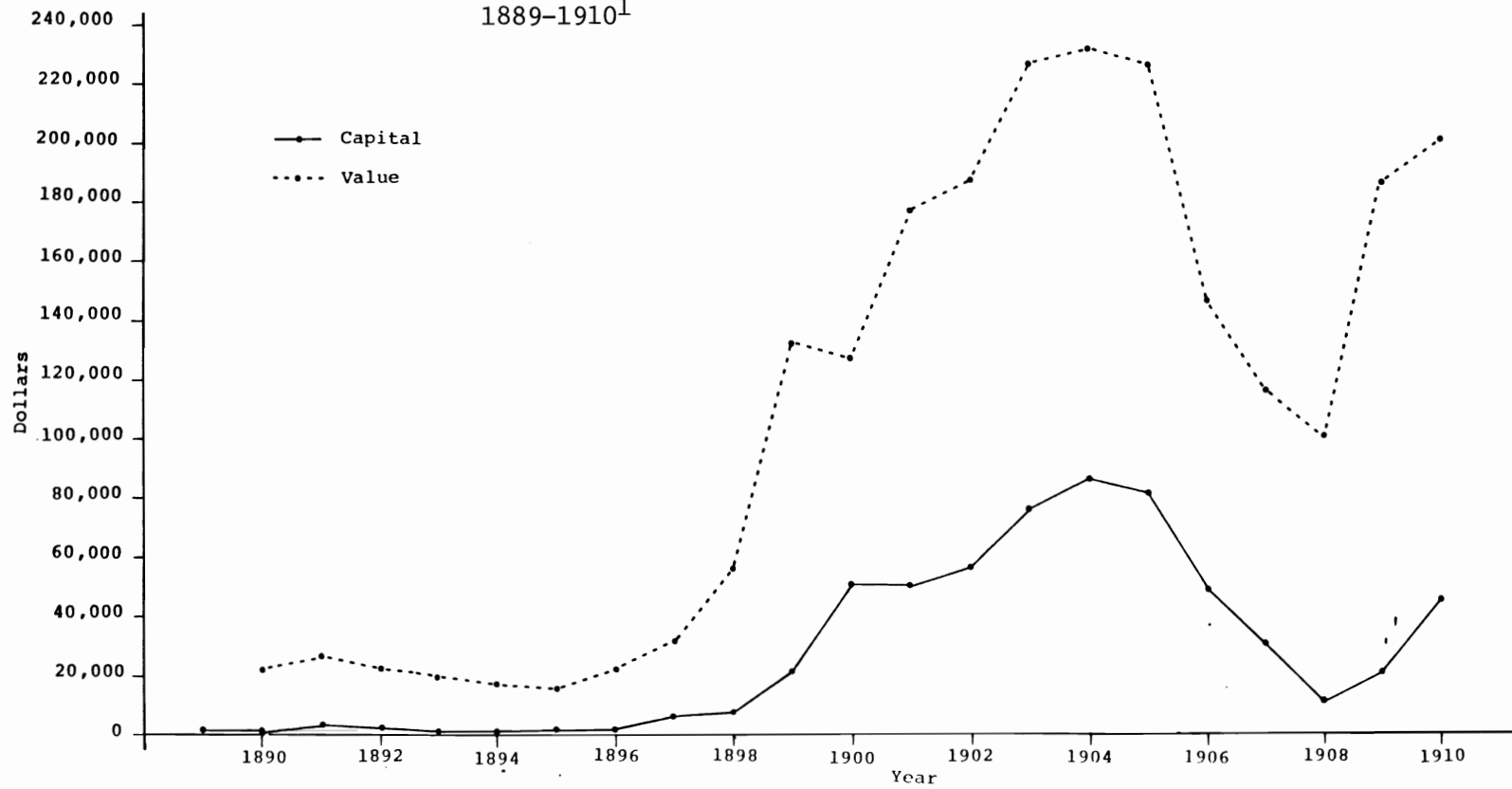
Source: Canada, Sessional Papers, Fisheries.

FIGURE 3.16 THE RELATIONSHIP BETWEEN CAPITAL AND VALUE ON LAKE MANITOBA, 1885-1910



Source: Canada, Sessional Papers, Fisheries.

FIGURE 3.17 THE RELATIONSHIP BETWEEN CAPITAL AND VALUE ON LAKE WINNIPEGOSIS,
1889-1910¹



Source: Canada, Sessional Papers, Fisheries.

¹Note that the relationship between value and capital on Lake Winnipegosis is quite different from that of Lake Winnipeg.

1905) value increased at a more rapid rate than did the amount of capital invested. But once production declined in 1905 (Figure 3.5) value drops at a rate faster than capital (Figure 3.15). One explanation may be that if fish stocks were declining more capital would be required to maintain harvest levels. Table 3.2 indicates the ratio of pounds of whitefish produced per dollar of capital invested for Lake Winnipeg. The trend is for a decline and in spite of absolute increases in production, proportionally more capital was required. However, Lake Winnipegosis is somewhat different in that the discrepancy between value and capital remained constant throughout the period (Figure 3.17). This may reflect the abundance of fish (relatively new fishery).

With 95 per cent of the production being exported to the United States, there was little effort to market fish in Winnipeg or elsewhere in Manitoba.⁴⁸ It must be noted that during the development of the Red River settlement fish were an important article of diet and fish were sold in Winnipeg prior to the creation of a commercialized export industry. Therefore, it appears that the large scale commercial firms repressed the development of a local market. The large firms argued that there was no local market or Manitobans were not fish eating people. R.L. Tupper stated in 1897 that "I believe that nine dollars out of every ten dollars worth of fish consumed in Winnipeg comes from either one coast or another."⁴⁹ Tupper added that: "it seems to me no effort is made to supply the towns of Manitoba and the North-West Territories with our fish, where there surely must be a good market for at least winter caught fish, which small dealers can easily handle."⁵⁰ It appears that Manitoba fish were not available. Indian agent Muckle stated that the commercial fisherman Ewing: "... has no doubt shipped some thousands of dollars worth of sturgeon and caviare to the United States, one can only get either as a compliment as they are not for sale here."⁵¹ In sum, the expansion of commercial fishing dislocated the previous self-reliant fisheries of settlers and natives, and had the effect of diverting fish from the Winnipeg market.

3.1.4 Opposition To Capitalization And Depletion

The local fishermen responded to commercialization and foreign capitalization of the fisheries by circulating petitions and organizing themselves into what was sometimes referred to as the Fishermen's Protection

TABLE 3.2
RATIO OF POUNDS OF WHITEFISH PRODUCED PER
DOLLAR OF CAPITAL INVESTED, LAKE WINNIPEG

Year	Pounds of whitefish caught/dollar invested
1890	32.9
1891	73.8
1892	68.9
1893	33.5
1894	16.0
1895	28.6
1896	16.3
1897	15.1
1898	11.2
1899	22.9
1900	17.7
1901	13.3
1902	15.6
1903	15.5
1904	15.5
1905	12.9
1906/07	10.2
1907/08	5.7
1908/09	8.1
1909/10	15.3
1910/11	9.2

Source: Calculated from Canada, Sessional Papers,
Fisheries.

Union. Thus, in 1899 the annual report for fisheries recorded that:

There was much dissatisfaction amongst the fishermen on this lake regarding prices paid by the only two buyers there, and quite a number forsook the lake and went elsewhere, most of them to Winnipegosis, where prices are higher. Those remaining here, I understand, formed themselves into an association, ...⁵²

A petition May 3, 1899 by fishermen of the Selkirk area corroborates much of the information that Colcleugh had presented concerning the formation of a combine on Lake Winnipeg. The petition stated that "the Dominion Fish Company will practically have a monopoly of the fishing industry ... which your petitioners verily believe will prove disastrous to the prices obtainable ..."⁵³ Furthermore it stated: "the said company having further intimated their intention in the event of your petitioners not agreeing to the said price and terms, to import fishermen from the Eastern provinces."⁵⁴ The fishermen, then "'humbly pray' that a commission be established to investigate, and that the Dominion Fish Company not be licensed to fish."⁵⁵

Apparently, the fishermen of Lake Winnipeg were not able to stop the Dominion Fish Company as next spring (April, 1900) they petitioned again. This time the wording of the petition was more direct:

By means of this excessive and illegal quantity of nets thus allowed it, the said American company practically exercise a monopoly of the white-fish business on the said lake; thereby injuring us to an immense extent not only by the rapid depletion ... but also in many other ways incident to a monopoly, as by greatly and unjustly depressing the wages, prices and profits obtainable by us as such fishermen as aforesaid, and by practically excluding many bona fide Manitoba companies from Selkirk and Winnipeg, etc., which would otherwise form and engage in the said fishing industry.⁵⁶

Equally important, the petition was supported by Icelandic and native communities. Similarly, the demands became more consistent with the antagonistic situation which had been created by American capital. The petitioners demanded a cancellation of the licences of Tait, Sigurdson and Simpson which they had obtained for Dominion Fish Company, and that licences only be issued to British subjects who are proprietors of the fishing equipment.⁵⁷ Interestingly, the fishermen demanded that licences be limited to no "more than 3000 yards of net with one sail boat."⁵⁸ Such a restriction might have placed severe limits on the capitalization process on Lake Winnipeg. The articulation of such demands indicates that fishermen identified many of the

problems (declining yields, monopoly, compression of wages and American control) with the control of capital and the forces of production. Unfortunately, the demand for state regulations could not in itself hold back the increasing control by capital.

Moreover, the fishermen held the commercial companies responsible for depletion. They claimed "throughout the last past ten years or thereabouts the said lake has been overfished to a most serious degree," and "now practically no whitefish can be caught except at the extreme north end of the lake; and even there, the average weight is only three pounds ..."⁵⁹ During this period of overall rapid expansion there were still the same questions concerning overfishing. In 1896, Indian Agent Muckle provided the Ottawa office of the Fisheries Branch with information on his impressions based on 26 years of experience at the southern end of Lake Winnipeg. He stated: "it is easy to see that the commercial fish is disappearing, this I think is from overfishing ..."⁶⁰ Muckle added that whitefish and pickerel had been declining in the last two years while other types of fish remained the same. In the previous concerns about fish yields (late 1880's and the report of Wilmot of 1890) whitefish were the species that appeared to be jeopardized. However, Muckle explained that "in regard to pickerel where ten were caught five years ago, there are not over two caught now."⁶¹ With the decline of whitefish, especially in the south end of the lake, pickerel became a substitute, and a commercially caught fish. (See Maps 3.1 to 3.3.) Maps 3.1 and 3.2 do not indicate a decline in pickerel production.

The fishermen and Indian agents were not the only ones complaining about overfishing during the late 1890's. In 1897, the annual report of fisheries department suggested that "in the southern part of Lake Winnipeg the whitefish has been gradually disappearing ..."⁶² However, this may have been partly the result of changes in water quality of the Red River. Even further north, the fishing officer at Beren's River "now writes stating that the lake is being rapidly depleted of both whitefish and sturgeon ..."⁶³ Compare Map 3.1 to 3.2 for an indication of changes in whitefish yields. Furthermore, F.W. Colcleugh, Fisheries Inspector for Manitoba, stated:

The fish companies continue to move their plants northward, and this year their operations were carried on within a short distance of the northern shores of the lake

and I understand they contemplate another move to Norway House and Play Green Point on the northern coast. To my mind this is prima facie evidence of the depletion of these waters.⁶⁴

In the late 1880's the Fisheries Branch in Manitoba tended to side with the companies. By the 1890's, there were more independent forces in the fisheries department who were not aloof to reporting about changing conditions. And it is clear that the northward movement of fishing in Manitoba was brought about by the commercial companies.

In many respects Lake Winnipegosis provided a control for determining if commercial fishing affected the original stocks of fish. The fishery of Lake Winnipegosis was never intensely exploited by settlers or Indians prior to commercial fishing. Additionally, commercial fishing began after a set of regulations had been established. The result of commercial fishing was that production of whitefish increased and decreased rapidly (Figure 3.7). In 1899 it was reported that whitefish were "abundant" and "vigorous fishing for a year or two" was recommended.⁶⁵ In 1902, the fishing officer for Lake Winnipegosis commented:

The catch this year has been much lighter there than last year although the number of men employed has been much larger, particularly so in Lake Winnipegosis, this shows that this lake is being fast depleted especially of whitefish which shows a large falling off. This lake cannot hold out many seasons longer without restocking ...⁶⁶

In the late 1890's production declined on lakes Manitoba and Winnipeg and when prices dropped, fishermen moved their operations to Lake Winnipegosis. In this sense, new fisheries may have represented an effort to overcome problems of profitability. This process of expansion did not stop with Lake Winnipegosis. In 1904 it was reported:

While there is a steady pressure on the part of the commercial fishermen to get into the waters north of the Saskatchewan where the catches in practically virgin waters give results not now obtainable in the lake farther south ...⁶⁷

Thus, various descriptive sources such as fishermen, fisheries officers and Indian agents all suggest that the industry was caught in a depletion/profitability bind.

Such numerous accounts of fishermen, Indian agents and fisheries officers indicating that the industry was caught in a depletion/profitability bind can be supported by statistical data. Table 3.3 presents, in a crude form, a catch/effort ratio.⁶⁸ It is based on a ratio of the total

TABLE 3.3

INDICATIONS OF PRODUCTIVITY: POUNDS OF FISH CAUGHT PER FOOT OF GILL NET BY FISHERY¹

Year	Lake Manitoba			Lake Winnipeg			Lake Winnipegosis		
	Total	Whitefish	Pickereel	Total	Whitefish	Pickereel	Total	Whitefish	Pickereel
1886	-	-	-	15.4	8.5	2.7	-	-	-
1887	5.3	1.9	0.5	8.2	5.7	0.2	-	-	-
1888	12.5	3.0	1.6	7.2	3.5	0.8	-	-	-
1889	7.0	0.8	1.0	7.1	5.0	0.2	4.7	3.0	1.7
1890	5.3	1.5	0.9	10.5	6.9	0.9	8.9	7.8	0.6
1891	14.0	3.8	1.4	9.3	6.2	0.9	18.7	6.4	1.1
1892	11.2	3.0	1.2	12.1	9.1	1.0	7.8	5.1	0.9
1893	7.3	2.1	0.8	11.7	8.2	0.9	24.8	3.5	0.6
1894	11.0	2.0	1.2	7.9	3.2	1.1	15.3	3.5	0.5
1895	2.3	0.7	0.2	5.8	3.1	0.7	14.8	3.2	0.4
1896	6.9	1.8	1.3	8.4	4.0	1.0	11.0	3.4	0.6
1897	3.1	0.7	0.6	6.9	3.4	1.4	8.1	3.0	0.5
1898	6.4	1.9	1.1	8.0	3.6	1.3	14.2	3.1	0.1
1899	73.6 ²	20.8	12.6	10.8	5.4	1.7	6.9	2.3	0.7
1900	54.8 ²	2.1	12.6	20.9	11.3	3.7	9.5	6.5	2.0
1901	21.0	1.5	4.7	9.4	3.3	1.7	8.3	2.9	2.1
1902	7.9	1.0	2.2	9.8	3.3	1.7	5.8	1.4	1.9
1903	7.2	1.0	1.7	10.6	3.6	2.1	5.8	1.4	1.8
1904	6.5	0.8	1.6	9.1	3.0	1.7	5.2	1.2	1.7
1905	8.5	0.9	2.3	7.1	2.1	1.5	3.7	0.8	1.1
1906/07	3.3	0.2	0.7	6.2	1.7	1.6	3.2	0.6	0.9
1907/08	4.8	0.4	0.8	4.5	1.0	1.1	5.5	1.1	1.6
1908/09	6.4	0.6	1.5	8.9	2.0	1.3	7.2	1.0	2.5
1909/10	5.0	0.3	2.5	4.7	1.5	1.0	6.0	1.2	2.1
1910/11	5.6	0.5	1.8	4.1	0.9	0.7	3.7	0.7	0.8

Year	South end of Lake Winnipeg			North end of Lake Winnipeg			Commercial Firms Lake Winnipeg		
	Total	Whitefish	Pickereel	Total	Whitefish	Pickereel	Total	Whitefish	Pickereel
1888	14.0	0.9	2.4	-	-	-	11.0	10.0	0.7
1889	29.3	5.1	2.8	9.7	7.8	-	9.4	8.3	0.6
1890	7.9	1.8	1.1	32.2	28.4	1.7	10.1	9.0	0.6
1891	7.9	2.3	1.3	8.9	8.1	0.7	9.1	8.4	0.7
1892	7.6	2.0	1.4	13.4	11.1	0.9	13.7	12.3	0.8
1893	6.4	0.6	1.1	13.3	10.5	0.8	14.1	13.1	0.7
1894	5.9	0.4	1.0	1.1	0.7	0.1	10.9	8.7	1.4
1895	4.1	0.3	0.9	7.8	6.3	0.4	8.5	8.5	0.1
1896	4.7	0.4	1.0	13.2	8.9	0.8	11.8	11.5	0.3
1897	5.3	0.2	1.1	8.4	6.2	1.6	12.7	12.4	0.3

Source: Calculated from Canada, Sessional Papers, Fisheries¹This ratio was established by dividing the total pounds of fish, total pounds of whitefish and total pounds of pickereel by total feet of gill net for each fishery.²Probably inaccurate data concerning total feet of gill net.

number of linear feet of gill nets used to the pounds of fish caught. Its usefulness is not in the absolute value presented, rather in the relative changes indicated over time. It shows that productivity was declining as a consequence of commercial production of whitefish. The increase in pickerel production on Lake Winnipeg suggests that declining yields of whitefish may have been offset by diversifying fishing effort. For the southern end of Lake Winnipeg there does appear to be a decline in pickerel yields in the early 1890's.

Production for commercial firms does not appear to decline in the 1890's (Table 3.3). The trend shown would have been more marked had not the commercial companies attempted to evade fishing regulations by under reporting the lengths of their nets. The public records of fisheries indicated that Wilmot:

... is quite certain that the fishery regulations for Lake Winnipeg have been frequently and grossly violated, more particularly by the large fishing companies that are worked and influenced almost wholly by American fishing companies and capitalists, actual citizens of the United States.⁶⁹

Similarly, archival records, such as a memo of March, 1894--to the Deputy Minister of Fisheries--stated that "in the past the violations seems to have been the rule and the observance of the regulations the exception."⁷⁰ With respect to nets it was stated "many people who ought to know seem to think that the commercial licenses used far more length than they are allowed."⁷¹ Apparently, the U.S. Consul during this period had sent a Pinkerton's man to work on a commercial fishing boat to try and determine if the companies were evading U.S. customs. The Pinkerton's man indicated that regulations concerning net lengths were violated.⁷² Hence, the data for fish/net ratio in Table 3.3 for commercial operators is an overstatement of their catch, and in fact the commercial operators probably increased their capital investment in nets when stocks were declining.

Other explanations concerning the changing fish stocks can be considered apart from violations of regulations. In 1897, it was reported for the mode of sturgeon fishing that wastage "has been too often the case."⁷³ It was noted in 1902 on Lake Winnipegosis that: "... it was injudicious to open the southern end of this lake for summer fishing, as there was not any ice put up in south and only what was at Masey River and a large quantity of the fish caught in the latter part of the season was wasted ..."⁷⁴ In

1896, G.T. Orton, M.D. reported that:

In the summer season a large number of Indians are employed at Selkirk and Poney Island, where I have observed a good deal of diarrhea, sore throat, neuralgia and other derangements, due, I have no doubt, to the fact that the useless fish are allowed to rot on the shore, creating a horrible stench. This should be at once stopped, and all refuse burned, as was already ordered at one time.⁷⁵

Dr. Orton believed that the situation at fishing stations was not only unsanitary and unhealthy for the Indians, but fish were wasted. As in the 1880's, the waste of fish had not stopped, and continued to contribute to a change in fish populations. Hence, the production data for commercial fishing during the 1890's is likely an understatement of the size of the harvest as fish that were wasted by commercial companies were not recorded.

With the legacy of excessive harvests there was some concern about the expansion of commercial fisheries into the Lower Saskatchewan River. In 1898, the Saskatchewan Inspector of Fisheries maintained that:

Licensed fishing for sale is confined mostly to the sturgeon fishing in Cedar Lake, but as this lake is generally held to be the water from which the Saskatchewan River received its supply of fish, the development of the fishery at this point for export purposes is considered to be prejudicial to the interests of the resident populations.⁷⁶

However, as elsewhere, foresight was not sufficient to prevent the entry of the commercial relations of production. In 1902, for the lower Saskatchewan it was reported that "as with the competition of fish buyers to procure sturgeon, the fishermen are tempted to regard immediate profits without recognizing the necessity of preserving the fishery unimpaired."⁷⁷ Regardless of this caution, in 1904 the commercial potential of fish from the Saskatchewan River became more important, as the annual report for fisheries recorded:

Some little irritation was at first shown by the resident fishermen at the licensing of a few pound nets, but they were quick to realize that this formed the necessary nucleus for the opening up of a valuable industry to them. ... and the fish in such waters would remain an unrealizable asset if fishing by outsiders was entirely prohibited. The licensing of such parties does much good therefore as forming the nucleus for the establishment of a profitable industry, in which the Indians and Half-breed residents of these isolated districts can freely participate.⁷⁸

Pound nets had a greater capacity to reduce fish stocks than gill nets. However, pound nets were important in the initial exploitation of sturgeon

on the Saskatchewan River. The fact that a "profitable industry" could be made out of a hitherto "unrealizable asset" overlooked the importance of sturgeon to native peoples. The opposition to commercial fishing by the Indians of Lake Winnipeg in the late 1880's was repeated when commercial fishing expanded northward into the drainage of the Lower Saskatchewan River.

3.2 Renewed Opposition And The Royal Commission 1909/10

3.2.1 Opposition To Commercial Fishing And The Evidence Presented To The Royal Commission 1909/10

The declining fish yields were such that summer fishing was closed on lakes Manitoba and St. Martin in 1905 and on lakes Winnipegosis and Dauphin in 1906.⁷⁹ In addition, petitions from Indians requesting the restrictions on commercial fishing continued to be drawn up as in the case of Duck Bay Indians. In 1907 they wrote:

We the undersigned beg to draw your attention to the following fact: there are now a good many men fishing at Duck Bay. This is the place where we fish during the winter. If you allow summer fishing at Duck Bay, we will be left starving during the winter, so we humbly ask of you to stop at once the fishing at Duck Bay.⁸⁰

In 1908, a petition from a missionary of Cumberland House complained that "the fishing company of which Capt. Coffee [sic] and others represent this company are killing our own whitefish and sturgeon."⁸¹ Again a nationalist protest emerged "... we found it very strange that an Amercian can be allowed to deplete our waters of fish," and protested the "whole sale slaughter of our fish."⁸² Nonetheless Captain Coffey and the North West Fish Company continued to fish in the lower Saskatchewan.⁸³ The class antagonisms were clearly outlined in a petition in 1909 against Merritt and Coffey, "We are further of the opinion that the residents of these parts are entitled to any benefits that may be derived from the products of their labour in fishing these lakes instead of placing them under the control of any company ..."⁸⁴ As in previous periods and locations, commercial fishing, in a very short period of time jeopardized the livelihood of natives and raised vitriolic contradictions.

The declining production during the middle of the first decade of the 1900's and the concomitant compression of the fishermen's wages put pressure on the Fisheries Branch to examine the situation.⁸⁵ The fishermen's union had sent delegates to Ottawa in 1907.⁸⁶ The declining produc-

tion of 1905-09 was not simply the result of the closure of some lakes to summer fishing. For 1905, it was reported in the annual report of the Fisheries Branch that:

Lake Winnipegosis fishing has been falling off somewhat, and the fish were very small in the north end of the lake. Over one-half of the whitefish caught during the latter part of the season only graded No. 2 and weighed less than two pounds per fish; this is accounted for by the fishermen constantly reducing the size of the mesh of their nets.⁸⁷

The decline in the size and therefore the grade of fish meant a lower price for the fishermen. However, the cost of production or the labour time involved would not drop. Hence, the decline in fish yields influenced the fishermen's income. For 1908 it was reported in the annual report of the Fisheries Branch:

The whitefish fishery of Lake Winnipeg during the summer season was all that could be hoped for, fish were abundant throughout the season in any part of the commercial waters, but averaging smaller in size, nine or ten years ago the whitefish of Lake Winnipeg averaged in weight from three to three and one eighth pounds, they now average about two and one-half pounds.⁸⁸

Given this situation, and pressure from fishermen, a Royal Commission was appointed in 1908.

The Commission of 1909/10 was the first full fledged Royal Commission concerned with commercial fishing and its evidence in terms of public records and minutes provides valuable detailed information about the fishing industry.⁸⁹ It also provided a forum for the fishermen whose views generally are not recorded elsewhere. The Commission included Professor E.E. Price (chairman), an important official of the fisheries office in Ottawa; D.F. Reid of Selkirk, who had been a commercial fisherman whose firm was absorbed by the combine; and J.B. Hugg, a Winnipeg lawyer. The discrepancy between what is said at a Royal Commission and the final recommendations, as well as the resulting policy implementations may suggest the relative power of various groups in society. Although it is not possible to record in this study all of the important evidence and views presented to the Commission, it is necessary to reiterate some substantial portions.

Opposition to commercial fishing was present at Commission hearing, and again settlers objected to commercial fishing and were concerned about the depletion of sturgeon at Lac du Bonnet. Many expressed opposition to

a company fishing the lake. Similarly, a farmer on Lake Winnipegosis felt that "... open it and you deplete the lake--and sweep away everything from the farmer ... Fish should be preserved for the farmer."⁹⁰ Another farmer felt that "the parties whose concern for the lake to be opened in the summer have no interest in the country. They only have, while they are making money."⁹¹ It was also pointed out that the average weight of whitefish had dropped from 3 or 4 pounds to 2 and 2 ½ pounds.⁹² As during Wilmot's investigation, fish stocks were of prime concern since a change in average size was perceived as indication of over-fishing.

Interesting evidence was provided by H. Leech, who had no special involvement in the fishing industry. Leech had been in the country for some thirty years and had recalled before the Commission his perception of early fish populations. In 1905 he was so concerned about the decline of fish populations that he took it upon himself to investigate the conditions of fisheries on Lake Winnipeg by questioning all those concerned. He stated: "afterward I was amazed to be told there were no fish in localities I had known to teem with fish ...,"⁹³ and that from "the testimonies of these men, I could only form one opinion, and that was, that the quantity taken out of the lake, was entirely in excess of any means then adopted to replenish the waters."⁹⁴ More important than the nature of the depletion was Leech's understanding of the reason:

The conclusion I came to ... was the exportation to outside markets, particularly to the United States, was one of the greatest causes of depletion. My idea was, firstly that these fish ought to be kept primarily as food supply for the great population of this country.⁹⁵

Again, a nationalist sentiment arose to defend the conservation of this important resource.⁹⁶ At the time it was felt, by observers like Leech, that production for an external market was threatening the whitefish stocks and was not satisfying a smaller but local market.

Some of the most important evidence to be presented to the fish commission were the statements of local fish merchants concerning the stifling of a local market by subsidiaries of U.S. interests. This conforms to dependency theory which emphasizes that export activities often block local development or even consumption. J. Johns, a fish merchant in Winnipeg since 1884, maintained that "all good fish are shipped away, anything drowned or diseased ... Winnipeg has been the market for it."⁹⁷

Johns argued that good size whitefish would have a better market than salmon and that the fish merchant would pay more but "we cannot get them. They will not send large white fish to Winnipeg."⁹⁸ Johns pointed out that "the sales of white fish dropped over fifty percent from any year I have been in the business."⁹⁹ The argument of the fish companies was that local merchants did not have facilities to handle Lake Winnipeg fish. It should be pointed out that these merchants handled fish from the coasts and inland whitefish from Saskatchewan and Alberta, and as such must have had the appropriate means. Other merchants such as J.R. Davis (fish merchant for 26½ years) and A. Brill encountered difficulties in getting whitefish from Lake Winnipeg: "It seems to me we are catering to the United States; foreign market and Canadian people in this neighbourhood should be allowed this privilege, why should we let the best fish leave the country and we have to pay such exorbitant prices."¹⁰⁰ Interestingly, in spite of the alternative prospects of a small local market, the continued exporting of fish to U.S. market presented problems: "Practically all the fish from these lakes are being shipped to United States markets, and these markets are really oversupplied, so that prices are low and the fishing in a great many of cases, quite unprofitable."¹⁰¹ Not surprisingly, the relationship of dependence had not only truncated local markets but eventually did not really create stable income from this export activity.

Perhaps the most cogent testimony at the Commission was provided by Johann Pjetur Solmundson, a clergyman and secretary of the fisherman's union. Solmundson's interest in the Commission was a desire "... that the whole thing needs to be cleared up in a more historical way ..." and that the trouble was "in a small way between capital and labour that has cropped up here."¹⁰² Solmundson was extremely resolute on the issue of American fishing maintaining that there "have been American interests here, and this very fact is the key to the whole situation."¹⁰³ Solmundson, even though he represented the interests of working fishermen, identified the supply problem nature of the industry.

The story of the white fish is identical with the story of the buffalo. The lake was filled with white fish when the white man came here first, and it is through the white man's work that it is gone, ... evidence goes to show that these interests are rich enough to maintain that hold and to keep going on after them, and possibly to chase them into the last spot in the north end of the lake. And it is

shewn that from the beginning, when the immigrant settler could catch enough fish for his family on a small scale, which it was then, until now, when it takes a good-sized steamboat to catch anything worth the investment, and this has all come about in thirty short years.¹⁰⁴

Solmundson's analogy between the buffalo and the whitefish is of interest to scholars of Indian history. Solmundson was a member of the Icelandic community who recognized that the capital intensive fishery had debased native and settler means of survival. Furthermore, he felt that greater amounts of capital were required to maintain fish production. As Solmundson suggested those who owned capital (steamboats) could continue to fish by moving to new fisheries.

On the issue of foreign control and combine, Solmundson's description was not unlike that of the American populists of the 1890's.

But just a little after this the arm of the octopus from south of the line arrived at Selkirk, arms clutched in the whole thing--the numerous Selkirk companies, and if the allotting of them, and the manner in which that stock was subscribed and paid for was investigated, ... There was virtually a monopoly formed ...¹⁰⁵

Such a description of American capital could easily have been written by the Canadian nationalists of the late 1960's. Solmundson's views represent an early radical tradition which opposed the penetration of American capital--not out of strictly nationalist sentiments, but because it was a manifestation of the contradiction between metropolis and hinterland which in turn exacerbated the contradictions between labour and capital.

In other respects Solmundson's testimony before the Commission was important as he provided a class description of the industry.

Gradually three interests were formed. The corporate interest, of which the Booth Company has been the holding company, Secondly, the labor interests on the lake, and 3ly., sic and last, a sort of go-between-interest in the Icelandic local merchants, and those three are so intertwined that it will take superhuman wisdom to prescribe a remedy for the malady.¹⁰⁶

The term 'go-between' is the very words that W. Clement has used in describing certain fractions of the capitalists class in Canada today.¹⁰⁷

The mercantile basis of such commercial relationships has also been an argument used by R. T. Naylor.¹⁰⁸

3.2.2 The Interim Report Of The Royal Commission 1909/10

After several sittings of the Royal Commission an interim report was issued on November 26, 1909. This report invoked considerable controversy, as it stated:

We have reached the conclusion that all the lakes of Manitoba have been over-fished, and that some of the more valuable species such as whitefish and yellow pickerel have decreased very seriously in size and in abundance, and that the sturgeon, the most valuable fish found in these waters, is on the point of extinction ...¹⁰⁹

This report of the Commission drew attention to the fact that regulations concerning gill nets had been avoided. Perhaps more significantly the Commission maintained:

We have abundant evidence that the Manitoba fisheries have been unduly controlled by foreign fish operators, who have indicated the prices of fish and have secured the major portion of the profits. The people of Manitoba have benefited little from these Great Lake fisheries.¹¹⁰

The interim report of the Commission demonstrates two salient features of the industry--declining yields and foreign control. On the question of the local market, the Commission's interim report noted "moreover, inferior grades of fish have been sold in the Canadian market, while the better grades including the larger size fish, have been exported to the United States markets."¹¹¹ It would be very hard to ignore this aspect of the industry given the unanimity of the testimony of the small, independent fish merchants of Winnipeg.

All of the commissioners recommended a continuation of the prohibition of summer fishing on lakes Winnipegosis and Manitoba. On the question of closing Lake Winnipeg to summer commercial fishing there was a division; commissioners Price and Hugg favoured a closure, while Reid did not. As the Commission had not finished its work this was left for further investigation. Hugg and Price argued that "in our opinion the fisheries on Lake Winnipeg have been so depleted that we recommend the closing of the lake to summer fishing ..."¹¹² On January 21, 1910 Hugg corresponded with Price informing him that the newspapers in Winnipeg had responded to the report favourably and that "I am satisfied that we did not make it a bit too strong."¹¹³ Additionally, G. Bradbury, Member of Parliament for Selkirk, had part of the interim report read into Hansard on January 28, 1910.¹¹⁴ Bradbury added that "this investigation which has been made

corroborates everything that I have stated year after year and which I stated to this House last year."¹¹⁵ The state now had to consider the conflicts that an export orientated commercial fishing had generated. The Fisheries Branch could no longer dismiss the opposition to commercial fishing as exaggerations. On one side of the conflict stood the commercial fishing companies with their American capital and Canadian representatives opposed by small local fish merchants, settlers and fishermen from Icelandic and native communities.

3.2.3 Findings Of The Royal Commission Of 1909/10

Even in 1910, Fisheries Inspector Young stated: "I am free to admit that the fish do not average as large as they did in the old days ..."¹¹⁶ Prior to commercial fishing whitefish averaged 4 pounds, but Wilmot's investigation had observed that the weight had dropped to an average of 3 to 3½ pounds. During the Royal Commission of 1909/10, considerable testimony was provided to indicate that the weight of whitefish had dropped to 2 to 2½ pounds. Clearly, the average age of fish was dropping with the decline in size. It would appear that thirty years of commercial fishing had altered the characteristics of whitefish populations. What is an additionally important aspect is that a drop in the average size of whitefish meant that production could only be stabilized or increased if proportionally more fish were caught to compensate for the declining average size. Furthermore, a decline in the average size of fish meant that the market quality of fish would be reduced. Smaller fish resulted in lower prices and a reduction of fishermen's income.

The final report of the fish commission for Manitoba 1909/10 altered its position.¹¹⁷ In fact, the Commission backed off from its findings of the interim report. It stated that "... evidence of the declining of the fishery resources of Lake Winnipeg, to the serious extent generally alleged, has not been amply borne out by our subsequent investigations ..."¹¹⁸ This subsequent investigation involved the setting of some gill nets which apparently produced good results. Although the Commission recognized that the size of fish had declined it felt that "... the continuance of the prohibition of summer fishing is unjustifiable ..."¹²⁰

The results of a gill net sampling by a sub-committee did not re-

flect the only reason for continuing summer commercial fishing. The final report stated that the shut down of Lake Winnipeg:

... would not justify, in our opinion, the industrial dislocation to which we refer, viz., the stoppage of an important fishery enterprise, and the cutting off of a valued and necessary supply of fresh fish for our own local needs in the West and for Eastern markets.¹²¹

It is apparent that the dependence of the industry on the large fishing companies was consolidated by 1910. Additionally, local needs were not supplied by the summer fishing on Lake Winnipeg as indicated by the testimony of local merchants. On the question of combines and the control of U.S. capital, the Commission's final report altered its previous position. It stated:

The commercial crisis which affected so seriously the large United States fish companies, about four years ago, had this result, that the property really owned by these companies in Manitoba was disposed of and was bought by Canadians; and, so far as we can ascertain, the freezers, ice house, tugs, boats and gear at present employed in the fisheries of the Province are owned by Canadians and not United States citizens.¹²²

The fiscal crisis of 1907 probably resulted in the reorganization of U.S. capital and perhaps there was some contraction of their equity in Canada. Judson, nonetheless, maintained that although the financial crisis may have resulted in more domestic control, "the degree was much less than believed at the time, as U.S. influences remained dominant."¹²³

The final report had been signed on February 28, 1911 after some delay. Between the interim report and the final report considerable pressure was mounted to prevent the closure of Lake Winnipeg. On June 8, 1910, commissioner Hugg corresponded with Prince stating:

No reason for changing original recommendation. Agitation at Selkirk engineered by big fish companies. Majority independent fishermen and almost entire public in Province favour continued prohibition summer and fall until matter thoroughly investigated ... Am strongly convinced Lake Winnipeg requires protection from summer and fall fishing for sometime to come.¹²⁴

Prince replied to Hugg and suggested that the issuing of an interim report had been a strategic error.¹²⁵ The Commission then recommended various changes in the regulation of fish production, a royalty on fish to provide some revenue from this public domain resource, and hoped for an increase in the local market with the increased immigration to western Canada.¹²⁶

The reasoning of the Commission in its final report for not closing Lake Winnipeg to summer fishing does not adequately explain the reversal of the stand taken in the interim report. The control of summer fishing on Lake Winnipeg was with the commercial companies, who were opposed to closing the lake but did favour more regulations. Additionally, it appears from the correspondence that Hugg continued to support the closing of the lake. In the House of Commons, M.P. Bradbury supported the interim report and was constantly questioning the Minister concerning the delays in the submitting of the final report. When Bradbury read the interim report into Hansard he commented:

It has seemed impossible to get the Fisheries Department to take hold of this question in a business way and to protect the fisheries in the interest of the Canadian consumer and the Canadian fishermen, while on the other hand everything possible seems to have been done in the interest of the great American trust, who, one would imagine had control of the Fishery Department here at Ottawa.¹²⁷

Whether American capital influenced the fisheries department in Ottawa is not known. The comments that the Commission's final report made concerning the withdrawal of U.S. capital from Manitoba lakes lacks evidence. Moody's Manual of Railroads and Corporation Securities for 1910 listed Armstrong Trading Co. Ltd., the Dominion Fish Co. Ltd., and the Winnipeg Fish Co., as companies whose entire capital stock was owned by Booth Fisheries Co.¹²⁸ The value of the stock that had been issued for these firms was 450,000 dollars.¹²⁹ There can be no doubt that the issue of control by American capital was left unresolved.

Judson characterized the Commission of 1909/10 as "the first of a series of investigations into the Manitoba fishery, but it had little impact upon the industry."¹³⁰ It is difficult to consider the minute changes concerning the regulation of fish production. New regulations and hatcheries may have helped to establish a sustained yield of whitefish on Lake Winnipeg. However, these levels remained below the peak of 1904. The investment of capital, especially in the form of steam tugs and shore installations was considerably more intensive on Lake Winnipeg than the other lakes. This would make it difficult to recommend a closure of Lake Winnipeg to summer fishing.

Summary

Production increased rapidly in the 1890's as the industry became increasingly dominated by larger commercial companies. Immediately after the formation of an oligopolistic structure (Dominion Fish Co. and Northern Fish Company) the production of fish soared. The operations of these companies became increasingly capital intensive with the development of more distant fisheries. Investment was also required when fish were shipped fresh to meet new consumer preferences in the metropolis. This concentration of capital facilitated the merging and combining of smaller fishing companies with larger ones. Ultimately, this process and the means of fishing were controlled by American capital. The creation of the Booth combine in the United States prior to the turn of the century was replicated by the absorption of local fishing firms in Manitoba by Capt. William Robinson, a representative of Booth interests. The simultaneous merging of firms in both the United States and Manitoba was a manifestation of the relationship between the metropolis and periphery--that changes in the metropolis necessitate alterations in the periphery. Such control by American interests maintained a steady supply of fish, even when this was not required, and at the same time restrained the development of a local market. Thus, the people in Manitoba were not even in a position to consume this resource, regardless of price. Additionally, this period can be considered a period of consolidation and as well market fluctuations had repercussions on the incomes of fishermen. Differences in prices between dockside on Lake Winnipeg and the wholesale price in Chicago suggest the transfer of surplus.

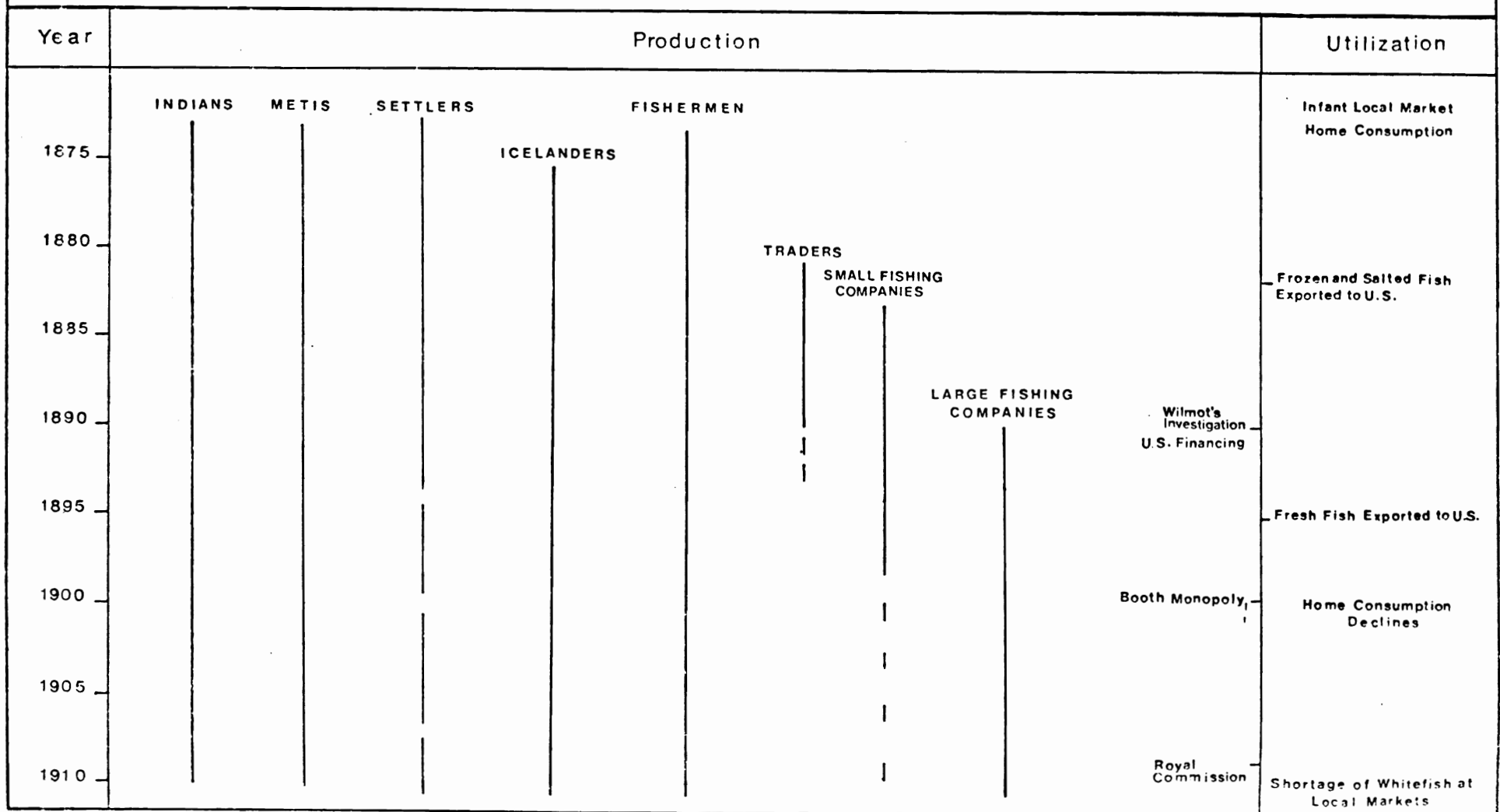
Annual production figures indicate fluctuations which may have been influenced by markets, effort, or the weather. Similarly, annual production figures do not indicate whether a particular fishery of a large lake had been over fished. However, it does appear that commercial fishing had an impact on whitefish populations as demonstrated by the relative increase in effort to catch and the declining average weight of fish. Ultimately, it is in this period that record whitefish yields are produced on Lake Winnipeg and the subsequent drop in production did not contradict the Royal Commission of 1910 which believed that a sustained yield could support a commercialized fishery.

It is in this early period--from 1890 to 1910--that the entire

structure of the industry was consolidated and also the problems that characterize the industry for decades are rooted. Thus, the catch/effort problem, dependence upon export markets, the lack of a local market and the instability of fishermen's incomes can only be understood by the historical reconstruction of the initial period of commercial fishing. The Royal Commission of 1909/10 was an important nexus in the structural development of an export orientated fishing industry. It is difficult to determine how significant a local market may have been, but it would not have matched the larger U.S. demand. However, the encouragement of a local market would have resulted in a more diversified marketing structure and allocated some of this resource to the people of Manitoba.

FIGURE 3.18

STRUCTURAL DEVELOPMENT OF THE FISHING INDUSTRY



Notes and References

1 The problem of data is compounded by changes in data years. Starting in 1906, figures are reported for fiscal year, usually ending in March. Thus, the figures for 1906 is based on the importance of summer production. In this chapter the years 1906 to 1910 are overlapping fiscal years.

2 C.S.P., 1889, Fisheries, XXII, No. 8, Appendix No. 7, p. 219.

3 C.S.P., 1892, Fisheries, XXV, No. 11, Appendix E, p. 161.

4 Ibid.

5 C.S.P., 1895, Fisheries, XXVIII, No. 11A, Appendix 11, p. 340.

6 C.S.P., 1898, Fisheries, XXXIII, No. 11A, Appendix 8, p. 215.

7 C.S.P., 1901, Fisheries, XXXV, No. 22, Appendix No. 6, p. 146.

8 C.S.P., 1899, Fisheries, XXXIII, No. 11A, Appendix 8, p. 205.

9 C.S.P., 1905, Fisheries, XXXIX, No. 22, p. xlii.

10 This hauling of fish during the winter by horses would involve distances of 110 to 130 miles. C.S.P., 1908, Fisheries, XXXXII, No. 22, Appendix NO. 7, p. 204.

11 Dominion Fish Company was incorporated in July 1899, Moody's Manual of Railroads and Corporation Securities 1916, 11, (New York: Moody Manual Company, 1916), p. 3971.

12 C.S.P., 1901, Fisheries, XXXV, No. 22, Appendix No. 6, p. 148.

13 Ibid.

14 P.A.M., MG 9 273, H.C. Knox, "Manitoba Commercial Fisheries."

15 See Theodore Barris, Fire Canoe: Prairie Steamboat Days Revisited (Toronto: McClelland and Stewart Limited, 1977) for a description of the importance of steamboats on the prairies. The development of staples such as timber, fish and even minerals was closely related to the steamboat.

16 Ibid., p. 232.

17 Ibid., p. 212.

18 P.A.M., MG 11 b3, a transcript of tape recorded interview with Gurdmundur E. Solmundson (1959).

19 C.S.P., 1892, Indian Affairs, XXV, No. 14, p. 179.

20 Barris, op. cit., p. 214.

21 A. Barbour, "A Brief History of Manitoba Fisheries," Paper Read Before The Historical and Scientific Society of Manitoba, Series III, No. 12, 1957, p. 45.

22 Thomas A. Judson, "The Freshwater Commercial Fishing Industry of Western Canada (unpublished Ph.D. thesis, University of Toronto, 1961), p. 28.

23 Ibid., p. 50.

24 P.A.C., RG-23 Vol 210, 1089 (1). Correspondence to W. Smith, Deputy Minister of Marine and Fisheries (March 9, 1894) marked 'Private and Confidential'.

- 25 Ibid.
- 26 P.A.C., RG-23 Vol 210, 1089 (1) memo "Re: Violation of Fishery Laws in Lake Winnipeg."
- 27 Ibid.
- 28 Ibid.
- 29 Barris, op. cit., p. 232.
- 30 Ibid., p. 233.
- 31 P.A.C., RG-23, Vol 112, 110 (1) "Statement made before Prof. Prince and Mr. Wilmot: re: application for a commercial license for 1894 (May 12, 1894)".
- 32 P.A.C., RG-23, Vol 210, 1089 (1) memo "Re: Violation of Fishery Laws in Lake Winnipeg."
- 33 Ibid. It appears from the public records of the Fisheries Branch that court actions against the violation by these American subsidiaries failed.
- 34 P.A.C., RG-23, Vol 112, 110 (2). Correspondence from Wm. Robinson to F.W. Colcleugh, Fishery Inspector (March 4, 1899).
- 35 Ibid.
- 36 P.A.C., RG-23, Vol 112, 110 (2). Correspondence from F.W. Colcleugh to Major F. Gordeau, Deputy Minister of Marine and Fisheries (May 2, 1899).
- 37 Ibid.
- 38 Moody's Manual of Railroads and Corporation Securities 1907 (New York: Moody Corporation, 1907), p. 1937.
- 39 P.A.C., RG-23, Vol 112, 110 (2). Correspondence from Colcleugh to Gordeau (May 2, 1899). Additionally, in correspondence from M.P. Bradbury to J.D. Hazen, Minister, Department of Naval Services (January 27, 1914), stated "... this was merged into the Booth Fish Packing Company of Chicago, when Reid and our other Canadian companies were forced out of business by this great combine which secured absolute control for some years of Lake Winnipeg." P.A.C., RG-23, Vol 24, 710-1-9.
- 40 P.A.C., RG-23, Vol 112, 110 (2). Correspondence from Colcleugh to Gordeau (May 2, 1899).
- 41 Ibid.
- 42 C.S.P., 1901, Fisheries, XXXV, No. 22, Appendix No. 6, p. 147.
- 43 P.A.C., RG-23, Vol 112, 110 (2). Correspondence from Colcleugh to Gordeau (May 2, 1899).
- 44 Ibid.
- 45 C.S.P., 1895, Fisheries, XXVIII, No. 11A, Appendix 11, p. 342.
- 46 C.S.P., 1897, Fisheries, XXXI, No. 11A, Appendix No. 8, p. 212.
- 47 C.S.P., 1898, Fisheries, XXXII, No. 11A, Appendix 8, p. 339.
- 48 C.S.P., 1895, Fisheries, XXVIII, No. 11A, Appendix 11, p. 339.

- 49 C.S.P., 1899, Fisheries, XXXVIII, No. 11A, Appendix Y, p. 205.
- 50 Ibid., p. 208.
- 51 P.A.C., RG-23, Vol 112, 110 (1). "Extract From Mr. Indian Agent Muckle's Report Dated December 23rd 1896."
- 52 C.S.P., 1901, Fisheries, XXXV, No. 22, Appendix No. 6, p. 146.
- 53 P.A.C., RG-23, Vol 110, 110 (2). Petition (May 3, 1899).
- 54 Ibid.
- 55 Ibid.
- 56 P.A.C., RG-23, Vol 210, 110 (2). Petition (April 19, 1900).
- 57 Ibid.
- 58 Ibid.
- 59 Ibid.
- 60 P.A.C., RG-23, Vol 112, 110 (1). "Extract From Mr. Indian Agent Muckle's Report Dated December 23rd 1896."
- 61 Ibid.
- 62 C.S.P., 1899, Fisheries, XXXVIII, No. 11A, Appendix No. 8, p. 206.
- 63 C.S.P., 1901, Fisheries, XXXV, No. 22, Appendix No. 6, p. 147.
- 64 Ibid.
- 65 Ibid.
- 66 C.S.P., 1904, Fisheries, XXXVIII, No. 22, Appendix No. 8, p. 199.
- 67 C.S.P., 1906, Fisheries, XI, No. 22, Appendix No. 9, p. 196.
- 68 Catch/Effort ratios are basically a function of the ratio of nets (and therefore the labour time required) to the pounds of catch. Thus gross production figures do not necessarily indicate the strength of fish stocks as the use of more nets and time may compensate for declining catch. The data cannot indicate if nets were set for whitefish or pickerel, therefore the total feet of nets divided into the pounds of fish does not reflect the real amount of nets used between pickerel or whitefish. However, it is a ratio figure which represents an indication of changes in effort relative to catch. For certain years no doubt typographical errors (for example, a missing zero) and sloppy administrative records result in the obviously unrealistic ratios.
- 69 P.A.C., RG-23, Vol 210, 1089 (1) memo "Re: illegal fishing in Lake Winnipeg."
- 70 P.A.C., RG-23, Vol 210, 1089 (1) memo, March 15, 1894.
- 71 Ibid.
- 72 P.A.C., RG-23, Vol 210, 1089 (1). Correspondence to W. Smith, Deputy Minister of Marine and Fisheries (March 9, 1894) marked 'Private and Confidential'.
- 73 C.S.P., 1897, Fisheries, XXXI, No. 11A, Appendix 8, p. 206.
- 74 C.S.P., 1904, Fisheries, XXXVIII, No. 22, Appendix No. 8, p. 199.

75 C.S.P., 1897, Indian Affairs, Medical Report of George Orton, M.D., XXXI, No. 14, p. 126.

76 C.S.P., 1899, Fisheries, XXXIII, No. 11A Appendix 8, p. 219.

77 C.S.P., 1904, Fisheries, XXXVIII, No. 22, Appendix 9, p. 202.

78 C.S.P., 1906, Fisheries, XI, No. 22, Appendix 9, p. 196.

79 C.S.P., 1906-07, Fisheries, XII, No. 22, Appendix No. 5, p. 57, and C.S.P., 1907-08, Fisheries, XIII, No. 22, Appendix No. 7, p. 197.

80 P.A.C., RG-23, Vol 112, 110 (2). Petition (August 11, 1907).

81 P.A.C., RG-23, Vol 365-3216 (1).

82 Ibid.

83 It appears from Hansard that Coffey and Merritt had a five year licence which included the exclusive right to use a pound net. Hansard, Session 1906-07, p. 1394.

84 P.A.C., RG-23, Vol 112, 110 (4).

85 Member of Parliament for Selkirk, G.H. Bradbury stated in the House of Commons that "this is a question that has agitated the people of Manitoba during the last twelve or fourteen years. ... I have repeatedly petitioned and had personal interviews with the Fishery Department, both with this minister and official, but up to the time this commission was appointed I have failed to secure any redress of or any consideration for the grievances and complaints of the fishermen and residents of Manitoba. Hansard, Session 1909/10, p. 2668.

86 P.A.C., RG-23, Vol 365, 3216 (1).

87 C.S.P., 1906-07, Fisheries, XII, No. 22, Appendix No. 5. p. 57.

88 C.S.P., 1910, Fisheries, XIIIV, No. 22, Appendix No. 8, p. 231.

89 Wilmot's investigation in the summer of 1890 was not a Royal Commission. Interestingly, Bradbury makes two references to a commission in 1884-5. Hansard, Session 1909/10, pp. 2684-2693. This is the first reference to such a commission and it does not appear that Bradbury was referring to Wilmot's investigation of 1890. A search of the Hansard, Sessional Papers, and the Journal of the House of Commons did not produce any information on such a commission.

90 P.A.C., RG-23, Vol 366, 3216 (3). Minutes of the Commission of 1909/10.

91 Ibid.

92 Ibid.

93 Ibid.

94 Ibid.

95 Ibid.

96 Additionally, the testimony of many of the fishermen describing their movement of operations tend to provide evidence of declining yields. Captain Johanson pointed out that the southern end of Lake Winnipeg had been plentiful, but then moved to the area around Beren's Island, then

northwest to Selkirk Island, and that in 1910 only the north east corner was not depleted. Ibid.

97 Ibid.

98 Ibid.

99 Ibid.

100 Ibid.

101 P.A.C., RG-23, Vol 365-3216(1) December 11, 1909 Memorandum.

102 P.A.C., RG-23, Vol 366-3216(3). Minutes of the Commission of 1909/10.

103 Ibid.

104 Ibid.

105 Ibid.

106 Ibid.

107 See W. Clement, Continental Corporate Power (Toronto: McClelland and Stewart, 1977).

108 T. Naylor, The History of Canadian Business: 1867-1914, Volume 1 (Toronto: James Lorimer and Company, 1975).

109 Canada, Dominion Fisheries Commission for Manitoba and the North West: 1909-10: Interim Report and Recommendations (Ottawa: Government Printing Bureau, 1909), p. 5.

110 Ibid., p. 6.

111 Ibid.

112 Ibid., p. 11.

113 P.A.C., RG-23, Vol 365, 3216 (1). Correspondence Hugg to Prince (January 21, 1910).

114 Hansard, Session 1909/10, p. 266.

115 Ibid.

116 C.S.P., 1911, Fisheries, XIV, No. 22, Appendix No. 8, p. 215.

117 A copy of this Royal Commission titled Report of the Manitoba Fisheries Commission (1909-1910) is found in the National Library of Canada, under Canadian Federal Royal Commission Reports (microfiche copy) Micfi, 51, No. 148, 1911. It is also found in the Public Archives of Canada, RG-23, Vol 366, 3216(2).

118 Ibid., p. 17.

119 Ibid.

120 Ibid.

121 Ibid., p. 28.

122 Ibid., p. 31.

123 Judson, op. cit., p. 80.

- 124 P.A.C., RG-23, Vol 365, 3216 (1). Correspondence Hugg to Prince (June 8, 1910).
- 125 Ibid. Correspondence Prince to Hugg (June 17, 1910).
- 126 Report of Manitoba Fisheries Commission (1909-1910), pp. 51-57.
- 127 Hansard, Session 1909/10, p. 2670.
- 128 Moody's Manual of Railroad and Corporation Securities 1916, II (New York: Moody Manual Co., 1916), p. 3971.
- 129 Ibid.
- 130 Judson, op. cit., p. 80.

CHAPTER 4 COMMERCIAL FISHING 1910-1940: GROWTH AND DEPENDENCE

Introduction

By 1910, an export orientated fishing industry was well established in Manitoba. The concentration of the ownership of the means of production associated with it was achieved at the expense of native fisheries and subordinated native and settler labour. From 1910 to 1940 numerous changes in production techniques and regulations governing the exploitation of fish occurred. Changes in the industry can be monitored by using indices of productivity, capital and distribution of value. Graphic portrayal of this data by major fisheries (lakes) establishes some aspects of the changing spatial character of the industry. Production from northern lakes becomes somewhat important to the industry, especially during periods of peak demand or good prices. It is in this period that the transfer of natural resources from the federal government to provincial administration occurred (1930). In spite of the provincial government's concern for the situation of fishermen, it had little capacity to improve their livelihood or maintain a sustained yield production for all species and an effort to alter the structure of the industry through the formation of a fisherman's pool eventually failed. In this period and especially during the depression, marketing conditions were extremely disorderly. This is apparent from an analysis of the evidence provided by the Fish Commission of 1933. As a response to the chaotic marketing structure, the government used conservation or resource management regulations to control production. The availability of fish resources conditioned levels of fishermen's incomes. Although total production tended to increase throughout this time, there are significant shifts in the levels of production of particular species. Finally, the dependent nature of the industry is intensified during this period.

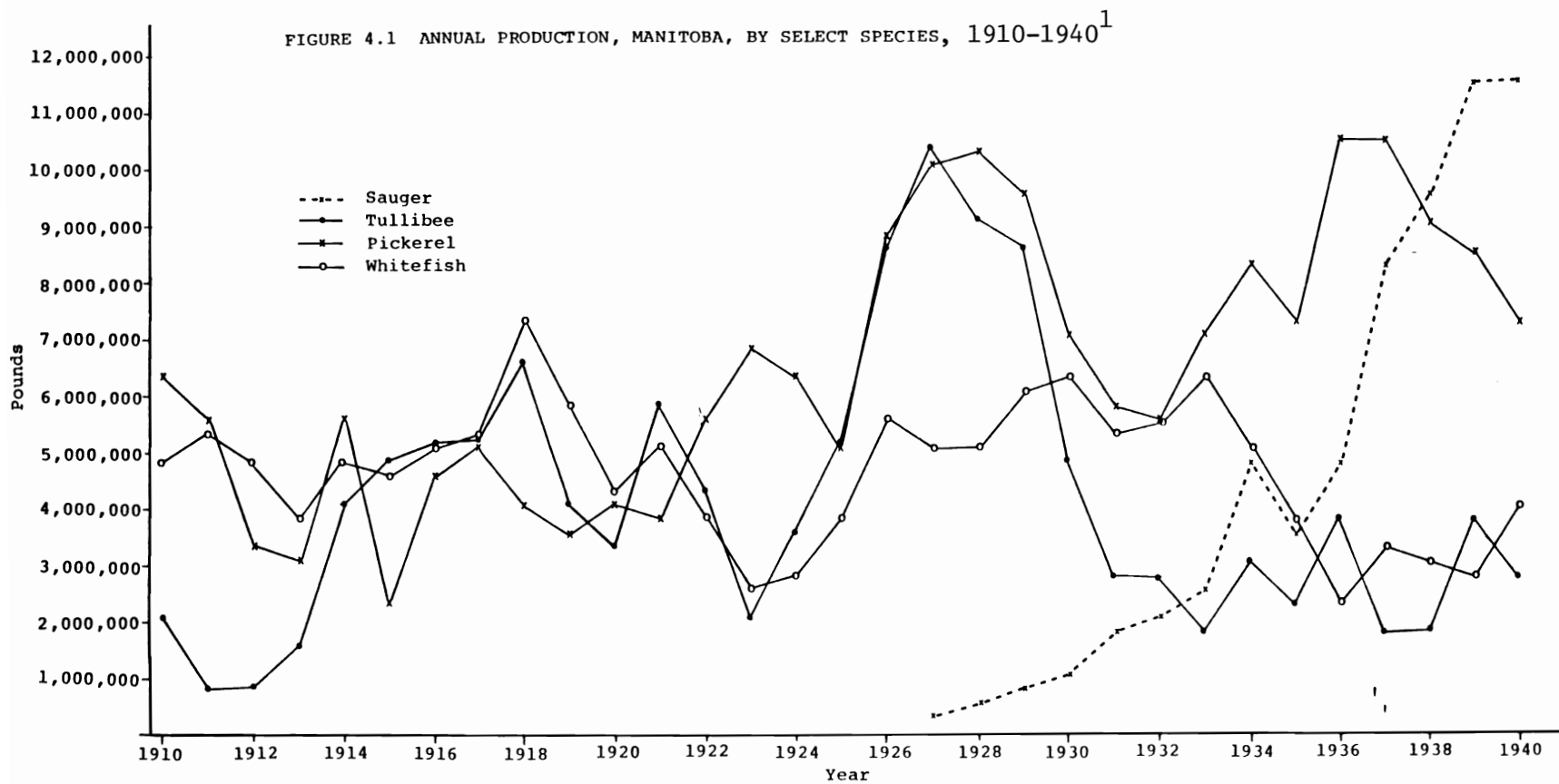
4.1 Export Led Growth And Stagnation: 1910-1930

4.1.1 Production Trends

Once Manitoba's fisheries became commercialized, it was still uncertain whether the resource would produce long-term benefits for the people of Manitoba. Judson has characterized the period up to the 1930's as "... a search for new production areas and increasing intensity of

fishing activity in the older ones, both of which were usually rewarded with comparatively good returns."¹ Figures 4.1-4.7 portray production trends from 1910 to 1930 by lake fishery and by species.² The production peaks of 1918 and 1928 indicate peak demands for Manitoba fish (Figure 4.1). In this period and the periods that follow many of the problems of the commercial industry faced in its inability to match production to demand were strongly manifest. Prior to this, natives and fishermen feared the possibility of depletion of lakes by a commercialized fishery. These people were aware that production for exchange value would jeopardize fish stocks. Whereas, in previous times certain marketing problems had occurred (especially the compression of incomes and monopsony buying), it is in the period after 1910 that the problems of circulation became dominant. In this period it is difficult to determine to what extent the fish stocks (supply) or external market forces (demand) account for production levels. Fish markets were heavily influenced by war, depression and shifting strategies for the promotion of consumption. It would appear that any fluctuations of a short-term nature were primarily influenced by the market and that long-term production trends of species or of lakes, or the aggregate of the industry, reflected the strength of fish populations.

