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NOAA Technical Memorandum NMFS



AUGUST 1991

RESULTS OF THE SOUTHERN CALIFORNIA SPORTFISH ECONOMIC SURVEY

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NOAA-TM-NMFS-SWFSC-164

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Center

NOAA Technical Memorandum NMFS

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ACKNOWLEDGEMENTS

The authors gratefully acknowledge the cooperation of the numerous individuals who participated in the survey. They thank John Witzig of the National Marine Fisheries Service, Silver Spring, Maryland for graciously providing data and unpublished statistics from the Marine Recreational Fishery Statistics Survey and Larry Jacobson of the Southwest Fisheries Science Center for thoroughly reviewing an earlier draft of this report. Thanh-Huyen Vu and Judy Ester of the Southwest Fisheries Science Center provided diligent assistance with computer programs and tabulation.

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E.0 Executive Summary

E.1 Background

The Southern California Sportfish Economic Survey is the first comprehensive survey of the marine recreational fishery in southern California to provide information on fishing participation and related socioeconomic variables on a county-by-county basis. It was sponsored by the National Marine Fisheries Service, Southwest Fisheries Science Center and the California Department of Fish and Game. It was conducted in 1989 under contract by HBRS, Inc. of Madison, Wisconsin.

The survey was targeted at two segments of the angling population:

1) recreational anglers living in eight southern California counties (Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara and Ventura) who had gone saltwater fishing in southern California in the previous twelve months, and

2) persons living outside the eight coastal counties who fished in southern California in the previous twelve months.

Anglers in these two categories are referred to throughout the report as coastal and noncoastal county anglers respectively.

For purposes of the survey, southern California fishing was defined to include:

1) beach and pier fishing occurring in Los Angeles, Orange, San Diego, San Luis Obispo, Santa Barbara and Ventura counties, and

2) fishing trips aboard commercial passenger fishing vessels (CPFV's)¹ and private boats where anglers: a) boarded a boat in Los Angeles, Orange, San Diego, San Luis Obispo, Santa Barbara or Ventura county, and b) fished in U.S. or Mexican waters.

¹ Commercial passenger fishing vessels transport paying passengers to and from the fishing grounds and provide bait, food and beverage service, gear rental and fish cleaning. They are usually operated by a skipper who has marine sportfishing expertise.

Coastal county anglers were surveyed via a two-stage sampling procedure: 1) a random telephone canvass of households in the eight counties to identify and interview twelve-month angling households, and 2) a follow-up mail questionnaire. Twelve-month angling households identified in this manner were asked to provide general information about the household's fishing activity in the previous twelve months and more detailed information for fishing activity in the most recent two months. The telephone survey was repeated at the beginning of May, July, September and November during 1989 so that respondents' detailed two-month recall would cover fishing activity during the periods March-April, May-June, July-August and September-October.

Noncoastal county anglers were identified in intercept interviews conducted as part of the Marine Recreational Fishery Statistics Survey (a separate survey which took place in southern California simultaneously with the Southern California Sportfish Economic Survey). When intercepted, these individuals were asked to provide their home telephone number for the purpose of participating in the Southern California Sportfish Economic Survey. Those who agreed were subsequently called by a telephone interviewer and also invited to participate in the follow-up mail survey. The same telephone and mail questions that were administered to coastal county anglers were also administered to these noncoastal county anglers.

The mail survey instrument included questions regarding household demographics, annual expenditures on fishing gear and licenses, and boat-related expenses. Respondents were asked for details of their most recent fishing trip, including fishing mode, month of occurrence, area fished, target species, catch, bait used, motivation for fishing, and trip expenditures. Using a method known as contingent valuation, we also asked respondents a series of questions regarding enhancement of halibut, yellowtail and white sea bass fishing and also bass fishing from piers.

The National Marine Fisheries Service and the California Department of Fish and Game worked closely with HBRS to ensure data quality. Both the telephone and mail survey instruments were subject to extensive review and pretesting to enhance response rates and the accuracy of information provided by respondents. HBRS carefully trained and monitored the telephone interviewers and also mailed, monitored and coded the mail questionnaires. The initial mailing of questionnaires was followed up with several reminder letters and yielded a final mail response rate of 73%.

Data from our telephone and mail surveys, along with ancillary information from other sources (the most important being the Marine Recreational Fishery Statistics Survey) were used to extrapolate our results from the sample to the angling population. The procedures underlying these extrapolations are carefully documented in this report.

