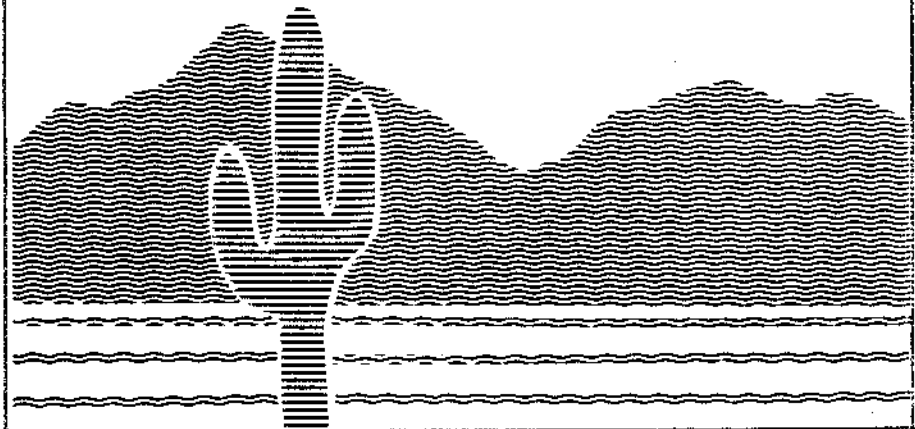




# Southwest Administrative Review



*Kolk* — Economic Growth in Inland Empire

*Toruño* — History of Kaiser Steel

*Sutphen* — Lake Elsinore Flooding

*Demirdjian* — Seafood Consumption

**SEASONAL FACTORS IN SEAFOOD CONSUMPTION:  
A SOUTHERN CALIFORNIA STUDY**

**Z. S. Demirdjian  
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Of the nation's oldest and most vital elements in the U.S. economy, the marine fishing industry has been a slumbering giant. After many decades of relatively sluggish growth, it recently began to enjoy prospects and opportunities for expansion. With the advent of the U.S. 200-mile Fishery Conservation Zone in 1976, buttressed by increasing domestic demand for fish and fish products, the U.S. fleet has been afforded, to some extent, the competitive advantage to achieve its potential.

In a concerted effort to respond to the industry's impending growth opportunities, a cooperative Federal/state/industry program was established in 1979. The Saltonstall-Kennedy (S-K) Program, administered by the National Marine Fisheries Service, has been a major impetus to accelerate the domestic development and utilization of the Nation's fishing resources. Since the inception of the S-K Program, the National Marine Fisheries Service (NMFS) has spearheaded various small and large projects in such areas as technology development, application of new technology to harvesting and processing of "non-traditional" species, adaptation of unfamiliar species by domestic and foreign consumers, and others, spawning a significant R&D effort within the industry.

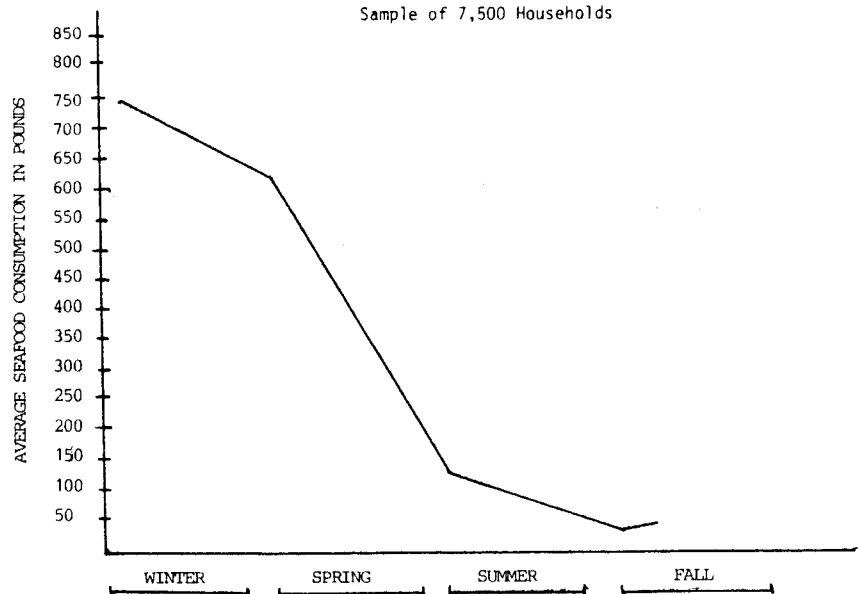
Specifically, in the marketing area, the NMFS initiated in 1981 the National Seafood Consumer Education and Market Development Program--commonly referred to as Catch America. This program organized a joint government and industry campaign to increase consumer awareness, availability and consumption of quality domestic fish and seafood products.