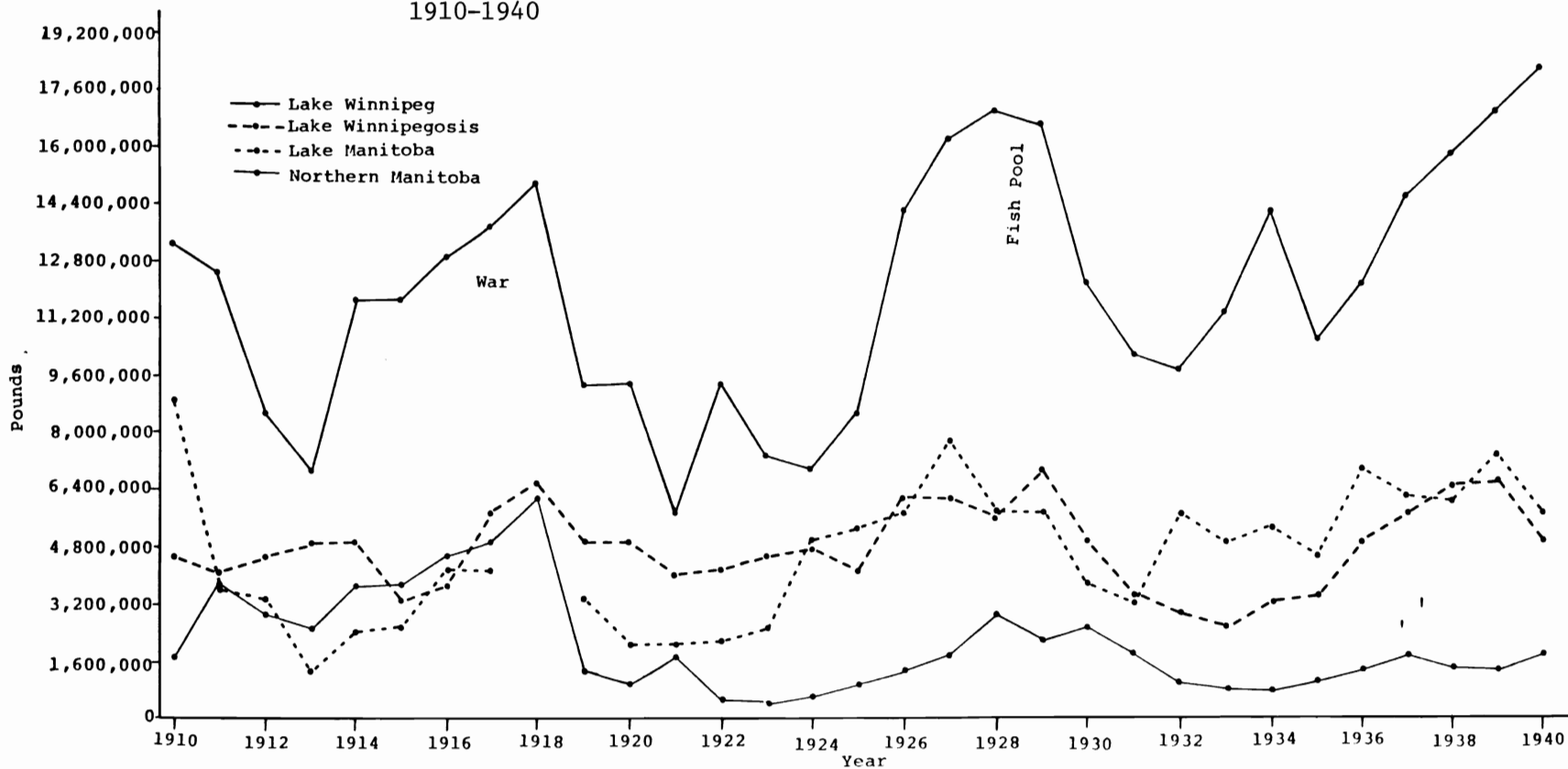
In Figure 4.1 it is clear that whitefish are surpassed by pickerel, and later by tullibee. This reflects the strong demand for tullibee by fish smoking houses in the U.S.³ Fish marked as 'smoked whitefish' were more often than not smoked tullibee.⁴ This suggests that marketing structure was quite capable of adjusting to problems of supply. Tullibee, as well as pickerel, were winter caught fish which meant that farmers on lakes Winnipegosis and Manitoba could exploit this resource. For example, Judson claimed that in the winter of 1923/24 great numbers of farmers concentrated on Lake Manitoba to fish for tullibee.⁵ Nonetheless, for this period pickerel appears to have replaced whitefish, and eventually tullibee increased to levels close to that of pickerel.⁶ In the late 1920's, as during the First World War period tullibee was the leading species in terms of production for Lake Winnipeg (Figure 4.3). An analysis of Lake Winnipegosis production by species does not indicate an increase in tullibee, rather the general decline in whitefish is offset by an increased output of pickerel (Figure 4.4). Figure 4.5 shows that the



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

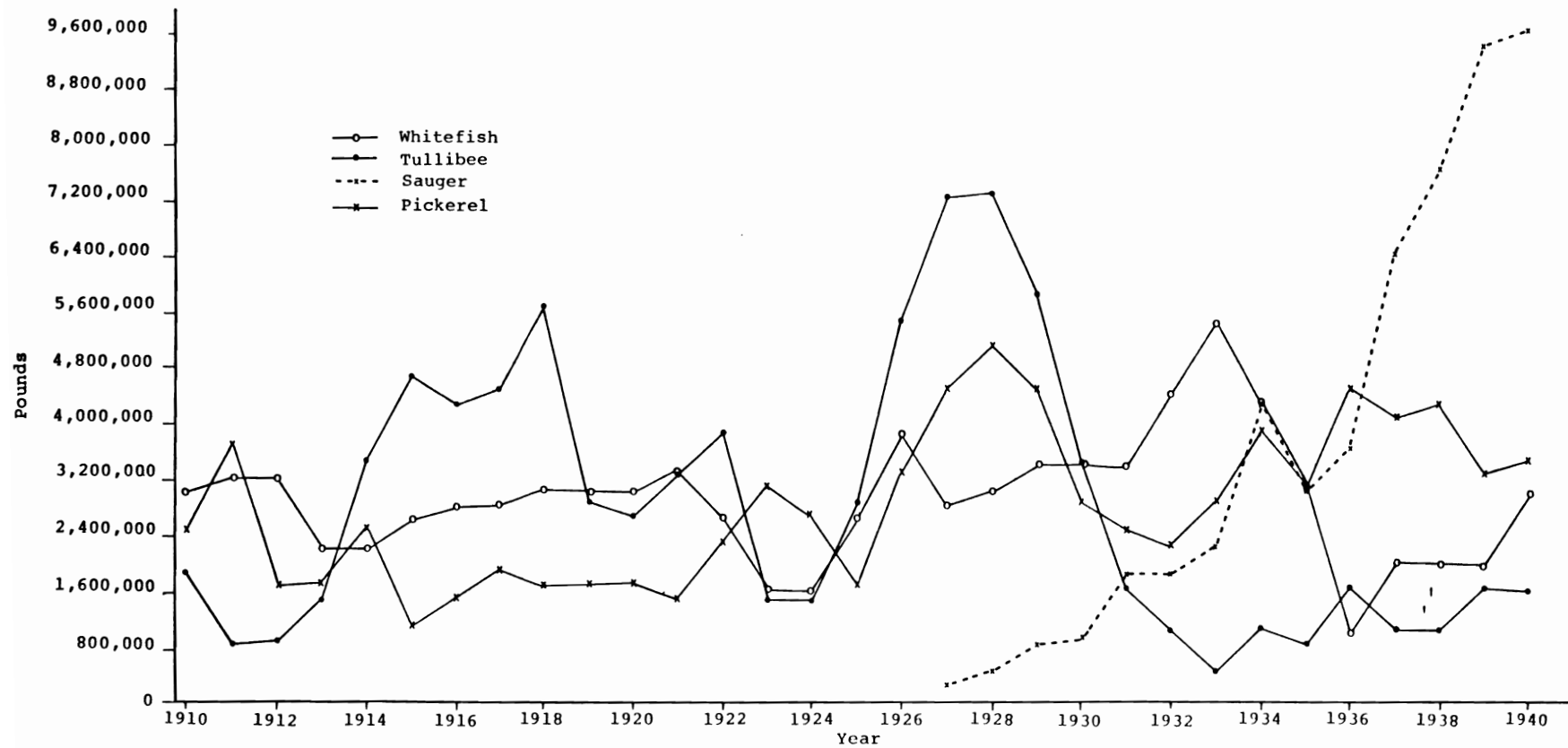
¹Note that the high levels of tullibee production in the 1920's did not recover in the 1930's. Note also the difference in the levels of whitefish and pickerel production in the 1930's (as compared to the period prior to 1922) and the sudden rise of sauger production.

FIGURE 4.2 ANNUAL PRODUCTION FOR MANITOBA'S COMMERCIAL FISHING INDUSTRY, BY LAKE, 1910-1940



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

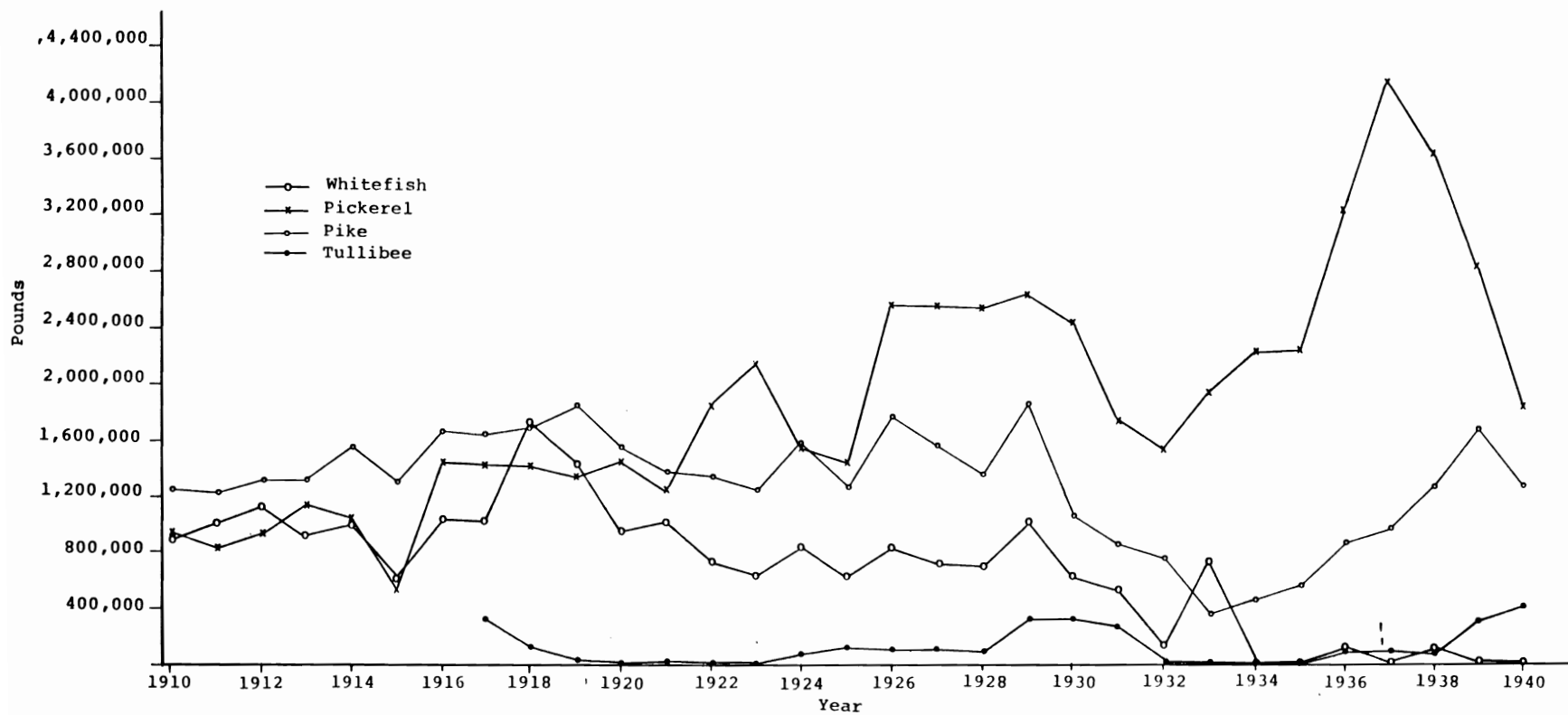
FIGURE 4.3 ANNUAL PRODUCTION FOR LAKE WINNIPEG, BY SELECT SPECIES, 1910-1940¹



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

¹Note the importance of tullibee from 1913-1930, its decline, and the rise of sauger.

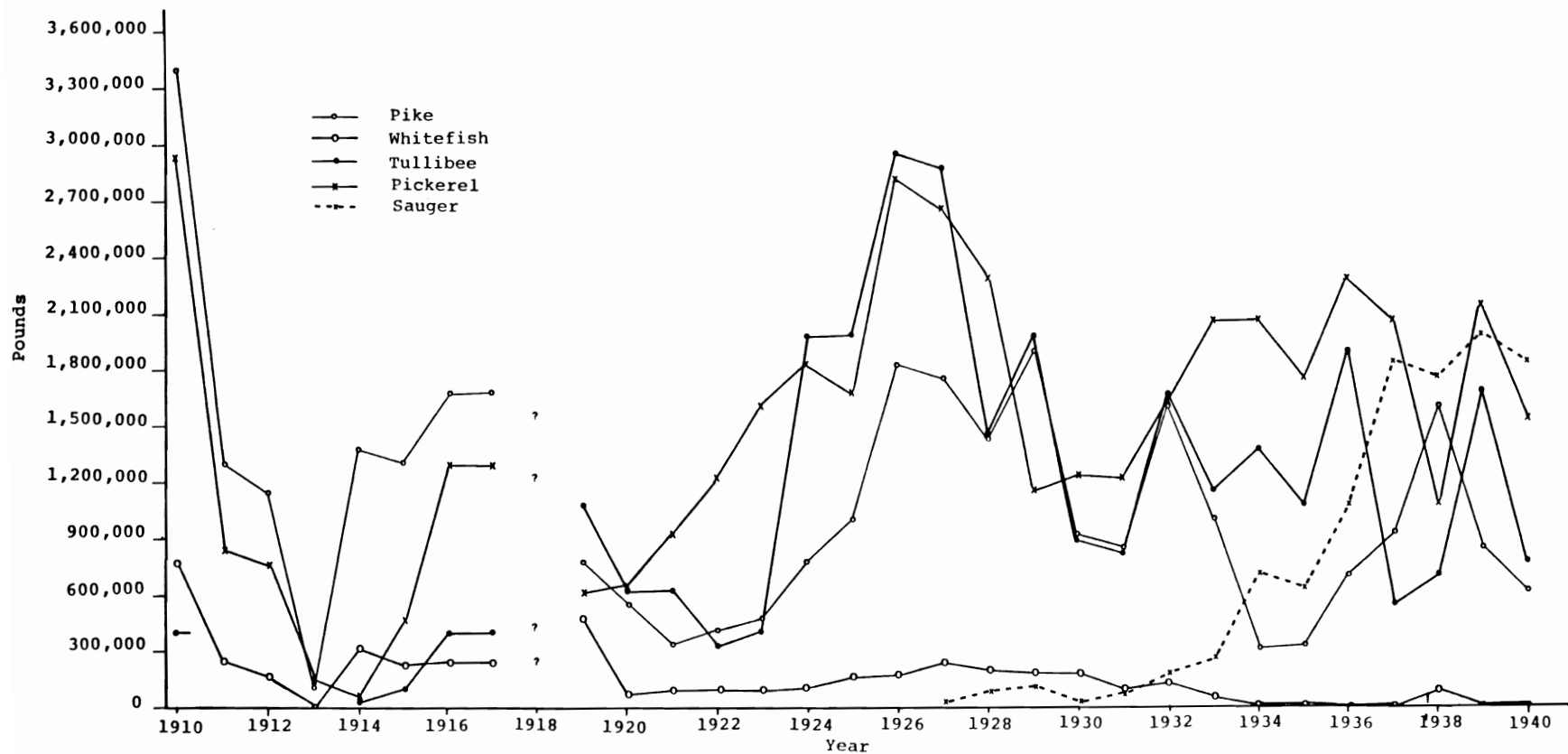
FIGURE 4.4 ANNUAL PRODUCTION FOR LAKE WINNIPEGOSIS, BY SELECT SPECIES, 1910-1940¹



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

¹Note the decline of whitefish (from 1926) and the increased production of pickerel.

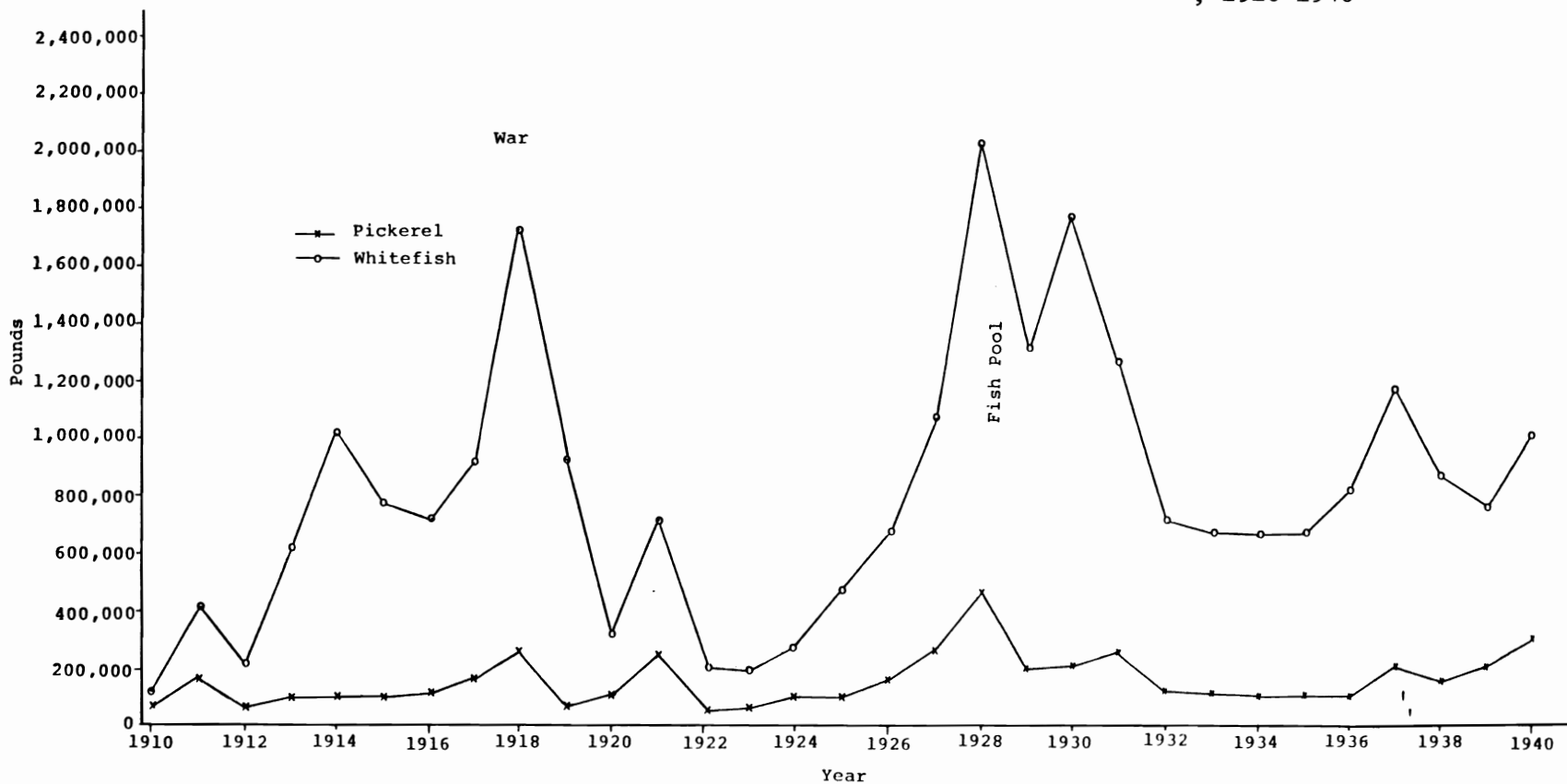
FIGURE 4.5 ANNUAL PRODUCTION FOR LAKE MANITOBA, BY SELECT SPECIES, 1910-1940¹



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

¹Data for 1910 was probably inaccurate. Note the quick rise and general decline of tullibee production.

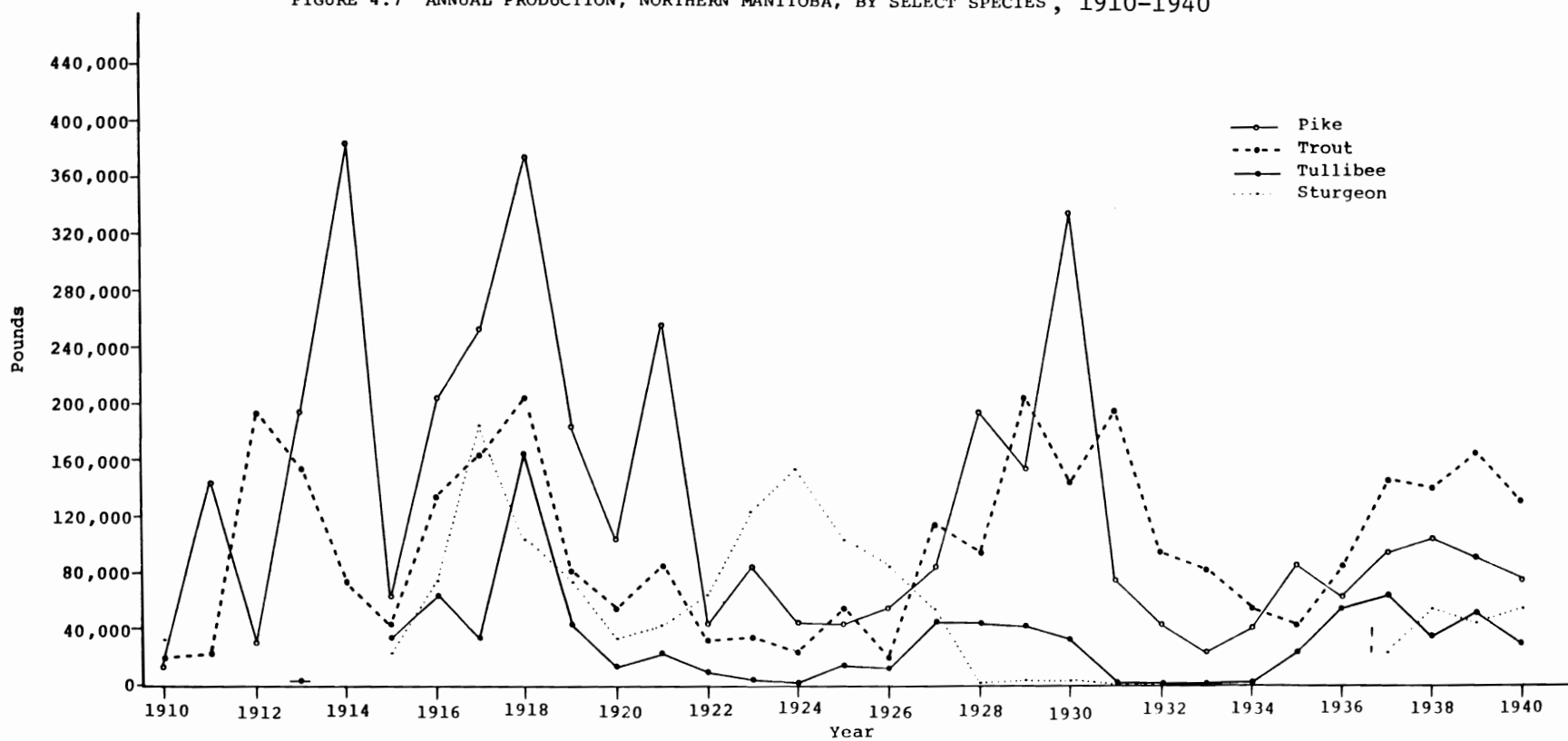
FIGURE 4.6 ANNUAL PRODUCTION OF WHITEFISH AND PICKEREL FOR NORTHERN MANITOBA, 1910-1940¹



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

¹In general the increase in production over the period prior to 1910 is considerable but concentrated largely on whitefish. The peaks in production appear to be influenced by prices and demand.

FIGURE 4.7 ANNUAL PRODUCTION, NORTHERN MANITOBA, BY SELECT SPECIES, 1910-1940¹



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

¹Production is largely conditioned by the market, however note the decline of sturgeon.

production of whitefish stagnated on Lake Manitoba. However, by the early 1920's tullibee production reached the general levels of pickerel. It should be recalled that during the period of consolidation (1890-1920) declining yields of whitefish were offset by the increased harvests of pickerel. In this period of expanded production (1920-1930) tullibee also becomes an important species.

By and large, the expansion of production was encouraged by increased prices. D.F. Reid, Fishing Inspector, reported that 1916 was one of the best years and the price increases to fishermen, over the previous year had been 50 to 100 percent.⁷ By closing lakes such as Manitoba, Winnipegosis and Dauphin to summer fishing, winter fishing was encouraged and Judson claimed that this "was based upon the belief that summer activity lacked certain beneficial influences upon the Manitoba economy which winter operation possessed."⁸ It was claimed that prices were high, fish would not spoil, and since less equipment was required, farmers could enter the industry.⁹ This is an instance of the state using regulations largely based on biological reasoning to regulate the economic aspects of the industry. Judson stated that "the government was going much further than attempting to assure biological survival; it was making important planning decisions of an economic nature."¹⁰

4.1.2 Penetration Into Northern Manitoba And The Case of Sturgeon

Prior to 1920, the commercialized fishing had been conducted on the Nelson and Saskatchewan river systems. In the period 1910-1920, production from northern Manitoba help to maintain growth in the province's fishing industry. During this period the extension of railways from The Pas to Flin Flon, and the completion of Hudson Bay Railway to Churchill (1930) provided a means to transport fish from the smaller, more remote lakes. The available production figures for northern Manitoba lakes are presented in Figures 4.6 and 4.7. It appears that production was somewhat erratic and probably heavily influenced by available prices. Judson pointed out that even high yield lakes such as Moose and Cormorant "could be profitably tapped only when prices were good and local freighting was not too expensive."¹¹ In this sense, commercial fishing may have not only disrupted local production, but, in fact, established the industry in a capricious fashion. It is interesting to note that the peak total

production for northern Manitoba was reached in 1918 (Figure 4.2) which is somewhat distinct from the pattern of other lakes.

To a certain extent, the smaller lakes could not produce a sustained yield catch which was profitable; hence, lakes were exploited intensely for a few years and then abandoned. In this way, the character of production was highly dependent upon external prices. However, production was maintained at a time when a conservation resource management policy was implemented. An account of fishing in Manitoba in 1924 stated:

The Government realizing the necessity of conserving the fish in these waters, and benefiting by experience of former exploitations of waters situated in what was at the time considered the hinterland of civilization, has placed a limit of annual out-put on every lake so opened ...¹²

As in previous periods, Indians demonstrated concern as commercial fishing began to expand northward and they demanded that the fisheries be protected. For example, in 1912 Indians from Cross Lake requested an exclusive reserve for their own fishing.¹³ Nevertheless, sturgeon and, to a certain extent, lake trout were fish which drew commercial fishermen to northern Manitoba. As on lakes Cedar and Winnipeg, Indian labour was involved. Fisheries records in 1923 stated: "The white men do not seem to do very good fishing in the Swift Waters and the Indians seem to know the very few places where nets can be set."¹⁴ The skills that Indians had in catching sturgeon would have made the commercial exploitation of this fish more feasible, conflicting with more current images of the Indian as an inefficient fishermen.

Sturgeon was the highest priced fish, which meant that it was always sought after. Prior to the advancement of the railroad or the use of the aeroplanes, sturgeon fishing extended to the far north of Manitoba. It is reasonable to expect that when thousands of pounds of sturgeon were removed from the Churchill River (near Pukatatawagan Lake), it would be profitable in spite of a shipment of over 200 miles by horse teams. Manitoba sturgeon brought good prices according to Fisheries Inspector Skaptason because of "the rapid decrease and depletion of the sturgeon fisheries of North America during the past 40 or 50 years, or since its commercial value became pronounced ..."¹⁵ Skaptason realized in 1926 that the sturgeon fishing on the lower Saskatchewan River in the period prior to 1910 had jeopardized the sturgeon stocks. He stated that "A period of exten-

sive pound net fishing made heavy inroads into the sturgeon of the river ..." but that the intervention of the Fisheries administration prevented the depletion of another sturgeon fishery.¹⁶ It should be recalled that when the pound net was first introduced on the lower Saskatchewan it spawned opposition by local fishermen. The department responded to the need to regulate sturgeon fishing by establishing lake limits and periodically closing the lakes (as Figure 4.7 suggests). The sturgeon limit for the lower Saskatchewan River was 50,000 pounds, which was considerably less than the annual production for that area at the turn of the century (see Figure 3.8).¹⁷ Sturgeon was initially pursued at the south end of Lake Winnipeg and then was carried at Pigeon and Beren's rivers.¹⁸ Eventually, it reached up into the lower Saskatchewan and Nelson rivers, and afterwards moved north and eastward to the Churchill, Hayes and Fox rivers. Although whitefish has long been recognized as the important commercial species, in many respects the diffusion of commercial fishing was preceded by species selective commercial exploitation of sturgeon. The fact that pound nets were prohibited and fishing grounds were closed did not eventually result in sustained yields of sturgeon.

4.1.3 Increased Dependence Upon External Markets

The optimistic forecast of the Commission of 1910 concerning the expansion of the western Canadian population did not redirect the production of Manitoba fisheries towards a growing local market. In 1926 Skaptason reported that he:

... made some definite efforts to ascertain the reasons why it is necessary to find a foreign market for such a large percentage of our fish production, and has come to the conclusion that is not so much the lack of demand and desire for the fish by the residents of the province, as the fact that little or no effort has been made put forth to cultivate the possibilities of this market and the people find difficulty in obtaining the fish. In fact they find it much more convenient to obtain either Pacific or Atlantic fish than those produced from the lakes at their doors. It is only when adverse conditions prevail on the American markets that the producer tries to find local outlet for their product.¹⁹

The situation concerning the neglect of the local market had not changed from the early period of commercial development of fisheries. Skaptason, however, argued that this need not be the case, and that "local demand

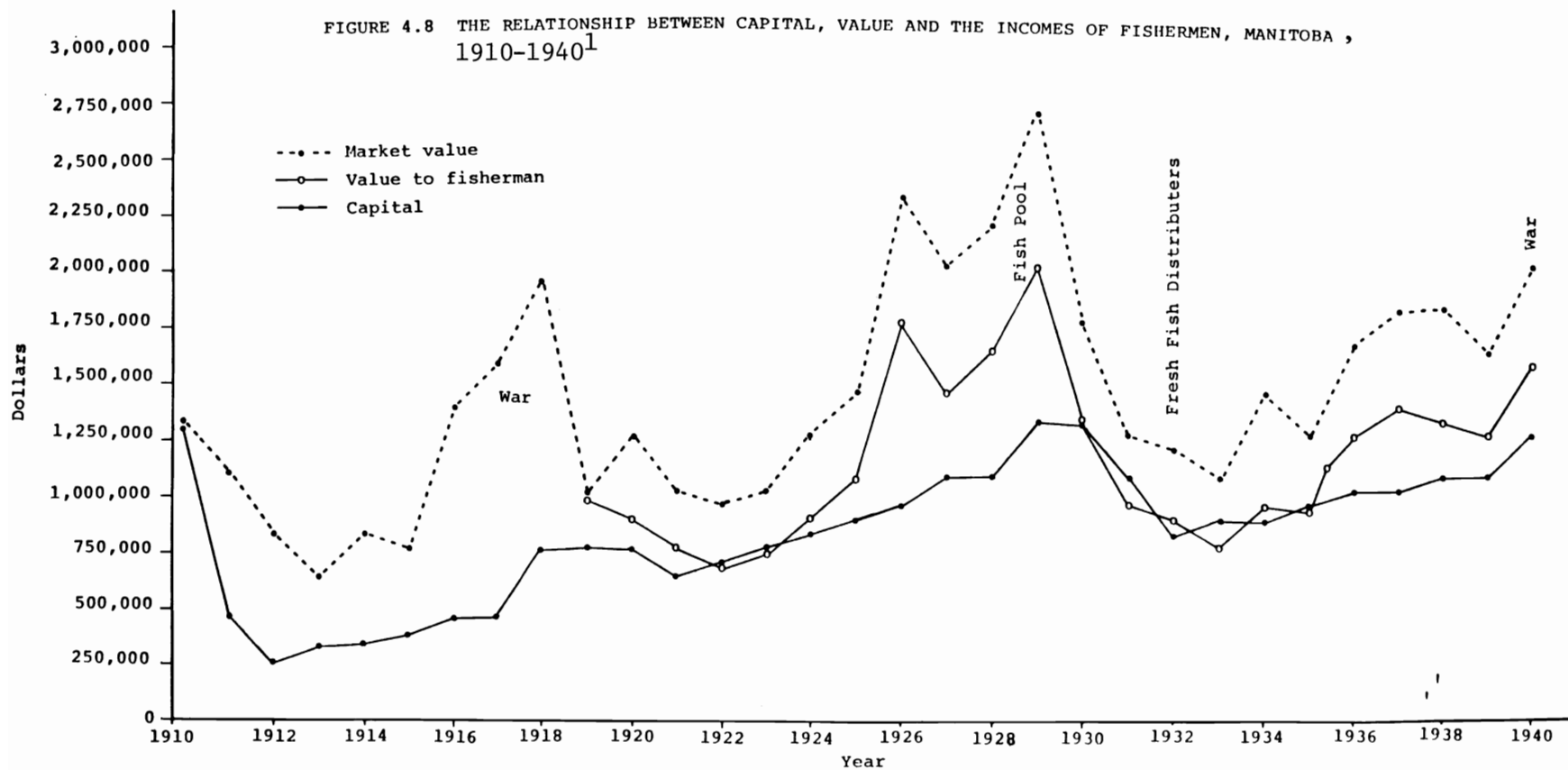
could ... be created for many of our varieties of fish."²⁰ Furthermore, "This would have the effect of stabilizing the market and prices, ... in seasons when American production is excessively large and the prices fall ..."²¹ There were times during this period when there was a price inducement to expand, however, production remained for an external market.

It is in this period that the first mention is made of quality problems of Manitoba fish. The quality of Manitoba fish is related to an attempt to justify lowering the price of fish (Winnipeg f.o.b.). It should be recalled that as early as 1895 Manitoba had shipped fresh fish to Chicago and there had never been an indication of poor quality fish shipped for export. The Commission of 1920 indicated that poor quality fish or small fish were disposed of in Winnipeg. However, in the Annual Report for Fisheries in 1914 it was recorded: "There is one matter that the department's attention should be particularly drawn to, and that is, the amount of drowned fish that are offered for sale during the winter, which does much injury to the trade."²² Predictably, while fishermen's incomes were being compressed, they would ship as many fish as possible regardless of quality. However the marketing problems were somewhat more intricate, as the annual report for 1921 suggested that the general lowering of the price of food did not include fish.

In my opinion the price is much too high to make it a popular article of diet. So long as a very large percentage of the catch of these provinces finds an unlimited market, with high prices in the United States, the price will keep its present level.²³

Fish, then, was not only an export product but a luxury one at that. The structural development of the industry prior to 1910, and the higher prices that prevailed in this period of expanded production all militated against the development of a local market. As such the industry was trapped into a dependence upon external markets.

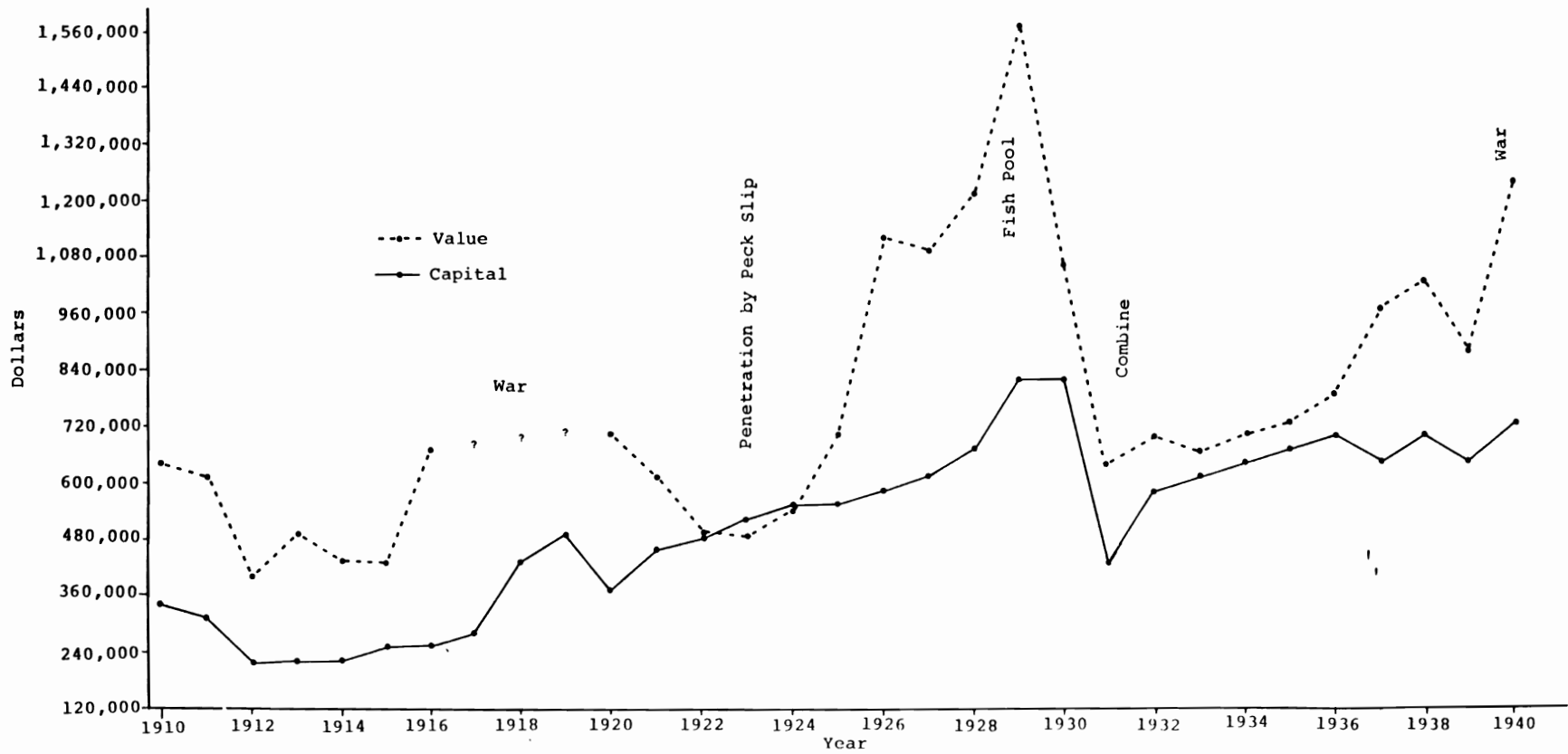
A closer examination of data concerning the relationship between the value of fish and capital invested indicates a stable growth prior to 1918 (Figures 4.8 to 4.14). Between 1918 and 1923 the incomes of fishermen (value to fishermen) decline. (Figure 4.8).²⁴ There is a slow but steady growth of capital invested (Figure 4.8) between 1921 and 1930 which was largely directed towards gill nets (Figure 4.13). The increase in gill nets expenditure suggests an increased effort in fishing. The most uneven



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

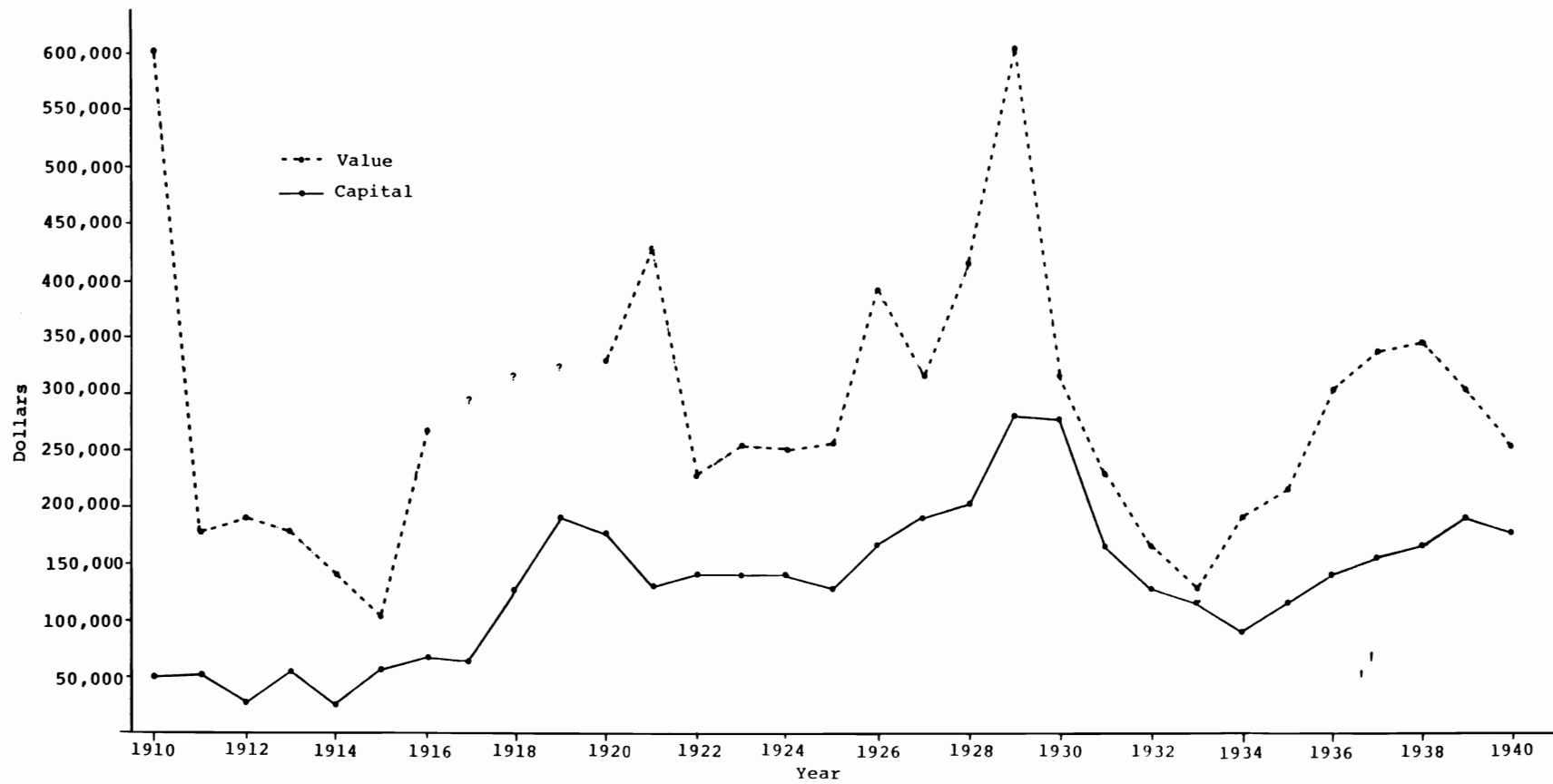
¹Note that during the First World War a relatively rapid increase in value generated but a smaller increase in investment. Note in 1923-1924 and in 1930-1935 that capital (constant capital) and the incomes to fishermen (variable capital) are at the same level. This identifies a crisis in the industry and is followed by changes in ownership patterns.

FIGURE 4.9 THE RELATIONSHIP BETWEEN CAPITAL AND VALUE FOR LAKE WINNIPEG FISHERY,
1910-1940



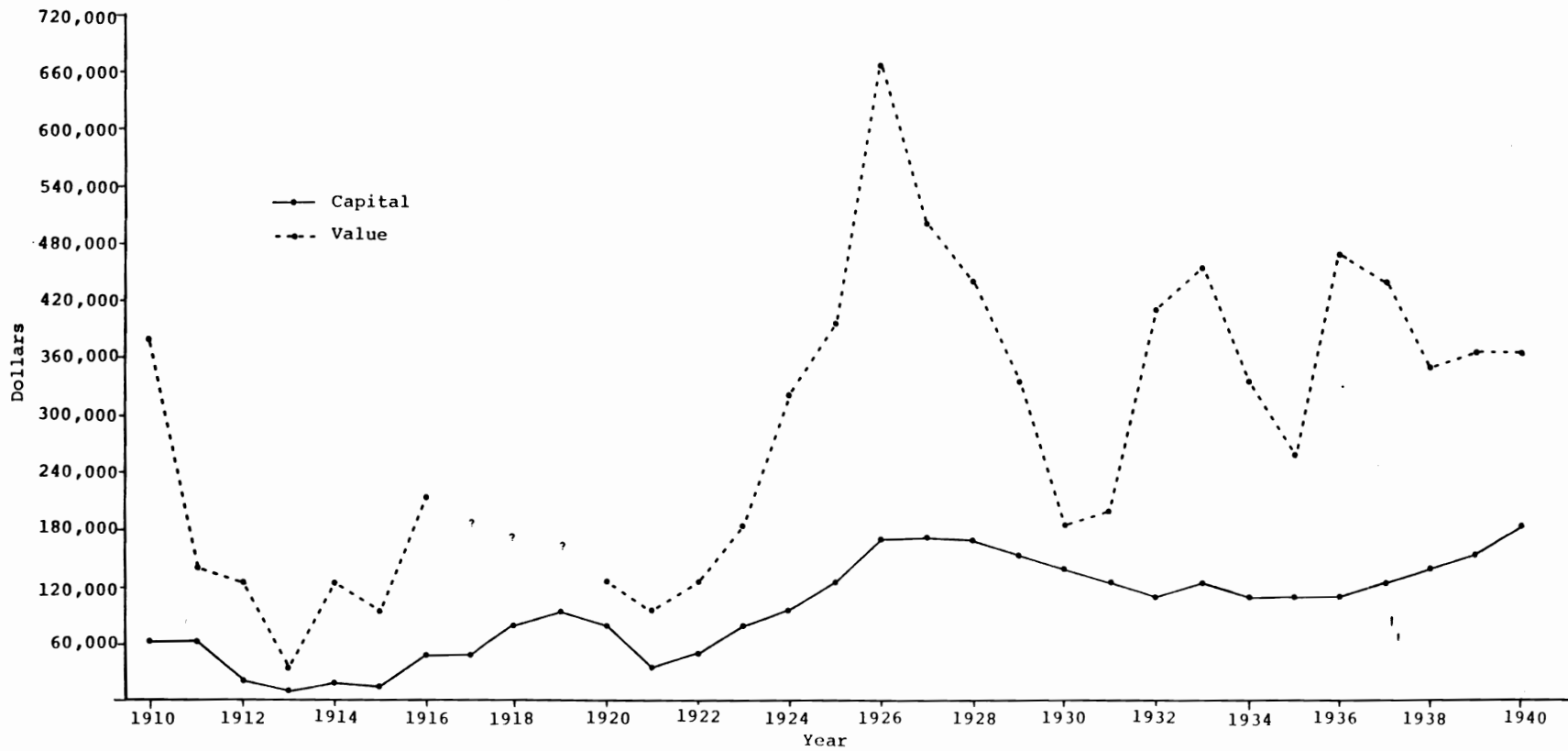
Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

FIGURE 4.10 THE RELATIONSHIP BETWEEN CAPITAL AND VALUE FOR LAKE WINNIPEGOSIS FISHERY, 1910-1940



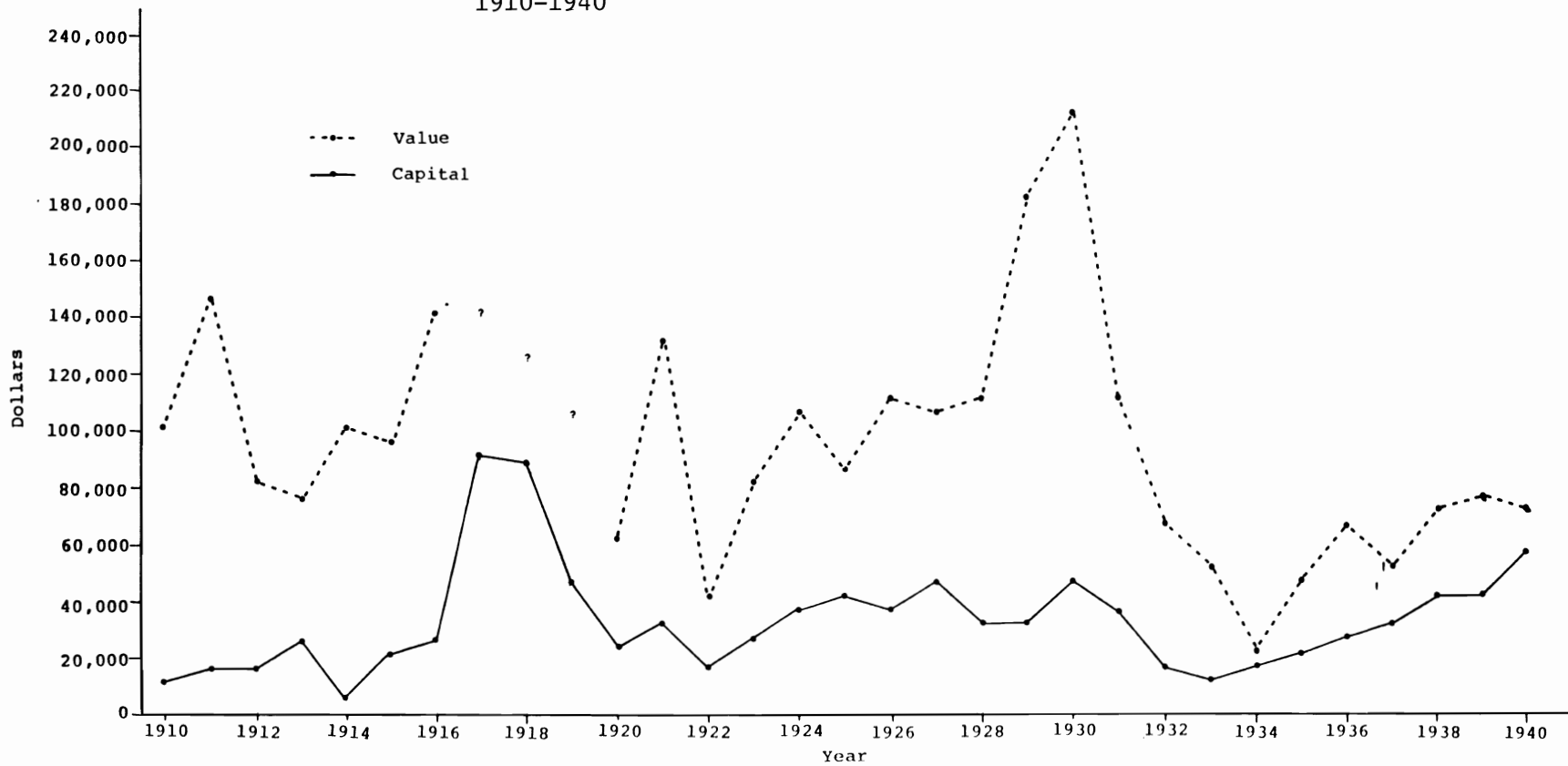
Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

FIGURE 4.11 THE RELATIONSHIP BETWEEN CAPITAL AND VALUE FOR LAKE MANITOBA FISHERY,
1910-1940



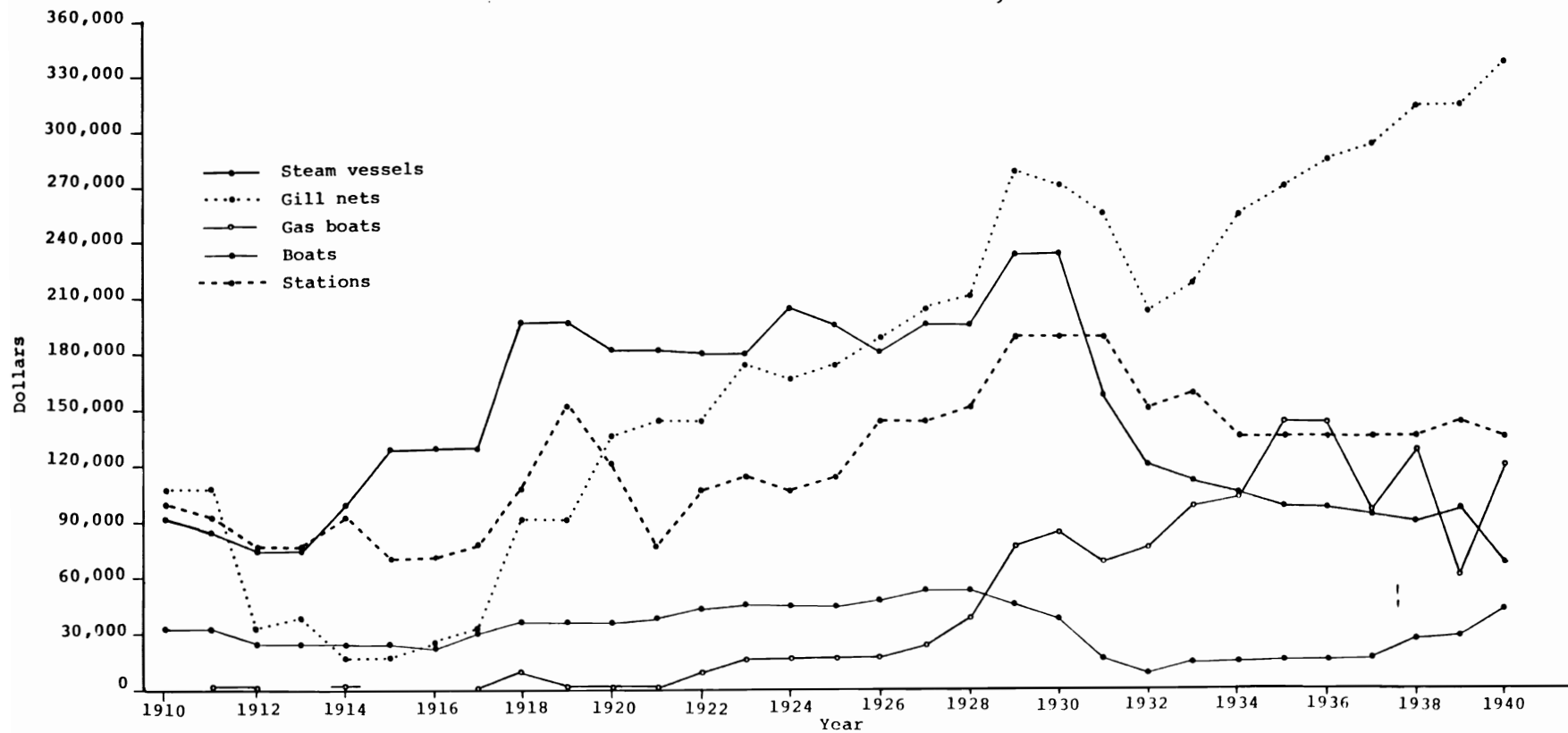
Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

FIGURE 4.12 THE RELATIONSHIP BETWEEN CAPITAL AND VALUE FOR NORTHERN MANITOBA FISHERIES,
1910-1940



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

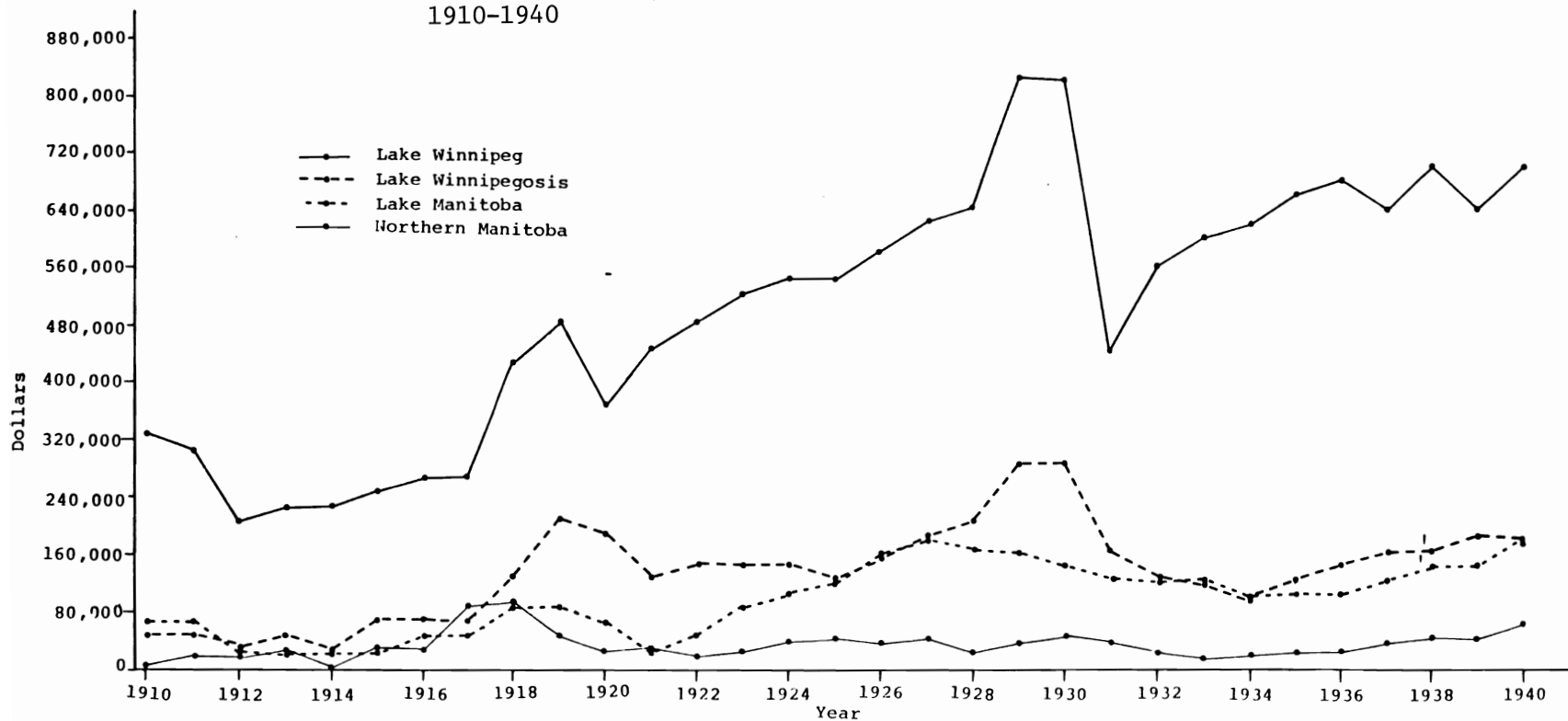
FIGURE 4.13 CAPITAL INVESTMENT IN LAKE WINNIPEG FISHERY, BY TYPE, 1910-1940



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

¹Note the increasing investment in gill nets, and the decline in steam vessels as gas boats become generalized. The increase in gill net investment indicates a particular type of increase in effort.

FIGURE 4.14 CAPITAL INVESTED IN MANITOBA'S COMMERCIAL FISHING INDUSTRY, BY LAKE ,
1910-1940



Source: Canada, Sessional Papers, Fisheries, and D.B.S., Fisheries Statistics.

relationship between value and capital was demonstrated by the Lake Winnipeg fishery (Figure 4.9). In the early 1920's the value of fish fell below the level of capital investment. The immediate post war period, in economic terms is one of instability. To understand the reason for such instability and how the problem is handled it was necessary to consider other forms of evidence.

Prior to 1910 the market for Manitoba fish seemed to be largely orientated towards Chicago and the mid-west United States. This is partly as result of the importance of the Booth Fisheries Company in Manitoba. However, by the 1920's Manitoba's production appears to be largely orientated towards the Peck Slip fish market in New York City. In the late 1920's Professor Grant reported on the Peck Slip market for Manitoba fishermen. He claimed that 90 percent "of the freshwater fish consumed on the New York market goes into the Jewish trade," which meant that "the effect of this is to narrow the class of consumer demand ..."²⁵ Grant also pointed out that this "fish market is poorly organized," and "it is a buyer's market in a foreign country, and we must realize this."²⁶ The problems that the industry faced in the late 1920's, as reflected by low returns to capital and fishermen, facilitated the reorientation of the industry towards new markets, such as New York's Peck Slip. These post World War I marketing problems are an instance of the industry readjusting to conditions in the metropolis.

As a result of marketing problems, small fish dealers and fishermen in Manitoba organized what was titled the Manitoba Co-operative Fisheries Limited, more generally known as the Fish Pool. The conditions which led to this were described in the annual report for 1928:

In the winter of 1927-28 a powerful New York Syndicate of commission men and dealers undertook to set a price for fresh fish. These prices were regarded by the fishermen as entirely out of reason for profitable operation. It was also reported that the intention was to further decree that all fresh fish going to New York must come through one source, generally thought to be controlled by the same New York Syndicate.²⁷

It was recorded that 515 fishermen had joined, but more than 1000 were involved. The organization of fishermen coincided with the direct investment of capital from New York in Manitoba's fisheries, which closely followed the reorientation of Manitoba production to the New York market.

The response of local fishermen to changes in the industry's structure was to organize their own marketing pool.

The Fish Pool could only sustain itself for a couple of years before it went out of business. The idea to organize a co-operative had been developing prior to the sudden appearance of the pool. The expeditiousness which ensued as a result of the pressure from the New York combine made it a weak organization. The report of the committee of enquiry into the failure of the fish pool observed "... we can summarize our finding ... by saying that the pool could hardly have committed more mistakes in co-operative organization if the organizers had deliberately set out to make them."²⁸ The numerous organizational and management problems in themselves are not worth detailing. However, it was felt that the fundamental problem was haste in organizing the pool and the subsequent failure to develop policies and understanding of co-operative principles among fishermen. Additionally, the pool was basically organized by some smaller fish dealers who no doubt were caught in a cost/price bind as a result of increased external control. The report emphasized that: "A co-operative association can be recognized if its policies are controlled by the people who use its services and if they receive the benefits. Your pool unfortunately was not controlled by the producers of fish."²⁹ The control over the Fish Pool was the responsibility of the fish dealers--a natural outcome as the fishermen had not been educated on co-operative production.

The report by Grant and Ward strongly suggested that the failure of the Fish Pool was a result of a lack of participation and control by fishermen. During its operation the Fish Pool had difficulties in New York's Peck Slip as the report stated:

We have been told that many of your unfortunate sales operations were the result of premeditated plans on the part of the so-called combines. Although direct evidence is impossible to obtain, we are sure that such operations were quite possible. It is common gossip on Peck Slip that the pool was the victim of such dealings.³⁰

However, Grant felt that fishermen should continue to organize themselves first as an association to deal with the combines because "class consciousness must be aroused and the indispensable voice of the people must replace the dispensible voice of the individual."³¹ The Fish Pool was not entirely

a failure while it managed to operate. It provided competition to fish companies and drove up the price of fish as demonstrated by the rapid increase in value in the late 1920's (Figure 4.8). This also spurred a short period of expansion in northern Manitoba (Figure 4.6).³¹ The act of organizing a pool by fishermen and fish dealers was an effort to restructure the industry in a response to changes invoked by the metropolis. The collapse of the Fish Pool and the world depression would result in further readjustments by Manitoba fishermen.