E.2 Results

About 1.5 million (24%) of the 6.1 million households living in the southern California coastal counties in 1989 included at least one household member who had ever gone saltwater sportfishing in southern California. About 465,000 of these households included at least one household member who went saltwater sportfishing in 1989 (877,000 individual anglers altogether). An additional 165,000 households living outside the coastal counties came to the area to fish during the year. In 1989, 5.5 million angler trips were made in southern California by coastal and noncoastal county anglers: 11% from beaches, 22% from piers, 30% from CPFV's and 37% from private boats. Coastal county residents made 5.1 million angler trips: 10% from beaches, 22% from piers, 29% from CPFV's and 39% from private boats. Noncoastal county residents made 0.4 million angler trips: 13% from beaches, 21% from piers, 49% from CPFV's and 17% from private boats.

Two-thirds of all beach trips, 80% of all pier trips and over 85% of all CPFV and private boat trips in southern California in 1989 occurred in Los Angeles, Orange and San Diego counties. San Diego CPFV operators drew a large proportion of their clientele from outside the county. About 43% of their passengers in 1989 originated from San Diego county, 39% from other coastal counties and 17% from noncoastal counties.

Expenditures on saltwater fishing in southern California by coastal and noncoastal county anglers totalled \$536.3 million in 1989: 16% on licenses and gear, 23% on boat-related expenses and 61% on trip-related expenses. Los Angeles county residents accounted for 37% of this total, Orange county 22%, San Diego county 14%, noncoastal county residents 12% and all other counties (Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura) 15%. Of the \$327.8 million spent on trip-related expenses, the distribution among fishing modes was 5% beach, 9% pier, 51% CPFV and 35% private boat.

Los Angeles county residents spent more than anyone else for licenses and gear and for pier, CPFV and private boat trips. San Diego county residents spent the most on beach trips. Orange county residents spent more than anyone else on boat-related expenditures (33% of total expenditures in this category as compared to second-ranked Los Angeles county's contribution of 23%). Although over twice as many angling households lived in Los Angeles as in Orange county, Orange county anglers tended to be more affluent and spent considerably more money on boat-related expenses than any other southern California anglers.

Much of our survey revolved around the key angler in the household, that is, the household member who made the most fishing trips in the previous year. Key anglers possessed a distinctive

demographic profile: They were predominantly White, male, middle-class (median annual household income \$40,000-\$50,000), and middle-aged (median age 35-44 years). Well over half of them began fishing prior to the age of 13. One-fourth of them had at least four years of college. One-fourth owned a boat that could be used for saltwater fishing. Average household size for these angling households was three persons and, on average, males tended to outnumber females in the household.

The key angler appeared to set the household's fishing patterns. Although he sometimes fished without other household members, other household members seldom fished without him. Key anglers generally viewed fishing trips as opportunities to relax and socialize while enjoying the challenge of catching fish. Species availability was also a significant motivating factor, particularly for boat-based trips.

Catch and keep rates reported in the mail survey were generally higher for CPFV and private boat trips than for beach and pier trips. Catch and keep rates also varied by target species, and were significantly higher for species such as rockfish/lingcod and bass/bonito/barracuda than for gamefishes such as marlin, albacore and yellowtail. Anchovy and to a lesser degree squid were the most heavily utilized bait species, although bait usage also tended to vary by fishing mode and target species.

About 381,000 shellfisher trips were made in southern California by coastal county residents during the four survey waves (covering the months March-October). The breakdown of these trips by target species was 46% abalone, 30% lobster and 24% clams.

Using a method called "contingent valuation", we asked mail respondents to estimate the value that they attached to each of several different types of fishery enhancement: 1) an increase from one California halibut for every five days of fishing effort (status quo) to one California halibut for every two days of effort, 2) an increase from one yellowtail for every fourteen days of fishing effort (status quo) to one yellowtail for every three days of effort, 3) an increase from one white sea bass for every twenty days of fishing effort (status quo) to one white sea bass for every three days of effort, and 4) an artificial reef around a local fishing pier resulting in a catch rate of one bass for every two trips to a pier. Results indicated that fishing enhancements of the magnitude indicated in the contingent valuation questions could be expected to have a significant impact on angler participation and satisfaction.

E.3 Recommendations

The survey suggests several possible areas for future investigation:

1) About 5.6% of the households contacted in the eight coastal counties during the telephone survey were non-English speaking households. Non-English speakers comprised 12.1% of the contacts in Los Angeles, 2.0% in San Luis Obispo and 3.9%-5.4% in each of the other six counties. Our estimates of aggregate fishing effort by coastal county residents were based on the assumption that fishing patterns were similar for English- and non-English-speaking households. One possible direction for future research would be to evaluate similarities and differences between these two subpopulations.

2) Telephone survey results indicated that the proportion of households who had gone shellfishing during each survey wave was exceedingly low for all survey waves and coastal counties of residence (0.1%-1.6%). As a result, the number of shellfishing households identified in the telephone survey was too small to yield reliable county level estimates of shellfishing effort. Future investigations of shellfishing would best rely on a more efficient shellfisher identification procedure than the random telephone survey procedure that we employed.

