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THE MARKETING OF EXCESS
MICHIGAN SALMON IN MICHIGAN

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Major professor

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THE MARKETING OF EXCESS
MICHIGAN SALMON IN MICHIGAN

By

Mark S. Sargent

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ABSTRACT

THE MARKETING OF EXCESS
MICHIGAN SALMON IN MICHIGAN

by

MARK S. SARGENT

The 1983-1993 excess Michigan salmon harvest contract required Tempotech Industries, Inc. to perform a Michigan market study for excess Michigan salmon. The main objective was to obtain perceptions of those involved in the Michigan fish marketing system. The study was based on 42 personal interviews conducted with representatives of the following market levels: specialty fish wholesalers, wholesale/retailers, retailers; supermarkets, Tempotech Industries, Inc., and the Michigan Department of Natural Resources. Interview results indicated salmon carried by Michigan fish firms were mainly west coast salmon and few carried excess Michigan salmon. Fish firm managers perceived low quality as the major marketing barrier to excess Michigan salmon, and that high grade excess Michigan salmon should be sold as fresh, medium grade as frozen, and low grade as processed. High quality packaging, labeling, and promotion were perceived as important to a successful marketing plan. Proper attention to marketing barriers will be necessary to obtain a successful Michigan market. Over time and with proper marketing activities the Michigan market may be a feasible alternative to the present situation.

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TABLE OF CONTENTS

<u>CHAPTER</u>	<u>PAGE NUMBER</u>
I. INTRODUCTION	1
Statement of Problem	3
Organization of Thesis	8
II. OBJECTIVES, HYPOTHESES, AND METHOD	9
Specific Objectives	9
Hypotheses	10
Research Method	10
Limitations of Research Method	17
Analysis of Data	20
III. RESULTS: THE MICHIGAN FISH MARKETING SYSTEM	21
Interviews	21
The Michigan Fish Industry	24
Marketing Problems	41
The Northern Michigan Fish Industry	45
Future Outlooks	46
IV. RESULTS: THE MICHIGAN SALMON MARKET	47
The Michigan Salmon Market	47
Tempotech's Perspectives and Opinions	57
MDNR Perspectives and Opinions	67

<u>CHAPTER</u>	<u>PAGE NUMBER</u>
V. DISCUSSION OF RESULTS	73
The Michigan Fish Industry	73
The West Coast Salmon Market	82
The Michigan Salmon Market in Michigan	90
VI. RECOMMENDATIONS	101
Recommendations to Tempotech	102
Recommendations to the MDNR	108
Recommendations to the Michigan Fish Marketing System	109
VII. SUMMARY AND CONCLUSION	110
Summary	110
Conclusion	112
APPENDIX A: Introduction Letter	114
APPENDIX B: Questionnaire	116
APPENDIX C: Definitions	124
LITERATURE CITED	127

LIST OF TABLES

<u>TABLE</u>		<u>PAGE NUMBER</u>
1	U.S. salmon landings from 1973 to 1983	85
2	U.S. salmon consumption from 1973 to 1983	87
3	1983 excess Michigan salmon harvest, by species and grade	91

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE NUMBER</u>
1	Location of Michigan cities which were used in telephone directory listing	13
2	Location of Michigan fish wholesale interviews . .	25
3	Location of Michigan fish wholesale/retailers interviews	27
4	Location of Michigan fish retail interviews . . .	28
5	Location of Michigan supermarket interviews . . .	29
6	Location of excess Michigan harvest sites and processing plant	59
7	Processing steps performed by Tempotech	61
8	Primary marketing channels of the Michigan fish marketing system	75
9	Percent of world salmon supply by major country, 1980	84

CHAPTER I

INTRODUCTION

Coho salmon (Oncorhynchus kisutch) and chinook salmon (Oncorhynchus tshawytscha) were introduced to the Great Lakes by the Michigan Department of Natural Resources (MDNR) in 1966 and 1968, respectively, in an effort to improve the declining sport fishery and as reported by Ryder et al. (1981) to utilize the abundant forage base available in the Great Lakes. These salmon have not only supplied a large sport fishery to the public, but have also provided a substantial economic advantage to public and private organizations.

During the fall, mature salmon migrate up the Great Lakes tributaries to spawn and die. Although there is some natural reproduction of chinook salmon, which is estimated to be from 600,000 to 700,000 smolts per year (Tanner 1985 pers. commun.). The majority of salmon returning to these streams are the same salmon planted there as smolts or fingerlings several years earlier by the MDNR. In the past, the MDNR caught these spawning salmon at weirs located on two streams to remove the eggs and milt for state hatcheries. The carcasses and surplus eggs were then sold to private enterprises for further processing and marketing. During these earlier years the contracts between the MDNR and private enterprises were for one year. Since private

firms had no guarantee of obtaining the contract at the next bidding, they had little incentive to investigate long run market strategies or make capital investments.

The 1983 Harvest Contract

The contractual time frame was changed in 1983 when a 10 year contract was signed between the MDNR and Tempotech Industries, Inc. (Tempotech), a private fish marketing firm located in Hart, Michigan. Tempotech had handled excess Michigan salmon¹ in the past and had the knowledge and facilities to market these fish. The 1983 contract specified the following requirements to be met by Tempotech.

- 1) To operate state-owned weirs, under MDNR direction, at designated locations, to harvest excess salmon, and to purchase the harvested salmon carcasses and/or salmon eggs.
- 2) To construct, install and operate temporary devices or methods, under MDNR direction, to harvest excess salmon at designated locations and to purchase salmon carcasses and/or eggs at those locations.
- 3) To propose, develop and implement a plan to process and market salmon and salmon byproducts harvested from state owned weirs and temporary harvest facilities in the State of Michigan and elsewhere.

¹ : Defined in Appendix C.

University Involvement

After being awarded the contract, Tempotech contacted Michigan State University and asked M.S.U. to perform the Michigan marketing study under the above requirements. The Fisheries and Wildlife Department at M.S.U agreed to undertake this marketing study under the leadership of Dr. Howard Tanner.

Statement of the Problem

Marketing Difficulties

Before going into more detail on the present marketing study it is necessary to look at the difficulties in marketing Michigan salmon. Both public relations and economic problems exist. Opinions have been voiced that these fish are common property and that they have been paid for with funds from fishing licenses. Thus, some fishermen are upset with the sale of what they regard as "their" fish (Rankin 1984). Furthermore, fishermen misconceive that their fishing recreation is affected by the harvest and that Tempotech is removing other game fish (Huggler 1983). Communities near Great Lakes tributaries are also concerned, since they fear the loss of tourist and recreation revenues generated by the salmon migration into their area.

Marketing of Michigan salmon in Michigan also poses difficulties. Some Michigan residents believe the fish may contain substantial amounts of toxic chemicals making them

unfit for human consumption (Buelow 1984). In past years, the chemical contents of salmon exceeded limits set by the Federal Food and Drug Administration and the Michigan Department of Agriculture for the sale of fish. Even though the fish are currently below legal contaminant limits, the public remains skeptical about the safety of the fish. The problem is compounded by Michigan Department of Public Health warnings on fishing regulations that state: no one should eat salmon from certain lakes for more than one meal per week and that children, women who are pregnant, nursing or expect to bear children should not consume these fish at all (Michigan fishing guide 1983).

The harvested excess Michigan salmon consist of four grades. The top quality salmon have bright red meat and silver skin and are referred to as "bright grade", with the next lower grade referred to as "semi-bright". Low quality fish have dark skin and pale meat and are labeled as "dark grade". Those fish spending excessive amounts of time in holding runs have very low quality because of extensive bruising and are referred to as "hatchery grade". Up to 80% of the harvest is composed of the lower grade salmon (semi-bright, dark, and hatchery grades), and because of their darker skin and pale meat they are considered unappetizing by consumers. During the 1983 harvest, an estimated 1,273,000 pounds of dark grade salmon were harvested (unpublished MDNR notes). The problem with these fish is

how to utilize them effectively since they are unappealing to consumers in their natural condition.

Another difficulty is the competition among Michigan salmon and other fish, especially west coast salmon. Introduction of Michigan salmon into the Michigan market will directly compete with the west coast salmon industry. To compete effectively, the quality of the Michigan salmon should be similar to west coast products. However, pricing may compensate for lower Michigan quality.

The Concept of Marketing

"Marketing" is not just the selling of a good or service, but deals with research, planning, purchasing, distribution, and the behavioral sciences (Cantor et al. 1969). Thus, marketing has to do with all steps, processes, and services which are used from the production of a good or service until it is delivered to the ultimate consumer. Vast economic and social changes in the last decade have made better marketing imperative (Business Week 1983), and within the marketing field the new priority is the minimization of risk through indepth market research.

The Research Problem

In light of the vast array of subjects that could be involved in this study and the economic and time constraints, it was necessary to establish limitations and focus efforts of the study. Since the study is a

requirement placed on Tempotech by the MDNR, personnel from the MDNR were asked to develop a list of questions that they would like answered. The following list contains the pertinent questions as perceived by the MDNR.

- 1) What are the barriers to marketing Michigan salmon and how can these barriers be "overcome"?
- 2) What is the overall feasibility of improving the marketing situation for the firm possessing the harvest contract?
- 3) What is the economic potential of marketing excess Michigan salmon?

The following general objectives are areas of emphasis or focus which were selected for the research because they lie within the above MDNR areas of interest and are also acceptable to Tempotech.

- 1) To determine the perspectives and attitudes of those involved in the Michigan fish marketing system with respect to the present fish marketing systems and its operations.
- 2) To determine the perspectives and attitudes of those involved in the Michigan fish marketing system on marketing of west coast and excess Michigan salmon.

Participants in the fish marketing system can provide valuable information on present market conditions, as well

as the feasibility of marketing new products in the future. Because of daily involvement in the market, they are aware of trends and believe that they are knowledgeable about their customers' taste and preferences. Also, since marketing channel participants will not deal in fish which they perceive to be undesirable to consumers, these participants have a very direct influence on the marketability of the product.

A primary concern of the study was to survey wholesalers, retailers, and supermarkets that sell fish and seafood in Michigan. Due to budget and time restrictions the restaurant industry will not be observed. However, it could be a major marketing channel for Michigan salmon and may require further research.

Transportation lines required to carry fish between different levels of the marketing channel have indirect affects on the supply or demand in the marketplace. The transportation system is a link between the quantity supplied by the fishermen and the quantity demanded by consumers. However, the transportation system may affect the product quality. Time and temperature during transportation have a direct affect on the quality of the product and its shelf life. To further understand these effects it would be appropriate to document how the product is being transported.

Organization of Thesis

The next chapter will discuss the objectives, hypotheses, and methods used as a base for this study. Chapters III and IV will review the study results obtained concerning the Michigan fish marketing system, as well as the activities and perceptions of Tempotech and the MDNR. Chapter V will highlight some of the major results and some of the pertinent literature. Chapter VI will give a list of recommendations for Tempotech, the MDNR, and the Michigan fish marketing system. The last chapter will summarize the information covered within the text and give the concluding remarks.

CHAPTER II

OBJECTIVES, HYPOTHESES, AND METHOD

The following chapter will present the specific objectives and hypotheses of this study. There will also be a discussion of the method used to collect the data and its limitations.

Specific Objectives

The following is a list of objectives to be met by the study.

- 1) To describe the marketing channels that Michigan salmon follow from harvest sites to consumers.
- 2) To identify and describe barriers in the sale of Michigan salmon within the state and to determine ways to help overcome these barriers.
- 3) To determine the perceptions of those involved in the Michigan fish marketing system, with respect to the best form (smoked, canned, fresh, etc.) for marketing different grades of Michigan salmon.

4) To determine the perceptions of wholesalers and retailers, with respect to the similarities and differences between west coast and Michigan salmon.

Hypotheses

At the outset of this study there were several hypotheses proposed, regarding the study.

- 1) The labeling of salmon as "Michigan salmon", will have a negative effect on the sale of Michigan salmon.
- 2) Lower grade fish will have to be processed in form and/or taste to reduce the negative impacts of its identity and origin.
- 3) Those involved in the Michigan fish marketing system perceive that consumers view Michigan salmon as unsafe to eat because of the contamination issue.
- 4) The Michigan fish marketing system perceives Michigan salmon to be lower in quality than west coast salmon.

Research Methods

Sample Composition

The main concern was to sample wholesalers, wholesale/retailers, retailers, and supermarkets involved in Michigan's fish marketing system. Tempotech and the MDNR

were sampled because of their participation in the excess Michigan salmon market. Because of financial and time limitations other market levels (eg. institutions, restaurants, etc.) were not sampled. The study was also limited to firms located only in Michigan.

Sampling Procedures

Firms were selected non-randomly in an effort to obtain information from the largest firms at each marketing level. It was assumed that these firms handle the majority of the fish and seafood products in Michigan and that they would have well formed perceptions and opinions because of their large involvement in the marketing system.

The best criterion to determine the largest firms would be to look at the relative rankings of these firms within a market level, through accounting and production figures. However, this type of data was not readily available and a feasible alternative method had to be found and is explained below.

Wholesalers.- Wholesale firms consist of firms which sell fish and seafood to other market levels. Several listings of wholesalers were obtained, as listed below. The individual lists were cross referenced against each other. Firms found on several lists were recorded, and considered as representatives of the largest firms.

1) A list of 40 Michigan wholesalers was obtained from telephone books, for the following cities: Lansing, Grand

Rapids, Battle Creek, Jackson, Detroit, Saginaw, Flint, Mt. Pleasant, Gaylord, Ludington, Traverse Bay area, Sault St. Marie, and Escanaba (Fig. 1). These cities were chosen because of their size and their location throughout the state.

2) A list of 147 Michigan fish marketing firms obtained from the Department of Agriculture.

3) A list of the largest Michigan fish wholesalers as perceived by the MDNR.

4) A list of the largest Michigan fish wholesalers as perceived by Tempotech.

During the survey period, wholesalers were also asked who they perceived as the largest wholesalers in the state. This was used as a check to make sure the largest wholesalers were sampled. If a firm was mentioned several times by interviewees it was added to the sample.

Wholesale/retailers.— Firms that were both wholesalers and retailers were first noted while sampling wholesalers and retailers. These wholesale/retail firms sold fish to other market levels as well as directly to consumers. Since they performed different activities than the wholesalers or retailers they were later separated as a distinct category. Given that these wholesale/retail firms were observed while



Fig. 1. Location of Michigan cities which were used in telephone directory listing.

sampling the largest wholesalers and retailers, it was assumed that the sample of wholesale/ retailers was composed of the largest firms at that market level. This can be supported by the fact that these firms usually list themselves as wholesalers and/or retailers, as far as phone directories or market level activities.

Retailers.- Retailers sold fish directly to consumers and carried few other items than fish. The sample of retailers was chosen by the same methods used to sample wholesalers. Wholesalers and retailers were also asked for their perception of the largest retailers for verification.

Supermarkets.- Supermarkets sold fish directly to consumers and handled numerous other grocery items. Meijer Thrifty Acres, Michigan division of The Kroger Co., and Spartan Stores were chosen because of their size and distribution throughout the state. The first interview for each group was with the Michigan fish supervisor for each firm. These interviews provided the names of the largest three Michigan stores in each firm, which were sampled later.

