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**Yellow Perch Markets
in the
North Central Region:
Results of a 1996/97 Survey**



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by

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Executive Summary

Yellow perch is a popular sport and eating fish in the North Central Region. A serious decline in the Great Lakes fishery began in the early 1970's and has never reversed itself. Consequently, interest in the commercial culture of yellow perch has intensified in recent years. Considerable funds have been invested in developing commercial culture practices. This study examines marketing issues affecting yellow perch aquaculture.

Methods

In this study, a mail survey was conducted of retail and wholesale firms in the food industry, i.e., restaurants, supermarkets, seafood wholesalers, seafood retailers, foodservice distributors, grocery wholesalers, and fish brokers. Different survey instruments were developed for different firm types. Survey questions requested general information on firm characteristics and fish/seafood purchase/sales behavior along with specific information on purchases/sales of yellow perch. A mailing list was purchased from a private company. Survey mailings occurred between August 1996 and March 1997.

Firm Characteristics Positively Influencing Yellow Perch Sales

Restaurants (tableservice establishments not part of a chain and not primarily serving pizza)

- Location is a very strong influence in terms of:
 - ▶ proximity to Great Lakes: 70% of restaurants serving yellow perch are located within 50 miles of the Great Lakes
 - ▶ state: predominantly Michigan and Wisconsin followed by Ohio, Indiana, and Illinois
- Location exception is population density:
 - ▶ whether the restaurant was located in a rural or urban location did not seem to affect whether or not it served yellow perch
- Other characteristics with positive influence:
 - ▶ more formal ambience/more expensive menu
 - ▶ higher annual sales volume
 - ▶ greater presence of seafood on menu

Supermarkets (grocery stores with \$2 million or more in sales)

- Location is a strong influence in terms of:
 - ▶ proximity to Great Lakes: 56% of those selling yellow perch located are within 50 miles of Great Lakes with a definite trend of greater distance away, less likely to sell yellow perch
 - ▶ state: predominantly Ohio and Michigan followed by Wisconsin, Indiana, Illinois, and Missouri
 - ▶ population density: definite trend of supermarkets located in larger population centers more likely to sell yellow perch
- Other characteristics with positive influence:
 - ▶ larger store size
 - ▶ higher annual sales volume
 - ▶ larger seafood department
 - ▶ seafood department offering full-service rather than self-service only

Wholesalers (Seafood wholesalers and retailers, foodservice distributors, and grocery wholesalers)

- Firm type: seafood wholesalers much more likely to sell yellow perch than foodservice distributors who in turn are more likely to than grocery wholesalers
- Location: predominately firms located in Ohio, followed by Michigan, Wisconsin, and Illinois
- Firm size: larger firms more likely to sell yellow perch
- Product line: firms that sell other freshwater species are more likely to sell yellow perch

Proportions of Firms by Type That Sold Yellow Perch in 1996

- 17% of Restaurants
- 26% of Supermarkets
- 42% of Seafood Wholesalers
- 44% of Seafood Retailers
- 16% of Foodservice Distributors
- 3% of Grocery Wholesalers

Details on Purchases and Sales of Yellow Perch Products by Firm Type for July 1996

Seasonality

- Discernible cyclical patterns in wholesale prices paid, customer demand, availability of yellow perch supplies
- Cycles for wholesale firms more dramatic than for restaurants which are smoother
- Most firms sell yellow perch year-around
- Restaurants: 2/3 sell yellow perch daily, 1/4 sell yellow perch weekly

Restaurants

- Product form preferred: frozen fillets (51% of firms) over fresh fillets (44%)
- Product form purchased: frozen fillets (65%) over fresh fillets (30%)
- Size: frozen fillets (1.96 oz.) vs. fresh fillets (2.44 oz.)
- Price: frozen fillets (\$6.89/lb.) vs. fresh fillets (\$7.45/lb.)
- Frequency: weekly strongly preferred for fresh and frozen fillets
- Quantity: frozen fillets weekly (24.7 lbs.) vs. fresh fillets weekly (20.5 lbs.)
- Suppliers:
 - frozen fillets: 60% from foodservice distributors, 23% from seafood wholesalers
 - fresh fillets: 54% from seafood wholesalers, 33% from foodservice distributors

Wholesalers

- Product forms purchased and sold by seafood wholesalers:
 - purchases: fresh fillets (79% of firms), frozen fillets (53%), fresh rounds (58%)
 - sales: fresh fillets (100%), frozen fillets (71%), fresh rounds (29%)
- Product forms purchased and sold by seafood retailers:
 - purchases: fresh fillets (88% of firms), frozen fillets (47%), fresh rounds (18%)
 - sales: fresh fillets (87%), frozen fillets (50%), fresh rounds (6%)
- Product forms purchased and sold by foodservice distributors:
 - purchases: fresh fillets (33% of firms), frozen fillets (53%), fresh rounds (17%)
 - sales: mostly all frozen fillets
- Size: fresh fillets (2.50 oz.); frozen fillets (2.07 oz.); fresh rounds (6.6 oz.)
- Price: fresh fillets (\$6.91/lb.); frozen fillets (\$6.33/lb.); fresh rounds (\$2.19/lb.)

- Frequency: weekly strongly preferred for all firm types for all product forms
- Customers (percentages similar whether fresh or frozen fillets are being sold):
 - ▶ restaurants: served by 100% of seafood wholesalers, 27% of seafood retailers
 - ▶ consumers: served by 56% of seafood wholesalers, 100% of seafood retailers
 - ▶ supermarkets: served by 50% of seafood wholesalers, 0% of seafood retailers
 - ▶ foodservice distributors: served by 17% of seafood wholesalers, 0% seafood retailers
 - ▶ other seafood wholesalers: served by 33% of seafood wholesalers, 0% seafood retailers
 - ▶ other customers: served by 12% of seafood wholesalers, 0% of seafood retailers

Increased Yellow Perch Purchases if Aquaculture Increased Supply and Decreased Price

- Restaurants: purchases could increase by one-third
- Seafood retailers: purchases could almost triple
- Seafood wholesalers: purchases could quadruple

Conclusions and Implications

- Survey data can help persons involved in yellow perch aquaculture to plan production, marketing, lending, research, and education strategies
- The market views *frozen* fillets as an acceptable yellow perch product form which influences:
 - ▶ location of production facilities
 - ▶ decisions on timing of production
- Restaurants almost exclusively prefer fillets, so to serve this market aquaculturists will need to:
 - ▶ perfect difficult hand-filleting techniques
 - ▶ organize cooperatives for filleting and/or marketing, or
 - ▶ sell live fish or fresh/frozen rounds directly to consumers or to wholesalers
- Weekly deliveries of product are highly preferred which impacts:
 - ▶ marketing strategies
 - ▶ storage and technology (i.e., cryovac, IQF, etc.) considerations
- Geography plays an important role in yellow perch markets:
 - ▶ 70% of restaurants serving yellow perch were located within 50 miles of the Great Lakes
 - ▶ marketing strategies will need to take this factor into account
- The supply, demand, and pricing of yellow perch all follow cyclical patterns through each year:
 - ▶ patterns are more volatile for wholesale firms than for retail firms
 - ▶ aquaculturists need to be aware of these patterns in order to time sales for maximum profit
- Significant marketing opportunities should arise if aquaculture helps increase the supply and lower the price of yellow perch:
 - ▶ enhanced purchases to firms already selling yellow perch
 - ▶ increased percentages of restaurants and supermarkets selling yellow perch
 - ▶ potential for other communities in close proximity to Great Lakes, but outside the North Central Region

Introduction

Yellow Perch

Yellow perch (*Perca flavescens*) is a popular eating fish with both commercial and sport fisheries in the Great Lakes and smaller lakes within the North Central Region (NCR). However, supplies have been greatly restricted over the last 20-plus years. This has resulted in increasing pressure for aquaculture production of this once common species. In the early 1970's, the commercial harvest of yellow perch in the Great Lakes declined precipitously following some 20 years of exceptionally bountiful harvests. Accordingly, prices soared. Research into the culture and marketing of yellow perch was conducted in the 1970's in response to the large slump in the commercial supply. While the market for yellow perch was strong, knowledge concerning culture techniques was limited. However, yellow perch aquaculture was thought to be potentially viable from an economic standpoint (Vilstrup).

The Great Lakes commercial harvest of yellow perch has never recovered to the levels sustained in the 1950's and 1960's. Lake Erie has traditionally provided the bulk of commercial supplies of yellow perch, over three-fourths of the total Great Lakes harvest. During the 20-year span from 1950 to 1969, the yellow perch commercial harvest out of Lake Erie, from both U.S. and Canadian waters, averaged 18.3 million pounds (Great Lakes Fishery Commission). During the 1980's the average harvest had fallen to 11.1 million pounds, a 40-percent reduction. Commercial fishing restrictions in both the U.S. and Canada have further reduced the commercial catch in the 1990's. Overfishing has often been cited as the culprit in the demise of the Great Lakes yellow perch fishery. However, as the situation has dragged on year after year, a considerable amount of research by various groups has been conducted to try to pinpoint the cause for the lack of recovery. Scientists have determined that the ecosystem in the Great Lakes has changed and somehow has adversely affected yellow perch. (For discussions of the problems of yellow perch fisheries in the Great Lakes, see the Commercial Fisheries Newslines, July 1996 and *Lake Michigan Yellow Perch Fishery: A Resource at Risk.*)

With the inception of the North Central Regional Aquaculture Center (NCRAC) in the late 1980's, interest in reviving and/or intensifying research into culture methods for yellow perch became more pronounced. Yellow perch was given the status of a high-priority species, and significant research funds have been devoted to developing appropriate culture methods. Results have been encouraging, and a few yellow perch aquaculture businesses are in operation.

This study examines the existing market for yellow perch. Sound marketing data are needed for business planning, capital acquisition, research and extension efforts, and public policy decisionmaking. In the early 1990's, NCRAC commissioned a general marketing study of (particularly wholesale) firms in the seafood marketing channels of the NCR. This was to determine firms' fish purchase/sales behavior and the market potential for various species for aquaculture. Survey results identified yellow perch and walleye as the two aquaculture candidate species having the highest market potential. This report presents the results of a follow-up marketing study devoted to investigating the current markets for yellow perch and walleye. This publication focuses on yellow perch. A subsequent one will focus on walleye.

Survey Procedures

The objective of establishing the current marketing status and potential for yellow perch products with wholesale and retail businesses in the seafood marketing channels in the NCR was accomplished through a mail survey. Types of firms (based on Standard Industrial Classification codes) that would likely handle fish, at either the retail or wholesale level, were identified. This activity was performed in conjunction with obtaining a mailing list and reviewing the trade literature. Information from all three of these activities was used to decide which types of firms would be surveyed and how they would be defined. The basic groups chosen to be surveyed included seven types: restaurants (defined as non-chain, non-pizza food establishments offering table service), supermarkets (defined by the grocery trade as grocery stores with at least \$2 million in annual gross sales), seafood wholesalers, seafood retailers, grocery wholesalers, foodservice distributors, and fish brokers.

Five separate survey instruments were developed. One survey instrument was envisioned initially, but the needs for firm characteristic information and lack of foreknowledge regarding retail firms' use/nonuse of yellow perch required the use of multiple instruments. The seven firm types were divided into three groups for surveying purposes: restaurants, supermarkets, and all others (seafood-specific wholesale and/or retail firms plus nonspecific wholesalers). Two surveys were designed for the restaurant group and two for the supermarket group. The Phase I surveys were used to ask all the questions regarding firm characteristics and general fish/seafood purchasing behavior. Also included in the Phase I surveys were questions to determine which firms sold yellow perch in 1996 and why the others did not. The Phase II surveys were sent only to those firms which had indicated in their Phase I surveys that they had sold yellow perch in 1996. This instrument asked only for specific information on purchases/sales of yellow perch and walleye. Only one survey instrument was used for the third, "catch-all" group because few firm characteristic questions were needed and most seafood wholesalers and/or retailers were likely to handle yellow perch (or walleye).

The development of all five mail survey instruments was completed during the initial project period. An effort was made to keep overlapping questions across firm type as identical as possible. Appropriate firm characteristic questions were developed for each group of firms surveyed. General fish/seafood purchase/sales behavior questions were asked. Questions specific to the purchase/sale of yellow perch and walleye were developed after discussion with selected wholesalers and retailers to determine general market terminology and practices. Both the general fish/seafood questions and the species-specific questions were designed to more specifically track fish through the marketing channels. One shortcoming of many fish marketing studies is that they ask survey questions about "fish" marketing behavior as if "fish" were homogenous. However, they are not. There are hundreds of species, and each can be marketed in multiple product forms. Therefore, an attempt was made in this study to identify the marketing channels for different types of "fish." Identical questions were developed for walleye and yellow perch. Some questions related to the seasonality of supply and demand. Other questions dealt with actual purchase/sales behavior. These were geared toward specific product forms rather than the species in general. Each draft of the survey instruments was submitted to several survey experts for reaction/feedback. This procedure was used in lieu of a pre-survey of potential respondents because of mailing list considerations and time constraints.

A mailing list was obtained from a private business list company, American Business Lists. Purchasing a mailing list made two things possible: firms from all geographic locations were

included (versus only those located in large population centers with readily available telephone books), and a random, representative sample of firms of each type was obtained. Table 1 contains the number of firms by type in the NCR, along with the number of firms pulled in the random sample, the number of firms actually surveyed, and the number of usable surveys returned.

Table 1. Numbers of Firms (by Type) Existing in the North Central Region, Drawn for Sample Surveyed, and Responding, Plus Response Rate.

| Firm Type | Firms Existing ^b | Firms Drawn in Sample ^b | Firms Surveyed ^b | Firms Responding ^c | Response Rate |
|---------------------------|-----------------------------|------------------------------------|-----------------------------|-------------------------------|---------------|
| | ----- number of firms ----- | | | | ---%--- |
| Restaurants ^a | 65,571 | 7,900 | 6,344 | 643 | 10.1 |
| Supermarkets ^a | 6,932 | 1,733 | 1,574 | 107 | 6.8 |
| Seafood Wholesalers | 249 | 249 | 249 | 40 | 16.1 |
| Seafood Retail | 485 | 485 | 485 | 61 | 12.6 |
| Foodservice Distributors | 171 | 171 | 171 | 12 | 7.0 |
| Grocery Wholesalers | 831 | 492 | 492 | 52 | 0.6 |
| Fish Brokers | 13 | 13 | 13 | 0 | 0 |

^aSee text for firm type definitions used for purposes of survey.

^bThe numbers of firms existing and drawn for sample were based on the setup of the database of the business lists firms from which the mailing list was purchased. In the cases of restaurants and supermarkets, this did not reflect in every aspect the definition of these firm types used for this survey. As a result, the drawn sample was further narrowed as best as could be done to better reflect the firm definitions. Thus, the number of firms actually surveyed was less than the drawn sample for restaurants and supermarkets.

^cNumber of firms that completed and returned useable surveys.

The first batch of surveys was mailed out August 28, 1996. The final batch of mailings was not completed until March 25, 1997. In general, the response rate was rather low. For a couple of firm types the response rate was between 15 to 20 percent. A few other firm types responded at rates between 10 and 15 percent, while others had a response rate of less than 10 percent. For supermarkets the response was so bad that a re-mailing was done about six months after the

initial mailing and follow-up postcard. Survey questions were worded to refer to a specific time period so that the timings of mailings/response would not render the data meaningless. Since the Phase I surveys for the restaurants and supermarkets were very similar, it is not entirely clear why the response was so much worse from the supermarkets. However, it did appear that there was some problem with the managers of chain stores realizing that the information sought was strictly for their individual store. Perhaps more of an effort needs to be made, when conducting surveys of grocery stores, to deal with this issue as up front and explicitly as possible.

Restaurants: Profile of Yellow Perch Servers Versus Non-Servers

Only tableservice restaurants were included in this survey. Restaurants were excluded if they primarily sold pizza, were part of a restaurant chain, or only sold fast food. The mailing list provider was not entirely able to limit the sample to fit this definition. Therefore, some of the restaurants were excluded based on name and others because their completed survey revealed that they did not fit the definition. The number of usable restaurant surveys totaled 643. Of these, 583 responded either affirmatively (denoted as "Servers") or negatively (denoted as "Non-Servers") to having served yellow perch in 1996. Only 17 percent of the responding restaurants were Servers (n=97), while 83 percent were Non-Servers (n=486).

Location

Three factors related to a restaurant's location were analyzed to determine if they influenced the serving of yellow perch, including state, proximity to the Great Lakes, and population density. The first two factors appear to play a significant role in influencing a restaurant's preference for serving yellow perch, while the third does not. A 1991 survey of restaurants in Indiana found the same type of influence of location factors for perch within that state (Riepe, Martin, and Schrader). Perch was much more popular in the northern third of the state than in the middle or southern portions, and most popular in those counties close to Lake Michigan. In that survey, as well, population density was not a factor influencing the serving of perch in restaurants. The relationships found in this survey between the three location factors and whether or not a restaurant serves yellow perch are discussed below.

State

Restaurant consumption of yellow perch in the NCR appears to be concentrated in the states surrounding Lake Michigan, Lake Huron, and Lake Erie. Over one-third of the responding restaurants located in Michigan (38%) and Wisconsin (36%) sold yellow perch in 1996 (Figure 1). These two states had by far the highest concentrations of yellow perch Servers. Next highest were Ohio (16%), Indiana (14%), and Illinois (10%). Surprisingly, none of the 50 responding restaurants located in Minnesota sold yellow perch in 1996. For the remaining states, virtually none of the responding restaurants were Servers of yellow perch. Thus, state location appears to have a strong influence on whether or not a restaurant serves yellow perch.

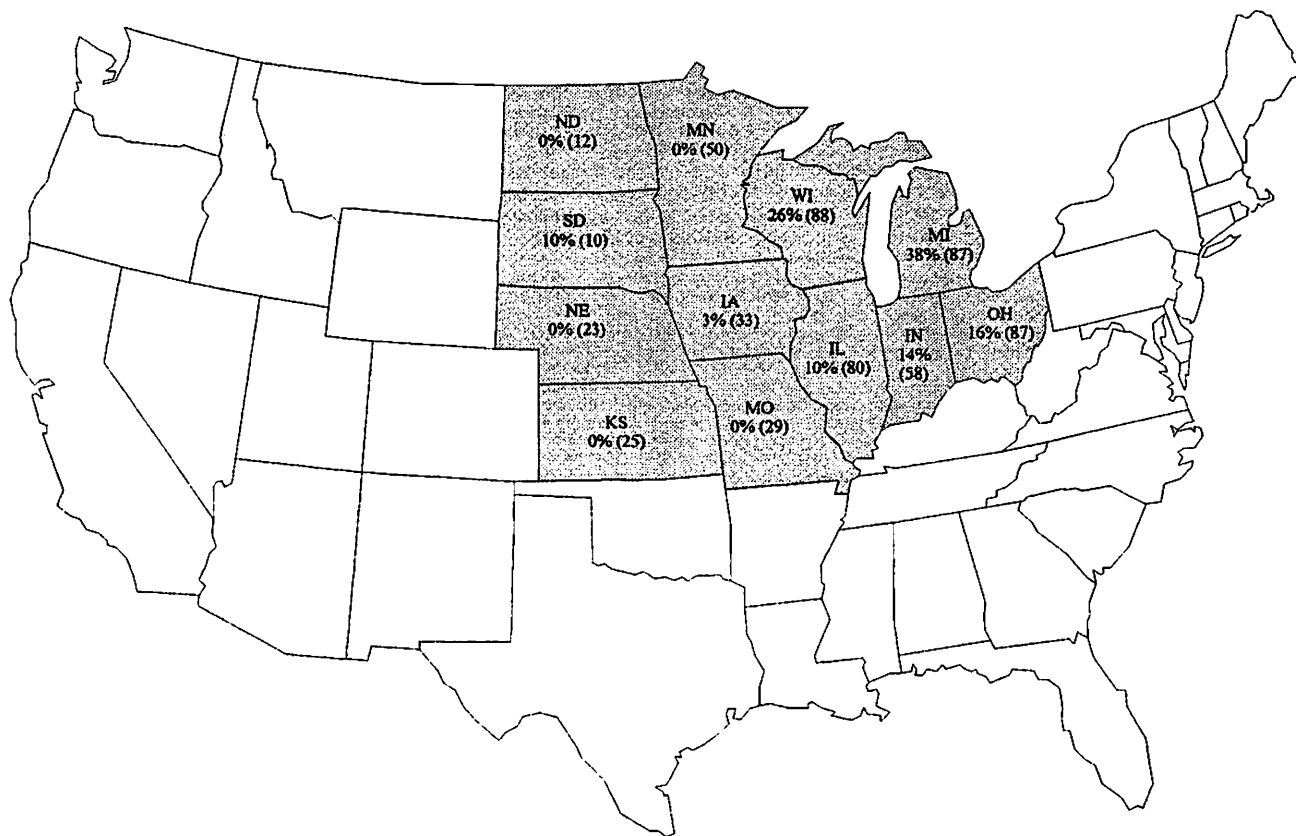


Figure 1. Percent of Restaurants in the North Central Region That Sold Yellow Perch in 1996, by State and with Number of Respondents in Parentheses.

The pattern of yellow perch consumption in restaurants based on state location reflects the historical pattern of the commercial harvest of yellow perch. Lake Erie has historically been the single largest source of yellow perch in the Great Lakes. During the heyday of Great Lakes fishing in the 1950's and 1960's, Lake Erie accounted for 83 percent of the commercial harvest of yellow perch, both from U.S. and Canadian waters (Great Lakes Fishery Commission). Lake Michigan accounted for 12 percent during this time period, followed by Lake Huron (4.5%) and Lake Ontario (1%). Since the state of Michigan borders Lakes Erie, Huron, and Michigan, there is likely a tradition of yellow perch consumption in many, if not most, areas of the state. Wisconsin accounts for much of the western coastline of Lake Michigan, so this has likely influenced the pattern of consumption in that state. Alone among the Great Lakes, Lake Superior has never been a noted yellow perch fishery. This may account for the lack of popularity of yellow perch in Minnesota restaurants, combined with the high popularity of walleye and other sport fish obtained from Lake Superior and other lakes interior to the state.

Proximity to Great Lakes

Respondents were asked to indicate how close their establishment was located to one of the Great Lakes. Since the Great Lakes are the world's largest yellow perch commercial and sport fishery, it was hypothesized that restaurants near the Great Lakes would have a higher likelihood of serving yellow perch than those farther away. The data strongly support this conclusion. More than two-thirds (70%) of the restaurants serving yellow perch were concentrated within 50 miles

of the Great Lakes (Figure 2). In stark contrast, this is true of only one-fourth (26%) of the Non-Servers. In fact, almost two-thirds (60%) of the Non-Servers were located more than 100 miles away from the Great Lakes, while the comparable figure for Servers was only 12 percent.

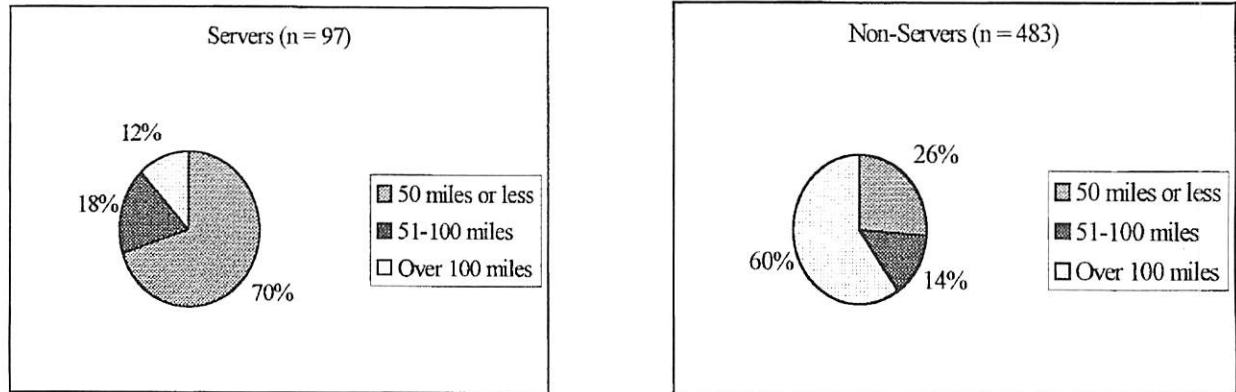


Figure 2. Proximity to Great Lakes of Restaurants in the North Central Region That Are Servers or Non-Servers of Yellow Perch.

Population Density

Population density appears to have no impact on whether or not restaurants serve yellow perch. Within the two groups, Servers and Non-Servers, the percentages of restaurants located in urban settings, suburban settings, small town/rural settings, etc., were virtually identical. For each group (Servers and Non-Servers) the percentages were roughly as follows: urban 10%, suburban 15%, smaller metropolitan areas 13%, and small town/rural 62%.

Interestingly, close to two-thirds of the responding restaurants (about 62%) were located in small town/rural areas. The common population density of a restaurant's location is decidedly different in the East Coast restaurant market. In their East Coast survey of the seafood purchase and sales behavior of restaurants in New York and New Jersey, Gall and O'Dierno reported that only 6 percent of their responding restaurants inhabited rural locations, while 60 percent were in urban locations (Gall and O'Dierno, 1995). The difference between the East Coast and the NCR in terms of population densities of restaurant locations may strongly influence other factors related to seafood purchase and sales behavior other than preference for yellow perch. For this reason, seafood market survey data, which are more readily available for East Coast markets, may not be applicable to NCR markets.