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This study was supported by a research grant from the National Marine Fisheries Service.

The Catch America Program provided over \$6.5 million of free broadcast and print media time and space which reached over 30 million individuals. This produced a 12 percent increase in the sales of those members of the industry who participated in the program. While the industry as a whole experienced an average of nine percent increase, a three percent increase for the participating members could be attributed to the Catch America Program.

Much to NMFS' perplexity, though, the sales of seafood have been traditionally low during the summer months, despite the fact that the majority of seafood is caught in the spring and summer. Figure 1 presents the dismal decline in the summer. In 1981, a survey study was conducted for the NMFS in the United States. According to this study, the average seafood consumption per household plummets from a 750 pounds in the winter to barely a 100 pounds in the summer. Even though the Catch America Program has been successful the ironing out of the summer slump has not been mitigated for years.

Figure 1  
Seasonal Seafood Consumption in 1981  
in the United States Based on a  
Sample of 7,500 Households



Source: "National Seafood Consumption Survey,"  
National Marine Fisheries Service,  
Washington, D.C., 1981, p. 155 #w.4.B

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The purpose of this article is to report a research study conducted to identify the major factors which may have been contributing to the traditional slump in the summer seafood sales in the Southern California market. First, a review of the literature is presented for finding clues responsible for the slump, then the methodology of the study is discussed, and finally the analyses and the findings of the study are presented followed by some recommendations.

#### A REVIEW OF THE LITERATURE

An extensive survey of the literature, as well as through personal interviews with various industry leaders, sufficient data were gathered to suggest six major areas of concern as possibly being responsible for the slump. Categorically, these areas entail recreational fishing, substitutes, consumer education, temperature, pricing, and promotion practices. As a result, the following six research questions were formulated and supported by scattered evidence from the literature for an empirical investigation:

1. To what extent does recreational fishing contribute to the summer slump?

From the California Fish and Game it was found that from 1977 to 1981 the amount of recreational fishing that consumers engage in is greatly increased in the summer months (June, July, August).(1) The summer catch ranges from four to ten times greater than the winter catch. Several hundred thousand additional fish are entering the Los Angeles market area every month during the summer from non-commercial sources. For example, in 1981 recreational fishing in the Los Angeles area jumped from a level of 110 thousand game fish caught during March to 280 thousand in July.(2) Nearly 6.4 million people fished on a recreational basis according to a survey conducted in Canada in 1975. Nine fish were caught for every man, woman, and child during the year on the average.(3) Thus, recreational fishing may be held culpable for casting a damper over the industry's summer sales.

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2. What effect do substitutes have on the sale of seafood during the summer months?

During the summer months substitutes including beef, pork, poultry, and veal have different effects on the sales of seafood. For instance, in the restaurant industry, which accounts for 40 percent of all food sales, seafood tops the list of entrees ordered in dinnerhouse restaurants. Seafood comprises 35.1 percent of total entrees ordered. The growth of seafood orders over the past three years has been double that of beef orders. Increased restaurant traffic, as a result of a healthier disposable income translates to increases in seafood demand.(4) In this case substitutes had apparently a positive effect on seafood sales in general but no evidence was found pertaining to their impact particularly during the summer months.

3. To what extent does the temperature (weather) affect seafood consumption during the summer?

One study speculated that certain factors such as poor handling, preparation methods, distribution and storage may be aggravated by hot summer temperatures, and would have a lot to do with spoiling the freshness of fish and fears about seafood because of food poisoning.(5) Additionally, temperature may affect consumers' appetites for seafood products, since hot temperatures occur during the summer, it would be valid to regard this factor as a suspect contributing to the depressed summer sales.