Survey Procedures

Personal interviews with representatives of each chosen firm were used to collect the necessary information. Each firm was sent an introductory letter approximately three to four weeks before the intended interview. This letter explained the study, stressed its importance, and asked for

their cooperation (Appendix A). Approximately one week after the mailing, phone contacts were used to follow-up the introductory letter. This contact was used to verify the reception of the letter, locate the person to act as the firms representative, and to set-up an interview. All interviews were made at the respondents' convenience and were held at their place of business.

Each person interviewed was asked to answer a list of questions pertaining to the activities performed by that firm in the Michigan fish marketing system, as well as to discuss their views of the Michigan fish and salmon markets (Appendix B). The questions were open-ended in an effort to assure that these topics were covered during the interview and to prompt the host to reveal, in as much detail as possible his opinions and perspectives on other topics dealing with the marketing study.

I conducted all interviews and most were held in a semi-formal format. Appropriate clothes were worn for each interview, depending on market level and location. Business style clothes consisting of dress slacks, shirt, and tie, were worn for most interviews in the southern portion of lower Michigan. This seemed to be the accepted dress style of the respondents. More informal clothing was worn for interviews with northern lower Michigan and the upper peninsula firms. A clipboard was used to write on for the first two supermarket interviews and these interviews were short and held standing in front of a display case. On the

next supermarket interview a briefcase was brought to the interview. This interview and the following interviews were substantially longer, covered more information, and were held in an office or breakroom where there were fewer interruptions. The grocers' seemed to be impressed when a briefcase was used and were willing to spend more time and supply more information.

Few notes were taken during the interview, so to allow the interviewer to keep eye contact with the respondent and show interest in the response. The recording of information depended on notes composed of key words which were used for memory recall following the interview. Immediately after each interview, notes were reviewed and all recalled information was recorded on to a tape recorder. At a later time this data was transcribed.

Sample Size and Response Rate

A total of 51 introductory letters were mailed out and a total of 42 interviews were conducted, resulting in a response rate of 82 percent. Reasons for non-response were the following; 3 firms refused the interview, 2 firms accepted to do the interview but convenient times between interviewer and interviewee could not be arranged, and 4 firms were not interviewed because phone contacts were not made due to disconnected phones.

Limitations of Research Method

Sampling Limitations

Because of time and study scope not all market levels were not observed. Market levels, such as restaurants and institutions, may be important segments of the Michigan fish marketing system, though, not as important as the market levels sampled. McCoy and Hopkins (1979) reported that, when time and money are constraints, brokers, wholesalers, and market place sellers are logical sources of information. Because of present well developed egg markets, the marketing of eggs and egg byproducts were not investigated.

The sampling procedures relied heavily on listings from several sources which may have biased the sampling for several reasons.

- 1) The lists may not have contained all Michigan fish firms.
- 2) Lists formed from phone directories were based on a limited number of cities and tended towards larger cities in certain areas.
- 3) Listings may have contained a majority of firms with large expenditures on promotion and advertising activities.

The choice of firms representative of the Michigan marketing system was based on an arbitrary estimate of which firms were the largest for each market level. Firms chosen in such a manner may not actually be the largest firms in the

state, although, comments made during interview indicated that the largest firms were covered within the sample. The basic assumption of using the largest firms was that these firms would perform well as knowledgeable representatives for the market system and would have well formed perceptions. This assumption may be limited by several factors. First, respondents may have biased their response in hope of creating a positive image with the interviewer. Second, new incoming firms, and smaller firms may have just as accurate perceptions as those larger firms.

Survey versus Personal Interviews - Decision Rationale

Mail surveys may have been less expensive than personal interviews. Data obtained via mail surveys could have been analyzed using statistical methods and may have been easier to summarize and present in the form of tables and figures. However, personal interview surveys were chosen for several reasons. Problems with surveys for marketing studies, as identified by McLaughlin (1983), are the substantial uncertainty in forming pertinent questions and frequently the unwillingness of respondents to fill out mail survey forms. Furthermore, McCoy and Hopkins (1979) report that if research is conducted by one individual, the interviews can be aided by the use of interviewer guideline questionnaires with ample space for responses. Social scientists have also shown that personal interviews guided by this type of questionnaire can yield highly valid, reliable, and

representative preferences, values, and beliefs (Brudge and Hendee 1972).

Survey Limitations

Although, the personal interview approach was selected as the most appropriate method to use, it was not without limitations. One limitation was the lack of numerical data and statistics which impede the analysis and summarization of the data. Another limitation is the possibility that some of the information was not gathered due to the relatively small number of observations of those interveiwed. The following limitations were reported by McLaughlin (1983);

- 1) Too strong of a rapport can bias the response given.
- 2) Misleading conclusions based on a minority of observations of a non-random sample
- 3) Unwillingness of respondents to reveal information

The unwillingness to reveal information was also reported by McCoy and Hopkins (1979). This lack of response can be caused by respondents concern for being quoted or having their specific strategies reported (McLaughlin 1983).

Analysis of Data

Interviews were categorized into each specific market level to enhance analysis. These interviews were then aggregated to facilitate organization and summarization of the responses. Focus was placed on similar responses made by the majority of the respondents for each market level. This provided summarized and aggregated information for each market level. Research publications and trade publications were used to support the results and to help form recommendations.

CHAPTER III

RESULTS: THE MICHIGAN FISH MARKETING SYSTEM

In this chapter information on the Michigan fish marketing system will be revealed. The Michigan fish industry is composed of firms; fishermen, suppliers, wholesalers, retailers, and supermarkets; which are involved in fish marketing activities in Michigan. Current marketing practices, as well as the perspectives and opinions of those active in the Michigan fish industry will be reviewed.

Interviews

Interviews were conducted with firms active in the Michigan fish industry to get their perspectives and opinions on the marketing of excess Michigan salmon in this state. Because there was little information available about the general activities of these firms, respondents were asked to describe their activities. The majority of interviews were conducted with the proprietor, although, some were conducted with store managers and salesmen. Because of the diversity of people interviewed, they all will be referred to as "managers."

Interview Composition

Forty two interviews were conducted between June and November, 1984. The interviews included: 10 specialty fish and seafood wholesalers, 10 specialty fish and seafood wholesale/retailers, 8 specialty fish and seafood retailers, 6 supermarkets from 2 supermarket chains (3 from Meijer Thrifty Acres, 3 from the Michigan division of The Kroger Co.), 3 independent supermarkets from Spartan Stores, as well as the Michigan distribution centers for each supermarket group. Interviews were also conducted with Tempotech Industries, Inc. and the Michigan Department of Natural Resources.

Michigan Fish Marketing Participants, Defined.

- 1) Specialty fish and seafood wholesalers (wholesalers)- sell fish and seafood products to other firms which sell directly to the consumer.
- 2) Specialty fish and seafood wholesale/retailers (whole-sale/retailers)- sell the majority of their fish and seafood through wholesale activities, although, they also sell fish through their own retail operation.
- 3) Specialty fish and seafood retailers (retailers)- sell fish and seafood directly to consumers through private retail establishments.

4) Supermarkets- sell fish directly to consumers through a supermarket operation. Interviews were conducted with each stores meat and fish department manager. Throughout the paper they will often be referred to as "grocers."

5) Michigan distribution centers- the main warehouse and office for each supermarket group. The main fish and seafood buyer for the state of Michigan for each supermarket was interviewed. Their responses were aggregated with those given by individual supermarkets.

6) Tempotech Industries, Inc. (Tempotech)- present holder of the Michigan salmon contract and perform such activities as harvesting, processing, and other marketing operations.

7) Michigan Department of Natural Resources (MDNR)- state governmental body in charge of the state's natural resources. Responsible for the salmon contract and harvesting requirements.

Length of Interviews and Data Aggregation

Length of the interviews ranged from 15 minutes to 3 hours, the average was about 45 minutes. Length of interviews depended on how much time respondents had available to spend with the interviewer.

All information reported in this section are aggregations of respondents opinions and perspectives. Some

individual comments have been included when they are of importance to the study. It is useful to understand that the information presented was derived from the interviews and thus represent perspectives and opinions, although some are reported as if they are facts.

The Michigan Fish Industry

Fish Marketing Participants

Wholesalers.- The location of fish and seafood wholesalers are in three areas, Detroit and surrounding suburbs, Grand Rapids, and along the shore of northern Lake Michigan (Fig. 2). Most wholesalers are active in wholesale fish markets only, although, some do handle other products such as red meats or deli items. These firms sell fish to restaurants, supermarkets, retail fish stores, and institutions or industry. These wholesalers draw upon a nationwide and Canadian network of suppliers.

Wholesale/retailers.- All firms labeled as wholesale/retailers sold a majority of their fish through wholesale channels, but did operate some type of retail outlet. The percentage of wholesale activities, estimated by firm managers, ranged from 55-85 percent of their total sales. Retail operations of these firms generally consist of some type of full service counter and a display area for frozen and/or fresh fish. Several also contained small food



Fig. 2. Location of Michigan fish wholesale interviews.

service operations for the sale of cooked fish. Most wholesale activities involved transactions with local restaurants. The majority of these restaurants relied heavily on the tourist trade, thus fish sales are seasonal and peak during summer months. Wholesale/retailers were located in larger cities, as well as along the Great Lakes shoreline (Fig. 3). Wholesale/retailers receive most of their fish from Michigan wholesalers, commercial fishermen, tribal fishermen¹, and from their own commercial fishing operations.

Retailers.- Fish and seafood retailers were located in larger cities, as well as along the Great Lakes shoreline (Fig. 4). These firms purchase their fish from wholesalers in Michigan and from nearby markets. They sell to customers generally living near their store.

Supermarkets.- The supermarkets interviewed were located in larger cities in southern lower Michigan (Fig. 5). These stores receive their fish directly from wholesalers and sell to shoppers of their store.

Suppliers

Wholesalers.- Michigan wholesalers draw upon a nationwide network of suppliers, although, most transactions are with Boston, New York, and Chicago markets. The remaining supplies come from the Canadian Freshwater Fish

¹ : Defined in Appendix C.



Fig. 3. Location of Michigan fish wholesale/retail interviews.



Fig. 4. Location of Michigan retail interviews.



Fig. 5. Location of Michigan supermarket interviews.

Market Corporation, as well as from west coast and other east coast markets. These suppliers are able to provide a wide variety and a relatively consistent supply of fish and seafood products.

Wholesale/retailers.- Wholesale/retailers receive most of their fish from Michigan wholesalers, commercial fishermen, tribal fishermen, and from their own commercial fishing operations. Wholesalers are able to provide a wide variety and consistent supply, but are perceived as charging higher prices for certain species. Commercial fishermen can often offer fresh quality products at lower prices but can not offer consistent or stable supplies. Tribal fishermen offer the same advantages and disadvantages as commercial fishermen but also supply Michigan lake trout (Salvelinus namaycush), which is illegal for Michigan commercial fishermen to harvest. Wholesale/retailer fishing operations have several advantages, such as fresh quality products and control over their own supply, but again to some extent face inconsistent and unstable supplies.

Retailers.- The majority of retailers purchase their fish from wholesalers out of Detroit, Chicago, and northern Michigan markets. Northern Michigan wholesalers supply mostly white fish (Coregonus clupeaformis) and lake trout. Several retailers did get some fish from commercial fishermen.

Supermarkets.- Each group is serviced by a wholesaler who works directly with that supermarket group. Each

individual store receives its fish directly from wholesalers. In the past some frozen fish came from distribution centers but this has decreased because of space, time, and cost limitations.

Volume Moved Through Marketing Channels.

A rough estimate of yearly tonnage for each wholesaler ranged from 200,000 pounds per year to over 8,000,000 pounds per year, with a mean of 4,000,000 pounds per year per firm. These estimates are very rough for several reasons. First, estimates of a firm's volume relied on the manager's estimate and his ability to recall past sales. Second, managers may have been skeptical about releasing their volume for competitive reasons. Third, managers often gave wide ranges of estimates which were often based on short run volume figures. Because of these problems in obtaining estimates of volume, other market levels were not asked for their volume.

Products Handled

Types of fish.- Most firms handle a wide variety of ocean, lake¹, and Great Lakes² fish as well as other seafood. Wholesale/retailers and retailers handle more lake and Great Lakes fish than ocean fish when compared to wholesalers and supermarkets.

A large portion of the lake and Great Lakes fish
1-2: Defined in Appendix C.

handled in Michigan is not supplied from Michigan commercial fishermen but is produced in Canadian waters. The main reason for this is the convenience of working with the Canadian Freshwater Fish Market Corporation. This corporation is composed of numerous Canadian fishermen and receives marketing and financial help from the Canadian government. The corporation offers its customers a variety of species, stable and often lower prices, consistent supply, and better quality for some fish species. They can offer these advantages because they have governmental support and are well organized. Managers also carried Canadian fish because they felt that consumers perceive it to be safer, higher quality, and better tasting. There are firms that carry only Michigan fish, but they are a small minority.

Product Form.— Fresh and frozen fish are carried by all firms, although, wholesale/retailers and retailers handle a majority of fresh fish with few frozen items. These firms also carry more smoked fish than any other marketing group. The amount of low value species compared to high value species carried for all firms depends on the demographics of the market they are selling in. All supermarkets interviewed had some type of fresh fish display area, as well as frozen fish display, and the majority of these stores had a fresh fish service counter. Because of the low volume of sales for high value species, supermarkets tend to carry more low value fish.

Large scale sales of fresh fish in supermarkets has just started in the last few years, but has received good reception from shoppers. Supermarkets are increasing their display space and number of species. Some grocers perceived restaurants as being very important to their sales because frequently the first time consumers try fish or a new fish species it is at a restaurant.

Processing

Wholesalers and Supermarkets.— Some operations performed during processing are; scaling, skinning, fileting, and steaking. All wholesalers and supermarkets are involved in some type of processing, although, the majority do very little. The amount of processing that is needed often depends on the species of fish, with some species being processed by the supplier to save on transportation cost. Both wholesalers and supermarkets avoid processing because of high added costs to the product, since processing for both market groups is performed by union employees who receive relatively high rates of pay.

As a consequence most supermarkets want their fish to be processed before delivery to their stores. Almost all their fish is sold as fillets, although, a small amount is sold as steaks, or headed and gutted (H&G). Some supermarkets do buy bulk fish in the round if they feel they can sell the product at a reduced price or as a sale item. In this case, stores will do their own processing and packaging as needed.

One supermarket group received its fish from its wholesaler not only processed but also packaged, labeled, and priced. The only thing the stores had to do was place the product in the display case.

Wholesale/retailers and Retailers.- There is a difference between the amount of processing performed by northern and southern wholesale/retailers and retailers. Northern firms do all their own processing because of the larger amount of fish they get from commercial and tribal fishermen. The southern firms get most of their fish from wholesalers, and either buy preprocessed fish or sell it as H&G.