4.2 The Depression Years And The Fish Commission Of 1933

4.2.1 Production In The 1930's

When Manitoba became a province it did not acquire jurisdiction over its natural resource lands (unlike other provinces except Alberta and Saskatchewan). In 1930 Manitoba's natural resources were placed under provincial control and this included inland fish resources.³² Figure 4.1 displays the total production for various species in the 1930's. The general sinuosity of the graph conforms extremely well to most of the major economic indices of the depression period. For example, the years 1932 and 1933 are considered the worst years of the depression, and in this case Manitoba's fish production and value drop to low levels (Figures 4.1 and 4.8). Figures 4.2 to 4.7 simply indicate the trends for the major lakes. The most interesting aspect, in terms of species, is the total decline of tullibee in the early 1930's after intense fishing in the mid 1920's. This decline in tullibee was offset by the reasonably strong demand for Lake Winnipeg whitefish in the 1930's by fish smoking houses in New York.

By the 1930's a cumbersome production/circulation structure had evolved for both winter fresh fish and summer fish. In the 1930's winter fresh fish production and marketing involved 1) the fishermen; 2) freight to railhead; 3) a local packer and shipper; 4) Winnipeg dealers; 5) transport to New York or Chicago; 6) selling by commission merchants; 7) peddlars and small dealers who sell to; 8) stores, restaurants and hotels.³³ In the early 1930's the cost structure for fresh winter fish was 5 cents to the fisherman; handling costs in Canada 5.5 cents; transport to New York 6 cents; duty of 1 cent; commission house (New York) 5 cents; retail distributing charges 10 cents; making a final consumer price of 32.5 cents.³⁴ It must be noted that winter fishing tended to provide higher prices to

fishermen, possibly because the technical conditions of production made them less dependent on companies. Also local community merchants would ship fish in the winter. Nonetheless, the increased value of the fish over the price paid to the fisherman and the final consumer prices, strongly suggest that value is added in a mercantile fashion through various middlemen; value that certainly transcends the costs of transport and handling by a considerable margin.

In the summer the process was somewhat similar except that the involvement of fish companies in production and marketing was dominant. Companies such as Booth Fisheries and Armstrong-Gimli in the early period of the depression were producing and marketing frozen fish. Other companies who had close ties to Peck Slip were responsible for fresh fish production. When gas boats replaced steam tugs and sail vessels, the companies became less involved in the actual production of fish. Boats and nets were financed or rented to fishermen by companies directly or through local station operators. Since the late 1920's two types of capital investments increased while others declined or stagnated. Figure 4.13 indicates the increased investment in gill nets and gas boats on Lake Winnipeg. Nonetheless, transport of fish on lakes, such as Lake Winnipeg was carried out by company fish carriers. Thus, the involvement of companies was somewhat indirect, but their control over financing insured production. In the early years of the depression, the price paid to fishermen and the cost structure of fish were so controversial that a provincial Royal Commission was held to determine what could be done to improve the situation of the fishermen.

4.2.2 Combines, External Control And Disorderly Markets

In the initial phase of commercial fishing, the records seem to indicate that problems of the industry revolved around the question of overfishing. In the years after the Commission of 1910, production expanded but concerns developed about the effect of external demand on incomes. However, in the 1930's the disorderly fish markets revealed their chaotic impact on Manitoba's fishermen as the real problem of such a dependent development. The depression, of course, enhanced this problem, and the fact that a provincial Royal Commission was held in 1933, one of the worst years of the depression, was not simply a coincidence.

The racketeering and instability that characterized the fishing industry in the 1930's in fact had an earlier origin. H. Hannesson, long associated with the fish business in Manitoba stated before the Fish Commission of 1933 that: "for the past ten years the fish business in Manitoba has been a complete racket ... from the time the Pack Slip [sic] crowd got into the game it has been nothing but a racket and this year has been the worst attempt to pull off a complete racket."³⁵ In 1933 the low prices offered by the companies and the fishermen's disappointing experiences with the fish pool resulted in pressure by fishermen for a Royal Commission. Hannesson provided some information which documented a new phase in the penetration of U.S. capital:

Had a jump in price right after the war, then a collapse in price. Those companies took a heavy loss. Could not be financed in Canada and had to tie up with those fellows and it made them subject to these people from the United States. The American companies started to form small companies up here with very small capital. It was never the intention that those companies should make money, the men who were running them had no financial interest and were on salary ... if it did not lose the American company took the profit.³⁶

Thus, the instability of demand meant that U.S. capital could again penetrate the Manitoba fisheries. Hannesson's comment is very important as it validates the evidence provided in Figures 4.8 and 4.9. These figures indicate the crisis of declining value relative to capital investments in the early 1920's and again in the early 1930's. Hannesson's knowledge of the industry confirms that U.S. capital, mainly from New York reappeared in Manitoba. When these firms faced a crisis similar to that of the 1920's, the structure of the industry was modified. Thus, the underlying structure of the industry and the shifting character of the metropolis influences on Manitoba's fishing industry provided the build up or pressure to convene the Commission of 1933.

The sort of problems that Hannesson was familiar with often meant that fish shipped to New York would be bought cheaply from Manitoba under the pretext that it was of poor quality and that it had to be disposed of cheaply. Fresh fish, as a product, was vulnerable to these sorts of problems. The Report of Commissioners Appointed to Investigate the Fishing Industry of Manitoba: 1933 recorded how this operated:

It has been a common occurrence in Manitoba that producers will make sales to a concern in the States and for a period of time the transaction may be carried on in a satisfactory manner. To the shipper's dismay and often to his ruin he is suddenly advised that his last car was of inferior quality and will only be accepted at a very low price. The shipper ... is forced to take a loss which may often wipe out not only the profit on previous transactions but most of his operating capital ... [there]remains a constant threat over the heads of independent shippers and producers.³⁷

However, the Commission reported that:

It is a matter of common knowledge that in these large cities racketeers have come in to the fish distributing business thereby restricting competition and increasing the spread between Winnipeg prices and retail prices in American cities.³⁸

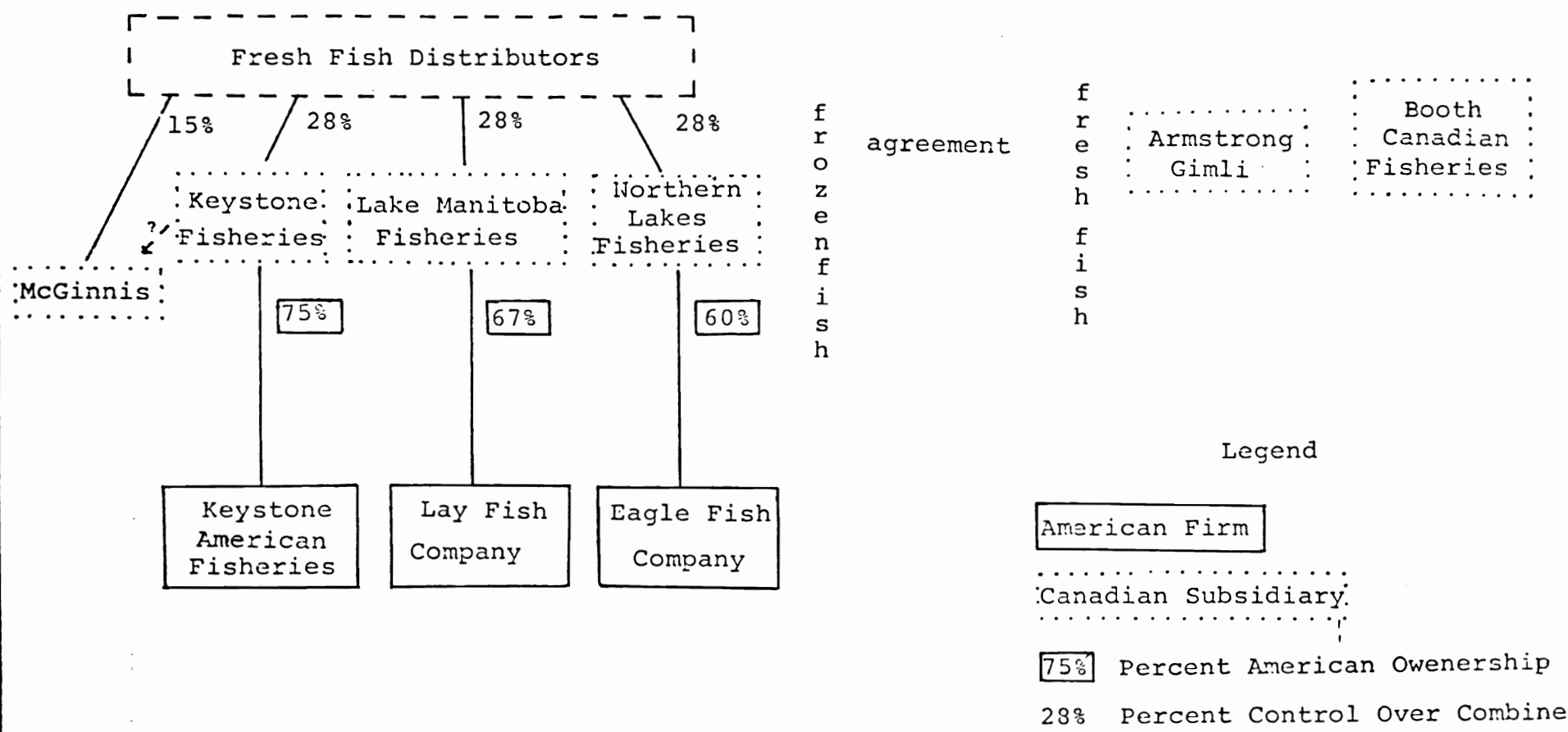
Racketeering was not something that the fishermen imagined; it was, as the Commission reported, an essential element of the total structure of the industry during the depression. The findings of the Commission are confirmed by memo from the Canadian Trade Commission in New York:

... there is no doubt that in times of both depression and prosperity, this business is handled in such a haphazard, clumsy, unbusiness like manner that the interests of Western Canada fresh water fish dealers are sacrificed to the cut-throat and at times suspicious activities of the New York fresh water fish importers.³⁹

At the same time that the Commission was investigating the conditions in Manitoba, United States Federal indictments under the Sherman Anti Trust Act were launched against many of the elements on the New York Peck Slip Fish Market.⁴⁰ Although racketeering may have been prevalent in certain industries of the U.S. economy in the 1930's, the information and analysis provided by the Canada Trade Commission indicated that regardless of prosperity or depression it was difficult for western Canada fish dealers to get a fair price in New York.

The specific nature of the combine organized in 1932 involved all of the U.S. fishing interests in Manitoba either directly or indirectly. The firms of Lake Manitoba Fisheries, Northern Lake Fisheries and Keystone Fisheries formed a partnership called Fresh Fish Distributors (see Figure 4.15). Ostensibly, it was to improve their credit arrangements in the New York fish market. This combine was formed at a meeting in Chicago between the New York firms of the Lay Fish Company and the Eagle Fish Company and local Manitoba companies. Essentially, a price was arranged

FIGURE 4.15 STRUCTURE OF MANITOBA'S COMMERCIAL FISHING INDUSTRY 1932-1933



Source: Manitoba, Report of the Commission of 1933.

between these various New York companies and their Canadian subsidiaries; as well, an arrangement was made for the Manitoba firms to only sell to these New York based firms.⁴¹ Also at the meeting were representatives of Booth Fisheries and Armstrong-Gimli who agreed to specialize in fresh fish and leave the U.S. Fresh Fish Distributors the frozen market. G. Jonnasson of the Keystone Fish Company maintained that in the previous year, due to the disorderly markets, he had 10,000 to 15,000 dollars in bad debts, whereas once the Fresh Fish Distributors had been organized this was reduced to 300 dollars.⁴²

Figure 4.15 summarizes the structure of industry during the early depression. Clearly, the Fresh Fish Distributors was a combining of some local middlemen's interests, who by and large ran the operations of American firms in Manitoba. This essential structure was described in the words of the Commission:

There are four companies operating in Manitoba who have endeavored to control the supply of summer catch of whites for smoking purposes, by an agreement or an understanding with the other two companies who are mainly interested in fresh fish. These two companies undertook not to interfere with the frozen fish market and the other four companies who are each controlled by a parent American company secured control of the bulk of the frozen whites available in Manitoba this year.⁴³

The New York firms which had subsidiaries in Canada were said to control or influence the New York Peck Slip. The Commission recorded:

It has been suggested that these men [owners of New York fish companies], along with one or two others, pretty well control the New York market and through the medium of the local companies are endeavouring to extend that control to include the production of Lake Winnipeg whitefish for smoking purposes.⁴⁴

Some of the confusion that remained unanswered by the Commission is that, if the parent firms of the Manitoba firms also controlled the disorderly Peck Slip, why was it necessary to form a combine to improve credit arrangements on Peck Slip? It appears that by forming a monopoly in Manitoba, U.S. fish retailers and smokers would be forced to purchase through the New York firms. It also meant that the fishermen would have little bargaining ability during a time when the entire industry was in a cost/price squeeze. Figure 4.8 demonstrates that the value of fish fell at a quicker rate than did the rate of capital investment. Additionally, the

incomes of fishermen dropped the sharpest and remained at or below the level of constant capital until 1935.

The disorderly marketing in this period was often intensified by the technical conditions of production. It was pointed out that Manitoba fish were caught far from the railway, that the market was distant, and because the fishermen were paid by the pound, they were not sensitive to daily shifts in demand by the U.S. markets. However, fishermen were now expected to match their production to the erratic fluctuations in New York and Chicago. In previous years, demand changes had largely been discussed on a seasonal or annual basis, and participants recognized the effects of the war and recessions. Often Alberta or Ontario fish, or fish from other parts of Manitoba were cited as responsible for "breaking the market".⁴⁵ However, this was not always the case as Sykes from the Philadelphia Fish Producers Association remarked that: "Manitoba is big from January to March," and that winter fish caught under the ice meant "you have the fish that is wanted down there."⁴⁶

The quality of product, competition from other sources, and the timing of shipments are all testimonies to the general problems of the lack of planning in the market economy. Nonetheless, these are secondary features, but they also reflect the external control that U.S. fishing interests maintained over the provincial fishing industry. As in previous periods, nationalist sentiments were expressed. One of the commissioners during an interview with a representative of the Fresh Fish Distributors remarked in an emotional pitch that:

We are looking for benefits. What I would like to see is something that is self-evident but which would accrue to the fisherman. It does seem to me that the results of the control that you hold over the production of our lakes is so fraught with danger that I would like to see whether there is any likelihood of actual benefits to the fishermen in Manitoba. The picture is that the organization of the distributors is financed and backed by American capitalists who are in effect dictating to the people of Manitoba.⁴⁷

To this, H.M. McGinnis simply reminded the Commission that: "you must keep in mind that without the United States connection along the lines that this organization is now working you cannot market 4,000,000 pounds of fish on the open market."⁴⁸ The external market dependence was openly used to defy the commissioners. Therefore, the Commission's report also

maintained that the most important influences on the marketing of Manitoba fish were "... the necessity of relying on United States markets, ... the large investment of American capital in Manitoba fish companies."⁴⁹ In the early period of commercial fishing, U.S. capital had helped produce high levels of production. However, in this period an array of marketing problems had been created by an identical process based on monopoly and external control.

4.2.3 Combines, Prices And The Incomes Of Fishermen

The arrangement which the combine made with the New York fish companies provided that fishermen would be paid three cents a pound for fish. Additionally, the entire catch would be sold to New York firms, preventing U.S. retailers and smokers from purchasing directly in Winnipeg. The price established was 6.75 cents per pound f.o.b. Winnipeg⁵⁰ while smoke houses purchased fish through the New York firms from 9 to 10.5 cents per pound f.o.b. Winnipeg.⁵¹ Since both prices are f.o.b., Winnipeg transportation costs did not enter into the New York middlemen's profit.

The main concern of the commissioners was the low price paid to the fishermen. Table 4.1 outlines the cost of operations for 3 and 4 man gas boats which had become the dominant mode of summer fishing on Lake Winnipeg. The four man boats would have to catch 50,000 pounds to pay the wages of first helper.⁵² Judson established that "... an average catch of 42,000 lbs. and an increase in price, the return to the boat operator was much improved over early expectations, but it remained slightly below that of the previous summer."⁵⁴ Rather than deal with the power of the combine, an increase in price was negotiated by the Minister. The conversion to gas boats in the 1920's and 1930's meant that the fishermen were no longer as dependent upon the companies as they had been for steam tugs. Nonetheless they did not own the gas boats. One witness at the Commission maintained that the companies owned 75 percent of the boats on Lake Winnipeg.⁵⁵ The equipping of fishermen was the major mechanism of dependence. One fisherman, J. Johansson, of Langarth felt: "our profit is wages, we are really not fishermen, we are labourers. We buy our nets and have to take the price given to us."⁵⁶ Furthermore, Jonasson desired that "the only thing I can say is to eliminate the outsiders ... I would like to quit fishing while the prices are low but have money tied up in outfit."⁵⁷ Hannas Hannesson pointed out

TABLE 4.1

COSTS OF OPERATION OF WHITEFISH BOATS ON LAKE WINNIPEG 1933

	Four-man Boat	Three-man Boat
Nets at \$17.50 per net, 75% depreciation	\$ 413	\$ 320
Rent on corks and leads	25	15
Lines	10	10
Boat rent	100	100
Workmen's compensation	30	18
Board for men at 85¢ per day for 10 weeks	238	182
Gas and oil	200	100
Wages 1st helper at \$100 per season 2nd and 3rd helpers at \$90 per season	280	180
License	50	10
Other	25	20
Total (ex operator's wages)	<u>1,371</u>	<u>955</u>
Wages to boat operator	100	100
Total	<u>1,471</u>	<u>1,055</u>

Source: Thomas A. Judson, "The Freshwater Commercial Fishing Industry of Western Canada," based on information given by fishermen and Winnipeg dealers to the Manitoba Fish Commission of 1933.

TABLE 4.2

BREAKDOWN OF MARKETING COSTS OF FRESH LAKE WINNIPEG WHITEFISH 1933

	\$ per cwt.
Payment to the fisherman	• <u>3.00</u>
Labour costs at the station	0.51
Icing	0.29
Freighting	0.74
Selkirk Handling, etc.	0.35
Boxes	0.60
Depreciation chargeable to summer operations	0.40
Salaries chargeable to summer operations	0.50
Insurance, telegraph, telephone	0.60
Net margin of Winnipeg dealers	1.00
Total and average selling price f.o.b. Selkirk	<u>8.00</u> ¹
Express charges averaging	6.00
Duty	1.00
Commission costs in New York 10-15%--a minimum of	5.00
New York peddlers' minimum margin of	10.00
Peddlers' price in New York approximately	<u>\$30.00</u>

Source: Thomas A. Judson, "The Freshwater Commercial Fishing Industry of Western Canada," based on evidence from the Manitoba Commission.

¹The Fresh Fish Distributors had arranged a f.o.b. price of Selkirk of \$6.75, which indicates the extent of transfer pricing.

that the companies:

... always like to have the fishermen in debt to them at the end of the season,--this gives them a definite hold on the fishermen. If the market goes against them the fishermen are the ones who take a cut.⁵⁸

It was not only fishermen who felt this way. Purvis, a station operator, knew that the combine was "holding the price to fishermen down."⁵⁹ Debt dependence remained for decades as a basic means of holding the fishermen to production. However, during the depression the relationship was unbearable.

The dependence of the fishermen on the fish companies, as a result of not owning the means of fishing, allowed the companies to hold the incomes of fishermen to a subsistence level and yet maintain their labour within the industry. The Commission did not ignore the fact that the combining of fishing interests meant that "the welfare of the fishermen is not protected by these agreements."⁶⁰ The report of the Commission also recorded the basic feelings of the fishermen:

The chief grounds for complaint against it [the combine] have arisen by reason of the fact that the fisherman feels that the companies are so powerful that he, as an individual, has little opportunity of securing just treatment from them. He feels also that the low prices quoted by the companies are not justified by actual market conditions. Fishermen believe that actual profits are much in excess of those claimed and that prices are lowered or raised without any regard to supply or actual market demands.⁶¹

As in previous periods the fishermen were challenging the structure of the industry with a Royal Commission. From the fishermen's view point prices were not simply a matter of market forces. A continuity had been carried over from earlier years. The change from steam power to gas was seen as an important event on the lakes. However, as the essential fabric of the industry had remained, the possible benefits of this technological change did not accrue to the fishermen.

During the Commission's sessions, the local Winnipeg fish companies, as representatives of the combine, provided cost schedules which inferred that the costs of station operations, lake freighting and shortage charges in Winnipeg were quite high relative to the f.o.b. price Winnipeg (see Tables 4.1 and 4.2). That is, local companies were not profiteering. It is clear that most of the value was added to the product after the fish

left Winnipeg.⁶² The largest spread of prices was between the distributors in New York and retailers. Although these costs, especially the costs to Winnipeg may be justified, what seems hard to understand is why New York fish smoking houses could not buy directly from Winnipeg even though they had offered higher f.o.b. prices than the New York principals. As Hannesson pointed out the fishermen themselves could not ship directly to U.S. retailers as the companies "... have tied up the transportation and production end."⁶³ Also, unless fishermen could fill a railway car, freighting costs would be prohibitive.⁶⁴ Given the technical conditions of summer production and the failure of the Fish Pool, it was not possible for the fishermen to advance their position in the structure by circumventing local middlemen.

The empirical evidence demonstrating the compression of fishermen's income as a group people (for example, Figure 4.8) and the apparent absence of local profiteering would indicate that some form of transfer pricing was the basic mechanism by which value was created in the metropolis. A variety of historical commentary, along with the statistical data (Figure 4.8, and Tables 4.1 and 4.2) tends to indicate that transfer pricing was an essential element of the metropolis-periphery relationship in the early 1930's. It was pointed out at that time that profits were unevenly structured; Hannesson argued that "the price is always fixed on the basis that high profit will be made by the American concern."⁶⁵ Sykes, a representative from the Philadelphia Fish Producers, remarked that:

The average price on frozen whites f.o.b. Winnipeg is nine and one half cents. The Canadian companies will not show any profit, the American companies will show the profit. The minimum figure on the summer business would show a profit of \$150,000.⁶⁶

This, then, was not only a position held by Manitobans. Sykes, an American, opposed the monopoly which originated in the United States.⁶⁷ The Commission, ultimately, could not ignore this transfer pricing aspect of the structure since it reported that: "The result of this is that the four American companies not only share in the profits of the local companies but are given an opportunity of making still further profits themselves."⁶⁸ Furthermore, the Commission established that "... from the information your Commissioners have it is safe to believe that they are making substantial profits, certainly more than any of the Manitoba residents ..."⁶⁹ The Commission recognized that ownership patterns were responsible: "our

problem is complicated by the fact that our fishermen are all Manitoba citizens while the distributing agencies, although they employ local men are largely controlled by American capital."⁷⁰ As in the Commission of 1910, American capital and monopsony structure were identified by some observers as a source of the problem.

4.2.4 Recommendations Of The Fish Commission Of 1933 And Aftermath

During the early sessions of the Commission many fishermen were supportive of the government closing the lake if an acceptable minimum price was not obtained for the fishermen. This did not occur primarily because the companies did increase the price to fishermen. This was only a remedial measure and on the question of the existence of a combine the report of the Commission of 1933 stated:

Your commissioners find that a combine did exist in so far as the marketing of summer-caught Lake Winnipeg white-fish for smoking purposes is concerned but that the real principals in such combine are citizens of an [and ?] resident in the United States and as such would appear to be beyond the Jurisdiction of the Canadian authorities.⁷¹

While the external control of the industry was recognized by the Commission it was used as an excuse to do nothing about the situation. This position was clearly demonstrated by the public records of the Department of Mines and Natural Resources:

While it is true that the operations of a combine may have a direct bearing upon this phase of the matter at the same time the evidence which we have before us indicated that conditions are such that co-operation between distributing companies is essential if the industry is to survive.⁷²

Hence, the Commission realized that the real structure of the fishing industry could not be tampered with.⁷³ Very simply then, the industry was not only dependent upon the external market, but it also depended upon the monopolistic structure which U.S. capital imposed upon the production and distribution of Manitoba fish. As in the Commission of 1910, the situation was well documented, but the eventual position of the Commission of 1933 was unable to change the existing structure.

The submission of yet another commission to foreign capital represented another disappointment for Manitoba fishermen. Arguing that foreign markets were beyond their control, the Commission maintained that "our task is to devise control in our own country which will eliminate, as far as possible, the effect of the abuses which are permitted to exist elsewhere

and which, unfortunately for us, are transmitted indirectly into our industry."⁷⁴ The Commission then established a list of recommendations largely unrelated to the question of combines; recommendations that were mainly orientated towards the rationalization of production for the American market.

The Commission's report suggested limits to the quantity of fall fishing on Lake Winnipeg, restrictions on fishing at spawning grounds (Sturgeon, Fisher, Limestones bays, and the mouth of the Big Saskatchewan River), and limiting gill nets to 5 ¼ inch mesh for Lake Winnipeg fall fishing and northern lakes; and the complete closing of lakes St. Martin, Waterhen and the Crane and Waterhen rivers.⁷⁵ While depletion was not the central issue, the Commission pointed out:

It is our opinion, based on conditions as we have seen them that the fish resources of Manitoba while still extensive are in danger of becoming depleted in course of time. This is evidenced by the falling off in the catches of different types of fish in different lakes where they were at one time extremely plentiful.⁷⁶

Ultimately related to depletion issue was the question of the smaller mesh net. However the report could not recommend any position:

While your commissioners are of the opinion that the use of small mesh nets such as 3 ½ should be discouraged at the same time they realize that many species of fish of a commercial value such as saugers, tullibee, etc., can only be caught by their use. The question of whether or not the material benefit to the fishermen by permitting them to be used is offset by the damage they do to the younger fish of the larger varieties is one that we are not prepared to answer.⁷⁷

This represented the eventual enigma of substituting one commercial fish for another. Sauger are similar to pickerel but smaller. As tullibee were in the marketable form similar to whitefish, the exploitation of these fish compensated for declining catches of the larger species. Regrettably, the smaller nets may have had an impact on the larger whitefish and pickerel by catching immature fish. The Commission hoped that the smaller nets would gradually disappear.⁷⁸ The efforts to restrict production (as suggested by the Commission) illustrates the strategy of the government--to use resource management regulations to match production to a disorderly and chaotic market. However, the Commission's inability to recommend a position on smaller nets suggests that even resource manage-

ment regulations could not resolve the problems of production.

The Commission advocated a clearing house which would attempt to strengthen the producers' position against the American importers--by being something of an export monopoly.⁷⁹ It was felt that unless other provinces participated a clearing house would be ineffective. After the inter-provincial conference in 1934, a clearing house was not established.⁸⁰ One tangible recommendation that might have had some impact on the structure of the industry was not implemented. Instead of replacing the control of local subsidiaries with a clearing house the Commission and the province sought to use conservation methods to regulate production in an effort to improve the fishermen's situation in a disorderly market. Indeed, the Commission saw this as a necessity: "... but it would appear to your commissioners that little effort has been made in the past to co-ordinate production either with a view to conservation or marketing conditions."⁸¹ For example, if the fall catch was not shipped before the winter season started, then an oversupply would develop. Hence, the opening of winter season could be delayed and the timing of production could be more orderly. Instead of tackling the market problem, the Commission sought to regulate production with resource management.

In 1938, Grant who chaired the Commission of 1933, reported to the Economic Survey Board of Manitoba on the commercial fishing industry of Manitoba. This report provided some understanding of the aftermath of the provincial Royal Commission and the later years of the depression. Still, production was oriented to export markets:

American markets continue to take about 90 per cent of Manitoba's production and thus most of the factors which effect conditions in Manitoba are a reflection of the market condition and general trade situation in the United States.⁸²

Grant recommended an export tax to help provide some revenue from the resource.⁸³ He also pointed out that increasing amounts of fish were being filleted and frozen which suggest new adaptations to the conditions of consumption and market demand in the United States.⁸⁴

Although Booth Fisheries and Armstrong-Gimli Fisheries were essentially American subsidiaries Grant maintained that the direct influence of American companies on fish production had declined since the Commission of 1933. This implies more local control at the level of station operators. Grant explained that: "during the past decade the balance of control of

the production of whitefish on Lake Winnipeg has gradually shifted from the five large companies to that of locally owned and operated concerns."⁸⁵ This does not suggest, however, that the development of local concerns were able to restructure the profitable sections of the production/circulation process. Figure 4.8 indicates that both value and value to fishermen climbed in the late 1930's although the value to fishermen remained far below the late 1920's levels. If some localization of fishing operations occurred in the late 1930's this might be explained by unwillingness of American capital to invest in gas boats and gill nets (Figure 4.13). Additionally, after the Commission a New York fish smoker entered the Manitoba market. Judson summarized this experience:

In the Lake Winnipeg summer whitefish season the entry of a New York smoker directly as a buyer pushed prices up both in 1935 and in 1936. Owing to the almost complete failure of the 1936 catch he experienced heavy losses and withdrew from the market, leaving the combine once more in substantial control.⁸⁶

This statement by Judson suggests that external market control had not vanished. The entry of local owners of stations may reflect the withdrawal of foreign capital from a section of the industry which had already become unprofitable.

At times during the Commission of 1933 it was suggested that there might have been too many fishermen. In Grant's report to the Economic Survey Board which influenced government policy, he believed that: "fundamental to an understanding of the problem of quality is the fact that there are too many fishermen engaged in the industry."⁸⁷ In 1938, on Lake Winnipeg the gross return per boat was 840 dollars⁸⁸ which no doubt would have provided the evidence that Grant would need to suggest that there were too many fishermen.⁸⁹ If, in fact, the fish stocks were declining on Lake Winnipeg, then it may also provide the reason why some local control of production and transportation may have developed (as Figure 4.3 shows). Apparently, the government responded to the "too many fishermen argument" by limiting the number of boats on lakes Winnipeg and Winnipegosis. All of which, according to Judson resulted in:

... some major changes in the initial regulations, [and] a large cut in number was achieved. Although the Government expected prices would rise as a result of this limitation of effort, they actually fell. The procedures employed to limit numbers raised the barriers to entry, achieved a possible improvement

in the bargaining power of the exporter with the U.S. buyer, led to a rising average age of operators, and failed to reduce monopsony bargaining power.⁹⁰

Although localized ownership may have been one outcome of the depression, the fisherman's insecurity, partly as a result of supply problems remained.

Summary

The difficulties during the period of consolidation of the commercial fishing industry largely centred on the monopolist structure. An era of growth and expanded production followed the Commission of 1910 until the end of the First World War. However, no local market developed and levels of production fluctuated with the needs of the metropolis. After the war, the industry slumped. Among various commercial species tullibee exceeded whitefish, but by the 1930's tullibee production failed. During the war production in northern Manitoba increased, although it remained somewhat insignificant in its share of the provincial industry. The total collapse of sturgeon fisheries in this time period is undebatable.

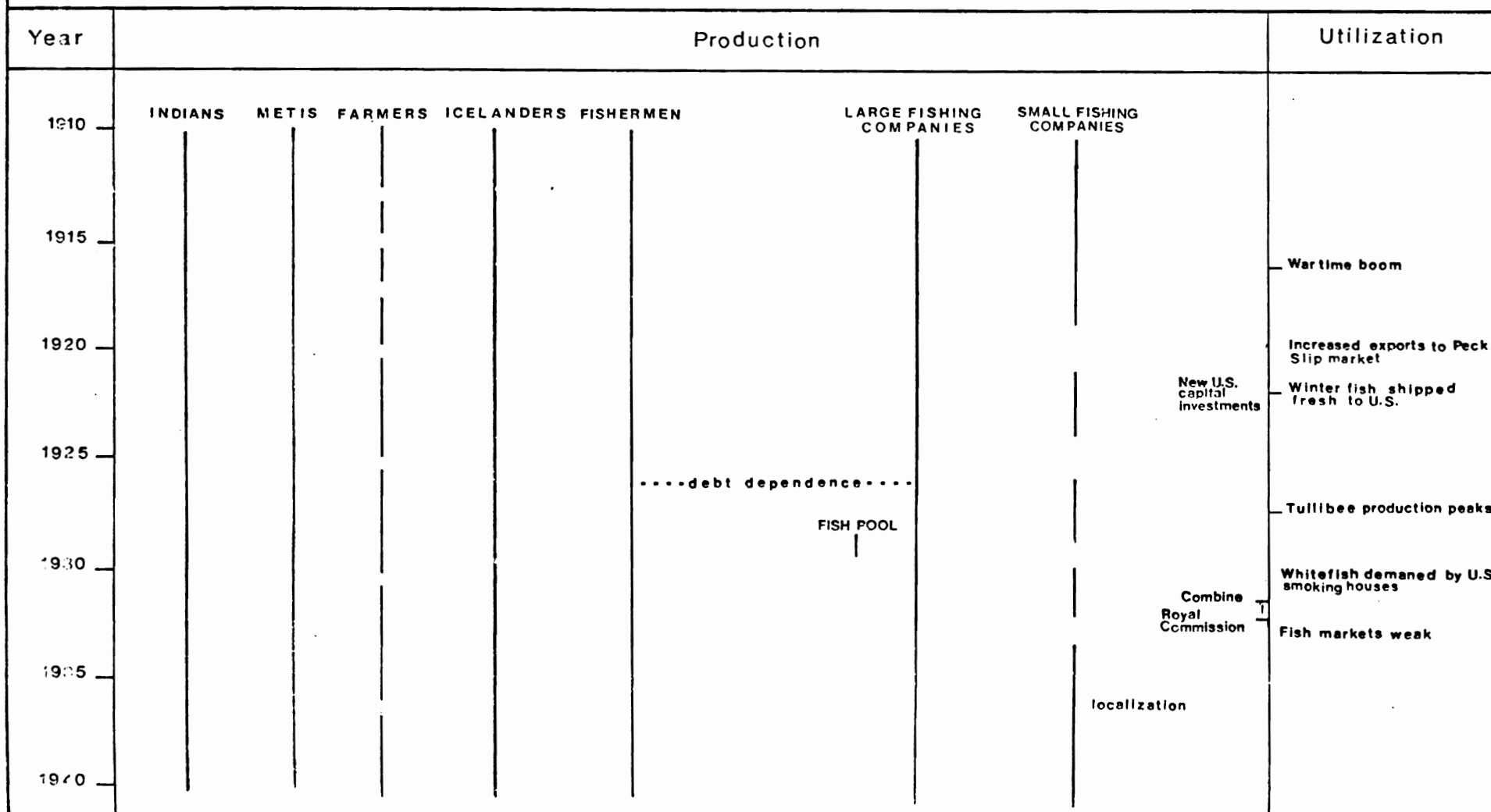
In the early 1920's structural problems of the industry appeared, partly as a result of post war conditions. At the same time New York's Peck Slip fish market strengthened its influence on the Manitoba industry. This orientation towards New York fish consumers is followed by direct investment of New York capital. The response by fishermen and local middlemen to increased metropolitan pressures was to organize their own marketing mechanism. The failure of the Fish Pool to displace metropolitan interests can be explained by the lack of control over the pool by fishermen and its inability to get fair treatment by American fish markets. The world depression had a tremendous impact on the industry and certain structural adjustments had to be made. In the late 1890's the organization of the Booth Packing Company was replicated in Manitoba with the establishment of the Dominion Fish Company. Again the combining of fish companies around Peck Slip was paralleled in Manitoba by the formation of the Fresh Fish Distributors. This reorganization of the industry resulted in the squeezing of fishermen's incomes.

The Commission of 1933 provided a useful cross section view of the reconstruction of the commercial fishing industry of Manitoba. The Commission confirmed that a combine existed which conflicted with the interests of the fishermen. The Commission did not break up the combine, rather it

tolerated its existence and the alignment with the external market. The evidence of the Commission elucidated in full detail that the location and level of profitability was a decision made by American firms. To cope with the turbulent markets, the Commission recommended the use of resource management policies to regulate production. In the late 1930's there appeared to be some decline in the direct influence of American subsidiaries as witnessed by the localization of certain features of the industry. World War II would provide another stimulus for Manitoba's fisheries to respond to.

FIGURE 4.16

STRUCTURAL DEVELOPMENT OF THE FISHING INDUSTRY



Notes and References

1 T.A. Judson, "The Freshwater Commercial Fishing Industry of Western Canada," (unpublished Ph.D. Thesis, University of Toronto, 1961), p. 81.

2 For part of this period fiscal years are used (1910/11-1916/17). However, the rest of the data is reported on annual year.

3 This may also be the result of declining production for Great Lakes herring from 1910 to 1925. Report of Commission of Inquiry into Freshwater Fish Marketing: 1966, Commissioner George McIvor, p. 27.

4 Judson, op. cit., p. 70.

5 Ibid., p. 75.

6 In 1922 (as in 1912) it was recommended by the annual report for Manitoba fisheries that "... Lake St. Martin, which in my opinion should be closed to all commercial fishing operations for a period of not less than three years ..." C.S.P., 1924, Fisheries, XL, No. 29, p. 43. For 1923, it was reported that "there has been an unaccountable falling off in the production of whitefish during the past two summers seasons on Lake Winnipeg." C.S.P., 1925, Fisheries, LXI, No. 29, p. 42.

7 C.S.P., 1918, Fisheries, LIII, No. 39, Appendix 6, p. 201.

8 Judson, op. cit., p. 53.

9 Ibid., pp. 53-54.

10 Ibid., p. 54.

11 Ibid., p. 76.

12 P.A.C., RG-23, Vol 16, file number 3. Tom Lamb disagreed stating "... the highly efficient means of white man's way of catching fish had practically closed the Indian's supermarket," [rivers and lakes filled with fish] and "Manitoba's Game and Fisheries Branch will go down in history as the government who failed by neglect and indifference to take decisive control of our environment ..." P.A.M., MG 8, B 46-1, Tom Lamb, "Reminiscences of Grand Rapids and The Pas."

13 P.A.C., RG-23, Vol 403, file 4204 (1).

14 P.A.C., RG-23, Vol 526, file 711-12-3. This observation contrasts to Judson's accounts of Indians as commercial fishermen; "... particularly in the fishing operation itself, the native is less proficient than the typical white man mainly because of his lack of interest." Judson, op. cit., p. 19.

15 J.B. Skaptason, The Fish Resource of Manitoba (Winnipeg: Industrial Development Board, 1926), p. 34.

16 Ibid., p. 17.

17 This limit was raised to 65,000 pounds after 1923, Ibid. However, in 1902 250,000 pounds of sturgeon were produced in this area. C.S.P., 1904, Fisheries, XXXIV, No. 22, Appendix No. 9, p. 206.

18 For the 1910/11 year, it was reported that 173,800 pounds of dressed sturgeon (average weight of 10 to 12 pounds) was exported to the United States from the Lac du Bonnet fishery. The overseer boasted "... and the fact that out of so large a production [sturgeon] only twenty-four cwts. of caviare were manufactured, would go to show that the fish were not parent fish." C.S.P., 1912, Fisheries, XLVI, No. 22, p. 283. In fact, given the weight they were probably young and immature sturgeon.

19 Skaptason, op. cit., p. 38.

20 Ibid.

21 Ibid.

22 C.S.P., 1916, Fisheries, LI, No. 39, p. 216.

23 C.S.P., 1923, Fisheries, LIX, No. 29, pp. 45-46.

24 It was reported that "The year 1920 has been a rather trying one for the industry as a whole ... but since the armistice there has been a serious drop in the consumption of fish and a consequent slowing down in the demand therefor. One result was a sharp reduction in the prices of fish, but unfortunately this reduction reflected itself more speedily and greater degree on the producer than on the consumer. On the other hand the equipment with which the fishermen were supplied had been purchased at high-water prices, and from which there was little reduction when replacement had to be made during the year." C.S.P., 1922, Fisheries, LVIII, No. 40, p. 32.

25 H.C. Grant and J.W. Ward, Manitoba Co-operative Fisheries Limited: Report of Committee of Enquiry, Part 2 (Winnipeg: 1930), p. 9.

26 Ibid.

27 Canada, Annual Report, Fisheries, p. 77.

28 Grant and Ward, op. cit., p. 1.

29 Ibid., p. 9. These dealers included Rykdal and Jonasson.

30 Ibid., p. 11. Later, Mr. Sykes of the Philadelphia Fish Producers claimed that the combine put the Fish Pool out of business. P.A.M., RG-17, Fish Commission, 2, Minutes of Fish Commission of 1933, p. 203.

31 Ibid., p. 18.

32 Judson maintained that the anticipation of the transfer of resources meant that the federal government did not continue to invest in the enforcement fleet. Judson, op. cit., p. 126.

33 P.A.M., MG-9 A 73, Knox H.C., "Manitoba Commercial Fisheries," p. 4.

34 Ibid., p. 5.

35 P.A.M., RG-17, Fish Commission, 2, "Minutes of Fish Commission of 1933," p. 167.

36 Ibid.

37 Manitoba, Report of the Commission Appointed to Investigate the Fishing Industry of Manitoba: 1933, Part 1 (Winnipeg: 1933), p. 8.

38 Ibid., p. 6.

- 39 P.A.M., RG-17, Fish Commission, 2, memo: Canadian Trade Commission.
- 40 Report of Commission 1933, Part I, p. 16.
- 41 Judson, op. cit., p. 144.
- 42 P.A.M., RG-17, Fish Commission, 2, "Minutes of Fish Commission of 1933," p. 47.
- 43 Report of Commission 1933, Part I, p. 14.
- 44 Ibid., p. 16.
- 45 Grant stated at the Inter-Provincial Fish Conference "I was down to Port Colborne last summer and they told me there that when the market is broken in the East the dealers in the States are always blaming western fish. We are told here that when the market is broken it is always Ontario fish that broke it." P.A.M., RG-17, Fish Commission, 2, "Resume of Inter-Provincial Fish Conference," (Winnipeg: January 15, 1934).
- 46 P.A.M., RG-17, Fish Commission, 2, "Minutes of Fish Commission of 1933," p. 204.
- 47 Ibid., p. 122.
- 48 Ibid.
- 49 Report of Commission 1933, Part I, pp. 23-24.
- 50 Judson, op. cit., p. 144.
- 51 Ibid., p. 145.
- 52 Ibid.
- 53 Ibid., p. 146.
- 54 Ibid.
- 55 P.A.M., RG-17, Fish Commission, 2, "Minutes of Fish Commission of 1933," p. 11.
- 56 Ibid., p. 211.
- 57 Ibid., p. 210.
- 58 Ibid., p. 165
- 59 Ibid.
- 60 Report of Commission 1933, Part I, p. 23
- 61 Ibid., p. 85.
- 62 This situation did not change as in 1935/36 the cost structure of Manitoba fresh fish was 4 ½ cents/pound to fishermen, handling to Winnipeg 5 ½ cents, (dealers margin), charges to New York 6 ½ cents, commission dealers charges 5 cents (wholesale price in New York 21.5 cents), with a retail markup of 10 cents meant a retail price of 31.5 cents. Judson, op. cit., p. 165.
- 63 P.A.M., RG-17, Fish Commission, 2, "Minutes of Fish Commission of 1933," p. 130.

64 The mercantilist nature of the industry was document by the Commission "In Manitoba, however, the fisherman usually obtains his catch a long way from where he ordinarily lives and his equipment is expensive. He is out of touch with the markets and generally has no idea as to whether or not the markets will absorb his catch from day to day nor has any opportunity of marketing himself." P.A.M., RG-17, Fish Commission, 2, "Draft report of the Commission of 1933".

65 P.A.M., RG-17, Fish Commission, 2, "Minutes of Fish Commission of 1933," p. 169.

66 Ibid., p. 201.

67 Using Judson's figure of 22 cents over the cost of production and the U.S. peddler's price (Table 4.2) when multiplied by the pounds of whitefish from Lake Winnipeg (5,480,500) for the year 1932/33 suggests a value of \$1,205,710 created in the metropolis. This is an indication of surplus transfer. It must be recalled that this was not all profit since legitimate cost incurred in the 22 cents, however, these cost represent growth in metropolis. In very general terms the magnitude of surplus transfer can be comprehended by multiylying the spread between f.o.b. prices Winnipeg and the retail price in the United States and amount of fish exported.

68 Report of the Commission 1933, Part I, p. 18.

69 Ibid.

70 Ibid., p. 6.

71 Ibid., pp. 18-19.

72 P.A.M., RG-17, Fish Commission, 2, "Draft report of the Commission of 1933"

73 The draft report continued: "If the Commission recommended that the matter be referred to the Federal Government for action under the Combine Investigation Act the chaotic conditions which exist would be amplified considerable at a time when order rather than chaos is essential objection [sic] of the industry." Ibid.

74 Report of the Commission 1933, Part I, p. 10.

75 Manitoba, Report of the Commissioners Appointed to Investigate the Fishing Industry of Manitoba, Part II (Winnipeg, 1934), pp. 7-11.

76 Ibid., p. 2.

77 Ibid., p. 5.

78 Ibid., p. 5.

79 Report of the Commission 1933, Part I, p. 26.

80 P.A.M., RG-17, Fish Commission, 2, "Inter-Provincial Fish Conference, January 15, 1934."

81 Report of the Commission 1933, Part II, p. 3.

82 H.C. Grant, Report on Commercial Fisheries of Manitoba (Winnipeg: Manitoba Economic Survey Board, 1938), p. 44.

83 Ibid., p. 49.

84 Ibid., p. 52.

85 Ibid., p. 9.

86 Judson, op. cit., p. 187.

87 Grant, Report on Commercial Fisheries of Manitoba, p. 64.

88 Judson, op. cit., p. 188.

89 Nonetheless, it was pointed out that some 5,000 were employed in the fish industry which was four times the amount employed by the largest manufacturing industry (meat-packing, slaughtering). Grand, Report on Commercial Fisheries of Manitoba, Appendix.

90 Judson, op. cit., p. 188.

CHAPTER 5 DECLINE OF A COMMERCIAL FISHERY: 1940-1970's

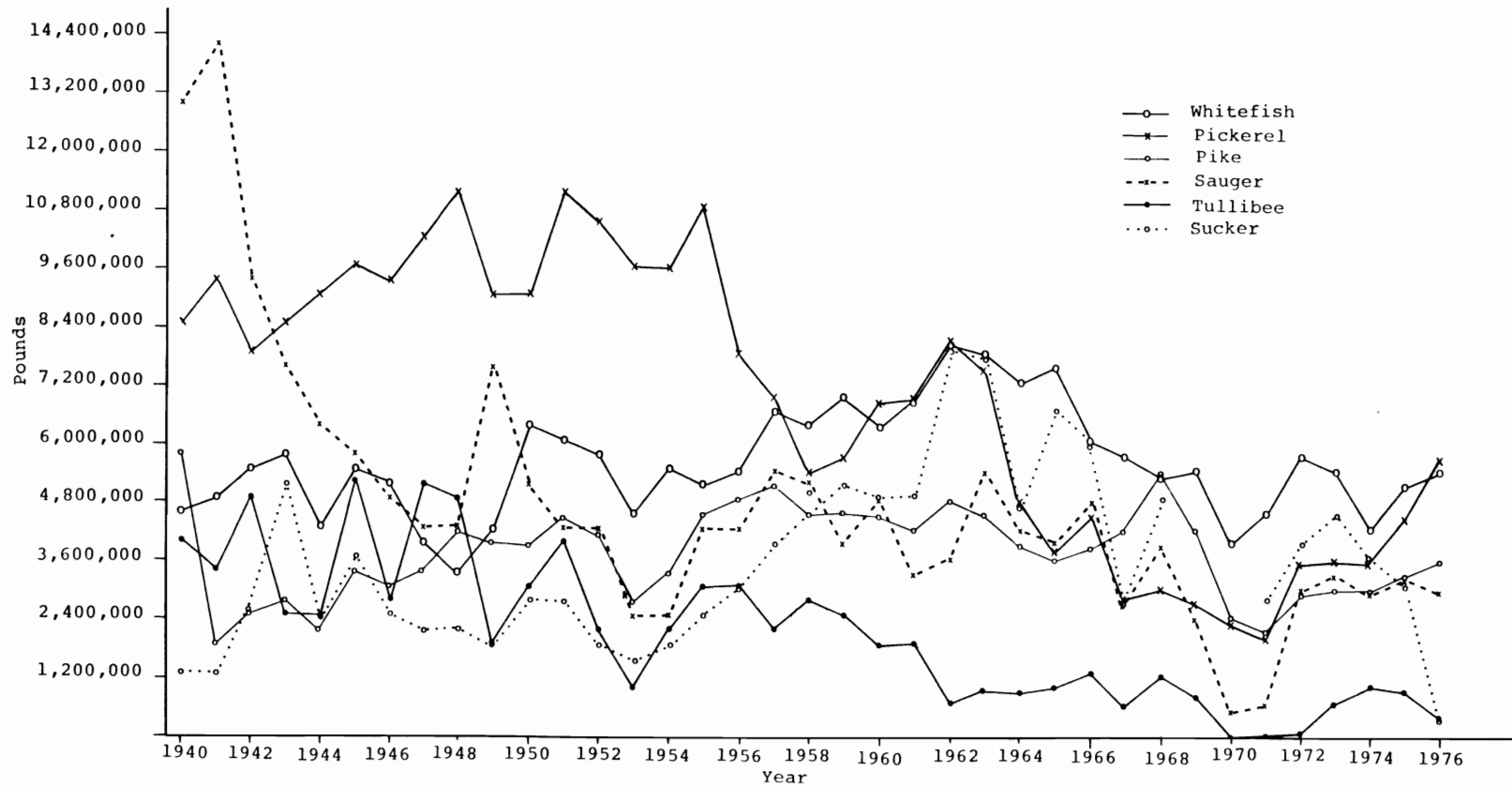
Introduction

This chapter provides an analysis of the most recent period of commercial fishing. Two government commissions--one in 1954 and another in 1965 establish cross-sections for reconstructing this resource activity. In addition, data displayed in a graphical form, along with an analysis of production trends highlight the forces which necessitated the commissions. The Second World War pulled the western economies out of the depression. Since Manitoba's economy was closely incorporated with the world economy, and the fishing industry was not an exception, the war and recovery had a tremendous impact. During the war, production in real terms increased to record levels. Production could not be sustained; however, unlike other sectors of the western economy which did not experience a sharp decline in the post-war period, all major indices of the fishing industry in Manitoba point to a serious decline. Economic policies of state intervention and income redistribution which played a significant role in the post war economy were not seriously pursued in the management of the commercial fishing industry. Such policies were not adopted until the 1970's when the industry had already undergone a protracted downturn. Prior to this, efforts were made to rationalize the industry through labour reduction. With the deterioration of the industry, state involvement became necessary, and certain structural modifications resulted. In spatial terms, the northern lakes gained in relative significance with respect to pounds of production. The essential characteristic of this period was the classical decline of a staple.

5.1 Wartime Production And Aftermath

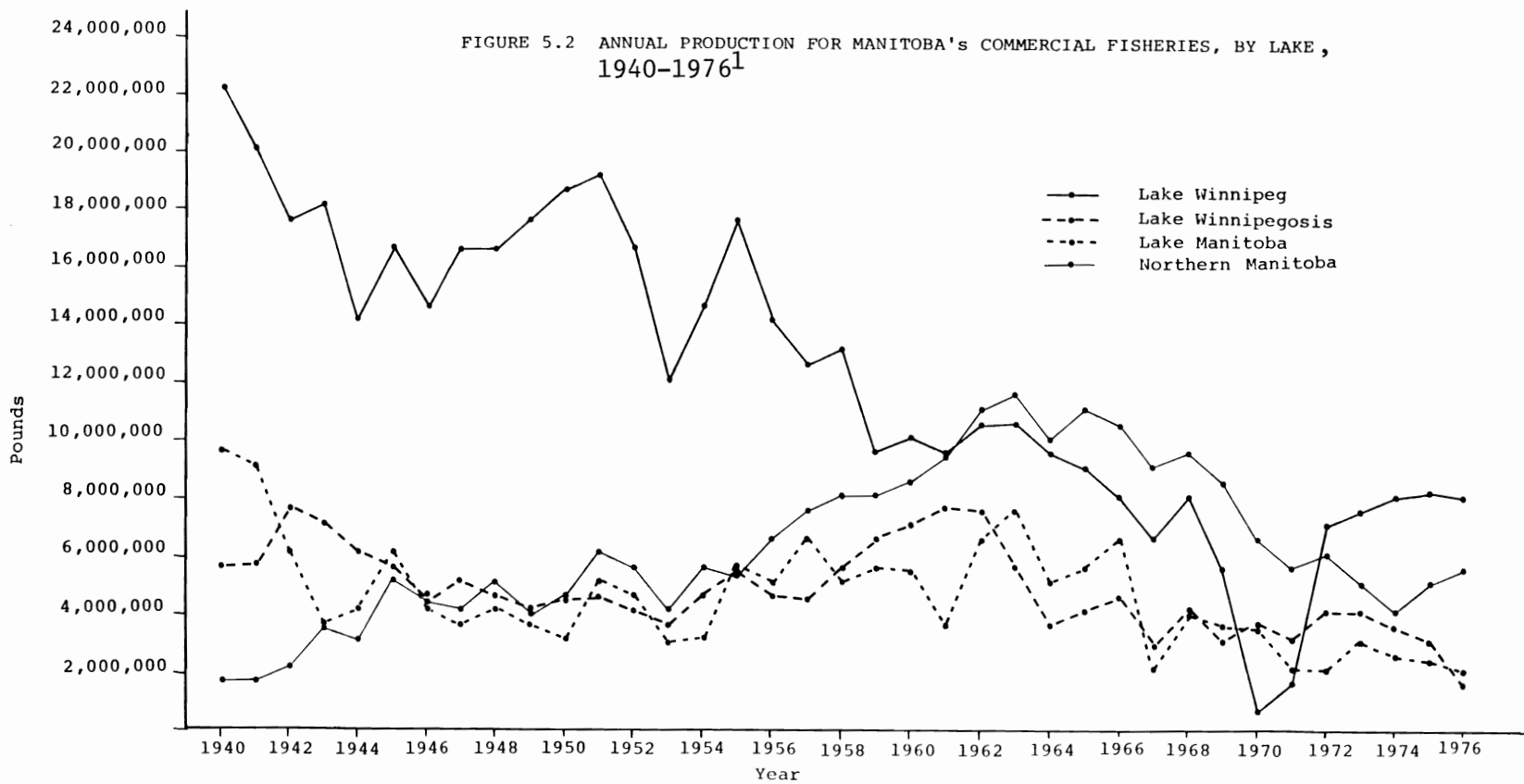
Figures 5.1 to 5.6 indicate production trends during the war.¹ Especially noticeable is the peak production of sauger. The war period production was significant for Lake Winnipegosis (Figure 5.4) and marked the beginning of a period of expanded production for northern lakes (Figure 5.5). Ready markets were established for Manitoba fish as a result of wartime meat rationing, increased incomes and the fact that ocean fish were not available. Price ceilings were established for fish in Canada and the United States and a higher price ceiling in the United States encour-

FIGURE 5.1 ANNUAL PRODUCTION, MANITOBA, BY SELECT SPECIES, 1940-1976¹



Source: Manitoba, Annual Reports, M.N.R.

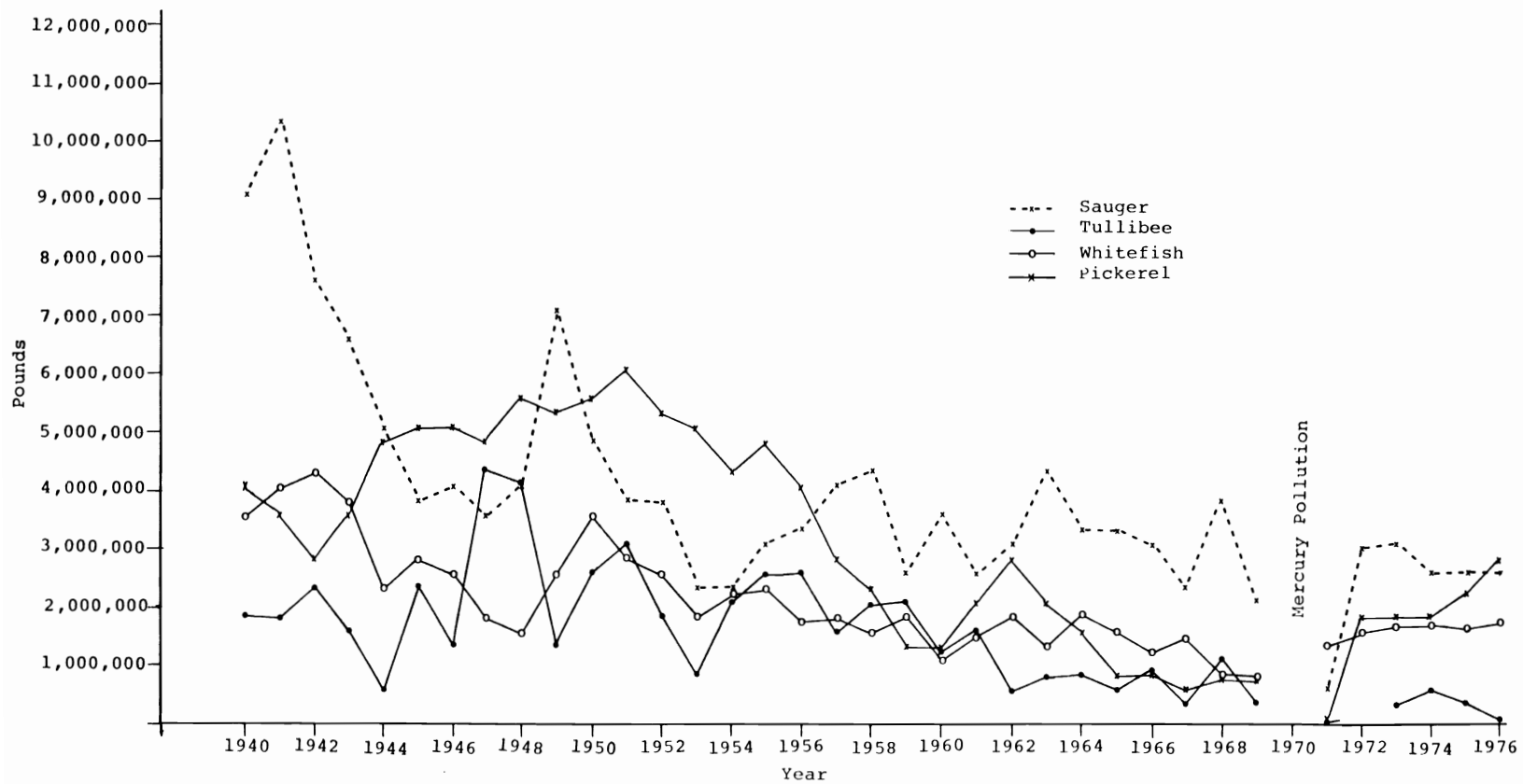
Note the general trend towards declining production (except sucker) throughout the entire period. Note that whitefish eventually surpasses pickerel during the period when production from Northern lakes expanded.



Source: Manitoba, *Annual Reports*, M.N.R.

¹Note the decline of Lake Winnipeg and the rise of Northern lakes production. In the early 1970's Lake Winnipeg was closed to commercial fishing.

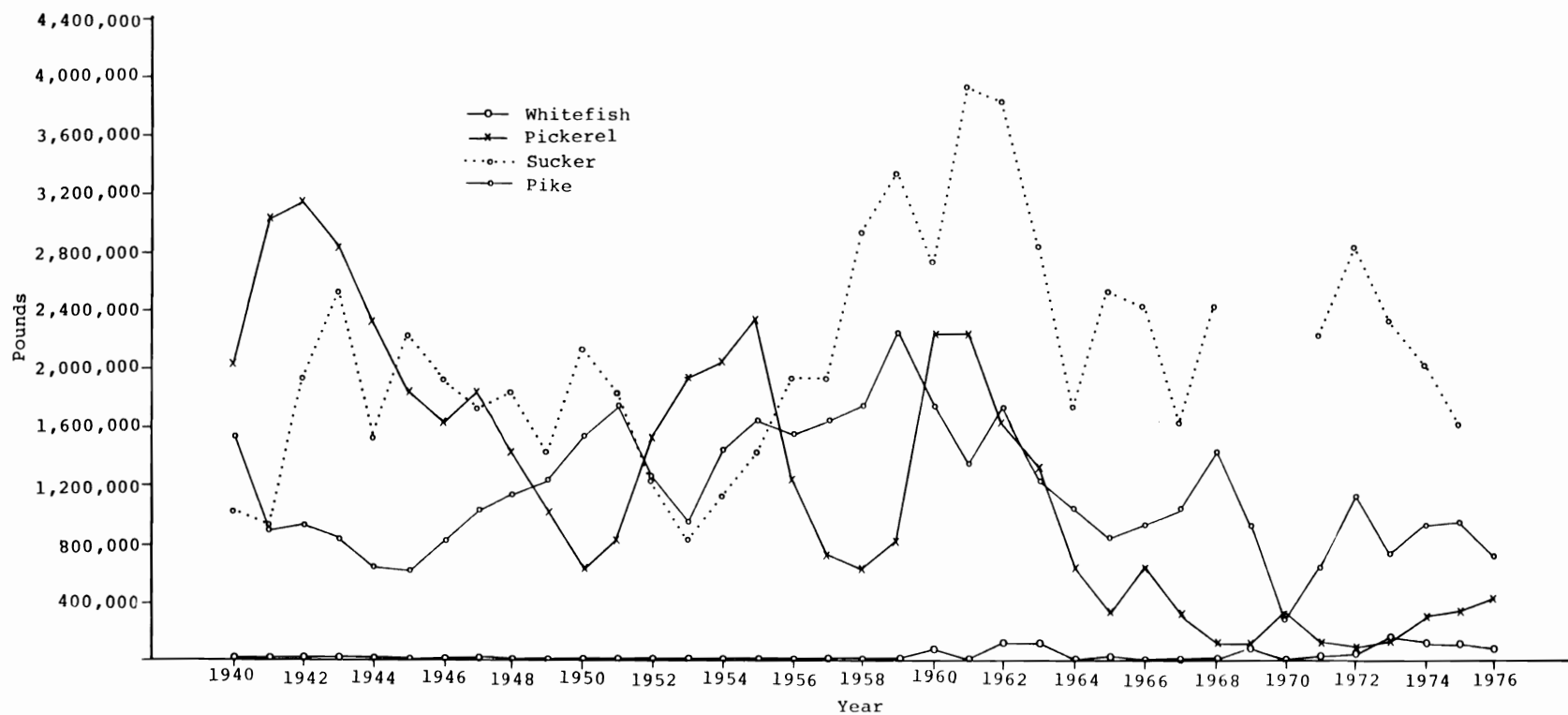
FIGURE 5.3 ANNUAL PRODUCTION FOR LAKE WINNIPEG, BY SELECT SPECIES, 1940-1976¹



Source: Manitoba, Annual Reports, M.N.R.