4. Is there a lack of knowledge in the methods of seafood preparation most appropriate for the summer months?

According to the findings of a market research done for Catch America Program, "Consumers need to be convinced that seafood offers consistently high quality, consistent cooking and taste results, and is valuable year-round or at least on a predictable schedule."(6) In the same vein, Mr. Dale L. Lynch, Safeway President and Chief Operating Officer, expressed in 1981 that the sale of seafood is decreasing and the consumer needs adequate education in

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order to encourage increased purchases of seafood overall.(7) There seems to be insufficient education given to students and food handlers. Textbooks used in home economics courses devoted only 1.5 percent of its pages to seafood preparation as compared to 12 percent for meats.(8)

5. Does pricing have an effect on seafood consumption in the summer?

Wholesale prices for seafood have risen faster than those of most entree groups.(9) Between 1974 and 1980 consumer prices gained at rates of 10.2 percent for seafood and 8.2 percent for beef and veal. These price increases could well be contributing to the difficulties that summer seafood sales have had in consistently replacing meat as the main entree in this country.(10)

6. Is there sufficient promotion of seafood in the summer months?

Because many products show seasonal variation in demand, the advertiser attempts to introduce appropriate modifications in the timing of advertising throughout the year rather than merely spreading promotional efforts evenly regardless of sales fluctuations. Preliminary review of the related literature failed to show any practice of promotional concentration during summer months. For instance, \$1.5 million was spent for the Catch America Program, but the preliminary search failed to provide data on the allocation of the funds to various seasons. Therefore, further investigation is required to see whether funds have been allocated disproportionately to various seasons.

Due to the nature of the preceding six research questions, the first four factors were investigated through a consumer survey study, while the last two factors relating to the pricing and promotion practices of the industry were explored through published material (secondary data).

## METHODOLOGY

## Overview

Data were collected by means of a survey in the residential greater Los Angeles area, California. A probability sample of 1440 respondents were contacted by telephone to answer a questionnaire of the structured, non-disguised type. The questionnaire consisted of sixteen questions that probed consumers' reactions to the aforementioned four major factors suspected to be contributing to the summer seafood slump. A modified version of the questionnaire appears in Table 1, which is used here for organizing and reporting the collected data. (see page 66)

## Sampling Procedure

Exploratory studies do not normally require probability sample, but since recommendations were to be made, a two-stage area probability sample was used in order to generalize the findings to the area of interest. This sampling method was chosen because the study also dealt with a large population.

The greater Los Angeles area accounts for nearly one half of the economy of California, concentrated within the 60-mile circle is 48 percent of the state's total personal income and represents a population of approximately 11 million. However, some parts of this 60-mile area are sparsely populated such as southwest portions of Riverside, and the Palmdale/Lancaster areas of Kern County. Therefore, it was deemed appropriate to reduce the radius to a 25-mile circle representing a densely populated area of Los Angeles. The population chosen for the study consisted of 42 major cities amounting to approximately 6,150,000 people.<sup>(11)</sup> Smaller incorporated communities, such as Bell and Midway City, were excluded.

Since the research questions could be answered either by the husband or wife, the total population was further divided into households. The average number of persons per household was 2.69 for the area.<sup>(12)</sup> Thus, the total population consisted of 2,286,285 households.

With a desired confidence level of 95 percent and a confidence interval of 2.64 percentage points, the sample size for this study was statistically determined to be 1440 households.

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To obtain a representative area sample, these 42 cities were divided into three homogeneous income groups. Income was chosen as a divisive factor in order to achieve a fair representation. The three income groups are broken down accordingly into the following areas:

- A. Households having annual incomes of \$10,000-19,999
- B. Households having annual incomes of \$20,000-25,999
- C. Households having annual incomes of over \$26,000(13)

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Households in Area A (e.g., Compton, El Monte, Los Angeles, etc.) comprised 61 percent of the greater Los Angeles area, while Area B (e.g., Buena Park, Bellflower, Placentia, etc.) represented 26.4 percent and Area C (e.g., Beverly Hills, Palos Verdes, Corona Del Mar, etc.) consisted of 12.6 percent.

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In following a two-stage area sampling procedure, first, two cities from each income group were randomly selected. Next, in order to achieve an adequate representation within the sample of 1440 households, the three area percentages were applied. As a result, 880, 380, and 180 households were randomly selected from each of the two cities representing areas A, B, and C, respectively.