Storage

Wholesalers store their fish in large walk-in refrigerators and freezers. The fresh fish is stored on ice in cardboard boxes, which are placed in refrigerators. Most fish handled by wholesale/retailers are stored in a similar manner, except that to be sold on retail markets. These fish are placed in the display case on a bed of ice during the day and stored on ice in the refrigerator during the night. This same method of storage is used by most supermarkets and retailers. Managers reported that ice not only helped keep fish moist and cold but was also attractive to consumers and helped reduce odors.

The majority of supermarkets displayed their fresh fish in the same display case as red meats. The fresh fish is

often stacked in piles within the display, these piles needing constant quality checks. Almost half of these display cases were kept at 30o F with the remaining kept at temperatures ranging from 28-34o F.

Consumers

Composition.- Present day fish buyers are of basically three groups. One group is young professionals with high income and higher levels of formal education. Another group is either oriental or has some oriental heritage. The third group of consumers is composed of health and diet conscience consumers who buy fish because it is good for them.

Buying Behavior.- Managers perceived that for most consumers, fish are bought on impulse and is not a normal part of their market basket. They feel that fish are usually not ranked as high as red meats in terms of consumer preference and is infrequently placed on consumers shopping lists. They also felt, pound for pound fish are more expensive than red meats and that consumers may perceive it as a luxury item. Similarly, after a bad experience consumers will not return to fish as readily as they would with red meats.

Knowledge.- At all marketing levels managers thought that consumers have a very low knowledge about fish. Consumers with either higher incomes or higher experience levels from fishing or long term fish purchasing have a higher knowledge about fish species, handling, and cooking.

It is interesting to note that only three managers mentioned that it was their role to educate consumers. A large majority of managers who sell to restaurants felt that the chefs also lack knowledge of fish species and proper handling techniques.

Consumer Questions.- Most consumers questions concern handling , preparation and cooking of the product. Origin of the catch and time of catch are also asked frequently. Managers thought that origins of the catch had a lot to do with consumer perceptions of the product. Managers felt that consumers perceive Lake Superior fish to be better than other Great Lakes fish. Although, few questions are asked about the taste of the product or about contaminants, there are consumers who show great interest in these topics. Several managers thought that consumers infrequently asked about contaminants because they feel the product must be safe to be on the market. However, some managers felt that consumers are tired of hearing about contaminants and no longer worried about this issue.

Promotion

Advertising.- Some wholesalers give buyers promotional items to use in their advertising campaign, but most leave promotional work and advertising up to retailers, super-markets and restaurants.

Wholesale/retailers and retailers rely heavily on word of mouth to promote their store. These firms place ads in

the telephone book yellow pages, and some place infrequent advertisements in local newspapers.

Supermarkets advertise fish products through store ad sheets. These sheets are placed in store weekly newspaper ads and generally feature two fish items, usually at reduced prices.

In-store Promotion.-- Wholesale/retailers, retailers, and supermarkets rely heavily on in-store promotion activities to help increase fish sales. The following are typical of methods used:

- 1) Special decorations to promote a fish and seafood atmosphere.
- 2) Fish recipes to inform shoppers of different ways to prepare fish.
- 3) Free samples which allow consumers to taste different species.
- 4) Daily specials to persuade consumers to try different species.
- 5) Special labeling such as "grain fed fish" or "Canadian" to inform consumers of special traits of the product.

Distribution

Wholesalers.-- Distribution from suppliers to wholesalers is either by truck or aircraft, with airfreight used most frequently. Most truck and aircraft fish carriers

specialize in fish and seafood, and regulate temperature for these specific products. Wholesalers rely on quick delivery from producers and suppliers to maintain product quality. Problems in getting supplies due to transportation interruptions, such as mechanical breakdowns or delayed flights, or changes in availability often cause shortages or delays in product supplies.

Delivery from wholesalers to wholesale/retailers, retailers, and supermarkets is by refrigerated truck. Fish are packed on ice, in either waxed cardboard boxes or plastic buckets. The majority of deliveries are made twice a week. Again, buyers expect fast delivery to insure fresh quality products.

Other Market Levels.- Fish purchased by wholesale/retailers from commercial fishermen or northern Michigan wholesalers are delivered by a private fish transportation firm. This firm serves as the transportation mode only, with the fish being sold directly to buyers. Fish are placed in waxed cardboard boxes and covered with ice before being placed in refrigerated trucks. Products, mainly white fish and lake trout, are picked up at numerous fishing ports in Michigan and are delivered to Michigan, Chicago, and New York markets. Fish from tribal fishermen, small scale commercial fishermen, and integrated fishing operations¹ are delivered to wholesale/retailers and wholesalers by boat or truck.

¹: Defined in Appendix C.

Markets

Wholesalers.- Wholesalers tend to differentiate into several different markets. These markets are segregated by their location or market activity. Wholesalers tend to sell in different areas because of territorial holdings. The other differential is the type of market purchasing the product. The most common markets sold to are; restaurants, chain supermarkets, fish retail stores, and institutions or industry. The first three markets purchase the majority of fish, with the latter purchasing fish infrequently and a relatively small portion.

Other Market Levels.- Wholesale/retailers sell wholesale to local restaurants and retail to the general public. Retailers and supermarkets sell to those consumers who live near their store.

Sales Trends

Supermarket and retail sales decrease in summer months for several reasons. First, during the summer months consumers prefer to cook outdoors and do not perceive fish as a barbeque item. Second, during summer, consumers change their food preference to light and quick food products. Lastly, during warm weather more consumers are active in catching their own fish.

During spawning seasons of local fish species (ie. rainbow smelt (Osmerus mordax) and salmon) there are increased sales for these specific species. One factor for

this increase may be increased publicity by the news media covering the run. Managers also get sales from sportsmen who after trying to catch these species end up empty handed. Lastly, with increased publicity on spawning and fishing, consumers are more aware of available supplies, and may perceive products in stores as fresher during this time period.

Market Competition

Fish wholesalers interviewed believe there are about 10-12 large wholesalers in Michigan. Because of small numbers of wholesalers and large numbers of buyers, these respondents felt that the market is very competitive (rivaless), and that only a few cents a pound can make a difference in obtaining a sale. Although, since they are all members of the Michigan Fish Producers Association (MFPA) and deal with the same employee union, wholesalers also believe they are part of a closely knit group.

Some wholesale/retailers and retailers felt that wholesalers had a tight hold on the market, and that few alternatives are available to buyers if unsatisfied with the service received. The main reasons for dissatisfaction is delivery of low quality products and high prices. One alternative is to send the product back, but firm managers thought this was only a short term solution. The second alternative is to change to a new wholesaler. Managers perceived that this alternative is limited for two reasons.

First, because there are so few wholesalers in the state, one has relatively little choice as to a new supplier. Secondly, managers thought that by repetitive changes they could force themselves into a situation where, either wholesalers would not service their firm or would charge higher prices because of their unstable purchases.

Fish Marketing Concerns

Storage temperatures, shelflife, and product quality are all major concerns of managers. The majority of managers are also concerned with methods used for giving fish species their market names, and the lack of regulations on naming products. Because of inconsistent market names, buyers feel it is difficult to perceive the species or quality of the product they purchase. Also, for most species there are no quality grading systems to inform buyers of the quality. These situations do influence some sellers and producers to substitute lower quality for higher quality products.

Marketing Problems

The following sections will review two sets of problems facing the industry. The first set of problems are general problems faced when marketing fish. The second set consists of problems faced with the marketing of Michigan fish.

Fish Marketing Problems

A large problem facing the fish industry is decreasing supplies and increasing costs of fish because of reduction in availability and restrictive government regulations. Another major problem is the lack of good promotion and public relations work. Some managers wanted the industry to place more emphasis on educating publics as well as educating managers involved in the fish industry. Inconsistent supplies of fish because of regulations, transportation problems, or inconsistent catch also has a large effect on the industry.

Those firms selling to restaurants are also faced with difficulties of delivering a portion controlled product, which is beginning to be requested by buyers. This increases the amount of handling, waste, and price. Because of portion control, sellers are also having problems selling fish which are smaller than those requested by buyers.

The main problems faced by the supermarkets are low product mark-ups and returns on fresh fish. Quality control problems are also faced with the placement of fish in the same display case as red meats, because of the different temperatures needed for the two products.

Problems in Marketing Michigan Fish

Different market participants gave a wide range of responses when asked about problems faced when handling Michigan fish. The largest complaint by wholesalers is the

large amount of paper work required by the MDNR when handling Michigan fish.

Wholesale/retailers.- Wholesale/retailers deal with a large portion of Michigan fish sold in Michigan. Because of their large involvement with Michigan fish they responded with the most problems, and perceived four basic problems;

- 1) The contaminate issue
- 2) The conflict between tribal and sports fishermen
- 3) Promotion and marketing
- 4) The MDNR

They thought that effects of the contamination issue, on shoppers purchases, were greatly magnified by the news media. They perceive that the media is publishing biased articles which they (the fish industry) have little power to challenge. Most thought that effects of the publicity were short term and that markets typically return to "normal" several weeks after a story breaks. Several respondents said that the contaminant issue was actually a political situation, since contaminant levels are used to regulate the commercial fishery but not the sports fishery.

The tribal-sportsmen conflict caused by tribal treaty rights have caused much controversy over allocations of Michigan's fish supply. Not only has this issue effected supplies of Michigan fish available but has also increased conflicts between commercial and sports use of fishery

resources which managers perceive as effecting consumer purchases.

Most wholesale/retailers thought the Michigan fish industry needed better consistency of supply, promotion, and marketing efforts. They feel this would help create a more consistent and stable supply and help control varying prices.

Managers are also concerned with the supply and demand for Michigan fish and other fish species. They do not want to improve or establish a market for a species if the supply can not meet future demands. Managers are also concerned with the supply and demand of a product because of their effect on prices and sale levels.

Respondents also thought the MDNR lacked support and interest in the Michigan commercial fishery. The wholesale/retailers would like to see fewer restrictions on fishing areas and are interested in limiting catches if they could get a longer season. The majority of respondents felt that the MDNR needs better public relations as well as a better explanation of their future plans.

Retailers.— Retailers were also concerned with problems facing the Michigan fish industry such as media effects with contaminants and sportsmen versus commercial fishery conflicts. Several managers mentioned the MDNR's poor public relations as a substantial problem in the industry.

The Northern Michigan Fish Industry

Because of special concerns and activities of those involved in the industry in the northern part of Michigan's Lower Peninsula and the Upper Peninsula, it is important to take a special look at this group.

Sale Channels.— These firms rely on Michigan whitefish and lake trout for a large part of their sales. Most local sales are connected with the tourist trade either directly or indirectly. A large portion of fish caught by northern fishermen are sold to wholesalers and wholesale/retailers which in turn sell most of their product to markets in Chicago, Detroit, and New York.

Marketing Position.— The nature of the market is such that when fish are available, fishermen will increase their fishing effort which typically creates a saturated market. These fishermen feel that they have little choice of who to sell to because of the small number of buyers. These buyers all typically offer similar prices which move inversely with supply.

Producers Position.— Because of the small number of buyers and undifferentiated products they offer, producers have very little marketing power. This loss of marketing power is a main concern of suppliers and producers. Although, most producers and suppliers in northern Michigan are members of the MFPA, a form of cooperative to increase marketing power, this organization does not appear to be a

factor in terms of stronger marketing. Presently the MFPA has mainly functioned as lobbyist for the organization and has been most functional during times of crisis. One reason for the small marketing role played by the MFPA is that its members, producers and wholesalers, are very individualistic and do not function well as a group. This lack of cooperation interferes with group plans to control supply and thus influence prices.

Those firms operating in the northern parts of the state seem to be displeased with the activities of MDNR. A majority of them feel that the MDNR can not be trusted and are trying to eliminate their industry through rules and regulations.

Future Outlook

Respondents from the entire industry look forward to increasing sales in the future. Wholesalers and super-markets seem to be the most optimistic, both groups plan on increasing their product lines in the future. Most managers thought that future fish markets will be good and that fresh fish service counters will be the new way of selling fish.

CHAPTER IV

RESULTS: THE MICHIGAN SALMON MARKET

This chapter looks at respondents marketing activities, perceptions, and opinions on salmon with emphasis on Michigan salmon. The last half of the chapter will review responses by Tempotech and the MDNR.

The Michigan Salmon Market

Present Handling of West Coast Salmon.

Most wholesale/retailers and retailers and over half of the supermarkets carried salmon, most of which were west coast salmon. Supermarkets mainly carried low value species and did not carry salmon because of its high price. Most wholesalers carried bright-silver grade west coast salmon, mainly from Alaska.

All market levels thought that west coast salmon sold well and reported good demand for the product. Wholesalers reported that salmon sales are a small percentage of their total sales, estimated as being less than 2% of the total sales. This estimate faces the same restrictions as the estimates of volume made earlier.

During winter months west coast salmon is not readily available and wholesalers carry Norwegian salmon because of its consistent supply. This Atlantic salmon (Salmo salar)

is expensive and most is sold to "white tablecloth" restaurants.

Fresh west coast salmon is flown to wholesalers approximately twice a week as long as the supply is available. Supermarkets tend to buy preprocessed salmon, but occasionally buy some H&G. Supermarkets sell smaller size fish as H&G, reporting that consumers usually buy smaller size because total costs are less. Large H&G salmon obtained by supermarkets are cut into steaks, while medium size fish are cut into fillets. Retailers handle west coast salmon in a similar manner, although, retailers carry more H&G fish.

Past and Present Sales of Michigan Salmon.

Past.— Several firms carried Michigan salmon during the early 1970's. This salmon was sold as fresh salmon steaks and managers perceived average sales. These sales were before discovery of contaminant problems and managers perceived good future markets. When contaminants were found in these fish, products were taken off markets for safety reasons.

Present.— At present, two retail firms are selling Michigan salmon supplied by Tempotech. Firm managers report that sales of these fish have been good. However, they are unsure of sale levels in the future. These salmon are being sold at low prices (e.g. 60 cents per pound) and this is likely the reason shoppers have been buying the product.

Managers could not say if shoppers have been satisfied with their purchases or if products would continue to sell.

Several retail stores also carried Michigan salmon which have been caught by tribal fishermen in the Great Lakes. Managers feel that these fish are of good quality, and sells for relatively high prices (e.g. 2.99 dollars per pound). Managers perceived good sales when these salmon are available, and that customers are highly satisfied with their purchases.

Michigan Salmon Samples.

Fish industry managers were asked how Michigan salmon should be handled if sold in Michigan markets. Managers were also asked to look at Michigan salmon samples which consisted of frozen H&G salmon of the following grades; bright, semi-bright, dark, and hatchery; and frozen salmon smoked fillets, frozen lox, salmon smokestick, and salmon jerky. Smoked salmon fillets had been dyed to give them a bright red color and were sealed in air tight packages. Salmon smokesticks and jerky were both processed in Los Angeles, California from Michigan salmon. The smokestick was in an air tight package and the jerky was in a sealed package with a decorative label. Managers were asked to look at the products to get their opinion as well as perspectives on how to utilize different grades and their market potential.

Managers showed very little interest in looking at frozen samples. Either they were not interested in the products or did not want to take the time. Those who did look at the samples had very little to say about the products, especially lower grades. Managers did show interest in the salmon smokestick and jerky. They also readily gave their opinion on Michigan salmon even if they did not see the samples.