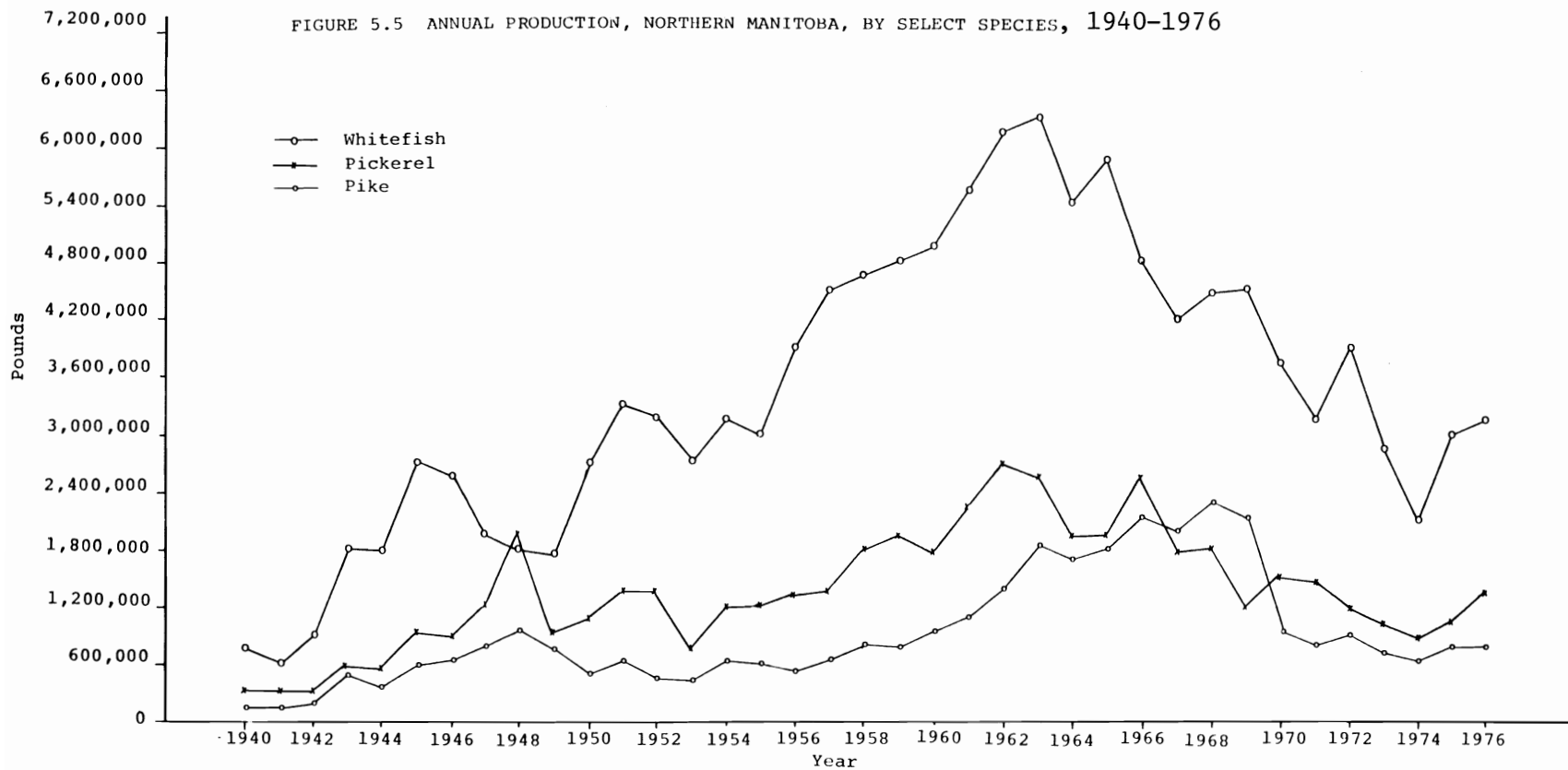
¹Note the downward trend of all species.

FIGURE 5.4 ANNUAL PRODUCTION FOR LAKE WINNIPEGOSIS, BY SELECT SPECIES, 1940-1976¹



Source: Manitoba, *Annual Reports*, M.N.R.

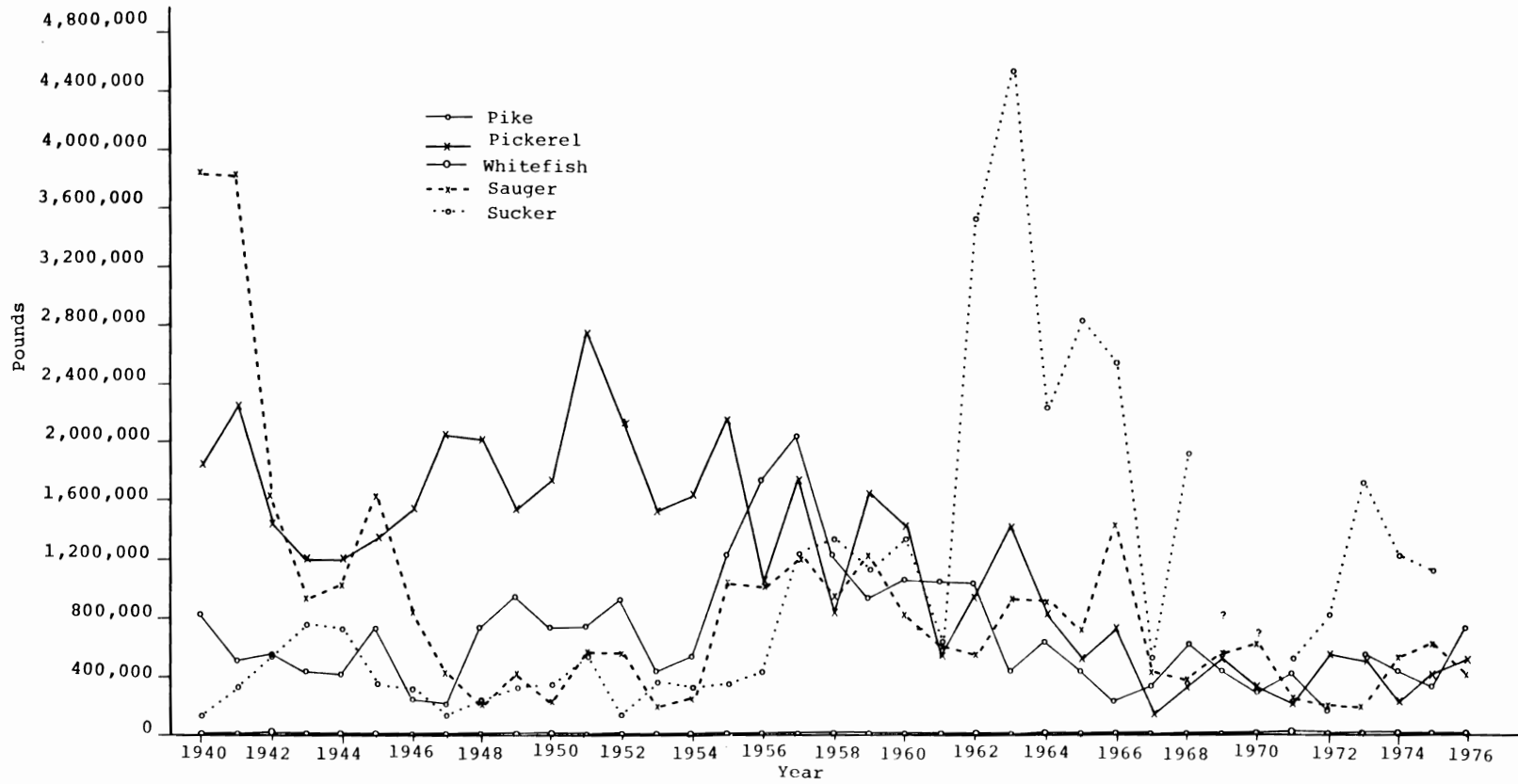
¹Note the increase in rough fish (sucker) and the insignificance of whitefish. Lake Winnipegosis was once (1890's) a major whitefish fishery. The downward trend in pickerel from 1962 is also apparent.



Source: Manitoba, Annual Reports, M.N.R.

¹The downward decline in fish production from the early 1960's may not reflect the strength of fish stocks, but transportation cost squeeze which removed some lakes from production.

FIGURE 5.6 ANNUAL PRODUCTION FOR LAKE MANITOBA, BY SELECT SPECIES, 1940-1976¹



Source: Manitoba, Annual Reports, M.N.R.

¹Note the eventual decline of pickerel to levels of pike and whitefish production.

aged export and further maintained the export orientated market structure.² Apparently, the incomes of fishermen also rose with production as the annual report for 1942 stated for the winter fishing season: "... but with high market prices prevailing for these 'Selkirk Whites' nearly all the fishermen made a fair financial showing."³ Increased prices and demand meant that the more remote northern lakes could be brought into production. Mainwaring claimed that for Reindeer Lake there were some 228 winter fishermen in 1944-45.⁴ Reflecting the cyclical nature, this was reduced to some 30 men in 1949-50, and 12 in 1955.⁵ Judson noted that "the good prices enticed more men into the fishery."⁶ Judson described the expansive production years impact on the fishery:

By 1941-42 evidence of boom conditions had appeared. There were high expectations, good catches, rising returns per man, more intensive fishing and extension into remote areas. Despite the price ceilings and employment alternatives, effort increased in 1943-44. Because expansion raised costs, and output did not increase proportionally, the returns per man began to fall.⁷

By 1944 a downturn was evident, marked by lower prices. Judson pointed out a critical aspect of the nature of the industry, in that: "despite these unfavourable factors most dealers gained adequate profits."⁸ Although the war provided a stimulus to expand production, in the long run it simply represented the cyclical instability of the industry. That is, the wartime provided unusual market conditions which could not be maintained.

This period is also characterized by government encouragement of labour entry into the industry. Strong prices for fish helped the government achieve its objective as suggested by the correlation between prices and the number of fishermen who engaged in the industry. The department helped further the post war employment situation by indicating a preference to veterans when issuing fishing licences. Regrettably, the market broke in 1949 which necessitated the intervention of the Fisheries Price Support Board. The board was forced to purchase some 3 million pounds of inland fish. At this time it was also noted that fishermen were withdrawing from the industry.⁹

The post war decline of the fisheries would eventually lead to the convening of the Royal Commission of 1953/54. To understand why such

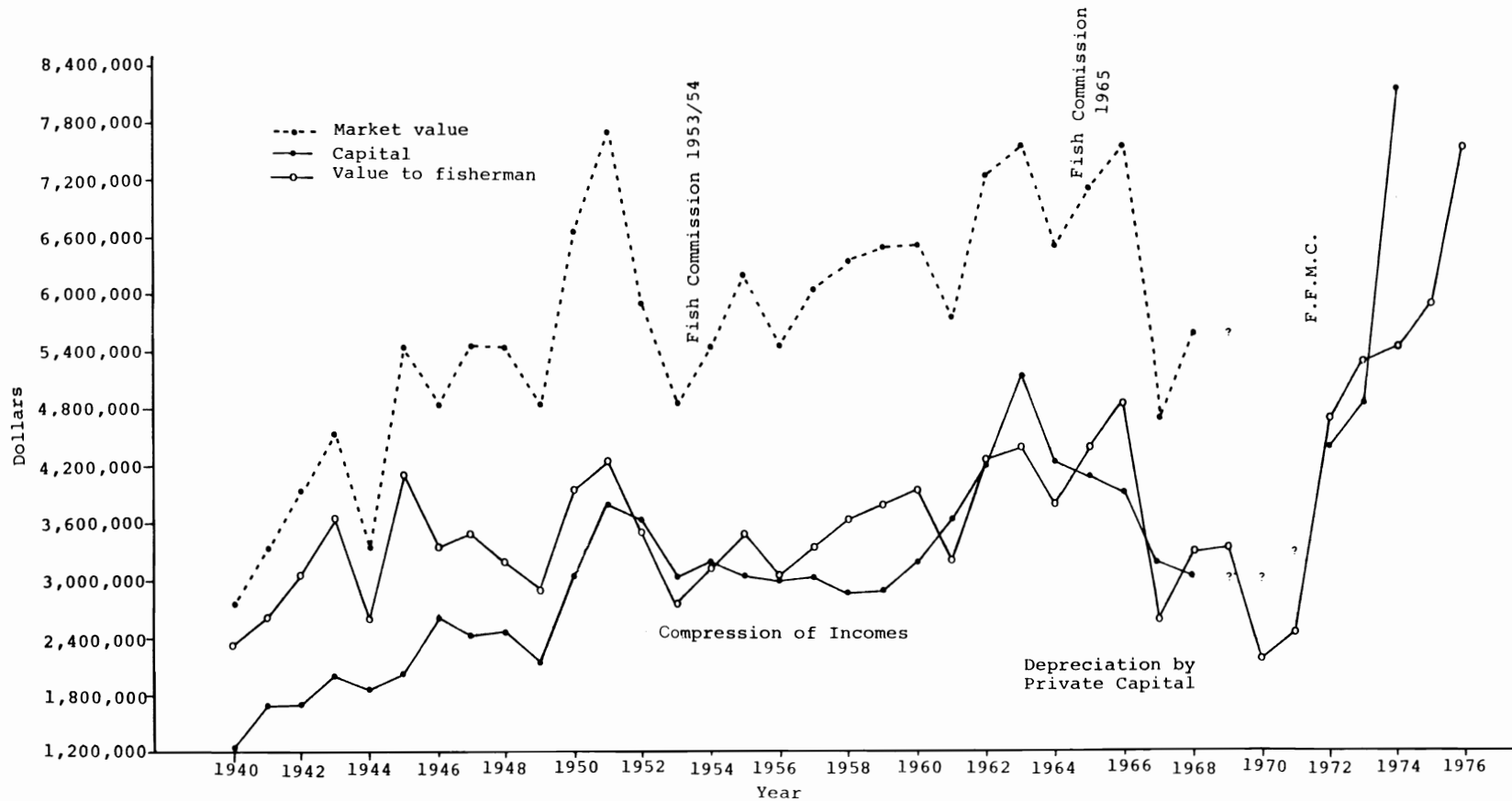
a Commission was held, it is necessary to examine important trends that were underway in the industry (Figures 5.7 to 5.12). Prior to the war, and during the depression, productivity per man rose. However, during and after the war this trend was reversed.¹⁰ The good prices associated with the war were able to support such declining productivity, but after the war this became impossible. Downturns in real productivity are indicated by Figure 5.9, where pounds of fish per dollar invested declines sharply during and after the war. Figure 5.10 demonstrates the market value per dollar of capital invested vacillates considerably during the war. However, by 1945, a consistent downward trend is evident. Generally, the war period has been considered something of a golden age of fishing. Total productivity and prices during this period appeared to be stable. However, these simple ratios concerning productivity suggested serious structural problems in spite of a buoyant market.

To understand the structural weakness of the commercial fishing industry it is necessary to consider how value was distributed in this period. Figure 5.7 displays the relationship between market value, incomes to fishermen and capital invested. During the depression and early years of the war the distribution of value between fishermen and local companies (market value) remained somewhat constant. However, in the last year of the war the gap increased (Figure 5.7). The same process is again presented in Figure 5.11 where fishermen's income as a percent of total market value is graphed and it is clear that even during the war this dropped. The relationship between local firms and U.S. buyers explains part of this structural weakness. Judson stated for this period:

... the Canadian exporter was seldom a free agent, but was tied closely to some U.S. buyer. Under these circumstances price was an intra-firm decision, and in others no real negotiation was possible. In a number of firms that appeared to be involved in bilateral oligopoly, the buyer actually was often able to set a monopsony price. As a result many Canadian dealers believed they bore the risks, yet were forced to accept minimal returns. It was therefore, not surprising that the Canadian dealer tended to limit his investment even where better equipment would have yielded higher returns.¹¹

The localization of certain operations in the 1930's did not strengthen the fishing industry. Additionally, increased filleting of fish, while adding value to the product in Manitoba also contributed to the problem

FIGURE 5.7 THE RELATIONSHIP BETWEEN MARKET VALUE, CAPITAL INVESTED AND VALUE TO FISHERMEN, MANITOBA, 1940-1976¹



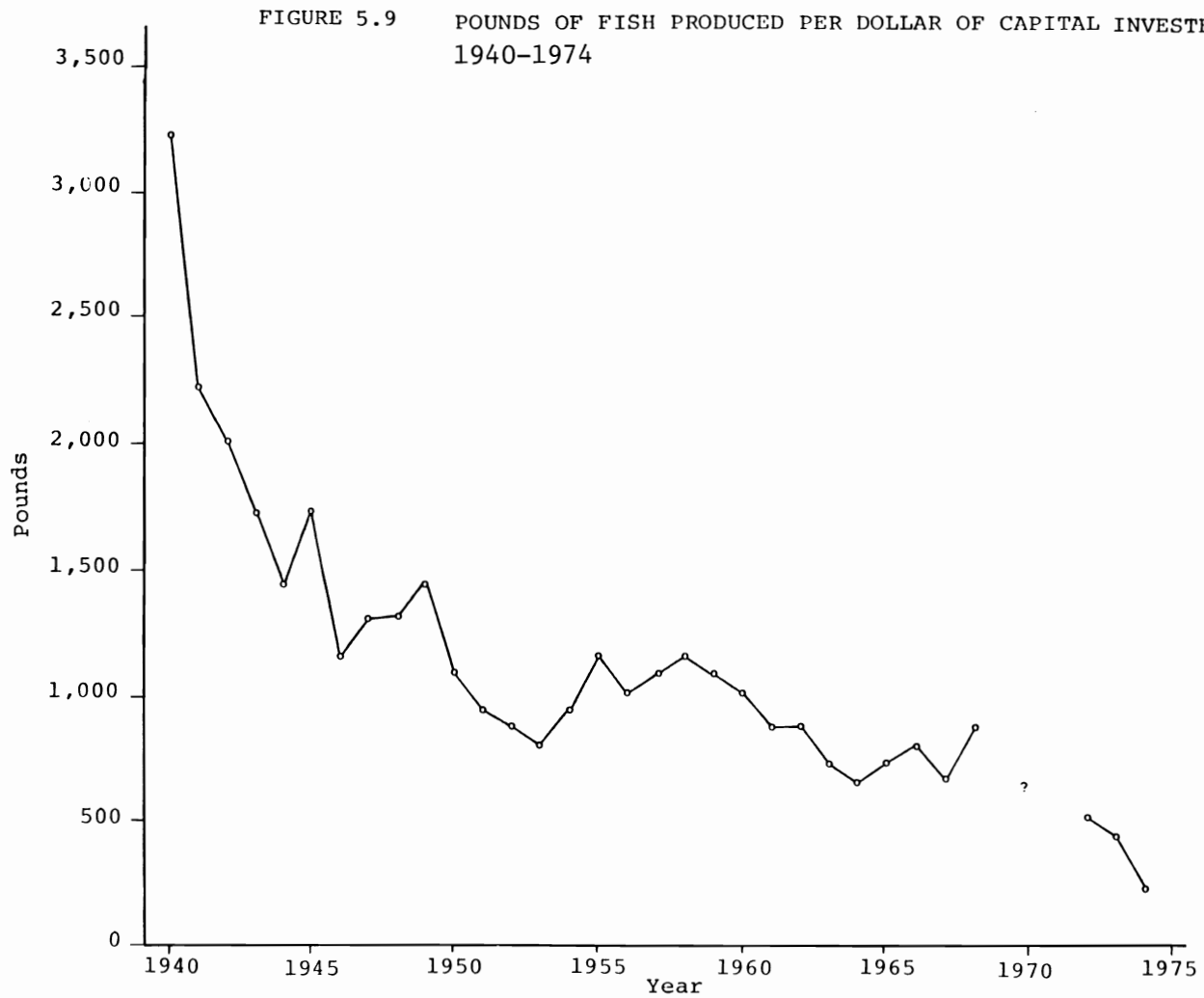
Source: Manitoba, Annual Reports, M.N.R.

¹Note the compression of incomes when constant capital (capital invested) and variable capital (value to fishermen) are at similar levels. Note since the 1940's an increasing spread between market value and value to fishermen.



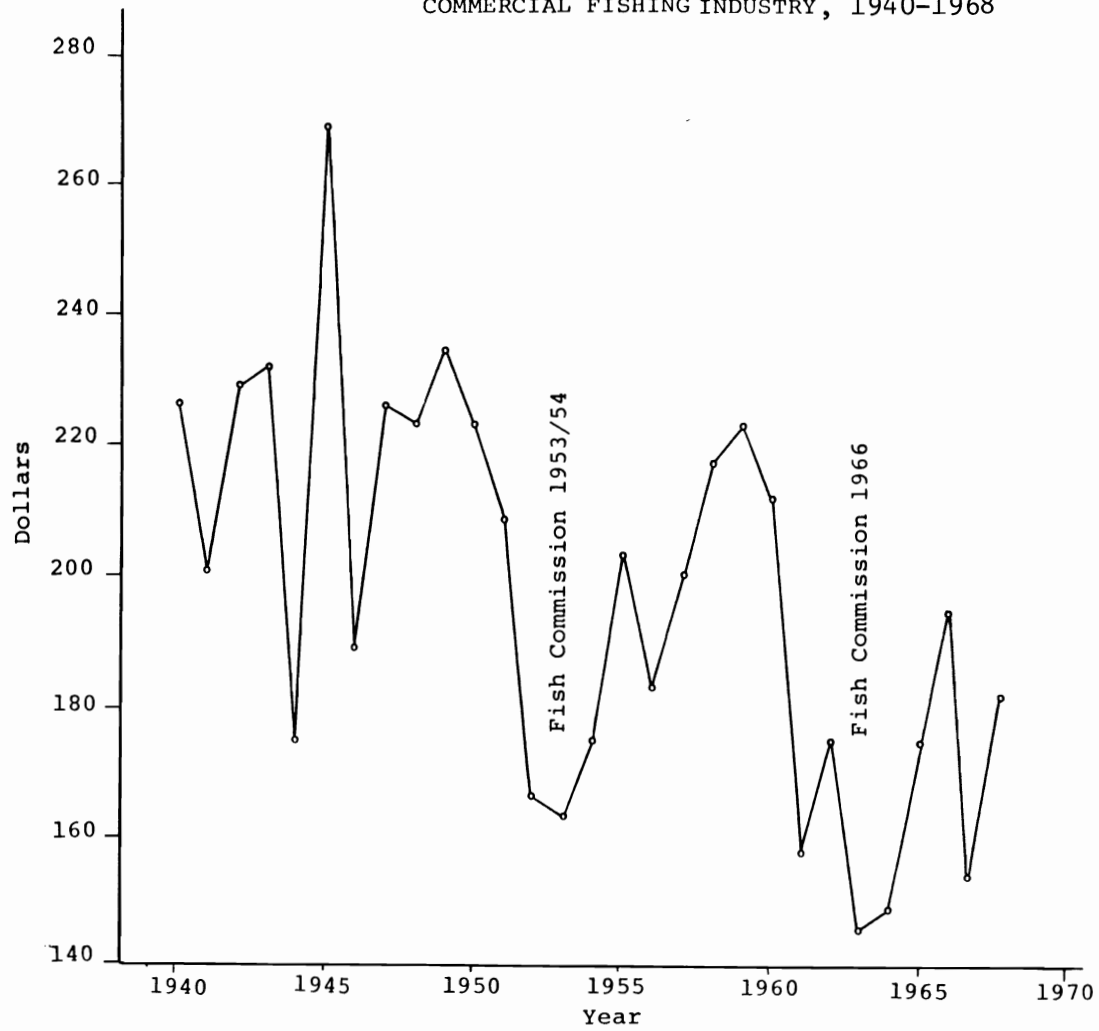
Source: Manitoba, Annual Reports, M.N.R.

¹Note that the rising productivity of the late 1950's was facilitated by changes in regulations and technology.

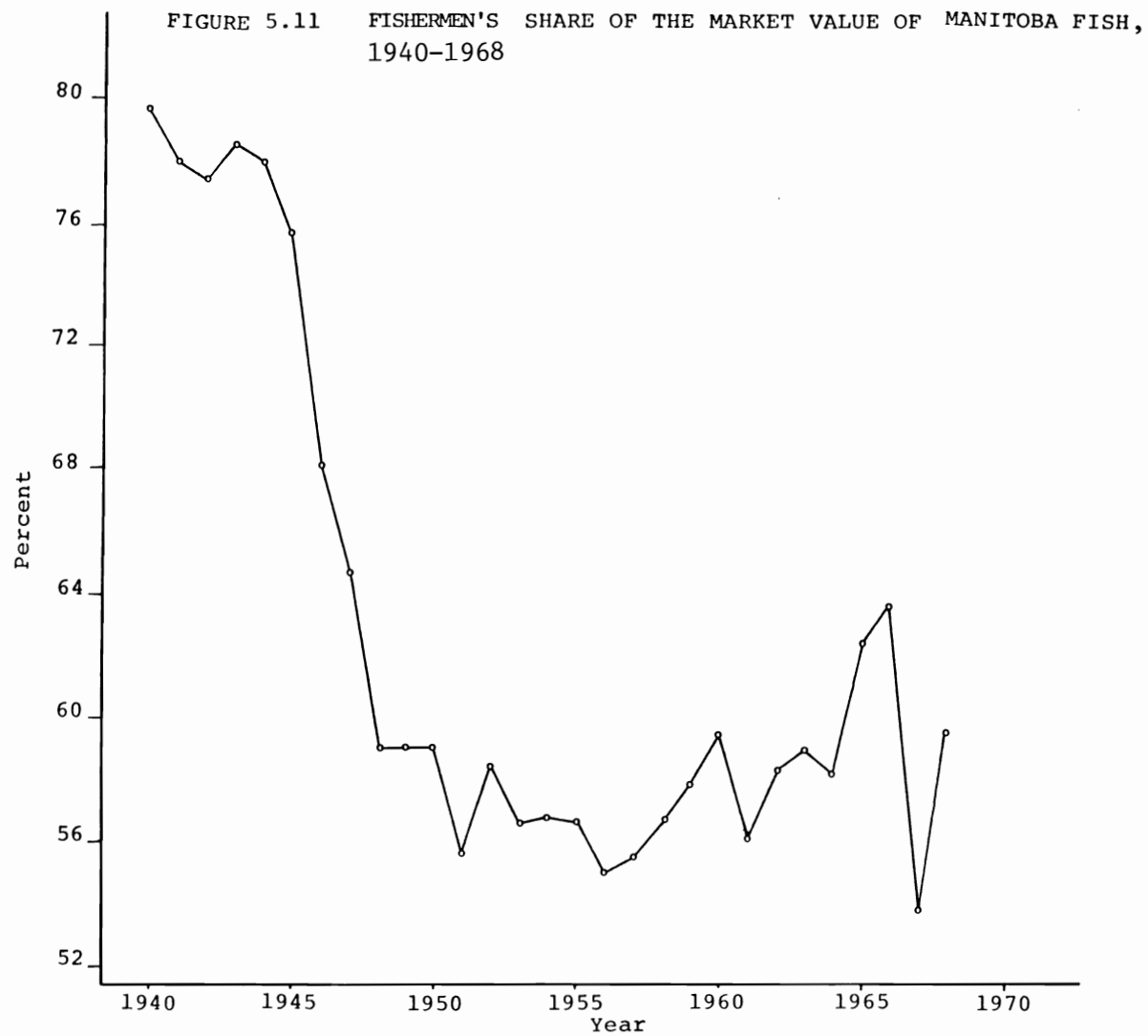


Source: Manitoba, Annual Reports, M.N.R.

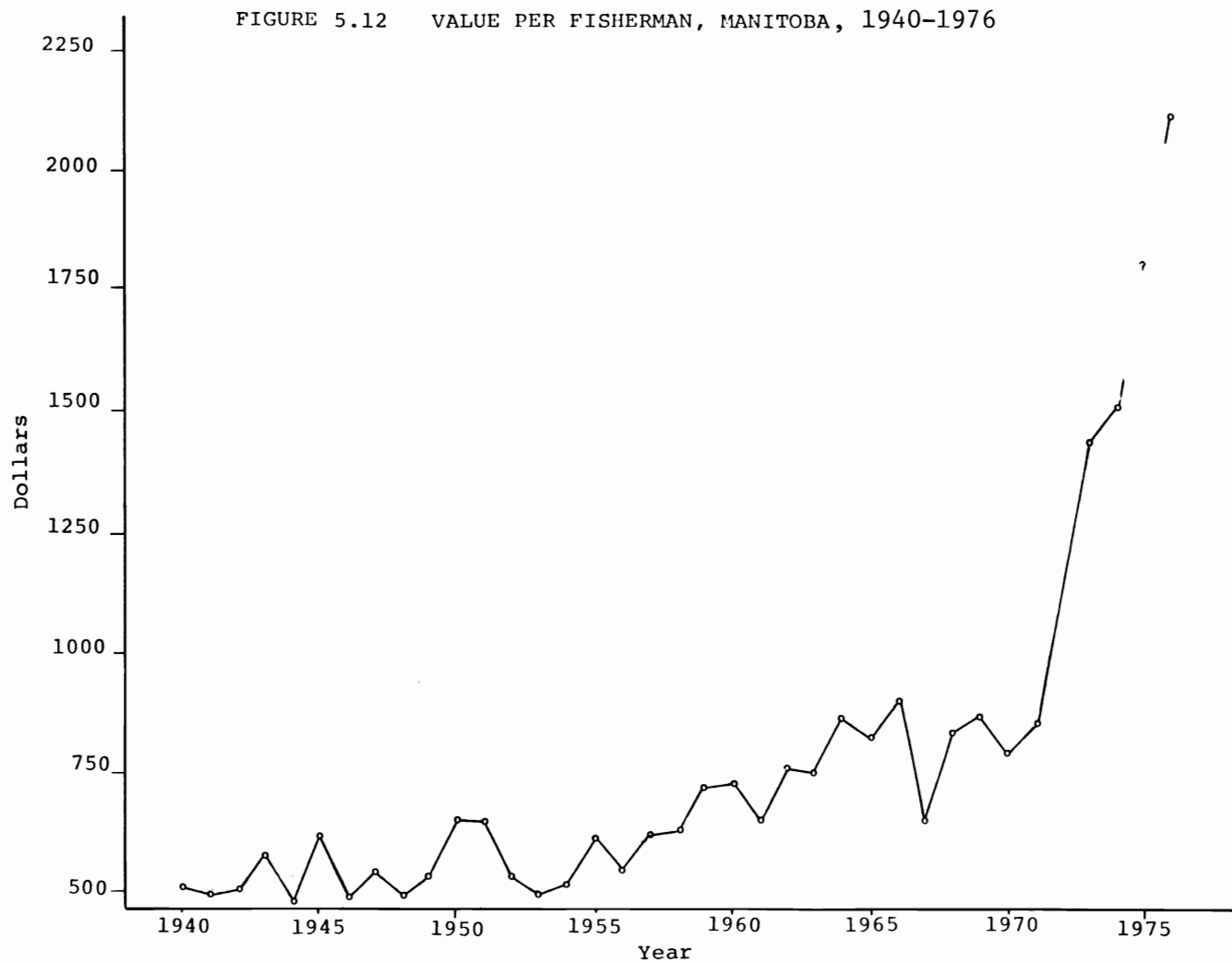
FIGURE 5.10 MARKET VALUE PER DOLLAR OF CAPITAL INVESTED IN MANITOBA'S
COMMERCIAL FISHING INDUSTRY, 1940-1968



Source: Manitoba, Annual Reports, M.N.R.



Source: Manitoba, Annual Reports, M.N.R.



Source: Manitoba, Annual Reports, M.N.R.

¹Note that the change in value per fisherman in the 1970's was probably the result of change data definitions.

in that the fishermen's portion of the market value was compressed (Figure 5.7). In the early 1950's fishermen's income fell below the level of constant capital. The creation and strengthening of local middlemen did not improve the incomes of fishermen. Rather they were forced to pass risks on to the fishermen. Again, this relationship between value, fishermen's income and constant capital exhibited certain structural weakness, and the outcome was another Royal Commission.

5.2 The Commercial Fish Commission 1953/54

Due to pressure by commercial fishermen on the provincial government, a Legislative Committee was established. On August 5th, 1953, it became a Royal Commission known as the "Commercial Fishing Commission". The Commission was the response to a crisis in the industry. Again, a structural feature of the industry emerged as the chairman stated one of the concerns of the Commission:

I may say gentlemen, that this is one of the duties of this commission, to see if we can find if the spread between the price that the fishermen is getting and the price that the consumer pays is justified.¹²

The Co-operative Commonwealth Federation member of the Legislative, D. Swailes, and a member of the Commission described the situation:

... even in a year which was described in the report of the Department of Fisheries as a good year as far as the volume of fish caught and price received are concerned, the fishermen received a mere pittance for their work, regardless of the location of the lake in which they fished.¹³

Unfortunately, the Commission's intention of coming to terms with the spread in price and the value to fishermen did not materialize as indicated by the recommendations from the Commission.

The failure of the Commission to consider seriously the spread of prices may be a result of the defence and rationale provided by local companies. The filleting of fish in Manitoba added costs to the f.o.b. Winnipeg prices. Johansson provided the Commission with cost figures for the firm Keystone Fisheries, and stated that they netted \$49.73 for 100 pounds of filleted fish while costs totaled \$48.38 which left "less three percent gross profit."¹⁴ It is not possible to test the validity of the cost schedules. However, it is possible that profitability, in spite of the processing carried out in Manitoba, was still being created in the

process of circulation in the United States. For instance, pickerel was purchased from the fishermen for 12-13 cents per pound, yet the filleted pickerel could be sold in Winnipeg for 40 to 50 cents per pound, while in the United States it would sell for 80 cents per pound.¹⁵ Given the loss of weight on filleting and transport costs to Winnipeg, the increased profit margin was created within the American market. A larger portion of value was generated in the metropolitan markets.

The companies' position reinforced the common knowledge of the price collusion between firms which fishermen alleged at Commission sessions. Johansson felt that: "... We have found through experience we can get a better price on the outside market if we have a regulated selling price, and, secondly a regulated buying price."¹⁶ He also argued that: "... I am fairly convinced, that through our efforts of controlling prices the fisherman, the primary producer, is the one that benefits as much as anyone else, ..."¹⁷ As if to reinforce fishermen's claims, a spokesman for the firm Armstrong-Gimli stated: "the fisherman who is indebted to us is part of our industry. Without him we cannot operate. It is a matter of us helping him making a living."¹⁸ Hence, the companies' position, ultimately, meant that the tradition of price collusion was in everyone's interest, that debt dependence helped the fishermen and that cost structure meant that the companies did not make large profits. The creation of local companies in certain spheres of operations (filleting) did not put an end to monopsony. The evidence of the Commission of 1954 confirms that the fishing companies did not hide this fact and felt that the status quo relationships were essential.

Naturally, fishermen expressed different concerns. A fisherman from Gimli stated:

I have been on the lake for 40 years and I can truthfully say that out of 30 of them I was hardly making a living. The rest of the time I shouldn't say I starved on it, but I had to hustle to earn my living in between seasons to make a go of it, but for the last 10 years we have lived, and now we are coming back to the same thing, so I guess we can starve.¹⁹

During the depression local companies arranged their prices with New York fish companies and established a price for fishermen. In the 1950's, although price setting between companies continued, a seasonal price was not set for fishermen. In the early 1950's fishermen would start the

season without knowing the price of fish and would in some cases be fishing for three weeks without a price.²⁰ A brief of Lake Manitoba fishermen stated that "the price of fishing equipment has advanced from year to year ... and the prices of fish are falling."²¹ Price fluctuations as the result of external market control meant that fishermen would be paid 12 cents per pound of fish at the start of the season but they would, at times, receive 24 cents at the close of the season.²² The fishermen charged that the companies would meet on Wednesdays to establish a price.²³ Thus, the fluctuations of fish prices were passed directly on to fishermen by local companies and prices were set on a weekly basis. Manitoba fishermen wanted a fundamental change to be made in the structure of the industry. Many fishermen indicated support for public sector intervention in the marketing system. A fisherman at Langruth stated: "why the devil don't you pay a man and run the business just like the Wheat Board instead of trying to steal everything you can from the fishermen."²⁴ Fishermen were clearly bearing the brunt of a cost/price squeeze. The problem of fishermen's income was further compounded by declining production of most species. Production for most species declined on lakes Winnipeg, Manitoba and Winnipegosis (Figures 5.2 to 5.4, and 5.6). Production in northern lakes, as an exception, increased (Figure 5.5). Increasing numbers of rough fish also affected incomes. Fishermen claimed that before they would get 50 pounds of rough fish while in the early 1950's they caught 300 to 400 pounds of such noncommercial fish.²⁵ An increase in rough fish leads to the inference that the fishing of commercial species promoted the growth of rough fish.

Fishermen were not alone in describing their situation. One member of the Commission, H. Shewman, who represented an agriculture community in the provincial legislature noted a similarity between grain and fish companies; "to my mind that is what is happening with the fish companies. They have got you under their thumbs and are putting the screws to you."²⁶ Similarly, the so-called problem of quality was really less of a problem of the attitude of individual fishermen than of the structure of the industry. A brief from the Manitoba Federation of Agriculture and Co-operation noted:

The lack of participation by the fisherman in the ownership of their industry's physical equipment, such as

large boats, warehouses, cold storage plants, filleting plants, and marketing facilities, inevitably has bad results. It causes an attitude of irresponsibility and short-term opportunism among all fishermen ...²⁷

The deterioration in the quality of Manitoba fish has been a convenient rationale which justified low incomes to fishermen. However, the Manitoba Federation of Agriculture and Co-operation explained poor quality fish were a result of the structure of the industry. Additional evidence documents the low incomes of fishermen. A study was carried out for the Commission by S. Sinclair concerning economic aspects of the industry. Table 5.1 indicates the fishermen's cost structure, based on a survey of 50 boats for the summer season of 1951. The gross revenue of fishermen was 3,169 dollars which after deducting costs, "left him a net return of \$621 for his labour and management for the season."²⁸

For native and northern fishermen the situation was no better. Fishermen felt that Indians who sold to the companies on Lake Winnipeg were not even making wages.²⁹ This is the first time that a commission held sessions in the north (The Pas, Moose Lake). To a certain extent fishermen on the large southern lakes felt that the production from the north jeopardized their position. It was explained by one such fishermen that: "... I think the companies use them as a reservoir whenever they are short of fish. We are told there is a slump in the market and the price goes down."³⁰ It is conceivable that companies could have held the price down to all fishermen. One set of figures suggests that the wage rate was considerably lower in the north. On Lake Winnipeg fishermen were paid 12 cents per pound for whitefish, while on Island Lake they were paid from 4 to 4½ cents and at Moose Lake 7 cents per pound.³¹ No doubt the cost of air transport would be claimed for the lower price. However, it does appear possible that production in the more northern area was generally used to hold down the wage rate and the natives were lower paid.

It was during this Commission that distinctions emerged between native and non-native fishermen. Mr. Malaher, an administrative officer with the Department of Mines and Natural Resources, drew this comparison:

Another part of the problem, and perhaps the biggest, is the fact that the majority of the fishermen of these northern lakes are Indian or of Indian extraction; they are

TABLE 5.1
STATEMENT OF COSTS AND OPERATIONS ON LAKE WINNIPEG,
SUMMER SEASON, 1951¹

	Average per boat operator
Actual fishing days	52
Number of nets used	32
Fish caught, pounds	15,870
Gross returns to fisherman	\$ 3,169
Number of men hired for season	3.4
Wages paid	\$ 782
Cost of board	\$ 426
Cost of gas and oil	\$ 283
Boat rental	\$ 201
Rental for corks and leads	\$ 48
Cost of lines, flags, etc.	\$ 41
Cost of nets and twine	\$ 573
Cost of license and compensation	\$ 69
Other costs	\$ 107
Total costs	\$ 2,548

Source: S. Sinclair, "Memorandum Re Certain Economic Aspects on the Production and Marketing of Manitoba fish," (Winnipeg, November, 1954), p. 6.

¹The total costs as shown are greater than the sum of the items due to the fact that the boat maintenance charges for 11 fishermen who owned their boats are not shown. For these 11 fishermen, the average cost of repairs and maintenance of the boats was \$234.

not fishermen, commercial fishermen, in the sense that the men you gentlemen have been interviewing in the last few weeks down south are. They don't have the same conception of quality and cleanliness or even of the activity of fishing itself. Their fishing has been confined to domestic fishing for their own use and they don't understand the principles of commercial fishing. They are not equipped either, in the way fishermen to the south are equipped.³²

Such a description is quite different from the early period of commercial fishing when native labour was an important component of commercial fishing. It also suggests that in spite of the existence of commercial fishing in the north for some decades, neither the companies nor the government developed the necessary skills for natives. Nonetheless, such a description may not be entirely correct because it tends to place problems of commercial fishing on the native fishermen instead of recognizing the detrimental effects of the industry's structure.³³

The nationalist and anti-monopolist sentiments that emerged in the Commissions of 1910 and 1933 directly challenged the export nature of the industry. However, in the Commission of 1953/54 no direct challenge to the orientation of production for external markets was made. Nonetheless, many felt that the local market had been neglected and that the industry could be placed on a sounder basis. One of the commission members, Dr. Thompson, Member of the Legislative Assembly for Gimli asked: "Why can't you develop a market in Winnipeg, a city of 350,000 people? They could eat all your fish in a very short time."³⁴ A Lake Winnipegosis participant stated: "That is what is ruining our market. The A-1 stuff is sold abroad and No. 2 is left here in the Province of Manitoba and sold to local people. Once they get a feed of it they don't want any more fish."³⁵ During the initial period of commercial fishing, the lack of local market was clearly identified with control by American capital. Although in this period foreign capital still existed in Manitoba, Grant had argued that portions of the industry had been localized. As such this did not really alleviate the control that U.S. market had over the orientation of production. In a brief to the Commission, Mrs. J.G. White of the Canadian Association of Consumers pointed out:

... so far as we can establish, it would seem that housewives have very little incentive to buy Manitoba fish in preference to imported fish offered for sale at the same or lower prices.

... some method of taking Manitoba fish out of the class of luxury foods must be devised.³⁶

Similarly, Swailes argued that "yet at no time has there been a real campaign promoted for the purpose of making the people of Manitoba and the people of Canada conscious of the fact that we produce such good fish."³⁷ The local market remained neglected and consumers were aware of this.³⁸

The testimony of many fishermen during the Commission was not really synthesized for the report as previous commissions had done. Fortunately, Swailes did provide a summary of evidence.

The fishermen feel that they are more or less at the mercy of the fishing companies, who in most cases finance them at the beginning of each fishing season... There was a general feeling that there existed a combine or form of organization among the fish companies which adversely affected the fishermen, who had no form of organization of their own... They were practically unanimous in their desire for a better system of marketing their fish ... They think that in recent years they have had to work harder to obtain smaller catches of fish.³⁹

In fact, Swailes was one of the viewers who clearly understood the role of the companies and stated:

... throughout the years, the fishing companies have occupied a dominant position. Instead of providing a marketing service to the fishermen, they have subordinated everything, fishermen, packers, and the entire natural resources of freshwater fish to the end of providing income for themselves ... The condition of the fishermen will never be improved as long as the companies dominate the situation ... It is obvious too; that as long as the companies are operating the cost to the fishermen will be higher than the minimum cost of a marketing service.⁴⁰

Swailes has identified the fishing companies as a major problem in the marketing of fish. The fact that local middlemen had emerged in the late 1930's did not in any way alter the inherent structure of the industry. Production was still orientated towards the American market, the local market was neglected, incomes of fishermen remained relatively low and fish stocks were deteriorating in both quality and quantity. Hence, some members of the Commission, including Swailes, recommended a marketing board structure.

A list of some forty recommendations, many of which would be essential to the efficient management of a fishery were detailed in the

report of the Commission.⁴¹ The tenure of the recommendations included more biological research, promotion of local markets, technical training for fishermen, improved transportation, quality and grading procedures, and a rough fish bounty so that fishermen could remove rough fish. Any follow-up of these recommendations might have improved the situation for fishermen. However, these recommendations did not challenge the structure of the industry.⁴² Hence, the relative positions of the fishermen and companies were maintained. In a short history of commercial fishing, Conservation Comment, a publication of Renewable Resources and Transportation Services revealed that "of all the problems laid before the Commercial Fishing Commission of 1953-54, few were found to have immediate solutions."⁴³ It is not that solutions were not to be found; rather, as in previous commissions, no effort was made to challenge the external control over production and distribution.⁴⁴ The Commission of 1910 refused to close Lake Winnipeg to summer commercial fishing. The Commission of 1933 failed to have a clearing house established, and the Commission of 1954 did not recommend some form of public marketing.

5.3 Production Trends And Rationalization: 1960's

After the Commission of 1954 production per man increased until 1964 (Figure 5.8), but the trend of declining productivity per dollar of capital invested continued (Figure 5.9). This increased productivity in terms of pounds of fish per man is explained by a reduction in gill net mesh from 5 ¼ to 5 inches in 1955.⁴⁵ Additionally, nylon nets, mechanical net lifters and increased yardage per boat contributed to increased productivity.⁴⁶ Figure 5.1 indicates that the total provincial whitefish production surpassed the declining production of pickerel. This increase in whitefish largely reflects the greater contribution of northern lakes (Figure 5.5) and it offset the continued decline on Lake Winnipeg (Figure 5.3). These declines in total production despite an increase in production per man is explained by the annual report of the Department of Mines and Natural Resources for 1960 which stated: "past experience indicates that a considerable poundage of small immature whitefish are taken and as a result the cycle of reproduction is adversely affected."⁴⁷ The small nets were intended for sauger. Thus the recommendation concerning the reduction of mesh sizes provided only temporary assistance to fishermen.

Sauger production was maintained during this period (although much lower than the levels of 1940's); however, the smaller nets furthered the decline of pickerel and whitefish stocks on certain lakes.

Although total capital investment grew in the industry, return per dollar invested declined from 1959 (Figure 5.10). The general stagnation and decline made the industry less attractive to private capital. To deal with this problem, in 1960 G.F. Jonasson (of Keystone Fisheries) recommended that the private companies be taken over by co-operatives with government support.⁴⁸ In the late 1950's and early 1960's the Manitoba government promoted fish producers co-operatives. However, the gap between fishermen's income and the market value indicates that disparity continued (Figure 5.7).

Another response to these trends was an effort by the fishing companies and the provincial fisheries branch to introduce new fishing techniques on Lake Winnipeg, chiefly the more elaborate trap net and trawling.⁴⁹ In 1962 some 172 trap nets were employed on Lake Winnipeg.⁵⁰ Ultimately, this would have resulted in the substitution of labour by capital. Not surprisingly, fishermen generally opposed these new techniques and for this and technical reasons, the gill net remained the major net on Manitoba lakes.

Nonetheless, rationalization was seen as the solution to the industry's problems, especially if the number of fishermen could be reduced. In the report of the Committee on Manitoba's Economic Future (C.O.M.E.F.) this position was stated:

... regulation and management of commercial fishing must be directed toward the objective of a high level of efficiency which at the same time will produce satisfactory levels of income for the fishermen. The welfare function, which is presently an integral part of the fishing industry through the existing system of the allocation of fishing rights, must be replaced by a broader scheme of rehabilitation, education and retraining.⁵¹

C.O.M.E.F. elaborated:

Over a period of time some 3,500 fishermen would be displaced from the industry. Most of these are Indians and Metis earning an average of perhaps \$400-\$500 per year from fishing at the present time ... At the same time, the 1,500 fishermen, representing 30 per cent of those presently licensed, and who will remain as full time fishermen, must be provided with the instruction and material assistance necessary to achieve the

changeover to new modern harvesting techniques. The withdrawal of the 3,500 fishermen from the industry should be gradual in relation to availability of alternative employment.⁵²

Once again it was hoped that the economic problems of the fishing industry could be resolved by reducing the number of fishermen.⁵³ Thus, the attempt to increase incomes meant a reduction of fishermen instead of a structural reform of the industry; such as a decrease in the high ratio of middlemen to fishermen.⁵⁴ It was reported that in 1964 there were 285 fish dealers in the prairie provinces with 198 in Manitoba, which was a ratio of one dealer for 17 fishermen.⁵⁵

5.4 The McIvor Commission 1965-1966

In July 1965, yet another commission was appointed to inquire into freshwater fish industry. This time the federal government appointed the commission after the findings of the Report of Inter-Government Committee on Market Organization for Freshwater Fisheries which stated:

It was unanimously agreed that disorderly marketing is a central problem in the inland fishing industry. More than ninety per cent of the exports of fish from the Praire Provinces are purchased by three large United States buyers who, working in unison, enjoy a large degree of monopoly control. As a result of this monopoly, Canadian freshwater fish prices fluctuate rapidly causing uncertainty in company profits and a low level of fishermen's income.⁵⁶

The Commission was, then, especially interested in the marketing problems and was chaired by George McIvor, who had been chairman of the Wheat Board. Therefore, the focus of the Commission was on the condition of the inland commercial fishing industry among those provinces which produced freshwater fish.⁵⁷ The main issues involved the weakness of prices, the problem of co-ordinating production with demand and the desirability of establishing an export monopoly.⁵⁸

In many previous periods, fishermen had supported the suggestion that the distribution structure should be reorganized, and the sessions of the commission meetings in Manitoba found fishermen supportive of a marketing board if it would set prices at the start of the season.⁵⁹ The Commission reported that "there are even today many fishermen who are in fact little better than indentured labourers of the fish companies."⁶⁰ The practice of not setting a price with the fishermen until after delivery continued.⁶¹ Similarly market prices fluctuated, sometimes as

much as 20 cents per pound in a day.⁶² The Commission of 1965 did not closely examine evidence concerning cost/price squeezes. It did however consider the change of value in the process of circulation. For example, dressed pickerel at 45 cents f.o.b. Winnipeg would retail for 89 cents per pound in Minneapolis (elsewhere it was 99 cents to \$1.09 per pound).⁶³ Similarly, pickerel fillets which were 85 to 90 cents f.o.b. would retail for \$1.28 to \$1.50 in Minneapolis.⁶⁴ This was not justified by transportation costs as the f.o.b. price in Madison, Wisconsin was 85 to 90 cents, or transport cost of about 6 cents per pound.⁶⁵

This price polarization occurred most markedly in northern Manitoba where the fishermen generally received lower prices. In the summer of 1965 the fishermen in northern Manitoba received 16 to 28 cents for dressed pickerel, the dealer 34-47 f.a.s. (fee alongside ship) and exporters received 50-56 cents f.o.b.⁶⁶ It was pointed out that fishermen in northern Manitoba did not benefit from a 6 to 8 cents increase in the price, as the dealer did not pass it on to the fishermen.⁶⁷ While prices remained high for fish in the United States the return to fishermen in both the larger lakes and northern Manitoba remained low. In the Commission's words, the fishermen's share was "approximately one quarter of the average price paid by the consumer in the United States."⁶⁸ Since the structure of the industry had not changed, the relationship between participants remained the same. The advantages to the firms of debt dependence was explained by the Commission since "by not giving a price to the fisherman at time of delivery, the exporter via his agent, passes on to the fisherman all the risks which he may encounter in marketing."⁶⁹ The nature of this industry perplexed the Commission: "the Canadian industry catches, dresses, ices, packs and transports the product, yet it receives only fifty percent of the retail price."⁷⁰ This was not really a new feature of Manitoba's commercial fishing and conforms rather well to the pattern of development based on staple production.⁷¹

The Commission also recorded an observation which was relevant to native and northern fisheries, and indicated spatial changes in the industry as: "... participation by Indians and Metis has been increasing and by whitemen has declined."⁷² The declining incomes were the result of:

... the failure of the freshwater fishery to support normal living conditions is associated more and more with the Indian

and Metis, as their participation in the commercial fishery has expanded in recent years.⁷³

and

Problems in marketing freshwater fish are becoming more and more just another aspect of the generally deplorable economic and social conditions which mark the existence of Indians and Metis in Canada's northland.⁷⁴

As established by the 1954 Commission, native and northern fishermen found themselves at the lowest level of the commercial fishing industry.

The allegation concerning combines or control by foreign capital did not emerge as a problem in this Commission's report.⁷⁵ Foreign influences were not negated because "many Canadian exporters of round or dressed fish are, in effect, agents of the importers in Chicago and Detroit and retain little independence."⁷⁶ In fact, the ownership with regard to product line and its influence on the marketing structure was not studied by the Commission. As a result it presented somewhat naive suggestions: "ideally any strengthening of the position of either the fisherman or the exporter should not occur at the expense of the other, but at the expense of the United States importer."⁷⁷ Again it was proposed that a pluralistic approach could placate the conflicting interests. The Commission also supported the general opinion of the state that there were too many fishermen: "it must be realized however that as much or more can be accomplished by a substantial reduction in the number of fishermen and by a rationalization of fishing."⁷⁸

In keeping with tradition, the Commission did not, in a historical manner, consider the reason why a local market had not been developed. It accepted the export market premise, although it noted the problem of the local market would improve: "... particularly if the industry would be more careful of the quality made available, and would not use the domestic market as a last resort to market fish of otherwise unacceptable quality."⁷⁹ Perhaps the Commission felt an important feature of the industry was the export development of this staple since "the freshwater fish industry is comparatively small in total output; it is an important participant in Canada's export trade," and "... makes a significant positive contribution to our balance of trade."⁸⁰

Whether the appeal to improve the balance of trade or a desire to increase the incomes of fishermen, the Commission recommended the estab-

lishment of a freshwater fish export authority to be legislated under federal legislation. Such a marketing board would be the sole seller of freshwater fish, would accept delivery only from fishermen, and would have authority to finance fishermen. The recommendation of the McIvor Commission resulted in the establishment of the Freshwater Fish Marketing Corporation. This was the first fundamental alteration in the structure of marketing of fish. Certainly it was not rash in its conception. Fishermen had attempted to organize a pool in 1928, and participants during the Commission of 1933 and 1954 had advocated fundamental changes in marketing and distribution.

5.5 The Aftermath Of The McIvor Commission

The year 1969 marked the beginning of a partial reorientation of the fishing industry. In this year, after some three years of study and procrastination, the state marketing agency, the Freshwater Fish Marketing Corporation was established. It was also the year that a social democratic party took office in the province of Manitoba--a party whose orientation was towards some sort of income redistribution and public sector involvement. Such a political orientation influenced the development of the industry. It is difficult to assess this period and the impact of social democratic policies on the industry as published statistics are not comparable to those from the previous periods.⁸¹ Generally the recommendations to rationalize the provincial economy as stated in the Targets for Economic Development were not followed by the new administration.⁸² Instead the Guidelines for the Seventies argued in favour of greater equality of the human condition, that is, "the principle of equality requires that these disparities be eliminated ..." and the stay option or "the principle of the stay option is intended to prevent economically forced migration."⁸³ This, then, was something of a reversal of the labour rationalization policies of the previous decade.

In 1969 the Fisheries Adjustment Study was carried out on lakes Winnipeg, Manitoba and Winnipegosis, which recommended that "no concerted effort should be made to reduce manpower on Lakes Manitoba, Winnipeg and Winnipegosis ..."⁸⁴ Table 5.2 details the decline that had already occurred in the 1960's. This study established that the decline in employment was a result of a "lack of ingress to the fisheries" which

TABLE 5.2
LABOUR RATIONALIZATION 1961-1969

Number of Licensed Operators			
Year	Lake Winnipeg	Lake Manitoba	Lake Winnipegosis
1961	902	450	200
1963	1,070	423	192
1965	936	381	138
1967	623	285	122
1969	630	275	96
Percent Change from 1961	- 30.2	- 38.9	-52.0

Source: R. England and R. Peters, Fisheries Adjustment Study
(Winnipeg, 1971), pp. 17, 21, 27.

can be explained by "the fact that commercial fishing, as a means of gaining a livelihood, has become an increasingly unattractive alternative for the fishermen's sons ..."⁸⁵ The study indicated that the participation of those fishermen who had been surveyed was indeed long and that it would be difficult for them to obtain alternative employment.⁸⁶ The fact that the employment rationalization scheme could not be fully carried out rested on the lack of new employment. This reflected the inability of the Manitoba economy, as a peripheral and staple producing economy, to create a significant secondary manufacturing sector. The study recommended:

Finally if policy relative to the commercial fishery is to favour a labour intensive type of organization there is little doubt but what the more capital intensive methods which have been advocated are not applicable.⁸⁷

In fact, the study felt that in some cases the fishermen were overcapitalized and had more equipment than they could handle.⁸⁸ The replacement of labour by capital is part of the process of economic growth and not necessarily that of development. In the case of fisheries this process of capitalization is intensified in order to maintain catch levels.

Figure 5.1 indicates a downward trend in the period following the McIvor Commission. Figure 5.2 shows that in the 1960's northern Manitoba had become the largest producer of fish in Manitoba surpassing Lake Winnipeg. Production decreased for lakes Winnipegosis and Manitoba (Figures 5.4 and 5.6). The sudden drop in the early 1970's is a result of the closing of lakes Winnipeg, Cedar and Saskatchewan River due to levels of mercury in excess of 0.5 ppm (Figures 5.1 and 5.3). At this level fish were not acceptable to export markets. These waters remained closed for 1971 and 1972. The Fishermen's Emergency Assistance Plan provided compensation of some 1.9 million dollars.⁸⁹ However, even after the opening of the lakes, production did not increase past the low levels of the 1960's.⁹⁰ It did, nonetheless, result in some rationalization of labour and thus reduced the number of fishermen relative to the fish population.

5.6 Freshwater Fish Marketing Corporation

The Freshwater Fish Marketing Corporation (F.F.M.C.) was expressly established to improve incomes of fishermen through a state monopoly export marketing corporation. In this sense the industry had reached the

state monopoly capitalist phase. The assets of the companies were purchased or leased, and the phasing out of private concerns presented no great problem as there had been little investment in the 1960's and state involvement occurred when the ratio of value and production to capital investment had already reached a low level.⁹¹ (See Figures 5.7, 5.9 and 5.10.) With the removal of the private companies from middlemen positions, various state agencies were responsible for equipping fishermen. In 1969/70 two million dollars were loaned to fishermen from the Manitoba Agriculture Credit Corporation.⁹² Similarly, Agricultural Rehabilitation and Development Act (ARDA) aid from 1971 to 1975 totalled some two million dollars.⁹³ Still, during this period Cable maintained that "the income derived from commercial fishing does not provide sufficient income to be set aside for the replacement of commercial fishing equipment."⁹⁴ The F.F.M.C. provided the fishermen with a price at the start of the season, which was the anticipated sale price minus costs. Should the market improve, a final payment was made to fishermen which included the increased price. The marketing board was basically established on a non-profit basis.

Initially the F.F.M.C. provided an increase in prices to fishermen over what had been offered in the previous year (Table 5.3). However, the difficulties of F.F.M.C. are well known among fishing communities. In financial terms these early difficulties are demonstrated in Table 5.4 which displays the current ratio (the ratio of current assets to current liabilities) and is a general measure of the short term financial strength of a firm. The first year was the most stable year for the company. To a certain extent the depreciation of private capital and the need for a capital investment program explain the weak current ratio. This capital investment program centres on the construction of a new processing plant located in Winnipeg.⁹⁵ The plant and processing equipment was originally intended to cost 2.5 million dollars but ended up costing 5.3 million dollars in 1972.⁹⁶ The excessive capitalization with the accompanying high interest payments, along with other problems resulted in the corporation exceeding its borrowing authority.

The plant expansion reflected a policy to direct the freshwater fish production towards highly processed convenience food. To the extent

TABLE 5.3
 PRICE PAID TO FISHERMEN
 1968-1977

	Whitefish Jumbo (export)	(continental)	Pickereel large dressed
1968	0.40		0.35
1969	0.57		0.445
1970	0.55		0.56
1970/71 Winter	0.52	0.41	0.47
1971 Summer	0.53	0.38	0.46
1971/72 Winter	0.49	0.43	0.50
1972 Summer	0.49	0.39	0.46
1972/73 Winter	0.49	0.43	0.50
1973 Summer	0.49	0.39	0.46
1973/74 Winter	0.51	0.46	0.54
1974 Summer	0.52	0.39	0.47
1974/75 Winter	0.54	0.47	0.57
1975 Summer	0.565	0.425	0.505
1975/76 Winter	0.585	0.485	0.595
1976 Summer	0.55	0.39	0.52
1976/77 Winter	0.60	0.39	0.63

Source: Annual Reports of F.F.M.C.

TABLE 5.4
 CURRENT RATIO OF F.F.M.C.
 1969-1977

Year	Current Assets	Current Liabilities	Current Ratio
1969-1970	\$2,079,135	\$ 2,239,240	0.93
1970-1971	2,824,299	4,947,282	0.57
1971-1972	3,960,396	10,636,106	0.37
1972-1973	4,157,357	11,570,040	0.40
1973-1974	6,024,117	13,071,143	0.46
1974-1975	6,628,633	13,021,553	0.51
1975-1976	5,235,361	10,710,021	0.49
1976-1977	6,826,549	10,694,057	0.64

Source: Annual Reports of F.F.M.C.

that this created a demand for rough fish, such as mullets (suckers), this represented an advantage to fishermen. It also supported an uncritical acceptance of metropolitan consumer habits. However, not all of the economic problems of the corporation were the result of too heavy a capital investment program. Problems such as spoilage, sales costs exceeding revenue and a total loss of inventory control characterized some of the early years of the F.F.M.C.⁹⁷ Also the new plant could not handle Interlake production in 1972. Similarly, in its early years, the F.F.M.C. still depended upon brokers in the U.S., whose commissions contributed to high sales costs. As a result of these problems, changes in management followed. In fact, the problems of the corporation were so extensive that the Auditor General of Canada could not even express an opinion on the correctness of the books for the fiscal year 1972.⁹⁸

The creation of the F.F.M.C. has probably prevented the total deterioration of the industry. It has not managed to advance the incomes of fishermen significantly despite the fact that Figure 5.12 suggests a rapid increase in the value to fishermen. However, this is not reliable as the data base had been redefined at the time of the establishment of Freshwater Fish Marketing Corporation.⁹⁹ In 1972 the average net income for Matheson Island/Pine Dock fishermen (considered to be some of the best fishermen on Lake Winnipeg) for the open water season was 3766 dollars and approximately 1197 dollars for winter season, which totalled 4936 dollars for the year.¹⁰⁰ In 1973 it was 4954 dollars. For Brocket (in 1973), on Reindeer Lake, daily gross earnings amounted to \$48.50 while daily expenses were \$33.63.¹⁰¹ This leaves a daily income of \$14.87 which may be shared between two men. MacMillan claimed for the 1970's that:

It would appear that increase in costs have been greater than increase in real income to fishermen. The information to precisely monitor such increase in real income to Manitoba fishermen is not available.¹⁰²

Similarly, Gislason stated:

For the northern fisheries in Manitoba, net returns have been steadily declining the last few years. Current production is much less than the historical highs indicating that total costs exceed total revenue ...¹⁰³

Increased costs of fuel and transportation resulted in withdrawal of labour at eleven per cent per year.¹⁰⁴ To understand the cost/price

squeeze that fishermen feel, it is necessary to discard the notion that fishing communities are economically isolated. These communities are closely integrated with the world economy which means that an increase in the price of petroleum has a fundamental impact. An increase in petroleum prices not only affects fuel for boats but raises the cost of inputs such as the nylon nets and rope. The unfavourable situation in the 1970's suggests that the fishermen of Manitoba were in a declining terms of trade situation.

In summary the F.F.M.C. has increased the price of fish but it has not really advanced the fishermen's share of the market value (Table 5.5). The bulk purchasing strategy of F.F.M.C. has helped to reduce the cost of fishermen's inputs; however, a more important consideration is that the corporation has not significantly developed the Canadian market (Table 5.6). The F.F.M.C. annual report for the fiscal year 1974 pointed out that in Chicago "... the markup was nearly 70 percent" over the Canadian export price.¹⁰⁵ This suggests that certain features of the industry remained; that is, the fishermen's share of the market remained relatively similar to the pre-public marketing period. Clearly, the removal of local middlemen has strengthened the export price. The Freshwater Fish Marketing Corporation has diversified the external market by selling in Europe; but the local western Canada market has not grown. J. Piper has stated "in an overinfatuation with the U.S. market the F.F.M.C. and its predecessors have neglected and lost the Saskatchewan market."¹⁰⁶ Additionally, the corporation has rationalized the industry's processing operations which has led to the shut down of many local community fish plants.¹⁰⁷ The industry remains orientated towards an external market. However, the removal of the local middlemen and declining terms of trade between what fishermen produce and their requirements to produce have meant that the fishermen now rely on government funding. Hence, fiscal policies of the government will determine the fishermen's level of production and their incomes.

Summary

The evidence of Commissions of 1954 and 1965 helped to develop an historical reconstruction of the industry in the course of its decline. High levels of production characterize the war years of strong markets.

TABLE 5.5
 DISTRIBUTION OF VALUE UNDER F.F.M.C.
 1970-1977

Year ¹	Total Payments to Manitoba \$	Total Payments to all Fishermen \$	Total Annual Sales	Manitoba % of Total	Fisherman % of Total
1970	3,390,547	7,679,832	14,398,446	23.5	53.3
1971 ²	2,114,115	6,652,650	13,276,341	15.9	53.1
1972	2,423,080	6,302,062	12,674,167	19.1	49.7
1973	4,578,521	8,247,722	15,448,390	29.6	53.3
1974	4,648,239	7,683,234	16,590,237	28.0	46.3
1975	4,957,821	8,343,301	19,217,438	25.7	43.4
1976 ²	5,960,000	9,302,000	22,297,000	26.7	41.7
1977 ²	7,686,000	11,646,000	24,848,000	30.9	46.8

Source: Annual Reports of F.F.M.C. 1969/70-1976/77

¹Year ending April 30th.