1.0 Introduction

The Southern California Sportfish Economic Survey is the first comprehensive survey of the marine recreational fishery in southern California to provide information on fishing participation and related socioeconomic variables on a county-by-county basis. The survey was sponsored by the National Marine Fisheries Service, Southwest Fisheries Science Center and the California Department of Fish and Game. The survey was conducted in 1989 under contract by HBRS, Inc. of Madison, Wisconsin.

The amount and variety of information obtained in the survey are reflected in the 100+ pages of tables provided in this report, covering such diverse topics as finfishing and shellfishing effort, trip characteristics, angler characteristics and fishing expenditures. Many of the statistics in the report pertain to topics for which information is currently sparse or unavailable. In order to facilitate the reader's understanding and evaluation of the results, the report also provides detailed information regarding survey procedures and the estimation procedures underlying the tables.

The report provides a detailed description of the fishery. The survey data are also suitable for other uses such as:

- 1) estimating the economic value of the fishery and its various components (such as trips associated with particular fishing modes or target species); and
- 2) evaluating the effect of catch rates, demographics and other factors on angler participation and the economic value of the fishery.

These issues will be addressed in future papers.

Section 2.0 of the report describes survey procedures. Section 3.0 provides guidelines for interpreting the tables. Section 4.0 discusses results of the survey, in terms of the level of participation, trip and angler characteristics, and expenditures on fishing. Section 5.0 describes the so-called "contingent valuation method" and summarizes the responses to the contingent valuation questions asked in the survey. Section 6.0 summarizes survey results regarding shellfishing.

2.0 Survey Implementation

2.1 Target Population

The survey was targeted at two segments of the angling population:

1) recreational anglers living in eight southern California counties (Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara and Ventura) who had gone saltwater fishing in southern California in the previous twelve months; and

2) persons living outside the eight-county area who fished in southern California in the previous twelve months.

Although six of the counties covered in the telephone survey border the Pacific Ocean (Los Angeles, Orange, San Diego, San Luis Obispo, Santa Barbara and Ventura - see Figure 1), the other two counties (Riverside and San Bernardino) do not. However, because some portion of each of the eight counties falls within 25 miles of the coast, all eight counties will be loosely referred to throughout the report as "coastal" counties.

For purposes of the survey, southern California fishing was defined to include:

1) beach and pier/jetty fishing occurring in Los Angeles, Orange, San Diego, San Luis Obispo, Santa Barbara and Ventura counties; and

2) fishing trips aboard CPFV's and private boats where anglers: a) boarded a boat in Los Angeles, Orange, San Diego, San Luis Obispo, Santa Barbara or Ventura county and b) fished in U.S. or Mexican waters.

2.2 Sampling Procedure

2.2.1 Telephone Survey

Anglers living in the eight coastal counties were surveyed in two stages:

1) A random telephone canvass was conducted in each of the eight counties to identify and interview households containing at least one person who had gone saltwater fishing in southern California in the previous twelve months (hereafter referred to as twelve-month angling households).

2) Twelve-month angling households identified in the telephone canvass who were willing participated in a follow-up mail survey.

The telephone interviewers asked all households contacted several brief questions regarding participation in shellfishing and boat ownership. They also asked if anyone in the household had ever gone saltwater fishing in southern California and, if so, the year in which the most recent fishing trip took place. The major

purpose of the interview, however, was to identify and interview twelve-month angling households.

Whenever interviewers identified a twelve-month angling household, they asked to speak to the key angler in the household, the key angler being the household member over the age of twelve who had fished most frequently in the previous twelve months. This individual was asked to provide some general information about the household's fishing activity in the previous twelve months and more detailed information for fishing activity in the most recent two months. At the conclusion of the interview, the key angler was asked if he or she were willing to fill out a follow-up mail questionnaire.

The major focus of the telephone interview was fishing activity in the previous two months. The reason for this is that detailed recall of fishing trips tends to deteriorate significantly when the recall period exceeds two months (Hiatt and Worrall 1977). The telephone survey was repeated in the first two weeks of May, July, September and November during 1989 so that respondents' two-month recall would cover fishing activity in March-April, May-June, July-August and September-October. Although we had originally planned to also cover fishing in January-February and November-December, budget constraints made it impossible to do this.

There were two reasons for using a random digit dialing procedure to identify potential respondents:

- 1) The procedure enhanced the likelihood of obtaining a random sample of angling households.

- 2) The procedure enabled us to estimate the proportion of households in each county who had: a) ever gone saltwater sportfishing, b) finfished in the previous twelve months, c) finfished in each of the four two-month recall periods (hereafter referred to as "survey waves"), d) shellfished in each of the four survey waves, and e) owned a boat that could be used for saltwater sportfishing. As will be seen in Sections 4.0 and 6.0, these proportions were useful for extrapolating our results from the sample to the angling population.