Michigan Salmon Market Form.

Fresh/Frozen.- Managers thought that high grade Michigan salmon could be sold as a fresh product, with the majority processed into steaks and fillets, and a small amount sold in the round or H&G. Those fish which were not good enough to sell as fresh, but still had good quality could be placed on frozen markets. Frozen Michigan salmon should be processed by suppliers into steaks and fillets. Managers had very little to say about lower quality fish. Comments such as "It should be used as catfood" or "used as fertilizer" were often made about this quality level. One individual did think that low quality Michigan salmon could be used in canned salmon, salmon patties, or as salmon nuggets similar to chicken nuggets.

Cured Products.- The majority of fish managers thought that Michigan salmon would do well on the market as a smoked product. Those who looked at smoked fillets and lox thought they were highly marketable products. Several responded

that these products would hide the identity of lower quality fish and still be marketable. Wholesalers and grocers perceived good demand and consumer acceptance for smoked salmon.

The jerky and smokestick both met positive comments from all respondents. They were impressed with these products, their packaging, and those who tried them were impressed with their taste. Managers thought both products would sell well, but noted that markets would be bars, taverns, and one stop convenience stores with little volume sold through conventional fish markets.

Needs to Handle Michigan Salmon.

State Involvement.— Managers were asked to report what they perceived as their needs to handle Michigan salmon. The major need of managers is to have the state become active in the Michigan fish industry placing emphasis on Michigan salmon. The following are activities they would like the state to perform.

- 1) Research publications and news releases on the quality of the Great Lakes and on Michigan fish.
- 2) Data to sporting publics on planting and harvest to help decrease sportsmen pressure.
- 3) Improve regulations and enforcement of illegal fish sales by sportsmen.

- 4) Accurate quotas on the harvest of Michigan fish to guarantee future supplies.
- 5) Educate the public about commercial fishing, Michigan fish; handling, preparation, and cooking of fish; present and future management plans.
- 6) Decrease the use of toxic level checks at wholesale levels.
- 7) Establish a marketing group to help promote and market Michigan fish.

Supply.— To handle Michigan salmon, managers said they need a semi-consistent supply, and insurance from producers that they will receive a quality product. This is especially important for the sale of fresh salmon when it is available. Fresh products will also need good distribution channels so it can be in stores 2-3 days after harvest. Several wholesalers mentioned that they wanted exclusive rights to sales in Michigan, if they became involved with Michigan salmon. Some managers said they would need a high quality product at a reasonable price before they would handle it, but they also said if price were too low consumers would judge the product as low in quality.

Product Name

Interviewees were also asked if they thought naming the product Michigan salmon or Great Lakes salmon would make a

difference in marketability. The majority of managers said that the product should be named Great Lakes salmon for the following reasons. They thought that the name Great Lakes had less connotation to Michigan contaminant problems. Secondly, if the product is sold in other Great Lake states, the name Great Lakes would receive better consumer acceptance. Lastly, since the product is coming from several of the Great Lakes, it would be more appropriate to call it Great Lakes salmon.

Labeling and a Seal of Approval

Managers were asked what they thought some type of special labeling or seal of approval would do for the product. The majority perceived labeling as helpful to consumers, since it would give consumers a way to identify products. All managers felt that a seal of approval would be beneficial, especially if backed by some governmental agency, since this would increase consumer acceptance.

Packaging

Several managers made comments that Michigan salmon should be sold in some type of sealed package. If the product is to be sold in a package, managers said it would have to be packaged in an appealing fashion with promotion items such as recipes, handling instructions, and a creative description of the product.

Barriers to Marketing Michigan Salmon in Michigan.

The main barriers to marketing Michigan salmon in Michigan, given by Michigan fish firm managers were;

- 1) Low quality of Michigan salmon.
- 2) Poor promotion and public relations of Michigan salmon.
- 3) Poor perceptions of the harvest contract.
- 4) The contaminant issue.

Quality.— The majority of managers thought that Michigan salmon are lower in quality when compared to west coast salmon. They perceive Michigan salmon to have less color and taste than west coast species. This perception was reflected by the fact that excess Michigan salmon are caught at weirs and are already spent. Quality of lake caught Michigan salmon was referred to as being very good, but still not as good as west coast salmon. Some managers did think that Michigan salmon has above average quality when compared to other fish species.

Promotion and Public Relations.— Poor promotion and public relations of the commercial use of Michigan salmon was perceived as one of the marketing barriers. Some managers did not know that it was legal to sell Michigan salmon and available on the market. The poor public relations in the past over allocation of the resource and conflicts at weirs have caused many problems. Managers are concerned that commercial allocation of salmon have caused conflicts between sport and commercial uses of the product.

Several managers said they would be afraid to handle Michigan salmon because they thought they may face boycotts or vandalism by local sportsmen.

Harvest Contract.- Some wholesalers and wholesale/retailers question the bidding contract process. They feel that transactions may be unethical or questionable and several accusations were made about the bidding. Some managers feel they should have been sent notification of the bidding. They are not sure if they would have bid or met the MDNR's bidding requirements, but feel they should have had opportunity to try. They also felt that if the bidding was done correctly, there would have been more than one firm placing a bid. Lastly, several managers thought that the upper echelon of the MDNR was influenced by Tempotech either by financial or political means, although, this is only a perception.

Conflicts.- Conflicts at the weirs caused by upset sportsmen and accusations of harvesting recreational species has created poor publicity for the harvest. Outraged sportsmen who felt that they were being cheated of their fish, which they supposedly paid for, verbally and physically opposed the harvest. There are also groups who have appealed to the MDNR and the media with accusations that Tempotech is harvesting recreational species (ie. brown trout (Salmo trutta) and steelhead (Salmo gairdneri) which are to be released and allowed to continue up stream.

Contaminant Issue.- Another barrier may be the contaminants found in Michigan salmon. Few managers perceived this as a large problem, but greatly magnified by the way the media handled the issue. Managers were under the perception that the media's desire for sensationalism had often blown issues out of proportion, although, it was their perception that consumers would overlook this issue after some time has passed since the last publication.

Other Barriers.- Other barriers mentioned by managers were; competition between Michigan salmon and west coast salmon, competition with other fish species in a similar price range, poor consumer acceptance, and non-consistent supply. Managers did not perceive these as large barriers, but when added to other barriers they could greatly affect the marketability of Michigan salmon.

Great Lakes Fishery

The majority of managers interviewed thought that Michigan salmon should be harvested in the Great lakes rather than at the weirs. They feel this would yield better quality, longer and more consistent supply, and would be beneficial to the commercial fishermen's economic status.

Future Michigan Salmon Market.

When asked about the possibilities of carrying Michigan salmon, managers gave a wide range of responses. Several managers said they would be interested in carrying Michigan

salmon and feel these salmon would do well in Michigan if a large supply is available at reasonable prices. However, managers were not sure if Michigan salmon would be marketable even at lower prices.

Several managers thought Michigan salmon would do well in world wide markets as a low cost protein source for less developed countries. Several also felt that Michigan salmon may be marketable in nation wide U.S markets if the supply of west coast salmon decreased.

Tempotech's Perspectives and Opinions.

To be able to get an accurate representation of the perceptions and opinions of marketing Michigan salmon, it is necessary to get the view point of the firm currently marketing the product. The current holder of the MDNR harvest contract is Tempotech Industries, Inc., and is in charge of harvesting, processing, and marketing Michigan salmon. This firm was interviewed to examine their current handling of the product, and to get their opinions on the marketing of Michigan salmon. This section will review activities performed by Tempotech, as well as their perspectives and opinions on Michigan markets.

Harvest

The Process.- During 1983 weirs were placed in five streams (Fig. 6) to obstruct salmon migration movements so they could be assembled for harvest. Fish are moved through several raceways, and are assembled into holding ponds where they are held until harvest.

When ready for harvest, fish are moved into another raceway where a mechanical fish crowder is used to concentrate them. Once concentrated, fish are removed by a mechanical basket and dumped on to a sorting table. While on this table MDNR biologists take biological data and fish are sorted by species. Non-harvested fish are released back into the stream and are allowed to continue up-stream.

Handling and Cost.- Fish are then placed in large wooden totes and are covered with ice. When the totes are full they are moved into the trailer of a waiting semi-truck, until the trailer is full. These trucks then move the fish to the processing plant in Hart, Michigan (Fig. 6).

The cost of operating the harvest site, as well as all up-keep costs are covered by Tempotech. These costs were formerly paid by the MDNR. Similarly, MDNR personnel formerly operated the harvest sites, which is now performed by Tempotech. These are some of the benefits that the MDNR has obtained with this new contract.

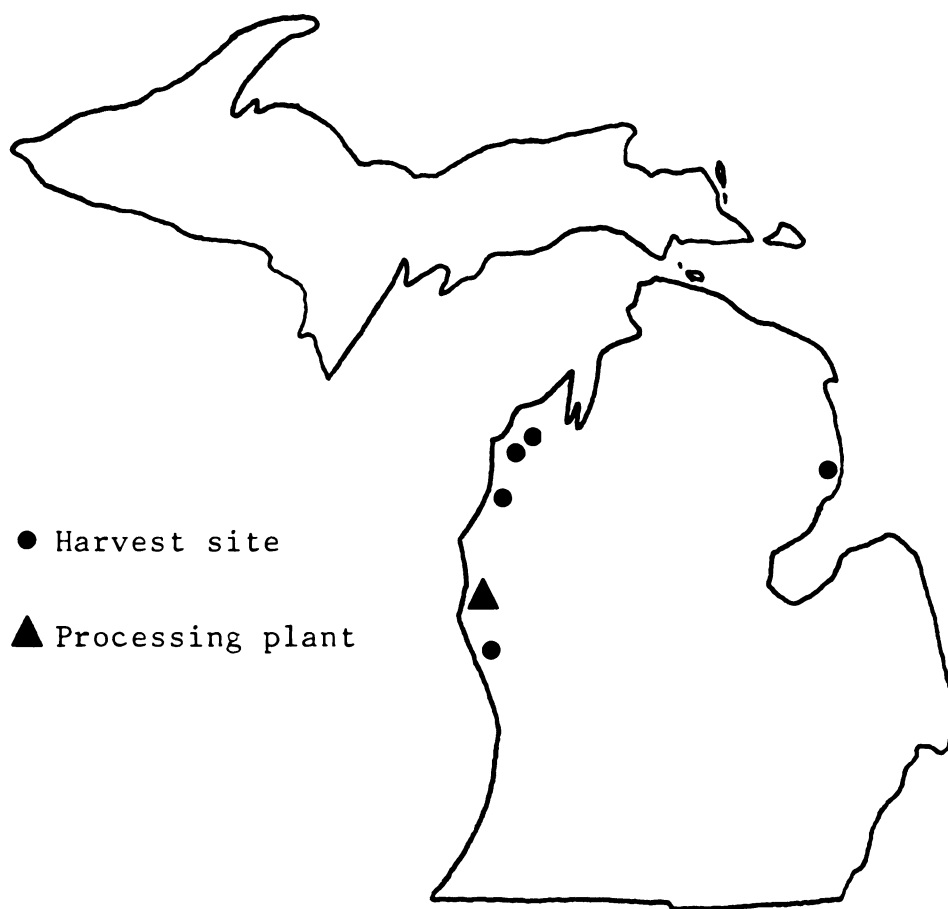


Fig. 6. Location of excess Michigan salmon harvest sites and processing plant, 1983.

Processing

Upon delivery at the processing plant, fish are put on the processing line as soon as possible. Fish are handled in various manners depending on the way they are sold, either H&G, fillets, steaks, or left in the round. The following is a description of the steps at the processing plant to produce frozen chinook fillets and rounds.

Totes full of fish and ice are dumped into a holding area at the head of the line. The fish are spread on to a sorting table as soon as possible. The fish are then sorted into females and males, with each sex moved to a different line. Males go through 8 steps before they are placed in freezers (Fig. 7).

Processing of Male Salmon

- 1) Slabbed- Fillets are cut from the body.
- 2) Headed - The head is cut from the carcass.
- 3) Skinned- The skin is removed from the fillet.
- 4) Cleaned- The fillet is scrapped clean and the pinbones are removed.
- 5) Washed - The fillet is rinsed in water.
- 6) Bagged - The fillet is placed in an individual plastic bag.
- 7) Shelved- The bagged fillet is placed on a metal shelving unit.
- 8) Freeze - The shelving unit is moved to the short term freezer.

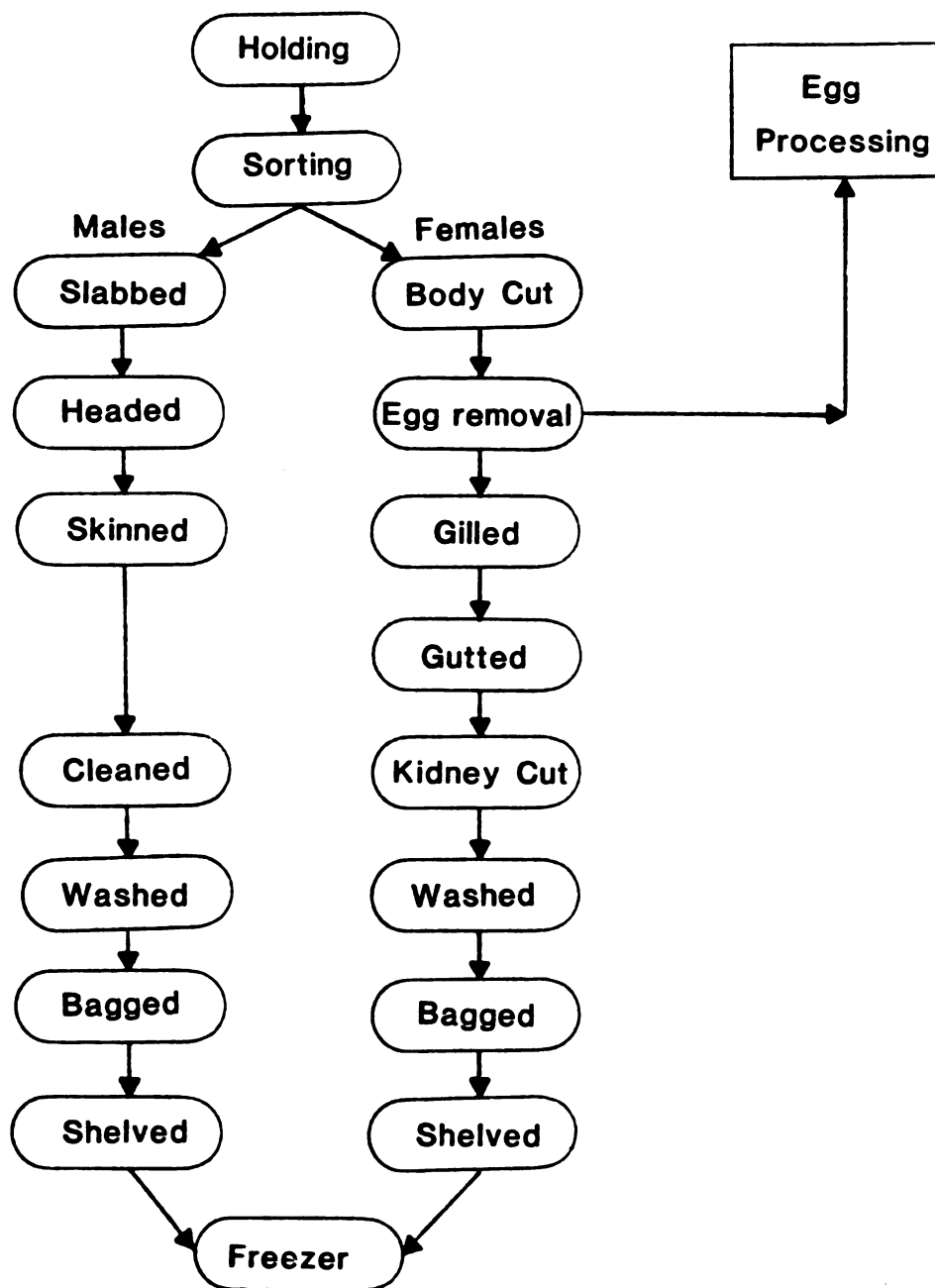


Fig. 7. Processing steps performed by Tempotech.