Menu Theme

Whether a restaurant in the NCR serves yellow perch or not, it is likely to serve American food. Figure 3 shows that almost two-thirds of restaurants in each group reported "American" as their menu theme (Servers 64%, Non-Servers 61%). Yellow perch Servers had about double the proportion of "Steak/seafood combination" restaurants as Non-Servers (21% vs. 10%), but less than half the proportion of "Ethnic" restaurants (5% vs. 19%).

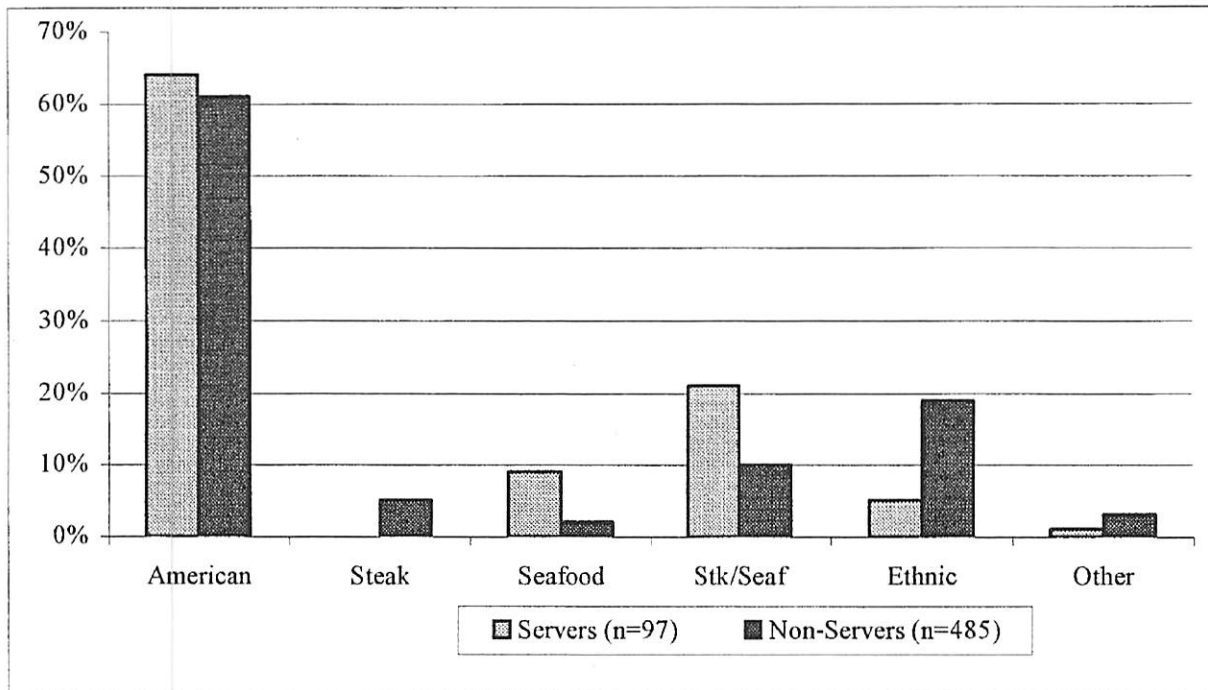


Figure 3. Menu Theme of Restaurants in the North Central Region That Are Servers or Non-Servers of Yellow Perch.

Formality

One measure of the formality of a restaurant is the dollar amount of the average dinner (evening meal) check per person. Categorization of restaurants by size of the dinner check is standard in the restaurant industry literature. The categories used in this survey were: less than \$8 (Casual); \$8 to \$14.99 (Midscale); and \$15 or more (Formal). Restaurants that are yellow perch Servers tend to have higher valued dinner checks per person, indicating a more expensive menu and more formal ambiance (Figure 4). Over three-quarters (78%) of the Servers had a per person average dinner check over \$8.00 (“Midscale” and “Formal”), while this was true for just under two-thirds (64%) of the Non-Servers.

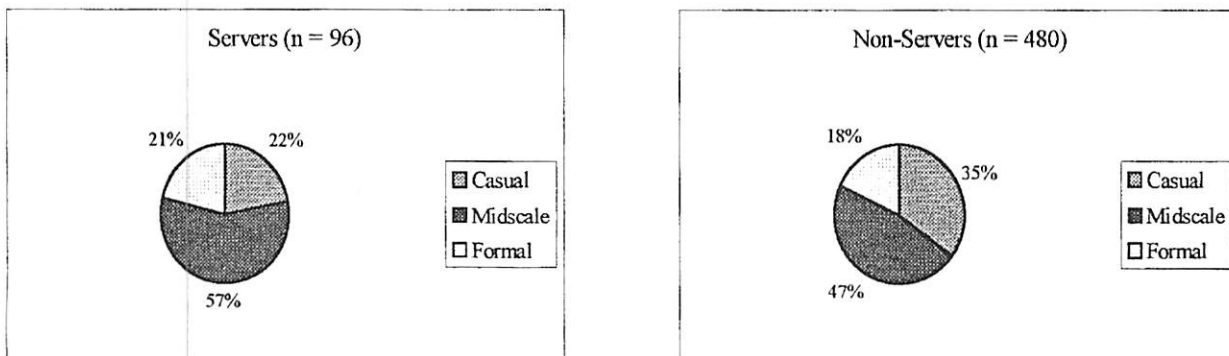


Figure 4. Formality (Based on Average Dinner Check Per Person) of Restaurants in the North Central Region That Are Servers or Non-Servers of Yellow Perch.

Size

The size of a firm as defined by gross sales often has a significant influence on the behavior of that firm. Restaurants are no exception. There is a strong relationship between restaurant size and whether or not yellow perch is served (Figure 5). Restaurants reporting gross sales of \$250,000 or less were classified as “Small.” Those with sales between \$250,001 and \$500,000 were classified as “Medium.” “Large” restaurants had reported gross sales between \$500,001 and \$1 million. Restaurants with gross sales over \$1 million were considered “Very Large.” Over one-half of the Servers (56%) fell into the “Large” or “Very Large” categories. The comparable figure for Non-Servers was much smaller, closer to one-third (34%). These data suggest that larger restaurants are more likely to serve yellow perch than smaller ones.

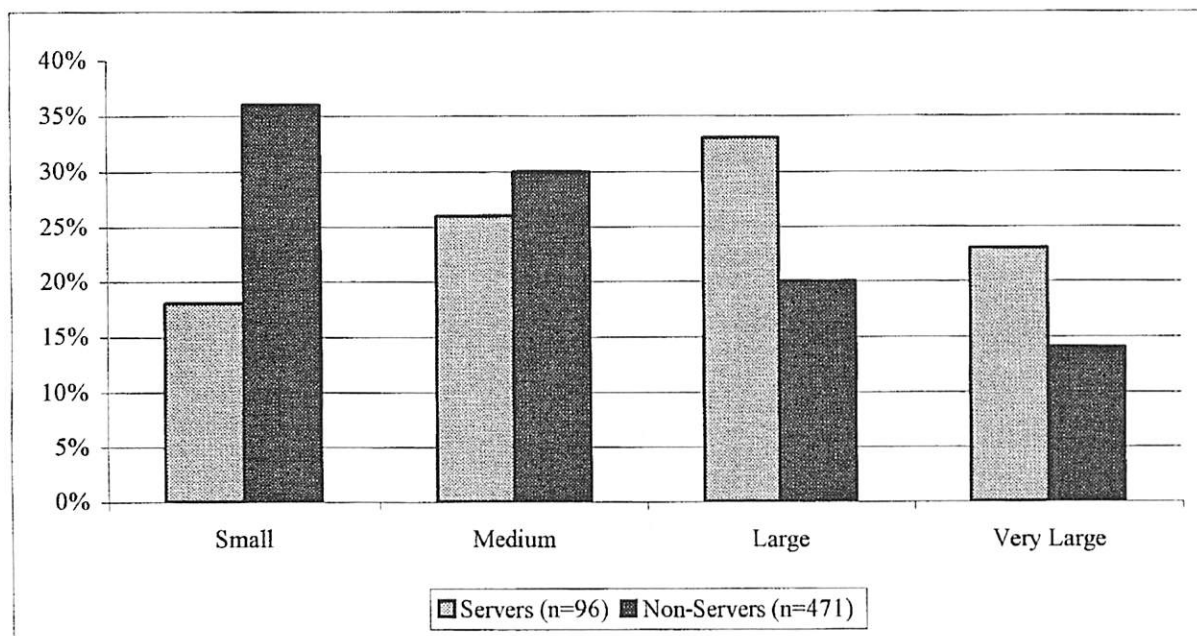


Figure 5. Size (Based on Annual Gross Sales) of Restaurants in the North Central Region That Are Servers or Non-Servers of Yellow Perch.

Presence of Seafood on Menu

Responding restaurants were asked to indicate the approximate percentage of their total food sales that come from seafood sales. Means were calculated based on the percentages reported by respondents. Restaurants serving yellow perch had a higher proportion of seafood sales than did Non-Servers (33% vs. 20%).

Top Selling Seafood Species

Top selling seafood species of both Servers and Non-Servers of yellow perch were virtually identical. Shrimp and cod were popular in half or more of all responding restaurants. Other species with significant levels of popularity included salmon, orange roughy, tuna, walleye, pollock, catfish, scallops, and lobster. The notable exceptions to the similarities in popular

species were lake species. Yellow perch was reported as a top selling species by 75 percent of Servers, while by definition yellow perch was not mentioned at all by Non-Servers. Lake whitefish was also a top selling species of Servers. This species was only mentioned as a top seller by less than 10 percent of Non-Servers.

Supermarkets: Profile of Yellow Perch Sellers Versus Non-Sellers

For the purposes of this survey, the only retail grocery stores included were supermarkets. The grocery trade defines supermarkets as retail grocery stores having \$2 million or more in annual gross sales. The firm which produced the mailing list was not able to limit the mailing list to supermarkets. Therefore, more than one-half of the completed surveys received could not be used because the grocery stores did not fit the supermarket definition. However, responses showed that these stores (those non-supermarket stores with gross sales under \$2 million) rarely carried any fresh or frozen seafood other than the frozen, pre-packaged, branded kinds such as Gorton's, Mrs. Paul's, etc. There were 107 usable supermarket surveys. Of these, 87 reported that they either did sell yellow (lake) perch in 1996 (Sellers) or did not (Non-Sellers). Only 26 percent of these responding supermarkets were Sellers (n=28), while 74 percent were Non-Sellers (n=59). Because the actual number of usable surveys was so small, the survey data reported below may not be truly representative of reality. Caution is advised in interpreting and using the data.

Status

Supermarkets are often grouped by their status as being either independent or part of a chain. Unfortunately, the grocery industry definition of "chain" (11 or more stores under the same ownership) is rather arbitrary and outdated. As a result, the meaningfulness of the label "chain" is questionable. Nevertheless, much grocery industry data are subdivided based on whether a supermarket is a chain or not. Accordingly, respondents to the supermarket survey were asked the status of their store. Similar proportions of both Sellers and Non-Sellers of yellow perch described themselves either as "chain" (46% vs. 40%, respectively) or "independent" (54% vs. 60%). Thus, it appears that the status of a supermarket as a chain or independent store does not influence its preference for selling yellow perch.

Location

As with restaurants, location appears to play a significant role in influencing a supermarket's preference for selling yellow perch. However, in the case of supermarkets, all three location factors analyzed appear to have significant effects. The influence of these location factors on whether or not a supermarket sells yellow perch is discussed below.

State

As with restaurants, yellow perch is primarily sold in supermarkets located in states bordering Lakes Erie, Michigan, and Huron. Almost one-half of the responding supermarkets located in Michigan (44%) and Ohio (47%) were Sellers of yellow perch (Figure 6). In Ohio, yellow perch seem to be more popular in supermarkets than in restaurants. The reverse is true for Wisconsin, where the percentage of supermarkets selling yellow perch is smaller than the percentage of restaurants. However, the small number of responding supermarkets makes it difficult to draw

definitive conclusions. Surprisingly, four of the 10 responding supermarkets located in Missouri indicated that they sold yellow perch in 1996. There were very few respondents from the remaining states, and none of them reported selling yellow perch.

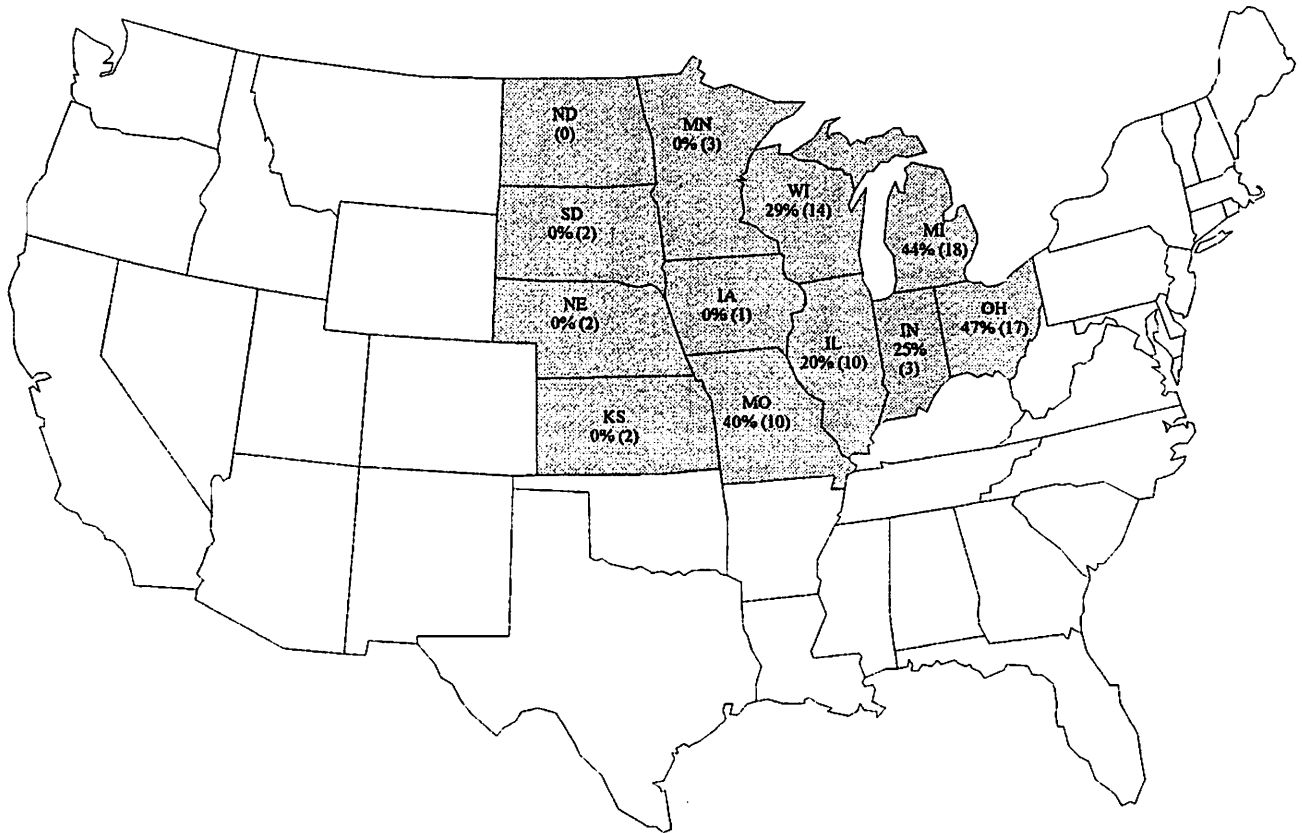


Figure 6. Percent of Supermarkets in the North Central Region That Sold Yellow Perch in 1996, by State and with Number of Respondents in Parentheses.

Proximity to Great Lakes

Supermarkets selling yellow perch tend to be concentrated around the Great Lakes, but not to the same extent as restaurants. Over one-half of the Sellers (57%) were located within 50 miles of the Great Lakes, while over one-half of the Non-Sellers (54%) were located more than 100 miles away (Figure 7). In comparison, 70 percent of the restaurants that serve yellow perch were located within 50 miles of the Great Lakes (Figure 2). One explanation for the much higher concentration for restaurants as opposed to supermarkets is based on the survey responses along with handwritten comments by respondents. The explanation is that “local fish” are expected to be served in restaurants in that locale, either by the local people or by visitors/tourists. Furthermore, the local people, who are usually the only ones who would buy fish in a grocery store, are theorized to prefer catching their own perch for home consumption at a nominal price rather than shopping for perch at a supermarket and paying the high prices perch are currently commanding. The trade literature suggests that consumers are more willing to pay for higher priced seafood in a restaurant than they are in grocery stores. In 1996, yellow perch was one of the most expensive seafood species, selling for about \$11.99 per pound for fillets at retail.

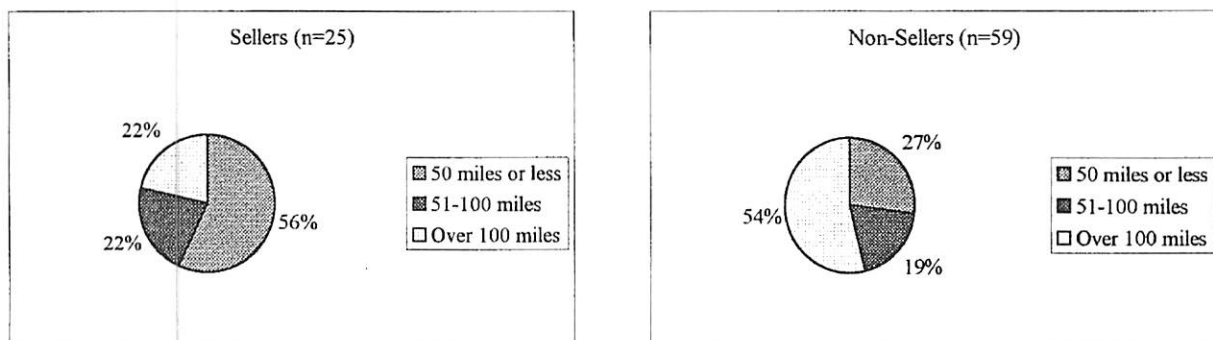


Figure 7. Proximity to Great Lakes of Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

The supermarket data can be approached in another way. Instead of looking at the supermarkets in the Sellers group to see how they divide up by proximity to the Great Lakes, the data can also be viewed from the standpoint of looking at all the supermarkets (both Sellers and Non-Sellers) which reported a location within 50 miles of the Great Lakes (and then at all the supermarkets located 51-100 miles and then all those located over 100 miles). When the data are considered this way, 50 percent of the responding supermarkets located within 50 miles of the Great Lakes sold yellow perch in 1996. This percentage is relatively large considering that Sellers made up only 26 percent of all respondents. Looking at all the responding supermarkets which reported their location as 51-100 miles from the Great Lakes, 35 percent reported selling yellow perch. Only 16 percent of supermarkets located more than 100 miles from the Great Lakes reported selling yellow perch in 1996. Thus, as supermarkets get farther away from the Great Lakes, they are less and less likely to sell yellow perch.

Population Density

Unlike the situation with restaurants, the population density of a supermarket's location does appear to be a factor in whether or not that supermarket sells yellow perch. Almost one-half (47%) of the supermarkets selling yellow perch (Servers) were located in either Urban or Suburban population centers (Figure 8). In contrast, only 23 percent of Non-Servers were located in these areas. Similar proportions of Sellers and Non-Sellers were located in smaller Metropolitan areas (between 100,000 and 1 million in population). While sizeable proportions of both Sellers and Non-Sellers were located in Small town/rural locations, the percentage was much lower for Sellers (32% Sellers vs. 58% Non-Sellers). The relationship between population density and selling yellow perch appears to be quite similar to the trend between proximity to the Great Lakes and selling yellow perch. As the population density becomes less and less (going from urbanized to rural areas), supermarkets are less and less likely to sell yellow perch. Restaurants, however, are just as likely to sell yellow perch in rural areas as in urban areas.

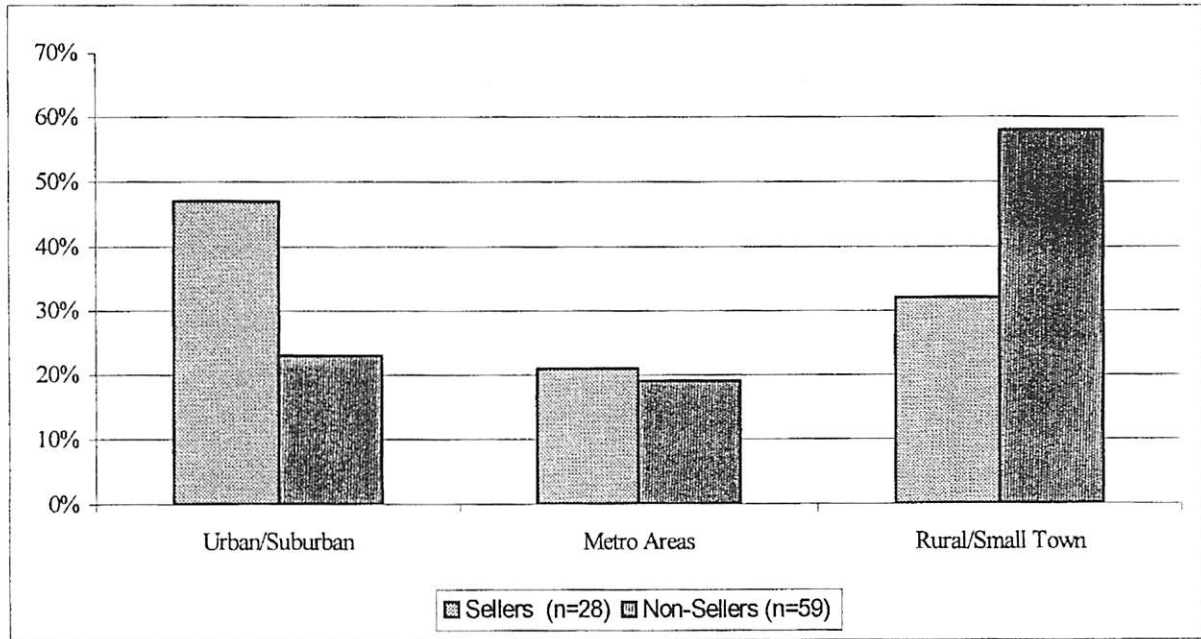


Figure 8. Location (Based on Population Density) of Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

Size

Two different questions were asked in the supermarket survey regarding the size of the supermarket. Total square footage was used as one measure of size. Supermarkets selling yellow perch tend to be larger in square footage than supermarkets that do not sell yellow perch (Figure 9). “Large” supermarkets were defined as those having more than 30,000 square feet, the industry definition of a superstore. Almost two-thirds (61%) of Sellers fell into this category, while far less than one-half (37%) of Non-Sellers did. Conversely, a much smaller percentage of Sellers, as compared to Non-Sellers, fell into the “Small” category (18% vs. 37%). (“Small” was defined as 15,000 square feet or less.) Thus, as supermarket size in terms of square footage increases, so does the likelihood of selling yellow perch.

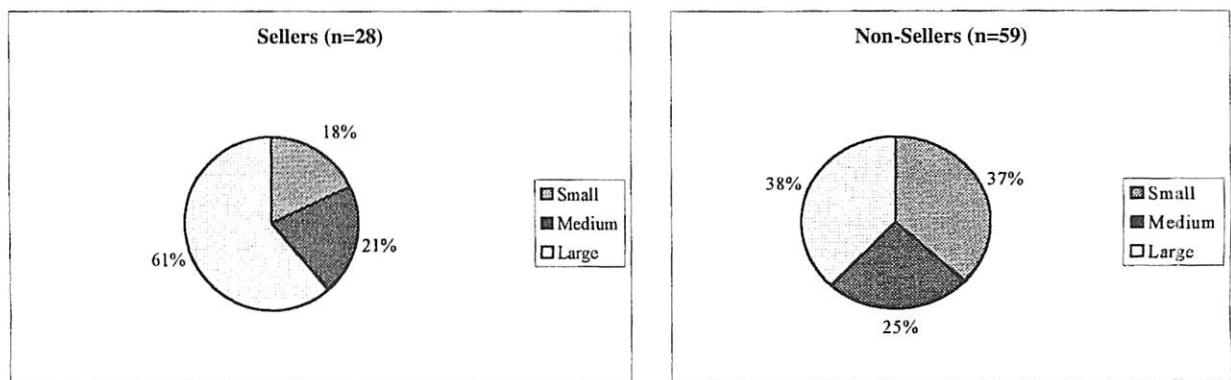


Figure 9. Store Size (Based on Total Square Footage) of Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

Typical grocery trade categories based on annual gross sales also were used to determine supermarket size. Using this definition of size, supermarkets that sold yellow perch again tended to be larger than those that did not sell this species. More than one-half (57%) of yellow perch Sellers reported annual gross sales of \$8 million or more, compared to about one-third (37%) for Non-Sellers (Figure 10).