#### Execution

Twenty-four interviewers were instructed and trained in the area of questionnaire and interview techniques. Each interviewer then, by calling randomly selected respondents and interviewing them, gathered 60 respondents' answers to the telephone questionnaire.

d be answered population was rage number of rea.(12) Thus, 185 households.

Due to the nature of the questionnaire and its inquiries, some adjustments had to be followed. For



instance, in many cases the researcher found it necessary to jump from the first question to question number five, if the response to question number one indicated that none of the members of the household engaged in recreational fishing.

Other modifications of this nature took place in questions number ten and twelve, which required multiple rankings and questions numbers eleven and thirteen, both of which allowed for more than one answer. Furthermore, it should be noted that because of the inconsistency in the method of recording responses to question five, relating to Factor B substitutes, during the survey by various interviewers, neither a meaningful tabulation, nor analysis of the data for this question could be obtained. Therefore, question number five was discarded.

#### Limitations

The research project was limited to the greater Los Angeles area which consisted of 2,286,000 households. Since the area of study involved only Southern California, the findings can be generalized to the rest of the nation only with extreme caution. Additionally, it should be borne in mind that the study undertaken was exploratory rather than conclusive in nature. However to mitigate the limitations of the exploratory study, a probability sample was used to strengthen the accuracy of the findings.

It should be noted, however, that even within these constraints it was possible to identify certain contributive factors relating to the summer slump in seafood sales.

#### ANALYSIS OF THE DATA

By applying Chi-square method of analysis on the differential data obtained in all the 14 categorical responses subsumed under the four factors, results were found to be statistically significant at the 95 percent confidence level, as is shown in Table 1.

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Table 1  
Frequency of Responses to the Survey Questions  
and the Results of Chi-Square Analyses

Question	Frequency of Response	Percent of Total	Calculated $\chi^2$	Tabulated $\chi^2$	$p > .05$
1. Including yourself, how many members of your household fish? a. 0 b. 1 or more	a. 632 b. 808	a. 43.9 b. 56.1	5.59	3.84	Significant
2. During which of the seasons do you fish most frequently? a. summer b. winter, spring, fall c. no difference	a. 412 b. 251 c. 144	a. 51.1 b. 31.0 c. 17.9	22.28	9.49	Significant
3. On the average, how often do you fish during the summer? a. less than once a month b. greater than or equal to once a month	a. 294 b. 514	a. 36.4 b. 63.6	119.47	7.81	Significant
4. What do you do with the fish you catch? a. eat it b. other	a. 548 b. 386	a. 58.6 b. 41.4	60.35	9.49	Significant
5. Please rank in order of preference the type of meat you like best. a. beef b. pork c. fish d. poultry	Omitted, see explanation on page 67				
6. Which of these items do you eat most often during the summer months? a. fish b. beef, pork, poultry	a. 286 b. 1154	a. 19.9 b. 80.1	15.98	7.81	Significant

Table 1 (continued)

Question	Frequency of Response	Percent of Total	Calculated $\chi^2$	Tabulated $\chi^2$	p > .05
7. What do you particularly like about fish? a. taste b. nutritional value c. ease of preparation d. price e. other	a. 645 b. 504 c. 124 d. 93 e. 159	a. 42.3 b. 33.1 c. 8.1 d. 6.1 e. 10.4	27.38	9.49	Significant
8. What do you particularly dislike about fish? a. taste b. odor c. hard to prepare d. price e. other (bones, etc.)	a. 142 b. 653 c. 166 d. 208 e. 348	a. 9.4 b. 43.1 c. 10.9 d. 13.7 e. 22.9	57.57	9.49	Significant
9. Is there any particular season that you serve or eat fish more often than other seasons? a. summer b. winter, spring, fall c. no	a. 422 b. 386 c. 632	a. 29.4 b. 26.7 c. 43.9	684.73	9.49	Significant
10. When you go out to eat during the summer which of the following do you order most often? Least often? a. fish b. beef, pork, poultry	Most Often a. 509 b. 931 Least Often a. 349 b. 1091	a. 35.4 b. 64.6 a. 24.2 b. 75.8	47.09	15.5	Significant
11. Of the various ways to prepare fish for eating, which of the following methods have you used? a. bake b. barbeque c. fry d. microwave e. other (broil, steam, etc.)	a. 708 b. 364 c. 744 d. 141 e. 145	a. 33.7 b. 17.3 c. 35.4 d. 6.7 e. 6.9	136.42	9.49	Significant