An explanation of movement of the product from the short term freezer will be given after going through the processing of females. It is interesting to note that both heads and skins will be stored and later sold. The heads are sold to southern U.S markets where they are used as crab bait. The skins are sold to European markets where they are processed to be used as a type of leather.

Processing of Female Salmon.- Females are moved into their own processing line where they go through 9 steps before reaching the freezer.

- 1) Body Cut- A cut is made so to have access to the eggs.
- 2) Eggs -The eggs are removed to be processed later.
- 3) Gilled - The gills are removed from the fish.
- 4) Gutted - The viscera is removed from the fish.
- 5) Kidney Cut- The kidney sack is cut open.
- 6) Cleaned - The exterior and body cavity are cleaned.
- 7) Washed - The fish is rinsed in water.
- 8) Shelved - The fish is placed on a metal shelving unit.
- 9) Freeze-The shelving unit is moved to the short term freezer.

Egg Processing.- Upon arrival to the egg processing room, eggs are sorted either as low quality for fishing bait, or high quality for human consumption. Bait eggs are placed in five gallon buckets and stored until they are

sold. Eggs for human consumption are either processed into ikura, (salmon roe which has been seperated from the sack during processing) or sujiko (salmon roe processed in the sack). Both are then placed in agitators were they are preserved and dyed. Eggs are allowed to dry to a specific degree and then packaged. Since most of these eggs will go to Japanese markets, Japanese technicians are at the processing plant to observe and perform some of the processing activities (e.g. sorting and packaging).

Storage

After sufficient freezing time, fish are removed from the short term freezer, graded, and placed in boxes. Fish are graded on skin and flesh color into 4 grades, bright, semi-bright, dark, and hatchery. Some fish may be given an ice glaze before being boxed. Approximately 100 pounds of fish are placed in each cardboard box which is bound with metal binding tape, labeled, and then moved to a long term freezer for storage.

Present Markets.

The majority of these fish are exported out of Michigan. Most are sold to a California broker, although, some will go to other national markets. However, some frozen and fresh salmon are being sold to retailers in Michigan. These retailers are handling a small amount of the total catch and their market results were covered

earlier. Bait eggs are sold to a bait manufacturer in Wisconsin. Ikura and sujiko are sold directly to Japanese markets.

Product Form

Fresh/Frozen.- The advantages and disadvantages of different ways to process the product were discussed. Tempotech is selling some fresh and frozen salmon directly to retailers in Michigan, although, they would rather be going through wholesalers. They have tried going through wholesalers but have not obtained agreeable terms on prices. The big problem in selling fresh and frozen salmon is the low quality of the majority of the harvest.

Cured.- Salmon jerky and smokestick are perceived by Tempotech as good ways to process Michigan salmon since lower quality fish may be used, and the identity of the product may no longer be an issue. The problem here is the difficulty of profitably marketing the products. Jerky and other similar products are handled by several large distributors who purchase their own rack space and perform rack jobber activities. For Michigan salmon products to go on the market, they will have to go through one of these distributors.

The entrance into the smoked salmon market also has several difficulties. Smoked salmon is best cured from salmon with high fat content which creates a problem since weir caught salmon are very lean. Secondly, smoked salmon

markets consist of numerous small scale smokers which creates a very competitive market.

Canned.-- Because of large inventories of canned west coast salmon, the canned salmon market is the least likely way to market Michigan salmon. These large inventories have been caused by several good harvest years and decreased demand for canned salmon because of the botulism scare faced several years ago.

Seal of Approval

Tempotech thought that government backed seal of approvals would be very beneficial to the marketing of Michigan salmon in Michigan. However, they also felt the state would not take the risk of performing this function.

Perspectives

Interviews were conducted with Tempotech to see what marketing problems they feel they face and to see if there are differences between Tempotech's perspectives and perspectives of other market levels in the Michigan fish industry.

Quality.-- Tempotech views low quality, contaminants, and market saturation as the main marketing issues. Because of the low quality of weir caught salmon, compared to west coast salmon, Tempotech feels that they receive poor consumer acceptance of the product in its natural form. Tempotech perceives that they will have to change the

products form, thus minimizing the negative impacts of its identity and origin. At this time Tempotech is looking into several processes which can hide the identity of the product, such as salmon jerky and smokestick, as well as fish nuggets and fish patties.

Contaminants.- Contaminants not only affect consumers perceptions of salmon, but will also affect the way Tempotech handles the product. If these fish are above government contaminant levels they cannot be sold for human consumption, pet food or fertilizer. If the fish are above contaminant levels, by contract, Tempotech still has to harvest the fish as well as transport them to a disposal site. Not only are they prohibited from selling the product, but they must also incur the cost of disposal.

Market Saturation.- Tempotech perceives that presently there is a saturation of salmon on the Michigan market. Norwegian, Alaskan, and Canadian salmon, on the market, leaves little room for the introduction of Michigan salmon.

Great Lakes Fishery

Tempotech was asked what effects moving the harvest from the weirs to the Great Lakes would have on their firm. They felt that this change would have little effect on their operation. If this were to happen, Tempotech would perform as assembler, processor, and distributor of the product.

MDNR Perspectives and Opinions

The MDNR fisheries division staff was interviewed because of their direct relationship with the product. The MDNR works with Tempotech in regards to harvest operations and restrictions, purchasing price of the resource, as well as having an interest in marketing procedures. They were also responsible for requiring Tempotech to conduct a Michigan marketing study. Another reason for interviewing them was the interest shown by Michigan fish marketing participants in state participation in the fish industry. The interview was also used to check for discrepancies of perceptions between Tempotech, the fish industry, and the MDNR.

The Marketing Study.— The MDNR placed emphasis on a Michigan marketing study for several reasons. First, a Michigan marketing study was part of the traditional salmon plan as far back as 1968, most major segments of this plan have been carried out except the marketing segment. The first firm to purchase the contract was a strong supporter of the possibilities of Michigan salmon, and impressed upon the MDNR the importance of a Michigan marketing study. Secondly, the MDNR believes Michigan should derive benefits from marketing salmon in several ways. Positive economic impact should occur if the amount of fish exported is decreased and more is channeled through Michigan's fish industry. Similarly, increasing demand in Michigan may

allow the MDNR to gain more economic benefits from the sale of the resource. Lastly, the MDNR has great pride in Michigan salmon because of the programs major success, and would like people to observe and purchase Michigan salmon in Michigan markets.

Harvest Problems

One of the major problems the MDNR has had to face with their salmon program has been public criticism of the harvest. The public perceives that these fish are worth more than the present weir selling price, and have been complaining to the MDNR about low prices. Also some publics have confused the salmon harvest with the snagging issue and have forwarded accusations that the salmon harvest is a step to support the MDNR's opposition to salmon snagging.

Product Form

The MDNR thought that Michigan salmon should be sold in the form that most closely related it with the natural form of the fish. They would prefer that a high proportion be sold as fillets, steaks, or H&G and less highly processed items such as jerky or fish patties. It is their opinion that relatively high quality salmon not be processed and that lower quality products still be used for human consumption.

Market Barriers

The number one marketing barrier perceived by the MDNR was the contaminant problem. They feel on an international scale that the second barrier would be the perception of poor product quality, although, they thought that the contaminant barrier was much more significant than the quality barrier. They feel that a part of the poor quality barrier is caused by public confusion and not the actual quality.

Marketing Role

The MDNR was asked what role they felt they should play in the marketing of Michigan salmon. They felt that in a perfect world it would be nice to assist in the marketing, but in view of the reality of the MDNR's present position, they will have very little involvement in any of the marketing procedures. They feel it is their role to manage the biological system, and that the industry must perform their own marketing operations. As an alternative, the Michigan Department of Commerce or Department of Agriculture may be influenced to perform these activities.

State involvement

The MDNR was also asked how they perceived their role towards the list of activities, given by Michigan fish marketing participants, that the state should perform.

Public Information.- Present research results and news releases on quality of the Great Lakes and on Michigan fish are being presented to the public by the news media. However, the MDNR perceives these stories as being generally sensational and negative. The MDNR has several problems when trying to inform the public of the safety of the Great Lakes and Michigan fish. At present it is hard to tell what are the long term effects of eating fish from the Great Lakes, so how confident can the MDNR be in informing the public of its safety. Also, because of differing philosophies between the MDNR and the Michigan Health Department, endorsement of fish safety by the MDNR may not be allowed by the Health Department or may cause conflicts between the two agencies.

Sportsmen Publics.- Both data to sporting publics on plantings and harvest to help reduce sportsmen criticism, and improved regulations and enforcement against illegal fish sales by sportsmen, are areas that the MDNR feels are deficiencies of their department. Better public relations and news releases for the salmon management plan are already scheduled for next year, and should be beneficial. The enforcement of illegal fish sales is deficient for several reasons. First, because of financial limitations and lack of man power, efforts to control this problem have been restricted. Second, the MDNR prefers to concentrate its efforts to apprehending illegal fish buyers instead of sellers, although, little progress has been achieved. They

perceive this method as more efficient than concentrating on numerous sellers.

Harvest Quotas.- Respondents wanted the state to set accurate quotas on the harvest of Michigan fish to guarantee future supplies. The MDNR feels that at this time the Michigan commercial fishery is one of the most regulated in the nation and questions the need for more regulations. Present regulations are designed to insure the future of the fishery resource.

Educating the Public.- Several difficulties face the MDNR when asked to educate the public. The first is how to educate the public. What methods can be used and can efforts really affect the public's knowledge? Second, is it the MDNR's role to educate the public on marketing aspects of the resource? Is it their role to educate the public about fish quality, handling, cooking and preparation? Lastly, performing activities such as educating the public can be expensive. Currently, the National Sea Grant program is performing work on this topic.

Toxic Checks.- Most wholesalers wanted a decrease in the use of toxic checks at wholesale levels. These checks are not performed by the MDNR but by the Food and Drug Administration (FDA). They check at wholesale levels because of the small number of wholesalers which reduces the expense, time, and work load necessary to check the fish. Michigan salmon are also checked at wholesale levels even though the fish have been checked at the producers and they

have been given permission to sell. This may cause a marketing barrier because of the risk incurred by wholesalers when carrying the product. However, the FDA only covers inter-state shipments, and Michigan fish sold in Michigan are exempt from their regulations. Although, the Michigan Department of Agriculture does check Michigan fish for toxics.

Great Lakes Fishery

The alternative of opening a Great Lakes commercial salmon fishery was an alternative that the MDNR felt they would not accept because there would be too much political opposition against it. Also, the MDNR feels that by allocating salmon in the Great Lakes to a sports fishery and harvesting salmon at the weirs as a commercial fishery they are promoting efficient and good resource management.

CHAPTER V

DISCUSSION OF RESULTS

This chapter will review and discuss some of the primary results covered in the last chapter. Information from trade and research publications will be used to compare and contrast the Michigan fish marketing system and Michigan salmon marketing with other markets and products. These publications will also be used as a source of pertinent information which may be beneficial to the present marketing system.

The Michigan Fish Industry

Fish Marketing Participants

Wholesalers.- The location of wholesalers in Michigan were in three areas; Detroit, Grand Rapids, and along the shores of the Great Lakes. Other researchers have also acknowledged Detroit and Grand Rapids as major fish markets (Development Planning and Research Associate, Inc. 1982). The Great Lakes shore markets are smaller, less concentrated and probably less known as major Michigan markets. Those markets in southern lower Michigan have probably located there because of large populations in those areas. Markets along the Great Lakes shores have most likely located there

because they are close to local commercial fishermen, thus a local supplier, and because of the high influx of tourist during summer months. Suppliers to Michigan wholesalers are distributed nation wide, although most transactions are with Boston, New York, and Chicago markets (Fig. 8). These distant markets also serve as destination points for Michigan-caught fish (Harris 1982).

Michigan fish wholesalers tend to differentiate into several markets; restaurants, retail, and supermarkets. One reason for this is because markets have different demand characteristics based on location, economic levels, preferences, and traditional consumption levels (Development Planning and Research Associate, Inc. 1982). The market demand for a species is influenced by the local culture, religion, and traditions (Shang 1981).

Wholesale managers in the Michigan fish marketing system felt that the Michigan fish industry is very competitive¹ between wholesalers. Bell (1968) states that the primary market for fish is one of the most competitive in the U.S.. In spite of wholesalers belief that they have a coordinated² and tightly knit³ organization, observations of this research indicate that the Michigan fish industry is very fragmented⁴, lacking group effort in marketing coordination, promotion activities, and quality control.

Wholesale/retailers.— Michigan wholesale/retailers receive fish from wholesalers, commercial fishermen, tribal¹⁻⁴: Defined in Appendix C.