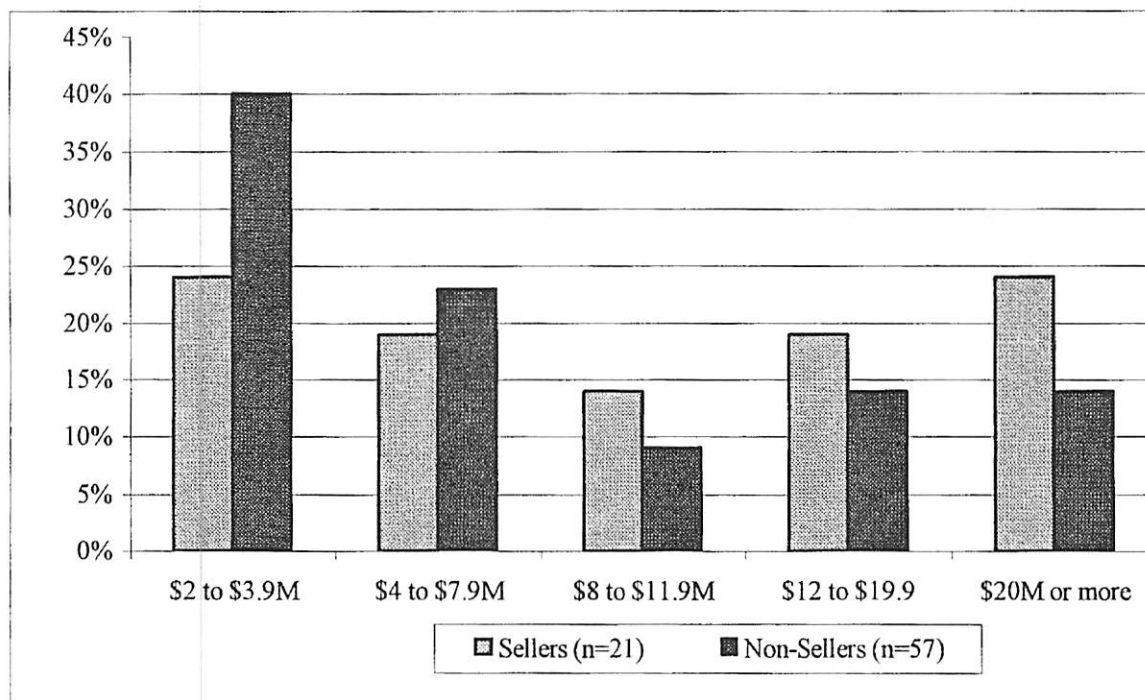


Figure 10. Store Size (Based on Annual Gross Sales) of Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

Characteristics of Seafood Department

Two of the characteristics of seafood departments that are considered in the trade to be important are the type of service provided (full-service vs. self-service) and the square footage allocated to the department. For each of these characteristics, significant differences were found between Sellers and Non-Sellers of yellow perch.

Type of Seafood Service

Supermarkets which sell fresh and/or frozen seafood offer seafood to their customers either through a full-service counter, self-service, or some combination of the two. Respondents were asked to indicate whether full-service or self-service best described the type of service they offered. Supermarkets that are Sellers of yellow perch are much more likely to offer full-service rather than self-service (63% full vs. 37% self) (Figure 11). Non-Sellers of yellow perch, on the other hand, were about equally likely to offer full- versus self-service (47% full vs. 53% self).

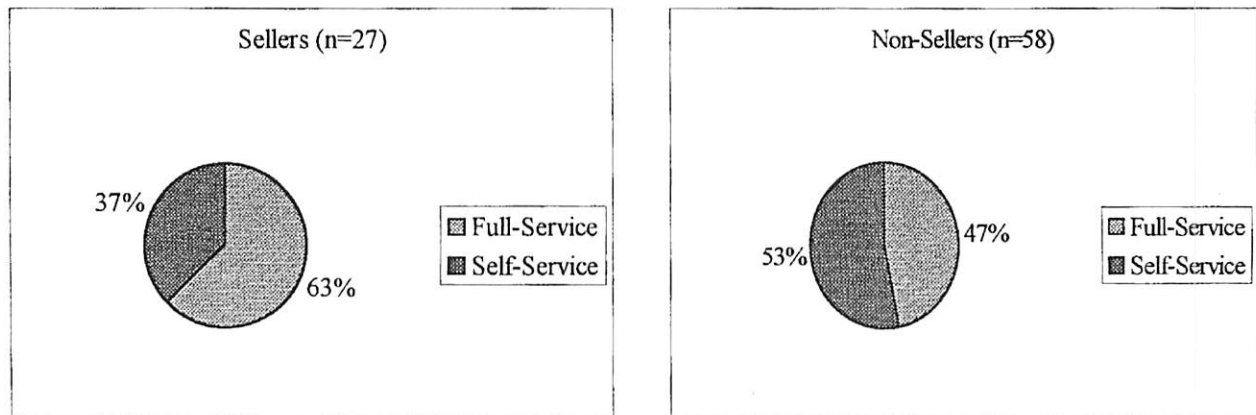


Figure 11. Type of Seafood Service Offered by Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

Space Allocation

One measure of how serious a supermarket is about seafood is the space allocated to the seafood department. Respondents were asked to write in the square footage of their store's seafood department. The square footage for yellow perch Sellers was higher than the square footage for Non-Sellers, both in terms of average square footage (138 sq.ft. Sellers vs. 91 sq.ft. Non-Sellers) and median square footage (50 sq.ft. Sellers vs. 28 sq.ft. Non-Sellers). This is not surprising given the higher incidence of full-service among the Sellers.

Top Selling Seafood Species

Supermarket managers were asked to list the five best selling fish/seafood species in their stores. For both yellow perch Sellers and Non-Sellers, the top selling species were virtually identical. Catfish and shrimp were reported as top selling species by over 50 percent of supermarkets in each group, followed by orange roughy, salmon, cod, and ocean perch. One notable exception to this list was the prominence of lake whitefish as a top selling species of Sellers. About one-third of Sellers (32%) reported lake whitefish as a top seller, while less than 10 percent of Non-Sellers did so. Also, pollock was much more popular in supermarkets that did not sell yellow perch than in those that did (41% Non-Sellers vs. 18% Sellers). Only one-fourth of Sellers reported yellow perch as a top selling species.

Species Decisionmaker

Respondents were asked to indicate from the list provided whether the person who decided which seafood species to sell in that particular store was located in that store or elsewhere, and whether the choice was open or restricted to species on a list provided by a corporate buyer. More external control over species choice was indicated by Sellers than by Non-Sellers. Sellers were less likely to make decisions at the store level as compared to Non-Sellers. About one-half (52%) of Sellers versus three-fourths (75%) of Non-Sellers indicated that either the store manager or the seafood manager makes an unrestricted choice of species (Table 2). Less than 10 percent of either group reported that a central (corporate) buyer makes the decision about which species to sell in that store. However, a significantly higher percentage of Sellers indicated that a store decisionmaker makes a restricted species choices based on a list of alternatives provided by a corporate buyer (41% Sellers vs. 12% Non-Sellers).

Table 2. Species Decisionmaker in Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

| Decisionmaker | Sellers (n = 27) | Non-Sellers (n = 57) |
|--|---------------------|----------------------|
| | ----- percent ----- | |
| Store Manager | 11 | 21 |
| Store Seafood Manager | 41 | 54 |
| Central/Corporate Buyer | 7 | 9 |
| Store Decisionmaker (based on list of alternatives from Central Buyer) | 41 | 12 |
| Other | 0 | 4 |
| Total | 100% | 100% |

Seafood Supplier Decisionmaker

Respondents were asked to indicate from a list of possibilities who the decisionmaker for their store was regarding choice of seafood supplier. The data reveal that this decisionmaking process is dominated by central or corporate decisionmakers for Sellers, but by in-store decisionmakers for Non-Sellers. This occurs despite the fact that similar proportions of both groups described their status as “chain” (40 and 46 percent). A central or corporate buyer makes the decision for about one-half (48%) of the Sellers (Table 3). This decisionmaker was only the third most frequently mentioned decisionmaker by Non-Sellers (22%). The most frequently reported decisionmaker by Non-Sellers was the store seafood manager (35%), followed by the store manager (29%). Seafood manager was indicated by one-fourth (26%) of Sellers. The third most frequently mentioned decisionmaker by Sellers was a store decisionmaker who chooses from a list of alternatives made up by a central or corporate purchaser.

Table 3. Seafood Supplier Decisionmaker in Supermarkets in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

| Decisionmaker | Sellers (n = 27) | Non-Sellers (n = 58) |
|--|---------------------|----------------------|
| | ----- percent ----- | |
| Store Manager | 11 | 29 |
| Store Seafood Manager | 26 | 35 |
| Central/Corporate Buyer | 48 | 22 |
| Store Decisionmaker (based on list of alternatives from Central Buyer) | 15 | 9 |
| Other | 0 | 5 |
| Total | 100% | 100% |

Wholesalers: Profile of Yellow Perch Sellers Versus Non-Sellers

In this study, wholesalers that typically sell to grocery stores (grocery wholesalers) or restaurants (foodservice distributors) were included in the survey along with seafood wholesalers and retailers. The purpose for including them was to obtain some data regarding the extent to which these types of firms are handling seafood, generally, and yellow perch, specifically. From a practical point of view, it is very difficult to determine the behavior of grocery wholesalers and foodservice distributors because they are such a diverse lot, with unclear connections between individual firms and with retail-level firms. Nevertheless, an attempt was made. Firms which primarily sell seafood directly to consumers were included in the wholesaler group because they were perceived to be, in their seafood purchase and sales behavior, much more like seafood wholesalers than like grocery stores. Compared to restaurants and supermarkets, there are few wholesalers of any type located in the NCR. Correspondingly, the number of useable surveys returned from firms of each firm type was small. (See Table 1 for more complete data on number of firms.) The number of useable surveys for seafood wholesalers was 50, for seafood retailers 41, for grocery wholesalers 37, and for foodservice distributors 37. These numbers are not large and do not represent substantial proportions of their respective firm types. Therefore, caution is advised in interpreting and using these survey results.

Seafood Sales Characteristics by Firm Type

The extent of seafood sales varies tremendously by firm type. Virtually all seafood wholesalers and retailers sell fresh and/or frozen seafood. Slightly less than one-half of these firms sell yellow perch. Significant percentages of both grocery wholesalers and foodservice distributors sell no seafood at all (Table 4). Many of those that do, only sell seafood that is of the

frozen, pre-packaged, branded kind such as Gorton's or Mrs. Paul's. The firms in these two groups that do sell seafood do not sell much seafood compared to their total volume of food sales. Very few sell yellow perch. Yellow perch was thought to be the exclusive province of seafood wholesalers, but the survey results show otherwise. In the next paragraphs, differences between yellow perch Sellers versus non-Sellers are profiled. Data on why firms do not sell yellow perch are presented in the next major section.

Table 4. Fish/Seafood Sales Characteristics of Wholesale Firms in the North Central Region.

| | -----Firm Type----- | | | |
|---|----------------------------------|--------------------------------|---------------------------------------|----------------------------------|
| | Seafood Wholesalers (n=50) | Seafood Retailers (n=41) | Foodservice Distributors (n=37) | Grocery Wholesalers (n=37) |
| | -----percent----- | | | |
| Type of Fish/Seafood Sold | | | | |
| Fresh and/or Frozen | 98 | 95 | 40 | 46 |
| Only Frozen/Prepackaged/Branded (such as Gordon's, or Mrs. Paul's) | 2 | 5 | 22 | 38 |
| Do Not Sell Fish/Seafood | 0 | 0 | 38 | 16 |
| Percent of Total Food Sales From Fish/Seafood | 92 | 74 | 8 | 11 |
| Percent Selling Yellow Perch | 42 | 44 | 16 | 3 |

State Location

Eighty-five percent of all responding seafood wholesalers and retailers were located in states bordering the Great Lakes. These were the same states that had high percentages of firms selling yellow perch. However, the proportions of firms selling yellow perch in 1996 did differ among the Lake states (Figure 12). Ohio was the most dominant state for yellow perch sales by seafood wholesalers and retailers, where over 90 percent of responding firms sold yellow perch in 1996. This is not surprising since Lake Erie is the source of the vast majority of the yellow perch commercial harvest from the Great Lakes. During the heyday of Great Lakes commercial fishing in the 1950's and 1960's, Lake Erie accounted for almost 85 percent of the total commercial catch of yellow perch (Great Lakes Fishery Commission). Lake Michigan was the second largest source, with 12 percent of the catch, followed by Lake Huron, with 4.5 percent, and Lake Ontario, with 1 percent.

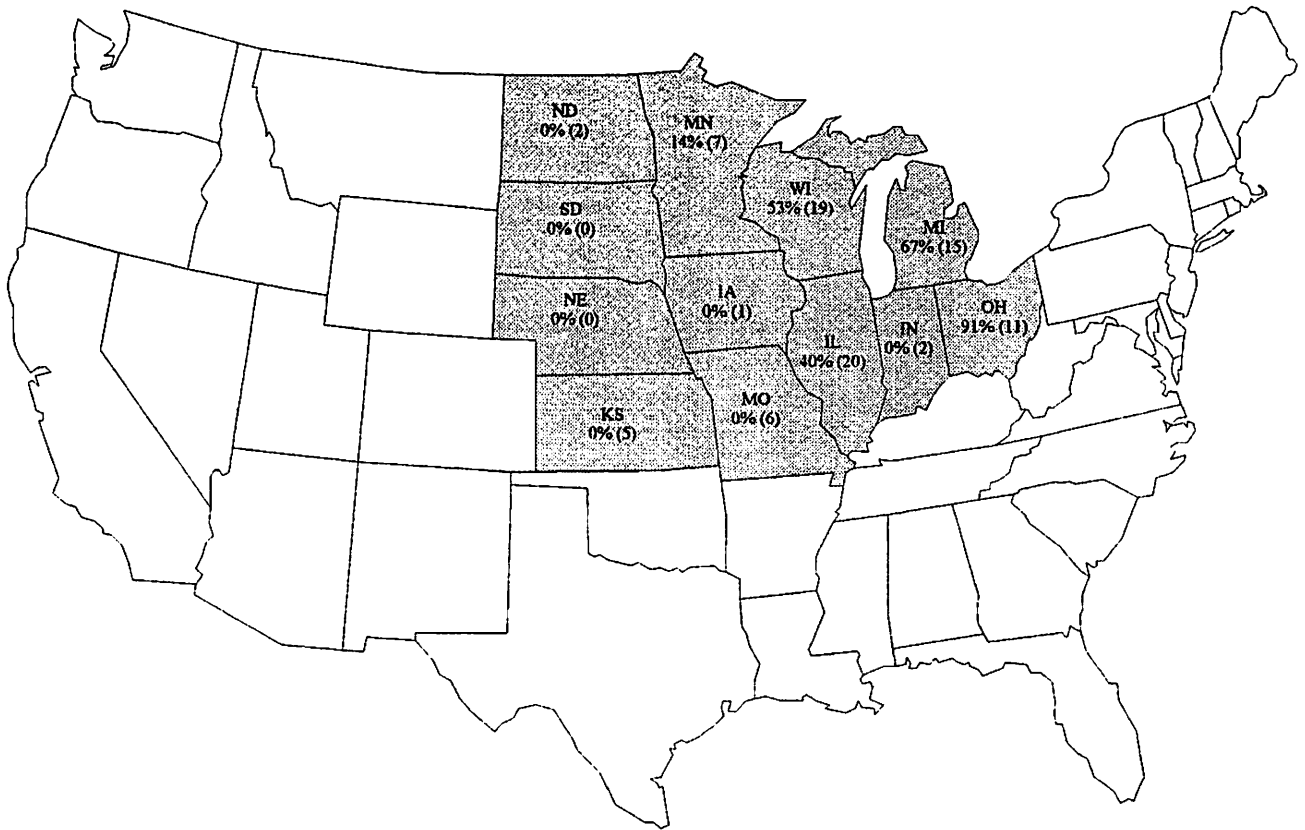


Figure 12. Percent of Responding Seafood Wholesalers and Seafood Retailers That Sold Yellow Perch in 1996, by State and with Number of Responding Firms in Parentheses.

Michigan had the second highest proportion (67%) of responding seafood wholesalers and retailers that sold yellow perch in 1996. This state borders all of the Great Lakes except for Lake Ontario. Of the responding firms located in Wisconsin, just over one-half (53%) sold yellow perch in 1996. Illinois had more Non-Sellers than Sellers of yellow perch, but still had 40 percent of its seafood wholesalers and retailers selling yellow perch. The only other state having any firms of these types selling yellow perch in 1996 was Minnesota. The proportion was quite low, 14 percent, but this might be attributed to the sport fishing popularity of walleye and other species that are found in Lake Superior and the interior lakes of the state. None of the responding seafood wholesalers and retailers located in the states of Indiana, Iowa, Missouri, Kansas, or North Dakota sold yellow perch in 1996. There were no respondents located in South Dakota or Nebraska.

Firm Size

Overall firm size, based on annual total food sales, appears to be larger for yellow perch Sellers in contrast with Non-Sellers, whether they are seafood wholesalers or retailers. Firms with annual total food sales up to \$100,000 were defined as "Small," while firms with sales between \$100,001 and \$500,000 were considered "Modest." "Medium"-sized firms reported sales between \$500,001 and \$1 million, while sales over \$1 million classified a firm as "Large." For seafood wholesalers, almost one-half (46%) of both Sellers and Non-Sellers fit the definition of "Large" (Figures 13 and 14). The Sellers, however, had a much higher proportion of

“Moderate” firms, while Non-Sellers had a significantly larger cohort of “Small” firms. For seafood retailers, the firms overall tended to be much smaller than seafood wholesalers. Both Sellers and Non-Sellers among seafood retailers had more than two-thirds of their firms falling into the “Small” and “Modest” categories. However, Non-Sellers had a notably larger proportion of “Small” firms (35% of Non-Sellers vs. 23% of Sellers).

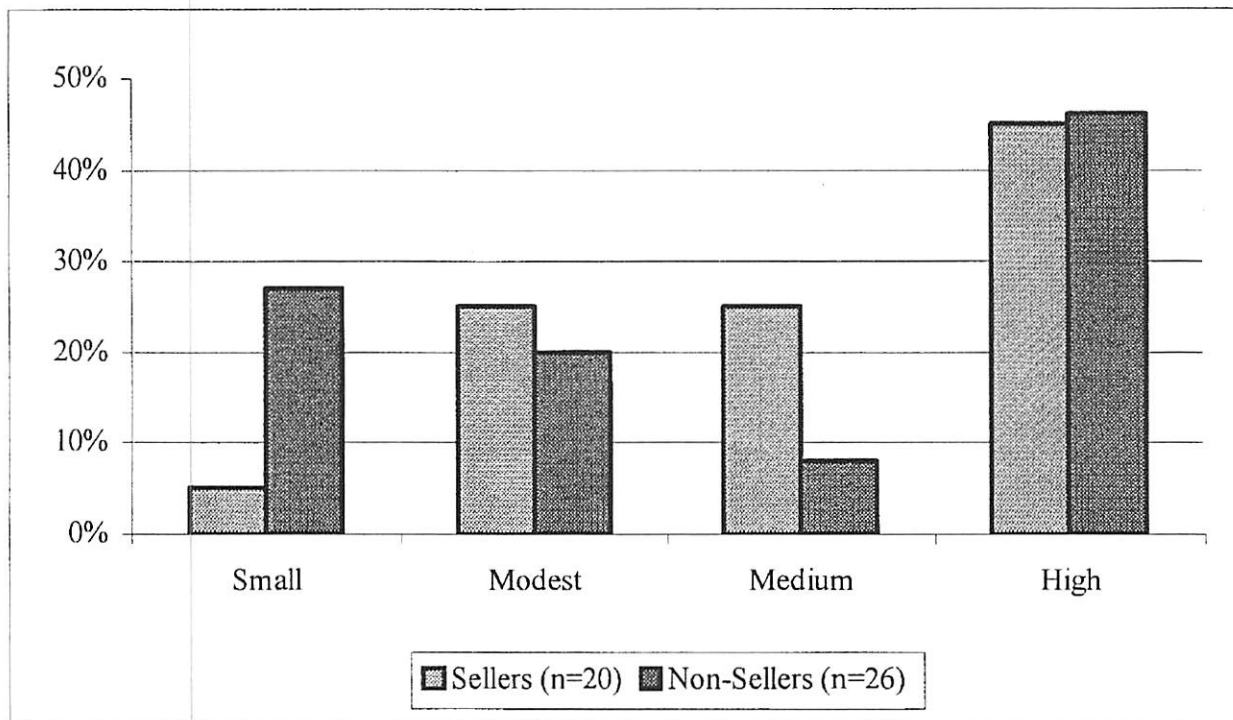


Figure 13. Size (Based on Annual Total Food Sales) of Seafood Wholesalers in the North Central Region That Are Sellers or Non-Sellers of Yellow Perch.

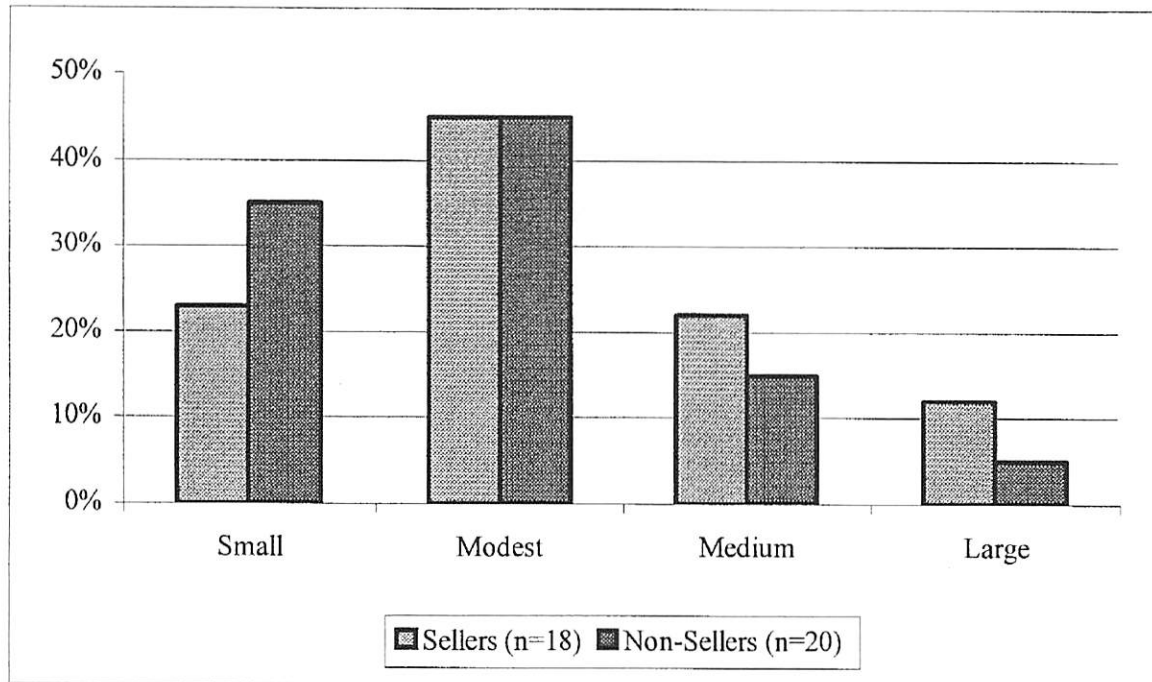


Figure 14. Size (Based on Annual Total Food Sales) of Seafood Retailers in the North Central Region that are Sellers or Non-Sellers of Yellow Perch.

Product Form of Seafood Purchases/Sales

The survey data show that, for both seafood wholesalers and retailers, both Sellers and Non-Sellers of yellow perch purchase fresh and frozen seafood products in similar proportions. Between 60 to 70 percent of purchases are of live or fresh products, and the remainder are frozen. Non-Sellers tend to buy and sell a little more of the frozen, pre-packaged, branded kind of seafood such as Gorton's or Mrs. Paul's brands. However, the proportions of purchases in this category are quite small (1%-7%) compared to those for the fresh and frozen purchases.

Top Selling Seafood Species

Shrimp, salmon, and catfish were all among the best selling species for all seafood wholesalers and retailers regardless of whether or not they sold yellow perch. Beyond these species, however, there were some notable differences in the best selling species for Sellers versus Non-Sellers of yellow perch. For both seafood wholesalers and retailers, the Sellers' other best selling species were typically lake or freshwater species such as lake whitefish, walleye, trout, or bass. The other best selling species for the Non-Sellers, however, tended to be ocean fish or shellfish.

That catfish is a best seller in the NCR is a marketing miracle suggesting that it is possible to succeed in expanding the market for an aquaculture species outside the historic consumption zone. The historic consumption zone for yellow perch appears to be limited mainly to locations in close proximity to Lakes Erie, Michigan, Huron, and Ontario. Widening yellow perch's acceptance beyond this zone would be necessary if supply ever surpassed demand from within the historic zone. This could occur if the Lake Erie yellow perch fishery were to recover substantially and/or if the yellow perch aquaculture industry substantially expanded its supply.

Reasons Why Firms Do Not Sell Yellow Perch

In all of the surveys, respondents were asked to indicate whether or not they sold yellow perch in 1996. Those who did not sell any perch in 1996 were asked to check which of several potential reasons applied in their particular situation. Responses were fairly similar for restaurants, supermarkets, and seafood wholesalers and retailers (Table 5). About one-third to one-half of the responding firms reported that one reason they did not sell yellow perch in 1996 was because perch was either too expensive or not available. This type of response suggests that if the availability and/or price of yellow perch improved, these firms might then be candidates for yellow perch sales. For each of these firm types, about one-half of the respondents indicated that there was no/low demand by their customers for this particular species. Taking this response at face value, one could assume that this 50 percent of firms should not be expected to sell yellow perch even if the supply/price situation improved through aquaculture. However, it is impossible to accurately sort out all the varied logic causing no/low demand. To the extent that the current high prices are driving the lack of demand, lowered prices for yellow perch could cause some increase in demand even in these firms. A sizeable proportion of seafood wholesalers reported "other" as one or more of their reasons for not selling yellow perch. Based on the hand-written explanations given, firms tended to check "other" when their product line was specialized and yellow perch just would not have fit in (e.g., handle shellfish only, sell one or two fish species only, could not easily accommodate necessary cooking equipment, etc.).