²Initial payments to fishermen only. The final payment provision to fishermen was \$697,714 in 1976 and \$2,200,000 in 1977.

TABLE 5.6

MARKET ORIENTATION OF F.F.M.C.
1974-1977

	1974		1975		1976		1977	
	\$	%	\$	%	\$	%	\$	%
Canada	2,967	17.8	2,600	13.5	2,777	12.4	3,091	12.4
United States	12,542	75.5	15,160	78.9	17,811	79.8	19,248	77.4
Overseas	1,082	6.5	1,431	7.4	1,709	7.6	2,509	10.0
Total	16,590		19,191		22,297		24,848	

Source: Annual Reports of F.F.M.C.

Yet, an incisive examination of the fishing industry during the war reveals certain faults in the structure. Indices such as productivity per man and pounds per dollars invested demonstrate the decline of a staple. After the war, the fishermen's share of the market contracted. This may be the consequence of localization of certain spheres of production and increased filleting of whitefish. In the early 1950's a classical crisis of the industry occurred as indicated by the dropping of variable capital to the levels of constant capital. The Commission of 1954 studied the problems of low incomes of fishermen, external market control, increased fishing effort and the non-existence of a local market. Again local middlemen stood up at commission meetings to defend the manner in which this staple was produced and marketed. The Commission did not recommend the implementation of structural changes. Instead, alterations in resource policies were used to shore up the industry. New regulations and changes in technology sponsored a short term increase in productivity per man which did not indicate strengthened fish populations. Rather, the reverse as smaller net meshes took a heavier toll of stocks.

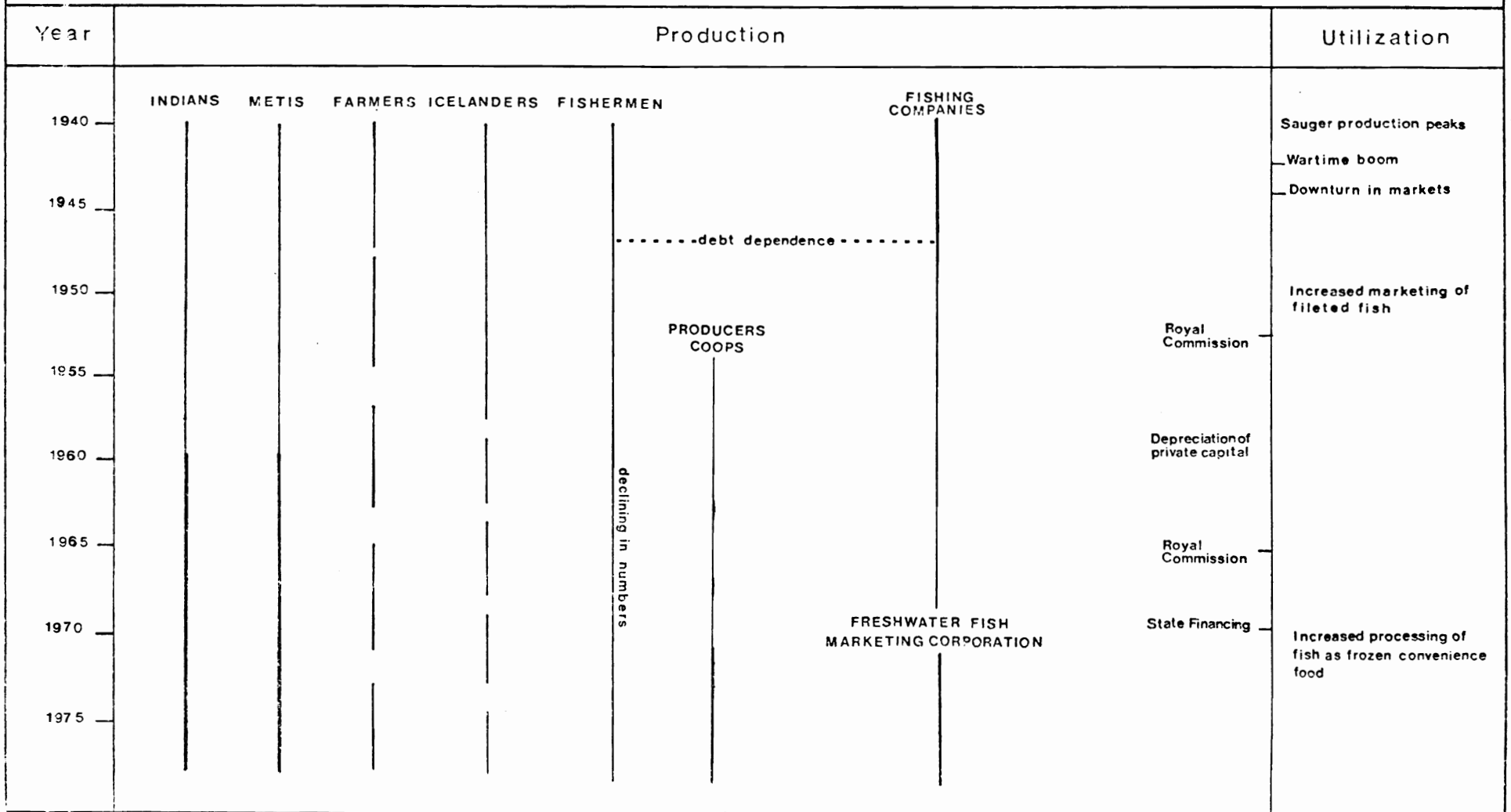
In 1965, yet another commission visited inland fishing communities as a response to a renewed downturn in the industry. In spatial terms, production from northern lakes surpassed Lake Winnipeg, yet this did not reverse the overall downward trend. In Manitoba, a proliferation of middlemen, perhaps rooted in the localization of the 1930's, had seriously distorted the structure of the industry. The overall concern of this Commission was the inability of the industry to generate value in Canada (price spread problem). In spite of the fact that most of the labour was added to the product in Canada, a disproportionate amount of profit was made in the United States. Unlike the previous investigations, the McIvor Commission recommended a public export marketing board. This was the first serious structural reform to be advocated by a commission and supported by the state.

Eventually, the Freshwater Fish Marketing Corporation became the sole marketing agency on inland lakes. The involvement by the public sector occurred when private capital had been depreciated because of a general decline in the productivity of the industry. The F.F.M.C. had many serious difficulties in the initial stage, but it has provided a

certain price security. Incomes from fishing have remained low as the costs of inputs have generally increased faster than fish prices. In the 1970's, the fishermen became dependent on funding from government agencies as incomes from fishing could not replace equipment. The fishermen were caught in a deteriorating terms of trade situation. Although F.F.M.C. has functioned as an export monopoly, the fishermen's share of the market value has not advanced. Value is still transferred to the metropolis and production continued to be directed towards the American market.

FIGURE 5.13

STRUCTURAL DEVELOPMENT OF THE FISHING INDUSTRY



Notes and References

1 The entire period from 1940-1976 is based on provincial reports which are recorded on a fiscal year basis (usually year ending March). For example, 1940 actually represents 1940/41, that is, 1940 summer and fall seasons, as well as, the winter season of 1941.

2 T.A. Judson, "The Freshwater Commercial Fishing Industry of Western Canada," (unpublished Ph.D. Thesis, University of Toronto, 1961), p. 244.

3 Manitoba, Annual Report M.N.R., 1942, p. 55.

4 P.A.M., M 69, A63, George Mainwaring, "The God That Speaks: The Story of Northern Manitoba," p. 63.

5 Ibid., pp. 63-64.

6 Judson, op. cit., p. 241.

7 Ibid., p. 249.

8 Ibid.

9 Manitoba, Annual Report M.N.R., 1950, p. 73.

10 The provincial reports do not represent the actual number of individual fishermen, instead the records indicate the number of men fishing by season (winter and summer). The total of these seasons is the figure used in the study. As this is used consistently it is valid as an indication of changes from year to year. However, since some men fish both seasons and others do not these figures are not realistic in their absolute value.

11 Judson, op. cit., p. 128.

12 Proceedings of the Commercial Fish Commission of 1953/54, Vol I, p. 111.

13 D. Swailes, "Report of D. Swailes: The Commercial Fishing Commission," p. 5.

14 Proceedings Vol 4, p. 1260. This data was reworked by Sol. Sinclair, and found that the profit was \$1.92. S. Sinclair, "Memorandum Re Certain Economic Aspects on the Production and Marketing of Manitoba Fish," (Winnipeg: 1954) (mimeographed), p. 13.

15 Proceedings Vol 2, p. 382, and Vol 4, p. 1075.

16 Ibid., p. 1000.

17 Ibid., p. 1135.

18 Proceedings Vol. 5, p. 90.

19 Proceedings Vol. 1, p. 119.

20 Swailes, op. cit., p. 12.

21 Proceedings Vol. 4, p. 919.

22 Proceedings Vol. 1, p. 242.

23 Swailes reported that the companies "admitted that they held a meeting every week, so they could determine the price at which they

could sell, and the price they could pay fisherman." Swailes, op. cit., p. 12.

24 Proceedings Vol. 2, p. 448.

25 Proceedings Vol. 1, p. 151.

26 Proceedings Vol. 3, p. 905.

27 Proceedings Vol. 4, p. 1104. The quality issue was often a diversion from the price issue. Swailes stated "once the word gets around, that poor fish is being accepted, and that a fisherman is being paid the same price for poor fish as good fish, then the incentive to deliver good fish only, is lost. This is what has happened in Manitoba since the beginning of the war." Swailes, op. cit., p. 10. Similarly, Judson argued "... uncertainty and other factors produced a short-term point of view in most dealers, who emphasised quantity, because their profit was primarily based on turnover. Finally, the interaction of the business cycle with the competitive pattern was detrimental to continued high level quality." Judson, op. cit., p. 341. However, the whitefish parasite, Trianaenophorus Crassus infested northern lakes and therefore affected the export of whitefish to the United States.

28 Sinclair, op. cit., p. 7.

29 Proceedings Vol. 1, p. 24.

30 Ibid., p. 7.

31 Proceedings Vol. 3, p. 771.

32 Ibid., p. 737.

33 An additional problem for native fishermen was the encroachment of tourists on northern fisheries. Ibid., p. 820.

34 Thompson implied that only poor quality fish remained in Canada. Proceedings Vol. 2, p. 398.

35 Proceedings Vol. 3, p. 731.

36 Proceedings Vol. 4, p. 1969.

37 Swailes, op. cit., p. 18.

38 It was reported for 1957 that when a surplus developed for Manitoba fish an intensive campaign was launched in the local retail market; and "the success of this campaign coupled with an improved export demand for frozen whitefish resulted in the disposal of all surplus stocks and the establishment of a more stable market." Manitoba, Annual Report M.N.R., 1958, p. 65. This demonstrated the potential of the local market, however, because of the structure of the industry it was only used as a reserve.

39 Swailes, op. cit., p. 8.

40 Ibid., p. 15.

41 See Manitoba, First Report of the Legislative Committee Investigating the commercial Fishing Industry in Manitoba in 1953/54 (Winnipeg: 1954).

42 It is at this Commission that the biologist W.A. Kennedy stated "I believe that there are too many regulations, and that efficient operations are thereby unnecessarily discouraged," and that "gill-nets of smaller mesh than 5 -inch be legalized for use throughout the whole north end" and "gill-nets of 3-inch mesh be legalized for all fishing seasons in the south end." "Resume of a verbal report to the Commercial Fishing Commission on November 10, 1953 by W.A. Kennedy," pp. 10-12. Several years later mesh sizes were decreased but this did not seem to really result in a greater efficiency or have any positive long run effects on fish populations.

43 Brendan Carruthers, "A History of Commercial Fishing in Manitoba," Conservation Comment, Part 2 (January/February 1978), p. 4.

44 Judson characterized the 1950's "basically the government was not interested in trying to assist fishermen by means of a co-operative." Judson, op. cit., p. 199. More importantly Judson argued "the Department of Natural Resources appears to have reflected the interest of the exports rather than those of the fishermen. The remark of a senior official that 'they [the fishermen] would only spend more money in the beer parlor,' as a reason for not providing greater assistance to fishermen, is indicative of the situation." Judson, op. cit., p. 200.

45 Manitoba, Annual Report M.N.R., 1959, p. 59.

46 Ibid.

47 Manitoba, Annual Report M.N.R., 1960, p. 80. Also biological research at the time suggested changes in populations of fish. This was summed up in the annual report for 1964 which stated: "since 1944 the trend of age composition in the commercial catch has been towards younger age groups. The average weight of individual whitefish has been reduced, but the growth rate has increased. The catch has been greatest when the total mortality rate ranged from 70 to 78 per cent annually. This rate is now close to 90 per cent. Changes in growth and mortality rates are believed to be associated with exploitation." Manitoba, Annual Report M.N.R., 1964, p. 24.

48 In 1960, G.F. Johansson (of Keystone Fisheries Limited) recommended that the private industry be turned over to co-operatives with state support and control for the benefit of fishermen. "Recommended Program for the Manitoba Fishing Industry," Presented to the Government of Manitoba (April, 1960).

49 See the Report of Commission of Inquiry into Freshwater Fish Marketing 1966. Commissioner George McIvor, pp. 23-24.

50 Manitoba, Annual Report M.N.R., 1963, p. 19.

51 Report of Committee on Manitoba's Economic Future, p. v-4-5.

52 Ibid., p. v-4-7.

53 Those concerned with administering fisheries did not oppose employment rationalization process, for example, a plan proposed to reduce the number of fishermen from 4,400 to 1,500 by 1975. Manitoba, Department of Mines and Natural Resources, "A Total Development Plan for the Manitoba Fishing Industry (1965)," (mimeographed), p. 21. (This study

was inspired by the rationalization and resettlement schemes of Newfoundland.)

54 This eventually became formally accepted as government policy: "The overemployment problem in the Manitoba fishing industry can only be solved by a long range policy aimed at reducing the number of commercial fishermen." Report of the Commission on Targets for Economic Development (Winnipeg: 1961), p. 91.

55 McIvor Commission, p. 86.

56 J. Gannon, Report of Inter-Government Committee on Market Organization for Freshwater Fisheries (February: 1964), p. 6.

57 Essentially, the structure of the industry during this period was the same as the preceeding decade, that is, the fishermen, dealers/packers, exporters (fishing firms) and U.S. importers, and then smaller volume retailers. In the dressed or round stage the exporter was considered to be more of a commodity broker than a processor. McIvor Commission, p. 86.

58 Ibid. p. 111.

59 Commission of Enquiry into the Freshwater Fish Industry. "Minutes of Public Hearing," Vol 1, p. 73.

60 McIvor Commission, p. 97.

61 Ibid., p. 96.

62 Gannon, op. cit., p. 19.

63 McIvor Commission, p. 91.

64 Ibid., p. 92.

65 Ibid.

66 Ibid., p. 9.

67 Ibid., p. 94.

68 Ibid., p. 99.

69 Ibid., p. 96.

70 Ibid., p. 6.

71 The McIvor Commission made some additional observations which are worthy of noting, it stated: "the encroachment of sport fishing is not only wasteful of fish resource, but it also forces the commercial fishing into more remote areas, where prices to the fishermen are lower." McIvor Commission, p. 4. The McIvor Commission also established that some quality problems are the result of improper handling by U.S. importers. Ibid., p. 7.

72 Ibid., p. 85.

73 Ibid., p. 3.

74 Ibid., p. 86.

75 Ibid., p. 97.

76 Ibid., p. 92.

77 Ibid., p. 97.

78 Ibid., p. 10.

79 Ibid., p. 72.

80 Ibid., p. 4 and p. 70.

81 The provincial annual reports are extremely deficient in that capital figures are not provided.

82 The follow-up to the Committee on Manitoba Economic Future was the Commission on Targets for Economic Development which stated: "The overemployment problem in the Manitoba fishing industry can only be solved by a long range policy aimed at reducing the number of commercial fishermen." Manitoba To 1980: Report of the Commission on Targets for Economic Development (Winnipeg: 1969), p. 15.

83 Manitoba, Guidelines for the Seventies, Vol 3, p. 53.

84 R.E. England and R. Peters, Fisheries Adjustment Study (Winnipeg: 1971), p. 1.

85 Ibid., p. 31.

86 Ibid., p. 118.

87 Ibid., p. 215.

88 Ibid., p. 211.

89 Manitoba, Annual Report M.N.R., 1971, p. 27.

90 Indications of declining fish stocks are demonstrated by the 1969 summer whitefish catch on Lake Winnipeg in which 60 percent were small, under 1.5 pounds and harvested before maturity. F.F.M.C. Annual Report 1969/70, p. 8.

91 In 1965, a department paper stated: "the private investment has been, in most cases, totally depreciated by the owners and is generally inadequate to the efficient harvesting and processing of the catch." Manitoba, Department of Mines and Natural Resources, "A Total Development Plan for the Manitoba Fishing Industry, 1965," (mimeographed), p. 20. This strongly suggests that the state entered into a sphere of operation that had ceased to be profitable.

92 Manitoba, Annual Report M.N.R., 1970, p. 5.

93 The capital support to commercial fishermen demonstrated that the incomes of fishermen increased, for Hole River 2 percent, Princess Harbour 7 percent, Moose Lake 25 percent, and St. Laurent 314 percent (for the years 1971 to 1974). D. Cable, "Some Socio-Economic Impacts of the Special ARDA program of Assistance to Commercial Fishermen," Paper Presented to the Freshwater Fisheries Seminar (Winnipeg: June, 1976), p. 9.

94 Ibid., p. 23.

95 The locating of the head office and plant F.F.M.C. in Winnipeg was conditioned by the Department of Regional Economic Expansion grant which was 10 percent of the capital cost of the new plant. At the same time processing and handling plants in communities such as Gimli and Selkirk were closed.

- 96 F.F.M.C. Annual Report 1971/72, p. 6.
- 97 Report of the Interdepartmental Committee on the Freshwater Fish Marketing Corporation (Ottawa: Environment Canada), p. 22.
- 98 F.F.M.C. Annual Report 1971/72, p. 6.
- 99 In the early 1970's the figures on men employed were reported on an annual basis which was a more realistic figure. The previous reports totalled winter and summer seasons, thus double accounting.
- 100 J.A. MacMillan, J. Craven and G.S. Gislason, "Determinants of Income to Fishermen, Southern Lake Winnipeg, Grand Rapids and Lake Winnipegosis, Open Water and Winter Seasons, 1972-1974," (Winnipeg: Department of Agricultural Economic and Farm Management, University of Manitoba, 1976) (Draft Research Bulletin), pp. 75-94.
- 101 Bruce Popko, "The Brochet Commercial Fishing: An Examination of Problems and Alternatives," (Manitoba; Department of Renewable Resource and Transportation Services), n.d., pp. 3-4.
- 102 J.A. MacMillan, "Freshwater Fish Seminar Overview," Paper Presented to Freshwater Fisheries Seminar (Winnipeg: June, 1976), p. 20.
- 103 G. Gislason and J.A. MacMillan, "Fishery Management in Manitoba," Paper Presented Before Freshwater Fisheries Seminar (Winnipeg: June, 1976), pp. 17-18.
- 104 Ibid.
- 105 F.F.M.C. Annual Report 1973/74, p. 7.
- 106 John Piper, "The Fishermen's Struggle for Survival," Next Year Country, 2, No. 1 (June-July, 1974), p. 30.
- 107 In 1968 some 35 processing plants were operating which by 1973 was reduced to 12. Report of the Interdepartment Committee on the Freshwater Fish Marketing Corporation (Ottawa: Environment Canada).

CHAPTER 6 CONCLUSION

Introduction

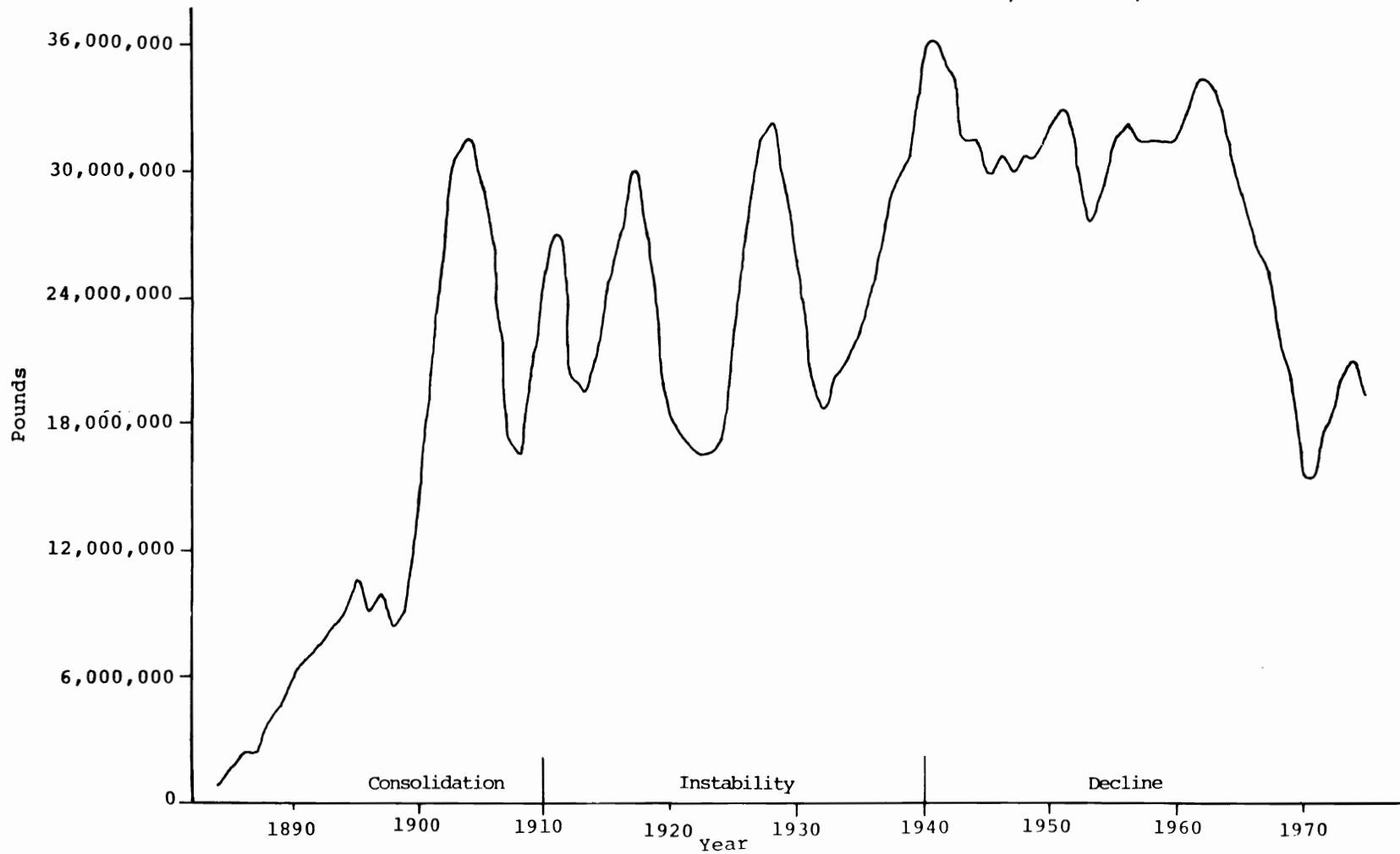
By reconsidering the paradigms of dependency and staple theories in light of their contribution to a clearer understanding of the Manitoba fishing industry, this chapter is designed to provide a summary of the complete study. One of the intentions of this thesis was to establish a statistical data base in order to evaluate the historical performance of the fishing industry. Therefore, the long term production trends of certain fish species have been compiled in this chapter, since previous chapters have presented data on a short term basis. In addition, the findings of this analysis have been reconciled with other research on the development of northern Manitoba and the native economy.

6.1 Summary Of Production Trends

In order to understand the underlying trends in the evolution of the industry from the point of view of production, Figures 6.1 to 6.3 have been presented as three year running means, which smooths the data and minimizes annual fluctuations based on adverse weather conditions or short term market influences. This is a more realistic indication of production trends. Figure 6.1 displays total production for the province and elicits a general impression that, from 1905 until recently, production has been rather stable. Nonetheless, the general periodization that this study has observed is indicated in the production trends. Certain peaks indicate the strength of markets, while the long term production performance reflects the tendency towards a weakening of fish stocks. For example, the decline in production from the late 1950's to the early 1970's would be more marked had not production increased from northern Manitoba (see Figure 5.5).

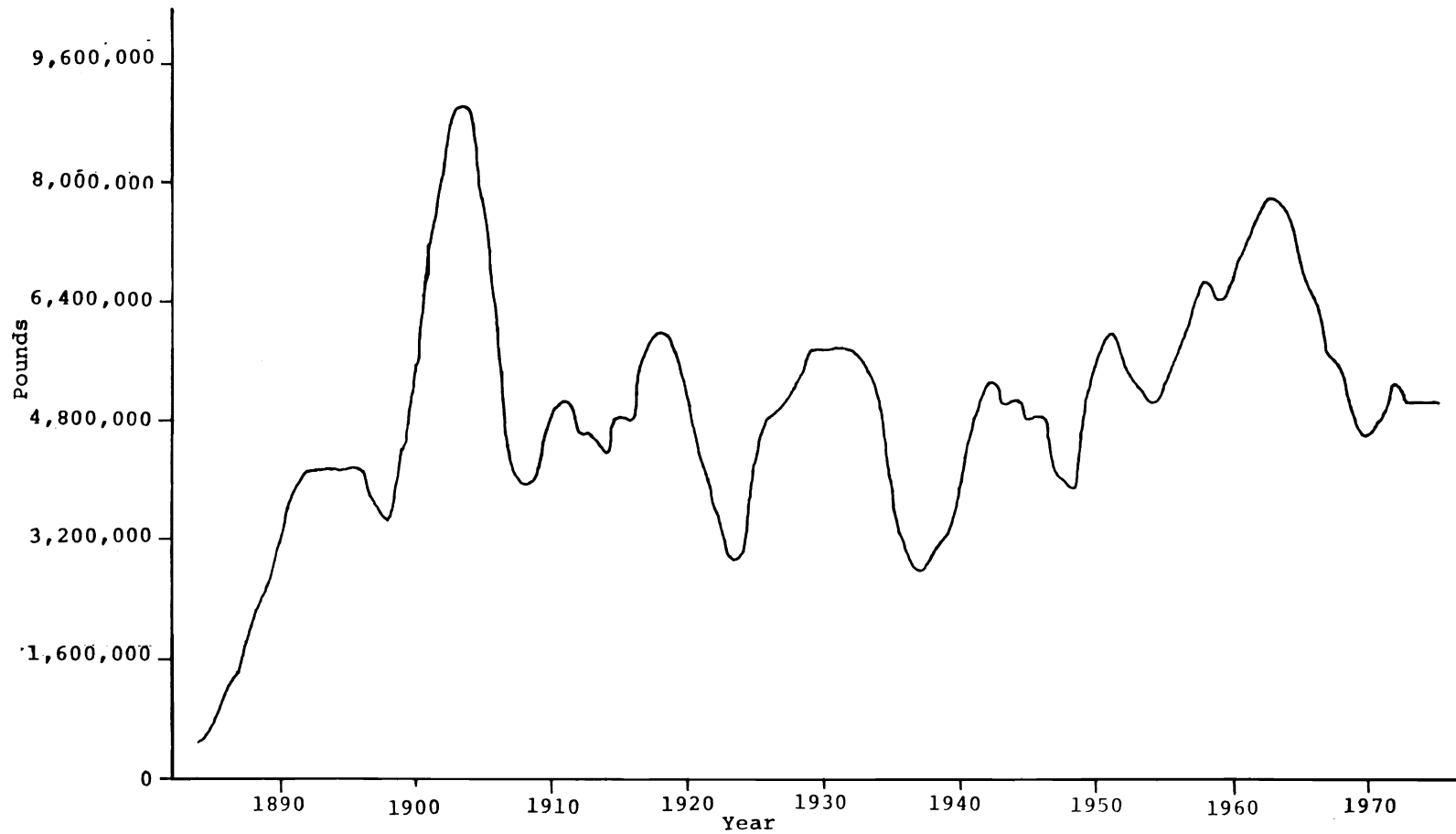
Figures 6.2 and 6.3 indicate the running means for whitefish and pickerel for all Manitoba fisheries. Historically, these two species constitute the major component of commercial catches. Whitefish production peaked during the period of consolidation when the pre-commercial whitefish stocks on lakes Winnipeg and Winnipegosis were exploited extensively. The fluctuations may indicate market influences or recovery of whitefish stocks. With the marked exception of the peak in the early 1960's the peaks have been below that of the original production apex. Again

FIGURE 6.1 THREE YEAR RUNNING MEAN OF TOTAL FISH PRODUCTION, MANITOBA, 1883- 1976



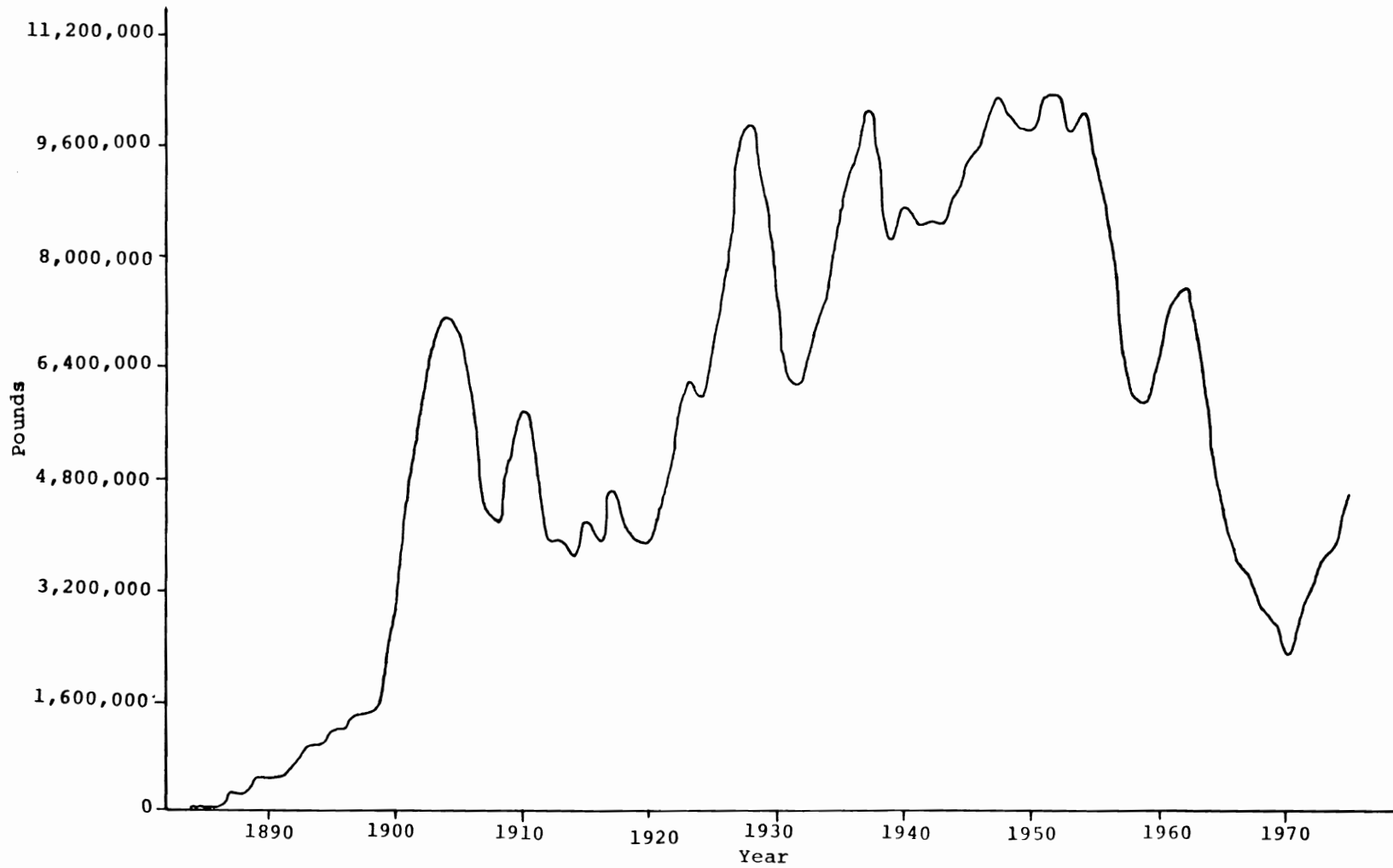
Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics; Manitoba, Annual Reports, M.N.R.

FIGURE 6.2 THREE YEAR RUNNING MEAN OF WHITEFISH PRODUCTION, MANITOBA, 1883-1876



Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics;
Manitoba, Annual Reports, M.N.K.

FIGURE 6.3 THREE YEAR RUNNING MEAN OF PICKEREL PRODUCTION, MANITOBA, 1883-1976



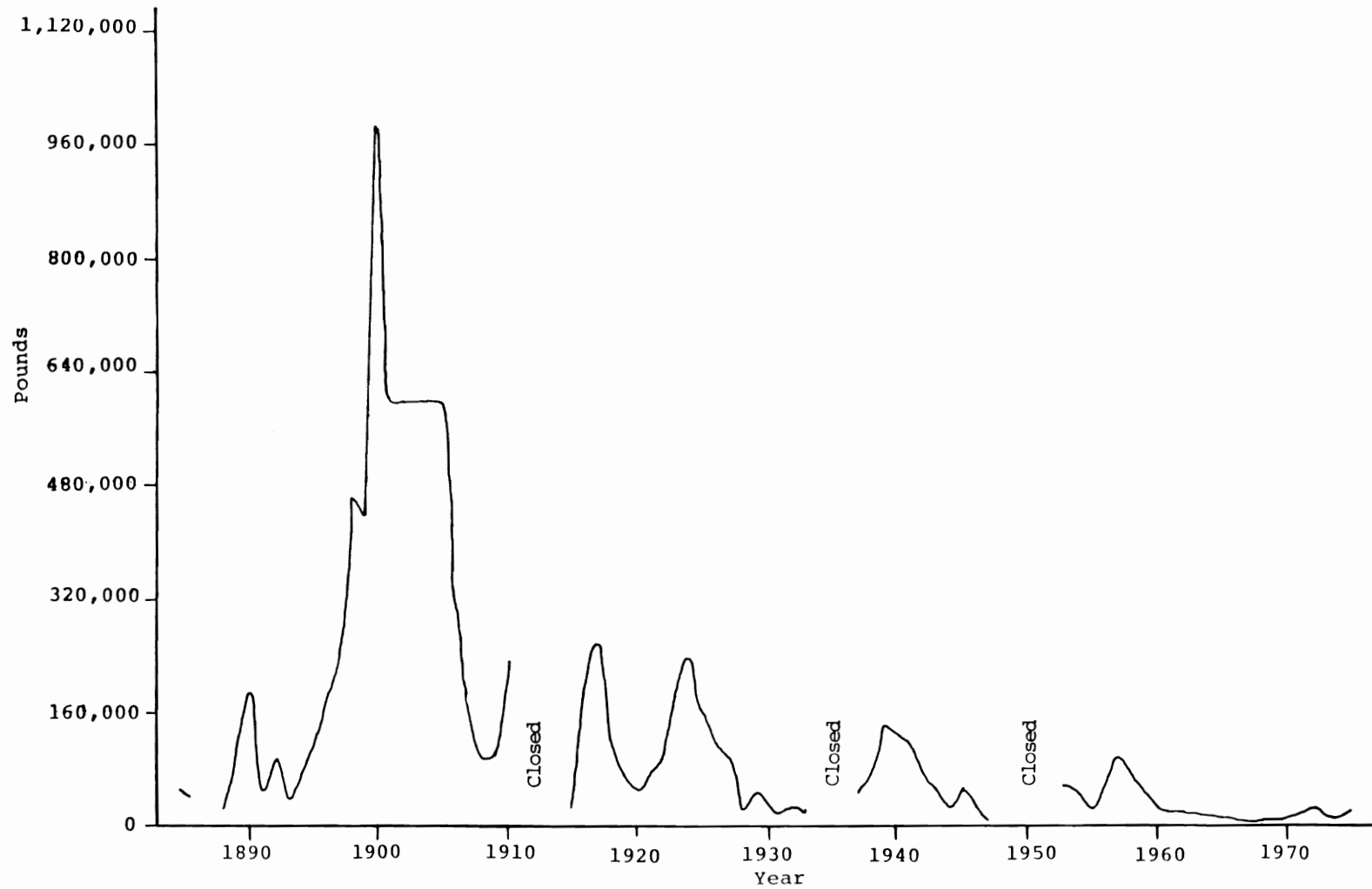
Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics;
Manitoba, Annual Reports, M.N.R.

production from northern lakes offset the declining production of whitefish on the provincial level. Pickerel production is graphed in Figure 6.3. The decline from the 1960's is striking. When Figures 6.2 and 6.3 are compared an inverse correlation between whitefish and pickerel production is apparent between the 1920's and the 1960's. Recall that in the period up to 1920 evidence suggested that pickerel exploitation increased after a decline in whitefish production. A full explanation of the dynamics between whitefish and pickerel and other species does not lie in the production figures alone, but in an understanding of competition and habitat of particular species and the influences that fishing practices might have on the survival rate of a species.

Figures 6.4 to 6.6 denote the annual production trends for sturgeon, tullibee and sauger. Figure 6.4 demonstrates the total collapse of the sturgeon fishery. Periods of closure and other government regulations did not protect the sturgeon or establish it on a sustained yield basis. The exhaustion of sturgeon stocks happened during the era of consolidation. Since sturgeon had the highest value per pound, its profits were valuable in the establishment of the industry in the more remote fisheries. The peaks of sturgeon in 1917 and 1924 do not reflect an improvement in sturgeon stocks but the encroachment of fishing into more distant fisheries (Nelson, Churchill, Hayes and Fox rivers). Figure 6.5 indicates the levels of tullibee production and shows a drop in yields since the late 1920's. In the marketable form tullibee was similar to whitefish and not surprisingly, its production is inversely correlated with whitefish in the 1920's and the 1950's. Figure 6.6 demonstrates that sauger production achieved an initial peak in the early 1940's and subsequently declined.

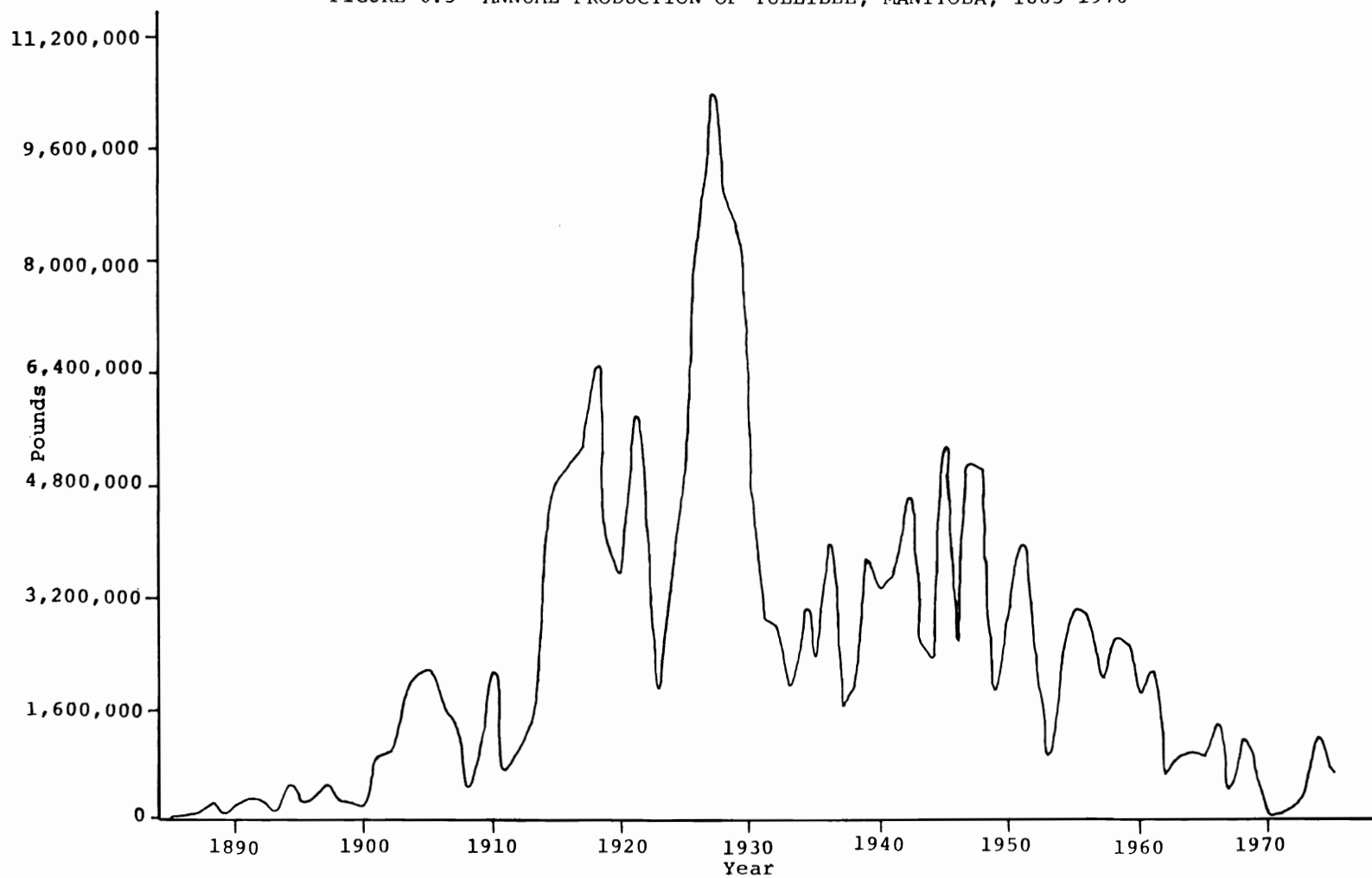
The basic difference between whitefish and pickerel production as compared to the other species (sturgeon, tullibee and sauger), is that the former production patterns indicate periods of at least partial recovery, whereas in contrast these last three commercial species have a single high peak followed by decline. One explanation is that the northern lakes were more capable of supporting whitefish and pickerel production than tullibee and sauger. The other significant difference is that hatcheries only produced whitefish and pickerel fry. This difference in

FIGURE 6.4 ANNUAL PRODUCTION OF STURGEON, MANITOBA, 1888-1976



Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics; Manitoba, Annual Reports, M.N.R.

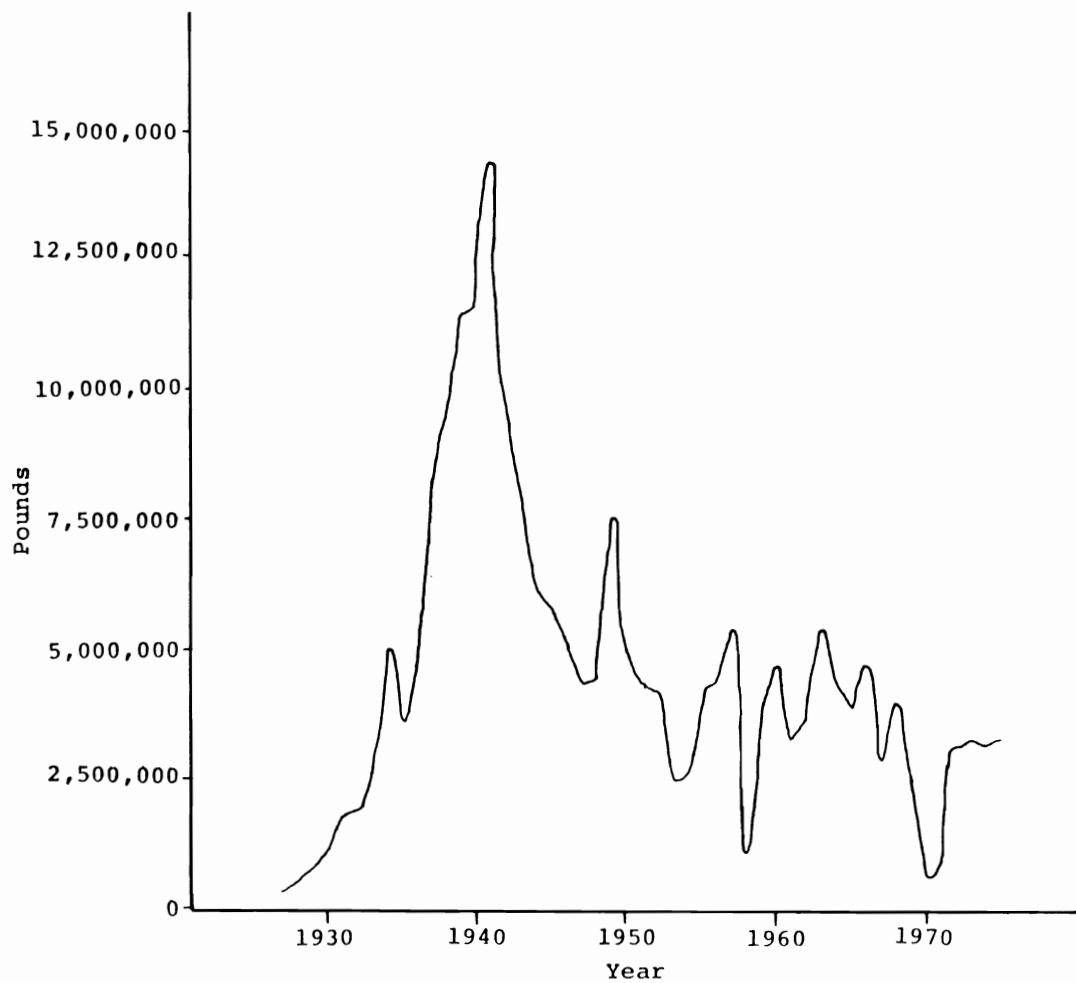
FIGURE 6.5 ANNUAL PRODUCTION OF TULLIBEE, MANITOBA, 1885-1976



Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics; Manitoba, Annual Reports, M.N.R.

4

FIGURE 6.6 ANNUAL PRODUCTION OF SAUGER, MANITOBA, 1927-1976



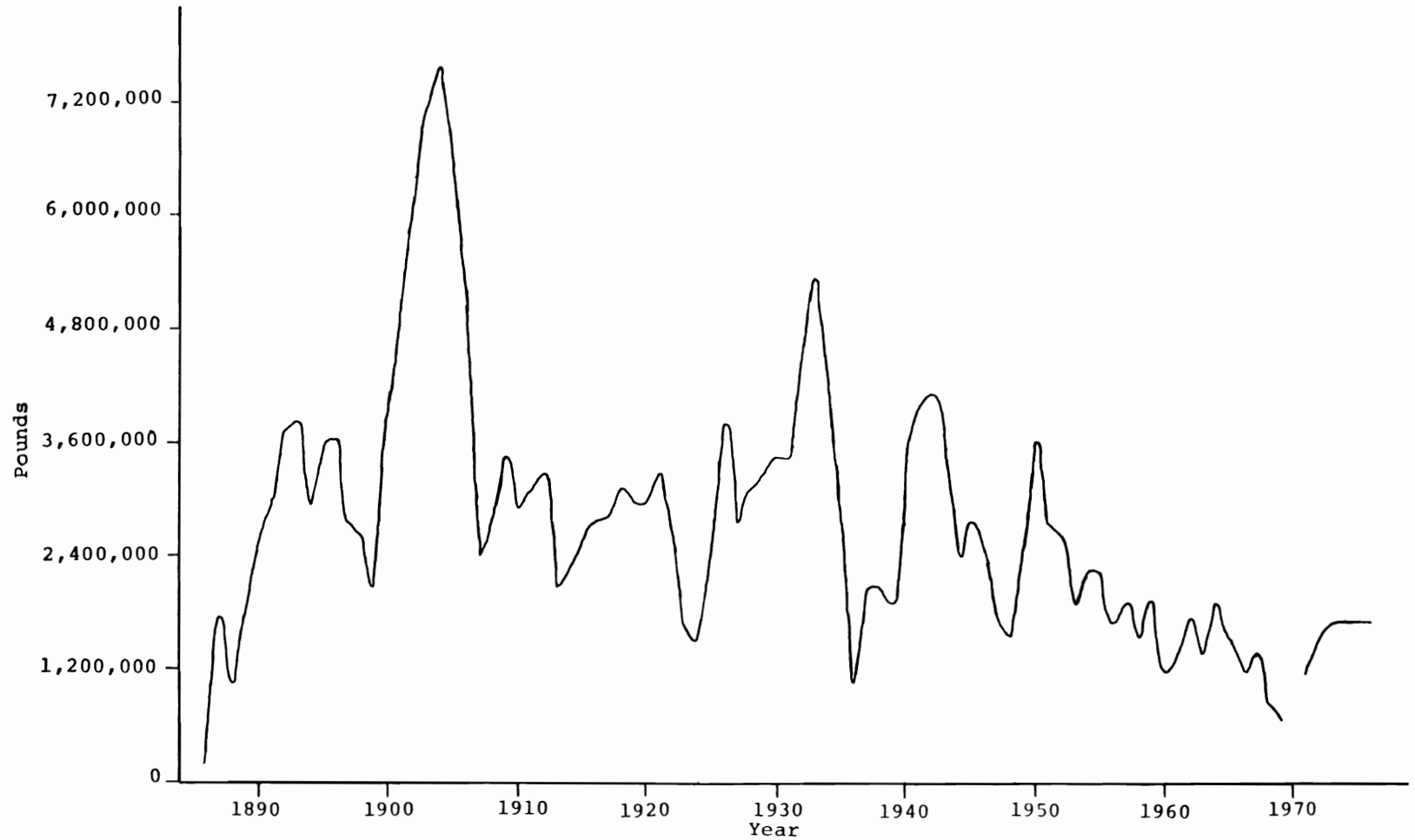
Source: D.B.S., Fisheries Statistics; Manitoba, Annual Reports, M.N.R.

trends suggests that the total utility of hatcheries should be investigated from the production figure framework, comparing species supported by hatcheries to those not supported on the basis of particular fisheries.

Although it is not possible to consider the trends on all lakes, Figures 6.7 and 6.8 indicate historical trends for two important fisheries. Figure 6.7 demonstrates annual production for whitefish on Lake Winnipeg. In spite of fluctuations, partly induced by the market, the trend is towards declining production. The peak production for this fishery occurred during the period of consolidation of commercial fishing. Figure 6.8 indicates annual pickerel production for Lake Winnipegosis. The peak during the latter half of the depression suggests that the market did not unduly distort pickerel production and the war that followed actually increased demand. Following the peak, despite several fluctuations, production dropped. From the mid 1960's to the early 1970's production remained at low levels. The recent production levels are similar to those established at the onset of the commercialization of pickerel. Additional findings concerning the influence of commercial fishing upon the fish resources of Manitoba are summarized in Tables 6.1-6.5. Here recent production levels (1976) are compared with peak levels. Since these tables are based on a variety of species and cover all the major fisheries, a rather complete survey of the process of commercial fishing is provided. The most striking impression conveyed is that production levels of the 1970's are significantly below the levels that occurred during the peak period. The most resilient species had been the northern pike. This is not because pike lacked commercial value, but this species is especially adapted to inland lakes, extremely competitive and an omnivorous carnivore. The possibility that commercial fishing may have expanded the niche of the pike and therefore upset the homeostasis should be explored from the framework of production figures. However, except for the one anomaly, all species, even the minor commercial ones such as goldeye and perch, have production levels well below that of preceding periods.

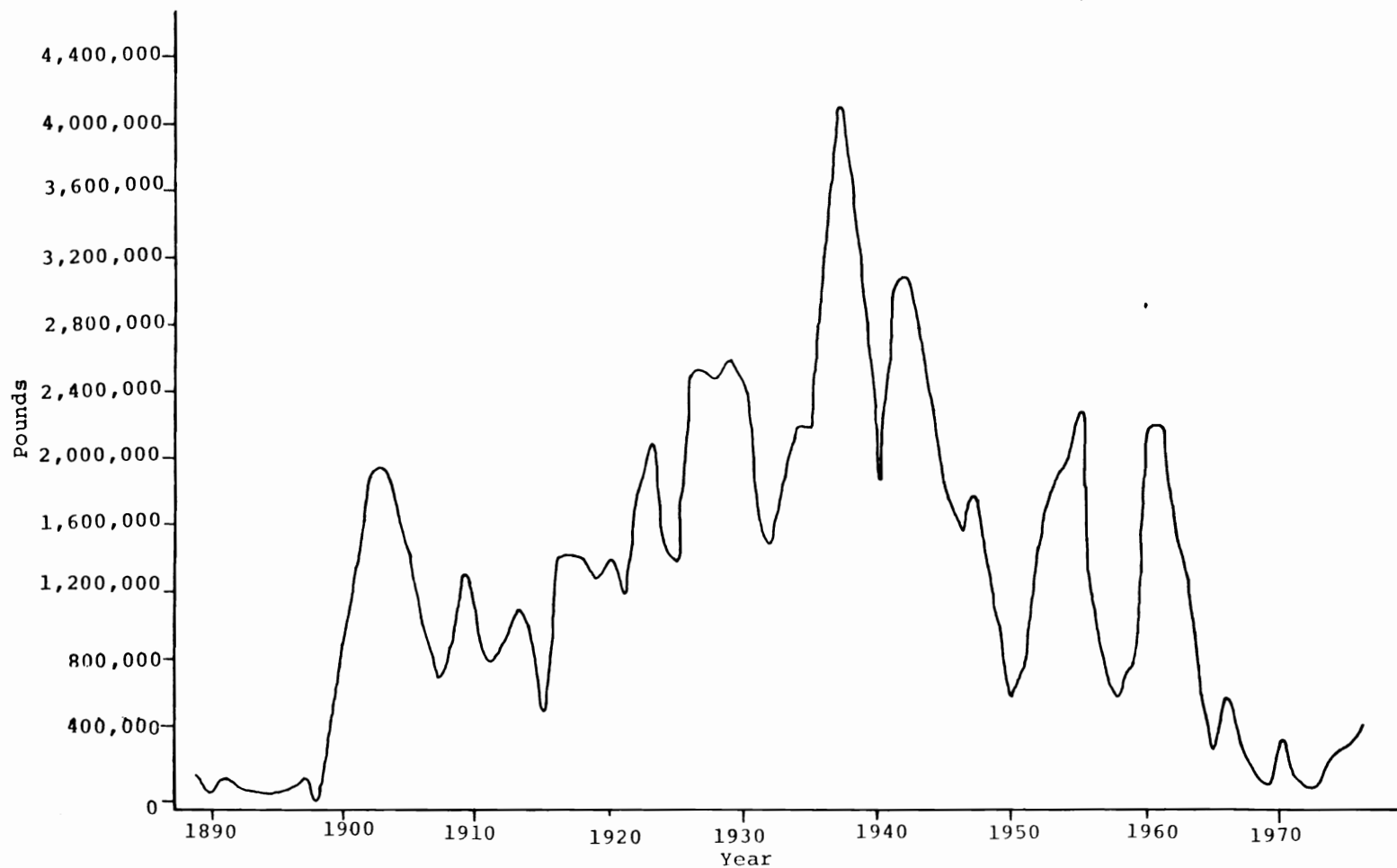
Tables 6.2 to 6.5 complement figures 6.7 to 6.9 as they reveal the strength of the various species amongst the major fisheries. Of significance is the total collapse of whitefish on lakes Manitoba and

FIGURE 6.7 ANNUAL PRODUCTION OF WHITEFISH, LAKE WINNIPEG, 1886-1976



Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics;
Manitoba, Annual Reports, M.N.R.

FIGURE 6.8 ANNUAL PRODUCTION OF PICKEREL, LAKE WINNIPEGOSIS, 1887-1976



Source: Canada, Sessional Papers, Fisheries; D.B.S., Fisheries Statistics; Manitoba, Annual Reports, M.W.R.

TABLE 6.1

PRODUCTION IN 1976 COMPARED TO PEAK PRODUCTION, MANITOBA, BY SPECIES

	Peak Production In Pounds	Peak Year	1976 Production In Pounds	1976 Production As A Percent of Peak Production
Total	36,810,800	1941	19,167,414	52.0
Whitefish	9,400,000	1904	5,450,378	59.0
Pickereel	11,208,200	1951	5,695,241	52.0
Sturgeon	981,500	1900	10,706 ¹	1.1
Pike	5,091,000	1910	3,746,586	73.6
Tullibee	10,245,100	1927	398,808	4.0
Sauger	14,209,000	1941	2,931,089	20.6
Goldeye	1,162,500	1926	28,328	2.4
Perch	1,128,000	1940	79,647	7.1

Source: C.S.P., Fisheries; D.B.S., Fisheries; Manitoba, Annual Reports M.N.R.;
Manitoba, Annual Reports R.R.T.S.

¹1975 figure.

TABLE 6.2

PRODUCTION IN 1976 COMPARED TO PEAK PRODUCTION, LAKE WINNIPEG, BY SPECIES

	Peak Production In Pounds	Peak Year	1976 Production In Pounds	1976 Production As A Percent of Peak Production
Total	22,350,000	1904	7,854,212	35.1
Whitefish	7,500,000	1904	1,717,675	22.9
Pickereel	5,956,700	1951	2,674,061	45.9
Sturgeon	981,500	1900	200 ¹	0.02
Pike	3,068,000 ²	1940	821,212	26.77
Tullibee	7,194,500	1928	18,776	0.03
Sauger	10,232,700	1941	2,491,639	24.3
Goldeye	727,100	1927	7,394	1.0
Perch	283,800	1942	55,116	1.9

Source: C.S.P., Fisheries; D.B.S., Fisheries; Manitoba, Annual Reports M.N.R.;
Manitoba, Annual Reports R.R.T.S.

¹1973 figure.

²This may be a typographical error, otherwise the alternative peak would be in
1929 with 1,429,000 pounds. The 1976 percent would then be 57.0.

TABLE 6.3

PRODUCTION IN 1976 COMPARED TO PEAK PRODUCTION, LAKE WINNIPEGOSIS, BY SPECIES

	Peak Production In Pounds	Peak Year	1976 Production In Pounds	1976 Production As A Percent of Peak Production
Total	7,539,000	1942	1,424,486	18.9
Whitefish	2,607,600	1901	55,438	2.1
Pickereel	4,056,600	1936	412,815	10.2
Pike	2,208,800	1959	654,112	29.6
Tullibee	1,288,200	1943	300 ¹	0.02
Sauger	202,700	1945	5,799	2.9
Goldeye	408,200	1943	7,627	1.9

Source: C.S.P., Fisheries; D.B.S., Fisheries; Manitoba, Annual Reports M.N.R.;
Manitoba, Annual Reports R.R.T.S.

¹1975 figure.

TABLE 6.4

PRODUCTION IN 1976 COMPARED TO PEAK PRODUCTION, LAKE MANITOBA, BY SPECIES

	Peak Production In Pounds	Peak Year	1976 Production In Pounds	1976 Production As A Percent Of Peak Production
Total	8,975,500	1941	1,927,597	21.5
Whitefish	743,400	1910	14,181	1.9
Pickereel	2,929,300	1910	509,615	17.4
Pike	3,383,600	1910	654,397	19.3
Tullibee	2,845,900	1927	5,300 ¹	0.02
Sauger	3,750,600	1941	425,873	11.4
Perch	951,600	1941	13,824 ²	1.5

Source: C.S.P., Fisheries; D.B.S., Fisheries; Manitoba, Annual Reports M.N.R.;
Manitoba, Annual Reports R.R.T.S.

¹1970 figure.

²1969 figure.

TABLE 6.5

PRODUCTION IN 1976 COMPARED TO PEAK PRODUCTION, NORTHERN MANITOBA, BY SPECIES

	Peak Production In Pounds	Peak Year	1976 Production In Pounds	1976 Production As A Percent Of Peak Production
Total	11,532,900	1963	5,618,922	48.72
Whitefish	6,208,100	1962	3,167,200	51.0
Pickereel	2,772,200	1961	1,343,756	48.5
Sturgeon	250,000	1902	10,651	4.2
Pike	2,236,600	1968	811,338	36.3
Tullibee	436,300	1969	234,642	53.8
Lake Trout	504,200	1962	25,467	5.0
Goldeye	126,500	1966	12,693	10.0

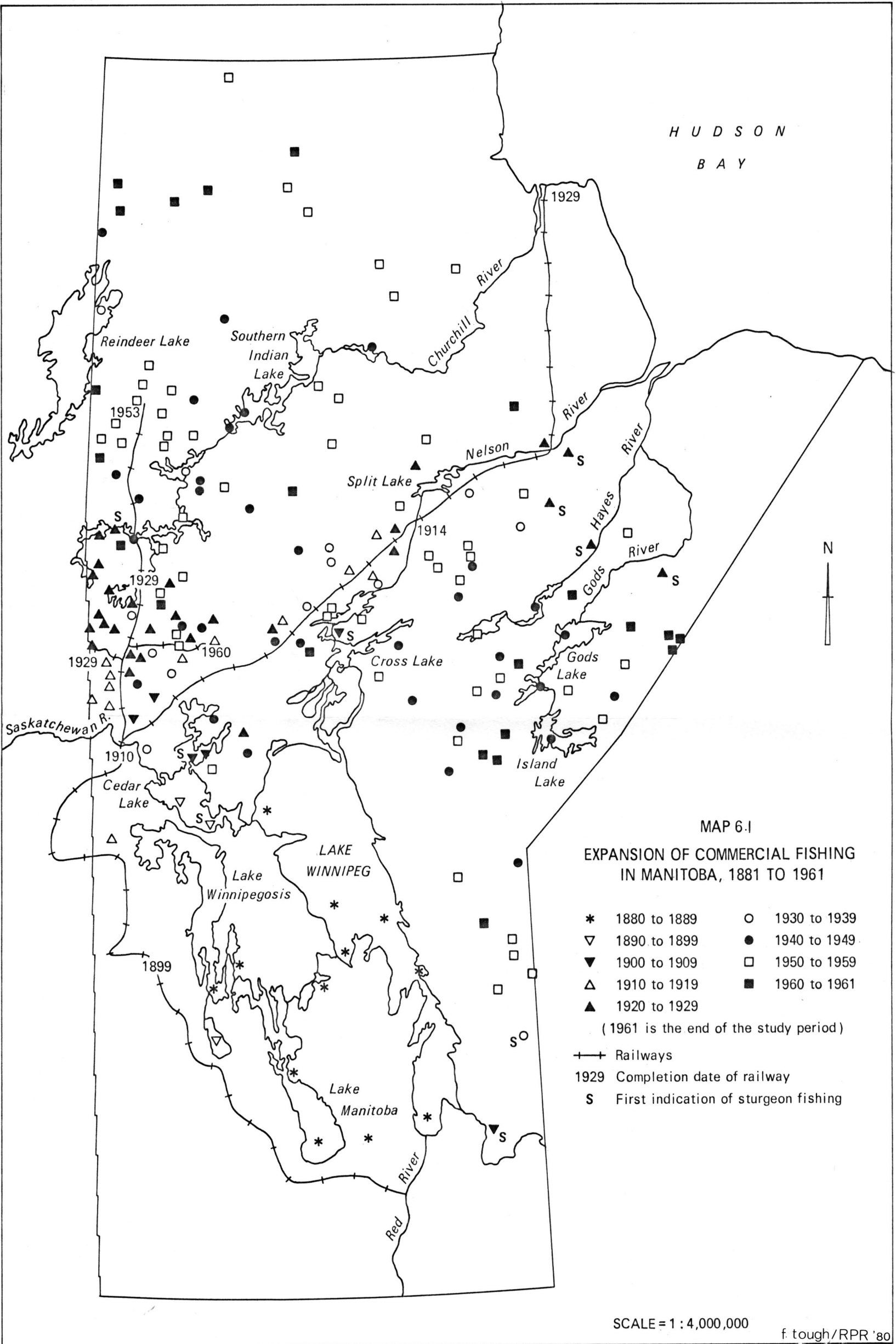
Source: C.S.P., Fisheries; D.B.S., Fisheries; Manitoba, Annual Reports M.N.R.;
Manitoba, Annual Reports R.R.T.S.