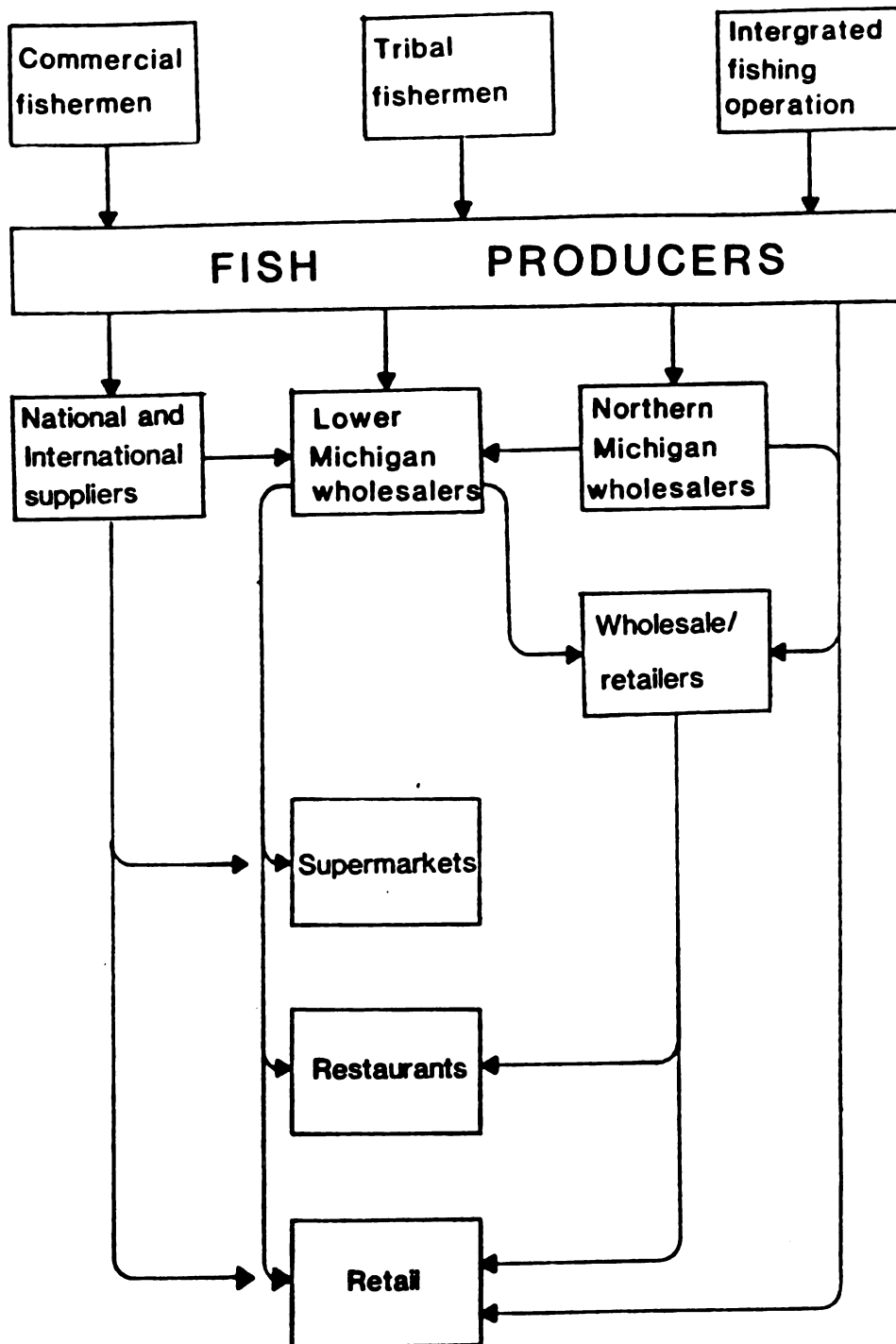


Fig. 8. Primary marketing channels of the Michigan fish marketing system.

fishermen, and from their own operations. Wholesale/retailers sold a majority of their fish through wholesale channels, but did operate a retail outlet. Harris (1978) reports that Michigan fish suppliers are not only involved in marketing, but in some cases also operate retail markets.

Supermarkets.- All supermarkets interviewed carried both fresh and frozen fish and the majority had a fresh fish service counter. The sale of fresh fish in Michigan supermarkets has just started recently, but has faced good sales. There seems to be a trend for grocers to establish fresh fish service counters. This trend was indicated by numerous new service counters, and reported plans for new fish service counters for stores which did not have service counters at this time. Similarly, Pierson (1983) reports that supermarkets are adding fresh fish service counters to their operations. In general, fresh fish departments are receiving increased space, capital, labor, promotion, and management attention. These trends may be caused by the growing number of consumers who buy fresh fish and seafood in supermarkets. Consumers are purchasing the majority of their fresh fish and seafood at supermarkets, and over half of all consumers rate fish and seafood selections in supermarkets to be good or excellent (GMA Research Corporation 1982a). Currently, there has been increasing consumer purchases of fresh products in general.

Restaurants.- Some grocers felt that restaurants are important to their sales because they are often the first

place consumers try fish. Although, restaurants prefer fresh fish, they also use frozen fish because it is convenient, less perishable, and less costly (Zehner 1972). Inherently, stable prices are crucial when a restaurateur is considering carrying fish, or a new species since they dislike frequently changing menu prices. Restaurants represent a large potential market for fish because people prefer to eat fish away from home (Ginley 1978, Finley 1981).

Fish Varieties

Most of Michigan's fish industry firms handle a wide variety of fresh and frozen ocean, lake, and Great Lakes fish, as well as other seafoods. Development Planning and Research Associate, Inc. (1982) states that a new concept in marketing is to centralize a wide variety of fish and seafood within one department. Michigan fish wholesale/retailers and retailers carried mostly fresh fish and few frozen items. Since fresh fish is significantly higher in economic value than frozen (Processed Prepared Foods 1980) and perceived by fish marketing managers as more desirable (Ginley 1978), Michigan wholesale/retailers and retailers seem to prefer carrying the fresh form. Alternatively, frozen fish is carried because of its convenience (Jensen 1982) and improved quality control (Wagner 1972).

Processing

The amount of processing performed by a firm depends on the type of fish. Michigan firms tend to do very little processing, preferring to let suppliers perform this function. This is similar to the produce market where wholesalers and retailers expect suppliers to take care of processing operations (McLaughlin and Pierson 1983).

Grocers and retailers in the Michigan fish industry sell the majority of their fish as fillets and a small amount as steaks. GMA Research Corporation (1982a) found that when the consumer is given a choice they most frequently choose fillets and steaks over whole fish.

Handling

Storage temperatures, shelflife, and product quality are all major concerns of Michigan fish market managers. Providing consistent quality is reported as a major key to merchandising fish (Pierson 1983). Storage temperatures for fresh fish reported by grocers ranged from 30-34° F, on the low side of the recommended temperature of 32-38° F (Food Manufacturer 1967).

Michigan managers perceived lack of standards in grading, naming of products, and labeling as one of the larger problems in the fish industry. Until the entire fish and seafood system upgrades its standards many consumers will avoid fish and seafood (Pierson 1983). This lack of

standards decrease the amount of market coordination between market levels and can cause confusion to shoppers.

Consumers

Composition.- Present day fish shoppers, as reported by the Michigan fish industry, are characterized as being one of three different groups; young professionals, persons of oriental heritage, and health and diet conscience consumers. Young professionals may be able to afford more fish and may be more aware of the nutritional and health values of fish. Orientals are traditional fish consumers, and fish consumption is part of their culture. Several researchers have acknowledged increased demand for fish and seafood by health and diet conscience consumers (Schaffer 1980, Ginley 1981, Pierson 1983). These consumers perceive fish as being nutritional, low in calories, and almost lacking in cholesterol (Ginley 1981, GMA Research Corporation 1982a).

Buying Behavior.- Michigan fish market managers thought that for most consumers, fish is bought on an impulse and is not a normal part of the consumer's market basket. U.S. consumers annually eat approximately 12.9 pounds per capita of commercial fish and shellfish (U.S. Dept. of Commerce 1984) compared to about 82 pounds of fresh beef (Development Planning and Research Associate, Inc. 1982). Unfortunately, Michigan managers report that pound for pound fish is more expensive than red meats. Similarly, Martin (1977) reports that beef and poultry are often cheaper per

ounce than fish. However, fish prices vary with quality, size, and supply, (van der Mealen 1962) and thus generalizations are risky.

Knowledge.- At all marketing levels managers thought that consumers and chefs have a low level of knowledge about fish characteristics, handling, and preparation. Consumers lack familiarity and competence in fish to a greater degree than with other foods (Ginley 1978, Pierson 1983). Zehner (1972) states that consumer education is a vital part of the selling effort and (Pierson 1983) reports that this effort must be continued. Though traditional eating habits die hard, shoppers presented with fish cooked in an appetizing way have added it to their menu (Craig 1981). Continued and increased education and promotion work should help maximize this acceptance.

Promotion

Most promotion done in the Michigan fish industry is by word of mouth, although grocers and retailers try to increase sales through in-store promotion activities. Several research projects on promoting seafood and fish have been conducted by the GMA Research Corporation (1982a). They found that consumers would purchase more seafood if more recipes were made available. Over 40 percent of consumers either always, or frequently, use recipes in preparing seafood and agree that there should be more recipes on ways to fix seafood. Cookbooks, magazines,

newspapers and word of mouth were the most cited sources of recipes. In Zehner's (1972) report to the Michigan Trout Producers Cooperative, she states that to market Michigan trout, producers must go out and extensively promote the product. According to retailers interviewed by Development Planning and Research Associate, Inc. (1982) advertising has a significant effect on purchases, and consumers are very receptive to salmon promotions. Television and newspaper reports about fish and seafood are well received by consumers, while radio plays an important part as a reinforcer (GMA Research Corporation 1983a).

Distribution

Distribution from suppliers to Michigan wholesalers is most frequently by temperature regulated aircraft, while distribution from wholesalers to other market levels is by temperature regulated truck. All market levels rely on quick delivery to maintain product quality. Grocers and retailers are looking for distributors who can get fish to them on time (Pierson 1983), and this probably holds true for wholesalers and wholesale/retailers. The primary concern in distribution is reflected by managers demand that fresh products arrive in their stores two to three days after harvest.

Market Position

Some wholesale/retailers and retailers feel that they have inadequate bargaining power with wholesalers and that wholesalers have a tight grasp on the market. It is interesting to note that Bell (1968) reports that individual fishermen have little market power, especially since they can do little to differentiate their product from their competitors. So it seems that both wholesale/retailers and suppliers lack market power. It may be possible that the fish industry is approaching strategies similar to those McLaughlin and Pierson (1983) reported for the fresh fruit and vegetable market. They state that "wholesalers and retailers are increasingly moving costs and risk to growers and shippers."

The West Coast Salmon Market

The Influence of the West Coast Salmon Industry

To understand more about fish marketing systems in Michigan and Michigan salmon markets it is useful to look at the west coast salmon industry. Not only are west coast salmon a substitute to Michigan salmon, but west coast products and marketing practices also influence the marketing of salmon in Michigan. Competition with regional products in domestic markets is an important factor affecting the demand for a species, as well as, market

demand for a species can be approximated by regional comparisons (Shang 1981).

Production

Alaska and Northwest salmon production accounts for approximately 50 percent of the world supply of salmon and almost the entire domestic supply (Fig. 9) (Natural Resource Consultants 1983). Alaskan production alone, accounts for about 84 percent of the U.S. production of fresh, frozen, and cured salmon over a six year period (Development Planning and Research Associate, Inc. 1982). Salmon landings were the second most important in quantity and value for the 1983 commercial U.S. fishery (U.S. Dept. of Commerce 1984). A total of 639,293,000 pounds of pacific salmon were landed in 1983 (Table 1), of which 0.6 percent went into fillets and steaks, and 27.4 percent into canned salmon production, and 78 percent as whole or eviscerated fish. Forty six percent of the pacific salmon landings were sold on export markets as fresh, frozen or canned. Although no major changes are expected in the status of northwest salmon resources, before the end of the decade abundance of pacific salmon will drop to cyclical lows, with decreasing run sizes and catches (Natural Resource Consultants 1983). However, other researchers may not agree with these predictions, Development Planning and Research Associate, Inc. (1982) expected that high Alaskan salmon production will continue into the future.

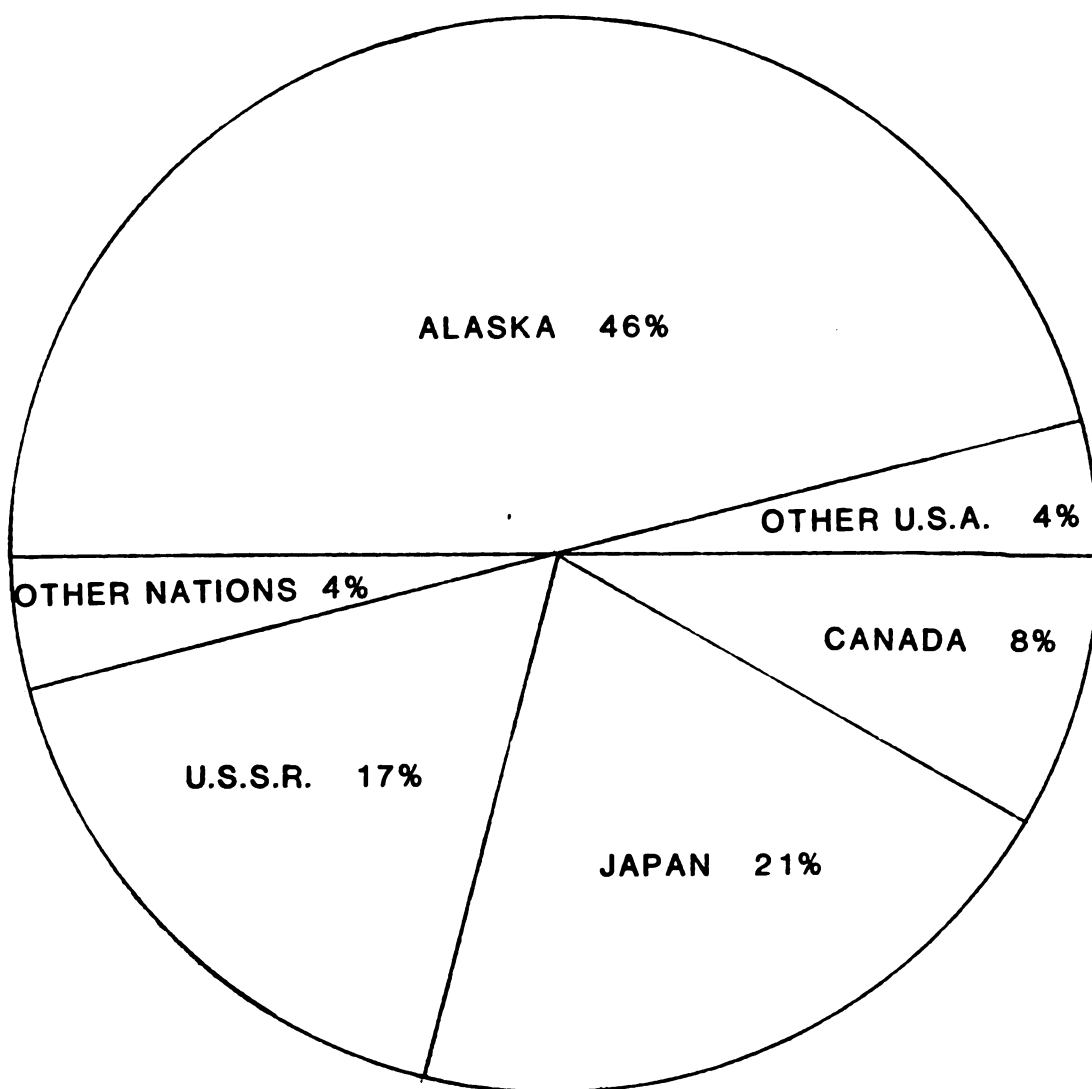


Fig. 9. Percent of world salmon supply by major country, 1980
(Natural Resource Consultants 1983).

Table 1. U.S. salmon landings, 1973-1983 (U.S. Dept. of Commerce 1973-1983).