Table 5. Reasons Why Firms in the North Central Region Did Not Sell Yellow Perch in 1996, by Firm Type.

| Reason | Seafood Wholesalers (n=25) | Seafood Retailers (n=15) | Grocery Wholesalers (n=8) | Foodservice Distributors (n=13) | Restaurants (n=484) | Supermarkets (n=57) |
|-------------------------------------|----------------------------|--------------------------|---------------------------|---------------------------------|---------------------|---------------------|
| | ----- percent ----- | | | | | |
| No/Low Customer Demand | 56 ^a | 47 | 87 | 85 | 53 | 56 |
| Too Expensive | 16 | 27 | 12 | 23 | 15 | 21 |
| Not Available | 16 | 27 | 0 | 8 | 20 | 32 |
| Available, but supply inconsistent | 0 | 7 | 0 | 0 | 4 | 3 |
| Available, but quality inconsistent | 0 | 7 | 0 | 0 | 3 | 0 |
| Other | 36 | 7 | 0 | 0 | 7 | 7 |

^aPercentages in each column sum to more than 100 percent. Respondents were allowed to check any or all reasons that applied to their situation.

The responses of grocery wholesalers and foodservice distributors were quite similar to each other but different from the responses of the other firm types. Almost 90 percent of the grocery wholesalers and foodservice distributors which are currently selling fish of some kind indicated that one of their reasons for not selling yellow perch was no/low customer demand. This suggests that these types of wholesale firms are not as likely to be good candidates for yellow perch sales as compared to other firm types.

Data on Yellow Perch Purchases and Sales

Firms which indicated they had sold yellow perch in 1996 were asked to complete several specific questions pertaining to the specifics of their yellow perch purchases. Supermarkets were not included in this because of the low response rate for this firm type. The questions were somewhat different between restaurants and wholesalers because of the assumption that wholesalers were likely to purchase a greater number of product forms than restaurants and have a greater number of customer types. However, much of the data are essentially similar. For the purposes of this section, "wholesalers" includes all seafood wholesalers, seafood retailers, grocery wholesalers, and foodservice distributors that reported selling yellow perch in 1996.

Seasonality

Wholesalers and restaurant managers were asked questions regarding the seasonality of prices paid for yellow perch, the demand for yellow perch products, and in the case of the restaurants, of the supply of yellow perch products. Respondents were asked to rank the four months of the year in which the demand for yellow perch is usually highest. Subsequent questions requested similar information for months of highest supply (restaurants only) and highest wholesale price paid. For each factor (price, demand, and supply), a mean score was developed, based on the responses, for each month that accounted for the various rankings given for that month. The mean score for each month was calculated by assigning a value to each ranking for that month, then summing the values and dividing by the number of respondents. Assignment of values was as follows; "1" —5.0, "2" —4.0, "3" —3.0, "4" —2.0, and "X" —1.0. Since several respondents simply marked four months with an "X" rather than rank them, these "rankings" were assigned the lowest value rather than be disregarded altogether. The calculation of mean scores made it possible to accurately compare monthly rankings, with a higher score indicating higher price, demand, or supply in that month (as perceived by respondents, on average).

Mean scores are presented and discussed in the following paragraphs and figures. It is evident from the graphs that there is seasonality in the price, demand, and supply of yellow perch. However, the annual cycles do not follow identical paths. Aquaculturists need to be aware of these seasonal fluctuations in order to more profitably time their production and sales. Each aquaculturist will need to work with individual wholesale and retail firms to determine the most opportune time to market yellow perch to them based on the ever-changing supply, demand, and price situation faced at a specific point in time by a specific firm. Customized timing is one element of successful niche marketing.

The majority of responding wholesalers ranked the winter months when there is no (or very little) commercial fishing activity as the months when wholesale price paid is highest, especially January, February, and March (Figure 15). A modest price spike seems to occur during the summer months of June, July, and August. There appears to be a rough annual cycle in wholesale prices. Prices are high during the winter months when there is no (or very little) commercial fishing, then drop off in the spring, when commercial fishing resumes for the year. Prices recover somewhat during the summer season, and then fall back to lower levels during the autumn months before climbing higher after the commercial fishing season is over.

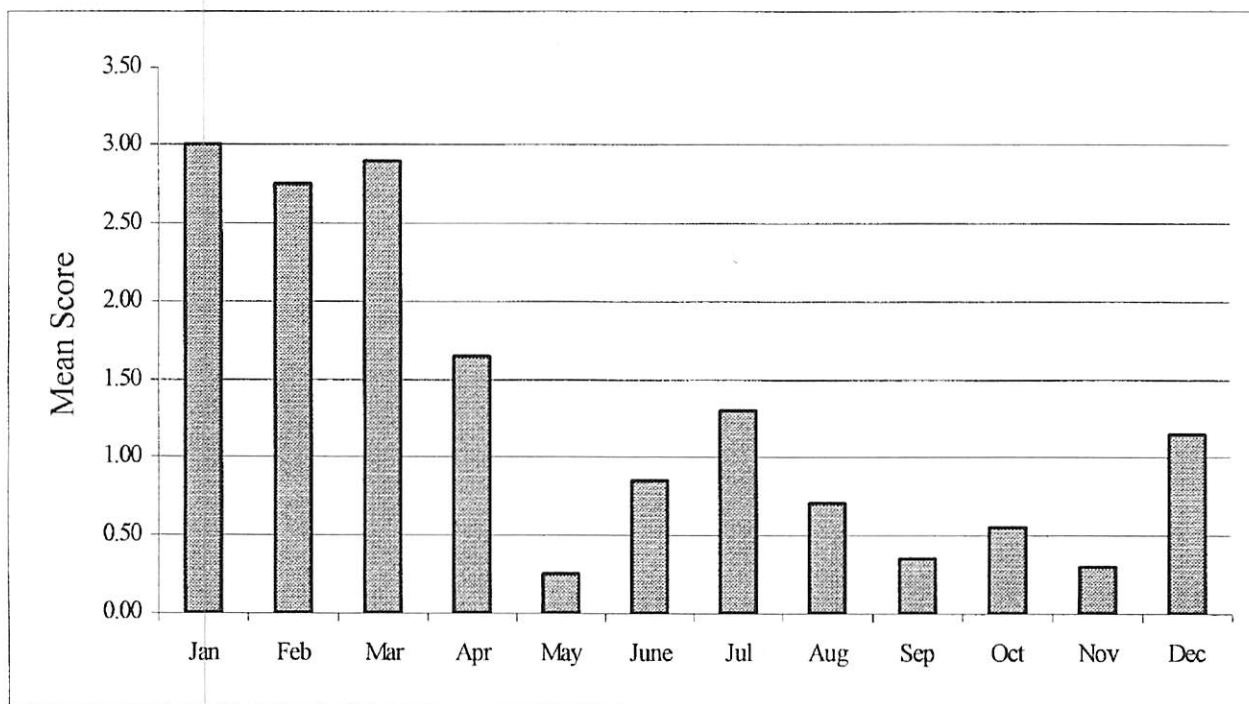


Figure 15. Seasonality of Wholesale Price Paid for Yellow Perch by Wholesalers: Mean Score by Month Based on Wholesalers' Ranking of Top Four Months When Price Is Highest (n=33).

Seasonal variation in the prices paid by restaurants for yellow perch follows the same general cycle as for wholesalers, but the ups and downs are not as drastic (Figure 16). Restaurants seem to face more mild fluctuations in price from month to month and from season to season, since there was less agreement on which four months of the year have the highest prices. The smoothing of cyclical fluctuations in food commodity prices is common as the food moves from the producer toward the consumer. Apparently, the fish/seafood market is no different.

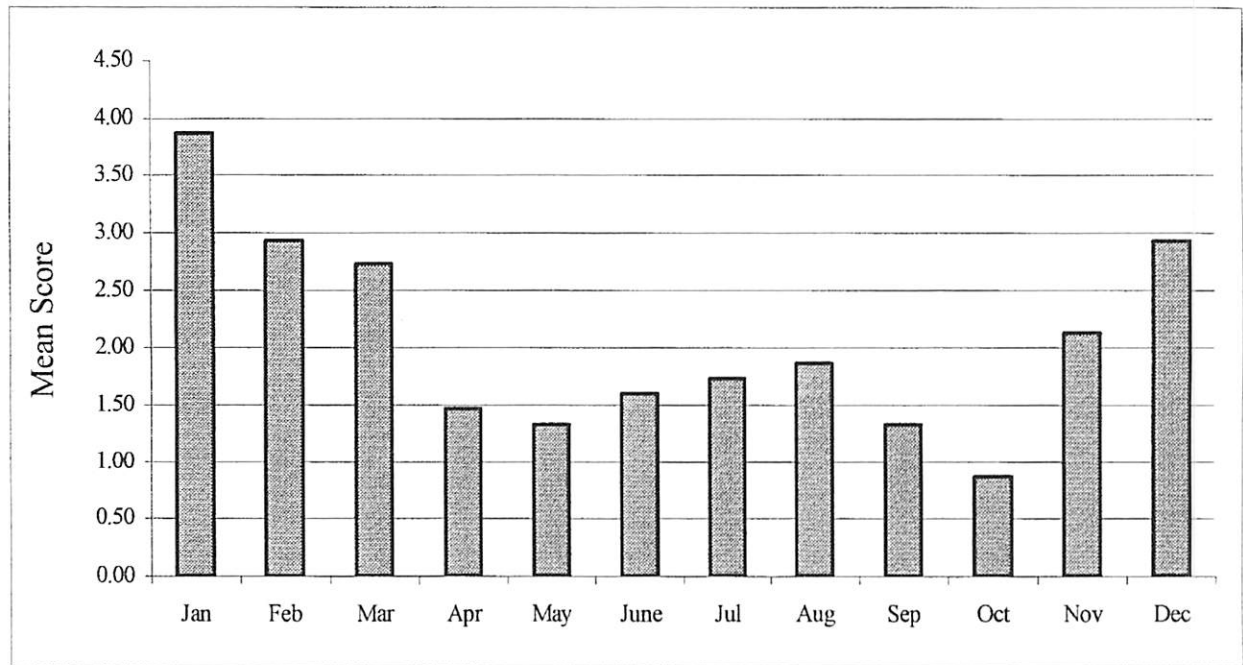


Figure 16. Seasonality of Wholesale Price Paid for Yellow Perch by Restaurants: Mean Score by Month Based on Restauraterus' Ranking of Top Four Months When Price Is Highest (n=29).

Demand (or more precisely, the quantity demanded or sold) for yellow perch faced by wholesalers appears to follow a different seasonal cycle than price (Figure 17). July was the most frequently reported month for high demand. Other top months include the early spring months and the summer months. There appears to be very little demand for yellow perch in the fall and winter months, beginning with October. The demand spike in the early spring coincides with the Lenten season and the opening, or anticipation of opening, of the commercial fishing season. After a dropoff in May, demand stays strong for the summer months and into September.

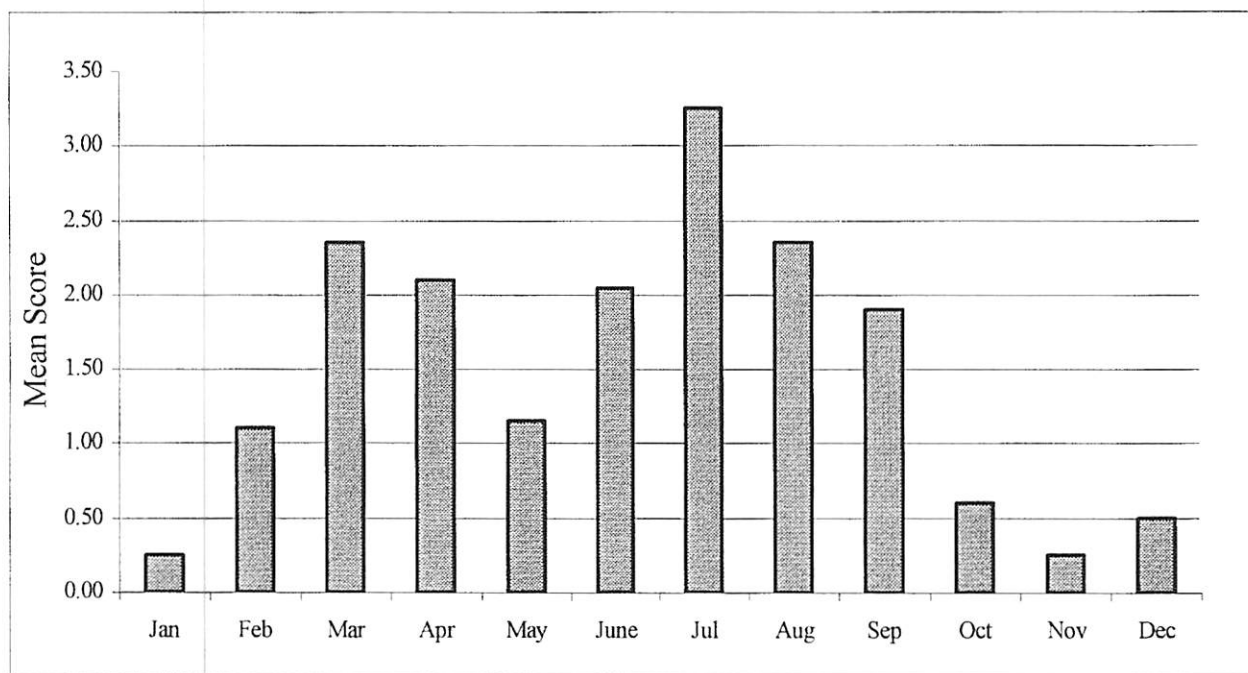


Figure 17. Seasonality of Demand for Yellow Perch by Wholesale Firms: Mean Score by Month Based on Wholesalers' Ranking of Top Four Months of Highest Demand (n=26).

The seasonal variation in demand (quantity demanded or sold) for yellow perch by restaurant customers is very similar to the variation faced by wholesalers (Figure 18). The two exceptions to this are: 1) demand in restaurants does not appear to fall off during the month of May; and 2) restaurant demand in the fall season seems to drop off earlier, in September rather than October.

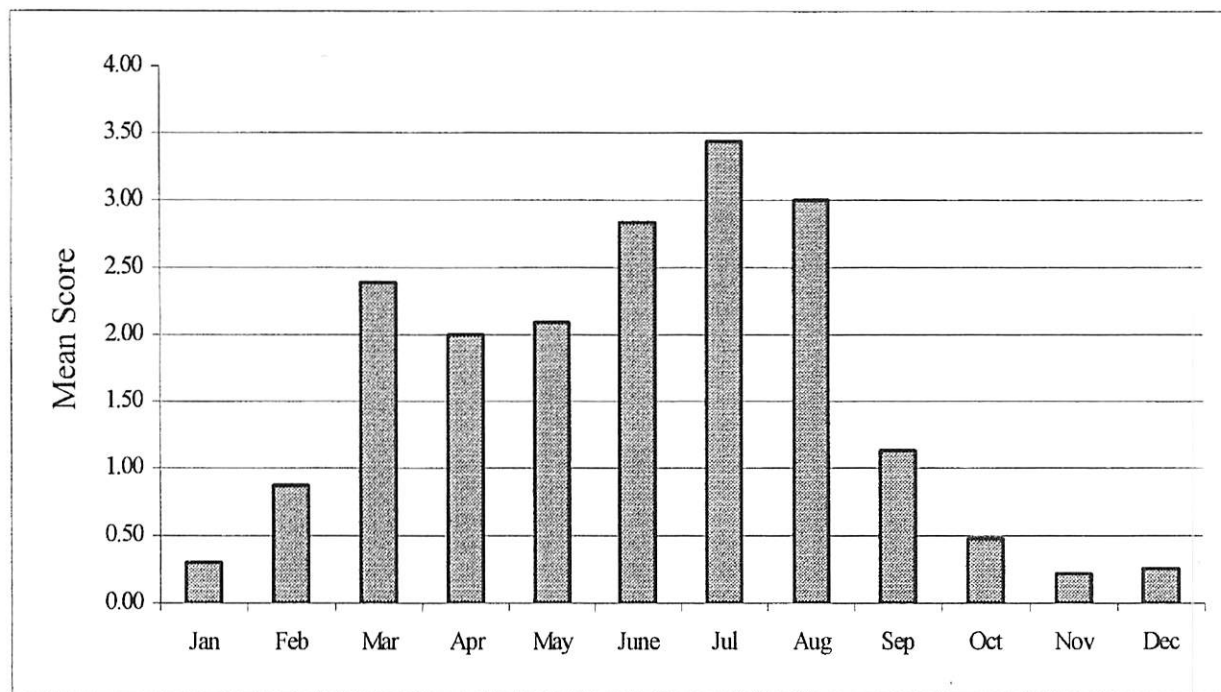


Figure 18. Seasonality of Demand for Yellow Perch by Restaurants: Mean Score by Month Based on Restaurateurs' Ranking of Top Four Months of Highest Demand (n=36).

Due to space constraints in the survey instruments, only restaurant managers were asked about the seasonality of yellow perch supply. Not surprisingly, supplies of yellow perch are highest (e.g., perch is most available) during the months of commercial fishing activity, particularly May through October, with supplies being the most plentiful during the summer months, particularly June (Figure 19).

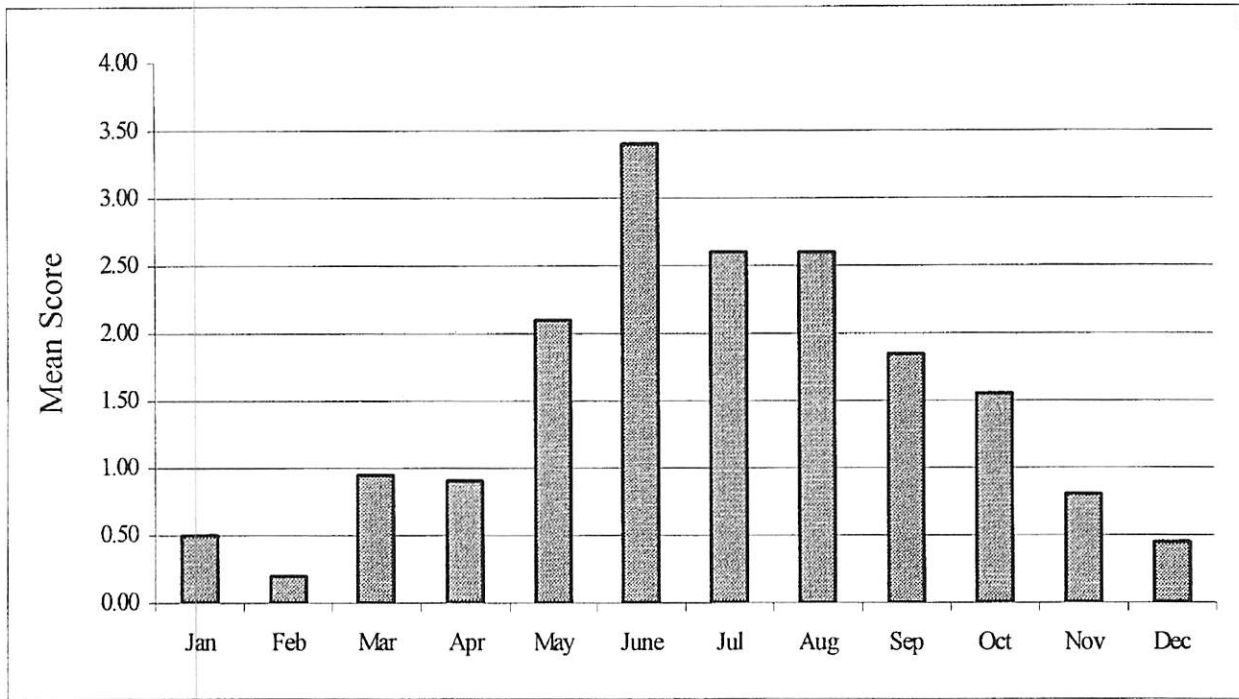


Figure 19. Seasonality of Yellow Perch Supply to Restaurants: Mean Score by Month Based on Restaurateurs' Ranking of Top Four Months When Supply Is Highest (n=29).

Selling Interval

Wholesalers and restaurant managers were asked to indicate the typical selling interval for yellow perch in their establishment. The vast majority of wholesale and restaurant businesses that sell yellow perch do so on a year-around basis (Table 6). This is mildly surprising given the supply problems with yellow perch. Among wholesale firms, those that do not sell year-around primarily sell on an occasional basis. The proportion of restaurants selling yellow perch occasionally is one-half of the proportion of wholesalers selling occasionally. The remaining restaurants sell yellow perch only during a particular "season," whether that be the Lenten season, the summer season, or the commercial fishing season. None of the responding wholesalers typically sell yellow perch only during Lent only or during the summer.

Table 6. Typical Selling Interval of Yellow Perch by Restaurants and Wholesalers in the North Central Region.

| | Restaurants (n = 38) | Wholesalers (n = 46) |
|--------------------------------|-------------------------|-------------------------|
| | -----percent----- | |
| Occasionally | 13 | 26 |
| Lenten Season Only | 3 | 0 |
| Summer Months Only | 5 | 0 |
| Commercial Fishing Season Only | 3 | 2 |
| Year Around | 76 | 70 |
| Other | 0 | 2 |
| Total | 100% | 100% |

Selling Frequency

In addition to indicating their typical selling interval for the year, restaurants were also asked to report on how frequently they usually serve yellow perch during that interval. Nearly two-thirds (61%) of the restaurant managers indicated that they typically sell yellow perch on a daily basis (Figure 20). Another one-quarter (26%) reported selling yellow perch on a weekly basis. Only 13 percent of the respondents indicated that they sell yellow perch once a month or less. Clearly, yellow perch are popular for more than just Friday night fish fries.

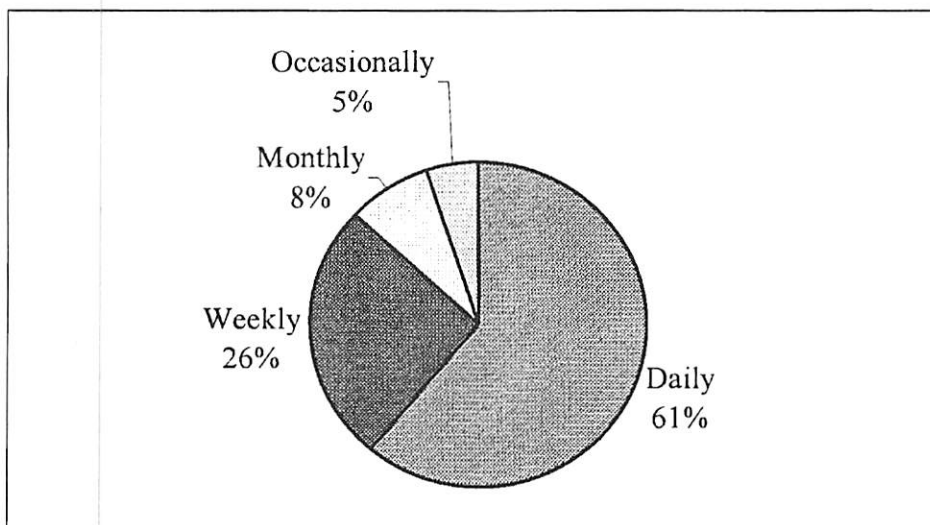


Figure 20. Typical Selling Frequency of Yellow Perch by Restaurants in the North Central Region (n=39).

Restaurant Purchases of Yellow Perch Products

Product Form

Restaurants are about equally split between preferring fresh and frozen fillets from among the available product forms when price and supply are not problems (Figure 21). It was expected that restaurants would greatly prefer fresh yellow perch fillets under these conditions. The data show this to be untrue. When yellow perch is actually purchased, however, about two-thirds of the restaurants end up purchasing frozen fillets. As expected, the restaurants preferred fillets over less processed products.

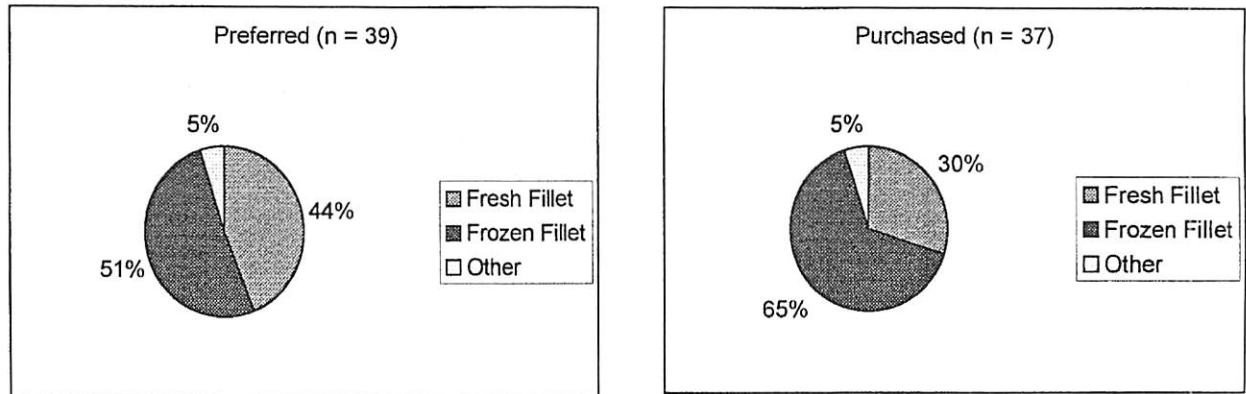


Figure 21. Yellow Perch Product Forms Preferred and Purchased by Restaurants in the North Central Region.

Size and Price

Respondents were asked to indicate the size and price of their two most frequently purchased product forms. Fresh fillets purchased by restaurants tend to be a bit larger in size than frozen fillets (Table 7). Because of the way in which the data were entered, the sizes are somewhat understated, but clearly there is a difference in the size of fillets purchased depending upon whether they are fresh or frozen. Because the data entry form only allowed for whole numbers, fillet sizes were rounded to the nearest whole number, with 1.5 being rounded to 1. If a size range was given, the lowest figure in the range was rounded to a whole number and entered. Fillet size is not a big issue with yellow perch anyway since, given the diminutive size of the fish, it is not possible to have several different fillet sizes as occurs with larger fish such as walleye.