After both the March-April and May-June survey waves, the script for the telephone survey was subject to minor modification (i.e., reordering of some of the questions and minor changes in wording). The questions asked in all four survey waves, however, are essentially the same. A copy of the telephone survey instrument used in the July-August and September-October survey waves is contained in Appendix A.

2.2.1.1 Parallels with the Marine Recreational Fishery Statistics Survey

The Marine Recreational Fishery Statistics Survey (MRFSS) is a nationwide survey sponsored annually since 1979 by the National Marine Fisheries Service in Silver Spring, Maryland. The major purpose of the MRFSS is to estimate saltwater sportfishing catch and effort for each coastal state on an annual basis.² The MRFSS consists of two surveys: 1) the aforementioned telephone survey, and 2) an on-site creel survey conducted at fishing sites within each coastal state. The MRFSS telephone survey data, combined with ancillary information from the creel survey, are used to estimate the annual number of trips made in each coastal state. Estimates of aggregate catch are made by combining estimates of catch per unit effort, obtained from the creel survey, with the aggregate effort estimates (Witzig, in prep.).

Our telephone survey was patterned after the MRFSS in several respects:

- 1) Like the MRFSS, our survey utilized two-month recall and two-month survey waves.

- 2) The eight counties covered in the southern California portion of the MRFSS telephone survey are the same counties covered in our telephone survey.

For purposes of this report, several differences between the MRFSS and our estimates of fishing effort should also be noted:

- 1) While both the MRFSS and our survey cover fishing in all modes (beach, pier, CPFV and private boat), the MRFSS estimates of beach and pier fishing effort are combined into a single "shore" mode.

- 2) While we provide estimates of fishing effort in terms of household trips and angler trips (both terms to be explained in Section 3.0), the MRFSS estimates are measured in terms of angler trips.

² California is an exception in that the MRFSS provides separate estimates of catch and effort for southern and northern California rather than statewide estimates. The species composition of catch is distinctively different between southern and northern areas of the state.

3) While we provide estimates of fishing effort for each coastal county in southern California, the MRFSS estimates fishing effort for southern California as a whole with no breakdown by county.

4) While the MRFSS estimates of CPFV and private boat fishing effort cover trips departing from U.S. ports to fish in U.S. waters, our estimates also include trips departing from U.S. ports to fish in Mexican waters.

As will be seen in later sections of this report, results from both the telephone and creel portions of the MRFSS served as a useful complement to our survey.

2.2.2 Mail Survey

The mail survey instrument included questions regarding household demographics, annual expenditures on fishing gear and licenses and boat-related expenses. Respondents were asked for details of their most recent fishing trip, including fishing mode, month of occurrence, area fished, target species, catch, bait used, motivation for fishing, and trip expenditures. Using a method known as contingent valuation (which is discussed in Section 5.0), we also asked respondents a series of questions regarding enhancement of halibut, yellowtail and white sea bass fishing and also bass fishing from piers.

The mail survey instrument consisted of a cover letter, an information sheet, the questionnaire printed in the form of a 7 x 8 1/2 inch booklet, and a postage-paid, pre-addressed return envelope. Inserted inside the booklet was a map, which served as a visual aid enabling respondents to identify the area in which their most recent fishing trip took place. A copy of the mail survey instrument is contained in Appendix B.

2.2.3 Identification of Potential Respondents Living Outside the Eight-County Telephone Survey Area

While angling households living in the southern California coastal counties were identified via the telephone canvass described in Section 2.2.1, anglers living outside the coastal counties were identified by a separate procedure. Over the period of time that our survey was in progress, the California Department of Fish and Game was conducting a separate creel survey in California as part of the MRFSS (previously discussed in Section 2.2.1.1). The creel survey involved intercepting anglers at beaches, piers, CPFV's and private boats for the purpose of examining and recording information on their catch. For each fishing mode, the distribution of MRFSS interviews among fishing sites was designed to be proportional to the geographic distribution of fishing effort (as measured by recent historical data). As part of the intercept interview, respondents were

routinely asked to identify their county of residence. With the agreement and cooperation of the National Marine Fisheries Service in Silver Spring, Maryland and the California Department of Fish and Game, MRFSS respondents intercepted at southern California fishing sites who were not coastal county residents were asked to provide their home telephone number for the purpose of participating in the Southern California Sportfish Economic Survey. Those who agreed were subsequently called by an HBRS telephone interviewer and also invited to participate in the follow-up mail survey. The same telephone and mail questions that were administered to anglers living in the coastal counties were also administered to these noncoastal county residents.