Winnipegosis. Not surprisingly, those species which were supported by hatcheries such as whitefish on Lake Winnipeg and pickerel on Lake Winnipegosis have been more viable. The fishery that exhibits the greatest strength is northern Manitoba. The peak production period for northern lakes is recent and production levels have remained more stable. A careful study of Tables 6.1 to 6.5 suggests the species and spatial dynamics of fish production. The economic conditions of commercial fishing have favoured a succession of different species.

There are certain parallels in the development of fish and fur as staples in Manitoba. The nature of the penetration of commercial fishing in spatial terms was analogous to that of the fur trade. As fish yields declined and effort had to be increased, the industry and its transportation network expanded northward (see Map 6.1). Map 6.1 suggests that the spatial diffusion of commercial fishing was not an even process, railroads and waterways were among the mediating influences. Map 6.1 also indicates that sturgeon fishing penetrated northern Manitoba before the commercial fishing of other species. Winter fishing based on horse freight extended commercial fishing well beyond the existing railroads. Like the fur trade, and in spite of transportation costs, commercial fishing reached even the most distant lakes. In a similar fashion, when the fur trade had exhausted the prime producing areas and transportation costs escalated, the importance of that staple declined.¹ The marginalization of the fishing industry in Manitoba coincided with the contraction of northern fishing operations.

6.2 Manitoba Fisheries: Metropolis--Satellite Relationships

The dependency theorists Frank and Amin and staple writers such as Innis and Naylor have discussed the structural adjustments necessary to the continued exploitation of a resource in a peripheral region. These concepts are particularly relevant to certain features of hinterland economic activity in Manitoba. In the late 1890's, the formation of the Booth monopoly was replicated in Manitoba with the establishment of the Dominion Fish Company. When fish prices collapsed after the First World War capital from New York's Peck Slip penetrated Manitoba and new adjustments were made. This prompted the short lived Fish Pool. With the depression another structural accommodation was made by the combining of



American owned fish companies in Manitoba into the Fresh Fish Distributors. Similarly, the localization of certain features of the industry in the late 1930's occurred when foreign capital interests recognized declining profits in certain portions of the industry. This simply meant that some of the risky operations were passed from direct subsidiaries to station operations. In the 1960's labour rationalizations marked another change in the industry since supply and prices (controlled by U.S. importers) could no longer support as many fishermen. The final rearrangement of the industry's structure came with state marketing which appeared only when the industry was in a stagnant condition.

André Gunder Frank's concern with the polarization that occurs in the process of capitalist development (see above p. 4) is also relevant to the situation in Manitoba. Such polarization was evident during the breakdown of original native fisheries. The access to capital in the form of steam boats and ice stations placed control over the development and exploitation of this resource in the hands of foreign fishing companies. Once the process of commercialization had been consolidated, the labour of native peoples, settlers and fishermen was subordinated to the needs of companies. Each of the Royal Commissions documented that a basic disparity existed between the incomes of fishermen and the price received by American importers. Thus, in spite of changes in the industry such as the northward movement of fisheries, new government regulations, adoptions of new technology (gas power for steam power, nylon gill nets for cotton twine) or changes in the product exported (salt whitefish, sturgeon, frozen fish, fresh fish, fresh winter caught fish, fillets, frozen convenience fish), the polarization between producers and companies continued. Previous studies have tended to focus on changes in commercial fishing without recognizing this fundamental continuity.

The writings of Baran, Frank, Amin and Emmanuel have directed attention to the metropolis control over economic surplus (see above pp.3-7). In Manitoba the difference between actual and potential surpluses has largely been the difference between the relatively low export price and the consumer price in the United States. However, as historical data on final consumer price is not extensive, the U.S. wholesale price in itself indicated that the drain of value was of great magnitude

relative to the incomes of fishermen. The transfer of value took on ratios from two to ten times the amount that remained as incomes. In the case of the fishing industry in Manitoba the repatriation of profits from subsidiaries does not appear to have been the major mechanism of surplus drain. Instead, the evidence of commissions, especially the 1933 Commission indicated that transfer pricing, coupled with the compression of incomes, facilitated the draining of surplus from Manitoba. Very simply, unequal exchange explained the relative poverty of fishing communities. After the Second World War the cost of obtaining the means of fishing (fuel oil, nets, boats) increased at a more rapid rate than did the price of fish. During the 1970's this declining terms of trade became particularly important in restricting fishing incomes.

The maintenance of unequal exchange together with a dependent structure, cannot be understood, unless the monopolistic nature of that structure is recognized. Although any number of fish companies may have existed, their relationship to the fishermen was essentially monopsonistic.² The total dominance of the external market has been the essential link in the monopolistic structure which maintained a long-term dependent relationship of the fishermen on the U.S. importers.

There can be no doubt that the industry has had periods of growth and high levels of capital investment. Wars were important in stimulating increased production. However, even in the early 1940's, in spite of a high level of production, structural weaknesses were compounded. This is indicated by increased fishing effort and a change in the distribution of income--an increase in the share to the middlemen. More importantly, the potential of the local market for fish did not develop; in fact, it was undermined during the initial growth period. The local market was used to dump poor quality fish or to dispose of fish surplus to metropolis needs. Otherwise a local market did not develop because it might have limited the power and growth of monopoly. As Baron suggested, export led growth transfers value to the metropolis and leaves only wages behind in the periphery (see above p. 3). The economic growth of Manitoba's commercialized fishery did not result in the equitable development of Manitoba's fish resources. Due to the marketing structure, the people of Manitoba were not able to consume this resource.

This study has indicated that fish have been an important staple in the economic and historical geography of Manitoba. Numerous Manitoba communities have been established or were based on the production of this resource. Fish, as a staple, followed fur and wheat and preceded the later staples of pulp and paper and minerals. Innis' study of the Atlantic cod fisheries revealed the importance of credit and the impact of trade which exhibited similar ramifications as the commercial fishing industry of Manitoba (see above p. 9). In summary, the freshwater fish of Manitoba have been another staple produced for a more industrialized metropolis.

The finding of this study sheds light on northern economic activities and the native economy. Rothney has stated that northern Manitoba has been integrated with the world economy which has resulted in "large flows of economic surplus out of Northern Manitoba."³ Rothney argued that: "it is apparent that as a region Northern Manitoba is characterized by relative, social and economic underdevelopment."⁴ Loxley has stated: "There are serious problems of poverty and inequality in the North both within communities and between communities. These problems are not confined to non-urban centres or simply to Native people but this is the section of northern society most acutely affected and to a degree that is simply scandalous."⁵ Elias has stated that northern communities are: "... at the fringe of a series of metropolis-hinterland relationships: the United States metropolis seeks out its hinterland in Canada. ... the south is a metropolis to the north. From there the series goes no further except in class terms internal to the community ..."⁶ With respect to commercial fishing the metropolis-hinterland relationship has been facilitated by local fishing companies. This study on commercial fishing is consistent with previous research which explains the metropolis/hinterland relationship in Northern Manitoba.

The McIvor Commission illustrated that native involvement in commercial fishing increased as the industry deteriorated. In Manitoba, native peoples have been engaged since the start of commercialized fishing. This resource activity is considered to be integral to the native economy--an economy generally viewed as isolated from the dominant economy. Rea has stated that "it would not appear to be useful to try

and analyze the economy of the area in terms of a 'native' or 'domestic' sector and 'European' or 'export' sector."⁷ Rea has pointed out that the native economy has been commercialized since the fur trade.⁸ The development of an export oriented fish trade has resulted in further commercialization of the native economic activities. In fact, the case of sturgeon illustrates that commercialized trade narrowed the resource base of native peoples. Plans to strengthen the native economy must show an awareness of the historical character of this industry. It also appears that any effort to promote the position of natives within the fishing industry has only come since the decline of fish yields.

Finally, a review of a political economy approach to the development of this resource indicates that such an approach has been useful to geography. The history of commercial fishing has witnessed an initial opposition to the establishment of commercial fishing by native peoples and settlers. Changing fish yields, low incomes to fishermen, transfer of value to the metropolis and a truncation of the local market has been consistent features of this industry's development. Naturally, the question that remains to be answered is why such structure and resource use patterns were not fundamentally changed? The early staple thesis of Innis does not address itself to this problem.⁹ The federal and provincial commissions documented the problems and conflicts within the industry, but their recommendations or follow-up measures never challenged the structure of the industry. Instead, efforts were made to marginally improve the incomes of fishermen. Generally, the main thrust of the state was to regulate production which was directed toward a disorderly market. This was accomplished by resource management policies, although these measures could not always protect the fish stocks. Whenever fishermen mounted pressure to change the marketing structure little was done. Not until the performance of the industry had declined and private capital depreciated did the government support public involvement.

The failure to manage fish resources in the interest of fishermen or the people of Manitoba in general follows from the resource development strategy pursued by successive Manitoba governments. It is another example of the economic dominance of staples and the uncritical acceptance of export-led growth. However, the explanation goes deeper and the

writings of recent Canadian political economists are a key to understanding the persistent situation. Naylor and Clement have emphasized the importance of the relationship between hinterland capital and metropolis capital (see above pp. 10-11). The continuation of the particularly distorted structure of commercial fishing rests upon that relationship. Fishing companies were established in the 1880's and 1890's based on American capital and U.S. funding was again important in the 1930's. While some localization occurred in the late 1930's, the fish companies remained oriented towards the external market. Commission after commission witnessed the testimony of local middlemen--representatives of fish companies who argued for the maintenance of the system. The weakness of these Commissions was largely due to an unwillingness of the state to interrupt either the middlemen position or to lose the market. The Freshwater Fish Marketing Corporation will be evaluated on the basis of how its performance breaks with the past--or whether a public approach to distribution will be a significant improvement over a market dominated by merchants.

Summary

This chapter has summarized the production trends of Manitoba's fisheries. The use of production data has permitted a reconstruction of the industry according to species and fisheries. The spatial and temporal changes are reflected in this data. An original contribution of this thesis towards a regional geography of northern Manitoba has been the historical reconstruction of this resource activity. The paradigms of staple and dependency theory have been related to the structural changes in the industry. The analysis of the development of commercial fishing, especially for the period up to 1910, represents an original contribution and it is based on the methods of historical geography. The use of archival and other historical sources have been useful in understanding the importance of fish to the regional geography and native economy of northern Manitoba.

Notes and References

1 See H. Innis, The Fur Trade in Canada (Toronto: University of Toronto Press, 1956), pp. 387-392.

2 See T. Judson, "Market Structure," "The Freshwater Commercial Fishing Industry of Western Canada," (unpublished Ph.D. Thesis, Toronto: 1961), pp. 310-335.

3 Russ Rothney and S. Watson, "Brief Economic History of Northern Manitoba," (Winnipeg: Manitoba, Department of Northern Affairs, and Resources and Economic Development Subcommittee of Cabinet) (Mimeographed), p. 118.

4 Ibid., p.v.

5 John Loxley, "The Northern Manitoba Development Strategy: Issues of Theory, Policy and Methodology," (Mimeographed), p. 6.

6 Peter D. Elias, Metropolis and Hinterland in Northern Manitoba (Winnipeg: The Manitoba Museum of Man and Nature, 1975), p. 52.

7 K.J. Rea, The Political Economy of the Canadian North (Toronto: University of Toronto Press, 1968), p. 323.

8 Ibid.

9 Ryerson stated "Undoubtedly, geography and technique were of crucial importance for economic development. But they operated within a framework of socio-political relationships; those of merchant's capital and then of nascent industrial capital, under the conditions of colonialism. It is just these socio-economic and political relationships--class and property relationships--that Innis in effect ignored." Stanley B. Ryerson, Unequal Union: Roots of Crisis in the Canadas, 1815-1873 (Toronto: Progress Books, 1973), p. 426.

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APPENDIX: STATISTICAL DATA

VARIABLE LIST
SERIES I MANITOBA COMMERCIAL FISHING 1883-1910¹

OBS corresponds to year
TOPRO = TOLB = total production (lbs.)²
WF = WHLB = whitefish production (lbs.)
PICK = PICKLB - pickerel production (lbs.)
PI = PILB = pike production (lbs.)
STUR = STURLB = sturgeon production (lbs.)
HOCO = HOCOLB = home consumption production (lbs.)
MIX = MIXLB = mixed fish production (lbs.)
TUBE = TUBELB = tullibee production (lbs.)
CAT = CATLB = catfish production (lbs.)
GOY = GOYLB = goldeye production (lbs.)
PER = PERLB = perch production (lbs.)
TRO = trout production (lbs.)
CAU = CAULB = total pounds of caviare
WFP = WHP = whitefish % of total production
PICKP = pickerel % of total production
PIP = pike % of total production
STURP = sturgeon % of total production
HOCOP = home consumption % of total production
MIXP = mixed fish % of total production
TUBEP = tullibee % of total production
CATP = catfish % of total production
GOYP = goldeye % of total production
PERP = perch % of total production
CAUP = caviare % of total production
TROP = trout % of total production
TOVA = total value of total production
WHVA = value of whitefish production
PICKVA = value of pickerel production
PIVA = value of pike production
STURVA = value of sturgeon production
MIXVA = value of mixed fish production
HOCOVA = value of home consumption
CATVA = value of catfish production
PERVA = value of perch production
CAUVA = value of caviare
GOYVA = value of goldeye
TROVA = value of trout
TOCAP = total capital invested
V = VES = number of vessels
VT = tons of vessels³
VMEN = MEN = number of men on vessel
BO = TOBO = number of boats
BOMEN = BMEN = number of men on boats
FGN = GNETFT = total feet of gill nets⁴
VVA = VESVA = value of vessels
GNVA = value of gill nets
ONVA = OTN = value of other nets
IH = number of ice houses
SH = number of shore houses
PW = number of piers and wharves
HMEN = number of shore men
ST = STVA = value of stations
TOBOMEN = TMENB = total men on boats
TOMEN = TOM = total men
VVAP = VESP = % capital as vessels
BOVAP = BOP = % capital as boats
ONVAP = ONP = % capital as other nets
GNVAP = % capital as gill nets
STVAP = STP = % capital as stations
PPK = production per capital
VPK = value per capital
PPM = production per man
VPM = value per man
PPGF = production per gill net feet

Source: All data from Canada, Sessional Papers, Fisheries.

¹Variables ending in M means Manitoba; LW means Lake Winnipeg;
LM or 4 means Lake Manitoba; LWS or 5 means Lake Winnipegosis;
NM means Northern Manitoba.
²1 pound equals 0.373 kilograms
³1 ton equals 1.016 metric tons
⁴1 foot equals 30.48 centimeters

PRODUCTION, CAPITAL AND VALUE DATA LAKE WINNIPEG

OBS	YEAR	TOLBLW	WHLBLW	PICKLW	PIBLW	STURLW	PERLW	TUBELW	CATLW	MIXLW	GOYLW	CAULW	HOCOLW	TOVALW
1	1986	416574	226629	73863	98082	16000	.	.	.	.	.	.	.	23566
2	1987	2457787	1720487	68000	53000	2300	.	.	.	214000	.	.	400000	104387
3	1988	2225679	1086668	238355	101608	15460	.	200906	3605	205097	.	.	344000	.
4	1989	2369737	1692857	78816	10742	83038	.	1476	600	.	.	.	502253	87000
5	1890	3849671	2316722	318707	102482	187830	.	70700	.	653230	.	.	.	147530
6	1891	4350996	2886315	405260	261599	49020	.	171100	.	577482	.	.	.	185770
7	1892	5020256	3766598	412808	81460	93090	.	150000	.	516300	.	.	.	238122
8	1893	5429416	3810955	401486	104900	37200	.	7000	10150	395750	.	.	661975	223355
9	1894	6977635	2835703	999920	338261	76275	18434	338024	59738	817530	.	.	1493750	215653
10	1895	6965548	3666539	801340	281395	75800	23450	268600	79724	581300	.	.	1187400	205440
11	1896	7656180	3670820	877330	237676	175748	40800	230000	178000	1233500	.	.	1012306	263091
12	1897	5615949	2754563	1102948	274308	225619	47437	256110	92664	417600	.	.	444700	182834
13	1898	5700554	2537041	945422	350978	447510	65790	221420	164363	412930	.	8520	555100	204058
14	1899	4005418	1996520	643758	269258	444787	61013	144948	124653	174100	25881	15745	120500	170406
15	1900	7170400	3895100	1253400	304300	981500	48000	116900	184400	106400	3600	17500	276800	318781

OBS	TOCAPLW	VESLW	MENLW	VESVALW	BOLW	BMENLW	BOVALW	FGNLW	GNVALW	OTNLW	TMENBLW	TOMLW	STVALW	VESPLW	BOPLW
1	21490	.	.	11000	21	.	4000	27000	.	.	405	405	14400	30.0	10.9
2	36626	6	32	25500	74	136	7650	299790	7226	.	168	168	24500	39.3	11.8
3	64960	6	24	28000	526	55	5300	310356	7510	300	172	172	26000	36.0	6.8
4	77710	3	288	.	50	.	1035	335598	4074	800	.	.	27000	.	1.3
5	77460	3	31	19000	301	416	9292	366730	8025	.	.	.	297	.	2.3
6	39088	5	35	36000	213	380	8603	467556	10656	140	447	447	.	48.6	15.7
7	54630	7	88	92600	194	428	10370	416100	8877	1150	248	248	.	65.9	9.1
8	113762	13	83	97500	395	1106	11882	462450	10637	105	516	516	.	81.4	6.7
9	177114	13	85	90840	553	748	12777	878730	17052	130	1189	1189	50550	55.0	6.7
10	128440	10	64	105300	392	719	8150	1199700	24623	200	833	833	.	70.7	9.9
11	225955	13	80	92600	381	564	9840	909505	19085	200	783	783	93220	46.6	3.6
12	182011	10	94	113600	276	403	9818	810240	16251	200	644	644	63120	50.9	5.4
13	225934	16	60	23500	120	172	3000	711480	16666	340	497	497	85900	50.3	4.3
14	87096	8	61	107000	76	128	4910	370800	6996	550	232	232	53050	27.0	3.4
15	227530	15	.	.	.	.	.	343200	9670	380	189	189	105950	47.0	2.2

OBS	PPMLW	VPMLW	GNPLW	STPLW	DNPLW	WHPLW	PICKPLW	PIPLW	STURPLW	PERPLW	TUBEPLW	CATPLW	MIXPLW	GOYPLW	CAUPLW	HOCOPLW
1	.	.	.	.	.	54.9	17.7	23.5	3.8	.	.	.	.	.	.	.
2	6068.6	257.7	19.7	39.3	.	70.0	2.8	2.2	0.1	.	.	.	8.7	.	.	16.3
3	13248.2	.	11.6	37.7	0.5	48.8	10.7	4.6	0.7	.	.	.	9.2	.	.	15.5
4	13777.8	505.8	5.2	33.5	1.0	71.4	3.3	0.5	3.5	.	9.0	0.0	0.0	.	.	21.2
5	.	.	10.1	34.0	.	65.4	8.3	2.7	4.9	.	1.8	.	17.0	.	.	.
6	9733.8	415.6	27.3	.	0.4	66.3	9.3	6.0	1.1	.	3.9	.	13.3	.	.	.
7	20243.0	960.2	16.2	.	2.1	75.0	8.2	1.6	1.9	.	3.0	.	10.3	.	.	.
8	10522.1	432.9	9.4	.	0.1	70.2	7.4	1.9	0.7	.	0.1	0.2	7.3	.	.	12.2
9	5868.5	181.4	9.6	28.5	0.1	40.6	14.3	4.8	1.1	0.3	4.8	0.9	11.7	.	.	21.4
10	8362.0	246.6	19.2	.	0.2	52.6	11.5	4.0	1.1	0.3	3.9	1.1	8.3	.	.	17.0
11	9778.0	336.0	8.4	41.3	0.1	47.9	11.5	3.1	2.3	0.5	3.0	2.3	16.1	.	.	13.2
12	8720.4	283.9	8.9	34.7	0.1	49.0	19.6	4.9	4.0	0.8	4.6	1.7	7.4	.	.	7.9
13	11469.9	410.6	7.4	38.0	0.2	44.5	16.6	6.2	7.9	1.2	3.9	2.9	7.2	.	0.1	9.7
14	17264.7	734.5	8.0	60.9	0.6	49.8	16.1	6.7	11.1	1.5	3.6	3.1	4.3	0.6	0.4	3.0
15	37938.6	1686.7	4.2	46.6	0.2	54.3	17.5	4.2	13.7	0.7	1.6	2.6	1.5	0.1	0.2	3.0

PRODUCTION, CAPITAL AND VALUE DATA LAKE WINNIPEG

OBS	YEAR	TOLBLW	WHLBLW	PICKLBLW	PILBLW	STURLBLW	PERLBLW	TUBELBLW	CATLBLW	MIXLBLW	GOYLBLW	CAULBLW	HOCOLBLW	TOVALW		
16	1901	14127600	5000000	2500000	1000000	600000	28500	500000	550000	3401100	200000	20000	350000	484081		
17	1902	17643000	6000000	3000000	1000000	600000	40000	600000	600000	5000000	300000	30000	500000	641200		
18	1903	23500000	7000000	4000000	1200000	600000	100000	1200000	500000	5000000	300000	25000	600000	710500		
19	1904	22350000	7500000	4250000	1225000	600000	125000	1800000	550000	5000000	300000	35000	1000000	1045000		
20	1905	21575000	6500000	4500000	1250000	600000	125000	1800000	500000	5000000	300000	36000	1000000	1112625		
21	1906/07	17875000	5000000	4500000	1000000	200000	75000	1600000	200000	4000000	300000	22000	1000000	892125		
22	1907/08	10871000	2350000	2755000	759000	157000	75000	1250000	175000	2050000	400000	15500	900000	574085		
23	1908/09	11662000	2600000	1651000	476000	87000	36600	375000	201700	5000000	575000	12800	600000	402137		
24	1909/10	13775000	3468100	2238500	779800	72200	58000	684200	87200	800000	837400	3600	1750000	550040		
25	1910/11	13329000	2917500	2389100	418900	204000	51400	1719000	79100	.	746300	6400	4425025	662764		
OBS	TCCAPLW	VESLW	MEMLW	VESVALW	BOLW	BMENLW	BOVALW	FGNLW	GNVALW	OTNLW	TMENBLW	TOMLW	STVALW	VESPLW	BDPLW	
16	377300	18	140	197200	750	1500	18250	1500000	25000	1550	1640	1640	135000	52.3	4.8	
17	334800	19	150	200000	750	1500	18250	1800000	30000	1550	1650	1650	135000	52.0	4.7	
18	450950	23	190	219700	774	1560	30550	1926000	64200	.	1750	1750	136400	48.7	6.8	
19	483700	24	211	231700	900	1900	33000	2467500	82250	350	2111	2111	136400	47.9	6.8	
20	501740	25	211	231700	900	1900	33000	2467500	82250	350	2111	2111	136400	47.9	6.8	
21	490330	28	200	155500	500	600	20530	2880000	80000	300	800	1100	234000	31.7	4.2	
22	415345	13	115	102300	475	600	19000	2400000	66660	385	715	1040	227000	24.6	4.6	
23	329300	11	110	104000	450	550	18750	1311000	36250	500	660	660	170300	31.5	5.7	
24	226590	10	74	66000	288	565	16080	2298000	45200	1010	639	639	98300	29.1	7.1	
25	318294	10	103	87000	547	973	28730	3255000	94709	780	1076	1270	97025	27.3	9.0	
OBS	PPMLW	VPMLW	GNPLW	STPLW	DNPLW	WHPLW	PICKPLW	PIPLW	STURPLW	PERPLW	TUBEPLW	CATPLW	MIXPLW	GOYPLW	CAUPLW	HOCOPLW
16	8615.6	295.2	6.6	35.8	0.4	35.4	17.7	7.1	4.2	0.2	3.5	3.9	24.1	1.4	0.1	2.5
17	10690.9	333.6	7.8	35.1	0.4	34.0	17.0	5.7	3.4	0.2	3.4	3.4	28.3	1.7	0.2	2.8
18	11714.3	320.3	14.2	30.3	.	34.1	19.5	5.9	2.9	0.5	5.9	2.4	24.4	1.5	0.1	2.9
19	10587.4	496.9	17.0	28.2	0.1	33.6	19.0	5.5	2.7	0.6	8.1	2.5	22.4	1.3	0.2	4.5
20	10298.3	531.1	16.9	30.1	0.5	30.1	20.9	5.8	2.8	0.6	8.3	2.3	23.2	1.4	0.2	4.6
21	22343.8	1115.2	16.3	47.7	0.1	28.0	25.2	5.6	1.1	0.4	9.0	1.1	22.4	1.7	0.1	5.6
22	15234.2	802.9	16.0	54.7	0.1	21.6	25.3	7.0	1.4	0.7	11.5	1.6	18.9	3.7	0.1	8.3
23	17670.2	609.3	11.0	51.6	0.2	22.8	14.2	4.1	0.7	0.3	3.2	1.7	42.9	4.9	0.1	5.1
24	15862.9	800.8	19.9	43.4	0.4	32.2	20.8	7.2	0.7	0.5	6.3	0.8	7.4	7.8	0.0	16.2
25	12387.5	616.0	32.9	30.5	0.2	21.9	17.9	3.1	1.5	0.4	12.9	0.6	.	5.6	0.0	33.2

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEGOSIS

OBS	YEAR	TJLBS	WFLBS	PICKLB	PILBS	TJBELBS	GOYLS	MIXLBS	HOCOLBS	TOVAS	TOCAPS	MENS	TOJJS	FIGNS
1	1888	40000	40000	.	.	.	.	.	.	.	.	.	.	.
2	1889	140000	90000	50000	.	.	.	.	.	.	1000	20	.	30000
3	1890	445000	390000	30000	20000	.	.	5000	.	20950	2095	50	35	49000
4	1891	535000	305000	50000	92000	.	.	445000	.	24190	1852	.	70	47400
5	1892	367500	241000	44000	82500	.	.	.	.	21115	1872	100	72	47400
6	1893	1000000	140000	25000	68000	.	.	250000	520000	15810	810	90	.	40500
7	1894	749500	172275	22500	60000	.	.	155000	339775	15436	1290	170	50	49900
8	1895	797500	171000	25500	59000	.	.	170000	368000	14165	1254	100	60	54000
9	1896	712500	221000	37500	59000	.	.	145000	250000	19805	1488	130	61	64800
10	1897	1034615	391000	67250	71365	.	.	352000	173000	24204	5193	143	64	130500
11	1898	2355000	545000	10000	270000	1000	.	1450000	250000	53200	7435	15	3	180000
12	1899	3755000	1253120	401000	1612000	15000	.	1620000	300000	127880	20300	52	14	340000
13	1900	2452000	1952300	864700	.	7300	3600	25000	.	123988	51265	252	34	300000
14	1901	5671900	2077600	1408700	950300	2000	.	1094700	198600	176806	51206	225	112	635000
15	1902	5857200	1864500	1375600	1064800	11500	.	1200000	236800	182712	56855	260	129	1011900
16	1903	6062000	1500000	1900000	1100000	12000	100000	1200000	250000	226300	74115	283	141	1050000
17	1904	5575000	1300000	1800000	1200000	18000	10000	1000000	250000	229480	85025	307	143	1080000
18	1905	4831000	1100000	1400000	1009000	14000	3000	1000000	300000	215770	78575	314	143	1095000
19	1906	3165000	600000	950000	750000	6000	7000	500000	350000	146205	49740	367	73	1002000
20	1907	2461000	500000	700000	600000	5000	6000	300000	350000	114845	27000	45	3	450000
21	1908	2147205	300000	761200	711000	2000	60000	163000	152005	101547	8340	.	.	300000
22	1909	3802000	728840	1345000	1015400	4400	121800	250000	310000	197388	21100	.	.	633000
23	1910	4742700	682700	959600	1274600	5200	140000	.	1435400	201269	46523	360	.	1276500

OBS	GNVAS	PPKLWS	VPKLWS	WFPLWS	PICKPLWS	PIPLWS	TUBEPLWS	GOYPLWS	MIXPLWS	HOCPLWS	GNPLWS
1	.	.	.	100.000	.	.	.	.	.	.	100.000
2	1000	140.00	.	64.286	35.7143	.	.	.	.	.	71.599
3	1500	212.41	10.0000	37.640	6.7416	4.394	.	.	1.124	.	62.205
4	1152	477.86	13.0616	34.463	5.9887	9.266	.	.	50.282	.	61.535
5	1152	196.31	11.2794	65.578	11.9723	22.449	.	.	.	.	100.000
6	810	1238.27	20.7531	13.958	2.4923	6.780	.	.	24.925	51.8445	75.969
7	980	581.05	11.9659	22.984	3.0018	6.005	.	.	20.679	45.3305	70.494
8	884	635.96	11.2959	21.442	2.9467	7.398	.	.	22.069	45.1442	77.351
9	1089	478.83	13.3098	31.018	5.2632	8.281	.	.	20.351	35.0877	41.333
10	2175	203.08	5.4312	37.075	6.3767	9.757	.	.	32.377	16.4041	40.3697
11	3000	311.779	7.15535	22.1049	0.391236	10.5634	0.0391236	.	57.1205	9.78091	44.353
12	9000	144.74	6.2995	33.414	10.6324	42.983	0.399166	.	43.196	7.9993	44.353
13	5000	55.65	2.4166	68.432	30.3093	.	0.255880	0.12619	0.876	.	20.311
14	10600	110.77	3.4528	35.396	24.8365	16.931	0.035262	.	19.300	3.5015	29.053
15	16865	103.02	4.2136	25.003	32.0904	18.179	0.190340	.	20.438	4.0429	45.733
16	35000	79.64	2.7743	24.744	31.3428	18.146	0.197954	1.64362	19.795	4.1241	42.340
17	36000	65.60	2.6990	23.305	32.2696	21.513	0.322696	0.17928	17.928	4.4819	45.815
18	36000	61.48	2.8733	22.770	28.9795	20.856	0.249745	0.16560	20.700	6.7099	67.331
19	33400	64.24	2.9692	18.969	30.0348	23.712	0.189693	0.22131	15.803	11.0654	45.455
20	12500	89.49	4.1776	20.317	28.4437	24.380	0.203169	0.24380	12.190	14.2219	100.000
21	8340	257.70	12.1759	13.959	35.4177	33.082	0.053058	2.79173	7.584	7.0726	100.000
22	21100	179.45	8.9	19.6	35.4	26.7	0.116207	3.21683	6.867	8.1873	45.455
23	40423	100.97	4.3	19.6	20.2	26.9	0.110695	2.99025	.	30.5560	45.455

PRODUCTION, VALUE AND CAPITAL DATA - NORTHERN MANITOBA 1900-1910

OBS	YEAR	TOLBNN	WFLBNN	PICKLBNN	TROLBNN	PILBNN	STURLBNN	MIXLBNN	HOCOLBNN	TOVANM	TOCAPNM	MENNM	TOBNNM	BOVANM	GNETNM	GNETVANM
1	1900	602000	180000	15000	10000	150000	42000	205000	.	17350	1400	100	40	400	45000	1300
2	1901	518000	190000	13500	3700	98000	82800	130000	.	17740	2204	210	125	880	59800	1324
3	1902	691000	225000	15000	4000	78000	250000	119000	.	27390	16850	453	351	4100	516000	10300
4	1903	554000	265000	25000	4000	42000	140000	78000	.	26230	7500	86	227	3050	192000	3200
5	1904	1094000	495000	70000	30000	140000	195000	164000	.	66470	24750	216	435	19300	144000	3900
6	1905	1820000	1020000	130000	50000	170000	195000	255000	.	99050	23485	391	383	10550	336000	8700
7	1905/06	702000	330000	86000	46000	40000	125000	75000	50000	63380	43260	64	11	8000	84000	28000
8	1907	1172000	700000	200000	100000	2000	20000	75000	75000	75820	36500	116	34	20000	276000	9200
9	1908	257500	84000	75300	15200	20000	.	28000	35000	13772	3170	.	.	.	114000	3170
10	1909	172200	235700	69300	4500	38900	22100	107600	1254200	64769	11750	.	.	.	352500	11750
11	1910	1638400	124100	28400	18200	13900	29500	4	1424300	58404	9373	57	.	.	226600	7173
OBS	VPKNN	PPKNN	PPMNN	VPMNN	BOPNM	GNPNN	WFPNN	PICKPNN	TROPNN	PIPNN	STURPNN	MIXPNN	HOCOPNN			
1	12.4	430.0	6020.0	173.5	28.6	71.4	29.9	2.5	1.7	24.9	7.0	34.1	.			
2	8.0	235.0	2486.7	84.5	39.9	60.1	36.7	2.6	0.7	18.9	16.0	25.1	.			
3	1.6	41.0	1525.4	60.5	24.3	64.1	32.6	2.2	0.6	11.3	36.2	17.2	.			
4	3.5	73.9	6441.9	305.0	40.7	42.7	47.8	4.5	0.7	7.6	25.3	14.1	.			
5	2.7	44.2	5064.8	307.7	78.0	15.4	45.2	6.4	2.7	12.8	17.8	15.0	.			
6	4.2	77.5	4654.7	253.3	44.9	37.0	56.0	7.1	2.7	9.3	10.7	14.0	.			
7	1.5	16.2	10968.8	990.3	18.5	64.7	47.0	12.3	6.6	5.7	17.8	10.7	7.1			
8	2.1	32.1	10103.4	653.6	54.8	25.2	59.7	17.1	8.5	0.2	1.7	6.4	6.4			
9	4.3	81.2	.	.	.	100.0	32.6	29.2	5.9	7.8	.	10.9	13.6			
10	5.5	147.4	.	.	.	100.0	13.6	4.0	0.3	2.2	1.3	6.2	72.4			
11	6.2	174.8	28743.9	1024.6	.	76.5	7.6	1.7	1.1	0.8	1.8	.	86.9			

VARIABLE LIST

SERIES 2 MANITOBA COMMERCIAL FISHING 1910-1940 ¹

TOPRO = total production
 WF = whitefish production
 PICK = pickerel production
 PI = pike production
 TUBE = tullibee production
 TRO = trout production
 PER = perch production
 MIX = mixed fish production
 SAU = sauger production
 STUR = sturgeon production
 Wfvap = value of whitefish to fishermen
 PICKVAF = value of pickerel to fishermen
 PIVAF = value of pike to fishermen
 GOYVAF = value of goldeye to fishermen
 TUBVAF = value of tullibee to fishermen
 TROVAF = value of trout to fishermen
 PERVAF = value of perch to fishermen
 STUVAF = value of sturgeon to fishermen
 MIXVAF = value of mixed fish to fishermen
 SAUVAF = value of sauger to fishermen
 Wfvam = market value of whitefish production
 PICVAM = market value of pickerel production
 PIVAM = market value of pike production
 TUBVAM = market value of tullibee production
 TROVAM = market value of trout production
 PERVAM = market value of perch production
 MIXVAM = market value of mixed fish production
 SAUVAM = market value of sauger production
 STUVAM = market value of sturgeon production
 TUGM = number of men on tugs
 TUGVA = value of tugs
 BOVA = value of boats
 BOM = BMEN = number of men on boats
 GNVA = value of gill nets
 TOCAP = total capital invested
 TOPMEN = total number of fishermen
 PPM = production per man
 PPK = production per capital
 FVPK = value to fishermen per capital
 FVPM = value to fishermen per man
 MVPK = market value per capital
 MVPM = market value per man
 FTM = ratio of value to fishermen and market value
 VPGN = value per gill net
 VPST = value per station
 WFP = whitefish % of total production
 SAUP = sauger % of total production
 PICKP = pickerel % of total production
 TUBE% = tullibee % of total production
 PIP = pike % of total production
 TROP = trout % of total production
 PERP = perch % of total production
 MIXP = mixed fish % of total production
 GOYP = goldeye % of total production
 STURP = sturgeon % of total production
 SAUPM = sauger production per man
 PICKPM = pickerel production per man
 TUBEPM = tullibee production per man
 Wfvap = whitefish market value % of total market value
 PICVAP = pickerel market value % of total market
 PIVAP = pike market value % of total market
 TUBVAP = tullibee market value % of total market
 TROVAP = trout market value % of total market value
 PERVAP = perch market value % of total market
 MIXVAP = mixed fish market value % of total market
 GOYVAP = goldeye market value of total market
 SAUVAP = sauger market value of total market
 TUGVAP = % capital as tug value
 BOVAP = % of capital as boats
 GNVAP = % of capital as gill nets
 PLAVAP = % of capital as plants
 ONVAP = % of capital as other nets

TOVAM = total market value of production
TOVAF = total value to fishermen
V = number of vessels
VVA = value of vessels
B = number of boats
GB = number of gas boats
GBVA = value of gas boats
TMEN = total number of men
FMEN = total number of fishermen
STVA = value of station
GN = gill nets feet
ONVA = value of other nets
VPM = value per man
VPC = value per capital
VVAP = % capital as vessels
GBP = % of capital as gas boats
BOP = % of capital as boats
GNP = % of capital as gill nets
STP = % of capital as stations
ONP = % of capital as other nets
STVAP = % of capital as stations
BB = number of boats

Source: Data for 1910-1916/17, Canada, Sessional Papers, Fisheries;
1917-1940, Dominion Bureau of Statistics, Fisheries
Statistic of Canada.

¹Variables ending MD means Manitoba; LW or LG means Lake Winnipeg;
LM means Lake Manitoba; NM means Northern Manitoba.

PRODUCTION, VALUE AND CAPITAL DATA MANITOBA

YR	YR	DATA	PICKM D	PIM D	TUBEM D	TROM D	PERM D	MIK M J	SAUM D	GOYM D	STURM D	WVAFM D	PICVAFM D	PIVAFM J	GOVAFM D	TUOVAFM D	TROVAFM D
1	1910	4740500	6306600	5091000	2071600	9100	78500	10814800	0	886300	233300	.	.	.	.	.	.
2	1911	5184400	5427400	3289000	712900	23600	64000	9981500	0	0	0	.	.	.	.	.	.
3	1912	4343400	3304400	2977000	847000	26600	38500	6846700	0	0	0	.	.	.	.	.	.
4	1913	3324300	3102400	1875600	1384400	150500	24300	5822400	0	0	0	.	.	.	.	.	.
5	1914	4704900	5389800	3704300	3998700	74200	109100	4928700	0	508900	0	.	.	.	.	.	.
6	1915	4436000	2313400	3022800	4756200	43600	57300	7178200	0	714000	0	.	.	.	.	.	.
7	1915	533900	4529800	4128900	4918500	125900	860300	8348200	0	394100	15300	.	.	.	.	.	.
8	1917	5241900	4972800	4201300	5264600	156100	859900	8605300	0	646600	181900	.	.	.	.	.	.
9	1918	7128000	3950600	3644500	6434300	202500	81000	9111900	0	434900	113700	.	.	.	.	.	.
10	1919	5700900	3580200	3090500	3892000	80500	99200	2491700	0	324500	78900	344531	25953	136189	13071	184792	5687
11	1920	4353300	3907000	2553500	3338600	46300	67100	2322800	0	459300	39700	280400	26682	90855	15303	167250	3704
12	1921	5069500	3863400	2189100	5788200	89300	116400	636900	0	346200	57200	299690	18366	48596	10847	179620	7049
13	1922	3652600	5417500	2127200	4151100	33200	48300	627700	0	386500	87400	163884	28271	51236	12719	103931	2324
14	1923	2549100	6809600	2410300	1895200	28600	217500	710700	0	611000	177000	139311	34737	62858	23019	79650	1857
15	1924	2790400	6248600	3031400	3436300	23700	217000	1153200	0	653300	235900	175651	396411	76927	19402	100642	1896
16	1925	3807800	4895300	2730500	4953900	45200	166700	1536400	0	720500	167700	226640	450445	86135	21901	157846	3316
17	1926	5412200	8725100	4346700	8526700	60400	629600	1459500	0	1162500	108000	317411	746022	132162	41030	392299	4885
18	1927	4911400	9981300	4015600	10245100	111100	216100	1345000	246100	1142000	82000	236356	636057	107696	39339	305744	9199
19	1928	4989900	10187000	3636600	8963800	93500	152100	1291000	410400	1064200	600	324014	712819	111668	53396	347710	7250
20	1929	5995400	9405500	5491900	8404300	202000	93200	1700100	818100	1110500	7100	447276	757477	173003	65707	491253	17330
21	1930	6133200	6905300	3402700	4749900	145000	135100	1045200	896100	574500	2100	423935	440092	83595	36607	306278	11938
22	1931	5321000	5759900	2165500	2772900	185800	227700	362500	1827900	335700	600	307531	367634	36893	16588	81714	12800
23	1932	5381900	5527300	1555300	2679700	92900	296900	670500	1894200	301600	1000	297991	332205	32320	13483	77928	5762
24	1933	6143000	6877400	1478500	1812600	77600	504200	208900	2491400	280100	600	303877	256380	12736	14960	32412	2835
25	1934	4956800	8344800	1049200	2915800	47600	610800	399200	4869500	325300	0	282586	368630	16713	20526	58096	2370
26	1935	3787800	7218300	1399600	2212800	39500	453300	752000	3504400	328300	0	254781	371093	37239	23528	71733	1994
27	1936	2127500	1050300	2433200	3833100	80500	93400	1013400	4771100	584500	0	174940	570654	65425	35655	125459	4586
28	1937	3230100	10409500	2398400	1693600	130600	782900	938100	8267600	546200	44200	276664	530278	71571	30320	50964	6783
29	1938	3008100	9066200	3317900	1805000	143900	664100	1837400	9500700	449000	68900	189445	447231	71332	33551	67772	8945
30	1939	2745200	8459600	2964100	3697300	118800	887300	1708300	11397200	453400	129000	152681	416877	58326	28335	62486	8108
31	1940	3982600	7150900	2244200	2780400	131900	1128000	1492900	11506500	199000	126700	276716	485412	54488	17064	61289	11748

YR	PERVAFM D	STUVAFM D	SAUVAFM D	WVAFM D	PICVAFM D	PIVAFM D	TUBVAFM D	TROVAFM D	PERVAFM D	MIK VAFM D	GOVAFM D	STUVAFM D	SAUVAFM D	TUGVAFM D	TUGVAFM D	BOVAFM D	BOVAFM D	GNVAFM D	PERVAFM D	STUVAFM D
1	.	.	.	331835	378396	152730	62148	637	4710	305044	26589	40590	0	87000	10	28780	547	203890	.	.
2	.	.	.	362908	325644	98670	21387	1652	3780	299440	0	0	0	84000	10	31370	562	205740	8944	10462
3	.	.	.	339073	165220	89310	16940	1862	1925	185819	0	0	0	75000	8	23290	298	85690	6001	9305
4	.	.	.	229391	155020	56268	27696	7525	972	116679	12721	0	0	85000	9	28750	411	89490	3275	15589
5	.	.	.	273818	240085	78530	97443	3710	4719	101237	14048	0	0	107000	8	26500	636	83491	2658	22218
6	.	.	.	256992	114973	90099	119826	1744	2865	137069	7882	0	0	141000	10	29335	362	79534	8408	62486
7	.	.	.	350543	311262	187199	245925	8813	63521	171304	31610	22781	0	142000	11	30935	660	144577	12066	80689
8	.	.	.	390321	345179	208846	263230	10927	42995	183376	39084	59600	0	141000	11	53323	1069	166713	15626	51238

PRODUCTION, VALUE AND CAPITAL DATA MANITCBA

SUB	MIXVAFMD	SAJVAFFMD	FFVAFMD	PICVAFMD	PIVAFMD	TUBVAFMD	TROVAFMD	PERVAFMD	MIXVAFMD	GUYVAFMD	GND	PLAVAFMD	TMLNMD	FNMNMD	TOMNMD	ONVAFMD	SMENMD	TDRUMD	TOVAFMD	TOVAFMD
1	.	0	703733	350316	237757	263856	19740	7049	291303	29052	1073100	108105	1880	0	2124	780	244	30231900	1302779	.
2	48583	0	349811	264741	137114	186260	5687	10172	49300	17570	20574	104300	1919	0	2122	0	203	24681800	1113481	.
3	38731	0	441992	355358	137622	201844	4167	7210	56624	33274	8673	89550	1420	0	1656	164	236	18674100	800149	.
4	11983	0	473552	221697	61134	185762	8372	4520	17340	27231	8931	100375	1162	0	1448	112	286	16692800	606272	.
5	11293	0	267692	355216	70243	133024	2656	3282	18894	26777	10127	100700	1455	0	1864	92	309	23683700	813590	.
6	14350	0	183459	484982	89734	98279	2145	11122	19083	43761	8309	149250	1165	0	1469	0	304	22216900	732368	.
7	22726	0	265076	528426	104973	125258	2370	15677	33037	35495	20145	90200	1728	0	2049	100	321	26774000	1392958	.
8	34164	0	361849	562881	110222	207622	4068	18678	40518	70080	15799	88260	2192	0	2217	100	25	30362200	1543558	.

SUB	TUCCAPMD	TOFFENMD	PPMMMD	PPKMD	FVPKMD	FVPMMD	MVPMMD	MVPMMD	FTMMMD	VPGNMD	VPSMMD	WFFPMMD	SAUPMMD	PICKPMMD	TUBEPMMD	WFFPMMD	PICKPMMD	PI4J
1	423555	1860	16080.8	70.5	.	.	3.0	693.0	.	6.4	12.1	2521.5	0.0	3354.6	1101.9	15.7	20.9	16.8
2	425410	1919	12951.5	58.0	.	.	2.6	580.2	.	5.4	10.7	2701.6	0.0	2828.2	371.5	21.0	22.0	13.3
3	273694	1420	13291.6	69.0	.	.	2.9	563.5	.	6.3	8.9	3411.2	0.0	2327.0	596.5	25.7	17.5	15.8
4	303927	1162	14365.6	54.9	.	.	2.0	521.7	.	6.8	6.0	3291.1	0.0	2669.9	1191.4	22.9	18.6	11.2
5	313233	1455	16277.5	74.4	.	.	2.6	559.2	.	6.7	8.1	3274.8	0.0	3704.3	2748.2	20.1	22.8	15.6
6	397119	1163	19070.3	55.7	.	.	1.8	628.6	.	9.2	4.9	3807.7	0.0	1985.8	4082.6	20.0	10.4	13.6
7	407812	1728	16651.6	70.6	.	.	3.4	806.1	.	9.6	15.4	2913.1	0.0	2621.4	2846.4	17.5	15.7	14.3
8	449416	2192	13851.4	67.6	.	.	3.4	704.2	.	9.3	17.5	2391.4	0.0	2268.6	2401.7	17.3	16.4	13.8

SUB	TUBVAFMD	TROVAFMD	PERVAFMD	MIXVAFMD	GUYVAFMD	SAJVAFFMD	FFVAFMD	PICVAFMD	PIVAFMD	TUBVAFMD	TROVAFMD	PERVAFMD	MIXVAFMD	GUYVAFMD	SAJVAFFMD	FFVAFMD	PICVAFMD	PIVAFMD	ONVAFMD
1	6.9	0.0	0.3	35.8	0.0	0.0	2.9	0.8	25.5	29.0	11.7	4.8	0.0	0.4	23.4	2.0	3.1	0.0	20.3
2	2.9	0.1	0.3	40.4	0.0	0.0	0.0	0.0	32.6	29.2	8.9	1.9	0.1	0.3	26.9	0.0	0.0	0.0	19.7
3	4.5	0.1	0.2	36.2	0.0	0.0	0.0	0.0	42.4	20.6	11.2	2.1	0.2	0.2	23.2	0.0	0.0	0.0	27.4
4	8.3	0.1	0.1	34.9	0.0	0.0	0.0	0.0	37.8	25.6	9.7	4.5	1.2	0.2	19.2	2.1	0.0	0.0	28.0
5	16.9	0.3	0.5	20.6	0.0	0.0	0.0	0.0	33.7	29.3	9.7	12.0	0.5	0.6	12.4	1.7	0.0	0.0	33.6
6	21.6	0.2	0.3	32.3	0.0	0.0	0.1	0.1	35.1	15.7	12.3	16.4	0.2	0.4	18.7	1.1	0.1	0.0	35.3
7	17.1	0.4	0.0	29.3	0.0	0.0	0.6	0.6	25.2	22.3	13.4	17.7	0.6	4.6	12.3	2.3	1.6	0.0	34.8
8	17.3	0.5	2.8	28.3	0.0	0.0	2.6	0.9	25.3	22.4	13.5	17.1	0.6	2.8	11.9	2.5	3.9	0.0	31.4

DOB	PERVAFMD	STUVAFMD	MIXVAFMD	SAJVAFFMD	FFVAFMD	PICVAFMD	PIVAFMD	TUBVAFMD	TROVAFMD	PERVAFMD	MIXVAFMD	GUYVAFMD
9	.	.	.	0	703733	350316	237757	263856	19740	7049	291303	29052
10	8944	10462	48683	0	349811	264741	137114	186260	5687	10172	49300	17570
11	6001	9805	38731	0	441992	355358	137622	201844	4167	7210	56624	33274
12	3275	15589	11983	0	473552	221697	61134	185762	8372	4520	17340	27231
13	2658	22216	11293	0	257692	355216	70243	133024	2656	3282	18894	26777
14	8408	62486	14350	0	183459	484982	89734	98279	2145	11122	19083	43761
15	12066	80689	22726	0	265076	528426	104973	125258	2370	15677	33037	35495
16	15626	51238	34164	0	361849	562881	110222	207622	4068	18678	40518	70080

PRODUCTION, VALUE AND CAPITAL DATA . MANITOBA

OBS	PLAVAMD	TMENMD	FENMD	TJENMD	DNVAMD	SMENMD	TUPRUMD	TOVAMMD	TOVAFMD	TOCAPMD	TOFENMD	PPMMD	PPKMD	FVPKMD	FVPMMD	MVPMMD	MVPMMD	FTMMD	VPGNMD	VPSMMD	WPPMMD	SAUPMMD					
17	183873	1579	2230	3809	1252	0	30430700	2328803	1744642	966852	3809	7989.2	31.5	1.8	458.0	2.4	611.4	74.9	5.2	12.7	1420.9	0.0					
18	190683	1701	2390	4091	1405	0	32296700	2039738	1423100	1033109	4091	7894.6	31.3	1.4	347.9	2.0	492.6	69.8	4.2	10.7	1200.5	50.2					
19	201323	1732	2440	4172	238	0	30794500	2240314	1620976	1054889	4172	7381.2	29.2	1.5	388.5	2.1	537.0	72.4	4.6	11.1	1190.0	95.4					
20	209177	1847	2830	4577	1696	0	33193000	2745205	2038891	1316795	4577	7097.1	25.2	1.5	435.9	2.1	587.0	74.3	4.6	10.2	1263.7	174.9					
21	274177	1568	3213	4761	590	0	23994100	1815481	1377173	1309141	4761	5018.6	18.3	1.1	288.1	1.4	379.7	75.9	3.1	6.6	1283.9	187.4					
22	244100	953	2454	3437	430	0	18959500	1241575	907748	1041258	3437	5515.3	18.2	0.9	264.1	1.2	361.2	73.1	2.5	5.1	1548.2	531.8					
23	203602	843	2025	2868	444	0	18401800	1204892	858410	840198	2868	6416.2	21.9	1.0	299.3	1.4	420.1	71.2	3.1	5.9	1670.5	660.5					
24	207179	1063	1759	2822	172	0	19891300	1076136	725224	852727	2822	7348.7	23.3	0.9	257.0	1.3	381.3	67.4	2.8	5.2	2175.0	882.6					
25	172691	1348	1683	3231	146	0	23459000	1465358	965785	849144	3231	7739.7	27.6	1.1	318.6	1.7	483.5	65.9	3.5	8.5	1615.6	1600.6					
26	172406	1488	1753	3041	410	0	19646000	1268335	920319	922452	3041	6077.1	21.4	1.0	284.0	1.4	388.3	73.1	2.8	7.3	1168.7	1081.3					
27	184315	1578	2008	3586	438	0	25442100	1767371	1261983	974706	3586	7094.8	26.1	1.3	351.9	1.7	465.0	75.7	3.4	9.0	593.3	1333.5					
28	184610	1531	2293	3824	646	0	28441200	1796012	1372477	970296	3824	7437.6	29.3	1.4	358.9	1.9	469.7	76.4	3.5	9.7	844.7	2162.0					
29	187191	1720	2099	3819	688	0	29861200	1811124	1307085	1052809	3819	7819.1	28.4	1.2	342.3	1.7	474.2	72.2	3.2	9.7	787.7	2487.7					
30	195422	1351	2356	3707	937	0	32560200	1655273	1228273	1034975	3707	8783.4	31.5	1.2	331.3	1.6	446.5	74.2	2.8	8.5	740.5	3074.5					
31	191832	1910	2295	4205	274	0	30743100	1988545	1554536	1249546	4205	7311.1	24.6	1.2	369.7	1.6	472.9	78.2	3.0	10.4	947.1	2736.4					
OBS	PICKPMD	TUBEPMD	PFPMMD	PICKPMD	PIPMMD	TUBEPMD	TRDPMMD	PERPMD	MIKPMMD	SAUPMD	GOYPMMD	STUKPMMD	WVAPMU	PICVAPMD	PIVAPMD	TUBVAPMD	TRVAPMD	PERVAPMD	MIKVAPMD	GOYVAPMD	STUVAPMD	SAUVAPMD	TUCVAPMD	BDAVAPMD	GNVAPMD	PLAVAPMD	ONVAPMD
17	2290.7	2238.6	17.8	28.7	14.3	28.0	0.2	2.1	4.8	0.0	3.8	0.4	21.1	38.7	7.6	21.5	0.3	3.1	1.6	3.7	2.5	0.0	23.9	11.0	45.9	19.0	0.1
18	2439.8	2504.3	15.2	30.9	12.4	31.7	0.3	0.7	4.2	0.8	3.5	0.3	20.5	39.5	7.3	20.5	0.5	0.8	1.9	5.6	2.2	0.7	23.7	10.7	46.3	18.5	0.3
19	2441.8	2148.6	16.2	33.1	11.8	29.1	0.3	0.5	4.2	1.3	3.5	0.0	21.1	41.1	6.9	21.6	0.5	0.8	1.6	5.1	0.0	1.3	22.2	12.6	45.1	19.1	0.0
20	2011.0	1796.9	17.8	28.3	16.5	25.4	0.6	0.3	5.1	2.5	3.4	0.6	22.5	36.0	8.2	21.4	0.8	0.4	1.3	7.0	0.1	2.3	21.7	12.7	45.1	20.4	0.1
21	1444.3	993.5	25.6	28.8	14.2	19.8	0.6	0.6	4.4	3.7	2.4	0.0	29.5	32.0	6.4	20.6	0.8	0.9	1.0	5.3	0.0	3.4	21.1	12.9	45.0	20.9	0.0
22	1675.9	806.5	28.1	30.4	11.4	14.6	1.0	1.2	1.9	9.6	1.8	0.0	35.4	38.7	4.7	8.4	1.3	1.8	0.6	3.1	0.0	6.0	18.5	10.5	47.5	23.4	0.0
23	1927.2	934.3	29.2	30.0	8.5	14.6	0.5	1.6	3.6	10.3	1.6	0.0	37.4	35.5	3.8	8.1	0.6	1.7	0.7	3.1	0.0	8.7	16.2	12.9	46.7	24.2	0.1
24	2444.2	642.3	30.9	34.7	7.4	9.1	0.4	2.5	1.1	12.5	1.4	0.0	40.4	35.6	1.9	4.3	0.3	3.3	0.4	3.0	0.0	10.7	15.3	14.8	45.7	24.3	0.0
25	2753.2	962.0	20.9	35.6	4.5	12.4	0.2	2.6	1.7	20.8	1.4	0.0	28.9	37.8	2.1	7.0	0.2	3.7	0.5	3.2	0.0	16.6	14.8	16.2	48.7	20.3	0.0
26	2227.2	682.8	19.2	36.6	7.1	11.2	0.2	2.3	3.8	17.8	1.7	0.0	29.9	39.7	4.0	7.6	0.2	2.3	1.0	3.0	0.0	12.4	12.9	19.6	48.8	19.7	0.0
27	2929.6	1068.9	18.4	41.3	9.6	15.1	0.3	0.4	4.0	18.8	2.3	0.0	13.2	45.4	5.9	9.7	0.3	5.7	1.0	3.0	0.0	15.8	12.3	18.7	50.0	18.9	0.0
28	2722.1	442.9	11.4	36.6	8.4	6.0	0.5	2.8	3.3	29.1	1.9	0.2	20.8	39.8	5.4	3.9	0.6	3.6	0.8	3.2	0.8	21.0	12.4	15.3	53.1	19.0	0.1
29	2374.0	472.6	10.1	30.4	11.1	6.0	0.5	2.2	6.2	31.8	1.5	0.2	14.9	38.4	4.9	5.0	0.6	3.2	1.5	3.3	1.3	27.0	11.3	17.9	52.9	17.8	0.1
30	2282.1	997.4	8.4	26.0	9.1	11.4	0.4	2.7	5.2	35.0	1.4	0.4	13.8	34.4	5.1	4.8	0.5	4.1	1.2	3.6	3.0	29.4	11.6	12.5	57.0	18.9	0.1
31	1700.6	561.2	13.0	23.3	7.3	9.0	0.4	3.7	4.9	37.4	0.6	0.4	18.3	31.8	4.2	4.3	0.6	4.5	1.5	1.4	2.7	30.8	14.9	16.7	53.0	15.4	0.0

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEG

OBBS	YEAR	T P P L U R E	W F L G	P I C K L G	P I L G	P E R L G	T U B E L G	M I X L G	S T U R L G	S A U L G	G O Y L G	T O V A L G	W H V A L G	P I C K V A L G	P I V A L G
1	1910	13229000	2917500	2389100	418900	51400	1719000	4882800	204000	.	746300	622764	204225	143346	12567
2	1911	12576800	3123300	3661000	622500	59400	712900	4397700	.	.	.	613830	218631	219642	18675
3	1912	8206800	3197500	1535500	440300	34900	841000	2157600	.	.	.	387674	223825	76775	13209
4	1913	5365336	2141600	1678700	83935	24300	1351000	1093800	.	.	492000	473885	128496	272000	8160
5	1914	11478800	2247000	2408600	434300	35500	3493900	2148700	.	.	710800	434094	146060	120430	13029
6	1915	11569400	2638300	1035500	260300	40700	4541100	2689400	.	.	364100	412919	171944	51775	7800
7	1916	12915100	2777600	1444800	369000	810700	4128100	2653500	115800	.	610500	665094	194432	101136	18450
8	1917	13723800	2615100	1860100	401900	810300	4474200	2590000	85300	.	756900	.	.	.	.
9	1918	14555700	3352500	1596100	330300	49100	5509700	3833700	13500	.	270800	.	.	.	.
10	1919	9981000	2775500	1631300	377700	41500	2794400	1172000	12400	.	75200	.	.	.	.
11	1920	9001800	2903000	1686000	355000	65000	2698300	1060000	7500	.	285500	688131	306255	159660	20750
12	1921	5397500	3243000	1482200	235500	86200	3169000	79500	20600	.	133600	604603	304837	80076	7331
13	1922	9271900	2039400	2142800	333900	13800	3788500	118500	25100	.	209900	494433	193883	120837	11519
14	1923	7234400	1626400	2986600	619400	182000	1441600	93500	52700	.	233200	490950	106752	194052	27772
15	1924	6926200	1591000	2601400	643600	148200	1324800	167200	88600	.	361400	529218	164618	169031	22768
16	1925	8333100	2359000	1591700	419400	87700	2785500	409900	69700	.	410200	682312	257392	137347	15000
17	1926	13648333	3741700	3105300	728700	164700	5344100	190000	30900	.	539200	1104006	344929	247154	32978
18	1927	15152100	2826000	4361100	623000	37700	7160500	174800	33800	222100	727100	1065328	267969	303810	27371
19	1928	16593300	3089300	4917900	655100	58000	7194500	169700	.	363300	443100	1209322	300709	350511	32552
20	1929	16554300	3313800	4462700	1429600	42700	5827500	89500	.	711100	677300	1553739	354810	409471	63328
21	1930	12037700	3444600	2732900	1035400	55400	3496600	47800	.	868200	356800	1036259	296768	197153	51922
22	1931	9977800	3426400	2467500	340800	47800	1691600	53600	.	1734500	213600	639116	283356	166088	10754
23	1932	9713900	4411700	2124700	293500	42200	938500	67700	.	1736200	104400	683286	374266	141404	10969
24	1933	11099400	5333500	2717400	146100	61900	471000	25800	.	2248900	88800	661273	390373	128244	3437
25	1934	13853100	4156500	3873300	278100	73500	1191600	57400	.	4140300	89400	692571	379654	230629	10198
26	1935	10777400	2955000	3017400	387100	44300	786500	149400	.	2917200	79500	719039	330030	200875	13073
27	1936	12332100	1959400	4461800	735300	117700	1573200	135000	.	3677400	145600	776745	157300	315423	40120
28	1937	14413700	2051600	4033100	447800	100500	920100	63900	27200	6392100	377400	946350	309321	282629	19836
29	1938	15339900	2042200	4133200	285100	84900	161600	59600	22900	7686800	301800	1023546	209568	305705	11246
30	1939	16930500	1932500	3291700	431700	116200	1639500	55900	9900	9365000	118100	872990	185818	216380	14338
31	1940	18150100	2957600	3438900	326100	248100	1519500	28600	12100	9543200	114000	1223022	247904	321351	13490

PRODUCTION, VALUE AND CAPITAL DATA - LAKE WINNIPEG

OBS	PERVALG	TUBEVALG	MIXVALG	SAUVALG	STURVALG	GUYVALG	TCCAPLG	VVALG	BLG	GBLG	GBVALG	TMENLG	BMENLG	FMENLG	GNLG	STVALG	GNVALG	
1	3384	51573	149023	.	36560	22389	315614	10	67000	547	.	1270	1076	0	541100	97025	102809	
2	3564	21367	131931	.	.	.	309750	10	84000	555	1	500	1236	1081	10403	92333	104330	
3	1745	16023	55300	.	.	.	206954	8	75000	297	1	1000	699	499	3204	76000	31300	
4	972	27028	24930	.	.	12299	213377	8	75000	344	.	.	811	611	3931	76600	39310	
5	1775	87347	51637	.	.	13816	220857	7	98000	531	1	1000	939	714	1654	86400	15290	
6	2035	113527	58547	.	.	7282	238266	8	127000	319	.	.	781	556	1825	68500	18530	
7	40535	206405	57510	.	16096	30530	251508	9	129000	524	.	.	1037	777	2264	70000	25660	
8	.	.	.	.	.	.	265722	10	131000	578	1	800	929	910	2902	73000	35724	
9	.	.	.	.	.	.	425130	13	192000	599	4	4700	888	888	0	5770	104950	89110
10	.	.	.	.	.	.	470006	13	192000	81	1	2500	914	379	535	5860	131631	90000
11	650	153307	7110	.	2100	30799	351995	13	181000	164	3	2700	685	453	232	6080	121000	15273
12	2843	104329	6344	.	8649	24974	441771	13	181874	414	4	1850	1013	720	293	10206	71531	143343
13	443	123305	8515	.	11755	24075	486578	14	179074	456	10	10650	1092	772	320	11181	138531	145323
14	3312	84659	8053	.	29345	31995	516581	14	179074	475	16	12000	1240	803	437	13570	111130	171302
15	4516	71719	10768	.	45340	30458	530371	15	202074	550	17	13000	1378	854	524	13200	108730	162442
16	7337	127497	40553	.	30144	63482	537296	14	192074	753	21	15000	1791	1200	591	14700	109230	172142
17	7391	366803	11857	.	17566	75558	576339	13	181874	778	23	16750	1828	1221	607	15700	139973	188142
18	4242	303813	18330	11571	19990	106927	611463	13	197048	850	43	22750	2096	1418	678	16700	141173	202142
19	4225	401274	13495	24969	.	79167	647049	12	194059	871	49	40150	2174	1483	691	17700	151823	213142
20	5046	475067	4212	54918	.	184787	819034	15	235895	1096	85	74250	2456	1564	892	25936	137477	273082
21	7942	321140	3935	60585	.	96828	813942	15	235895	689	87	79750	2531	1301	1230	27792	137477	273082
22	4533	64704	2472	64042	.	38117	434576	12	160476	530	70	70000	3179	725	2454	26200	183300	253000
23	2734	36207	2380	93388	.	19378	557045	19	117819	419	76	78700	1296	631	665	21112	149377	203310
24	3663	10069	1000	102202	.	16238	599689	14	109514	547	95	98325	1616	956	660	22131	159569	215380
25	4021	57057	2389	197231	.	20562	616809	15	107500	661	121	102850	1934	1224	710	25760	137075	254790
26	2535	31724	5383	126350	.	8369	665722	14	101000	642	164	141040	1980	1328	652	30567	134650	272875
27	8517	42828	4034	197412	.	10111	677672	13	98500	690	166	141100	2083	1394	689	34625	134650	280023
28	7276	27072	2841	274803	9965	12757	637852	12	95500	707	133	99750	1938	1317	621	28367	134650	290083
29	5714	30233	3075	381915	10627	58611	696578	13	90000	770	169	126750	2134	1473	661	31545	135000	310050
30	7054	30080	3655	386632	4695	23318	643735	11	98000	690	69	62100	1857	1036	821	32057	143300	312250
31	17208	43335	1809	494054	7034	26367	707478	9	70000	910	118	118800	2335	1448	887	40072	137983	335163