Prices paid for yellow perch fillets varied by fresh versus frozen. As expected, the average price of fresh fillets purchased by restaurants in the NCR is somewhat higher than the average price of frozen fillets. Both prices are significantly higher than wholesale prices for fish of other species.

Table 7. Average Size and Price of Yellow Perch Fillets Purchased by Restaurants in the North Central Region.

| | Fresh (n = 18) | Frozen (n = 27) |
|-------|-------------------|--------------------|
| Size | 2.44 oz | 1.96 oz |
| Price | \$7.45/lb. | \$6.89/lb. |

Delivery Schedule and Quantity

Respondents also were asked to report, by product form, which delivery schedule and quantity they commonly used. Restaurants prefer weekly, or more frequent, purchases of yellow perch regardless of whether they are purchasing fresh or frozen fillets (Figure 22). However, almost one-fourth (22%) of restaurants that purchase frozen fillets do so on a monthly basis.

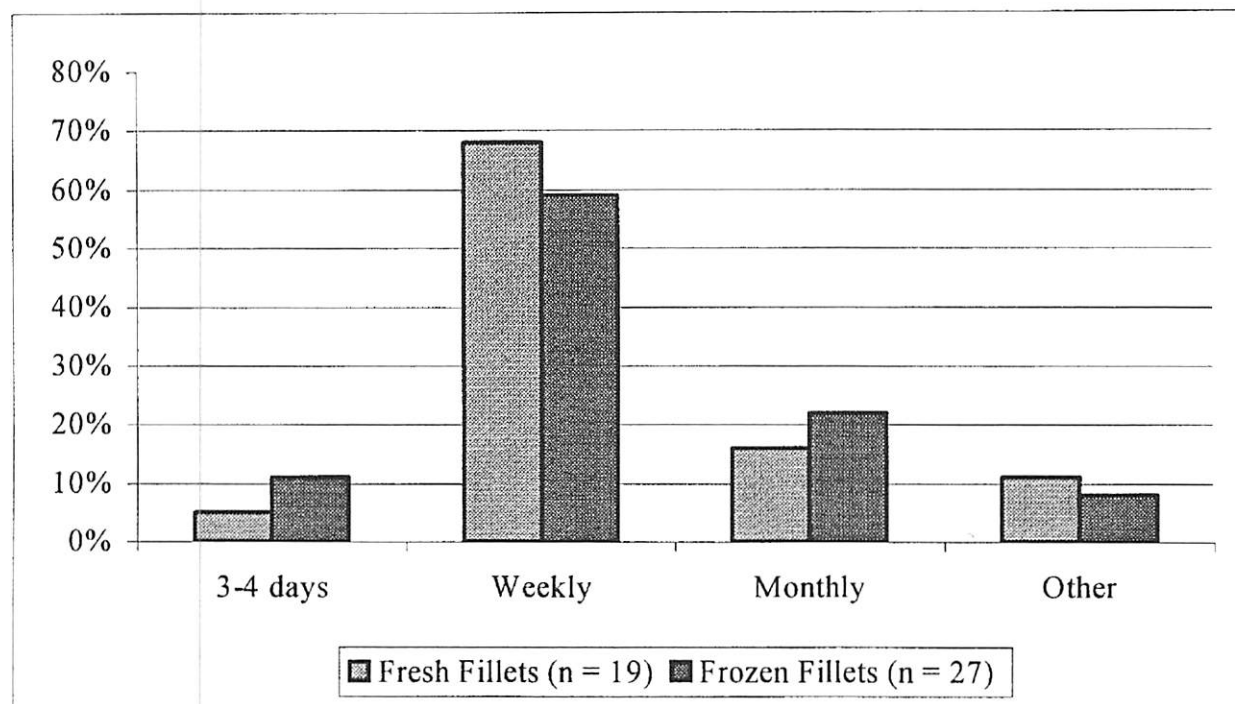


Figure 22. Typical Delivery Schedule for Yellow Perch Fillets to Restaurants in the North Central Region.

The average delivery quantity for restaurants purchasing fresh fillets on a weekly basis was 20.5 pounds (Table 8). The average quantity was slightly higher for frozen fillets delivered weekly, 24.7 pounds. Monthly deliveries of frozen fillets were higher yet at an average of 36.2 pounds. The quantity of frozen fillets delivered monthly was less than four times the quantity of frozen fillets delivered weekly. Therefore, it appears that restaurants that purchase frozen fillets on a monthly basis do not serve yellow perch as frequently or in as large a volume as those that obtain their fillets weekly.

Table 8. Average Quantity of Yellow Perch Delivered to Restaurants in the North Central Region, by Product Form and Delivery Schedule.

| | Weekly | Monthly |
|-----------------------|------------------|-----------------|
| Fresh Fillets | 20.5 lbs. (n=13) | -- |
| Frozen Fillets | 24.7 lbs. (n=16) | 36.2 lbs. (n=6) |

Suppliers

For species-specific data on fish/seafood purchases and sales to be meaningful, they must be connected to specific product forms. Accordingly, respondents were asked to indicate the supplier type from which they buy their most frequently purchased product forms, and not simply where they get “yellow perch.” As anticipated, the supplier type typically used is different depending upon whether the restaurant is purchasing fresh or frozen fillets (Figure 23). Seafood wholesalers and foodservice distributors supply the vast majority of yellow perch products to restaurants in the NCR. However, seafood wholesalers play a greater role when fresh fillets are purchased, whereas foodservice distributors are used to a greater extent when frozen fillets are purchased.

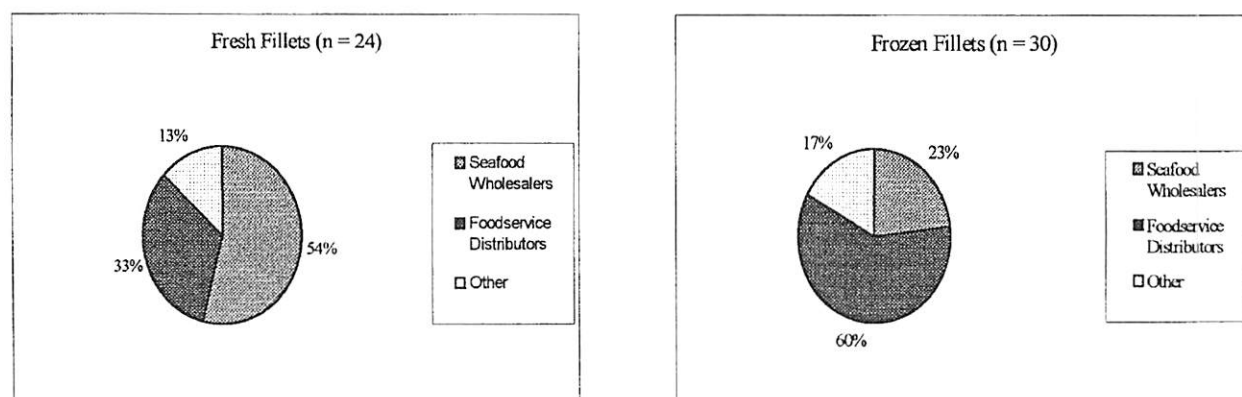


Figure 23. Supplier Type for Yellow Perch Fillets Purchased by Restaurants in the North Central Region.

It was not expected that foodservice distributors would be sources of yellow perch at all. Anecdotal evidence had suggested that yellow perch was so expensive and such a specialty item that it came only from processors or seafood wholesalers. However the term “foodservice distributors” should be interpreted with caution. Some of the restaurant managers who completed the survey forms may have classified the processors or seafood wholesalers that supply their restaurants with yellow perch as foodservice distributors rather than processors or seafood wholesalers. Classifying firms is not an exact science. However, since foodservice distributors were reported so frequently as a source for yellow perch fillets, it is highly likely that true foodservice firms are in fact handling yellow perch.

Strategies for Coping with Supply and Price Problems

It is well known that yellow perch can be difficult to obtain and that the price per pound of fillets is higher than virtually any other freshwater or ocean fish species. The seasonality data presented earlier in this section (See Figures 15 to 19) showed that price, demand, and supply of yellow perch all follow cyclical patterns throughout the year. Given the uncertainties of the yellow perch market, then, what types of coping strategies are commonly used by restaurants?

Similar coping strategies are used regardless of whether supply or price is the problem (Table 9). Switching suppliers was the most frequently reported coping strategy. Dropping yellow perch from the menu was also commonly mentioned, but more so when price was the problem. Other commonly used strategies were switching from fresh to frozen products (or frozen to fresh) or switching to another size of the same product form. The results suggest that restaurants are much more willing to change the size of the products they usually purchase rather than switching to a totally different product form. Since almost all restaurants purchase fillets, it is not likely that aquaculturists could succeed in marketing unprocessed yellow perch directly to many (if any) restaurants. The least favorite strategy reported by restaurants was to switch species. This suggests that restaurants do not view yellow perch as having a “substitute.” However, it could mean that only those restaurants that are currently (or still) serving yellow perch do not view this species as having a substitute. These data could be interpreted different ways. Several respondents reported that they handle price problems by simply raising the price or by listing the menu price for yellow perch as “market price.”

Table 9. Strategies Used by Restaurants in the North Central Region for Coping with Yellow Perch Supply or Price Problems.

| Strategy | Supply Problem (n=39) | Price Problem (n=39) |
|---|-----------------------------|----------------------------|
| | ----- percent ----- | |
| Switch from fresh to frozen | 36 | 28 |
| Switch to a different size of the same product form | 33 | 28 |
| Switch to a different yellow perch product form | 15 | 13 |
| Switch suppliers temporarily | 54 | 38 |
| Drop yellow perch from menu temporarily | 31 | 38 |
| Switch to a different fish species | 3 | 10 |
| Other strategy (raise price) | 8 | 18 |

Current Purchases of Farm-Raised Yellow Perch

Farm-raised yellow perch have only a small presence in restaurants in the NCR. Less than 10 percent (8%) of respondents indicated that they purchase farm-raised yellow perch (Table 10). Over one-half (56%) of responding restaurant managers reported that they do not purchase farm-raised yellow perch, but are interested in doing so. Confusion always seems to arise when questions related to farm-raised seafood come up. About one-fourth (26%) of the respondents to this question were not sure whether or not they were purchasing farm-raised yellow perch. Ten percent of respondents indicated that they do not purchase farm-raised yellow perch and are not interested in doing so. Educational efforts may be needed to reach this segment of restaurant managers.

Table 10. Frequency of Purchasing Farm-Raised Yellow Perch by Restaurants in the North Central Region.

| | Frequency (n=39) |
|---------------------------------------|---------------------|
| | ----- percent ----- |
| Frequently | 8 |
| Infrequently | 0 |
| Not at all, but interested | 56 |
| Not at all, and not interested | 10 |
| Unsure | 26 |
| Total | 100% |

Increased Purchases with Aquaculture

It is hoped that yellow perch aquaculture will be able to alleviate the supply and price problems currently being experienced by retail firms. If this were to happen, restaurants that are already (or still) serving yellow perch are likely to increase their purchases/sales. In order to estimate how much purchases might increase, respondents were first asked to report how many pounds they purchased during an average week (month) during the summer of 1996. Next they were asked to indicate how many pounds they might purchase per week (month) if aquaculture improved the supply and price of yellow perch to the point where they could buy all they wanted at prices lower than recent years but still higher than prices for other species. All responses were converted to weekly data for analysis. The average quantity of yellow perch purchased per week during the summer of 1996 was 105 lbs., while the median purchase quantity was 20 pounds. When respondents contemplated the lower price and larger supply scenario that aquaculture might bring, they reported that their purchases might increase to 140

lbs. on average, with a median purchase quantity of 27 pounds. According to these responses, it could be expected that purchases by restaurants already serving yellow perch could increase by about one-third. This does not take into account new purchases by those restaurants that would start or resume serving yellow perch if the supply and price situation improved.

Wholesaler Purchases/Sales of Yellow Perch Products

Product Form of Purchases

Wholesalers were asked to list their top five product forms purchased, in terms of volume of purchase. Fresh fillet appears to be the product form of choice among wholesale firms (Table 11). Close to one-half (40%) of wholesale firms reported fresh fillet as their most frequently purchased product form, and three-fourths of the firms mentioned this product form as one of their top five. Fairly close behind in second place was frozen fillet, followed more distantly by fresh whole/round.

Table 11. Yellow Perch Product Forms Purchased by Wholesale Firms in the North Central Region, by Firm Type.

| Firm Type | Fresh Whole | Fresh Fillet | Frozen Fillet | Other | Total |
|--|---------------------|-----------------|------------------|-------|-------|
| | ----- percent ----- | | | | |
| All Wholesalers (n=42) | | | | | |
| Top mention ^a | 24 | 40 | 33 | 3 | 100 |
| Any mention ^a | 36 | 76 | 62 | 4 | |
| Seafood Wholesaler (n=19) | | | | | |
| Top mention | 47 | 37 | 11 | 5 | 100 |
| Any mention | 58 | 79 | 53 | 10 | |
| Seafood Retailers (n=17) | | | | | |
| Top mention | 6 | 53 | 41 | 0 | 100 |
| Any mention | 18 | 88 | 47 | 0 | |
| Food Service Distributors (n=6) | | | | | |
| Top mention | 0 | 17 | 83 | 0 | 100 |
| Any mention | 17 | 33 | 100 | 0 | |

^aWholesalers were asked to list their top five yellow perch product forms in terms of volume of purchases. The percentages for "Top mention" sum to 100% since each firm could only list one product form as the most frequently purchased. The percentages for "Any mention" sum to greater than 100% since each firm could list up to five product forms.

Purchases of various product forms does vary based upon firm type. The most frequently purchased yellow perch product form was fresh whole/round for seafood wholesalers, fresh fillets for seafood retailers, and frozen fillets for foodservice distributors. Seafood wholesalers tend to purchase more than one yellow perch product form. Most (79%) reported purchasing at least two different yellow perch products, while about one-half (47%) of seafood retailers mentioned two product forms. Taking into account all product forms purchased, fresh fillet was the most widely purchased product form for both seafood wholesalers (79%) and seafood retailers (88%). About one-half of all firms of these two types reported frozen fillet as one of their top five yellow perch products. However, for seafood wholesalers, the second most frequently purchased product form was fresh whole/round rather than frozen fillets. Few seafood retailers reported purchasing fresh whole/round (18%). Foodservice distributors appear to primarily purchase frozen fillets with some secondary purchasing of fresh products.

Size and Price

Fresh whole/round yellow perch purchased by seafood wholesalers in July 1996 averaged over \$2 per pound in price and 6.6 ounces in size (Table 12). Fresh fillets were larger and costlier than frozen fillets. The average purchase price for fresh fillets in July 1996 was almost \$7 per pound (\$6.91/lb.), while the price for frozen fillets was at the lower end of the \$6 range (\$6.33/lb.). Prices paid for fresh fillets and frozen fillets by restaurants in July 1996 were higher, \$7.45/lb. and \$6.89/lb., respectively. Average sizes for fillets purchased by wholesalers were very similar to the average sizes purchased by restaurants. Average sizes are understated because of the manner in which the survey data were entered. Because the data entry form only allowed for whole numbers, sizes were rounded to the nearest whole number, with 1.5 being rounded to 1. If a size range was given, the lowest figure in the range was rounded to a whole number and entered. Size is not a major issue with yellow perch anyway, given the diminutive size of the fish.

Table 12. Average Size and Price of Yellow Perch Products Purchased by Wholesale Firms in the North Central Region.

| Yellow Perch Product Form | Average | Number of Firms |
|---------------------------|----------------------|-----------------|
| Fresh whole/round | | |
| Size | 6.60 oz ^a | 5 |
| Price | \$2.19/lb | 8 |
| Fresh Fillets | | |
| Size | 2.50 oz ^a | 18 |
| Price | \$6.91/lb | 18 |
| Frozen Fillets | | |
| Size | 2.07 oz ^a | 14 |
| Price | \$6.33/lb | 14 |

^aAverage ounces for each product form is understated. The data entry form did not allow for fractions. Therefore, the ounces were rounded to the nearest whole number, and any range of numbers was entered as the lowest value given in the range.

Delivery Schedule and Quantity

Seafood wholesalers indicated that they prefer weekly (or more frequent) deliveries of yellow perch products regardless of product form (fresh whole/round, fresh fillets, frozen fillets). Seafood retailers reported preferring weekly deliveries for fresh fillets. Deliveries of frozen fillets were split between weekly and monthly. Foodservice distributors indicated weekly deliveries were preferred for their frozen yellow perch fillets. Since the small number of delivery quantities reported were highly variable, averages may be misleading and were not calculated.

Suppliers

Data on suppliers of yellow perch products were examined by firm type and product form. Seafood wholesalers and seafood retailers utilize different sources when purchasing yellow perch. Seafood wholesalers also utilize different sources for different product forms. Seafood retailers tend to purchase most of their yellow perch products from seafood wholesalers. Seafood wholesalers reported purchasing their fresh whole/round perch primarily from commercial or tribal fishermen. Fresh and frozen fillets are typically purchased from processors or from other seafood wholesalers.

Current Purchases of Farm-Raised Yellow Perch

A significant proportion (31%) of seafood wholesalers are currently purchasing farm-raised yellow perch, either frequently or infrequently (Table 13). No seafood retailers reported purchasing farm-raised yellow perch. Most firms of both types indicated that they are interested in purchasing farm-raised yellow perch even though they are not now doing so. One-fourth (23%) of the seafood retailers replied that they are not interested in purchasing farm-raised yellow perch. Low percentages were unsure of whether or not they were purchasing farm-raised perch. The "unsure" percentage for restaurants was much higher (26%).

Table 13. Frequency of Purchasing Farm-Raised Yellow Perch by Wholesale Firms in the North Central Region, by Firm Type.

| Frequency | Seafood Wholesalers (n = 19) | Seafood Retailers (n = 17) |
|--------------------------------|---------------------------------|-------------------------------|
| | ----- percent ----- | |
| Frequently | 21 | 0 |
| Infrequently | 10 | 0 |
| Not at all, but interested | 58 | 65 |
| Not at all, and not interested | 0 | 23 |
| Unsure | 10 | 12 |
| Total | 100% | 100% |

Increased Purchases with Aquaculture

Seafood wholesalers and retailers were quite optimistic about increasing yellow perch purchases if aquaculture increased supplies enough to fully supply the market and reduced prices to levels lower than in recent years, but still somewhat higher than price levels for other species. On average, seafood wholesalers reported expected quantity increases of over three times current levels (Table 14). Seafood retailers were not as enthusiastically optimistic as wholesalers, but on average reported anticipated increases close to twice current levels. The high percentage increases reported by seafood wholesalers and retailers are encouraging for aquaculture. They suggest that there exists a large, untapped market for yellow perch.

Table 14. Mean and Median Weekly Purchases of Yellow Perch by Wholesale Firms in the North Central Region, Currently and with Aquaculture Improved Supply/Price.

| Firm Type and Scenario | Mean | Increase | Median | Increase |
|-----------------------------------|------------|----------|-----------|----------|
| Seafood Wholesalers (n=16) | | | | |
| Currently | 1,242 lbs | | 350 lbs | |
| Aquaculture improved supply/price | 5,939 lbs | 378% | 1,500 lbs | 329% |
| Seafood Retailers (n=14) | | | | |
| Currently | 48.64 lbs | | 18.5 lbs | |
| Aquaculture improved supply/price | 134.00 lbs | 175% | 50.0 lbs | 170% |

Best Selling Product Forms

Since it was hypothesized that wholesale firms might do some processing of the yellow perch they purchased, these firms were asked to indicate their best selling product forms as well as the product forms they typically purchase. By far the best selling products of wholesaler firms are fresh fillets, followed by frozen fillets (Table 15). Seafood wholesalers frequently purchase yellow perch in the whole/round form, but then sell primarily fillets, particularly fresh. These data suggest some processing is done by wholesalers. Seafood retailers, on the other hand, appear to purchase and sell fresh whole, fresh fillets, and frozen fillets in very similar proportions. This suggests they do very little processing themselves. When the average size of fillets sold was examined, it was quite clear that customers of seafood wholesalers (primarily restaurants) purchase smaller fillet sizes than do customers of seafood retailers (primarily final consumers). This suggests that restaurants prefer smaller size fillets, while final consumers prefer to buy larger fillets. For both firm types, the average size of fresh fillets was larger than the average size of frozen fillets.

Table 15. Best Selling Yellow Perch Product Forms of Wholesale Firms in the North Central Region.

| Firm Type | Fresh Whole | Fresh Fillet | Frozen Fillet | Other | Total |
|---------------------------|---------------------|--------------|---------------|-------|-------|
| | ----- percent ----- | | | | |
| All Wholesalers (n=57) | | | | | |
| Top mention ^a | 8 | 65 | 24 | 3 | 100 |
| Any mention ^a | 16 | 86 | 70 | 3 | |
| Seafood Wholesaler (n=17) | | | | | |
| Top mention | 12 | 82 | 6 | 0 | 100 |
| Any mention | 29 | 100 | 71 | 0 | |
| Seafood Retailers (n=16) | | | | | |
| Top mention | 6 | 56 | 38 | 0 | 100 |
| Any mention | 6 | 87 | 50 | 0 | |

^aWholesalers were asked to list their top five best selling yellow perch product forms. The percentages for "Top mention" sum to 100% since each firm could only list one product form as the top seller. The percentages for "Any mention" sum to greater than 100% since each firm could list up to five product forms.

Customers

Wholesale firms primarily sell yellow perch to restaurants, final consumers, and supermarkets (Table 16). Seafood wholesalers sell to a wider variety of customers, while seafood retailers typically serve only restaurants and final consumers. All of the responding seafood wholesalers reported selling yellow perch to restaurants, while just one-half reported selling

Table 16. Percent of Wholesale Firms in the North Central Region That Sell Yellow Perch to Various Customer Types, by Firm Type.

| Customer Firm Type | Wholesale Firm Type | |
|---------------------|---------------------------------|-------------------------------|
| | Seafood Wholesalers (n = 18) | Seafood Retailers (n = 15) |
| ----- percent ----- | | |
| Restaurants | 100 | 27 |
| Final Consumers | 56 | 100 |
| Supermarkets | 50 | 0 |
| Seafood Wholesalers | 33 | 0 |
| Foodservice | | |
| Distributors | 17 | 0 |
| Other | 12 | 0 |

perch to supermarkets. This suggests that restaurants are a bigger market for yellow perch than are supermarkets. Over one-half (56%) of seafood wholesalers sell to final consumers, revealing the pervasive role of retailing among firms that are primarily wholesalers. A significant proportion of seafood retailers sell to restaurants (27%) as well as to final consumers. The data were further analyzed to determine which product forms are typically sold to which customers. There was virtually no change in customers depending upon the product form being sold. This implies that fresh and frozen fillets are going to the different customer types in the same proportions, as opposed to all fresh fillets going to restaurants and all frozen fillets going to supermarkets and consumers or some such division based on product form.

Summary and Conclusions

Yellow perch is a popular sport and eating fish in the North Central Region. A serious decline in the Great Lakes fishery began in the early 1970's and has never reversed itself. Consequently, interest in the commercial culture of yellow perch has intensified in recent years. Considerable funds have been invested in developing commercial culture practices. This study examines marketing issues affecting yellow perch aquaculture.

In this study, a mail survey was conducted of retail and wholesale firms in the food industry, i.e., restaurants, supermarkets, seafood wholesalers, seafood retailers, foodservice distributors, grocery wholesalers, and fish brokers. Different survey instruments were developed for different firm types. Survey questions requested general information on firm characteristics and fish/seafood purchase/sales behavior along with specific information on purchases/sales of yellow perch. A mailing list was purchased from a private company. Survey mailings occurred between August 1996 and March 1997.

Restaurants were a major focus of the survey because this firm type had not previously been surveyed regionwide for fish/seafood purchases/sales behavior. For the purposes of this project, only tableservice restaurants were included. Also excluded were establishments primarily selling pizza or those that were part of a chain. Survey data were analyzed to determine which firm characteristics influence whether or not a restaurant serves yellow perch. Location appears to be a strong factor in serving yellow perch. Over two-thirds (70%) of the responding restaurants that did sell yellow perch in 1996 were located within 50 miles of the Great Lakes. Concentrations of yellow perch-serving restaurants also appeared in Michigan and Wisconsin, followed by Ohio, Indiana, and Illinois. The population density (urban, rural, etc.) associated with a restaurant's location, however, did not seem to affect whether or not the restaurant served yellow perch. Other firm characteristics that appear to positively influence a firm's decision to serve yellow perch were; a more formal ambiance/more expensive menu, larger firm size, and greater presence of seafood on the menu.

Supermarkets, which are defined by the grocery trade as stores with \$2 million or more in annual sales, were the other retail-level firm type surveyed. Unfortunately, it was very difficult to isolate the "supermarkets" from the larger set of "all grocery stores." Therefore, the rate of useable responses was quite low, and thus the results must be interpreted with caution. As with restaurants, location appears to have a significant influence on whether or not a supermarket sells yellow perch. The concentration of perch-selling supermarkets was highest in Ohio and Michigan, followed by Wisconsin, Indiana, Illinois, and Missouri. Regarding proximity to the Great Lakes, supermarkets selling yellow perch were more spread out than perch-serving restaurants. However, there was a definite trend of fewer supermarkets selling yellow perch as the distance from the Great Lakes increased. Unlike restaurants, there was some correlation between the population density associated with a supermarket's location and the likelihood of selling yellow perch. Yellow perch was much more likely to be sold in supermarkets located in urban/suburban areas than in rural/small town areas. Other firm characteristics which appear to positively influence the selling of yellow perch by supermarkets include; larger physical store size, larger size in terms of gross sales, offering full-service for fish/seafood products, greater fish/seafood selling space, and more centralized control of fish/seafood decisionmaking (concerning species sold and suppliers).