In contrast to the random telephone canvass that we employed to identify anglers living in coastal counties, the MRFSS creel survey was designed to provide a random sample of trips rather than a random sample of anglers. In general, angler samples obtained via intercept surveys are subject to avidity bias, since those who fish more frequently are more likely to be intercepted at fishing sites. The issue of correcting for avidity bias is addressed in Section 4.4.4.

2.3 Quality Control

2.3.1 Telephone Survey

2.3.1.1 Questionnaire Content and Format

Telephone surveys are demanding of both respondents and interviewers. Respondents must rely solely on the interviewer's verbal cues to comprehend and respond to questions within a fairly short time frame. This requires that respondents concentrate carefully on the telephone conversation, despite the fact that they may be anxious and/or distracted by other activities going on in the household. Interviewers must perform multiple tasks simultaneously: asking appropriate questions (which may vary among respondents if skip patterns are employed) and comprehending and recording the responses, while simultaneously maintaining a conversational tone and setting a pace for the interview that they feel is comfortable for the respondent.

Certain measures were taken in the telephone survey to ease the burden on respondents and enhance the accuracy of their responses. A major step in this regard was to ask detailed information only for fishing trips made in the previous two months. As indicated in Section 2.2.1, detailed recall of fishing trips tends to deteriorate significantly after two months (Hiett and Worrall 1977).

The questionnaire itself was worded to facilitate respondents' comprehension and accurate response. In particular:

1) Both the sponsoring agencies and HBRS devoted considerable time to formulating unambiguous and concise questions. Potentially complex questions were broken down into several simpler questions wherever possible. Thus for instance, instead of asking respondents in a single question to describe the number of trips made during the survey wave in each of the four fishing modes (beach, pier, CPFV, private boat), four separate questions were asked regarding participation in each mode.

2) The survey instrument contained a considerable amount of redundancy. For instance, in the July-August survey wave, the question "How many of your household members, including yourself, have taken saltwater fishing trips in southern California during July or August of this year?" was immediately followed by the question "How many saltwater fishing trips did you personally take in southern California during July or August of this year?" The general topic of interest (saltwater fishing trips), the area of interest (southern California) and the time period of interest (July or August) were repeated from one question to the next to assist the respondent in retaining the necessary information.

A number of measures were also taken for the benefit of interviewers. For instance:

1) Both the sponsoring agencies and HBRS devoted considerable time to formulating unambiguous and concise instructions to interviewers regarding coding, skip patterns, etc. This was done to ensure that interviews were administered in the same manner to each respondent.

2) The questions asked in each interview would vary somewhat, depending on whether the respondent had ever been saltwater sportfishing, fished in the previous twelve months, fished in the previous two months, shellfished in the previous two months, or owned a boat that could be used for saltwater fishing. The skip patterns used to guide interviewers to the appropriate questions established a vertical flow to the questionnaire. This was deemed less confusing and time-consuming than skip patterns that require interviewers to flip back and forth among pages of a questionnaire.

3) All instructions to interviewers were typed in boldface, while statements and questions directed at respondents were typed in regular face. This was done so that interviewers could quickly and easily distinguish the one from the other.

4) Interviewers' coding responsibilities were simplified as much as possible. Most of the coding was limited to circling one of several multiple choice responses or writing in a number.

2.3.1.2 Pretesting

Three groups of people were involved in pretesting the telephone survey: 1) HBRS personnel, who had extensive prior experience with designing and administering surveys (including angler surveys), 2) representatives from the two sponsoring agencies who are knowledgeable regarding the southern California recreational fishery and the potential uses of the data, and 3) interviewers and potential respondents. The sponsoring agencies provided a first draft of the telephone survey instrument, which was further refined in the course of discussions between agency representatives and HBRS. Refinements were intended to: 1) ensure that the questions asked would meet the study objectives and 2) enhance the clarity and reasonableness of the questions, instructions and multiple choice options contained in the questionnaires.

Potential respondents for the pretest were identified by the same random digit dialing procedure that would be used in the actual telephone survey. Six of the eight counties in the telephone survey area were represented by the eleven anglers who participated in the pretest: Los Angeles, Orange, Riverside, San Diego, San Luis Obispo and Ventura. Based on pretest interviews, HBRS found no major problems with the telephone survey instrument. Key anglers were easy to identify and understood the questions being asked of them. The amount of time required to complete the telephone interview averaged 8.33 minutes for two-month anglers and 6.38 minutes for twelve-month anglers.

Minor problems with the telephone survey instrument were identified and addressed, as follows:

1) In response to interviewer comments, HBRS shortened the introduction to the telephone interview in order to get respondents more quickly involved in answering questions. This was intended to reduce the probability that a respondent would refuse to complete the interview.