<p>11. Of the various ways to prepare fish for eating, which of the following methods have you used?</p> <p>a. bake b. barbeque c. fry d. microwave e. other (broil, steam, etc.)</p>	<p>b. 1091</p> <p>a. 708 b. 364 c. 744 d. 141 e. 145</p>	<p>b. 75.8</p> <p>a. 33.7 b. 17.3 c. 35.4 d. 6.7 e. 6.9</p>	<p>136.42</p> <p>9.49</p> <p>Significant</p>
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TABLE 1. (continued)

Question	Frequency of Response	Percent of Total	Calculated $\chi^2$	Tabulated $\chi^2$	p > .05
<p>12. Which of the following meats would you rank first for nutritional value?</p> <p>a. fish b. beef, poultry, pork</p>	<p>a. 728 b. 712</p>	<p>a. 50.5 b. 49.5</p>	<p>no test significance applied. Data used as is.</p>		
<p>13. How did you learn to prepare fish? (primarily)</p> <p>a. taught yourself b. influenced by external environment</p>	<p>a. 272 b. 1168</p>	<p>a. 18.9 b. 81.1</p>	<p>30.28</p>	<p>9.49</p>	<p>Significant</p>
<p>14. How much more information would you like to see in the preparation of seafood?</p> <p>a. no change b. change</p>	<p>a. 564 b. 787</p>	<p>a. 39.1 b. 54.7</p>	<p>292.99</p>	<p>5.99</p>	<p>Significant</p>
<p>15. During periods of hot weather (over 30 degrees), do you eat more or less seafood?</p> <p>a. no change b. change</p>	<p>a. 564 b. 787</p>	<p>a. 39.1 b. 54.7</p>	<p>35.33</p>	<p>5.99</p>	<p>Significant</p>
<p>16. How much does the smell of fish affect you during hot weather?</p> <p>a. pleasant b. unpleasant c. neutral</p>	<p>a. 92 b. 679 c. 669</p>	<p>a. 63.0 b. 47.3 c. 46.4</p>	<p>88.92</p>	<p>5.99</p>	<p>Significant</p>

Question one was the only question which had data available from previous studies for comparison. It was expected that 47 percent of the respondents to indicate that they do not fish, and 53 percent to indicate that they do.(14) We actually observed 43.9 percent and 56.1 percent, respectively. By analysis, these differences proved to be outside the range of chance variation. This would indicate that our sample differs from previous studies in some significant way. The most logical explanation would be that the geographical area of study, and its coastal position, provides for a larger percentage of fishers than similar statewide or national studies. It is suggested that this variance be taken into account when using this study.

Due to the original nature of this study, data from previous studies were not available for the remaining questions. Expected values were assigned as percentages derived from calculations and estimations based on any and all secondary information available. It was anticipated that the rough nature of these expected values would result in significant variations in all cases. This was found correct. From this we can be 95 percent confident that the data obtained is of importance. Future studies of this nature can use these statistics for Chi-square analysis with acceptable assurance of their accuracy.

Question five was omitted as mentioned earlier, and question twelve is a ranking of personal opinion on nutritional value, and is not appropriate for the chosen statistical analysis. It can be used, however, as presented for comparison and information.

## RESULTS

The survey produced the following results on the first four research factors, based on a two-stage area probability sample of 1440 respondents from the greater Los Angeles area.

### Recreational Fishing

A total of 632 (43.9 percent) households responded that they did not fish, while the remaining 808 (56.1

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percent) stated that one or more members of their household did fish. The calculated  $\chi^2 = 5.595$ , 1 d.f.,  $p > .05$  was found to be significant.

The survey indicated over half the sample population participate in recreational fishing. Of the people who fish, over half do so during the summer months. Over 1/3 of our respondents fish less than once a month and relatively few fish more than three times a month. The survey also indicated that more than two-thirds of the respondents eat their catch. This could be a contributing factor in the decline of sales in the summer months, since these fishermen have no need to purchase fish.