YEAR	Whole Weight (Thousand Pounds)	Exvessel Value (Thousand Dollars)
1973	213,009	125,113
1974	196,820	121,312
1975	201,591	116,298
1976	309,242	196,496
1977	335,642	221,863
1978	404,489	254,537
1979	536,116	412,776
1980	613,811	352,277
1981	648,440	438,247
1982	607,420	391,999
1983	639,293	350,826

Supply of West Coast Salmon Available to Michigan

The west coast salmon industry faced two major problems in 1983, large carryovers of inventories, and declining values of foreign currencies which negatively impacts export sales (Pacific Fishing 1984). This large supply of product and disincentive for international trade will increase supplies of northwest salmon available to Michigan wholesalers. This is reflected by Tempotech's response of market saturation as a major market barrier. However, the northwest salmon industry is having difficulties marketing their product profitability and this could continue into the future (Natural Resource Consultants 1983).

Michigan's Demand for West Coast Salmon

All Michigan market levels thought that west coast salmon sold well and report good demand for the product. Pacific Fishing (1984) reports that consumer awareness and consumption of salmon is growing. However, this increase in fish consumption may be caused by the growth in population, with only small increases, in per capita consumption (Table 2) (Natural Resource Consultants 1983). GMA Research Corporation (1983a) states that awareness of salmon has actually decreased in 1983, when compared to 1982. The largest market in sales for U.S. fresh and frozen salmon is Japan. However, the U.S. is the second largest market and U.S. frozen salmon sales have been rising rapidly in recent

Table 2. U.S. salmon consumption, 1973-1983 (U.S. Dept. of Commerce 1973-1983).

YEAR	U.S. Consumption* (Thousand Pounds)	Population (Million Persons)	Per Capita Consumption (lbs./capita/ year)
1973	134,807	209.6	0.64
1974	170,795	211.6	0.81
1975	134,838	213.8	0.63
1976	249,954	215.9	1.16
1977	239,788	218.1	1.10
1978	239,897	220.5	1.09
1979	336,462	223.0	1.51
1980	412,278	225.6	1.83
1981	364,889	227.7	1.60
1982	292,787	229.9	1.27
1983	331,357	232.0	1.43

*U.S. consumption = U.S. Landings + Imports - Exports - Storage.

years (Development Planning and Research Associate, Inc. 1982).

West Coast Salmon Prices

Exvessel.-- The exvessel price¹ per pound, in 1983, for all pacific salmon species was 55 cents, and prices for chinook and coho were the lowest they have been in the last six years (U.S. Dept. of Commerce 1984). Some of the most common factors determining exvessel prices are; quality, size, season, gear type, location, competition, and product form; although, Alaskan prices are most influenced by market perceptions of fish quality (Development Planning and Research Associate, Inc. 1982).

Wholesale.-- Domestic wholesale prices of salmon in real dollars has trended downward in recent years. Wholesale prices are affected by supply, quality, and the demand for fish (Development Planning and Research Associate, Inc. 1982). The wholesale price per pound for fresh west coast salmon ranged from 2.84 dollars for chinook to 1.60 for chum salmon.

Retail.-- Retail fish prices in 1983 were at their peak during August and September and lowest during March and April (U.S. Dept. of Commerce 1984). A large portion of the total salmon marketing cost is the high transportation cost of distributing the product (Development Planning and Research Associate, Inc. 1982).

¹: Defined in Appendix C.

West Coast Salmon Market Form

Domestic Market.— Coho and chinook pacific salmon are processed almost exclusively in fresh and frozen forms, and have been predominate species in fresh markets, with eventual market form depending on inherent quality, size, and method of harvest (Development Planning and Research Associate, Inc. 1982, Natural Resource Consultants 1983). Chinook salmon are very high in fat content and have firm, succulent flesh. Chinook are marketed as slices, steaks, fillets, and smoked sides. Larger fish are generally used for smoking. Coho also have firm flesh but have a more delicate flavor. These fish are highly desirable for both table use and smoking because of their size, color, and relatively high fat content. Most coho are sold as frozen whole fish, steaks, or as fillets. These frozen fish are popular with domestic retail stores and restaurants.

Michigan Markets.— The majority of Michigan firms that carried salmon, carried bright-silver grade west coast salmon, most of which is from Alaska. Michigan firms use the smaller size west coast salmon as H&G, since they perceive consumers as preferring smaller size fish. However, Development Planning and Research Associate, Inc. (1982) reports that larger size salmon are considered a positive attribute by buyers. Large salmon in the Michigan market are cut into steaks, while medium size fish are cut into fillets.

The Michigan Salmon Market in Michigan

Salmon Production

During 1983 approximately 1,975,886 pounds of excess Michigan salmon were harvested, of which roughly 60 percent were coho and 40 percent chinook (unpublished MDNR notes). Of the total catch about 24 percent were silver grade salmon¹ and the rest were dark grade salmon², stripped salmon³, and mortalities⁴; 64, 7, and 5 percent, respectively (Table 3). Although, this harvest of nearly two million pounds seems large, it is quite small when compared to the west coast salmon harvest of over 600 million pounds. Dramatically, the Michigan harvest equals roughly 0.3 percent of the west coast harvest.

Salmon Supply

At present, only a few Michigan firms are carrying excess Michigan salmon, and accounts for a small portion of the harvest. One of the main problems in supplying Michigan firms has been the lack of agreement between Tempotech and buyers on selling prices. There are also several Michigan firms carrying salmon which had been caught in the Great Lakes by tribal fishermen but these purchases have been small and supplies inconsistent.

¹⁻⁴: Defined in Appendix C.

Table 3. 1983 excess Michigan salmon harvest by species and grade (Unpublished MDNR Notes).

Species/Grade	Number	Pounds	Percent of Total Catch Weight
Chinook			
Silver	8,399	43,133	2.2
Dark	40,230	578,007	29.3
Stripped	7,480	90,974	4.6
Mortalities	<u>5,155</u>	<u>74,129</u>	<u>3.8</u>
TOTAL	61,264	786,243	39.8
Coho			
Silver	69,097	437,368	22.1
Dark	102,295	695,019	35.2
Stripped	6,961	37,869	1.9
Mortalities	<u>2,799</u>	<u>19,386</u>	<u>1.0</u>
TOTAL	181,152	1,189,692	60.2
	<u> </u>	<u> </u>	<u> </u>
TOTAL	242,416	1,975,935	100.0

Salmon Demand

Several Michigan fish firm managers said they would be interested in carrying excess Michigan salmon and thought they would want fresh and frozen, brights and semi-brights. They perceive good demand for the product if a large supply is available at the right price.

Salmon Prices

The price of excess Michigan salmon is mainly affected by the price Tempotech will have to pay the MDNR to purchase these fish. The price is also affected by harvest, processing, transportation, and storage costs. During 1984 excess Michigan salmon were sold by two Michigan retail fish stores. One store was selling Michigan salmon as frozen salmon steaks in five pound boxes for 2.99 dollars per box (60 cents/lb.). The other store was selling whole fish, averaging two to four pounds per fish, for 1.25 dollars per fish (31 to 62 cents/lb.). One Michigan retail fish store was selling salmon caught in the Great Lakes, by tribal fishermen, as fillets for 2.99 dollars per pound. These prices are relatively low compared to the Michigan retail price of west coast salmon of about 5.70 dollars per pound for fresh salmon steaks.

Salmon Processing

Utilization.— Michigan fish firm managers had little to say about Michigan salmon products, especially the lower

grades. This disinterest could be caused by several factors. First, respondents may not care how salmon are handled as long as they arrive at markets in the proper condition. Second, managers may have been restricted by time and may not have wanted to extend the survey by discussing the use of Michigan salmon. Third, respondents may lack adequate knowledge on utilizing low quality fish.

Quality and Form.— Managers perceived Michigan salmon as being lower in quality than west coast salmon, especially in color and taste. However, managers did think higher grade Michigan salmon could be sold as a fresh product. The majority of managers thought that a large percentage of the product should be processed into steaks and fillets and a small amount could be sold in the round or H&G. Those fish with inferior quality characteristics could be placed on frozen markets.

Canned.— Tempotech reported that, because of large harvests of west coast salmon and large inventories of west coast canned salmon, the canned salmon market is an unacceptable alternative for marketing Michigan salmon. High inventories of canned west coast salmon were also reported by the Development Planning and Research Associate, Inc. (1982). There has also been a shift in the U.S. away from canned salmon (Natural Resource Consultants 1983), despite a lower price image by consumers compared to fresh and frozen salmon. Consumers also perceive canned salmon as less nutritious than fresh (GMA Research Corporation 1982a).

It is interesting to note that the GMA Research Corporation (1982b) found that two percent of consumers interviewed thought that their purchased canned salmon (Alaskan) was from the Great Lakes and over 50 percent of those interviewed did not know or care where canned salmon came from. This awareness of the Great Lakes as a salmon fishery may be a reason for calling the product Great Lakes salmon.

GMA Research Corporation (1982b) reports that consumers have little awareness of the origin of pacific salmon. Only 18 percent of consumers interviewed by GMA Research Corporation (1983a) reported that fresh and frozen salmon comes from Alaska. Although, consumers are interested in the pros and cons of the selected species, they are not concerned with the origin of the species (GMA Research Corporation 1982).

Smoked Products.- The majority of managers thought that Michigan salmon would fare well on the market as a smoked product (e.g. smoked fillets, lox, etc.). Alternatively, Tempotech reported that Michigan salmon would not produce high quality smoked products and that smoked fish markets are highly competitive. In general, fish with low fat content, poor color, or with a tendency to bruise are unsuitable for smoking (Development Planning and Research Associate, Inc. 1982). Because of extensive energy required during spawning and the high tendency for bruising from holding prior to harvest, Michigan salmon would most likely provide a low quality smoked product.

Jerky and Smokestick.— Salmon jerky and smokestick met good acceptance from respondents, and those who tried the product were also impressed with its taste. These products would serve as convenience items which are an important part of consumers fish purchases (Martin 1977, Pierson 1983). Tempotech feels this would be the most appropriate way to sell Michigan salmon, although, the problem lies in the difficulty in getting shelfspace on the jerky market. Difficulties faced by small food manufacturers in obtaining shelf space were also reported by Walzer et. al (1976), as well as considerable amounts of risk involved in salmon processing due to the necessary fixed cost of operations (Development Planning and Research Associate, Inc. 1982). Although, problems may be faced in obtaining shelf space within supermarkets, possibilities exist of Tempotech directly servicing small grocery stores and convenience stores with processed Michigan salmon. This may be the best alternative for handling low grade salmon, although, the MDNR would prefer that only a small percentage of Michigan salmon be allocated to highly processed forms.

Labeling and a Seal of Approval

Both Michigan fish marketing managers and Tempotech thought some type of label and seal of approval would help market Michigan salmon. Both groups thought that the seal of approval would be most beneficial if backed by the government. The GMA Research Corporation (1984a,b)

conducted a quality seal shelf test with Alaskan salmon products using the "Alaska Premium" seal. These seals influenced shoppers positively; with shoppers willing to pay more, associated products with higher quality and/or increased safety, and were more likely to choose that product. They also report that the seal would have greater impact had it been more prominent and if greater exposure through advertising had been accomplished.

Packaging

If the product is to be sold in a package, Michigan fish firm managers perceived that it would have to be done in an appealing fashion with promotion items such as recipes, handling instructions, and a creative description of the product on the package . Packaging will increase consumer acceptance and help maintain higher product quality. Pierson (1983) reports that vacuum packaged fresh fish can remain seven days in the package and five more days in the display case, although, it is important that packages be odorproof and leakproof. Cornell University research on the storage of fish, found that blanched fish in 190o F water for two seconds prior to storage almost doubles product shelflife (Industry Week 1981). They have also worked on a controlled atmosphere storage system for fresh salmon which can extend the fresh products quality at least four weeks (Processed Prepared Foods 1980). Consumer reactions to salmon in individual polyethylene pouches has been excellent

(Wagner 1972), and other test markets reveal large potential markets for high quality prepackaged fresh fish (Food Manufacturer 1967).

Product Introduction

The introduction of a new product into the market is not easy. The average grocery chain is offered 100 new products a week and the success of these products depend on the products concept and its physical characteristics (Cantor et. al 1969). With the introduction of a new product we must be careful to avoid the following reasons for market failure given by Angelus (1970);

- 1) Insignificant consumer difference
- 2) Poor product positioning
- 3) No point of difference
- 4) Bad timing
- 5) Poor product performance
- 6) Wrong market for the company

Thus, when looking into markets as potential areas for the introduction of Michigan salmon, it will be important to observe the market to obtain a measure of the potential risk.

Conflicts and Needs

Conflicts.-- Poor promotion and public relations of commercial Michigan salmon is one of the barriers facing the marketing of these fish. Conflicts at the weirs caused by upset sportsmen, and accusations of harvesting recreational species has resulted in poor publicity of the harvest.

Similarly, Oregon's commercial and recreational fishermen are both trying to convince management agencies that their group should have a larger share of harvestable supplies (Smith 1978).

Needs.— One of the major needs of managers was to have the MDNR become active in the Michigan fish industry. Other states in the U.S. have marketing groups which combine state and private aid to help market a fishery product. The Alaska Seafood Marketing Insititute (ASMI) is a good example of a joint state and industry body, supported financially by the state, which provides promotional efforts, quality assurance, and publications (Development Planning and Research Associate, Inc. 1982). However, the MNDR feels that the Michigan Fish industry should perform their own marketing activities and that the MDNR should not be involved. Fish Industry needs from the MDNR, as listed by managers, will probably not be met because either the MDNR did not think they were responsible for that market role or were limited because of money, time, or labor. Although the MFPA is an organized fish industry group, they have not taken the lead in marketing Michigan fish. Perhaps in the future a group can be formed, composed of representatives from the MDNR, the MFPA, the Michigan Commerce Department, etc., to put a concerned effort into the marketing of Michigan's fishery resources.

The Contaminant Issue

Michigan fish marketing managers responded that few consumers asked about contaminants in fish. It was the managers perception that consumers were no longer worried about contaminants and that consumers believe that products on the market are safe. In contrast, the MDNR perceives contaminant problems as the number one marketing barrier and low quality as a secondary barrier. Tempotech also perceived contaminants and low quality as major barriers, with contaminants not only affecting consumers perceptions but also affecting the way Tempotech handles the product. In comparison, very few managers perceived contaminant levels as a large problem, but felt that it had been magnified by the news media.

Great Lakes Fishery

The majority of managers interviewed thought that Michigan salmon should be harvested in the Great Lakes. Salmon caught in open waters are also preferred by the Alaskan industry (Development Planning and Research Associate, Inc. 1982). Managers referred to lake caught Michigan salmon as being very good, but not as good as west coast salmon. The location of catch is also important from an intrinsic quality standpoint (Development Planning and Research Associate, Inc. 1982). Because of higher perceptions of salmon caught on the Great Lakes, managers felt that Michigan salmon and its products should be called

Great Lakes salmon. In their management report Tody and Tanner (1966) recommended that surplus stock of Michigan salmon be commercially harvested but do not mention if it should be an open water fishery. Tempotech felt that the change from a weir fishery to a Great Lakes fishery would have little effect on their firm, while, the MDNR would not accept the Great Lakes fishery alternative. Since, the MDNR is in charge of the harvest regulations and oppose the idea of a Great Lakes fishery, this alternative will not be feasible. Although, the MDNR should keep in mind that it would be easier for the harvester to market Michigan salmon if caught in the Great Lakes.