2) According to the script used in the pretest, interviewers stated that they were "working...on a study of saltwater sportfishing for finfish." Interviewers felt that this phrase was too wordy and that the term "finfish" was confusing to some nonanglers contacted in the telephone screening. HBRS replaced the term "saltwater sportfishing for finfish" with the simpler

"saltwater angling". (All references to "saltwater angling" in the telephone questionnaire were subsequently changed to "saltwater fishing" after the March-April survey wave, in response to interviewer comments that some respondents had difficulty with the word "angling".)

3) Several elaborations were added to the interviewer instructions. For instance, if respondents were unsure of the definition of shellfishing, interviewers were to mention lobster, abalone and clams. If respondents did not know whether a trip involved fishing in Mexican waters, interviewers were to state that fishing off the Coronado Islands would be fishing in Mexican waters. If respondents fished in more than one mode during a single trip, interviewers were to ask them to indicate the most important or primary mode for the trip.

2.3.1.3 Interviewer Training

An important aspect of quality control was training the telephone interviewers. In HBR's training sessions, instructors presented an overview of the telephone survey instrument. Interviewers received a packet of information describing background for the study, a summary of interviewer procedures, a telephone survey instrument, practice scripts, and lists of terms and definitions they would frequently hear while conducting the interviews. Next, the interviewers were led through the survey instrument question by question, and the purpose of each question was explained. The record-keeping responsibilities of the interviewers were also explained, as well as the forms they would use to record the disposition of each telephone call.

Interviewers listened to several staged interviews and were paired off to practice with each other under the guidance of the trainers. Scripts were provided for the "respondent" to follow in these practice interviews. These practice scripts were designed to expose the interviewers to the various types of skip patterns they would encounter while conducting interviews. All interviewers practiced the script and were required to complete a trial interview before they were allowed to make calls. The trial interviews were conducted with the Survey Manager, Survey Research Supervisor or Senior Project Manager playing the role of a respondent. Each interviewer was critiqued upon completion of the trial interview.

All interviews were conducted in centralized facilities under the guidance of the field supervisor. Completed angler and non-angler telephone interviews were reviewed daily for accuracy and completeness. The field supervisor called back approximately 5% of all telephone respondents to verify the outcome of the interviews.

2.3.2 Mail Survey

2.3.2.1 Questionnaire Content and Format

Following Dillman (1978), the content and format of the mail questionnaire were designed to minimize the burden on respondents and enhance the accuracy of the information they provided:

1) Both the sponsoring agencies and HBRS devoted considerable time to formulating clear, concise questions and instructions. Each question was accompanied by a specific instruction (e.g., Fill in blank, Circle one number, Circle all that apply). In order to help the respondent visually distinguish between questions and instructions, the questions were typed in lower case and the instructions in upper case.

2) HBRS used arrows and simple instructions (e.g., Skip to Question 7) that directed the respondent to questions that were relevant to him or her. The skip patterns established a vertical flow to the questionnaire. Such skip patterns are desirable for two reasons: a) they are less likely to result in confusion and inadvertent omission of questions than skip patterns that require respondents to flip back and forth among pages of a questionnaire, and b) they enhance respondents' feeling of accomplishment as they move through each page of the questionnaire.

3) The mail questionnaire was organized so that similar questions were grouped together and transitions were written between groups of similar questions. The transitions ranged in length from a single sentence to several paragraphs and appeared within a box to visually distinguish them from the rest of the questionnaire. The transitions served several useful purposes: a) provide information, instructions and definitions to help the respondent respond accurately to the subsequent group of questions, b) add a conversational tone to the questionnaire, c) provide a sense of flow and continuity to the questionnaire, and d) signal the respondent of an impending change in the types of questions being asked.

4) In order to make the questionnaire appear less formidable, it was printed in a 7 x 8 1/2 inch booklet format. HBRS used an attractive layout and quality printing to give the questionnaire a professional appearance.

5) The cover letter provides recipients with their first impression of a survey and is frequently the deciding factor in determining whether the recipient looks at the questionnaire or throws it away. We

attempted to convey three major points in the cover letter: a) the importance of the survey, b) the importance of the recipient's response to the survey, and c) the confidentiality of all information provided by the respondent. Attached to the cover letter was an information sheet entitled "More Information About the Saltwater Angling Study." The sheet reiterated the three points made in the cover letter and also addressed other questions that are commonly asked by survey recipients (e.g., How was I selected to participate in this study?)

6) HBRS provided each potential respondent with a postage paid, pre-addressed envelope in which to return the completed questionnaire.

According to Dillman (op.cit.) and Heberlein and Baumgartner (1978), the final response rate to mail surveys can be significantly enhanced by making several follow-up contacts to the initial mailing. These additional contacts are particularly effective if accomplished with a special mailing procedure (such as certified mail). Following these recommendations, HBRS achieved a final response rate to the mail questionnaire of 73%.