#### Substitutes

Respondents indicated that 624 (43.4 percent) ate beef most often during the summer, compared to 469 (32.5 percent) for poultry and 286 (19.9 percent) for seafood. The calculated  $\chi^2 = 27.279$  (1 d.f.,  $p > .05$ ) was significant. Similarly, beef was the most frequently ordered entree at restaurants during summer -- 43.2 percent, but this time seafood was next with 35.4 percent, and poultry further down with only 14.3 percent. In both cases pork had the weakest support with less than 8 percent in each. We found that 645 respondents (42.3 percent) enjoy the taste of fish, but 653 dislike the odor (43.1 percent). Although close to half of the respondents indicated no preference in seasons for consuming fish, of those who did the largest group chose summer as the season when they served or ate more seafood.

From the questions in this category it was learned that while beef is the most preferred substitute for fish, fish shows a strong position. Some factors, such as the "fishy" smell or the bones, may be keeping people from serving fish as often as they might, but these are not related to the seasonal change. No specific reason for consumer preferences for beef or poultry over seafood was isolated for either the summer months or any other season.

### Consumer Education

For preparing seafood, 693 respondents (48.1 percent) expressed a desire for additional information. On the other hand, 564 respondents (39.1 percent) found the existing information adequate. The calculated  $\chi^2 = 292.9$ , 1 d.f.,  $p > .05$ . The differences between these two groups were significant.

Moreover, the data indicated that baking and frying are the most frequently used methods of preparing seafood. Evidence was also obtained from the data that a majority of the respondents were well aware of fish having a higher nutritional value than its counterparts, i.e., beef and poultry. Also, it was found that most people have learned to prepare fish from friends and relatives.

Consistent with the results obtained from the preliminary review of the literature, the findings of this study show the consumers need further general education towards seafood.

### Temperature

Finally, regarding the impact of temperature (i.e., summer weather), 455 respondents (31.6 percent) had a higher consumption of seafood, 582 respondents (40.4 percent) indicated no change, and 403 respondents (28 percent) stated less consumption of seafood during summer. The calculated  $\chi^2 = 35.33$ , 1 d.f.,  $p > .05$ , was found significant.

According to the results obtained, the effect of temperature on seafood consumption appears to be minimal. Although seasonal consumption patterns are not found to be subject to increased temperature, 679 respondents (47.3 percent) reported as finding the odor of fish to be more unpleasant during summer months, 669 respondents (46.4 percent) indicated to be neutral on the issue, and only 92 respondents (6.3 percent) considered the odor to be more pleasant.

As stated earlier, price and promotion factors were studied through secondary data obtained from the review of relevant literature.

#### Price

In reviewing the literature, price was not found to be a significant factor in the consumption of seafood in the summer months. It was discovered, however, that fish is much more price elastic as opposed to meat and poultry. In other words, the consumer will not purchase fish when the price increases but will continue to purchase meat and poultry despite some price increase. Although current pricing practices may not be a determining factor in the decrease of fish sales in the summer, it definitely deserves consideration.

A comparison of prices was made for the last five years by the U.S. Department of Commerce in the form of price indexes for fish, meat, and poultry.(15) This study revealed no clear correlation between price increases or decreases and seasonal changes in any of the three categories, as is shown in Figure 2.(16) The only relation that can be easily determined is that seafood prices on the whole have risen more than either meat or poultry, although the price variations for fish have not been as volatile as the others.

#### Promotion

The value of well-planned promotion has been proven time and again as a means for increasing sales and changing purchase patterns of virtually any product. However, not once in our research did we uncover any evidence of the use of promotional programs to counteract seasonal variations.

The recent Catch America campaign was extremely effective in increasing overall seafood sales in the areas and during the times it was in effect.(17) A great deal of money was spent on advertising, and an even larger amount of free publicity was obtained through news articles and network talk shows. All cost figures and budgets were printed in the trade magazines