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEG

BO	ONVALG	BOVALG	TOFFMNL	GLFDD	V P M L G	V P K L G	V P G N L G	V V A P L G	G B P L G	R O O P L G	G N N P L G	S T P L G	U N N L G	W F P L G	P I C K P L G	P I P L G	P E R P L G	T U B E P L G	M I X P L G	S T U R P L G	S A U P L G	G O O P L G
1	780	29730	1076	12387.5	578.8	2.0	6.1	27.6	.	9.1	32.6	30.7	0.2	21.9	17.9	3.1	0.4	12.9	36.6	1.5	.	5.6
2	.	29250	1081	11534.4	567.8	2.0	5.9	27.1	0.2	9.4	33.6	29.7	.	24.8	29.1	4.9	0.5	5.7	35.0	.	.	.
3	164	22290	499	16446.5	776.9	1.9	12.1	36.4	0.5	10.8	15.0	37.2	0.1	39.0	18.7	5.4	0.4	10.2	26.3	.	.	.
4	112	22355	611	11236.2	775.6	2.0	28.4	35.1	.	10.5	18.4	35.9	0.1	31.2	24.5	1.2	0.4	19.7	15.9	.	.	7.2
5	92	20075	714	16076.8	608.0	2.0	25.3	44.4	0.5	9.1	6.9	39.1	0.0	19.6	21.0	3.8	0.3	30.4	18.7	.	.	6.2
6	80	24150	556	20808.3	742.7	1.7	22.3	53.3	.	10.1	7.6	28.7	0.0	22.8	9.0	2.2	0.4	39.3	23.2	.	.	3.1
7	.	25940	777	16521.8	856.0	2.6	25.9	51.3	.	10.3	10.2	28.2	.	21.5	11.2	2.9	6.3	32.0	20.6	0.4	.	4.7
8	100	27098	910	15158.0	.	.	.	49.3	0.3	10.2	12.7	27.5	0.0	20.4	13.5	2.9	5.5	32.4	18.9	0.6	.	5.5
9	100	34270	838	16504.2	.	.	.	45.2	1.1	8.1	21.0	24.7	0.0	20.8	10.9	2.3	0.3	37.6	26.2	0.1	.	1.8
10	75	33500	914	9935.4	.	.	.	40.9	0.5	7.2	19.1	32.3	0.0	32.8	18.0	4.2	0.5	30.8	12.9	0.1	.	0.8
11	.	3425	685	13141.3	1004.6	2.0	5.2	51.4	0.8	9.7	37.5	34.4	.	32.2	18.7	3.9	0.7	30.0	11.8	0.1	.	3.4
12	645	40531	1013	5525.7	596.8	1.4	4.2	41.2	0.4	9.2	32.9	16.2	0.1	57.9	26.5	4.2	1.5	56.0	1.3	0.4	.	2.4
13	803	42100	1092	8490.8	452.8	1.0	3.4	36.8	2.2	8.7	29.9	22.3	0.2	28.5	23.1	3.6	0.1	40.9	1.3	0.4	.	2.3
14	800	43325	1240	5834.2	395.9	1.0	2.9	34.7	2.3	8.4	33.1	21.5	0.2	22.5	41.3	6.6	2.5	19.9	1.3	0.7	.	3.2
15	803	43325	1378	5026.3	384.0	1.0	3.3	38.1	2.5	8.2	30.6	20.5	0.2	23.0	37.6	9.3	2.1	19.1	2.1	1.3	.	5.2
16	1075	47775	1791	4652.8	381.0	1.3	4.0	35.7	2.8	8.9	32.0	20.3	0.2	30.7	19.1	5.0	1.1	33.4	4.9	0.8	.	4.9
17	1200	48400	1828	7573.7	603.9	1.9	5.9	31.6	2.9	8.4	32.6	24.3	0.2	27.0	22.4	5.3	1.2	38.6	1.4	0.2	.	3.9
18	150	50200	2096	7710.9	508.5	1.7	5.3	32.1	3.7	8.2	35.0	23.0	0.0	17.5	27.0	3.8	0.2	44.3	1.1	0.2	1.4	3.5
19	150	50725	2174	7769.5	556.3	1.9	5.8	30.0	6.2	7.8	32.5	23.5	0.0	18.3	29.1	3.9	0.3	42.6	1.0	.	2.2	2.6
20	320	45400	2456	6740.4	432.6	1.9	5.6	28.8	9.1	5.5	33.7	22.9	0.0	20.0	27.0	8.6	0.3	35.2	0.5	.	4.3	4.1
21	410	36943	2531	4756.1	409.4	1.3	3.8	29.0	9.8	4.5	34.6	23.0	0.1	28.6	22.7	8.6	0.5	29.0	0.4	.	7.2	3.0
22	300	15500	3179	3138.7	201.0	1.5	2.5	36.9	16.1	3.6	58.8	43.3	0.1	34.4	24.7	3.4	0.5	17.0	0.5	.	17.4	2.1
23	64	10475	1296	7499.2	527.2	1.2	3.4	21.2	14.1	1.9	36.0	26.6	0.0	45.4	21.9	3.0	0.4	9.7	0.7	.	17.9	1.1
24	26	13675	1616	6866.0	409.2	1.1	3.0	18.3	16.4	2.3	36.4	26.6	0.0	48.1	24.5	1.3	0.6	4.2	0.2	†	20.3	0.8
25	52	14542	1934	7166.5	358.1	1.1	2.7	17.4	16.7	2.4	41.3	22.2	0.0	30.0	27.9	2.0	0.5	8.6	0.4	.	29.9	0.5
26	107	16050	1980	5241.1	363.2	1.1	2.6	15.2	21.2	2.4	41.0	20.2	0.0	28.9	29.1	3.7	0.4	7.6	1.4	.	23.1	0.8
27	149	17250	2053	5776.3	372.9	1.1	2.7	14.5	20.8	2.5	42.2	19.9	0.0	8.7	37.1	6.1	1.0	13.1	1.1	.	33.6	1.2
28	192	17675	1938	7437.4	484.3	1.5	3.3	15.0	15.6	2.8	45.5	21.1	0.0	14.2	28.0	3.1	0.7	6.4	0.4	0.2	44.3	2.0
29	492	28260	2134	7242.1	479.6	1.5	3.2	12.9	18.2	4.1	45.4	19.4	0.1	13.2	26.6	1.8	0.5	5.9	0.4	0.1	49.5	1.9
30	785	27600	1857	9144.0	470.1	1.4	2.8	15.2	9.6	4.3	48.5	22.2	0.1	11.4	19.4	2.5	0.7	9.7	0.3	0.1	55.3	0.7
31	28	45500	2335	7790.2	523.8	1.7	3.6	9.9	16.8	6.4	47.4	19.5	0.0	16.3	18.9	1.8	1.4	8.4	0.2	0.1	52.5	0.6

PRODUCTION, VALUE AND CAPITAL DATA II LAKE MANITOBA

OBS	YEAR	FLM	PICK L M	PIL M	MIX L M	P R R L M	TUBEL L M	S AU L M	T C P R L M	T O V A L L M	W F V A L L M	P I C K V A L L M	D I V A L L M	M I X V A L L M	P E R V A L L M	T U B E V A L L M	S A U V A L L M	G N L M	
1	1910	743400	2926300	3381400	1380500	27100	347400	8006600	378476	52038	175508	101442	37340	1626	10422	.	.	.	
2	1911	253700	790300	1285000	1065100	.	.	3400600	136090	18109	47448	33580	31953	.	.	.	.	4309
3	1912	183000	785000	1152000	1050100	3600	.	3170600	116840	12600	39250	34560	30250	180	.	.	.	1859	
4	1913	6800	62000	50400	997400	.	.	1117500	24973	405	3145	1512	19911	.	.	.	.	1000
5	1914	306500	15336	1331900	503900	58300	4494	2220430	123644	15335	60962	26638	9389	2332	8988	.	.	2032	
6	1915	223500	451000	1288000	445000	12600	95200	2515600	83316	11190	22550	38640	7450	630	2356	.	.	1608	
7	1916	262000	1245000	1679000	366400	30000	359100	3941500	216223	18340	87150	83950	7323	1500	17955	.	.	4660	
8	1917	262000	1245000	1679000	366400	30000	359100	3914500	.	.	.	.	.	.	.	.	.	4650
9	1918	5825
10	1919	471900	611900	742600	169400	56500	1032700	3085000	.	.	.	.	.	.	.	.	.	5070
11	1920	53000	553000	503000	80500	50000	565000	1811500	119985	4770	46300	27500	2015	5500	33900	.	.	3940	
12	1921	77600	900000	302000	36000	27000	580000	1922600	92719	5432	63000	7550	720	1517	14500	.	.	3135	
13	1922	77600	1200000	346000	39000	31000	290000	1933600	125165	7750	98000	8650	900	2635	7250	.	.	4610	
14	1923	70000	1540000	480000	45000	32500	390000	2565500	176780	8580	138600	14400	900	2600	11700	.	.	9390	
15	1924	90000	1832100	740000	157500	53000	1974200	4855800	315208	11880	219852	25400	2891	5830	49355	.	.	12386	
16	1925	117000	1674200	969400	386600	64000	1953500	5158700	391274	16380	251230	38776	7216	9600	60372	.	.	16272	
17	1926	136500	2762000	1801500	447800	443600	2930600	5621506	657316	19110	386764	63158	8956	62104	117224	.	.	22920	
18	1927	189400	2610600	1731600	225400	162000	2845900	20906	7785600	500628	20775	285747	64629	4508	18796	104965	1467	23000	

OBS	G N V A L L M	T M E N L L M	S T V A L L M	F M E N L L M	T O C A P L L M	O N V P A N L L M	W F P L L M	P I C K P L L M	P I L P L L M	M I X P L L M	P E R P L L M	T U B E P L L M	S A U P L L M	G N P L L M	S T P L L M	P N C L L M
1	49067	440	4000	.	53067	7.71345	8.4414	33.2342	36.3962	15.6757	0.3077	3.9448	.	92.462	7.5376	.
2	49090	440	4000	.	53090	2.77226	7.6075	23.2547	37.8169	31.3209	.	.	.	92.466	7.5344	.
3	18500	204	750	.	19250	6.31568	5.6772	24.7587	36.3338	33.1199	0.1135	.	.	96.104	3.8961	.
4	10000	160	750	.	10750	2.49730	0.6065	5.6286	4.5101	89.2528	.	.	.	93.023	6.9767	.
5	16256	254	.	.	16256	7.60605	13.8036	0.6907	59.9839	22.6938	2.6256	0.2024	.	100.000	.	.
6	12804	226	.	.	12864	6.47668	8.8965	17.9281	51.2005	17.6896	0.5009	3.7844	.	100.000	.	.
7	46800	312	.	.	46800	4.62015	6.6472	31.5870	42.5980	9.2960	0.7611	9.1107	.	100.000	.	.
8	68250	435	.	.	46800	.	.	6.6931	31.8048	42.6918	9.3601	0.7664	9.1736	100.000	.	.
9	76060	507	8000	455	76250	.	.	.	.	.	.	.	.	.	10.4918	.
10	60800	304	7000	304	87800	15.2966	19.8347	24.3713	5.4911	1.8314	33.4749	.	.	89.308	8.4276	.
11	23295	335	4000	335	27295	3.98021	4.0362	46.8116	15.7079	1.8725	2.7601	31.1896	.	89.676	10.3245	.
12	36760	459	5500	459	42260	3.40547	3.9121	60.4961	17.4430	1.9661	1.4043	30.1575	.	85.345	14.6317	.
13	75120	626	5000	626	80120	2.35339	3.0403	60.0275	18.7098	1.7540	1.2668	15.2017	.	86.995	13.0147	.
14	86702	779	5400	779	92502	3.63553	2.0388	37.7301	15.2395	3.2435	1.0915	40.0565	.	93.759	6.2404	.
15	113904	905	6300	905	120258	3.43512	2.2640	32.4539	18.7916	7.3778	1.2406	37.8681	.	93.730	6.2404	.
16	160440	1128	7200	1128	167670	4.09696	2.4283	49.1452	32.0477	7.9661	7.8914	52.1338	.	94.716	5.2487	0.844001
17	161000	1126	9000	1126	170040	3.11073	2.4326	33.5305	22.2405	2.8950	2.0807	36.5524	0.2684	95.688	4.2947	0.019793
18														94.684	5.2929	0.023524

PRODUCTION, VALUE AND CAPITAL DATA, LAKE MANITOBA

OBS	YEAR	WFLM	PICKLM	PILM	MIXLM	PRML	TUBELM	SAULM	TUPROLM	TOTALM	WVALM	PICKVALM	PIVVALM	MIXVALM	PERVALM	TUHEVALM	SAUVALM	GNLM
19	1928	179800	2248600	1427400	315530	79400	1451200	44200	5746300	442039	21576	269856	57096	7887	9528	72560	3536	21640
20	1929	155800	1133300	1874100	422500	33500	1936600	107000	5652500	331905	20250	147290	65593	8413	4335	77464	3550	23960
21	1930	157600	1234300	924500	411400	28100	906000	26500	3658400	185056	13914	108387	18490	8171	2529	31710	1855	16016
22	1931	106000	1184600	627700	155700	84700	790800	31100	3210600	197893	11535	124583	17371	2337	8789	28092	4553	15760
23	1932	119500	1591700	1583000	374200	170500	1641900	143900	5623600	407753	12416	154149	157248	3494	12950	58102	9359	15750
24	1933	36500	2033000	941500	105600	413100	1101600	240000	4873300	455720	3610	144397	9791	.	30261	27181	13330	21336
25	1934	28800	2029300	296100	141000	474500	1371100	700000	5042100	324827	3625	176417	9189	3214	45934	41997	44401	16187
26	1935	24800	1695000	328600	242000	390300	1050800	572100	4293600	251818	2957	131597	12681	3700	24422	50959	24222	19310
27	1936	10200	2259000	710800	282300	730300	1842500	1050400	6895500	460183	1108	179553	26018	5401	81097	102594	64414	10363
28	1937	5500	2010500	911100	232700	596300	536500	1833700	6126400	432039	58700	143728	33600	4405	52525	37627	101254	27237
29	1938	46000	1070900	1543500	370400	518900	661400	1727000	5955600	343136	4488	90220	39055	7037	48436	51064	102930	23230
30	1939	5300	2073300	799100	153100	714700	1618100	1960600	7324400	360043	519	137042	20033	2537	56610	44534	93096	25562
31	1940	8700	1490700	575300	183400	795000	759100	1828000	5640200	361177	1071	132990	17356	2346	65000	30415	111596	21976

OBS	GNVALM	TMENTLM	STVALM	FMENTLM	TDCAPLM	DNNVALM	VPGNLM	WFLML	PICKPLM	PIPLM	MIXPLM	PERPLM	TUBEPPLM	SAUPLM	GNPLM	STPLM	UNPLM
19	151430	1382	9000	1052	160568	88	2.91813	3.12897	39.1347	24.8403	5.4905	1.3818	25.2545	0.7692	94.3401	5.63510	0.354305
20	146720	1346	9000	1048	155896	176	2.26217	2.75143	20.0088	33.0967	7.4614	0.5916	34.2004	1.8896	94.1140	5.77308	0.112396
21	176112	308	9000	908	135252	140	1.46739	4.30789	32.9188	25.2706	11.2454	0.7681	24.7649	0.7244	93.2422	6.65425	0.103310
22	110460	789	9000	789	119460	90	1.79151	3.30156	36.2733	25.7802	4.8496	2.6381	24.6309	2.5260	92.4661	7.53390	0.075339
23	102770	789	9000	789	111770	90	3.96763	2.10889	28.3029	28.1462	6.6539	3.0318	29.1956	2.5588	91.9477	8.03225	0.06523
24	106714	712	9000	711	115739	146	4.27043	0.79002	41.7171	19.3196	2.1669	8.4768	22.6048	4.9248	92.2023	7.77612	0.125146
25	97146	650	9300	647	106596	94	3.34370	0.57119	40.2570	5.3726	2.7965	9.4108	27.1930	13.8990	91.1348	8.72453	0.083183
26	96100	644	9300	640	105650	138	2.62037	0.57760	39.4774	7.6533	5.6363	8.8574	24.4736	13.3245	90.9607	8.83265	0.135020
27	98200	656	9300	654	107770	109	4.68613	0.14792	32.7605	10.3082	4.0940	10.5910	26.7203	15.3781	91.1200	8.62749	0.101141
28	109800	926	9500	916	123300	164	3.93478	0.09141	32.8170	14.8717	3.7983	9.7333	8.7572	29.9311	89.0511	7.7079	0.133009
29	118550	785	9700	773	134250	156	2.89444	0.77498	18.0403	25.9536	6.2403	8.7422	11.1429	29.1057	88.3054	7.22333	0.115201
30	130250	874	9700	864	143400	152	2.75425	0.07236	28.3068	10.9101	2.0903	9.7578	22.0919	26.7703	90.8298	6.76430	0.105997
31	166295	735	9600	729	177295	216	2.17191	0.15425	26.4299	10.2000	3.2517	14.0952	13.4587	32.4102	93.7957	5.41470	0.121831

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEGOSIS

OBS	YEAR	TOPROLGS	WFLGS	PICKLGS	PILGS	MIXLGS	GOYLGS	PERLGS	TUBELGS	SAUPLGS	SAUVALGS	TOVALGS	WFVALGS	PICVALGS	PIVALGS	MIXVALGS
1	1910	4444800	861700	882500	1240300	1320300	140000	.	.	.	.	602524	60319	52950	37209	32046
2	1911	3898400	953600	753100	1201600	990100	.	.	.	.	.	177689	66752	45186	36048	29703
3	1912	4245000	1101400	865000	1301400	977200	.	.	.	.	.	185134	77098	43250	39042	25744
4	1913	4734100	908800	1114600	1276300	1434400	.	.	.	.	.	175488	54528	56555	38239	25116
5	1914	4708200	979700	1041000	1494600	1166600	23200	3100	.	.	.	133639	48885	41640	29893	12366
6	1915	3088600	593900	496700	1257200	738500	2300	.	.	.	.	102487	29645	24835	37716	10245
7	1916	3685256	994500	1432000	1645600	1195100	36000	11200	.	.	.	268327	67785	94416	80584	23902
8	1917	5717900	966700	1393500	1627800	1350500	36000	11200	7312200	.	.	.	.	.	.	.
9	1918	6504900	1713100	1353600	1662000	1610700	70700	.	59800	.	.	.	.	.	.	.
10	1919	4531600	1359000	1273700	1785700	1118900	64500	1200	28600	.	.	.	.	.	.	.
11	1920	4866000	941300	1370400	1500300	1019400	19000	.	15600	936	.	320659	94666	125471	78248	20388
12	1921	3789500	941100	1159700	1332400	267602	70600	.	16600	498	.	425809	328000	58201	33314	3854
13	1922	3955536	722200	1832800	1343500	383600	43600	.	10600	477	.	227542	50810	120096	46788	7627
14	1923	4478100	823000	2072200	1194100	456400	115400	.	2000	100	.	252808	54096	136324	44455	6831
15	1924	4776600	822800	1519500	1527100	656900	170400	500	79800	2673	.	247908	65371	112517	52193	10922

OBS	GOYVALGS	PERVALGS	TUBVALGS	VLGS	VVALGS	BBLGS	BVALGS	GNLGS	GNVALGS	STVALGS	TOCAPLGS	GBLGS	GBVALGS	TMENLGS	FMENLGS	PPKLGs	PPMLGS
1	420000	.	.	.	.	.	.	38570	6000	44570	.	.	.	345	.	99.7	.
2	.	.	.	.	.	.	3860	38500	6000	44600	.	.	.	345	.	87.4	.
3	.	.	.	.	.	.	2033	20330	6000	26330	.	.	.	275	.	161.2	.
4	.	.	.	1	10000	63	3390	2262	22520	9125	.	.	.	283	.	104.9	.
5	231	124	.	.	.	.	3360	25880	.	25880	.	.	.	227	.	181.9	.
6	46	.	.	2	14000	29	3460	2895	28750	8650	55860	1	800	261	.	55.3	.
7	1080	560	.	2	13000	28	3400	9715	37990	10300	64690	.	.	299	.	57.0	.
8	.	.	.	1	10000	95	3710	3720	38725	4505	57140	.	.	339	.	100.1	.
9	.	.	.	1	22000	78	3900	8580	65550	14000	125550	.	.	132	.	51.8	.
10	.	.	.	3	22000	108	22970	12440	126900	17500	191870	7	3000	732	544	24.1	8514.0
11	950	.	936	3	30000	120	25000	7810	97200	20000	175200	7	3000	423	223	27.8	21820.6
12	1942	.	498	3	30000	31	13500	3304	33712	46500	126712	7	3000	396	232	48.4	20408.0
13	1744	.	477	4	35000	58	15300	4112	42456	45570	141846	8	3500	362	286	27.9	13834.0
14	10982	.	100	4	36000	84	12380	3560	46340	43800	142520	7	3500	436	292	31.4	15336.0
15	4197	35	2673	4	36000	63	10500	5765	48260	42300	141060	8	4000	443	313	33.9	15260.7

OBS	VPKLGs	VPMLGS	VPGNLGS	WFPLGS	PICKPLGS	PIPLGS	MIXPLGS	GOYPLGS	PERPLGS	TUBEPLGS	SAUPLGS	VAAPLGS	BVAAPLGS	GBPLGS	GNPLGS	STPLGS
1	13.5	.	15.6	19.4	19.9	27.9	29.7	3.1	.	.	.	.	.	.	86.5	13.5
2	4.0	.	4.5	24.5	19.3	30.8	25.4	.	.	.	.	.	.	.	86.5	13.5
3	7.0	.	9.1	25.9	20.4	30.7	23.0	.	.	.	.	.	.	.	77.2	22.8
4	3.9	.	7.8	19.2	23.5	27.0	30.3	.	.	.	22.2	7.5	.	.	50.1	20.2
5	5.2	.	5.2	20.8	22.1	31.7	24.8	0.5	0.1	.	.	.	.	.	100.0	.
6	1.8	.	3.5	19.2	16.1	40.7	23.9	0.1	.	.	25.1	6.2	1.4	.	51.8	15.5
7	4.1	.	7.1	27.0	36.9	44.7	32.4	1.0	0.3	.	20.1	5.3	.	.	58.7	15.9
8	.	.	.	17.3	24.4	28.5	23.6	0.6	0.2	5.5	17.5	6.5	.	.	68.1	7.9
9	.	.	.	26.4	20.8	25.9	24.8	1.1	.	1.1	17.5	3.1	.	.	68.2	11.2
10	.	.	.	29.3	27.5	38.6	24.2	1.4	0.0	0.6	11.5	12.0	1.6	.	65.9	9.1
11	1.8	1437.9	3.3	19.3	28.2	30.8	20.9	0.4	.	0.3	0.0	17.1	14.3	1.7	55.5	11.4
12	3.4	1833.4	12.6	24.8	30.6	35.2	7.1	1.9	.	.3	0.0	23.7	10.7	2.4	26.6	36.7
13	1.6	795.6	5.4	18.3	46.3	34.0	9.7	1.1	.	0.3	0.0	24.7	10.8	2.5	29.9	32.1
14	1.8	865.8	5.4	14.2	46.3	26.7	10.2	2.6	.	0.0	0.0	25.3	8.7	2.5	32.9	20.7
15	1.8	792.0	5.1	17.2	31.8	32.0	13.8	3.6	0.0	1.7	0.1	25.5	7.4	2.8	34.2	30.0

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEGOSIS

OBS	YEAR	TOPRDLGS	WFLGS	PICKLGS	PILGS	MIXLGS	GOYLGs	PERLGS	TUBELGS	SAUPLGS	SAUVALGS	TOVALGS	WFVALGS	PICVALGS	PIVALGS	MIXVALGS	
16	1925	4075400	621500	1354800	1207900	617200	136000	.	138000	5503	.	255842	48824	138481	48070	2252	
17	1926	6154417	833700	2522900	1678900	733000	257500	800	121200	6417	.	392455	64501	225252	73595	14273	
18	1927	5964409	718700	2539200	1485200	906100	178400	4600	127200	5009	.	307441	53873	177143	50113	14196	
19	1928	5517438	678500	2487200	1301800	757900	178600	4900	108600	3936	.	414839	58980	254060	53866	13250	
20	1929	6611503	1010500	2621300	1759700	1016600	.	7200	253500	12703	.	606932	97000	287835	77356	19338	
21	1930	4758745	631300	2445900	975200	432900	.	9300	252500	11645	.	317286	50395	219361	28065	6503	
22	1931	3395330	466800	1709500	791200	109800	.	68000	243000	10000	500	229624	36957	150829	23392	2196	
23	1932	2639900	134000	1549300	603800	190600	6700	73200	11000	11300	507	157162	7956	113860	15987	2294	
24	1933	3056200	667000	1900600	328500	51800	76200	20100	11700	300	900	126649	3972	97921	6062	528	
25	1934	3053100	36100	2244200	396600	163900	109200	56800	21600	24700	1109	182091	2403	156742	10529	1539	
26	1935	3309200	43900	2240800	540700	304900	123400	17900	29200	8400	386	206662	3418	150486	20684	2759	
27	1936	4965400	106300	3158500	795400	551700	254500	36900	55300	6800	396	303699	8302	224131	26645	6190	
28	1937	5736100	36800	4056600	882300	604400	22900	60500	51900	20700	832	334270	3178	275092	41451	7349	
29	1938	6398400	57000	6596100	1249300	1360000	19200	32800	54700	39300	1842	341512	3876	281743	32985	15944	
30	1939	6358000	47700	2794800	1558300	1457200	164400	36000	265700	33900	1356	304455	3253	201464	44220	13620	
31	1940	4785600	22300	1783500	1182600	1222000	19400	59800	395400	100600	6200	254443	2071	158377	46250	24442	
OBS	GOYVALGS	PERVALGS	TUBVALGS	VLGS	VVALGS	BBLGS	BVALGS	GNLGS	GNVALGS	STVALGS	TOCAPLGS	GBLGS	GBVALGS	TMENLGS	FMENLGS	PKPLGS	PPMLGS
16	5712	.	5503	4	23000	48	10150	6722	56252	24500	125902	27	12000	423	296	32.4	13768.2
17	8359	58	6417	5	36000	59	12500	7422	69496	24800	157796	37	15000	523	348	39.0	17668.1
18	6734	373	5009	4	32000	53	7040	9481	91528	27600	183668	51	25500	578	396	32.5	15661.6
19	30262	485	3936	4	32000	43	6600	9715	94912	28500	198812	63	37800	618	407	27.8	13556.4
20	.	1127	12703	5	40000	66	11800	10446	121835	66400	277235	62	37200	688	442	24.1	15116.7
21	.	1317	11645	5	40000	69	9850	12616	118338	66400	273298	64	36200	663	433	17.4	10996.2
22	.	6150	9600	4	32000	15	450	8206	72268	41000	164218	31	18500	441	321	20.7	10577.3
23	11938	4213	407	2	18000	5	125	6255	53060	39500	126285	26	15600	345	252	20.9	10475.3
24	15900	1193	173	6	24778	4	255	6063	41175	35000	113933	27	12725	280	183	26.8	16700.5
25	25116	4171	383	5	14900	5	100	5107	34320	19641	90961	25	18000	243	149	35.8	20490.6
26	27122	843	958	6	18900	4	145	6990	50290	21666	112101	37	22000	340	203	29.5	19301.5
27	33529	2827	1679	6	19550	10	300	8380	61760	31065	133375	32	20700	384	252	37.2	19704.0
28	1707	3633	1028	7	19550	8	950	10326	73335	31240	151675	33	26600	451	317	37.8	18995.0
29	1487	2359	1276	6	15000	14	450	12950	90270	32891	166711	37	28100	546	386	38.4	16576.2
30	34750	2395	3397	4	16800	12	420	14797	105230	33997	186847	38	30400	574	413	34.0	15394.7
31	1314	5704	10085	3	11300	12	600	13050	100950	34297	174897	37	27750	564	394	27.4	12146.2
OBS	VPKPLGS	VPMLGS	VPGNLGS	WFPLGS	PICKPLGS	PIPLGS	MIXPLGS	GOYPLGS	PERKPLGS	TUBEPLGS	SAUPLGS	VVAPLGS	BVAPLGS	GBPLGS	GNPLGS	STPLGS	
16	2.0	864.3	4.5	15.3	33.2	29.6	15.1	3.3	.	3.4	0.1	18.3	8.1	9.5	44.7	19.5	
17	2.5	1127.7	5.6	13.5	41.0	27.3	11.9	4.2	0.0	2.0	0.1	22.8	7.9	9.5	44.0	15.7	
18	1.7	776.4	3.4	12.0	42.6	24.9	15.2	3.0	0.1	2.1	0.1	17.4	3.8	13.9	49.8	15.0	
19	2.1	1019.3	4.4	12.2	45.1	23.6	13.7	3.2	0.1	2.0	0.1	16.1	3.3	19.0	47.2	14.3	
20	2.2	1373.1	5.0	15.1	39.3	26.3	15.2	.	0.1	3.8	0.2	14.4	4.3	13.4	43.9	24.0	
21	1.2	732.8	2.7	13.3	51.4	20.5	9.1	.	0.2	5.3	0.2	14.6	3.6	14.0	43.5	24.3	
22	1.4	715.3	3.2	13.7	50.3	23.3	3.2	.	0.2	7.1	0.3	19.5	0.3	11.3	44.0	25.0	
23	1.2	623.7	3.0	5.1	56.7	25.1	7.2	0.3	2.8	0.4	0.4	14.3	0.1	12.4	42.0	31.3	
24	1.9	692.1	3.8	21.8	62.2	10.7	1.7	2.5	0.7	0.4	0.0	21.7	0.2	11.2	36.1	30.7	
25	2.0	1222.1	4.8	1.2	73.5	13.0	5.4	3.6	1.9	0.7	0.8	16.4	0.1	19.8	42.1	21.6	
26	1.8	1018.0	4.1	1.3	67.7	16.3	9.2	3.7	0.5	0.9	0.3	16.1	0.1	19.6	44.9	19.3	
27	2.3	1205.2	4.9	2.1	63.6	16.0	11.1	5.1	1.1	1.1	0.1	14.7	0.2	15.5	45.3	23.3	
28	2.2	1054.5	4.6	0.6	70.7	15.4	1.1	0.4	1.1	0.9	0.4	12.9	0.6	17.5	48.4	20.6	
29	2.0	884.7	3.8	0.9	56.0	19.5	21.3	0.3	0.5	0.9	0.6	9.0	0.3	16.9	54.1	19.7	
30	1.6	737.2	2.9	0.8	44.0	24.5	22.9	2.6	0.6	4.2	0.5	9.0	0.2	16.3	58.3	18.2	
31	1.5	645.8	2.5	0.5	37.3	24.7	29.5	0.4	1.2	8.3	2.1	6.5	0.3	15.9	57.7	19.6	

PRODUCTION, VALUE AND CAPITAL DATA - NORTHERN MANITOBA

1965 YEAR	TOBACCO	WHEAT	PICKERS	PIN	TRON	MIX	STUR	TUBER	GOY	TOCAP	GNN	GNVAN	STVAN	TREAN	BDN	BOVAN
1	1910	1628400	124100	28400	13900	18200	2897600	29500	.	.	9373	226600	7173	2200	57	.
2	1911	3789100	302700	132500	135600	23600	3057700	.	.	14450	10630	10630	2200	66	6	1620
3	1912	2609700	200100	34000	27200	186200	2141900	.	.	14640	834	8440	6100	374	.	.
4	1913	2707900	506000	60100	189500	150500	1298300	.	2000	11000	22570	557	5570	14000	77	3
5	1914	3516250	1000700	83000	335150	71200	2002700	.	.	.	5147	1149	11470	4300	131	.
6	1915	3550200	758700	55700	58500	43000	2589100	15300	27300	.	19594	799	9994	9100	32	9
7	1916	4109200	700000	97300	108500	135800	3059500	66100	56000	.	22738	1303	12365	9400	142	53
8	1917	4810200	878300	140500	209400	209400	1768100	32050	32050	.	26128	6149	65473	15265	577	476
9	1918	5311700	1718700	345200	234400	202300	3021900	102200	158300	.	96530	4136	55190	10000	622	404
10	1919	1257000	874500	63300	134500	83800	66500	38200	.	.	47100	1740	20600	7500	179	22
11	1920	7002400	3225000	116100	93600	43300	63400	32200	13200	.	22905	751	13426	5300	114	19
12	1921	1557700	710900	236000	241000	83300	215600	35600	22700	500	27769	1267	19089	5100	156	12
13	1922	4077300	197700	59400	37400	35200	67700	62300	19400	500	15943	379	5143	4900	92	21
14	1923	5802100	182300	45600	78000	25800	90000	124300	2000	.	27286	480	6286	6400	134	50
15	1924	5860000	238900	81400	43600	23700	51000	146800	900	.	33984	586	6088	8600	132	70
16	1925	7860700	444300	79400	43000	45300	63000	97800	6400	.	40619	892	9844	10500	151	49
17	1926	10684000	507100	182500	44400	20500	50000	76900	7400	.	36025	1374	15075	9000	231	40
18	1927	1770700	1053600	321300	32500	111100	2000	45200	49700	.	45051	1797	18376	8700	196	50
19	1928	3707700	1876600	441200	143700	93300	.	500	39000	.	28690	1459	15800	8800	151	18
20	1929	1430500	1205600	187100	157600	194600	78400	7100	38600	2500	30826	2128	22301	2500	207	22
21	1930	2420000	1708600	221800	227700	136800	.	2100	31600	.	47215	3654	36543	7300	328	14
22	1931	1774400	1774400	306300	73800	185400	.	600	4600	.	33740	2763	27030	2200	235	31
23	1932	6574000	731400	101300	41300	92900	12000	1000	3700	.	16908	1773	14458	2025	152	6
24	1933	8671500	487000	116600	24400	77100	16000	600	4300	.	10860	1033	10160	700	100	5
25	1934	8437300	641900	88600	37500	47600	25200	.	2400	.	15034	1060	10689	600	96	19

1965 YEAR	TOBACCO	WHEAT	PICKERS	PIN	TRON	MIX	STUR	TUBER	GOY	TOCAP	GNN	GNVAN	STVAN	TREAN	BDN	BOVAN
1	65475	10.4470	11.0137	76.528	23.4717	7.5748	1.7334	0.8484	1.1106	171.362	1.6005	.	.	.	.	.
2	147130	19.1240	13.8147	75.054	15.2249	11.2111	10.4651	3.6314	3.6140	0.6290	51.760	.	.	.	.	.
3	31140	4.6536	2.6172	38.027	41.9532	8.4516	1.3028	1.0481	7.1349	82.075	.	.	.	.	.	.
4	10110	5.9279	13.4337	34.674	62.0292	13.2923	25.6025	3.4409	8.1404	6.4651	55.793	.	.	0.10851	0.172525	.
5	10110	10.4714	8.7235	22.823	77.7152	24.2135	2.5669	10.7195	2.6424	55.162	.	.	.	.	.	.
6	63360	4.4783	6.5984	46.064	45.4428	4.5932	20.9767	2.4291	1.6390	1.2210	72.540	0.4287	0.7648	1.27524	1.27524	.
7	127520	6.2561	11.1024	51.547	34.7338	5.8137	16.2917	2.2632	4.5473	2.9264	71.163	1.8275	1.27524	3.6311	0.65712	.
8	.	.	.	71.486	17.0597	2.4507	18.9386	3.0787	5.1427	3.2060	66.246	3.6311	0.65712	1.7241	2.7242	.
9	.	.	.	52.6	14.9	23.1	29.3	4.2191	5.3045	3.4844	51.997	1.7241	2.7242	4.9055	2.67803	.
10	57330	0.4048	0.4715	61.265	15.9236	18.1037	65.9175	4.6647	13.5982	5.9322	2.314	4.9055	1.2630	1.8633	1.8633	.
11	128470	4.6717	6.7028	51.470	14.3858	12.9541	45.0325	16.3659	13.4702	6.5266	11.756	4.5300	1.2630	1.8633	1.8633	.
12	20370	2.4743	0.1748	70.330	30.1073	37.6341	43.0	11.0	15.5203	9.3149	14.111	2.3303	1.1495	6.031022	6.031022	.
13	20370	2.4743	0.1748	70.330	30.1073	37.6341	43.0	11.0	15.5203	9.3149	14.111	2.3303	1.1495	6.031022	6.031022	.
14	20370	2.4743	0.1748	70.330	30.1073	37.6341	43.0	11.0	15.5203	9.3149	14.111	2.3303	1.1495	6.031022	6.031022	.
15	106720	2.1983	17.7219	17.963	23.3777	68.6572	40.7306	13.8932	7.4415	4.0451	2.705	25.3555	0.71741	.	.	.
16	20370	2.4743	0.1748	70.330	30.1073	37.6341	43.0	11.0	15.5203	9.3149	14.111	2.3303	1.1495	6.031022	6.031022	.
17	20370	2.4743	0.1748	70.330	30.1073	37.6341	43.0	11.0	15.5203	9.3149	14.111	2.3303	1.1495	6.031022	6.031022	.
18	106720	2.1983	17.7219	17.963	23.3777	68.6572	40.7306	13.8932	7.4415	4.0451	2.705	25.3555	0.71741	.	.	.
19	111100	5.8375	4.3225	59.355	39.6727	13.6421	72.2	10.1	6.8	3.4	0.0155	1.5	.	.	.	.
20	181267	5.8716	4.3113	72.745	31.1100	19.5452	65.9841	9.6418	7.7763	10.2850	4.040	0.454	1.76410	0.128833	0.128833	.
21	203713	4.2047	4.4842	71.391	15.3084	6.3019	70.9379	8.9435	13.2137	5.4839	.	0.3847	1.76410	0.128833	0.128833	.
22	100711	3.1041	3.2967	83.014	6.6127	13.4695	71.4374	13.8455	3.9500	10.6447	.	0.0337	0.25853	.	.	.
23	64591	2.8172	4.4709	80.810	11.9766	2.5135	73.5523	10.6229	4.3310	9.7420	1.258	3.1049	0.71741	.	.	.
24	43737	4.4878	4.7600	92.554	1.5416	4.6341	75.2932	13.0029	2.7666	3.6011	1.763	0.0669	0.25853	.	.	.
25	39317	1.2026	1.7951	72.285	3.9530	23.7521	76.0415	10.5014	4.4447	5.6416	2.997	.	0.25853	.	.	.

1965 YEAR	TOBACCO	WHEAT	PICKERS	PIN	TRON	MIX	STUR	TUBER	GOY	TOCAP	GNN	GNVAN	STVAN	TREAN	BDN	BOVAN
26	1635	407500	667000	64300	62000	39300	500	.	24300	.	18001	1304	14261	3700	115	7
27	2530	1075000	700000	34700	60500	80300	.	.	48100	.	24740	1552	15440	3250	155	17
28	1037	1485000	1174100	194000	91000	142500	.	24200	54500	300	30500	2636	21908	4970	232	27
29	1037	1818000	957600	137600	94900	126300	550	51200	34400	.	38300	2409	20509	5650	197	52
30	1037	1251100	754500	196700	89000	154400	2600	33000	47700	1200	33181	2406	25711	5300	192	60
31	1044	1592200	991300	313400	67900	131400	1900	64900	25700	5300	55028	3553	34598	6100	249	145

1965 YEAR	TOBACCO	WHEAT	PICKERS	PIN	TRON	MIX	STUR	TUBER	GOY	TOCAP	GNN	GNVAN	STVAN	TREAN	BDN	BOVAN
26	40750	0.407500	3.22291	79.2214	14.9992	4.4442	73.0257	10.8823	9.0718	4.2287	0.055072	.	.	3.07651	.	.
27	64591	2.62801	4.10420	60.6091	21.2207	16.3703	74.0519	9.2851	5.65106	7.5191	.	0.3847	1.76410	0.128833	0.128833	.
28	31110	1.67735	2.33638	71.8137	14.2951	11.8992	68.7402	12.0822	5.60015	8.6189	.	.	1.44268	3.42997	0.016130	.
29	47000	1.77410	3.30001	63.6923	14.7485	31.5592	64.6200	10.4575	7.51177	10.5411	0.041830	3.90150	1.76410	0.128833	0.128833	.
30	74771	1.20261	2.90895	67.3791	11.8895	18.7364	68.7484	15.2841	6.81589	12.2696	0.201379	2.04223	3.07651	0.001444	0.001444	.
31	70148	1.27477	2.02752	62.8734	11.0853	25.9808	62.2508	19.7086	4.26464	8.2827	0.119332	3.44606	1.76410	0.128833	0.128833	.

VARIABLE LIST
SERIES 3 MANITOBA COMMERCIAL FISHING 1940-1976¹

TOPRO = total production
MIX = mixed fish production
GOY = goldeye production
PICK = pickerel production
PI = pike production
SAU = sauger production
STUR = sturgeon production
CAVI = caviare production
TRO = trout production
TUBE = tullibee production
WH = whitefish production
PER = perch production
SUCK = sucker production
GOYVAF = value of goldeye production to fishermen
PERVAF = value of perch production to fishermen
SUCKVAF = value of sucker production to fishermen
STURVAF = value of sturgeon production to fishermen
CAVIVAF = value of caviare to fishermen
MIXVAF = value of mixed fish production to fishermen
PICKVAF = value of pickerel production to fishermen
PIVAF = value of pike production to fishermen
SAUVAF = value of sauger production to fishermen
TROVAF = value of trout production to fishermen
TUBEVAF = value of tullibee production to fishermen
WVAF = value of whitefish production to fishermen
TOVAF = TOVAFM = value of total production to fishermen
TOVAM = TOVAMA = total market value of production
STURVAM = market value of sturgeon production
CAVIVAM = market value of caviare
MIXVAM = market value of mixed fish production
GOYVAM = market value of goldeye production
PERVAM = market value of perch production
PICKVAM = market value of pickerel production
PIVAM = market value of pike production
SAUVAM = market value of sauger production
SUCKVAM = market value of sucker production
TROVAM = market value of trout production
TUBEVAM = market value of tullibee production
WVAM = market value of whitefish production
SPRO = summer production
WPRO = winter production
SPROVAF = value of summer production to fishermen
SPROVAM = market of summer production
WPROVAF = value of winter production to fishermen
WPROVAM = market value of winter production
WMEN = men winter fishing
SMEN = men summer fishing
RBM = number of row boats
RBVA = value of row boats
BB = BS = number of boats and skiffs
BBVA = BSVA = value of boats and skiffs
GB = number of gas boats
GBVA = value of gas boats
ON = number of other nets
ONVA = value of other nets
PW = number of piers and wharves
IH = number of ice houses
SH = number of shore houses
TOSTVA = total value of stations
TOCAP = total capital invested
MG = miscellaneous gear
TOMEN = total number of men
VPK = value per capital
PPK = production per capital
PPM = production per man
FVPM = value to fishermen per man
FVPP = value to fishermen per production
FTM = ratio of value to fishermen to market value
PPGN = production per gill nets value
PPST = production per station value invested

MVPP = market value per production
 MVPM = market value per man
 WFPM = whitefish production per man
 SAUPM = sauger production per man
 PICKPM = pickerel production per man
 MIXP = mixed fish % of total production
 PICKP = pickerel % of total production
 PIP = pike % of total production
 SAUP = sauger % of total production
 STURP = sturgeon % of total production
 TROP = trout % of total production
 TUBEP = tullibee % of total production
 WHP = whitefish % of total production
 PERP = perch % of total production
 SUCKP = sucker % of total production
 GOYP = goldeye % of total production
 RBVAP = % capital as row boats
 BBVAP = % capital as boats and skiffs
 GBVAP = % capital as gas boats
 GNVAP = % capital as gill nets
 ONVAP = % capital as other nets
 STVAP = % capital as stations
 SVPM = value of summer production per man
 WVPM = value of winter production per man
 SFTM = ratio of value to fishermen to market value for summer production
 WFTM = ratio of value to fishermen to market value for winter production
 VPM = value per man
 TFTM = ratio of total value to fishermen to market value
 VM = total value to fishermen per total production
 VF = total market value per total production
 WfV = winter value per winter production
 SfV = summer value per summer production
 WfV = winter market value per winter production
 Sfv = summer market value per summer
 FS = fishing stations (number)
 FC = fish carrier (number)
 FCVA = value of fish carrier
 FV = fish vessels (number)
 FVVA = value of fish vessels
 FH = fish houses (number)

Source: All data from Manitoba, Annual Reports of the Department of Mines and Natural Resources, renamed Mines, Natural Resources and Environmental Management (1970), and renamed Renewable Resources and Transportation Services (1976).

¹ Variables ending in M means Manitoba; LW means Lake Winnipeg; LWS means Lake Winnipegosis; LB or LM means Lake Manitoba; SL means Other Southern Lake.

PRODUCTION, CAPITAL AND VALUE DATA MANITOBA

Q B S	Y E A R	T O P P R O D M	M I X M	G O Y M	P I C K M	P I M	S A U M	S T U R M	C A V I M	T R O M	T U B E M	W H M	P E R M	S U C K M	G O Y V A F M	P E R V A F M
1	1940	38585026	30900	152200	8417100	5559900	12874200	124000	3026	94200	3756700	4421000	2255500	1196900	14744	138593
2	1941	36510800	31500	349200	9366100	1866900	14209000	113300	2600	123900	3360700	4767600	1362300	1258700	32393	116779
3	1942	33678000	34000	411900	7872800	2317300	9408400	71000	600	111200	4651400	5286200	1004000	2510000	47347	135081
4	1943	32413900	316000	494900	8288000	2717100	7445900	37100	1000	183100	2454000	5694000	587400	5195400	63963	73679
5	1944	27293100	114700	253800	9011500	2183400	5160000	25100	.	104900	2360500	4103200	623100	2347800	34329	76156
6	1945	34244100	433100	113700	9529800	3168500	5652400	53500	500	193800	5236300	5459600	770000	3631900	15059	142431
7	1946	28595000	469700	78800	9340400	2927500	4948100	18900	600	161700	2601100	4972500	804900	2372200	11357	114018
8	1947	30110000	421700	83800	10257500	3427800	4123300	4700	39	138300	5013700	3792600	759000	2087600	11412	128700

O B S	S U C K V A F M	S T U R V A F M	C A V I V A F M	M I X V A F M	P I C K V A F M	P I V A F M	S A U V A F M	T R O V A F M	T U B E V A F M	W F V A F M	T O V A F M	S T U R V A M M	C A V I V A M M	M I X V A M M	G O Y V A M M	P E R V A M M	P I C K V A M M	P I V A M M
1	10591	33853	5908	1617	595782	212097	733152	16148	86395	344906	2193876	44504	7763	2206	17795	172856	762053	247032
2	15190	42627	5310	1958	715763	65323	975641	15979	116300	443001	2551272	52684	5986	2932	37456	146381	943589	92128
3	47753	34510	723	2039	828422	138354	866502	19244	162620	677295	2959921	46019	809	2796	52444	153553	1073393	171924
4	209400	27829	1300	24201	1130998	204736	830631	29704	140720	799205	3536378	35172	1531	32879	72275	86638	1406832	259259
5	63503	16139	.	5631	952722	123854	604797	11309	144373	400462	2511035	21774	.	4020	42075	88226	1244520	171004
6	132111	41303	3018	29187	1629058	259493	789619	22589	201952	818398	4034243	51105	4527	34231	17950	183866	2110721	318879
7	19501	16258	2421	13753	1491008	191106	671140	16226	89640	679683	3303711	24436	2814	24318	14694	143336	2171452	311282
8	47541	3522	96	12844	1752415	252212	552748	20353	198331	511855	3492037	4226	137	21751	16555	153295	2595215	335236

O B S	S A U V A M M	S U C K V A M M	T R O V A M M	T U B E V A M M	W F V A M M	T O V A M M	S P R O M	# P R J M	S P R O V A F M	S P R O V A M M	W P R O V A F M	W P R O V A M M	W M E N M	S M E N M	R B M	R B V B M
1	894349	13193	18128	139399	444926	2754254	10326526	28559100	631868	867325	1562008	1886929	2508	1787	1079	55470
2	1157326	1907	18889	157856	629753	3274887	13113800	23697900	836120	1316591	1665152	1958296	3023	2156	1372	79070
3	1063817	59327	27023	202153	984876	3843331	12243600	21430200	1062184	1588237	1897737	2006500	3188	2564	1715	92120
4	858991	292376	38075	172269	1157866	4522203	14435400	18768500	1529878	2258964	2263239	3295	2993	2152	93867	
5	683072	80633	18913	193855	677037	3228099	10344600	17048400	823580	1288537	1692957	1946190	3111	2874	2018	95773
6	1015555	177772	31315	252995	1144654	5343570	14049100	20195000	1725252	2290750	2308996	3052820	3481	3039	2169	85945
7	895195	52879	32179	110718	1070435	4853738	12489600	16207000	1603042	2396184	1700669	2457554	3806	3487	2616	99797
8	837617	69924	37364	420868	865938	5408326	12570639	17539400	1412581	2559261	2079356	2849065	3233	3250	2404	42363

O B S	S B V A M	S B V A M	G N M	G N V A M M	O N V A M M	I H M	S H M	T O S T V A M	T O C A P M	T O M G M	V P K	P P K	P P M	F V P M	F V P M	F T P M	P P G N M
1	73950	159	147450	85865	735250	370	424	73	116	186	200647	1213191	.	4295	227.0	3205.2	9053.7
2	154400	175	158150	103626	1035552	17	216	74	121	184	216943	1644331	.	5179	199.2	2238.6	7107.7
3	123900	152	153250	105709	1087427	177	867	78	116	156	230854	1888418	.	5752	227.6	1994.7	5855.1
4	127500	191	171225	110544	1276046	.	.	78	149	169	280532	1949170	.	6288	232.0	1714.3	5313.9
5	138000	192	172900	101551	1180987	.	.	77	143	160	277970	1865632	.	5985	173.0	1462.9	4560.3
6	126200	204	163376	107811	1296837	49	760	77	150	171	292612	1983700	.	6520	269.1	1724.5	5252.2
7	150350	199	180200	120714	1842570	31	690	76	143	161	285262	2558865	.	7293	189.7	1121.5	3934.8
8	171800	188	171050	147612	1661855	40	976	76	142	157	266512	2384573	.	6483	226.8	1262.7	4644.5

PRODUCTION, CAPITAL AND VALUE DATA MANITOBA

OB S	B V A M	G B M	G B V A M	G N M	G N V A M	O N N	O N V A M	P W M	I H M	S H M	T O S T V A M	T O C A P M	T O M M	V P K	P P K	P P M	F V P M	F V P P	F T M M	P P G N	
9	158700	184	171900	133230	1709902	37	674	76	145	156	296262	2442628	.	6764	221.7	1290.8	4661.3	470.3	10.1	58.8	183.4
10	215500	162	237600	98218	1254478	26	650	88	95	144	232612	2044560	.	5313	234.8	1443.0	5552.9	530.9	9.6	58.8	114.5
11	213600	193	273000	104058	2133306	26	740	88	85	173	232817	2970038	.	5912	222.2	1059.5	5322.7	656.3	12.3	58.8	114.0
12	313400	205	243000	121107	2591038	70	850	89	90	196	383287	3692285	.	6578	207.6	960.3	5390.3	648.1	12.0	55.6	144.7
13	313300	212	233300	117185	2407540	26	510	89	90	167	386042	3544037	.	6423	165.8	884.2	4879.0	535.4	11.0	58.5	123.7
14	310400	172	218400	99985	1924348	65	442	88	91	159	360762	2943877	.	5447	163.7	793.5	4283.5	498.8	11.6	56.4	107.0
15	310400	178	227700	113153	2042316	19	190	88	91	172	378162	3108243	.	5970	174.9	915.0	4764.1	517.2	10.9	56.8	124.9
16	310400	182	228800	108764	1973393	38	268	89	90	162	380162	3045127	.	5775	201.9	1147.3	6049.6	602.1	10.0	56.6	152.7

OB S	D P S T V	M V P P	M V P M	W F P M	S A U P M M	P I C K P M	M I X P M	P I C K P M	P I P M	S A U P M	S T U R P M	T R O P M	T U B E P M	W H P M	P E R P M	S U C K P M	G O Y P M	R B V A P M	B B V A P M	G B V A P M	G N V A P M	O N V A P M	S T V A P M
9	106.4	17.2	800.5	46634.8	63948.8	166093	0.8	35.6	13.2	13.7	.	0.5	15.7	10.6	2.2	7.1	0.6	4.3	6.5	7.0	70.0	0.0	12.1
10	126.8	15.3	903.5	79433.5	140542	158705	1.3	30.4	13.4	25.3	.	0.5	6.5	14.3	1.3	6.4	0.8	4.1	10.5	12.6	61.4	0.0	11.4
11	135.2	21.0	1116.3	105164	86618.7	154526	2.2	29.0	12.2	16.3	.	0.4	9.7	19.8	1.4	8.7	0.3	3.5	7.4	9.3	72.0	0.0	7.8
12	92.5	21.6	1165.2	93108.8	65664.3	170369	4.6	31.6	12.7	12.2	.	0.8	10.7	17.3	2.6	7.3	0.2	4.3	8.5	6.6	70.2	0.0	10.4
13	79.1	18.8	914.9	89638.8	66864.4	161627	4.6	33.1	13.2	13.7	.	0.9	7.2	18.4	3.4	5.3	0.2	4.9	8.8	7.1	67.9	0.0	11.2
14	64.8	20.6	884.7	83328.4	44295.9	175976	3.5	41.0	12.0	10.3	0.2	0.6	3.7	19.4	2.6	6.2	0.4	4.4	10.5	7.4	65.4	0.0	12.3
15	75.2	19.1	910.4	85716.9	42249.6	159515	10.3	33.5	11.3	8.9	0.1	0.9	7.9	18.6	2.1	6.0	0.4	4.8	10.0	7.3	65.7	0.0	12.2
16	71.9	17.6	1054.4	89743.9	73669.3	125948	9.3	30.7	13.0	12.2	0.1	1.1	8.3	14.8	3.5	6.7	0.2	5.0	10.2	7.5	64.8	0.0	12.5

OB S	Y E A R	T O P R O M	M I X M	G U Y M	P I C K M	P I M	S A U M	S T U R M	C A V I M	T R O M	T U B E M	W H M	P E R M	S U C K M	G O Y A F M	P E R V A F M	S U C K V A F M
17	1955	10395500	985900	56830	7669100	4738100	4294000	44700	.	486200	2983700	5524300	699000	2910500	9677	42763	50011
18	1956	11370900	134300	30500	6849400	5134700	5254100	30300	5500	396200	2079500	6480900	660300	3870200	12507	56594	53350
19	1957	11931600	1347500	108200	5477100	4448100	5294700	73700	1100	334000	2626500	6280500	634300	5101300	19006	39573	88439
20	1958	11042100	1392500	57600	5715200	4490800	3839900	34400	600	385100	2522600	6894900	489900	5002600	9939	38018	74119
21	1960	11942100	1935100	61500	6892200	4381600	4655400	20500	800	404200	1830400	6172300	860900	4727200	11337	32983	57554
22	1961	13061300	1270100	59200	7016700	4202700	3193500	7900	300	348000	1946400	6997900	805500	4816300	10920	54151	57774
23	1962	13611000	1544800	43700	8115000	4561700	3665500	6700	400	504200	743500	8087000	697600	8035500	9803	48044	132486
24	1963	135759500	1078000	52200	7368000	4430700	5270000	5300	100	439100	918300	7870700	551300	7763000	13342	46606	93448

OB S	S T U R V A F M	C A V I V A F M	M I X V A F M	P I C K V A F M	P I V A F M	S A U V A F M	T R O V A F M	T U B E V A F M	W F V A F M	T O V A F M	S T U R V A M	C A V I V A M	M I X V A M	G O Y V A M	P E R V A M	P I C K V A M	P I V A M
17	33353	.	29439	1104399	166474	609473	82072	90431	723916	2947008	56270	.	54959	15118	74008	1896293	402571
18	63197	15500	20552	1116728	168563	787807	68795	70660	843946	3279179	101375	22009	44582	20336	85284	1822576	393172
19	64208	3100	44335	1062593	183214	1073543	56987	83903	819504	3540358	94496	4550	85879	31779	84241	1737879	372893
20	35370	1200	40222	1299925	211437	913537	52631	70643	1008882	3757143	49400	1900	91224	16421	62824	2036795	470600
21	24171	1600	55576	1517958	242772	1032317	55458	59868	724134	3866748	33757	2600	96892	19359	126663	2291135	460240
22	12640	600	34153	1225329	190804	549210	50120	53034	928746	3173981	13430	975	49604	16919	106928	1980408	409256
23	10720	600	27375	1753222	254031	764051	82910	22431	1125806	4229179	12730	1200	43717	15102	82929	2634269	568033
24	5480	200	27774	1766797	183620	1142484	58488	25691	969435	4356365	10070	300	48210	18909	86843	2691025	515699

PRODUCTION, CAPITAL AND VALUE DATA MANITOBA

DAYS	STURVAFM	CAVIVAFM	MIKXVAFM	PICKVAFM	PIVAFM	SAUVAFM	TROVAFM	TUBEVAFM	WVAFM	TOVAFM	STURVAFM	CAVIVAFM	MIKXVAFM	GOVAFM	PERVAFM	PICKVAFM	PIVAFM
25	7550	.	26947	1275080	181448	839563	51008	32679	1091272	3719566	10200	.	59703	32835	87340	1848445	443503
26	4500	200	41894	1313969	206232	1230554	119480	25194	1158772	4370593	6000	300	84890	67109	81113	1861437	474961
27	3250	.	54267	1682524	251263	1447966	95650	42190	1000926	4787502	4550	.	110833	75160	79039	2277867	539126
28	1500	.	44193	642623	275903	406027	56837	25134	992504	2529178	2000	.	83737	34851	26602	1047002	586565
29	3300	.	34263	826291	418322	663377	92193	48014	1076982	3275589	4000	.	79919	10514	27282	1227054	815679
30	2359	.	169150	922570	350756	711916	59621	60797	1075202	3352271	.	.	.	.	.	.	.
31	4621	.	145911	902746	218954	232955	11051	1999	608051	2126290	.	.	.	.	.	.	.
32	.	.	31284	791812	192274	238654	12127	3079	972376	2368839	.	.	.	.	.	.	.

DAYS	SAUVAFM	SUCKVAFM	TROVAFM	TUBEVAFM	WVAFM	TOVAFM	SPROM	WPRUM	SPROVAFM	SPKOVAFM	WPROVAFM	WPROVAFM	WMENM	SMENM	RBNM	RDM	DB
25	1399596	233458	107050	58305	2127681	6408116	16039400	12594300	2049926	3788477	1659640	2619639	2288	2096	.	.	.
26	1851322	291835	194629	54724	2060405	7038775	16226200	13358900	2566902	4448447	1803691	2590328	2347	3033	.	.	.
27	2017447	266354	170734	77300	1925784	7544698	16572000	13358300	2944408	4838671	1843094	2656027	2314	2954	.	.	.
28	700975	125251	112082	43508	1959384	4721417	12538700	8301600	1439972	2957814	1089206	1763603	1725	2242	.	.	.
29	1095432	242333	132716	93473	1769025	5497437	.	.	.	.	.	.	1650	2326	.	.	.
30	.	.	.	.	.	.	13282600	8104600	2224577	.	1127994	.	1677	2158	.	.	.
31	.	.	.	.	.	.	7669600	6429300	1230022	.	896268	.	1413	1240	.	.	.
32	.	.	.	.	.	.	.	.	.	.	.	.	.	2757	.	.	.

DAYS	3UVAM	GAM	GBVAM	GNM	GNVAM	ONM	ONVAM	PWM	IHM	SHM	TOSTVAM	TUCAPM	TOMENM	VPK	PPK	PPM	FVPM	FVPP	FTMM	PPGNM
25	4273140	.	4384	150.0	670.1	6531.2	848.4	13.0	58.0	.
26	4062000	.	5300	173.3	728.3	5499.1	812.4	14.8	62.1	.
27	3900000	.	5268	193.5	767.4	5631.5	908.8	16.0	63.5	.
28	3100000	.	3967	152.3	672.3	5253.4	637.6	12.1	53.6	.
29	3000000	.	3076	183.2	857.7	6471.6	823.9	12.7	59.6	.
30	3835	.	.	5576.8	874.1	15.7	.	.
31	2653	.	.	5314.3	801.5	15.1	.	.
32	2737	.	.	432.0	849.2	18.5	.	.

DAYS	PTSPM	MVPP	MVPM	FPMM	SAUPMM	PICKPMM	MIKXPPM	PICKPPM	PIPPM	SAUPPM	STURPPM	TROPPM	TUBEPPM	WHPPM	PERPPM	SUCKPPM	GOYPM	RBVAPM	BBVAPM	GBVAPM	GNVAPM	ONVAPM	STVAPM
25	.	22.4	1461.7	166129	58086.2	110703	5.8	16.9	13.9	15.0	0.0	1.2	3.5	25.4	1.6	16.3	0.2	.	.	.	.	.	.
26	.	23.8	1308.3	138528	74957.2	70633.8	6.4	12.8	12.4	13.5	0.0	1.6	3.0	25.2	1.7	22.7	0.4	.	.	.	.	.	.
27	.	25.2	1432.2	114562	90009.3	87258.9	7.1	15.4	13.1	15.9	0.0	1.3	4.2	20.2	2.2	20.1	0.5	.	.	.	.	.	.
28	.	22.7	1170.2	142244	68507.7	72112.4	7.6	13.7	19.6	13.0	0.0	1.6	2.5	27.1	1.1	13.3	0.5	.	.	.	.	.	.
29	.	21.4	1382.7	133031	103163	77598.1	5.3	12.0	20.8	15.5	0.0	1.5	4.3	20.6	0.9	19.1	0.1	.	.	.	.	.	.
30	.	.	.	140756	65916.0	72597.1	25.5	13.0	19.8	11.8	0.0	1.1	3.5	25.2	.	.	.	.	.	.	.	.	.
31	.	.	.	142733	24327.2	86453.1	33.9	16.3	17.8	4.6	0.0	0.4	0.2	26.9	.	.	.	.	.	.	.	.	.
32	3.4	15.4	15.7	5.4	0.1	0.5	0.4	36.0	1.1	22.0	.	.	.	.	.	.	.