Wholesalers represented a much more diverse grouping of firms. However, because of the wholesale rather than retail orientation of most firms, fewer firm characteristic questions were necessary or useful. Virtually all of the seafood wholesalers and retailers sold fresh or frozen fish/seafood, while less than one-half of foodservice distributors and grocery wholesalers did so. In fact, only two-thirds of the foodservice distributors sold any fish/seafood at all. Fish/seafood sales among those foodservice distributors and grocery wholesalers that did sell some fish/seafood comprised only about 10 percent of total food sales on average. Somewhat less than one-half of the seafood wholesalers and retailers sold yellow perch in 1996, while the percentages were much smaller for foodservice distributors and grocery wholesalers (16% and 3%, respectively). Data for seafood wholesalers and retailers were analyzed to determine what was different between Sellers and Non-Sellers of yellow perch. Firms selling yellow perch were concentrated in Ohio, followed by Michigan, Wisconsin, and Illinois. Firms that sold yellow perch in 1996 tended to be larger in size (based on gross sales) and sellers of other freshwater fish species.

Respondents of all firm types that did not sell yellow perch in 1996 were asked to report why not. About one-half of the firms indicated that they had experienced no or low demand for yellow perch. Another one-third reported they did not purchase any yellow perch because it was too expensive or not available. These latter firms may increase their purchases of yellow perch if aquaculture were to alleviate the current price and/or supply problems.

Restaurants and wholesale firms that reported selling yellow perch in 1996 were asked to provide details on their yellow perch purchases and sales. The seasonality of the demand, price, and supply of yellow perch were examined. There are definite cyclical patterns for both restaurants and wholesalers. These need to be taken into account by aquaculturists in order to time their production and/or sales appropriately. Most firms that sell yellow perch do so on a year-around basis rather than for a limited time during the year. Nearly two-thirds of the restaurants indicated that they sell yellow perch on a daily basis, with another one-fourth selling it weekly. Thus, there is a year-around market for yellow perch at both the wholesale and retail levels, but that market is not steady. Purchases by wholesale firms may be more cyclical both in terms of quantity and price.

Restaurants prefer fresh and frozen fillets about equally, but end up purchasing frozen fillets more frequently. Fillets purchased in July 1996 averaged 2-3 ounces in size, with the fresh fillets tending to be larger. Fillet prices varied in the \$6 to \$8 dollar per pound range and averaged \$6.89/lb. for frozen fillets and \$7.45/lb. for fresh fillets. Weekly deliveries (or more frequent) were preferred for both fresh and frozen fillets, although monthly deliveries were used by about one-fifth of those purchasing frozen fillets. Restaurants purchasing fresh fillets on a weekly basis purchased 20.5 pounds per week on average. The weekly average for frozen fillets was 24.7 pounds. Deliveries of frozen fillets on a monthly basis averaged 36.2 pounds.

Seafood wholesalers and foodservice distributors supply the vast majority of yellow perch products to restaurants in the North Central Region. Seafood wholesalers play a larger role in providing fresh fillets, while foodservice distributors supply more of the frozen fillets. Less than 10 percent of the restaurants indicated they are purchasing farm-raised yellow perch, but 50 percent reported interest in doing so. If aquaculture substantially increased the availability of yellow perch and brought the price closer to other species, restaurants already selling yellow perch indicated that, on average, their yellow perch purchases could increase by about one-third. In order to cope with the current price and supply problems, restaurants tend to respond by

switching suppliers, dropping yellow perch from the menu temporarily, switching from fresh to frozen products (or vice versa), or switching to a different size of the same product form. Responses suggest that restaurants are not willing to buy unprocessed yellow perch even when price/supply is limited, nor are they interested in offering a substitute species in place of yellow perch.

For both seafood wholesalers and seafood retailers, fresh fillet was by far the most widely purchased yellow perch product form. Frozen fillet was a somewhat distant second. Seafood wholesalers tended to purchase multiple yellow perch products, while two products was about the limit for seafood retailers, and one product for foodservice distributors. The top yellow perch product form also varied by firm type. Foodservice distributors almost exclusively purchased frozen fillets. Seafood retailers were fairly evenly split between fresh and frozen fillets, with fresh fillets getting the edge. Seafood wholesalers' top purchased yellow perch product was fresh whole/round, but this product was not as widely purchased as fresh fillets when all product forms purchased were taken into account. Other product forms receiving top mention by seafood wholesalers were fresh fillets, followed distantly by frozen fillets.

Prices paid for yellow perch fillets in July 1996 by seafood wholesalers and retailers tended to be lower than the prices paid by restaurants. The average price paid for fresh fillets was close to \$7/lb., and the average price for frozen fillets was close to \$6/lb. Average fillet sizes were very similar to the 2-3 ounces averaged for restaurants. Weekly (or more frequent) deliveries of yellow perch products were preferred by all wholesale firm types. Again, there was some interest in monthly deliveries of frozen fillets, mostly by seafood retailers. Seafood retailers typically purchase most of their yellow perch products from seafood wholesalers. Seafood wholesalers usually purchase their fresh whole/round products from fishermen (commercial or tribal), but obtain their fresh and frozen fillets from processors and other seafood wholesalers. Of the wholesaler firms, only seafood wholesalers reported purchasing farm-raised yellow perch. A significant percentage indicated that they are currently purchasing the farm-raised version on either a frequent or infrequent basis. Wholesalers were much more optimistic than restaurants about increasing their yellow perch purchases if aquaculture improved the yellow perch supply/price situation. On average, seafood wholesalers expected that their purchases would almost quadruple with aquaculture. Seafood retailers showed an average increase between double and triple current levels.

Since wholesalers also sell yellow perch products as well as purchase them, data also were obtained on product forms sold and customer types. The top selling yellow perch product form among seafood wholesalers and retailers was also the most widely sold product form, fresh fillets. Frozen fillets are also widely sold, with fresh whole/round being sold to a much more limited extent. The universal customer for yellow perch products of responding seafood wholesalers was restaurants. Final consumers and supermarkets were also major customers, but not nearly to the same extent as restaurants. Other customer types were mentioned as well. Seafood retailers, on the other hand, reported only two customer types, final consumers and restaurants. All responding seafood retailers indicated that they sold to final consumers, while about one-fourth reported restaurants as a customer type. Customer type did not vary significantly by whether fresh fillets or frozen fillets were being sold.

The data collected from this survey provide current and potential aquaculturists with specific market information on desirable product form, price, and delivery of yellow perch, as well as on the seasonality of yellow perch markets. Other perch-specific data give guidance on the

likelihood of various businesses as potential markets. All of these types of data enable persons associated with yellow perch aquaculture to plan production, marketing, and/or research strategies, and to be aware of market expectations, possible problems, or areas of further investigation.

Some of the marketing data uncovered in this project have important implications for yellow perch aquaculture. One important finding is the acceptability of frozen yellow perch fillets in the marketplace. Once the burden of supplying fresh products on a weekly basis is lifted, the number of production and marketing options broadens considerably. Production facilities could be located wherever conditions are most conducive to cost-effective production rather than located in close proximity to markets. The culture process could begin at any time during the year that would work best for the type of production facility and for the pricing and availability of fingerlings, rather than having to time production to obtain market-size fish on specific dates. Because it would not be essential to market only to nearby firms, potential markets could be investigated in more far flung areas where customers might be found that would make a better fit with the aquaculture business.

On the negative side, few firms appear to be interested in purchasing yellow perch in the round except for seafood wholesalers, and they typically want round fish to be fresh. This suggests that aquaculturists who want to market yellow perch to businesses (rather than directly to consumers) will have to perfect the difficult technique of filleting yellow perch themselves, start/join cooperatives to fillet and/or market their yellow perch together, or sell only to wholesalers who will take their yellow perch rounds when they reach market size. Of course there are always the possibilities of finding a business which will buy frozen yellow perch rounds or of selling fresh/live rounds directly to consumers.

Weekly deliveries of yellow perch appear to be the preferred frequency of delivery regardless of the type of firm that is purchasing or what product form is being purchased. Anyone planning to market yellow perch would have to take this important market expectation into consideration, or scout out those customers who would be willing to make alternative arrangements.

Restaurants and final consumers seem to be the largest markets for yellow perch, but supermarkets are also part of the marketing picture. However, there is an incredible amount of diversity among restaurants and consumers. This presents various opportunities as well as challenges for those desiring to market yellow perch. The data from the restaurant portion of this project provide guidance to those interested in developing their marketing niche among restaurants. Further investigation into the needs of the foodservice firms that serve restaurants would be useful, as would a consumer survey to obtain some credible evidence of the desires exhibited by this market group.

The data from this survey appear to confirm the positive market potential for cultured yellow perch in the North Central Region. There is a reasonable likelihood that sales of yellow perch would significantly increase in two ways; to those retail and wholesale firms already selling yellow perch, and to those firms (particularly retail) not currently selling yellow perch. There appears to be a strong affinity for yellow perch around Lakes Erie, Michigan, and Huron, which have been the historic sources of commercial supplies (along with Lake Ontario which does not lie within the NCR). This affinity is based on an acquired taste and familiarity with the yellow perch product, which does not seem to have diminished much with time or been assuaged by alternative species. This historic market is somewhat dormant because of availability problems and high prices for yellow perch, but could easily be revived and perhaps expanded. The historic

link to yellow perch would make it much easier to introduce a cultured yellow perch product than to create an entirely new market for the product. Since there are millions of people living in fairly close proximity to the Great Lakes, with a substantial number of restaurants serving them, the possibility for large increases in the quantities demanded seems realistic. Additionally, with the strong correlation between location and preference for selling yellow perch indicated from the survey data, there should be selling opportunities for yellow perch outside the North Central Region, such as communities which border the Great Lakes in Pennsylvania, New York, and Canada. It is highly likely that these communities also have been historic markets for yellow perch. All in all, the data suggest a potentially large market for farm-raised yellow perch.

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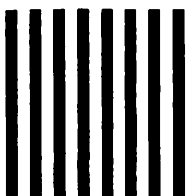
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Appendix

On the following pages are copies of the actual survey instruments developed and used in this project. The exception to “used” is the “Yellow Perch and Walleye” survey for supermarkets. This Phase II survey was used initially. However, when supermarket response was so low that a second full mailing of the Phase I supermarket survey had to be conducted, the mailing of this follow-up survey to obtain data specific to yellow perch and walleye purchases/sales was discontinued. For purposes of completeness this survey instrument was included in the Appendix.

The survey instruments were printed onto 8-inch by 11-inch paper. When stapled and folded, this yielded a survey booklet with the dimensions of 5 inches by 8 inches. Heavier stock was used for the cover of each booklet to minimize damage in mailing. The booklets were designed to be originally mailed out in 6-inch by 9-inch envelopes and to be self-mailers for the respondent. Business reply information was printed on the back cover of the booklet and a sticker attached to the front cover so that the respondent could seal the booklet before mailing at the surveying institution’s expense. A different color cover was used for each of the five survey instruments developed in order to minimize confusion. Some of the supermarket and restaurant respondents would be receiving both Phase I and Phase II surveys, so they needed to be able to distinguish between them on sight. Confusion for data entry personnel was also minimized by color coding of the surveys.

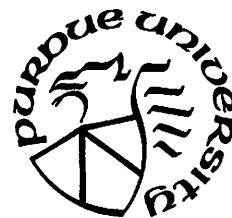
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Purdue University

Restaurant Survey

**Fish/Seafood Purchases and Sales in the
North Central Region**

Sponsors:

**North Central Regional Aquaculture Center
National Sea Grant College Program
Illinois-Indiana Sea Grant**

*Please use sticker below to
seal questionnaire before mailing*

About the Survey ...

Aquaculture is generating increasing interest in the U.S. In the North Central Region, both the production and marketing aspects of aquaculture are focusing in on two species having strong Regional but not National appeal: yellow perch and walleye.

Market information is vital for farmers and other entrepreneurs to successfully plan and establish aquaculture enterprises. However, most Regional aquaculture funding to date has focused on culture techniques. The purpose of this survey is to make restaurant market information for the North Central Region on fish/seafood in general and on yellow perch and walleye in particular available to all interested persons. Survey data will be used by government officials, bankers, venture capitalists, current and potential aquaculturists, university researchers and extension personnel to make sound judgments regarding aquaculture investments and activities.

Restaurants are a vital segment in the fish/seafood marketing channels of the Region. Your restaurant was randomly selected from the 65,000+ non-chain restaurants in the North Central Region. Because of the great diversity of restaurants spawned by the consumer-driven marketplace, your response is extremely important as representative of restaurants in your state with similar operational characteristics. **Your response will be completely confidential.** If your menu includes yellow perch or walleye, a follow-up survey will be mailed to you so that specific market information on these two species can be discovered. This data will be critical for building a successful aquaculture industry that can supply your restaurant year-round with quality lake fish.

Thank you for providing invaluable help by completing this survey. If you have any questions about the survey, have any additional comments to share, or are interested in receiving a copy of the survey results, please feel free to contact: Dr. Marshall A. Martin, Department of Agricultural Economics, Purdue University, 1145 Krannert Building, West Lafayette, Indiana, 47907-1145; telephone (317) 494-4268.

Operational Characteristics

1. Is your establishment a tableservice restaurant?
 - Yes -- my tableservice restaurant has either a full or limited menu
 - No -- my restaurant is either fast food or other

2. How close is your restaurant located to one of the Great Lakes?
 - 0 to 50 miles
 - 51 to 100 miles
 - More than 100 miles

3. Is the setting of your restaurant...? **(Check only one)**
 - Urban** (Chicago, Cincinnati, Cleveland, Columbus, Detroit, Indianapolis, Kansas City KS/MO , Milwaukee, Minneapolis/St. Paul, or St. Louis/East St. Louis)
 - Suburban** (suburb of an urban city listed above)
 - Major metro** (city and surrounding areas with population 250,000 to less than one million)
 - Minor metro** (city and surrounding areas with population 100,000 to 249,999)
 - Small town/rural** (population centers less than 100,000)

4. What is the primary menu theme of your restaurant? **(Check only one)**
 - American
 - Steak
 - Seafood
 - Steak/seafood combination
 - Pizza
 - Ethnic
 - Other _____

5. What is the average check per person at an evening meal in your restaurant? (Check only one)

- Less than \$8
- \$8 to \$14.99
- \$15 to \$24.99
- \$25 or more

6. Which category best describes the annual gross sales of your restaurant for the last fiscal year? (Check only one)

- \$250,000 or less
- \$250,001 to \$500,000
- \$500,001 to \$1 million
- Over \$1 million

Fish/Seafood Purchases & Sales

7. Does your menu include fish or seafood as an entree?

- Yes (please continue survey with Question #8)
- No, but I plan to add a fish/seafood entree within a year
- No

If you answered NO, you may stop at this point and return the survey. Thank you.

8. About what percent of your restaurant's total food sales are from fish/seafood?

_____ (percent)

9. What are your five best selling fish/seafood species? Please write in the code numbers from the coded list on the adjacent page.

(Only one code number per line)

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

Code Numbers for Fish/Seafood Species

- | | |
|---------------------------------|--------------------------------|
| 1. Abalone | 33. Monkfish |
| 2. Bass, hybrid striped | 34. Mullet |
| 3. Bass, lake | 35. Orange Roughy |
| 4. Bass, other | 36. Oysters |
| 5. Bluefish | 37. Perch, ocean |
| 6. Buffalo fish, lake | 38. Perch, yellow lake |
| 7. Carp, lake | 39. Perch, white lake |
| 8. Catfish, ocean | 40. Perch, other |
| 9. Channel catfish, farm-raised | 41. Pollock |
| 10. Channel catfish, lake | 42. Rockfish |
| 11. Calamari | 43. Sablefish |
| 12. Clams | 44. Salmon, lake |
| 13. Cod | 45. Salmon, other |
| 14. Crab | 46. Scallops |
| 15. Crawfish/crayfish | 47. Shark |
| 16. Croaker | 48. Shrimp/prawns |
| 17. Cuttlefish | 49. Snapper |
| 18. Drum, freshwater (lake) | xx. Sole (#21. Flounder/Sole) |
| 19. Eel, lake | 50. Squid |
| 20. Eel, ocean | 51. Sturgeon, lake |
| 21. Flounder/Sole (flatfish) | 52. Sturgeon, other |
| 22. Grouper | 53. Swordfish |
| 23. Haddock | 54. Tilapia |
| 24. Hake/Whiting | 55. Trout, lake |
| 25. Halibut | 56. Trout, other |
| 26. Herring, lake | 57. Tuna |
| 27. Herring, other | 58. Turbot |
| 28. Hoki | 59. Whitefish, lake |
| 29. KingKlip | 60. Whitefish, other |
| 30. Lobster | xx. Whiting (#24.Hake/Whiting) |
| 31. Mackerel | 61. Other |
| 32. Mahi Mahi | |

10. For this restaurant, what were average weekly sales of fish/seafood during the summer of 1996? _____ (dollars)

11. Have you sold any **yellow perch** in 1996?

- Yes
- No

12. If you **have not** sold any **yellow perch** in 1996, please indicate the reasons. (Check all that apply)

- No/low customer demand
- Too expensive
- Not available
- Available, but supply inconsistent
- Available, but quality inconsistent
- Other _____

13. Have you sold any **walleye** in 1996?

- Yes
- No

14. If you **have not** sold any **walleye** in 1996, please indicate the reasons. (Check all that apply)

- No/low customer demand
- Too expensive
- Not available
- Available, but supply inconsistent
- Available, but quality inconsistent
- Other _____

15. Are the choices of which fish/seafood species to serve in this restaurant and of which suppliers to purchase this restaurant's fish/seafood from made by decisionmakers in this restaurant or elsewhere?

A. Choice of Species

(check only one) Decisionmaker

- Restaurant manager
- Restaurant seafood buyer
- Restaurant chef
- Central buyer
- Central buyer makes up list of alternatives that restaurant decisionmaker chooses from
- Other (please specify) _____

B. Choice of Supplier

(check only one) Decisionmaker

- Restaurant manager
- Restaurant seafood buyer
- Restaurant chef
- Central buyer
- Central buyer makes up list of alternatives that restaurant decisionmaker chooses from
- Other (please specify) _____

16. What percentage of your fish/seafood **purchases** are...?

_____ % Fresh
_____ % Frozen
_____ % Previously frozen, slacked out
100 %

Code Numbers for Fish/Seafood Supplier Types

- | | |
|-----------------------------|---------------------------------|
| 1. Seafood Wholesalers | 7. Commercial Fishermen |
| 2. Grocery Wholesalers | 8. Tribal Fishermen |
| 3. Foodservice Distributors | 9. Restaurants |
| 4. Brokers | 10. Supermarkets |
| 5. Processors | 11. Seafood Specialty Retailers |
| 6. Fish Farmers/Aquaculture | 12. Other _____ |

17. What types of firms typically supply your restaurant with fish/seafood? From the coded list of supplier types above, please write in the code numbers for the types of fish/seafood suppliers which are of primary and secondary (lesser) importance to your restaurant in terms of fish/seafood purchase quantities. (Only one code number per line please). Then, write in the percentages of your fish/seafood purchases for each category requested.

Fish/Seafood Suppliers

Primary type _____ (code number)

What percent of fish/seafood purchases from this supplier type are:

| | | | |
|---------|---------|--------------|------|
| Fresh | Frozen | Prev. Frozen | |
| _____ % | _____ % | _____ % | 100% |

Secondary type _____ (code number)

What percent of fish/seafood purchases from this supplier type are:

| | | | |
|---------|---------|--------------|------|
| Fresh | Frozen | Prev. Frozen | |
| _____ % | _____ % | _____ % | 100% |

Secondary type _____ (code number)

What percent of fish/seafood purchases from this supplier type are:

| | | | |
|---------|---------|--------------|------|
| Fresh | Frozen | Prev. Frozen | |
| _____ % | _____ % | _____ % | 100% |

Code Numbers for Fish/Seafood Supplier Types

- | | |
|-----------------------------|---------------------------------|
| 1. Seafood Wholesalers | 7. Commercial Fishermen |
| 2. Grocery Wholesalers | 8. Tribal Fishermen |
| 3. Foodservice Distributors | 9. Restaurants |
| 4. Brokers | 10. Supermarkets |
| 5. Processors | 11. Seafood Specialty Retailers |
| 6. Fish Farmers/Aquaculture | 12. Other _____ |

18. It could be the case that your choice of supplier varies depending upon the characteristics of the fish/seafood products you are purchasing. What supplier types do you typically use when purchasing fish/seafood items with the following characteristics? (Only one code number per line please)

Code Number for Supplier Type of:

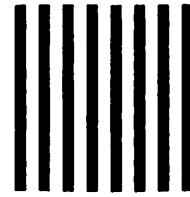
- | | |
|-------|-------------------------|
| _____ | Fresh shrimp |
| _____ | Frozen shrimp |
| _____ | Fresh ocean fish |
| _____ | Frozen ocean fish |
| _____ | Fresh lake fish |
| _____ | Frozen lake fish |
| _____ | Fresh farm-raised fish |
| _____ | Frozen farm-raised fish |

If you have any additional comments about the marketing of fish and seafood, or anything else related to this survey, we would appreciate them.

Comments:

*Thank You
for Your Time and Cooperation*

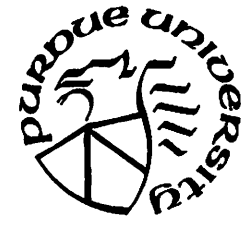
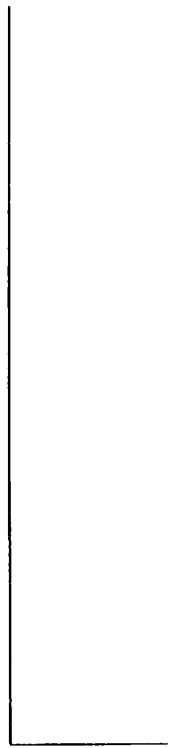
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Purdue University

Yellow Perch and Walleye

**Purchases and Sales
in the North Central Region
by Restaurants**

Sponsors:

**North Central Regional Aquaculture Center
National Sea Grant College Program
Illinois-Indiana Sea Grant**

*Please use sticker below to
seal questionnaire before mailing*

Thank You . . . for responding to the Phase I survey of fish and seafood purchases/sales by restaurants in the North Central Region. This Phase II survey focuses on specific market information for yellow perch and walleye. The data you provide by responding to this survey, in conjunction with data from the Phase I survey, will: (1) provide evidence of restaurant market dynamics involving yellow perch and walleye; (2) enable the tracking of these two regionally popular species through market channels; (3) reveal which product forms and sizes are in greatest demand; and (4) show which areas may be undersupplied.

Market information from the Phase I and Phase II surveys will be disseminated for use by people in all sorts of positions where they are called upon to make sound, informed decisions regarding future aquaculture activity and investments. Potential data users include current and potential aquaculturists, state and local government officials, financial institutions, and university personnel.

The pool of restaurants in the North Central Region that offer yellow perch and/or walleye entrees is much smaller than the entire pool of restaurants in the Region. As a result, your cooperation in completing and returning this Phase II survey is of vital importance. **Your response will be completely confidential.** Without specific market information on walleye and yellow perch, it will be difficult to build a successful aquaculture industry that can supply your restaurant year-round with lake fish of the product form, size, quality, and price you desire.

Please help the future of both your business and the aquaculture industry in the North Central Region by completing this survey. If you have any questions about the survey, have any additional comments to share, or are interested in receiving a copy of the survey results, please feel free to contact: Dr. Marshall A. Martin, Department of Agricultural Economics, Purdue University, 1145 Krannert Building, West Lafayette, Indiana, 47907-1145; telephone (317) 494-4268.

*Thank you for taking the time to complete
this survey*

Purchases and Sales of Walleye

1. Do you sell walleye? Yes
 No (Skip to Yellow Perch section)

2. Rank the top four months in which customer demand for walleye is highest. (Rank the top 4: 1=highest demand, 2=2nd highest demand, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

3. Rank the top four months in which supply of walleye is highest. (Please rank the top 4 months: 1=highest supply, 2=2nd highest supply, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

4. Rank the top four months in which wholesale price you pay for walleye is highest. (Rank the top 4: 1=highest price, 2=2nd highest price, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

5. Does your restaurant typically sell walleye..? (Check only one)
 - Occasionally
 - Only during Lenten season
 - Summer months only
 - Commercial fishing season only (about April - November)
 - Year around
 - Other _____

6. How often does your restaurant sell walleye? (Check only one)
 - Daily
 - Once a week
 - Once a month
 - Other _____

Code Letters for Walleye Product Forms

- A. Fresh whole/round
B. Fresh dressed
C. Fresh fillet, skinless
D. Fresh fillet, skin on
E. Fresh other (please specify)
F. Frozen whole/round
G. Frozen dressed
H. Frozen fillet, skinless
I. Frozen fillet, skin on
J. Frozen other (please specify)

7. Which two walleye product forms do you prefer to purchase when price and supply are not problems?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

- Most preferred walleye product form
Next preferred walleye product form

8. Because of supply and demand conditions in 1996, which walleye product forms did you actually purchase most frequently (meaning the highest quantity) in 1996?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

- First most frequently purchased walleye product form
Second frequently purchased walleye product form

9. The size, price, quantity, and frequency of any fish purchases are closely tied to product form. For the two most frequently purchased walleye product forms you indicated in the previous question (#8), please fill in the corresponding size, price, and quantity and frequency of delivery for 1996 purchases.