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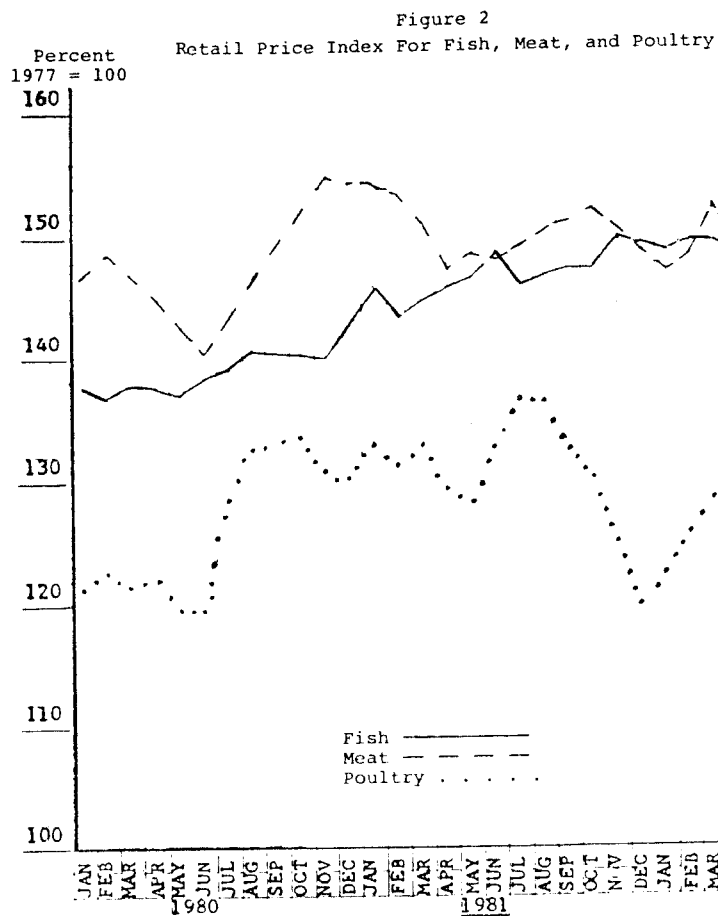
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Source: Operation Price Watch, U. S. Department of Commerce, National Oceanic and Atmospheric Administration, NMFS, 1980, 1981, and 1982

as to the amounts spent and the areas covered, but no mention was made as to the timing of the programs.

In this case, the lack of information is as revealing as its presence would be. Promotion is not being used to increase summer seafood sales any more than any other season. While this may not be the cause of reduced sales, it could be the cause for future increased summer sales.

1 Poultry

Therefore, in view of this neglect of ironing out seasonal fluctuations through strategic media scheduling we would have reason to believe that promotion may be a contributing factor in sustaining the summer sales decline.

### RECOMMENDATIONS

As the results of the study indicated, recreational fishing appears to steal away a good portion of commercial fish sales. A recent study also indicated that the average fisherman spends approximately \$10.13 for every fish he catches.(18) Since it is far cheaper to buy a fish than to catch one, this may be a point to cover in advertising. Furthermore, the simplicity and convenience of buying a prepared fish product compared to catching and cleaning your own could be brought out in a variety of ways, especially for the segment of the population who fish to supplement the family's food.

Fish has a number of advantages over its competitors, such as nutritional value, variety, price range, taste, and texture. These should be stressed in any information designed to reach the consumer. According to the study, findings suggest that most consumers acknowledge the nutritional value of seafood. In a nation of increased health awareness, this could be an important selling point.

One method to enhance further the discrimination learning of the consumer, would be to design comparative advertising campaigns in which the superior attributes of fish are highlighted over the characteristics of its major substitutes.

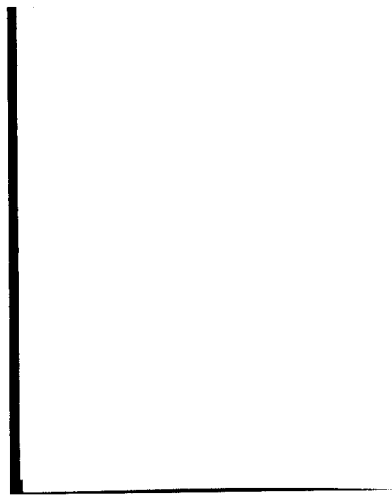
Results of this survey also revealed an apparent desire among respondents for more information about seafood. This is an area wide open for improvement, involving such means as school training, seafood cookbooks and recipe availability, effective product packaging, and any source of information available to the public. As stated earlier, the relative values of seafood as compared to other foods should be stressed. An article in the Seafood Business Reporter was written on heart disease and the related benefits of eating



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fish. Fish polyunsaturates deter coagulation of the veins and lessen the chance of heart attacks. A 19-year study was done on one group that ate fish three times a week and another group which did not eat fish. It was found that the group with a diet high in seafood lived an average of 4-1/2 years longer than the group not eating seafood.(19) Information of this sort should be in popular magazines, not just trade publications. This does not necessarily have to cost much, as most newspaper food sections or homemaking magazines welcome articles submitted, or even suggestions for interviews with experts in food related fields.