In order to attain this response rate, HBRS followed up their initial mailing with several additional contacts: One week after the initial mailing, HBRS sent a postcard to all telephone respondents who had agreed to fill out a mail questionnaire, reminding them to complete and return the mail questionnaire and thanking those who had already done so. Three weeks after the initial mailing, HBRS sent a second copy of the mail questionnaire and accompanying materials to nonrespondents. Five weeks after the initial mailing, HBRS sent a third copy and accompanying materials to nonrespondents via certified mail. The response rate to the mail questionnaire increased from approximately 51% after the initial mailing of the questionnaire to 64% after the three-week mailing to 73% after the five-week mailing.

2.3.2.2 Pretesting

Three groups of people were involved in pretesting the mail survey instrument: 1) HBRS personnel, 2) representatives from the two sponsoring agencies, and 3) potential respondents. The sponsoring agencies provided a first draft of the mail survey instrument, which was further refined in the course of discussions between agency representatives and HBRS. Refinements were intended to: 1) ensure that the questions asked would meet the study objectives and 2) enhance the clarity and reasonableness of the questions, instructions and options contained in the questionnaire.

Ten of the eleven anglers who participated in the telephone pretest (see Section 2.3.1.2) also agreed to participate in the mail pretest. HBRS used their random digit dialing procedure to

identify eleven additional anglers who were willing to participate in the mail pretest. Sixteen of the twenty-one anglers who agreed to the pretest actually completed the mail questionnaire and participated in a follow-up telephone interview.

During the follow-up interview, anglers were asked about their overall reaction to the questionnaire. The interviewer also briefly went through the questionnaire section by section to identify any problems. Pretest respondents reported that it took an average of eighteen minutes to complete the mail questionnaire. Overall they felt that the survey was interesting, the questions were understandable, and the questionnaire was easy to complete.

HBRS made the following modifications to the mail survey instrument in response to respondents' comments:

- 1) According to Heberlein and Baumgartner (op.cit.), respondents' perceptions regarding the saliency of a mail survey can have a significant effect on the response rate. With this in mind, one of the first questions asked in the pretest interview was "Overall, how important did this study sound to you?" Only half of the pretest respondents thought that the study sounded "somewhat important" or "very important" as opposed to "not important". In order to enhance saliency, HBRS revised the pretest version of the cover letter and the information sheet to more clearly emphasize the reasons for the study and the importance of hearing from the respondent.

- 2) In the pretest version of the questionnaire, the first question was prefaced by a ten-line statement which provided brief instructions and definitions of terms. In that statement, we defined trips in southern California as "fishing trips from San Luis Obispo County to the Mexican border....". One pretest respondent interpreted this to mean trips for which his origin was San Luis Obispo and his destination was the Mexican border. To remove this ambiguity, we redefined trips in southern California as "fishing trips in the area from San Luis Obispo County to the Mexican border....". We provided a definition for "length of trip", which was not provided in the pretest version. Finally, we boldfaced all of the terms being defined and set them off in separate paragraphs. This increased the length of the introductory statement from 10 to 20 lines but also significantly improved its readability.

- 3) In response to comments by a spear fisherman, HBRS added an expense category for diving supplies (Question 19).

4) HBRIS modified the wording of the enhancement questions (Questions 38, 41, 44 and 47) to clarify whether the dollar amount would be paid annually or per trip.

5) One respondent thought that the enhancement questions were asked with the intention of raising the license fees for sportfishing. HBRIS added a question (Question 49) to help determine whether responses to the enhancement questions reflected the angler's true value for the resource or other factors (such as concern about a license increase).

6) The draft mail questionnaire used in the pretest contained the question "How many of the miles traveled during your last saltwater fishing trip were due just to your decision to go fishing?" Because there was some confusion regarding the meaning of this question, it was replaced with a clearer request for information regarding distance travelled (Questions 14 and 16).

2.4 Disposition of Household Contacts (Tables 2.4-1a to 2.4-1e)

Tables 2.4-1a through 2.4-1e describe the disposition of household contacts in the eight-county telephone survey area in each of the four survey waves and in the four waves combined. According to Table 2.4-1e, 37,449 household contacts were made during the four survey waves, of which 5,245 (14.0%) reached households who refused to talk to the interviewer. The rate of "noncooperation" was lowest in San Luis Obispo (10.8%) and highest (almost 16%) in Los Angeles, Orange and San Diego counties. Another 2,079 (5.6%) of the telephone contacts reached non-English speaking households. Non-English speakers comprised 12.1% of the household contacts in Los Angeles, 2.0% in San Luis Obispo, and 3.9%-5.4% in each of the other six counties.