PRODUCTION, VALUE AND CAPITAL DATA OTHER SOUTHERN LAKES 1953-1976

OBS	YEAR	PICKSL	PISL	SAUSL	TUBESL	WMSL	SUCKSL	PERSL	MIKSL	STURSL	CAVISL	TOPROSL	WVAFMSL	WVAMASL	WPROSL	SPROSL
1	1953	42830	25000	9700	23300	2100	71000	24700	9400	.	.	826700	83058	146743	72700	99100
2	1954	42030	27230	13700	58400	3000	90000	23000	15100	.	.	895100	94193	139148	83100	89000
3	1955	34130	42400	25100	89200	1700	161900	74000	12400	.	.	1188000	140563	186300	1081700	83500
4	1956	19200	30000	12400	108200	4100	192500	16000	16300	.	.	1748000	32387	4681200	681200	83600
5	1957	20900	34700	9400	128400	2900	182900	15700	.	4500	.	933300	70769	123000	401200	27700
6	1958	131200	52700	8100	56200	26000	363000	35700	26000	700	.	913500	99802	144105	503900	27700
7	1959	131200	31780	10700	117100	124500	233000	21700	105000	400	.	244100	104600	144105	503900	10700
8	1960	175900	319100	15700	137400	82500	278200	57100	100	.	.	619200	104600	144105	503900	10700
9	1961	5000	59700	11400	18000	93700	90400	35100	1100	.	.	611800	67501	111800	11800	.
10	1962	5000	59700	11400	18000	93700	90400	35100	1100	.	.	611800	67501	111800	11800	.
11	1963	5000	20100	14000	9400	101900	77800	27400	100	.	.	530500	73742	102308	580300	.
12	1964	5000	11430	8400	9400	3300	175700	11400	100	.	.	387500	38102	61607	487300	.
13	1965	5000	92400	6700	4300	600	253500	27100	100	.	.	487500	38102	61607	487300	.
14	1966	110200	128000	19400	22700	3400	306000	28700	300	.	.	659100	98341	84341	659100	.
15	1967	64100	131900	16000	8000	200	122300	8200	200	.	.	350400	33523	53282	360900	.

OBS	SVAFMSL	SVAMASL	WMSL	SMNSL	GNSL	FHSL	BBSL	ONSLSL	FSSL	PMSL	TONMSL	TOVAFMSL	TOVAMASL	PPMSL	TFHMSL	VMSL
1	1446	19750	3513	3	3	2	3	.	.	194	194	99504	160493	426134	619090	0.144137
2	7040	10284	4819	2	2	2	2	.	.	269	269	101253	149436	334839	677504	0.109208
3	5711	7974	3510	2	2	2	2	.	.	228	228	94674	154242	503509	644522	0.149397
4	34843	52550	4160	59	59	2	51	.	.	168	168	58674	444524	651101	0.115043	
5	26400	36900	4512	2	2	2	46	.	.	228	228	115609	175555	410219	633134	0.170079
6	11300	15900	5030	53	53	2	40	.	.	251	251	103907	147274	376335	683165	0.155411
7	0	0	4584	0	0	2	2	.	.	324	324	111102	164005	282068	677431	0.179136
8	0	0	3763	0	0	2	2	.	.	194	194	100480	144939	415560	693257	0.150336
9	0	0	2840	0	0	2	2	.	.	1	1	57483	93326	344948	613591	0.154459
10	0	0	3480	0	0	2	2	.	.	183	183	70792	127248	317213	556040	0.167201
11	0	0	0	0	0	2	2	.	.	102	102	36102	61607	379002	536005	0.219204
12	0	0	0	0	0	0	0	.	.	136	136	48740	78754	329044	688868	0.158109
13	0	0	0	0	0	0	0	.	.	185	185	71276	98341	356270	724784	0.145205
14	0	0	0	0	0	0	0	.	.	131	131	35523	53282	275406	466609	0.147830

OBS	VFSL	WVMSL	SMVSL	PICKPSL	PIPSL	SAUPSL	TUBEPSL	*HPSL	SUCKPSL	PEFPSL	MIXPSL	STURPSL
1	0.120363	0.116932	0.14577	51.8326	31.2084	1.17334	2.8184	0.2540	8.5884	2.98778	1.1371	.
2	0.112616	0.113033	0.10697	45.7356	30.5061	1.76844	6.4954	0.3337	19.0100	2.50511	1.7907	.
3	0.086650	0.078541	0.09042	29.7387	30.5306	2.18641	7.7700	0.1491	14.0401	6.44590	1.0801	.
4	0.078567	0.073326	0.07755	23.8168	40.2919	1.65042	14.4385	0.8490	12.7879	2.22282	2.1325	.
5	0.123500	0.087921	1.02179	22.3351	37.3891	1.09503	13.7282	0.8446	19.8653	1.57163	.	2.77900
6	0.106325	0.081299	0.95307	13.8895	24.1478	0.83405	10.1842	2.7525	41.9013	3.75820	0.0109	1.14392
7	0.121569	0.110323	1.03670	20.9213	24.7740	1.13798	6.6342	13.2509	23.1278	2.38338	.	.
8	0.134222	0.104014	1.45872	18.2450	32.1047	1.37948	12.3335	6.6902	22.9748	5.98430	.	.
9	0.085906	0.059395	.	6.9337	42.5882	1.44949	19.5607	12.3730	11.6856	5.24507	0.1644	.
10	0.110332	0.113332	.	8.5649	30.2779	1.37004	2.9421	15.3155	14.8415	6.12945	0.0327	.
11	0.121950	0.119332	.	15.5900	44.0062	2.37250	12.9421	17.3155	13.4012	4.72007	0.0172	.
12	0.093169	0.093169	.	14.9593	20.5290	2.21735	2.4000	0.8516	45.3419	2.54194	0.0258	.
13	0.108916	0.108916	.	18.0559	25.6480	1.49721	0.9609	0.1341	59.6480	6.05587	.	.
14	0.108141	0.108141	.	10.7194	23.4893	3.00410	5.4441	0.1359	46.4542	4.35442	4.0053	.
15	0.098429	0.098429	.	17.7612	42.5092	1.60251	2.2167	0.0854	33.8675	2.27210	4.0053	.

PRODUCTION, CAPITAL AND VALUE DATA MANITOBA

DBS	YEAR	T O P P R U M	M I X M	G O D Y M	P I C K M	P I M	S A U M	S T U R M	C A V I M	T R U M	T U B E M	W H M	P E R M	S U C K M	G O Y V A F M	P E R V A F M	S U C K V A F M	S T U R V A F M	C A V I V A F M
33	1972M	20000100	414500	5110	3638100	2932600	3127800	12000	138510	72200	5721600	107800	3793500	7169	14003	122990	15644		
34	1973M	21365010	933976	26302	3723218	3066735	3227017	9600	61798	538604	5269472	117024	4419239	3362	13602	208282	13796		
35	1974M	19751115	647651	42130	3673434	3063699	3042896	5700	87189	1035129	4322467	147625	3683125	8282	23661	195270	7503		
36	1975M	20610069	186137	32547	4462301	3430737	3288933	10706	15647	776381	5158953	120954	3126603	5799	20357	141933	13775		
37	1976M	19167414	414710	28328	5695241	3746586	2931089		25977	398808	5450378	79647	396650	4958	18164	15679			

DBS	M I X V A F M	P I C K V A F M	P I V A F M	S A U V A F M	T R O V A F M	T U B E V A F M	W F V A F M	T O V A F M	S T U R V A A M M	C A V I V A A M M	T R U V A A M M	T U B E V A A M M	W H V A A M M	P E R V A A M M	S U C K V A A M M	G O Y V V A A M M	P E R V V A A M M	S U C K V V A M M	S T U R V V A M M	C A V I V V A M M
33	33184	1531745	282493	1240095	28127	9172	1353613	4693235												
34	83594	1735359	404392	1264854	14461	51000	1423718	5228802												
35	108503	1747205	453384	1264287	24328	142703	1391240	5374220							11650300	8100915	3329518	5327228	2044708	
36	14192	2059397	379797	1450391	4064	162172	1531792	5894269							14039952	6570117	4198591		1695678	
37	53307	3491836	315257	1624222	6774	62964	1772511	7567672							12447704	6719710	5163550		2404122	

DBS	J V V A M M	M M M M	S M M M	R S V A M	B B M	B V V A M	G U M	G B V A M	G N M	G N V A M	U N M	D N V A M	P M M	I H M	S H M	T O S T V A M	T O C A P M	M G M	T O M E N M	V P P K	P P M
33		1683	2304	1210900	9	213400	48	66500	58705	1020181	72	7480	4	4	68	1177430	4283691	358690	3987	466.9	5016.3
34		1774	1907	1069000	8	208400	7	4000	42511	759118	45	11800	15	13	140	1766400	4871908	581725	3681	442.7	5459.0
35	3271532	1664	1930	1652850	18	164980	6	3600	40584	1216900	26	17000	20	9	56	2523890	8123675	984470	3594	243.1	5495.6
36		1858	1704																		
37																			3562		5381.1

DBS	F V P M	F V P P	F T M M	P P G N M	P P S T M	M V P P M	M V P P M	W F P P M	S A U P M M	P I C K P M M	M I X P M	P I C K P P M	P I P M	S A U P P M	S T U R P P M	T R O P P M	T U B E P P M	W H P M	P E R P P M	S U C K P P M	G O Y P P M	R B V A P P M	B B V A P P M	G B V A P P M	G N V A P P M	J N V A P P M	S T V A P P M	
33	1177.1	23.5		300.8	17.0				143506	78450.0	91249.1	2.1	18.2	14.7	15.6	0.1	0.7	0.4	28.6	0.5	18.9	0.0	28.7	5.0	1.6	23.8	0.2	27.5
34	1420.5	24.2		5391.7	12.2				143137	87666.9	101147	4.6	17.3	14.3	15.0	0.0	0.3	2.5	24.4	0.5	20.5	0.1	21.9	4.3	0.1	15.6	0.2	36.3
35	1495.3	27.2		5480.4	7.3				120269	84665.0	102210	3.3	18.6	15.5	15.4	0.0	0.4	5.2	21.9	0.7	18.6	0.2	20.3	2.0	0.0	15.0	0.2	31.1
36		28.6										0.9	21.7	15.6	16.0	0.1	0.1	3.8	25.0	0.6	15.2	0.2						
37	2124.6	39.5							153015	82287.7	159889	2.2	29.7	19.5	15.3		0.1	2.1	28.4	0.4	2.1	0.1						

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEG

OBS	YEAR	MIX	GOY	PER	PICK	PIL	SAUL	SUCK	STUR	CAVIL	TRO	TUBE	WHL	TOPRO	SPPRO	WPRO	BSS	SEV
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
1	1940 ^M	28600	35000	547500	3941000	3068000	8894600	10900	12100	623	.	1855400	3501500	21895223	8874523	13020700	913	1448
2	1941 ^M	30300	37600	253300	3606100	303500	10232700	5400	12200	511	.	1658500	4012000	20162111	11072311	9089800	1147	1625
3	1942 ^M	31900	54500	283800	2761300	449600	7597500	3300	6500	200	.	2364100	4137600	17690300	10445500	7244800	1421	1925
4	1943 ^M	315600	26400	211600	3584600	863800	6379500	1551500	2900	300	100	1502800	3734000	18177100	11356300	6820900	1699	2216
5	1944 ^M	113800	17100	109300	4787000	734000	5006200	144100	7000	.	.	484500	2356800	13753500	8273400	5480100	1636	2214
6	1945 ^M	432600	3300	199100	5032900	998900	3802100	844800	1100	22	.	2294300	2721200	16330322	10728222	5602100	1872	2403
7	1946 ^M	465400	600	223800	4935900	935100	3965100	139500	.	.	.	1222900	2420900	14309200	10522100	3787100	2303	2929
8	1947 ^M	421700	1300	251500	4838700	1092400	3568700	166900	.	.	.	4299800	1797100	16438100	10637700	5800400	2130	273J

OBS	YEAR	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
		V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
1	1060	1207042	528025	679017	1536603	721218	815385	.	.	.	.	.	.	.	.	.	.	.	.
2	1367	1431099	725399	675700	1865553	1097889	767664	.	.	.	.	.	.	.	.	.	.	.	.
3	1141	1612446	901953	710493	2133882	1331053	802829	.	.	.	.	.	.	.	.	.	.	.	.
4	1247	205639J	1229116	827277	2632526	1771474	861052	.	.	.	.	.	.	.	.	.	.	.	.
5	1106	1306569	672802	633767	1706291	1033781	672510	.	.	.	.	.	.	.	.	.	.	.	.
6	1315	2104586	1413263	691323	2616466	1789302	827164	.	.	.	.	.	.	.	.	.	.	.	.
7	1208	1884507	134739	540768	2682233	2021276	660957	.	.	.	.	.	.	.	.	.	.	.	.
8	874	1839451	1167674	671777	2977921	2095442	882479	.	.	.	.	.	.	.	.	.	.	.	.

OBS	YEAR	T	T	P	V	S	W	P	F	S	W	S	W	M	G	P	P	S	S	T	T	H
		O	O	P	P	V	V	P	F	S	W	S	W	M	G	P	P	S	S	T	T	H
1	2508	8730.2	481.3	210.5	270.7	.	0.8	0.7	0.8	40.5	59.5	0.1	0.2	2.5	18.0	14.0	40.6	0.0	0.1	.	.	8.5
2	2992	6738.7	468.3	242.4	225.8	.	0.8	0.7	0.9	54.9	45.1	0.2	0.3	1.3	17.9	1.5	50.8	0.0	0.1	.	.	8.2
3	3066	5769.8	525.9	294.2	231.7	.	0.8	0.7	0.9	59.0	41.0	0.2	0.3	1.6	15.6	2.5	42.9	0.0	0.0	.	.	13.4
4	346J	5248.9	593.8	354.9	238.9	.	0.8	0.7	1.0	62.5	37.5	1.7	0.1	1.2	19.7	4.8	35.1	8.5	0.0	0.000550143	.	8.3
5	3320	4142.6	393.5	202.7	190.9	.	0.8	0.7	0.9	60.2	39.8	0.8	0.1	0.8	34.8	5.3	36.4	1.0	0.1	.	.	3.5
6	3718	4392.2	566.1	380.1	185.9	.	0.8	0.8	0.8	65.7	34.8	2.6	0.0	1.2	30.8	6.1	23.3	5.2	0.0	.	.	14.0
7	4137	3458.8	455.5	324.8	130.7	.	0.7	0.7	0.8	73.5	26.5	3.3	0.0	1.6	34.5	6.5	27.7	1.0	.	.	.	8.6
8	3604	4561.1	510.4	324.0	166.4	.	0.6	0.6	0.8	64.7	35.3	2.6	0.0	1.5	29.4	6.6	21.7	1.0	.	.	.	26.2

OBS	YEAR	MIX	GOY	PER	PICK	PIL	SAUL	SUCK	STUR	CAVIL	TRO	TUBE	WHL	TOPRO	SPPRO	WPRO	BSS	SEV
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
9	1948 ^M	244700	3500	241900	5425500	889400	3945000	137800	.	.	.	4027800	1531900	16447500	11601400	4846100	2289	2822
10	1949 ^M	371400	3200	190200	5130100	802100	6950300	123700	.	.	.	1320500	2419300	17310800	9722900	7587900	1818	2293
11	1950 ^M	700900	7000	211700	5586600	742300	4762500	226600	.	.	.	2559900	3531500	18329000	11550100	6778900	2237	2601
12	1951 ^M	1625400	8200	405200	5956700	937800	3751000	257000	.	.	.	3075900	2742300	18769500	13124000	5645500	2523	3051
13	1952 ^M	1420700	1300	517800	5178400	1283200	3657100	276800	.	.	.	1717200	2572100	16625100	13042400	3582700	2651	3139
14	1953 ^M	777600	700	284700	5014900	805300	2194400	253900	.	.	.	652600	1844900	11829000	9058000	2751000	1906	2344
15	1954 ^M	2855100	2700	245000	4334700	586800	2214300	270600	.	.	.	1994300	2157400	14660900	11612700	3048200	2039	2681
16	1955 ^M	3216200	19700	478600	4810700	786700	3082600	415400	.	.	.	2582100	2177800	17569800	13472900	4096900	1951	2539

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEG

OBS	ENRNL	TOVAFML	SVAFML	WVAFML	TOVAMAL	SVAMAL	WVAMAL	BSVAL	FCL	FCVAL	FVL	FVVAL	GNL	GNVAL	ONL	PWL	IHL	SHL	STL	TUVAL	
9	854	1757565	1309346	448219	3020857	2404785	616072	.	.	.	.	.	.	.	.	.	.	.	.	.	.
10	720	1821951	875025	946926	2987475	1745208	1242267	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11	842	2561050	1502024	1059026	4286459	2910649	1375490	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	935	2509957	1763702	760155	4275976	3189264	1086712	.	.	.	.	.	.	.	.	.	.	.	.	.	.
13	752	2509853	1636603	373250	3298908	2775296	523612	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14	574	1514353	1160781	352574	2512269	1975510	536799	.	14	.	32	.	40284	.	29	80	80	21	.	.	.
15	659	1659666	1349016	310650	2952974	2422004	530970	.	14	.	131	.	44753	.	6	80	80	21	.	.	.
16	614	1761893	1392028	369865	3053655	2510076	543579	.	14	.	130	.	43433	.	16	80	80	21	.	.	.

OBS	TOCAPL	TOCENL	PPML	VPL	SVPL	WVPL	PPGNL	FTML	SFTML	WFTML	SPRUL	WPRDPL	MIXPL	GOYPL	PERPL	PICKPL	PIPL	SAUPL	SUCKPL	TURRPL	TURDPL	WHPPL	
9	.	3676	4474.3	478.1	356.2	121.9	.	0.6	0.5	0.7	70.5	29.5	1.5	0.0	1.5	33.0	5.4	24.0	0.8	.	.	24.5	9.3
10	.	3013	5745.4	604.7	290.4	314.3	.	0.6	0.5	0.8	56.2	43.8	2.1	0.0	1.1	27.6	4.6	40.2	0.7	.	.	7.5	14.0
11	.	3643	5031.3	703.0	412.3	290.7	.	0.6	0.5	0.8	63.0	37.0	3.8	0.0	1.2	30.5	4.0	26.0	1.2	.	.	14.0	19.3
12	.	4046	4639.0	625.3	437.4	187.9	.	0.6	0.6	0.7	69.9	30.1	8.7	0.0	2.2	31.7	5.0	20.0	1.4	.	.	16.4	14.6
13	.	3941	4218.5	510.0	415.3	94.7	.	0.6	0.6	0.7	78.5	21.5	8.5	0.0	3.1	31.1	7.7	22.0	1.7	.	.	10.3	15.5
14	.	3118	3753.8	485.4	372.3	113.1	.	0.6	0.6	0.7	76.7	23.3	6.6	0.0	2.4	42.4	6.8	13.6	2.1	.	.	5.5	15.4
15	.	3340	4389.5	496.9	403.9	93.0	.	0.6	0.6	0.6	79.2	20.8	19.5	0.0	1.7	29.6	4.0	15.1	1.8	.	.	13.0	14.7
16	.	3203	5485.4	550.1	434.6	115.5	.	0.6	0.6	0.7	76.7	23.3	18.3	0.1	2.7	27.4	4.5	17.5	2.4	.	.	14.7	12.4

OBS	YEAR	MIXL	GOYL	PERL	PICKL	PIPL	SAUL	SUCKL	STURL	CAVILL	TURDOL	TUBEL	WHL	TOPROL	SPROL	WPRDOL	BSL	WML		
17	1956	799600	20300	390200	3909900	785100	3207800	480100	.	.	.	.	.	2592000	1649900	13835900	10769800	3066100	1834	2420
18	1957	573300	34400	363900	2858900	537300	4026400	513800	12100	700	.	.	.	1607400	1849300	12478000	9615500	2862500	1439	1974
19	1958	1302200	27000	393700	2202200	517000	4319200	441000	16600	400	.	.	.	2017800	1616300	12853400	11058600	1764300	1697	2102
20	1959	255000	8900	269300	1154100	302600	2569800	325200	8200	200	.	.	.	1963500	1870500	9727300	7077500	2649300	1357	1748
21	1960	1534300	1200	341200	1360000	391700	3592800	378600	9000	800	.	.	.	1275400	1119800	10024800	7581700	2443100	1099	1470
22	1961	985700	4900	416400	2111300	484500	2540700	146200	7900	300	.	.	.	1523100	1394200	9595200	7427000	2163200	941	1405
23	1962	1048900	4400	347300	2803400	517300	3000800	541000	6700	400	.	.	.	4997700	1671600	10441500	8213000	2228500	1177	1632
24	1963	989200	1600	253000	2037800	643400	4195800	277000	5300	100	.	.	.	708300	1316600	10428100	7975000	2453100	1360	1807

OBS	ENRNL	TOVAFML	SVAFML	WVAFML	TOVAMAL	SVAMAL	WVAMAL	BSVAL	FCL	FCVAL	FVL	FVVAL	GNL	GNVAL	ONL	PWL	IHL	SHL	STL	TUVAL	
17	460	1505981	1260083	245898	2676430	2325750	350680	.	11
18	499	1417096	1063424	353672	2553678	2049109	514569	.	11	.	126	.	37424	.	20	80	80	21	.	.	
19	455	1734935	1448125	286610	2980684	2529497	431187	.	11	.	98	.	36227	.	44	80	80	21	.	.	
20	354	1479305	1232605	246700	2389324	2014158	375166	.	11	.	85	.	36458	.	74	80	80	21	.	.	
21	382	1625333	1337882	287951	2409317	2019987	389330	.	11	.	87	.	35251	.	25	80	80	21	.	.	
22	382	1267364	974211	293153	2061897	1638822	423075	.	11	.	83	.	31005	.	188	80	80	21	.	.	
23	430	1727345	1336667	391178	2808384	2306439	501945	.	9	.	90	.	40247	.	191	60	60	21	.	.	
24	471	1860995	1556600	304395	2879285	2357977	521308	.	10	.	90	.	46828	.	200	55	55	21	.	.	
											90	.	51249	.	202	55	55	.	21	.	.

PRODUCTION, VALUE AND CAPITAL DATA LAKE WINNIPEG

OBS	YEAR	MIXLW	GOYLW	PERLW	PICKLW	PILLW	SAULW	SUCKLW	STURLW	CAVILLW	TRODLW	TUBELLW	HLW	TOPROLW	SPROLW	WPROLW	BSSLW	SMENLW
33	1972	.	.	46800	1837500	668600	2880100	54700	500	.	.	.	1572200	7070400	.	.	480	1185
34	1973	135077	.	90887	1850262	620080	3001038	95293	200	.	.	288213	1650381	7731431	.	.	663	1000
35	1974	283060	200	128624	1833708	593289	2560732	193787	.	.	.	619308	1632576	7845284	.	.	660	.
36	1975	127981	523	93504	2237651	771773	2700706	120309	55	.	.	408832	1825451	8347137	.	.	.	.
37	1976	68339	7394	55116	2674061	821212	2491639	.	.	.	.	16776	1717675	7854212	.	.	.	846

OBS	MEMENLW	TOVAFMLW	SVAFMLW	WVAFMLW	TOVAMALW	SVAMALW	WVAMALW	BVALW	FCLW	FVALW	FVLW	FVALW	GNLW	GNVALW	ONLW	PWLW	IHLW	SHLW	STLW	TOPLVALW
33	384	2607479	.	.	.	.	.	425200	7	200000	.	.	16442	389500	.	.	.	.	.	258000
34	378	2899827	.	.	.	.	.	587200	7	200000	163	162000	16804	262528	.	10	9	37	.	1012000
35	.	.	3329518	2044708	.	.	.	1065000	65	132800	.	.	11510	351900	.	15	9	30	.	1000000
36	.	.	4198591	1695678	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
37	401	843068	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

OBS	TOCAPLW	TOMENLW	PPMLW	VPLW	SVPLMLW	WVPLMLW	PPGNLW	FTMLW	SFTMLW	WFTMLW	SPRUPPLW	WPRJPLW	MIXPPLW	GOYPLW	PERPLW	PICKPLW	PIPLW	SAUPLW	SUCKPLW	STURPLW	TROPLW	TUBEPPLW	WHLW
33	1737900	1569	4506.3	1661.9	.	.	18.2	.	.	.	.	.	.	.	0.7	26.0	9.5	40.7	0.9	0.0	.	.	22.2
34	2406948	1378	5610.6	2102.2	.	.	29.4	.	.	.	.	.	1.7	.	1.2	23.9	8.0	36.8	1.2	0.0	.	3.7	21.3
35	3315700	.	.	.	.	.	22.3	.	.	.	.	.	3.6	0.0	1.6	23.4	7.6	32.6	2.5	.	.	7.9	20.8
36	.	.	.	.	.	.	.	.	.	.	.	.	1.9	.	1.1	28.8	4.2	32.4	1.4	.	.	5.6	21.9
37	.	1247	6298.5	676.1	.	.	.	.	.	.	.	.	0.9	0.1	0.7	34.0	10.5	31.7	.	.	.	0.2	21.9

PRODUCTION, VALUE AND CAPITAL DATA LAKE MANITOBA

OBS	YEAR	MIXLB	GOYLB	PICKLB	PERLB	PILB	SAULB	SUCKLB	TUBELB	WHLB	TROLB	TOPROLB	WVAFMLB	WVANALB	#MENLB
1	1940/41	2300	200	1788400	1598000	829700	3817800	143000	1206500	600	.	9386500	611457	731509	831
2	1941/42	.	.	2169400	951600	481000	3750600	280100	1334800	8000	.	8975500	668521	798333	977
3	1942/43	500	100	1435000	538100	513100	1592000	497400	1166500	31300	.	5774000	551171	660541	1111
4	1943/44	400	.	1160400	295800	438600	935300	730900	155300	3400	.	3720100	436639	375376	782
5	1944/45	400	.	1167000	425100	380500	1011300	717200	375600	600	.	4077700	449500	504674	882
6	1945/46	500	400	1276000	499400	717300	1620400	342500	1482200	14100	.	5952800	829429	1110869	762
7	1946/47	.	.	1509300	515100	236900	826700	253500	770400	100	.	4112000	525787	766943	952
8	1947/48	.	.	2016200	446700	164300	398200	126500	245000	1800	.	3400700	603708	777600	917
9	1948/49	.	100	1965900	379600	676400	205600	216600	504400	100	.	3948700	468553	711473	845
10	1949/50	.	.	1519400	129300	869000	402700	275900	364500	3000	.	3563400	401014	558570	736
11	1950/51	.	.	1666500	112900	710000	247600	311200	159200	1700	.	3209100	491033	730640	612
12	1951/52	8400	.	2715000	358500	714000	474200	463800	345600	500	.	5080000	718332	1156939	773
13	1952/53	8300	.	2091800	466200	894400	539300	149200	296500	1600	.	4447800	602313	848012	833
14	1953/54	21500	.	1484500	247900	423500	162800	317000	107700	4100	.	2769300	361627	583736	804
15	1954/55	65100	.	1587700	241900	452000	227600	276700	118900	4100	.	2974300	392038	572511	783
16	1955/56	37300	.	2092700	599200	1175000	1043100	335800	179700	2100	.	5464900	646884	955299	752
17	1956/57	173000	.	1035100	280900	1683400	1002900	383600	241000	1300	.	4801200	469222	666610	686
18	1957/58	89500	.	1735900	263100	1972700	1160900	1221900	201400	19000	.	6634400	744975	1083795	795
19	1958/59	242800	.	770600	177600	1224200	885400	1310500	379400	13500	.	5004300	624816	870476	886
20	1959/60	291000	.	1603700	168000	942200	1167400	1139300	338700	6900	.	5657200	836564	1196893	890
21	1960/61	345900	.	1437600	348800	1037000	1303900	1303900	248500	1100	.	5569500	626236	922018	950
22	1961/62	286900	.	499500	263600	985600	509900	612700	159300	1300	.	3318800	334488	499843	855
23	1962/63	277800	.	862600	209500	968000	500100	3485200	87100	9300	.	6399600	580710	768979	870
24	1963/64	69900	.	1432500	178600	439400	882900	4475500	73500	9500	.	7561800	682192	1094231	812
25	1964/65	551600	.	754700	65900	584800	868600	2204800	150000	16400	.	5196800	645299	921555	777

OBS	GNLB	ONLNB	SHLNB	PPMLB	FVPPMLB	FTMLB	MVPPMLB	MIXPLB	GOYPLB	PICKPLB	PERPLB	PIPLB	SAUPLB	SUCKPLB	TUBEPLB	WHPLB	TROPLB
1	.	.	.	11295.4	0.1	83.6	0.1	0.0	0.0	19.1	17.0	8.8	40.7	1.5	12.9	0.0	.
2	.	.	.	9186.8	0.1	83.7	0.1	.	.	24.2	10.6	5.4	41.8	3.1	14.9	0.1	.
3	.	.	.	5197.1	0.1	83.4	0.1	0.0	0.0	24.9	9.3	8.9	27.6	8.6	20.2	0.5	.
4	.	.	.	4757.2	0.1	91.8	0.1	0.0	.	31.2	8.0	11.8	25.1	19.6	4.2	0.1	.
5	.	.	.	4623.2	0.1	89.1	0.1	0.0	.	28.6	10.4	9.3	24.8	17.6	9.2	0.0	.
6	.	.	.	7812.1	0.1	74.7	0.2	0.0	0.0	21.4	8.4	12.0	27.2	5.8	24.9	0.2	.
7	.	.	.	4319.3	0.1	68.6	0.2	.	.	36.7	12.5	5.8	20.1	6.2	18.7	0.0	.
8	.	.	.	3708.5	0.2	77.6	0.2	.	.	59.3	13.1	4.8	11.7	3.8	7.2	0.1	.
9	.	.	.	4673.0	0.1	65.9	0.2	.	0.0	49.8	9.6	17.1	5.2	5.5	12.8	0.0	.
10	.	.	.	4842.1	0.1	71.8	0.2	.	.	42.6	3.6	24.4	11.3	7.7	10.2	0.1	.
11	.	.	.	5243.6	0.2	67.2	0.2	.	.	51.9	3.5	22.1	7.7	9.7	5.0	0.1	.
12	.	.	.	6571.8	0.1	62.1	0.2	0.2	.	53.4	7.1	14.1	9.3	9.1	6.8	0.0	.
13	.	.	.	5539.5	0.1	71.0	0.2	0.2	.	47.0	10.5	20.1	12.1	3.4	6.7	0.0	.
14	32940	56	13	3444.0	0.1	62.0	0.2	0.8	.	53.6	9.0	15.3	5.9	11.4	3.9	0.1	.
15	34212	13	13	3798.2	0.1	68.5	0.2	2.2	.	53.4	8.1	15.2	7.7	9.3	4.0	0.1	.
16	32907	22	13	7257.2	0.1	67.7	0.2	0.7	.	38.3	11.0	21.5	19.1	6.1	3.3	0.0	.
17	30522	10	13	6968.8	0.1	70.4	0.1	3.6	.	21.6	5.9	35.1	20.9	8.0	5.0	0.0	.
18	32763	67	13	8345.2	0.1	68.7	0.2	1.3	.	25.7	4.0	29.7	17.5	18.4	3.0	0.3	.
19	38667	27	13	5647.9	0.1	71.8	0.2	4.9	.	15.4	3.5	24.5	17.7	26.2	7.6	0.3	.
20	38745	34	13	6356.4	0.1	69.9	0.2	5.1	.	28.3	3.0	16.7	20.6	20.1	6.0	0.1	.
21	41040	41	13	5862.6	0.1	67.9	0.2	6.2	.	25.8	6.3	18.6	15.2	23.4	4.5	0.0	.
22	36727	46	13	3881.6	0.1	66.9	0.2	8.6	.	15.1	7.9	29.7	15.4	18.5	4.8	0.0	.
23	35061	90	13	7335.9	0.1	75.5	0.1	4.3	.	13.5	3.3	15.1	7.8	54.5	1.4	0.1	.
24	35238	33	13	9312.6	0.1	62.3	0.1	0.9	.	13.9	2.4	5.8	11.7	59.2	1.0	0.1	.
25	.	.	.	6688.3	0.1	70.0	0.2	10.6	.	14.5	1.3	11.3	16.7	42.4	2.9	0.3	.

PRODUCTION, VALUE AND CAPITAL DATA LAKE MANITOBA

OBS	YEAR	MIXLB	GOYLB	PICKLB	PERLB	PILB	SAULB	SUCKLB	TUPELB	WHLB	TROLB	TOPROLB	WVAFMLB	WVAMALB	WMENLB	GNLB	GNL3
26	1965M	712300	.	514200	74700	449400	714100	2785500	109700	2600	.	5363000	650436	893408	845	.	.
27	1965M	1409100	.	656400	147900	229700	1440500	2479800	144300	2500	.	6510200	791221	1061004	820	.	.
28	1967M	710700	.	140500	60500	329400	404300	517100	41500	900	.	2204900	176072	300545	551	.	.
29	1968M	627100	.	290500	57900	645700	313300	1871900	30400	3100	.	3839900	300823	489040	530	.	.
30	1969M	2115200	.	528600	.	406100	456600	.	54800	13600	.	3574900	426652	.	528	.	.
31	1970M	2015500	.	330200	.	328500	531600	.	5300	8300	.	3269300	431464	.	606	.	.
32	1971M	200913	.	235254	120418	304593	247701	486392	536	23322	.	1765129	.	.	.	.	.
33	1972M	302600	.	504500	51000	213900	226600	832000	.	10900	.	2191500	2607479	.	.	23320	51
34	1973M	161347	.	455408	16219	464730	214757	1746308	.	7707	.	3066536	486133	.	667	13330	37
35	1974M	521439	.	174143	8362	443462	467717	1193245	.	10599	.	2624167	509046	.	.	13967	5
36	1975M	43011	.	358072	13824	301556	580061	1114023	.	13087	.	2423634	543203	.	.	.	.
37	1976M	323531	.	509615	.	654397	425873	.	.	14181	.	1927597	722930	.	.	.	.

OBS	SHLB	PPMLB	FVPPLB	FTMLB	MVPPLB	MIXPLB	GOYPLB	PICKPLB	PERPLB	PIPLB	SAUPLB	SUCKPLB	TUPEPLB	WHPLB	TROPLB
26	.	6346.75	0.12128	72.8039	0.166587	13.2911	.	9.5879	1.39288	8.3796	13.3153	51.9392	2.04550	0.04848	.
27	.	7939.27	0.12154	74.5729	0.162976	21.6445	.	10.9825	2.27182	3.5283	22.1268	38.0910	2.21652	0.03440	.
28	.	4001.63	0.07985	58.5842	0.136308	32.2328	.	6.3722	2.74389	14.9395	18.3364	23.4323	1.68217	0.04082	.
29	.	7245.09	0.07634	61.5130	0.127357	16.3312	.	7.5653	1.50785	16.8155	8.1591	48.7487	0.79169	0.04073	.
30	.	6770.64	0.11935	.	.	59.1681	.	14.7804	.	11.3598	12.7724	.	1.53291	0.33043	.
31	.	5395.21	0.13197	.	.	61.6486	.	10.0994	.	10.0474	17.7887	.	0.16210	0.25386	.
32	.	.	.	.	.	16.2545	.	13.3279	6.82205	20.6553	14.0330	27.5556	0.03037	1.32125	.
33	12	.	1.18981	.	.	16.0894	.	23.0208	2.32717	9.7604	10.3399	37.9649	.	0.47738	.
34	12	4597.51	0.15053	.	.	5.2615	.	14.8509	0.52890	15.1549	7.0032	56.9492	.	0.25133	.
35	12	.	0.19398	.	.	12.2492	.	6.6361	0.31865	17.0897	17.8311	45.4714	.	0.40390	.
36	.	.	0.22413	.	.	1.7746	.	14.7742	0.57038	12.4423	23.9335	45.9650	.	0.53997	.
37	.	.	0.37504	.	.	16.7842	.	26.4378	.	33.9488	22.0935	.	.	0.73568	.

PRODUCTION, CAPITAL AND VALUE DATA LAKE WINNIPEGOSIS

OBS	YEAR	MIXLWS	GUYLWS	PERLWS	PILWS	PICKLWS	SAULWS	SUCKLWS	TJBELWS	WHLWS	TOPROLWS	SPROLWS	WPROLWS	SVAFMLWS	WVAFMLWS
1	1947/01	.	92800	89600	1461100	2009700	1289900	1042800	578400	28200	5430500	898300	4532200	48879	165334
2	1947/02	.	169600	134700	871500	3001100	207500	915200	225800	31600	5557100	1411100	4146000	87617	224634
3	1947/03	1300	274000	154700	912800	3122400	201300	1893500	934700	44300	7539000	1160100	6372900	80869	442285
4	1947/04	.	403200	65500	769500	2808900	78100	2520200	461100	18300	7129300	1779400	5350400	168277	472086
5	1947/05	.	203300	84100	595300	2296800	127100	1461100	1288200	9300	6062200	1292700	4769500	94155	348471
6	1947/06	.	93000	54000	616200	1752500	202700	2209800	760000	15700	5700900	2140500	3560400	171005	294467
7	1947/07	.	61800	40600	765200	1570500	132600	1919800	128400	18200	4637100	991900	3645200	155617	260389
8	1947/08	.	45800	36400	975200	1770000	135500	1736600	151500	21800	4873800	1046900	3826900	169256	354581
9	1947/09	.	125200	36600	1146300	1369700	134500	1780700	25600	11900	4632500	989500	3543000	151214	280764
10	1947/10	.	172300	25700	1172200	951200	84000	1392500	35800	9100	3862500	1032800	2829700	127898	149545
11	1951/01	.	62300	71900	1450800	563900	75200	2075800	18500	25400	4360900	862600	3498300	118877	210986
12	1951/02	.	15800	91000	1652600	841700	67800	1771000	25400	21800	4477100	937000	3540100	132373	236892
13	1952/03	.	15000	61200	1219700	1452000	65300	1174700	28900	11800	4028600	1118500	2910100	152665	189252
14	1953/04	.	14700	52900	935400	1864300	34900	796200	31300	12000	3739800	990900	2748900	142254	239316
15	1954/05	.	33500	84400	1364900	2012800	47400	1059600	12900	20100	4635600	1197500	3438100	161442	292284

OBS	SVAMALWS	WVAMALWS	BSLWS	SMENLWS	WMENLWS	GNLWS	GBLWS	ONLWS	PWLWS	IHLWS	FHLWS	FSLWS	BBLWS	TVAMALWS	TOMENLWS	TVAFMLWS	VPMLWS
1	74379	203358	49	170	321	.	.	.	.	.	.	.	.	277737	491	214213	436.3
2	129158	270232	49	170	298	.	.	.	.	.	.	.	.	399360	468	312251	657.2
3	153299	495347	50	177	435	.	.	.	.	.	.	.	.	649146	612	523154	854.8
4	265910	318933	58	176	625	.	.	.	.	.	.	.	.	785793	801	640363	799.5
5	153125	414375	59	157	591	.	.	.	.	.	.	.	.	572500	748	442626	591.7
6	280339	362139	51	161	598	.	.	.	.	.	.	.	.	642228	759	465472	613.3
7	211915	350133	58	187	530	.	.	.	.	.	.	.	.	572068	717	416006	530.2
8	316190	403591	81	191	467	.	.	.	.	.	.	.	.	724691	658	523337	795.3
9	262138	390532	82	188	495	.	.	.	.	.	.	.	.	602740	683	431978	632.5
10	255742	197639	78	171	330	.	.	.	.	.	.	.	.	453396	501	277443	533.8
11	211947	283953	54	152	234	.	.	.	.	.	.	.	.	495410	386	329863	354.6
12	233747	324704	64	148	338	.	.	.	.	.	.	.	.	558511	486	369265	759.8
13	269748	293805	64	164	309	.	.	.	.	.	.	.	.	583553	473	341917	722.9
14	272334	399815	17	156	310	14714	40	.	8	11	21	.	1	672210	466	381570	818.6
15	264341	426643	14	154	430	19734	47	.	8	11	21	.	1	690985	584	453526	776.6

OBS	PPMLWS	SVP4LWS	WVPMLWS	SFTMLWS	WFTMLWS	TFTMLWS	MIXPLWS	GOYPLWS	PERPLWS	PIPLWS	PICKPLWS	SAUPLWS	SUCKPLWS	TUDEPLWS	WHLWS
1	11050.1	237.5	515.1	65.7	81.3	77.1	.	1.7	1.6	26.9	37.0	2.4	19.2	10.7	0.5
2	11874.1	515.4	753.8	67.8	83.1	78.2	.	3.1	2.4	15.7	54.0	3.7	16.5	4.1	0.5
3	12318.6	458.9	1016.7	52.8	89.2	80.6	0.0	3.6	2.1	12.1	41.4	2.7	25.1	12.4	0.5
4	8901.1	956.1	755.3	63.1	91.0	81.5	.	5.7	0.9	10.8	39.4	1.1	35.3	6.5	0.3
5	8104.5	599.7	589.6	59.5	84.1	77.3	.	3.3	1.4	9.8	37.9	2.1	24.1	2.2	0.2
6	7511.1	1062.1	492.4	61.1	81.3	72.5	.	1.6	0.9	10.8	30.7	3.6	38.8	13.3	0.3
7	6467.4	832.2	491.3	73.4	72.3	72.7	.	1.3	0.9	16.5	33.9	2.9	41.4	2.8	0.4
8	7407.0	688.2	758.2	53.5	86.7	72.2	.	1.0	0.7	20.0	36.3	2.8	35.6	3.1	0.3
9	6792.6	604.3	557.2	57.7	82.4	71.7	.	2.7	0.8	24.7	29.6	2.9	38.4	0.6	0.3
10	7709.6	747.9	453.2	50.0	75.7	61.2	.	5.0	0.7	30.3	24.6	2.2	36.1	0.9	0.2
11	1127.7	782.1	901.5	56.2	74.3	66.6	.	1.9	1.6	33.3	12.9	1.7	47.6	0.4	0.5
12	9212.1	694.4	700.2	56.6	72.9	66.1	.	0.4	1.8	36.9	18.8	1.5	39.6	0.6	0.5
13	8517.1	930.9	612.5	52.7	64.4	58.6	.	0.4	1.5	30.3	36.0	1.6	29.1	0.7	0.3
14	8025.3	911.9	772.0	52.2	54.9	56.8	.	0.4	1.4	25.0	49.9	0.9	21.3	0.8	0.3
15	7937.7	1046.3	679.3	61.1	68.5	65.6	.	0.7	1.8	29.4	43.4	1.0	22.9	0.3	0.4

OBS	YEAR	MIXLWS	GUYLWS	PERLWS	PILWS	PICKLWS	SAULWS	SUCKLWS	TJBELWS	WHLWS	TOPROLWS	SPROLWS	WPROLWS	SVAFMLWS	WVAFMLWS
16	1955/06	.	19600	57800	1601900	2255600	71100	1431100	2700	16800	5456600	1518000	3938600	179411	245687
17	1955/07	.	15200	11300	1459300	1174000	33000	1743500	4400	26900	4668800	1899100	2779700	173427	110546
18	1955/08	.	26300	10900	1583900	656100	37800	1950000	900	30600	4272000	1454300	2817700	121778	103363
19	1955/09	.	14400	24900	1722300	562000	57200	2393800	4800	15500	5294900	2240100	3054800	160438	132186
20	1955/10	11700	3900	20800	2268800	346600	105000	3257600	14800	37900	6515100	2561600	3953500	210321	199188
21	1960/01	33400	2900	111400	1676000	2162300	127600	2736000	5600	56900	6914000	2277300	4636700	337575	375327
22	1960/02	15000	4900	39700	1345100	2165400	73500	3911900	6500	28900	7644900	2363200	5281700	246307	347203
23	1960/03	17900	2300	103000	1672600	1624400	91400	3789200	3300	104300	7408400	2561900	4846500	314615	284157
24	1960/04	17900	4600	92100	1248100	1269500	147100	2761800	2500	112400	5656200	2124400	3531800	314706	190679
25	1960/05	12600	3300	114900	958600	602900	161600	1676000	.	32100	3862200	1254800	2307400	169274	146594
26	1960/06	14200	11300	59000	773500	735000	145100	2542100	400	44400	3935000	1333000	2602000	135409	188647
27	1960/07	10600	24900	91600	946000	630500	163700	2433400	1300	28100	4330100	1150200	3179900	198913	254057
28	1960/08	3800	20300	21300	1057200	277500	36100	1561300	300	20600	2980600	919800	2060800	82834	120194
29	1960/09	1300	10500	4700	1446600	145600	31400	2447600	300	23100	4119100	1823500	2245600	110830	125440
30	1960/10	187200	.	.	930700	113100	30800	.	300	92300	3044400	1402600	1641800	100570	98749

PRODUCTION, CAPITAL AND VALUE DATA LAKE WINNIPEGOSIS

003	SVAR	VAL	AREAS	USL	SHEN	AMEN	GALL	BEU	OWLS	PLWS	INLWS	FHLWS	FSLWS	BEUWS	TVAM	LAWS	TOEN	LAWS	TVAF	MLWS	VPRLWS
17	20000	11	201	1091	52	1	9	10	21	21	1	785075	613	470000	77047						
18	20000	11	170	1407	49	1	10	11	22	22	1	479920	411	220000	5004						
19	20000	10	177	1345	63	1	8	11	22	22	1	420732	393	220000	5004						
20	20000	10	104	1150	63	1	8	11	22	22	1	509143	384	220000	5004						
21	20000	10	184	1265	58	2	8	11	22	22	1	704143	410	400000	10000						
22	20000	10	203	1065	62	4	8	11	22	22	1	1041000	519	700000	10000						
23	20000	10	214	1700	65	11	8	11	22	22	1	959000	559	700000	10000						
24	20000	10	220	1907	65	13	7	10	21	21	21	822024	619	500000	3373						
25	20000	10	303	1982	71	4	7	10	21	21	21	492101	541	500000	3373						
26	20000	10	320	232	71	1	7	10	21	21	21	479323	443	220000	72133						
27	20000	10	272	272	71	1	7	10	21	21	21	429223	500	220000	72133						
28	20000	10	184	210	71	1	7	10	21	21	21	349323	394	220000	72133						
29	20000	10	132	293	71	1	7	10	21	21	21	409370	393	220000	72133						
30	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
31	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
32	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
33	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
34	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
35	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
36	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
37	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
38	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
39	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
40	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
41	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
42	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
43	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
44	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
45	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
46	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
47	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
48	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
49	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
50	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
51	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
52	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
53	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
54	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
55	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
56	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
57	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
58	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
59	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
60	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
61	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
62	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
63	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
64	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
65	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
66	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
67	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
68	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
69	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
70	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
71	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
72	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
73	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
74	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
75	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
76	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
77	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
78	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
79	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
80	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
81	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
82	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
83	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
84	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
85	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
86	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
87	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
88	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
89	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
90	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
91	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
92	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
93	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
94	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
95	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
96	20000	10	171	175	71	1	7	10	21	21	21	421330	393	220000	72133						
97	20000	10	171	175	71	1	7	10	21	21	21										

PRODUCTION, VALUE AND CAPITAL IN NORTHERN MANITOBA

OBS	YEAR	TOTAL PRONM	SPRONM	WPRONM	WFFM	PICKNM	PINM	TRONM	TUBENM	STURNM	MIXNM	GOYNM	SAUNM	PERNM	SVAFNM	WVAFNM
1	1940	1467475	248275	1219200	757400	352400	129200	94200	85300	40300	.	5000	.	.	20227	85448
2	1941	1349355	376855	972500	589900	297100	110600	115600	72800	19600	.	121900	.	.	35453	72050
3	1942	1754700	365200	1389500	968800	279200	193700	111200	90800	14000	3200	32300	4000	1700	41398	144993
4	1943	3453200	1011200	2447000	1804300	552100	439800	193000	240100	9800	142200	59700	22900	.	88978	214595
5	1944	3013300	601500	2408800	1726700	665300	311500	104900	140200	15600	4900	36200	10800	.	37650	238597
6	1945	4914200	937500	3976700	2668800	933700	537300	193800	428600	5800	108500	19300	8400	.	81402	347135
7	1946	4697000	757900	3939100	2531600	968700	616300	151700	385300	.	500	15800	10700	.	66537	232284
8	1947	4242200	774400	3467800	1970200	1155900	739000	138300	192400	.	.	35400	10900	100	58413	313980
9	1948	5094600	1173700	3920900	1813100	1883700	915000	164900	233200	.	11800	51300	21600	.	101099	270169
10	1949	3314800	766200	3048600	1788800	960900	723800	137800	151700	.	.	33200	18600	.	36666	195446
11	1950	4523800	923500	3604900	2658500	1016200	509100	141300	179100	.	.	12400	12100	100	59990	316892
12	1951	5926100	1564900	4361200	3357500	1377900	612400	295800	232600	.	2800	37200	9900	.	150161	357638
13	1952	5331900	1724600	3657300	3168400	1329200	413200	270700	131000	.	5400	45100	18900	.	129410	267147
14	1953	4194900	924000	3270900	2675700	793200	393600	150600	52700	45700	4200	68000	11000	.	103040	257480
15	1954	5271900	1556300	3705600	3111800	1173600	544700	245800	65300	35800	.	77600	17100	200	177591	333885
16	1955	5497300	1895200	3402100	2967200	1238100	527600	398600	45000	27000	9600	31700	32500	.	160928	331566
17	1956	6343100	2537100	3806000	3842600	1357300	508200	486200	38100	44700	6800	21300	37900	.	268417	360741
18	1957	7251200	3288100	3963100	4574100	1419600	616100	396200	141400	42200	4700	19300	29600	7700	371943	404415
19	1958	7934700	4271000	3563700	4609200	1811100	756500	333400	128300	30100	62700	66800	34000	2600	456655	336421

OBS	SVAMNM	WVAMNM	SMENNM	WMENNM	BNN	STNN	TOMENNM	TOVAFNM	TOVPPNM	SFTNM	WFTNM	TFTNM	WFFNM	PICKPNM	PIPNM	TROPNM	TUBEPPNM	STURPNM	MIXPPNM	GOYPPNM	SAUPNM	PERPNM	
1	25707	109813	60	171	61	.	231	105675	136520	6352.7	75.7	77.8	77.4	51.6	24.0	8.8	6.4	5.8	2.7	.	0.4	.	.
2	48589	68177	88	188	83	.	276	111503	135766	4889.0	61.2	81.7	81.5	43.7	22.0	8.2	8.6	5.4	1.5	.	9.0	.	.
3	54253	239960	206	255	188	.	461	106896	293913	3806.3	77.2	60.5	63.6	55.2	15.9	11.0	6.3	5.2	0.8	0.2	1.8	0.2	0.1
4	154041	345226	376	415	396	.	811	303373	509267	4264.1	54.2	62.2	59.6	52.2	16.0	12.7	5.3	6.9	0.3	4.1	1.7	0.7	.
5	73634	329908	385	326	362	.	711	270487	402642	4233.9	51.5	72.5	68.7	57.4	22.1	10.3	3.5	4.7	0.5	0.2	1.2	0.4	.
6	148442	565363	347	605	334	.	952	428537	734405	5162.0	54.8	59.2	58.4	54.3	19.0	10.9	3.9	8.7	0.1	2.2	0.4	0.2	.
7	110953	357999	328	800	324	.	1128	348821	668052	4164.0	60.0	50.7	52.2	53.9	20.6	13.1	3.4	8.2	.	0.0	0.3	0.2	.
8	123763	619376	300	621	300	.	921	372393	743639	4606.1	47.2	50.7	50.1	46.4	27.2	17.4	3.3	4.5	.	.	0.8	0.3	0.0
9	202334	635200	456	770	393	.	1226	371268	837534	4155.5	50.0	42.5	44.3	35.6	37.0	18.0	3.2	4.6	.	0.2	1.0	0.4	.
10	109032	552736	231	553	166	.	784	232132	661768	4865.8	33.6	35.4	35.1	46.9	25.2	19.0	3.6	4.0	.	.	0.9	0.5	.
11	146590	775817	292	672	195	.	964	373882	922407	4697.9	38.9	40.8	40.5	59.7	22.4	11.2	3.1	4.0	.	.	0.3	0.3	0.0
12	517731	943428	268	688	168	.	956	507799	1461229	6198.8	29.0	37.9	34.8	56.7	23.3	10.3	5.0	3.9	.	0.0	0.6	0.2	.
13	330007	685103	438	525	224	.	963	396557	1015110	5588.7	39.2	39.0	40.6	63.8	24.7	7.7	5.0	2.4	.	0.1	0.8	0.4	.
14	252378	537808	334	531	158	102	665	361020	890186	4849.6	40.8	40.4	40.6	63.8	18.9	9.4	3.6	1.3	1.1	0.1	1.6	0.3	.
15	354479	714919	366	628	186	115	994	481476	1069398	5303.7	50.1	42.5	45.0	59.0	22.3	10.3	4.7	1.2	0.7	.	1.5	0.3	0.0
16	422302	775687	416	563	227	105	979	492494	1198489	5410.9	38.1	42.7	41.1	56.4	23.4	10.0	7.5	0.8	0.5	0.2	0.6	0.5	0.0
17	602086	877769	502	672	276	116	1174	629158	1479855	5403.0	44.6	41.1	42.5	60.6	21.4	8.0	7.7	0.6	0.7	0.1	0.3	0.5	0.0
18	816295	869170	847	699	482	131	1546	776358	1685465	4690.3	45.6	46.5	46.1	63.1	19.6	8.5	5.5	2.0	0.6	0.1	0.3	0.5	0.1
19	1018893	747054	915	683	589	151	1598	787116	1765947	4902.8	44.2	45.0	44.6	58.8	23.1	9.7	4.3	1.6	0.4	0.8	0.9	0.4	0.0

PRODUCTION, VALUE AND CAPITAL . . . NORTHERN MANITOBA

OBS	YEAR	T O P P R O D U C T I O N M	S P R O D U C T I O N M	W P R O D U C T I O N M	W F N M	P I C K I N G M	P I N M	T R O N M	T U B E N M	S T U R N M	M I X N M	G O Y N M	S A U N M	P E R N M	S V A F N M	M V A F N M
20	1959	8235600	4632100	3603500	4858500	1919600	719400	388100	148900	15700	101300	42800	37300	4000	466052	454404
21	1960	8469700	4781800	3687900	4930000	1756400	966200	404200	181800	11500	87400	57400	73000	1800	462383	336917
22	1961	9433400	5176200	4257200	5490700	2193100	1102500	348000	124600	.	67700	46400	59700	700	352176	568950
23	1962	11249300	6465000	4784300	6208100	2772200	1396200	504200	140400	.	129300	37000	61600	300	568680	685671
24	1963	11532900	7470500	4062400	6330300	2550500	1839700	439100	125100	.	171800	45800	30400	200	760115	476886
25	1964	9780000	6474600	3305400	5379000	1956700	1717500	336300	125900	.	174700	65000	24500	400	576899	527669
26	1965	10995800	7165500	3810300	5680700	2006100	1805000	485900	262600	200	402000	118800	32300	2200	923085	647385
27	1966	10367300	6956300	3411000	4755100	2495300	2027500	332200	228700	500	317300	126500	32400	1700	1164798	585251
28	1967	8914500	5960700	2953800	4207900	1782300	1892600	331900	213300	400	370300	81300	31300	2200	601792	535323
29	1968	9526000	6314800	3211200	4438200	1836900	2236600	375700	399200	800	214100	19600	4200	700	982276	588761
30	1969	8590700	6134500	2556200	4537100	1176500	2089100	235900	463300	100	185900	.	2800	.	1025171	426588
31	1970	6323000	4902300	1417700	3749200	1490500	945900	51400	23100	3100	41600	.	15200	.	995216	284693
32	1971	5598257	.	.	3181886	1478547	804481	59214	48637	3568	18815	.	1109	2000	.	.
33	1972	6184100	.	.	3886600	1180500	875100	138800	72200	11500	6900	11800	300	400	.	.
34	1973	4824169	.	.	2885277	1022199	719780	51788	97516	9400	22304	4590	300	615	.	.
35	1974	4332804	3015500	1017304	2125805	880314	574060	87189	222024	5700	135349	.	1522	841	773448	.
36	1975	5154234	913424	4250910	2987844	1006813	806450	15847	249766	10651	69562	14363	1671	1267	255857	.
37	1976	5618922	4723989	894933	3167200	1343756	811338	25467	234642	.	20730	12693	1935	1161	1492951	.

OBS	S V A M M	# V A M M	S M E N M	W M E N M	B M	S T N M	T U M E N M	T O V A F N M	T O V A M M	P P M M	S F T M M	W F T M M	T F T M M	W F P M	P I C K P M	P I P M	T R O P M	T U B E P M	S T U R P M	M I X P M	G O Y P M	S A U P M	P E R P M
20	1091081	957870	1022	582	589	149	1604	920463	2048951	5134.4	42.7	47.4	44.9	59.0	23.3	8.7	4.7	1.8	0.2	1.2	0.5	0.5	0.0
21	1157175	846543	1078	628	649	161	1706	799297	2003718	4964.7	40.0	39.8	39.9	58.2	20.7	11.4	4.8	2.1	0.1	1.0	0.7	0.9	0.0
22	938963	1062933	927	656	425	157	1583	921126	2051896	5959.2	35.6	53.5	44.9	58.2	23.2	11.7	3.7	1.3	.	0.7	0.5	0.6	0.0
23	1395035	1302251	1139	771	665	216	1910	1254351	2697286	5389.7	40.8	52.7	46.5	55.2	24.6	12.4	4.5	1.2	.	1.1	0.3	0.5	0.0
24	1503719	993426	1244	729	664	226	1773	1237001	2502145	5845.4	50.5	47.8	49.4	54.9	22.1	16.0	3.8	1.1	.	1.5	0.4	0.3	0.0
25	1339896	961129	1120	714	.	.	1434	1104568	2301025	5332.6	43.1	54.9	48.0	55.0	20.0	17.6	3.4	1.3	.	1.8	0.7	0.3	0.0
26	1814161	1037537	1221	720	.	.	1941	1576470	2851698	5665.0	51.2	62.4	55.3	53.5	18.2	16.4	4.4	2.4	0.0	3.7	1.1	0.3	0.0
27	2097027	966139	1154	731	.	.	1885	1750049	3063166	5499.9	55.5	60.6	57.1	45.9	24.1	19.6	3.7	2.2	0.0	3.1	1.2	0.3	0.0
28	1537252	877417	921	563	.	.	1484	1137115	2414669	6007.1	39.1	61.0	47.1	47.2	20.0	21.2	3.7	2.4	0.0	4.2	0.9	0.4	0.0
29	1736716	889922	953	567	.	.	1517	1571037	2626638	6279.5	56.6	66.2	59.8	45.6	19.3	23.5	3.9	4.2	0.0	2.2	0.2	0.0	0.0
30	.	.	895	541	.	.	1436	1451759	.	6052.0	.	.	.	52.2	13.5	24.0	2.7	5.3	0.0	2.1	.	0.0	.
31	.	.	924	389	.	.	1313	1279909	.	4813.4	.	.	.	59.3	23.6	15.0	0.8	0.4	0.0	0.7	.	0.2	.
32	.	.	.	.	.	.	.	.	.	.	.	.	.	56.8	26.4	14.4	1.1	0.9	0.1	0.3	.	0.0	0.0
33	.	.	877	290	560	49	1167	.	.	5299.1	.	.	.	62.8	19.1	14.2	2.2	1.2	0.2	0.1	0.2	0.0	0.0
34	.	.	726	214	427	112	940	.	.	5132.1	.	.	.	59.8	21.2	14.9	1.3	2.0	0.2	0.5	0.1	0.0	0.0
35	.	.	581	231	231	.	812	.	.	4966.5	.	.	.	52.7	21.8	14.2	2.2	5.5	0.1	3.4	.	0.0	0.0
36	.	.	612	226	.	.	838	.	.	6162.6	.	.	.	57.9	19.5	15.6	0.3	4.8	0.2	1.3	0.3	0.0	0.0
37	.	.	.	.	.	.	.	.	.	.	.	.	.	56.4	23.9	14.4	0.5	4.2	.	0.4	0.2	0.0	0.0

PRODUCTION, VALUE AND CAPITAL DATA OTHER SOUTHERN LAKES 1953-1976

OBS	YEAR	PICKSL	PISL	SAUSL	TUBESL	WHSL	SUCKSL	PERSL	MIXSL	STURSL	CAVISL	TOPROSL	WVAFMSL	WVAMASL	WPROSL	SPRUSL
16	1968/M	31000	127100	1600	34000	.	93300	7000	200	.	.	294200	26100	40763	294200	.
17	1969/M	103000	31000	3400	4100	1100	.	.	174800	.	.	379400	53641	0	379400	.
18	1970/M	116400	132000	9400	1400	11500	.	.	266100	.	.	539100	71864	0	475200	63900
19	1971/M	29471	163992	5561	1619	63365	102129	12350	60316	.	.	444344	79142	0	.	.
20	1972/M	42100	97800	7000	.	186300	79300	1600	55100	.	.	469700	134364	0	.	.
21	1973/M	291604	557722	1195	147766	592376	229352	8380	33268	.	.	1859175	474101	0	.	.
22	1974/M	530920	595933	3709	193797	458965	163248	8894	41561	.	.	1997027	634088	0	.	.
23	1975/M	244625	463013	2340	13365	107369	150240	10239	776	.	.	991967	230426	0	.	.
24	1976/M	754994	805527	5843	145389	495884	109839	18653	6068	.	.	2342197	769542	0	.	.
OBS	SVAFMSL	SVAMASL	WMENSL	SMENSL	GNSL	FHSL	BBSL	ONSL	FSSL	PMSL	TOMENSL	TOVAFMSL	TOVAMASL	PPMSL	TFTMSL	VMMSL
16	0	0	104	0	.	.	.	.	.	.	104	26180	40763	2828.55	64.2249	0.138555
17	0	0	154	0	.	.	.	.	.	.	154	53681	0	2463.64	.	0.000000
18	9544	0	189	88	.	.	.	.	.	.	277	81409	0	1946.71	.	0.000000
19	0	0	302	0	.	.	.	.	.	.	302	79142	0	1471.34	.	0.000000
20	.	-0	201	31	2625	.	28	.	3	.	232	.	0	2024.57	.	0.000000
21	.	0	339	69	1292	.	17	.	2	.	408	.	0	4556.60	.	0.000000
22	0	0	0	0	3478	5	36	2	1	2	0	634088	0	.	.	0.000000
23	0	0	0	0	.	.	.	.	.	.	0	230426	0	.	.	0.000000
24	0	0	0	0	.	.	.	.	.	.	0	769542	0	.	.	0.000000
OBS	VFSL	WFVSL	SFVSL	WMVSL	SMVSL	PICKPSL	PIPSL	SAUPSL	TUBEPSL	WHPSL	SUCKPSL	PERPSL	MIXPSL	STURPSL		
16	0.088987	0.088937	.	0.138555	.	10.5370	43.2019	0.54385	11.5568	.	31.7131	2.37933	0.0630	.		
17	0.141489	0.141439	.	0.000000	.	28.4660	23.1945	0.89615	1.0807	0.2899	.	.	46.0727	.		
18	0.151007	0.151229	0.149358	0.000000	0	21.9625	24.5409	1.74365	0.2597	2.1332	.	.	49.3800	.		
19	0.176110	.	.	.	.	6.6370	35.0310	1.25151	0.3644	14.2651	22.9842	2.77938	13.6867	.		
20	.	.	.	.	.	8.9632	20.8218	1.49031	.	39.7701	16.8331	0.34054	11.7309	.		
21	.	.	.	.	.	15.6846	29.9954	0.06428	7.9480	31.8492	12.3368	0.45074	1.7894	.		
22	0.317516	.	.	.	.	26.5855	29.8410	0.18573	9.7043	22.9824	4.1746	0.44536	2.0811	.		
23	0.232292	.	.	.	.	24.6606	40.6763	0.23589	1.3473	10.8238	15.1457	1.03219	0.0782	.		
24	0.328555	.	.	.	.	32.2344	34.3919	0.24947	6.2074	21.1717	4.6896	0.79639	0.2591	.		