An article in Sunset Magazine discusses an apparent confusion among consumers on the use of all the various methods of cooking seafood.(20) This confusion can be alleviated with more information in textbooks, on-site recipes (some are appearing in grocery store seafood sections now), and serving recommendations pictured on packages or displayed in the stores. There could be an improvement in the way fish is displayed. Pictures showing prepared meals with recipe cards might be more effective. Supermarkets in Japan have experimented with plastic meal simulations with some success. Packaging should be leak proof, odor free, clearly labeled, inform the consumer, and have directions on how to prepare the fish for eating.(21)

Although hot weather does not appear to affect overall seafood consumption according to this survey, a large number of respondents reported of being adversely affected by the enhanced "fishy smell." Comments from interviewers indicated that most of our respondents preferred fresh fish over frozen or canned. Apparent freshness of the fish was a deciding factor in purchasing decisions.

Suggestions should be made to the trade to update storage facilities, and increase inspections and procedures to assure quality to the consumers. For example, prompt bleeding, gutting, washing, and storage, including icing down and boxing at sea can result in premium prices to the trade, and greater purchasing from the consumer.(22) Also, it would be

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possible to initiate package dating (open dating), which would increase consumer confidence, and some sort of voluntary quality control. Each product could carry a certain seal of approval guaranteeing quality and freshness.(23) Proper buying by distributors, and avoiding overstocks would thus avoid storage and, in turn, would help improve freshness standards. Although, these suggestions are not aimed specifically at summer sales alone, by increasing sales in general, summer sales would improve as a consequence.

Although secondary data analysis did not indicate a strong correlation between past pricing policies and the summer sales slump, it uncovered a noticeable elasticity in consumers' responses to price changes. This can be put to use in offsetting the seasonal variations by adjusting seafood pricing to reflect consumer demand levels.

Of the three major types of price setting in practice (cost-, demand-, and competition-oriented), cost-oriented pricing seems to have been the traditional approach in the seafood industry. Such a pricing strategy is rigid, since neither demand nor competition are considered.

To compensate for the summer decline, the industry should look at the intensity of demand. Lower prices during the summer months could be justified, as long as total revenues would not drastically decline. Lower prices would tempt a greater segment of consumers to increase their seafood consumption and thereby build the requisite summer demand. As soon as a strong consumer habitual response becomes established, the industry may revert to cost-oriented pricing strategy in order to ensure higher total revenues.

Within the promotional plan, special attention should be given to the methods of budgeting advertising allowances during the year for most effective results. At times advertisers are forced to concentrate dollar allocations in certain time periods while cutting back at other times. This is known as "flighting" strategy. Ideally, advertising efforts should increase as sales begin to decline. In other words, sales should be a

function of promotion and not vice versa. Generally speaking, the majority of firms have been found in violation of this basic marketing principle. The seafood industry should devise its promotional programs according to seasonal and flighting media scheduling techniques. Therefore, before the summer season begins, promotional efforts should be increased in proportion to the anticipated sales decline.

Most of these recommendations so far have been designed as separate programs to be incorporated into an industry-wide strategic marketing plan. Although individual processors and distributors may be working in direct competition with each other, they all share some basic goals, such as increasing consumer demand for seafood products in general, or specific items at specific times, or as this study indicates--to increase overall sales during the summer, generically. To maximize results, the seafood industry needs to identify these goals, to set objectives, and to coordinate its efforts towards meeting these objectives. For example, in evaluating the industry's overall promotional efforts, integrated and coordinated marketing programs were found to be weak. Therefore, the industry as a whole would stand to benefit if it were to pursue a highly coordinated marketing program.

Southern California, with its large population and long coastline would likely benefit the most from the industry's concerted efforts to increase seafood consumption in the summer months.

ENDNOTES

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