First most frequently purchased walleye product form

Table with 3 columns: Size, Average Price Paid July 1996, Delivery Schedule. Includes sub-headers and blank lines for data entry.

Second frequently purchased walleye product form

Table with 3 columns: Size, Average Price Paid July 1996, Delivery Schedule. Includes sub-headers and blank lines for data entry.

10. What types of firms supply you with walleye? Below is a coded list of supplier types such as wholesalers, brokers, etc. For your first and second most frequently purchased walleye product forms, please write in the code numbers for the supplier types from which you purchase the highest volume of each product form. (Please put only one code number on each blank)

Code Numbers for Supplier Types

- 1. Seafood Wholesalers
2. Grocery Wholesalers
3. Foodservice Distributors
4. Brokers
5. Processors
6. Fish Farmers/Aquaculture
7. Commercial Fishermen
8. Tribal Fishermen
9. Restaurants
10. Supermarkets
11. Seafood Specialty Retailers
12. Other (please specify)

First most frequently purchased walleye product form

Supplier Type

Code Number

- Highest volume supplier type
2nd highest volume supplier type

Second most frequently purchased walleye product form

Supplier Type

Code Number

- Highest volume supplier type
2nd highest volume supplier type

11. How much walleye did you purchase during an average week or month during the summer of 1996?

- Pounds weekly
Or
Pounds monthly

12. Do you purchase farm-raised walleye? (Check only one)

- Yes, infrequently (less than once a month)
Yes, regularly (at least once a month)
No, but I am interested
No, and I am not interested
Not sure

13. How much walleye do you think you might purchase weekly or monthly during the summer if aquaculture increased supplies enough that you could buy all you wanted at prices lower than recent years but still somewhat higher than prices for other species?

Pounds weekly _____

Or

Pounds monthly _____

14. If the walleye product form you prefer to purchase is not available (supply problem) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different walleye product form
- Switch suppliers temporarily
- Drop walleye from the menu temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

15. If the walleye product form you prefer to purchase is too high priced, (price problem) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different walleye product form
- Switch suppliers temporarily
- Drop walleye from the menu temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

Purchases and Sales of Yellow (Lake) Perch

1. Do you sell yellow perch? Yes
 No (Thank you please return the survey)

2. Rank the top four months in which customer demand for yellow perch is highest. (Rank the top 4: 1=highest demand, 2=2nd highest demand, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

3. Rank the top four months in which supply of yellow perch is highest. (Please rank the top 4 months: 1=highest supply, 2=2nd highest supply, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

4. Rank the top four months in which wholesale price you pay for yellow perch is highest. (Rank the top 4: 1=highest price, 2=2nd highest price, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

5. Does your restaurant typically sell yellow perch? (Check only one)

- Occasionally
- Only during Lenten season
- Summer months only
- Commercial fishing season only (about April - November)
- Year around
- Other _____

6. How often does your restaurant sell yellow perch? (Check only one)

- Daily
- Once a week
- Once a month
- Other _____

Code Letters for Yellow Perch Product Forms

- A. Fresh whole/round
- B. Fresh fillet
- C. Fresh other (please specify)
- D. Frozen whole/round
- E. Frozen fillet
- F. Frozen other (please specify)

7. Which two yellow perch product forms do you prefer to purchase when price and supply are not problems?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

_____ Most preferred yellow perch product form
 _____ Next preferred yellow perch product form

8. Because of supply and demand conditions in 1996, which yellow perch product forms did you actually purchase most frequently (meaning the highest quantity) in 1996?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

_____ First most frequently purchased yellow perch product form
 _____ Second frequently purchased yellow perch product form

9. The size, price, quantity, and frequency of any fish purchases are closely tied to product form. For the two most frequently purchased yellow perch product forms you indicated in the previous question (#8), please fill in the corresponding size, price, and quantity and frequency of delivery for 1996 purchases.

First most frequently purchased yellow perch product form

| | | |
|-----------|----------------|-----------------------------|
| | Average Price | Delivery Schedule (write in |
| Size | Paid July 1996 | total pounds for most |
| _____ oz. | \$ _____/lb. | common delivery schedule) |
| | | _____ lbs every 3-4 days |
| | | _____ lbs. every week |
| | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

Second frequently purchased yellow perch product form

| | | |
|-----------|----------------|-----------------------------|
| | Average Price | Delivery Schedule (write in |
| Size | Paid July 1996 | total pounds for most |
| _____ oz. | \$ _____/lb. | common delivery schedule) |
| | | _____ lbs every 3-4 days |
| | | _____ lbs. every week |
| | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

10. What types of firms supply you with yellow perch? Below is a coded list of supplier types such as wholesalers, brokers, etc. For your first and second most frequently purchased yellow perch product forms, please write in the code numbers for the supplier types from which you purchase the highest volume of each product form. (Only one code number per blank)

Code Numbers for Supplier Types

- 1. Seafood Wholesalers
- 2. Grocery Wholesalers
- 3. Foodservice Distributors
- 4. Brokers
- 5. Processors
- 6. Fish Farmers/Aquaculture
- 7. Commercial Fishermen
- 8. Tribal Fishermen
- 9. Restaurants
- 10. Supermarkets
- 11. Seafood Specialty Retailers
- 12. Other (please specify)

First most frequently purchased yellow perch product form

Supplier Type

Code Number

_____ Highest volume supplier type
 _____ 2nd highest volume supplier type

Second frequently purchased yellow perch product form

Supplier Type

Code Number

_____ Highest volume supplier type
 _____ 2nd highest volume supplier type

11. How much yellow perch did you purchase during an average week or month during the summer of 1996?

Pounds weekly _____

Or

Pounds monthly _____

12. Do you purchase farm-raised yellow perch? (Check only one)

- Yes, infrequently (less than once a month)
- Yes, regularly (at least once a month)
- No, but I am interested
- No, and I am not interested
- Not sure

13. How much **yellow perch** do you think you might purchase weekly or monthly during the summer if aquaculture increased supplies enough that you could buy all you wanted at prices lower than recent years but still somewhat higher than prices for other species?

Pounds weekly _____

Or

Pounds monthly _____

14. If the **yellow perch** product form you **prefer** to purchase is not available. (**supply problem**) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different **yellow perch** product form
- Switch suppliers temporarily
- Drop **yellow perch** from the menu temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

15. If the **yellow perch** product form you **prefer** to purchase is too high priced, (**price problem**) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different **yellow perch** product form
- Switch suppliers temporarily
- Drop **yellow perch** from the menu temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

If you have any additional comments about the marketing of yellow perch and walleye, or anything else related to this survey, we would appreciate them.

Comments:

*Thank You
for Your Time and Cooperation*

About the Survey ...

Aquaculture is generating increasing interest in the U.S. In the North Central Region, both the production and marketing aspects of aquaculture are focusing in on two species having strong Regional but not National appeal: yellow perch and walleye.

Market information is vital for farmers and other entrepreneurs to successfully plan and establish aquaculture enterprises. However, most Regional aquaculture funding to date has focused on culture techniques. The purpose of this survey is to make retail grocer market information for the North Central Region on fish/seafood in general and on yellow perch and walleye in particular available to all interested persons. Survey data will be used by government officials, bankers, venture capitalists, current and potential aquaculturists, university researchers and extension personnel to make sound judgments regarding aquaculture investments and activities.

Supermarkets are a vital segment in the fish/seafood marketing channels of the Region. Your supermarket was randomly selected from the 22,000+ supermarkets in the North Central Region. Because of the great diversity of supermarkets spawned by the consumer-driven marketplace, your response is extremely important as representative of supermarkets in your state and with similar operational characteristics.

Your response will be completely confidential. If your store sells yellow perch or walleye, a follow-up survey will be mailed to you so that specific market information on these two species can be discovered. This data will be critical for building a successful aquaculture industry that can supply your supermarket year-round with quality lake fish.

Thank you for providing invaluable help by completing this survey. If you have any questions about the survey, have any additional comments to share, or are interested in receiving a copy of the survey results, please feel free to contact: Dr. Marshall A. Martin, Department of Agricultural Economics, Purdue University, 1145 Krannert Building, West Lafayette, Indiana, 47907-1145; telephone (317) 494-4268.

Store Characteristics

1. How close is your supermarket located to one of the Great Lakes?
 - 0 to 50 miles
 - 51 to 100 miles
 - More than 100 miles
2. Which best describes your supermarket? **(Check only one)**
 - Chain
 - Independent
3. Is the setting of your supermarket...? **(Check only one)**
 - Urban** (Chicago, Cincinnati, Cleveland, Columbus, Detroit, Indianapolis, Kansas City KS/MO, Milwaukee, Minneapolis/St. Paul, or St. Louis/East St. Louis)
 - Suburban** (suburb of an urban city listed above)
 - Major metro** (city and surrounding areas with population 250,000 to less than one million)
 - Minor metro** (city and surrounding areas with population 100,000 to 249,999)
 - Small town/rural** (population centers less than 100,000)
4. How many total square feet are in this store? **(Check only one)**

| | |
|---|---|
| <input type="checkbox"/> 10,000 or less | <input type="checkbox"/> 25,001 to 30,000 |
| <input type="checkbox"/> 10,001 to 15,000 | <input type="checkbox"/> 30,001 to 35,000 |
| <input type="checkbox"/> 15,001 to 20,000 | <input type="checkbox"/> 35,001 to 40,000 |
| <input type="checkbox"/> 20,001 to 25,000 | <input type="checkbox"/> Over 40,000 |
5. For the groups listed below, about what percent of your total customer base does each group make up? (Numbers should sum to 100%)

| | | |
|-------|---|------------------------|
| _____ | % | Asian |
| _____ | % | Black |
| _____ | % | Hispanic |
| _____ | % | White |
| _____ | % | Other (please specify) |
| 100 | % | |

6. Which category best describes the annual gross sales of this store for the last fiscal year? (Check only one)

- | | |
|--|---|
| (Millions) | (Millions) |
| <input type="checkbox"/> \$2 to \$3.9 | <input type="checkbox"/> \$12 to \$19.9 |
| <input type="checkbox"/> \$4 to \$7.9 | <input type="checkbox"/> \$20 or more |
| <input type="checkbox"/> \$8 to \$11.9 | |

Fish/Seafood Purchases & Sales

7. Do you sell fish/seafood other than the frozen, pre-packaged, branded kind such as Gorton's or Mrs. Paul's?

- Yes -- I sell fresh and/or frozen seafood
 No -- I only sell fish/seafood that is of the frozen/pre-packaged/branded kind

If you answered NO, you may stop at this point and return the survey.

8. Which of the following best describes the fish/seafood service you provide to your customers? (Check only one)

- Full-service with some self-service
 Self-service

9. How many square feet are allocated to the Seafood Department?
 _____ (sq. ft.)

10. About what percent of your supermarket's total food sales are from fish/seafood?
 _____ (percent)

11. What are your five best selling fish/seafood species? Please write in the code numbers from the coded list on the adjacent page. (Only one code number per line)

- (1) _____
 (2) _____
 (3) _____
 (4) _____
 (5) _____

Code Numbers for Fish/Seafood Species

- | | |
|---------------------------------|--------------------------------|
| 1. Abalone | 33. Monkfish |
| 2. Bass, hybrid striped | 34. Mullet |
| 3. Bass, lake | 35. Orange Roughy |
| 4. Bass, other | 36. Oysters |
| 5. Bluefish | 37. Perch, ocean |
| 6. Buffalo fish, lake | 38. Perch, yellow lake |
| 7. Carp, lake | 39. Perch, white lake |
| 8. Catfish, ocean | 40. Perch, other |
| 9. Channel catfish, farm-raised | 41. Pollock |
| 10. Channel catfish, lake | 42. Rockfish |
| 11. Calamari | 43. Sablefish |
| 12. Clams | 44. Salmon, lake |
| 13. Cod | 45. Salmon, other |
| 14. Crab | 46. Scallops |
| 15. Crawfish/crayfish | 47. Shark |
| 16. Croaker | 48. Shrimp/prawns |
| 17. Cuttlefish | 49. Snapper |
| 18. Drum, freshwater (lake) | xx. Sole (#21.Flounder/Sole) |
| 19. Eel, lake | 50. Squid |
| 20. Eel, ocean | 51. Sturgeon, lake |
| 21. Flounder/Sole (flatfish) | 52. Sturgeon, other |
| 22. Grouper | 53. Swordfish |
| 23. Haddock | 54. Tilapia |
| 24. Hake/Whiting | 55. Trout, lake |
| 25. Halibut | 56. Trout, other |
| 26. Herring, lake | 57. Tuna |
| 27. Herring, other | 58. Turbot |
| 28. Hoki | 59. Whitefish, lake |
| 29. KingKlip | 60. Whitefish, other |
| 30. Lobster | xx. Whiting (#24.Hake/Whiting) |
| 31. Mackerel | 61. Other |
| 32. Mahi Mahi | |

12. For this supermarket, what were average weekly sales of fish/seafood during the summer of 1996 ?
 _____ (dollars)

13. Have you sold any **yellow perch** in 1996?

- Yes
- No

14. If you **have not** sold any **yellow perch** in 1996, please indicate the reasons. **(Check all that apply)**

- No/low customer demand
- Too expensive
- Not available
- Available, but supply inconsistent
- Available, but quality inconsistent
- Other _____

15. Have you sold any **walleye** in 1996?

- Yes
- No

16. If you **have not** sold any **walleye** in 1996, please indicate the reasons. **(Check all that apply)**

- No/low customer demand
- Too expensive
- Not available
- Available, but supply inconsistent
- Available, but quality inconsistent
- Other _____

17. Are the choices of which fish/seafood species to sell in this store and of which suppliers to purchase this store's fish/seafood from made by decisionmakers in this store or elsewhere?

A. Choice of
 Species

(check only one) ***Decisionmaker*** _____

- Store manager
- Store seafood manager
- Central buyer
- Central buyer makes up list of alternatives that supermarket decisionmaker chooses from
- Other (please specify)

B. Choice of
 Supplier

(check only one) ***Decisionmaker*** _____

- Store manager
- Store seafood manager
- Central buyer
- Central buyer makes up list of alternatives that supermarket decisionmaker chooses from
- Other (please specify)

18. Please indicate below what percentage of this store's fish/seafood purchases and sales are live, fresh, and frozen.

Purchases

_____ % Live
 _____ % Fresh
 _____ % Frozen
 _____ % Previously frozen,
 slacked out
 _____ % Frozen/pre-
 packaged/branded
 100 %

Sales

_____ % Live
 _____ % Fresh
 _____ % Frozen
 _____ % Previously frozen,
 slacked out
 _____ % Frozen/pre-
 packaged/branded
 100 %

Code Numbers for Fish/Seafood Supplier Types

- 1. Seafood Wholesalers
- 2. Grocery Wholesalers
- 3. Foodservice Distributors
- 4. Brokers
- 5. Processors
- 6. Fish Farmers/Aquaculture
- 7. Commercial Fishermen
- 8. Tribal Fishermen
- 9. Restaurants
- 10. Supermarkets
- 11. Seafood Specialty Retailers
- 12. Other _____

19. What types of firms typically supply your store with fish/seafood? From the coded list of supplier types above, please write in the code numbers for the types of fish/seafood suppliers which are of primary and secondary (lesser) importance to your store in terms of fish/seafood purchase quantities. (Only one code number per line please)

| Fish/Seafood Suppliers | Code Number |
|------------------------|-------------|
| Primary Type | _____ |
| Secondary Type A | _____ |
| Secondary Type B | _____ |

20. For each of the supplier types you listed in Question #19, please indicate what percent of total fish/seafood purchases from each supplier type are live, fresh, etc.

| | Fish/Seafood Supplier Types | | |
|-----------------------------|-----------------------------|-------------|-------------|
| | Primary | Secondary A | Secondary B |
| Live | _____ % | _____ % | _____ % |
| Fresh | _____ % | _____ % | _____ % |
| Frozen | _____ % | _____ % | _____ % |
| Previously frozen | _____ % | _____ % | _____ % |
| Frozen/pre-packaged/branded | _____ % | _____ % | _____ % |
| | 100 % | 100 % | 100 % |

21. It could be the case that your choice of supplier varies depending upon the characteristics of the fish/seafood products you are purchasing. What supplier types do you typically use when purchasing fish/seafood items with the following characteristics? (Only one code number per line please)

Code Number for Supplier Type of:

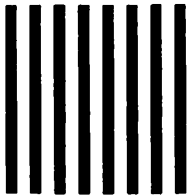
- _____ Fresh shrimp
- _____ Frozen shrimp
- _____ Fresh ocean fish
- _____ Frozen ocean fish
- _____ Fresh lake fish
- _____ Frozen lake fish
- _____ Fresh farm-raised fish
- _____ Frozen farm-raised fish

If you have any additional comments about the marketing of fish and seafood, or anything else related to this survey, we would appreciate them.

Comments:

*Thank You
for Your Time and Cooperation*

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



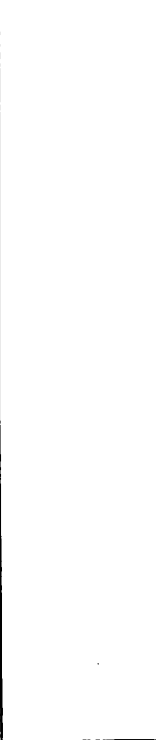
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Purdue University

Yellow Perch and Walleye

**Purchases and Sales
in the North Central Region
by Supermarkets**

Sponsors:

**North Central Regional Aquaculture Center
National Sea Grant College Program
Illinois-Indiana Sea Grant**

*Please use sticker below to
seal questionnaire before mailing*

Purchases and Sales of Walleye

Thank You . . . for responding to the Phase I survey of fish and seafood purchases/sales by supermarkets in the North Central Region. This Phase II survey focuses on specific market information for yellow perch and walleye. The data you provide by responding to this survey, in conjunction with data from the Phase I survey, will: (1) provide evidence of retail grocery market dynamics involving yellow perch and walleye; (2) enable the tracking of these two regionally popular species through market channels; (3) reveal which product forms and sizes are in greatest demand; and (4) show which areas may be undersupplied.

Market information from the Phase I and Phase II surveys will be disseminated for use by people in all sorts of positions where they are called upon to make sound, informed decisions regarding future aquaculture activity and investments. Potential data users include current and potential aquaculturists, state and local government officials, financial institutions, and university personnel.

The pool of supermarkets in the North Central Region that sell yellow perch and/or walleye is much smaller than the entire pool of supermarkets in the Region. As a result, your cooperation in completing and returning this Phase II survey is of vital importance. **Your response will be completely confidential.** Without specific market information on walleye and yellow perch, it will be difficult to build a successful aquaculture industry that can supply your supermarket year-round with lake fish of the product form, size, quality, and price you desire.

Please help the future of both your business and the aquaculture industry in the North Central Region by completing this survey. If you have any questions about the survey, have any additional comments to share, or are interested in receiving a copy of the survey results, please feel free to contact: Dr. Marshall A. Martin, Department of Agricultural Economics, Purdue University, 1145 Krannert Building, West Lafayette, Indiana, 47907-1145; telephone (317) 494-4268.

Thank you for taking the time to complete this survey

1. Do you sell walleye? Yes
 No (Skip to Yellow Perch section)

2. Rank the top four months in which **customer demand** for walleye is highest. (Rank the top 4: 1=highest demand, 2=2nd highest demand, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

3. Rank the top four months in which **supply** of walleye is highest. (Please rank the top 4 months: 1=highest supply, 2=2nd highest supply, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

4. Rank the top four months in which **wholesale price** you pay for walleye is highest. (Rank the top 4: 1=highest price, 2=2nd highest price, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

5. Does your store typically sell walleye..? (Check only one)
 - Occasionally
 - Only during Lenten season
 - Summer months only
 - Commercial fishing season only (about April - November)
 - Year around
 - Other _____

6. How often does your store typically sell walleye? (Check only one)
 - Daily
 - Once a week
 - Once a month
 - Other _____

Code Letters for Walleye Product Forms

- A. Fresh whole/round
- B. Fresh dressed
- C. Fresh fillet, skinless
- D. Fresh fillet, skin on
- E. Fresh other (please specify)
- F. Frozen whole/round
- G. Frozen dressed
- H. Frozen fillet, skinless
- I. Frozen fillet, skin on
- J. Frozen other (please specify)
- K. Live

7. Which two walleye product forms do you prefer to purchase when price and supply are not problems?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

_____ Most preferred walleye product form

_____ Next preferred walleye product form

8. Because of supply and demand conditions in 1996, which walleye product forms did you actually purchase most frequently (meaning the highest quantity) in 1996?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

_____ First most frequently purchased walleye product form

_____ Second frequently purchased walleye product form

9. The size, price, quantity, and frequency of any fish purchases are closely tied to product form. For the two most frequently purchased walleye product forms you indicated in the previous question (#8), please fill in the corresponding size, price, and quantity and frequency of delivery for 1996 purchases.

First most frequently purchased walleye product form

| | | |
|------------------------|----------------|---|
| Size | Average Price | Delivery Schedule (write in total pounds for most common delivery schedule) |
| _____ | Paid July 1996 | _____ lbs every 3-4 days |
| oz. or lbs. | \$ _____/lb. | _____ lbs. every week |
| (circle which applies) | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

Second frequently purchased walleye product form

| | | |
|------------------------|----------------|---|
| Size | Average Price | Delivery Schedule (write in total pounds for most common delivery schedule) |
| _____ | Paid July 1996 | _____ lbs every 3-4 days |
| oz. or lbs. | \$ _____/lb. | _____ lbs. every week |
| (circle which applies) | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

10. What types of firms supply your store with walleye? Below is a coded list of supplier types such as wholesalers, brokers, etc. For your first and second most frequently purchased walleye product forms, please write in the code numbers for the supplier types from which you purchase the highest volume of each product form. (Please put only one code number on each blank)

Code Numbers for Supplier Types

- 1. Seafood Wholesalers
- 2. Grocery Wholesalers
- 3. Foodservice Distributors
- 4. Brokers
- 5. Processors
- 6. Fish Farmers/Aquaculture
- 7. Commercial Fishermen
- 8. Tribal Fishermen
- 9. Restaurants
- 10. Supermarkets
- 11. Seafood Specialty Retailers
- 12. Other (please specify)

First most frequently purchased walleye product form

Supplier Type

Code Number

_____ Highest volume supplier type

_____ 2nd highest volume supplier type

Second most frequently purchased walleye product form

Supplier Type

Code Number

_____ Highest volume supplier type

_____ 2nd highest volume supplier type

11. What walleye product forms do you sell? From the coded list of product forms on the opposite page, please write in the code letters for your three best-selling product forms. (Use only one code number per line.) Then, write in the percent of total walleye sales for each product form.

| | | |
|-----|---|--|
| | Code Letter of Best Selling Product Forms | Percent of Total Walleye Sales by Product Form |
| 1st | _____ | _____ % |
| 2nd | _____ | _____ % |
| 3rd | _____ | _____ % |
| | Other | _____ % |
| | Total | 100% |

12. For your best-selling walleye product form, what was the retail price in July 1996? \$ _____ /lb.

13. How much walleye did you purchase during an average week or month during the summer of 1996?

Pounds weekly _____

Or

Pounds monthly _____

14. Do you purchase farm-raised walleye? (Check only one)

- Yes, infrequently (less than once a month)
- Yes, regularly (at least once a month)
- No, but I am interested
- No, and I am not interested
- Not sure

15. How much walleye do you think you might purchase weekly or monthly during the summer if aquaculture increased supplies enough that you could buy all you wanted at prices lower than recent years but still somewhat higher than prices for other species?

Pounds weekly _____

Or

Pounds monthly _____

16. If the walleye product form you prefer to purchase is not available (supply problem) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different walleye product form
- Switch suppliers temporarily
- Drop walleye from the case temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

17. If the walleye product form you prefer to purchase is too high priced, (price problem) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different walleye product form
- Switch suppliers temporarily
- Drop walleye from the case temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

Purchases and Sales of Yellow (Lake) Perch

1. Do you sell yellow perch? Yes
 No (Thank you please return the survey)

2. Rank the top four months in which customer demand for yellow perch is highest. (Rank the top 4: 1=highest demand, 2=2nd highest demand, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

3. Rank the top four months in which supply of yellow perch is highest. (Please rank the top 4 months: 1=highest supply, 2=2nd highest supply, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

4. Rank the top four months in which wholesale price you pay for yellow perch is highest. (Rank the top 4: 1=highest price, 2=2nd highest price, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

5. Does your store typically sell yellow perch..? (Check only one)

- Occasionally
- Only during Lenten season
- Summer months only
- Commercial fishing season only (about April - November)
- Year around
- Other _____

6. How often does your store typically sell yellow perch? (Check only one)

- Daily
- Once a week
- Once a month
- Other _____

Code Letters for Yellow Perch Product Forms

- A. Fresh whole/round
- B. Fresh fillet
- C. Fresh other (please specify)
- D. Frozen whole/round
- E. Frozen fillet
- F. Frozen other (please specify)
- G. Live

7. Which two yellow perch product forms do you prefer to purchase when price and supply are not problems?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

_____ Most preferred yellow perch product form
 _____ Next preferred yellow perch product form

8. Because of supply and demand conditions in 1996, which yellow perch product forms did you actually purchase most frequently (meaning the highest quantity) in 1996?

(Please write in one code letter per blank line from the list above.)

Product Form

Code Letter

_____ First most frequently purchased yellow perch product form
 _____ Second frequently purchased yellow perch product form

9. The size, price, quantity, and frequency of any fish purchases are closely tied to product form. For the two most frequently purchased yellow perch product forms you indicated in the previous question (#8), please fill in the corresponding size, price, and quantity and frequency of delivery for 1996 purchases.