CHAPTER VI

Recommendations

This chapter will present three separate sets of major recommendations. The first set consists of recommendations to Tempotech, which should help increase Tempotech's efficiency and reduce the risk of market failure for Michigan salmon products. Recommendations will also be made for the MDNR which should be beneficial to Tempotech and help reduce conflicts involving the harvest. Lastly, recommendations will be made for the Michigan fish marketing system. These recommendations center around improvements for market performance. They do not place emphasis on Michigan salmon, however, in the long run they may be beneficial to the marketing of Michigan salmon. Results of the interviews with Michigan fish marketing participants are the primary basis for each recommendation. However, formulation of specified recommendations and suggestion of practical implementation required integration of interviews with the MDNR and Tempotech, as well as personal observations and marketing literature.

Recommendations to Tempotech

Product Quality

Attempts should be made to improve product quality, thus increasing consumer acceptance and marketability. However, the feasibility of these changes, to increase quality, can be highly affected by their costs. Alternative methods of implementing increased quality are listed below.

- 1) Locate harvest sites as close to the Great Lakes as possible. This should increase the percentage of silver grade fish in the catch.
- 2) Decrease harvest site live fish holding time as much as possible so fish can be harvested sooner. This should increase the quality of the fish since they will be slightly less mature, experience reduced bruising, and sustain fewer preprocessing mortalities.
- 3) Reduce time period between harvest and processing. This may be accomplished by more frequent trips between the harvest and processing sites, quicker loading and unloading, and less delay time. Development Planning and Research Associates, Inc. (1982) state that salmon must be processed as soon as possible because of the fragile nature of the meat and its rapid deterioration.
- 4) Trailers should have refrigerator units and these should be kept at the proper temperature.

5) Decrease handling and processing time as much as possible, with less holding time before processing so fish may maintain higher quality.

Processing

1) Bright grade salmon should be processed into fresh fillets and steaks. Finley (1981) recommends that processors should concentrate on fresh fish. Additionally, Processed Prepared Foods (1980) states that storing fish in the fresh form can result in potential savings in the cost of freezing operations.

2) Semi-brights should be processed into frozen steaks, fillets, and H&G with large, medium, and small fish, respectively; used for each product form.

3) Low grade salmon should be used in highly processed forms. Cured products such as jerky should meet favorable market conditions.

Packaging

1) High quality packaging and handling will be important in marketing the product.

2) Packaging should be attractive and appropriate labeling would be beneficial.

3) Frozen and cured products should be sold in a sealed package and it may be feasible to sell fresh fish in a

similar manner. However, more information on packaging of fresh fish should be found before it is attempted.

4) Contacts with leading universities should be made and maintained to provide Tempotech insights into processes that can increase shelf life and quality. Cornell University may be a good place to gather such types of information.

Michigan State University departments of Food Science and Packaging may also be able to provide Tempotech with help in this area.

Labeling and Seals

1) Clean attractive labeling should be used whenever possible and can be used in several ways.

- a) Placed on packaged products
- b) Given to firms to be used in fresh fish display cases

2) Labels should include the following

- a) Handling instructions
- b) Cooking instructions
- c) Recipes
- d) Attractive description of the product

3) Some type of seal, such as a seal of approval from a governmental agency or consumers group, would be helpful.

Some possibilities for seals would be;

- a) Fresh Great Lakes Salmon
- b) Great Lakes Best
- c) Michigan's Finest

Distribution

1) Products should be moved to buyers as soon as possible, particularly fresh fish. Transportation systems should be temperature regulated and the product should be kept on ice.

2) Fresh and frozen products should be distributed through existing wholesalers and wholesale/retailers. Shang (1981) states that the existing fish marketing system should be given primary consideration.

3) If the above is not feasible, Tempotech should look into the possibility of performing these wholesale activities. Forward vertical integration should be used when there is an inability to effectively market products through existing outlets (Yuen et al. 1978).

4) If possible, jerky and smokestick products, should be distributed through those large distribution firms presently handling products similar to these. If this is not possible, Tempotech should look into the feasibility of directly distributing these products to grocery stores and one stop convenience stores.

Promotion

1) T.V. and newspaper should be the most effective way to promote the product. Radio spots should be used at intervals as reinforcement to the above methods.

2) Target consumer segments should include young professionals, orientals, and health and diet conscious consumers. Of the three, young professionals may be the least important since their higher incomes will allow them to easily substitute west coast salmon for Michigan salmon.

3) GMA Research Corporation (1983b) recommends that optimum impact, given a specific budget, can be achieved by covering more markets with limited advertising expenditures.

4) In-store promotion items, such as posters and recipes, should be readily available to firms purchasing the product. These promotion items should target consumers senses of taste and smell. Promotion items using "mouth watering" words convince consumers that fish is good and to purchase it (Ginley 1978).

5) News releases on the commercial use of Michigan salmon, harvest activities, salmon contaminant levels, and recipes should be made as often as possible.

Price

1) During the early years of product introduction, prices should be as low as possible to influence consumer acceptance, and decrease competition from illegal sales. Once the product has been initially accepted by Michigan consumers, increases in price may be feasible. Jensen (1982) states that success with fish products will insure repeat business.

2) Increase the volume of fish harvested, with more harvest sites or improved techniques. This may decrease the average fixed cost per fish and provide a larger supply to Michigan fish firms.

Product Identification

Products should be referred to as "Great Lakes Salmon" when sold in the Michigan and U.S. markets, to encourage greater consumer acceptance.

Product Introduction

1) It will be important to have a planned program that pre-determines the risk involved and moves to reduce these (Cantor 1969).

2) Best market penetration could be achieved during the fall and winter months, when availability of fresh salmon is a problem (Wagner 1972).

3) Product introduction through special group meetings may help increase consumer acceptance of the product.

a) Introduce the product through special functions and banquets, such as Michigan State University Autumn Fest.

b) Invite Michigan specialty fish firms to the processing plant for an open house, to introduce them to the product and provide information on Tempotech's

processing and harvest activities. A similar approach could be used with newspaper food section editors.

Future Research

- 1) Consumer market studies should be performed during the time of product introduction. Information on consumer demographics, product awareness, product acceptance and perceptions, could help predict market feasibility and reduce risks.
- 2) Studies should be performed to look into markets such as restaurants and institutions. These markets could supply feasible outlets for the product.

Recommendations to the MDNR

- 1) Supply as much information as possible to the public about the rationale for the harvest and the activities performed during the harvest.
- 2) Try to increase the public's knowledge on fish quality and contaminant levels of Great Lakes fish.
- 3) Increase enforcement of illegal salmon sales, especially those made by sportsmen.

4) In the future, make sure that the contract bidding is well publicized and that the transaction is transparent to the public.

Recommendations to the Michigan Fish Marketing System

1) Those involved in this system should try to improve their market organization so they can coordinate market activities. Professional experts, specializing in market cooperatives and organization should be called on to provide a coordinated, efficient, market system.

2) Standards for grades, names, and quality should be set up and enforced within this industry.

CHAPTER VII

SUMMARY AND CONCLUSION

SUMMARY

A total of 42 interviews were conducted with the following market levels; specialty fish wholesalers, wholesale/retailers, and retailers; supermarkets, Tempotech Industries, Inc., and the MDNR. These interviews were formatted as open discussions and observed present marketing activities and perceptions on marketing excess Michigan salmon in Michigan.

Michigan fish markets are located in southern Michigan's larger cities and along the shores of the Great Lakes. There are few large wholesalers in this state and they seem to have a highly competitive and differentiated markets. All market levels carried wide varieties of fish in both fresh and frozen forms. These firms prefer to sell fish which has been processed by the producer or supplier into fillets or steaks. Major concerns of firm managers were storage temperatures, product shelflife, quality, and lack of standards in the industry.

Fish firm managers perceived that their consumers were composed of young professionals, orientals, and health and diet conscience consumers. Managers were also under the perception that consumers bought fish infrequently when

compared to other meats, and that consumers had low knowledge on species, taste, and preparations of fish.

The majority of fish promotion activities performed by the industry is by word of mouth, although, retailers and supermarkets also rely on in-store promotion activities. Increased promotional activities may help strengthen fish sales in Michigan.

Salmon carried by Michigan fish firms were mainly west coast salmon. Large supplies of this product are available and managers perceive good consumer demand. These fish are sold in fresh and frozen forms and are usually processed as fillets and steaks.

The excess Michigan salmon harvest is very small (0.3 %) when compared to the west coast harvest and the Michigan harvest consist of a relatively small percentage of high quality fish. At present, few Michigan firms are carrying these excess salmon, though, increased demand may result if a large supply is available. The sale price for these fish was approximately 89 percent lower than what is being received for west coast salmon.

The main barrier to marketing Michigan salmon, as perceived by firm managers, is the lower quality and taste when compared to west coast salmon. A distant second barrier to marketing the product was the highly publicized contaminant issue surrounding the product.

Managers perceive that high grade excess Michigan salmon should be sold as fresh, and medium grade salmon as frozen,

with both products processed as fillets and steaks. Low grade Michigan salmon should be used in a highly processed form such as jerky or salmon smokestick.

Respondents perceived that attractive and descriptive labeling and packaging should be used to help market these fish. Some type of product seal would be beneficial and if possible the seal should be backed by a governmental or consumer agency. Better public relations and promotion of the commercial use of these salmon should be incorporated into both Tempotech's and the MDNR's future plans, so to increase consumer acceptance of the product and its commercial use.

Specific recommendations were made to Tempotech, the MDNR, and the Michigan fish marketing system. Recommendations to Tempotech and the MDNR were centered around the marketing of excess Michigan salmon in Michigan. Several recommendations were also made specific to the Michigan fish marketing system which may be beneficial to their market activities.

CONCLUSION

Although low quality of excess Michigan salmon and the contaminant issue surrounding this product are the two main marketing barriers, other minor barriers were also perceived

by the Michigan fish industry. None of these barriers appear to be so large that independently they would cause the failure of marketing excess salmon, but together they may form a large solid market barrier. These independent barriers could be perceived as building bricks of various shapes and depths, some larger and thicker than others, which form a solid wall separating market success from failure. The pertinent question is how many of these bricks must be reduced or removed to have access to a successful market. Those bricks representing low quality and the contaminant issue may be so massive that they may never be removed. Yet over time, well planned marketing activities may decrease their size and depth and additionally remove some of the smaller bricks, leading to a successful market.

APPENDIX A

Introduction letter sent to
Michigan Fish Market Participants.

Bruce Marshall
Marshall Seafood, Inc.
4243 Green, S.E.
Detroit, Michigan 49508

May 20, 1984

Dear Mr. Marshall:

During the summer of 1984 I will be interviewing fish marketing firms in Michigan. This initial contact is to inform you that you have been chosen to be part of a selected group of approximately forty five, which will serve as representatives from your industry.

This survey is part of my research for a masters degree under the department of Fisheries and Wildlife at Michigan State University. The study was generated by contract requirements placed by the Michigan Department of Natural Resources on Tempotech Industries, Inc.. Tempotech purchased the rights to harvest excess Michigan salmon from the state of Michigan. The contract calls for the development and implementation of a marketing plan for Michigan salmon and byproducts within the state. The purpose of the interview is to learn your perspectives and opinions on this topic. All interviews will be strictly confidential and anonymous. Hopefully this study can be beneficial to both our research unit and your firm.

Each person interviewed will be asked to answer a list of questions pertaining to Michigan salmon and its Michigan market. The questions will be open-ended and are to assure that specific topics are covered during the interview and to encourage the host to discuss in as much detail his/her opinions and perspectives on other topics which deal with the marketing study.

The interviews will take between 30-50 minutes. We would like to set-up an appointment at the most convenient time possible between June 1 and September 30. However, for efficiency, those merchants in the same local area will preferably be interviewed in the same time period. I would like to meet with you on 6/06/84 if this will be possible. I will be contacting you by phone within a week following this letter to discuss this appointment. I'm looking forward to meeting with you and discussing your opinions and perspectives. Thank you for your time and help, if you have any further questions please feel free to call me at (517) 353-7981.

Sincerely yours,

Mark S. Sargent
Research Assistant
Fisheries and Wildlife Dept.

APPENDIX B

Interview Questionnaire

Fish Marketing Questionnaire

Date _____

Time _____

Name of Firm _____

Name of Respondent _____

Respondents Title _____

Location of Firm _____

1) Are you involved in:

wholesale activities _____

retail activities _____

2) What types of fish do you carry?

3) Aproximately, how much fish do you carry?

4) Where does most of your fish come from?

5) How do you receive your fish?

6) Would you describe your processing activities?

7) Would you describe your storage system to me?

8) Would you describe your methods of displaying fish?

9) What type of consumer are you selling to ?

10) What type of questions do your consumers ask?

11) What type of promotion activities do you perform?

12) How do you distribute your products?

13) Who do you distribute your products to?

14) What would you say are the major problems in the Michigan fish marketing system?

15) What are your major marketing concerns?

16) Describe to me any other important factors effecting the marketing of fish in Michigan.

17) At this time do you sell salmon?

18) If so what kinds of salmon?

19) Where is this product from?

20) In what forms do you sell salmon?

21) Could you give me all your reasons for not selling Michigan salmon?

22) Assuming Michigan salmon were available for a reasonable price, what would be your reason for not selling it?

23) If a Michigan firm tried to develop a Michigan market for Michigan salmon, what would be the major problems encountered?

24) What would you need to carry Michigan salmon?

25) What activities are needed to gain a successful market?

26) Respondents are asked to look at samples of Michigan salmon.

27) What is your perception of these products?

APPENDIX C

Definitions and Terminology

DEFINITIONS OF TERMINOLOGY

Competitive- striving against each other for increased sales and market share.

Coordinated- organized group working towards common goals.

Dark Grade Salmon- MDNR grade, placed on weir caught salmon for price differentiation. These fish are the lowest grade produced at the weirs.

Excess Michigan Salmon- the portion of salmon returning to streams which exceed management objectives for recreational opportunities and stream ecology, as well as those carcasses remaining after egg removal for hatchery use.

Exvessel Price- the price received by the harvester of the fish.

Exvessel Value- the value of fish at the harvester marketing level.

Fragmented- disorganized group working against each other or not working towards common goals.

Integrated Fishing Operation- firms which have integrated their fishing operation with a retail and/or wholesale operation.

Great Lakes Fish- fish caught on the Great Lakes (eg. whitefish (Corgonus clupeaformis), salmon (Oncorhynchus spp.).

Lake Fish- fish caught on inland lakes (eg. bass (Micropterus spp.), bluegill (Lepomis macrochirus).

Mortalities- MDNR grade, placed on weir caught salmon for price differentiation. These fish have died during holding and have low quality and value.

Silver Grade Salmon- MDNR grade, placed on weir caught salmon for price differentiation. These fish are the highest grade produced at the weirs.

Stripped Salmon- MDNR grade, placed on weir caught salmon for price differentiation. These fish have had their eggs removed by MDNR personal and have a low value.

Tightly knit- organized group which works well together.

Tribal Fishermen- those fishermen who have been given special fishing rights because of their native american heritage.

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