First most frequently purchased yellow perch product form

| | | | |
|------|---------------------------------|-----------|---|
| | Average Price Paid July 1996 | | Delivery Schedule (write in total pounds for most common delivery schedule) |
| Size | \$ _____/lb. | _____ oz. | _____ lbs every 3-4 days |
| | | | _____ lbs. every week |
| | | | _____ lbs. every month |
| | | | _____ lbs. Other _____ |

Second frequently purchased yellow perch product form

| | | | |
|------|---------------------------------|-----------|---|
| | Average Price Paid July 1996 | | Delivery Schedule (write in total pounds for most common delivery schedule) |
| Size | \$ _____/lb. | _____ oz. | _____ lbs every 3-4 days |
| | | | _____ lbs. every week |
| | | | _____ lbs. every month |
| | | | _____ lbs. Other _____ |

10. What types of firms supply your store with yellow perch? Below is a coded list of supplier types such as wholesalers, brokers, etc. For your first and second most frequently purchased yellow perch product forms, please write in the code numbers for the supplier types from which you purchase the highest volume of each product form. (Only one code number per blank)

Code Numbers for Supplier Types

- 1. Seafood Wholesalers
- 2. Grocery Wholesalers
- 3. Foodservice Distributors
- 4. Brokers
- 5. Processors
- 6. Fish Farmers/Aquaculture
- 7. Commercial Fishermen
- 8. Tribal Fishermen
- 9. Restaurants
- 10. Supermarkets
- 11. Seafood Specialty Retailers
- 12. Other (please specify)

First most frequently purchased yellow perch product form

Supplier Type

Code Number

_____ Highest volume supplier type
 _____ 2nd highest volume supplier type

Second frequently purchased yellow perch product form

Supplier Type

Code Number

_____ Highest volume supplier type
 _____ 2nd highest volume supplier type

11. What yellow perch product forms do you sell? From the coded list of product forms on the opposite page, please write in the code letters for your three best-selling product forms. (Use only one code number per line.) Then, write in the percent of total yellow perch sales for each product form.

| | Code Letter of Best Selling Product Forms | | Percent of Total Yellow Perch Sales by Product Form |
|-----|---|-------------|---|
| 1st | _____ | _____ | % |
| 2nd | _____ | _____ | % |
| 3rd | _____ | _____ | % |
| | Other | _____ | % |
| | Total | 100% | |

12. For your best-selling yellow perch product form, what was the retail price in July 1996? \$ _____ / lb.

13. How much **yellow perch** did you purchase during an average week or month during the **summer of 1996**?

Pounds weekly _____

Or

Pounds monthly _____

14. Do you purchase farm-raised **yellow perch**? (Check only one)

- Yes, infrequently (less than once a month)
- Yes, regularly (at least once a month)
- No, but I am interested
- No, and I am not interested
- Not sure

15. How much **yellow perch** do you think you might purchase weekly or monthly during the summer if aquaculture increased supplies enough that you could buy all you wanted at prices lower than recent years but still somewhat higher than prices for other species?

Pounds weekly _____

Or

Pounds monthly _____

16. If the **yellow perch** product form you prefer to purchase is not available (**supply problem**) which of the following strategies do you use to solve your problem? (Check all that apply.)

- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different **yellow perch** product form
- Switch suppliers temporarily
- Drop **yellow perch** from the case temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

17. If the **yellow perch** product form you prefer to purchase is too high priced, (**price problem**) which of the following strategies do you use to solve your problem? (Check all that apply.)

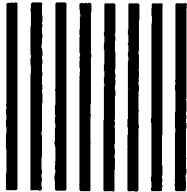
- Switch from fresh to frozen
- Switch to a different size of the same product form
- Switch to a different **yellow perch** product form
- Switch suppliers temporarily
- Drop **yellow perch** from the case temporarily
- Switch to a different fish species (please specify) _____
- Other strategy (please specify)

If you have any additional comments about the marketing of yellow perch and walleye, or anything else related to this survey, we would appreciate them.

Comments:

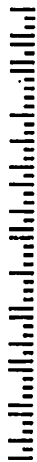
*Thank You
for Your Time and Cooperation*

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Purdue University

Wholesaler/Retailer Survey

Fish/Seafood Purchases and Sales in the
North Central Region

Sponsors:

North Central Regional Aquaculture Center
National Sea Grant College Program
Illinois-Indiana Sea Grant

*Please use sticker below to
seal questionnaire before mailing*

About the Survey ...

Aquaculture is generating increasing interest in the U.S. In the North Central Region, both the production and marketing aspects of aquaculture are focusing in on two species having strong Regional but not national appeal: yellow perch and walleye.

Market information is vital for farmers and other entrepreneurs to successfully plan and establish aquaculture enterprises. However, most Regional aquaculture funding to date has focused on culture techniques. The purpose of this survey is to make wholesale market information for the North Central Region on fish/seafood in general and yellow perch and walleye in particular available to all interested persons. Survey data will be used by government officials, bankers, venture capitalists, current and potential aquaculturists, university researchers and extension personnel to make sound judgments regarding aquaculture investments and activities.

Wholesalers are a vital segment in the fish/seafood marketing channels of the Region. Your firm is one of a small number of wholesale food firms located in the North Central Region. Because of the small number and diversity of wholesale firms in the Region, your response is extremely important. **Your response will be completely confidential.**

Thank you for providing invaluable help by completing this survey. These data will be critical for building a successful aquaculture industry that can supply your firm year-round with quality lake fish. If you have any questions about the survey, have any additional comments to share, or are interested in receiving a copy of the survey results, please feel free to contact: Dr. Marshall A. Martin, Department of Agricultural Economics, Purdue University, 1145 Krannert Building, West Lafayette, Indiana, 47907-1145; telephone (317) 494-4268.

I. General Fish/Seafood Purchases & Sales

1. Which category best describes your firm's annual **total food sales** for the last fiscal year? (Check only one)

- | | |
|---|---|
| <input type="checkbox"/> \$10,000 or less | <input type="checkbox"/> \$25,001 to \$500,000 |
| <input type="checkbox"/> \$10,001 to \$50,000 | <input type="checkbox"/> \$500,001 to \$1 million |
| <input type="checkbox"/> \$50,001 to \$100,000 | <input type="checkbox"/> \$1.001 to \$2.5 million |
| <input type="checkbox"/> \$100,001 to \$250,000 | <input type="checkbox"/> \$2.501 to \$5 million |
| | <input type="checkbox"/> Over \$5 million |

2. Do you sell fish/seafood other than the frozen, pre-packaged, branded kind such as Gorton's or Mrs. Paul's? (Check only one)

- Yes -- I sell fresh and/or frozen seafood
- No -- I only sell fish/seafood that is of the frozen/pre-packaged/branded kind
- No -- I do not sell any fish/seafood (thank you, please answer Question #5 then return survey)

3. About what percent of your firm's **total food sales** are from fish/seafood?
_____ (percent)

4. What percent of your firm's fish/seafood purchases and sales are?

| | Purchases | Sales |
|-----------------------------------|------------------|--------------|
| Live | _____ % | _____ % |
| Fresh | _____ % | _____ % |
| Frozen | _____ % | _____ % |
| Previously frozen, slacked out | _____ % | _____ % |
| Frozen/pre- packaged/branded | _____ % | _____ % |
| | 100% | 100% |

Code Numbers for Firm/Customer/Supplier Types
 1. Seafood Wholesalers 7. Fish Farmers 12. Seafood Specialty
 2. Grocery Wholesalers /Aquaculture Retailers
 3. Foodservice 8. Commercial 13. Final Consumers
 Distributors Fishermen 14. Other Foodservice
 4. Brokers 9. Tribal Fishermen 15. Other
 5. Importer/exporters 10. Restaurants
 6. Processors 11. Supermarkets

5. Where is your firm positioned in the fish/seafood marketing channels? Of the firm types listed above, please write in the code number for the firm type that best describes your primary role in fish/seafood marketing channels and the code numbers for the firm types that best describe your firm's secondary, less important roles. (One code number per blank line please)

| Code Number for Your Firm Type: | Primary Role | Secondary Role | Secondary Role | Secondary Role |
|------------------------------------|-----------------|-------------------|-------------------|-------------------|
| _____ | _____ | _____ | _____ | _____ |

6. What types of firms typically supply your firm with fish/seafood? From the coded list of firm types above, please write in the code numbers for the top five types of fish/seafood suppliers in terms of volume of purchases. (One code per line.) Then, write in the percent of total fish/seafood purchases from each supplier type.

| | Code Number of Supplier Type | Percent of Total Fish/Seafood Purchases from Each Supplier Type |
|-----|---------------------------------|---|
| 1st | _____ | _____ % |
| 2nd | _____ | _____ % |
| 3rd | _____ | _____ % |
| 4th | _____ | _____ % |
| 5th | _____ | _____ % |
| | Other | _____ % |
| | Total | 100% |

7. What types of firms are your customers of fish/seafood? From the coded list of firm types above, please write in the code numbers for the top five types of customers you serve in terms of volume of sales. (Use only one code number per line, and only use the same code number once.) Then, write in the percentage of your total fish/seafood sales to each customer type.

| | Code Number of Customer Type | Percent of Total Fish/Seafood Sales to Each Customer Type |
|-----|---------------------------------|--|
| 1st | _____ | _____ % |
| 2nd | _____ | _____ % |
| 3rd | _____ | _____ % |
| 4th | _____ | _____ % |
| 5th | _____ | _____ % |
| | Other | _____ % |
| | Total | 100% |

8. For fish/seafood with the following characteristics, what types of firms are your primary suppliers and customers for these kinds of products? (Only one code number per line please)

| Code Number of Primary Supplier Type | | Code Number of Primary Customer Type |
|---|-------------------------|---|
| _____ | Fresh shrimp | _____ |
| _____ | Frozen shrimp | _____ |
| _____ | Fresh ocean fish | _____ |
| _____ | Frozen ocean fish | _____ |
| _____ | Fresh lake fish | _____ |
| _____ | Frozen lake fish | _____ |
| _____ | Fresh farm-raised fish | _____ |
| _____ | Frozen farm-raised fish | _____ |

9. For this firm, what were average weekly sales of fish/seafood during the summer of 1996?
 (dollars) _____

10. What are your five best-selling fish/seafood species? Please write in the code numbers from the list below. (One code per line)

(1) _____ (4) _____
 (2) _____ (5) _____
 (3) _____

Code Numbers for Fish/Seafood Species

- | | |
|---------------------------------|--------------------------------|
| 1. Abalone | 33. Monkfish |
| 2. Bass, hybrid striped | 34. Mullet |
| 3. Bass, lake | 35. Orange Roughy |
| 4. Bass, other | 36. Oysters |
| 5. Bluefish | 37. Perch, ocean |
| 6. Buffalo fish, lake | 38. Perch, yellow lake |
| 7. Carp, lake | 39. Perch, white lake |
| 8. Catfish, ocean | 40. Perch, other |
| 9. Channel catfish, farm-raised | 41. Pollock |
| 10. Channel catfish, lake | 42. Rockfish |
| 11. Calamari | 43. Sablefish |
| 12. Clams | 44. Salmon, lake |
| 13. Cod | 45. Salmon, other |
| 14. Crab | 46. Scallops |
| 15. Crawfish/crayfish | 47. Shark |
| 16. Croaker | 48. Shrimp/prawns |
| 17. Cuttlefish | 49. Snapper |
| 18. Drum, freshwater (lake) | xx. Sole (#21.Flounder/Sole) |
| 19. Eel, lake | 50. Squid |
| 20. Eel, ocean | 51. Sturgeon, lake |
| 21. Flounder/Sole (flatfish) | 52. Sturgeon, other |
| 22. Grouper | 53. Swordfish |
| 23. Haddock | 54. Tilapia |
| 24. Hake/Whiting | 55. Trout, lake |
| 25. Halibut | 56. Trout, other |
| 26. Herring, lake | 57. Tuna |
| 27. Herring, other | 58. Turbot |
| 28. Hoki | 59. Whitefish, lake |
| 29. KingKlip | 60. Whitefish, other |
| 30. Lobster | xx. Whiting (#24.Hake/Whiting) |
| 31. Mackerel | 61. Other |
| 32. Mahi Mahi | 62. Walleye |

II. Purchases and Sales of Walleye

1. Did you purchase **walleye** in 1996?

- Yes
 No

2. If you **did not** purchase **walleye** in 1996, please indicate the reasons. (Check all that apply, then skip to Section III)

- No/low customer demand
 Too expensive
 Not available
 Available, but supply inconsistent
 Available, but quality inconsistent
 Other _____

3. Rank the top four months in which **wholesale price** you pay for **walleye** is highest. (Rank the top 4: 1=highest price, 2=2nd highest price, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

4. Rank the top four months in which **demand** for **walleye** is highest. (Rank the top 4: 1=highest demand, 2=2nd highest demand, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

5. Does your firm typically handle **walleye** ? (Check only one)

- Occasionally
 Lenten Season only
 Summer months only
 Commercial fishing season only (about April - November)
 Year around
 Other _____

Code Letters for Walleye Product Forms

- | | |
|---------------------------------|----------------------------------|
| A. Fresh whole/round | F. Frozen whole/round |
| B. Fresh dressed | G. Frozen dressed |
| C. Fresh fillet, skinless | H. Frozen fillet, skinless |
| D. Fresh fillet, skin on | I. Frozen fillet, skin on |
| E. Fresh other (please specify) | J. Frozen other (please specify) |

Code Numbers for Firm/Customer/Supplier Types

- | | | |
|-----------------------------|-------------------------|---------------------------------|
| 1. Seafood Wholesalers | 7. Fish Farmers | 12. Seafood Specialty Retailers |
| 2. Grocery Wholesalers | /Aquaculture | |
| 3. Foodservice Distributors | 8. Commercial Fishermen | 13. Final Consumers |
| 4. Brokers | 9. Tribal Fishermen | 14. Other Foodservice |
| 5. Importer/exporters | 10. Restaurants | 15. Other |
| 6. Processors | 11. Supermarkets | |

6. What product forms of walleye do you purchase? From the coded list above, please write in the code letters for the top five walleye product forms in terms of volume of purchases. (Use only one code number per line.) Then, write in the percentage that each product form makes up of your total walleye purchases.

| | Code Letter of Highest Volume Product Forms | Percent of Total Walleye Purchases |
|-----|---|------------------------------------|
| 1st | _____ | _____ % |
| 2nd | _____ | _____ % |
| 3rd | _____ | _____ % |
| 4th | _____ | _____ % |
| 5th | _____ | _____ % |
| | Other | _____ % |
| | Total | 100% |

7. What types of firms supply you with walleye? A coded list of firm types is located above. For each of the top five walleye product forms you purchase, as indicated in the previous question, please list the code numbers of the supplier types that sell you the most of each product form. (One code per blank)

| Highest Volume Walleye Product Forms | -----Code Numbers for----- | |
|--------------------------------------|------------------------------|----------------------------------|
| | Highest Volume Supplier Type | 2nd Highest Volume Supplier Type |
| 1st | _____ | _____ |
| 2nd | _____ | _____ |
| 3rd | _____ | _____ |
| 4th | _____ | _____ |
| 5th | _____ | _____ |

8. The size, price, quantity, and frequency of any fish purchases are closely tied to product form. For the two highest volume walleye product forms purchased that you listed as 1st and 2nd in the previous questions, please fill in the corresponding size, price, and quantity and frequency of delivery for 1996 purchases.

Highest volume walleye product form purchased

| | | |
|------------------------|------------------------------|---|
| | Average Price Paid July 1996 | Delivery Schedule (write in total pounds for most common delivery schedule) |
| Size _____ | \$ _____/lb. | _____ lbs every 3-4 days |
| oz. or lb. | | _____ lbs. every week |
| (circle which applies) | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

Second highest volume walleye product form purchased

| | | |
|------------------------|------------------------------|---|
| | Average Price Paid July 1996 | Delivery Schedule (write in total pounds for most common delivery schedule) |
| Size _____ | \$ _____/lb. | _____ lbs every 3-4 days |
| oz. or lb. | | _____ lbs. every week |
| (circle which applies) | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

9. What product forms of walleye do you sell? From the coded list of product forms on the opposite page, please write in the code letters for your five best-selling walleye product forms and indicate the most popular size of each product form. Then, write in the percentage that each product form (all sizes) makes up of your total walleye sales.

| Code Letter of Best-Selling Product Forms | Most Popular Size | Percent of Total Walleye Sales |
|---|-------------------|--------------------------------|
| 1st _____ | _____ oz | _____ % |
| 2nd _____ | _____ oz | _____ % |
| 3rd _____ | _____ oz | _____ % |
| 4th _____ | _____ oz | _____ % |
| 5th _____ | _____ oz | _____ % |
| | Other | _____ % |
| | Total | 100% |

Code Numbers for Firm/Customer/Supplier Types

- | | | |
|-----------------------------|-------------------------|---------------------------------|
| 1. Seafood Wholesalers | 7. Fish Farmers | 12. Seafood Specialty Retailers |
| 2. Grocery Wholesalers | /Aquaculture | |
| 3. Foodservice Distributors | 8. Commercial Fishermen | 13. Final Consumers |
| 4. Brokers | 9. Tribal Fishermen | 14. Other Foodservice |
| 5. Importer/exporters | 10. Restaurants | 15. Other |
| 6. Processors | 11. Supermarkets | |

10. What customer types buy your best-selling walleye product forms? A coded list of customer types is located above. For each of the five best-selling walleye product forms you indicated in the previous question, please list the code numbers of the customer types that purchase the most of each product form. (One code per blank)

| Best Selling Walleye Product Forms | -----Code Numbers for----- Highest Volume Customer Type | 2nd Highest Volume Customer Type |
|--|---|-------------------------------------|
| 1st | _____ | _____ |
| 2nd | _____ | _____ |
| 3rd | _____ | _____ |
| 4th | _____ | _____ |
| 5th | _____ | _____ |

11. How much walleye did you purchase during an average week or month during the summer of 1996?

Pounds weekly _____

Or

Pounds monthly _____

12. Do you purchase farm-raised walleye? (Check only one)

- Yes, infrequently
- Yes, regularly
- No, but I am interested
- No, and I am not interested
- Not sure

13. How much walleye do you think you might purchase weekly or monthly during the summer if aquaculture increased supplies enough that you could buy all you wanted at fairly competitive prices?

Pounds weekly _____

Or

Pounds monthly _____

III. Purchases and Sales of Yellow (Lake) Perch

1. Did you purchase yellow perch in 1996?

- Yes (Skip to Question #3)
- No

2. If you did not purchase yellow perch in 1996, please indicate the reasons. (Check all that apply, then please return the survey)

- No/low customer demand
- Too expensive
- Not available
- Available, but supply inconsistent
- Available, but quality inconsistent
- Other _____

3. Rank the top four months in which wholesale price you pay for yellow perch is highest. (Rank the top 4: 1=highest price, 2=2nd highest price, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

4. Rank the top four months in which demand for yellow perch is highest. (Rank the top 4: 1=highest demand, 2=2nd highest demand, etc.)

| | | |
|-------------|------------|------------|
| _____ JAN | _____ MAY | _____ SEPT |
| _____ FEB | _____ JUNE | _____ OCT |
| _____ MAR | _____ JULY | _____ NOV |
| _____ APRIL | _____ AUG | _____ DEC |

5. Does your firm typically handle yellow perch? (Check only one)

- Occasionally
- Lenten Season only
- Summer months only
- Commercial fishing season only (about April - November)
- Year around
- Other _____

Code Letters for Yellow Perch Product Forms

- A. Fresh whole/round
- B. Fresh fillet
- C. Fresh other (specify) _____
- D. Frozen whole/round
- E. Frozen fillet
- F. Frozen other (specify) _____

Code Numbers for Firm/Customer/Supplier Types

- | | | |
|-----------------------------|-------------------------|-----------------------|
| 1. Seafood Wholesalers | 7. Fish Farmers | 12. Seafood Specialty |
| 2. Grocery Wholesalers | /Aquaculture | Retailers |
| 3. Foodservice Distributors | 8. Commercial Fishermen | 13. Final Consumers |
| 4. Brokers | 9. Tribal Fishermen | 14. Other Foodservice |
| 5. Importer/exporters | 10. Restaurants | 15. Other |
| 6. Processors | 11. Supermarkets | |

6. What product forms of yellow perch do you purchase? From the coded list above, please write in the code letters for the top five yellow perch product forms in terms of volume of purchases. (Use only one code number per line.) Then, write in the percentage that each product form makes up of your total yellow perch purchases.

| | Code Letters of Highest Volume Product Forms | Percent of Total Yellow Perch Purchases | |
|-----|--|---|---|
| 1st | _____ | _____ | % |
| 2nd | _____ | _____ | % |
| 3rd | _____ | _____ | % |
| 4th | _____ | _____ | % |
| 5th | _____ | _____ | % |
| | Other | _____ | % |
| | Total | 100% | |

7. What types of firms supply you with yellow perch? A coded list of supplier types is listed above. For each of the top five yellow perch product forms you purchase, as indicated in the previous question, please list the code numbers of the supplier types that sell you the most of each product form. (One code per blank)

| Highest Volume Yellow Perch Product Forms | -----Code Numbers for----- Highest Volume Supplier Type | 2nd Highest Volume Supplier Type |
|---|--|----------------------------------|
| 1st | _____ | _____ |
| 2nd | _____ | _____ |
| 3rd | _____ | _____ |
| 4th | _____ | _____ |
| 5th | _____ | _____ |

8. The size, price, quantity, and frequency of any fish purchases are closely tied to product form. For the two highest volume yellow perch product forms purchased that you listed as 1st and 2nd in the previous questions, please fill in the corresponding size, price, and quantity and frequency of delivery for 1996 purchases.

Highest volume yellow perch product form purchased

| | | |
|-----------|------------------------------|---|
| Size | Average Price Paid July 1996 | Delivery Schedule (write in total pounds for most common delivery schedule) |
| _____ oz. | \$ _____/lb. | _____ lbs every 3-4 days |
| | | _____ lbs. every week |
| | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

Second highest volume yellow perch product form purchased

| | | |
|-----------|------------------------------|---|
| Size | Average Price Paid July 1996 | Delivery Schedule (write in total pounds for most common delivery schedule) |
| _____ oz. | \$ _____/lb. | _____ lbs every 3-4 days |
| | | _____ lbs. every week |
| | | _____ lbs. every month |
| | | _____ lbs. Other _____ |

9. What product forms of yellow perch do you sell? From the coded list of product forms on the opposite page, please write in the code letters for your five best-selling yellow perch product forms and indicate the most popular size of each product form. Then, write in the percentage that each product form (all sizes) makes up of your total yellow perch sales.

| Code Letter of Best-Selling Product Forms | Most Popular Size | Percent of Total Yellow Perch Sales |
|---|-------------------|-------------------------------------|
| 1st _____ | _____ oz | _____ % |
| 2nd _____ | _____ oz | _____ % |
| 3rd _____ | _____ oz | _____ % |
| 4th _____ | _____ oz | _____ % |
| 5th _____ | _____ oz | _____ % |
| | Other | _____ % |
| | Total | 100% |

Code Numbers for Firm/Customer/Supplier Types

- | | | |
|-----------------------------|-------------------------|-----------------------|
| 1. Seafood Wholesalers | 7. Fish Farmers | 12. Seafood Specialty |
| 2. Grocery Wholesalers | /Aquaculture | Retailers |
| 3. Foodservice Distributors | 8. Commercial Fishermen | 13. Final Consumers |
| 4. Brokers | 9. Tribal Fishermen | 14. Other Foodservice |
| 5. Importer/exporters | 10. Restaurants | 15. Other |
| 6. Processors | 11. Supermarkets | |

If you have any additional comments about the marketing of fish and seafood, or anything else related to this survey, we would appreciate them.

Comments:

10. What customer types buy your best-selling **yellow perch** product forms? A coded list of customer types is located above. For each of the five best-selling **yellow perch** product you indicated in the previous question, please list the codes of the customer types that purchase the most of each product form. (One code per blank)

| Best Selling Yellow Perch Product Forms | -----Code Numbers for----- | |
|---|---------------------------------|-------------------------------------|
| | Highest Volume Customer Type | 2nd Highest Volume Customer Type |
| 1st | _____ | _____ |
| 2nd | _____ | _____ |
| 3rd | _____ | _____ |
| 4th | _____ | _____ |
| 5th | _____ | _____ |

11. How much **yellow perch** did you purchase during an average week or month during the summer of 1996?

Pounds weekly _____

Or

Pounds monthly _____

12. Do you purchase farm-raised **yellow perch**? (Check only one)

- Yes, infrequently
- Yes, regularly
- No, but I am interested
- No, and I am not interested
- Not sure

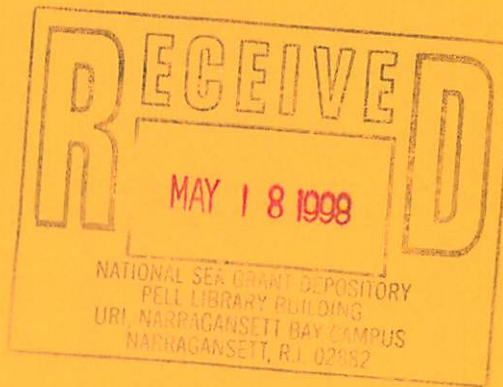
13. How much **yellow perch** do you think you might purchase weekly or monthly during the summer if aquaculture increased supplies enough that you could buy all you wanted at prices lower than recent years but still somewhat higher than prices for other species?

Pounds weekly _____

Or

Pounds monthly _____

*Thank You
for Your Time and Cooperation*



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