Of the 30,125 calls that reached a cooperating household, 2,577 identified themselves as twelve-month angling households. Of the 2,577, 112 refused to participate further in the telephone interview and 2,465 completed the interview. Of these 2,465 anglers, 2,302 said that they would be willing to participate in the mail survey and 163 said that they would not. Of the 2,302 respondents who received the mail questionnaire, 1,669 (72.5%) actually completed and returned the questionnaire.

Because a major goal of the survey was to derive statistics at the county level, HBRIS attempted to allocate its household contacts in such a manner as to generate an equal number of completed telephone and mail questionnaires in each county. This task was complicated by differences among counties in the proportion of households refusing to talk with interviewers, the proportion of non-English speaking households, the proportion consisting of

twelve-month anglers and the mail response rate. The number of twelve-month angling households who completed the telephone survey ranged from 287 to 344 among counties; the number who completed the mail survey ranged from 179 to 259 (Table 2.4-1e).

As indicated in Section 2.2.3, the home telephone numbers of a sample of anglers living outside the telephone survey area were obtained in intercept interviews conducted at southern California fishing sites. Over the survey period, HBRS completed 105 telephone interviews of these non-resident fishing households. Of the 105, 98 agreed to participate in the follow-up mail survey and 86 actually completed and returned the mail questionnaire. The mail response rate for these non-resident households (87.8%) was higher than the response rate for resident households (72.5%).

3.0 Guidelines for Interpreting Tables

The tables in this report include numerous statistics such as means, proportions and frequencies. All statistics are accompanied by a number in parentheses which is the sample size on which the statistic was based. For example, Table 4.1-1 describes the proportion of households living in each coastal county who had ever gone saltwater sportfishing in southern California. This proportion was 20.8% in Los Angeles county, based on a sample size of 4,697. This means that, of the 4,697 telephone respondents who lived in Los Angeles county and answered definitively (Yes or No) to the question regarding whether or not anyone in the household had ever fished, 20.8% answered Yes.

Note that the sample sizes denoted in the tables pertain only to valid responses. Thus for instance, the age distribution reported in Table 4.3-1 for Los Angeles county is based on a sample size of 173 while the distribution by ethnic background is based on a sample size of 176. The reason for this difference is item nonresponse.

Sample sizes also depend on whether the question was asked of telephone respondents or mail respondents, who were a subset of the telephone respondents. For example, the mean number of household trips reported by telephone respondents living in Los Angeles county was estimated at 8.22, based on a sample size of 285 (Table 4.1-3). By contrast, the age distribution of mail respondents living in Los Angeles county was based on a sample size of 173 (Table 4.3-1).

Fishing activity is variously described in the tables in terms of household trips and angler trips. For purposes of this report, a household trip is defined as a trip on which one or more household member participates in fishing, while the participation of each individual on each trip counts as an angler trip. For example, suppose that on one occasion one household member fished with friends and on three occasions two household members fished

together. Then the household has made four household trips and seven angler trips during the year.

Finally, row and column totals displayed in the tables may not exactly equal the row and column elements that are being summed. These slight discrepancies are due to rounding error.

4.0 Survey Description of Anglers and Angler Behavior

4.1 Fishing Effort

4.1.1 Trips Made With the Key Angler by Coastal County Residents During the Telephone Survey Period

4.1.1.1 Number of Households That Ever Fished (Table 4.1-1)

The definition of what constitutes an angling household varies with the time frame being considered. While the survey was targeted largely at twelve-month angling households, we asked all households contacted in the telephone survey if they had ever gone saltwater fishing and, if so, the year of the most recent fishing trip. The results reported in Table 4.1-1 indicate that the proportion of households that had ever fished ranged from 20.8% in Los Angeles county to 37.2% in San Luis Obispo county.

Table 4.1-1 also describes the total number of households living in each of the eight coastal counties in 1989 (Bill Communications Inc. 1990). For Los Angeles county, the number of households that had ever fished was computed as $657,717 = 3,162,100 * 0.208$, where 3,162,100 is the total number of households living in Los Angeles county in 1989 and 20.8% is the proportion of household contacts in Los Angeles county who had ever fished. The distribution of ever-fishing households according to the year of the most recent fishing trip was accomplished by distributing the 657,717 households among years in the proportions indicated by the the telephone sample for Los Angeles county. This same procedure was used to estimate the number of ever-fishing households in the other seven counties. According to the table, 1.5 million (24.3%) of the 6.1 million households living in the southern California coastal counties in 1989 are estimated to have ever fished. Over 60% of these ever-fishing households had made their most recent trip after 1985.

4.1.1.2 Participation in Previous Year (Tables 4.1-2, 4.1-3, 4.1-4)

Table 4.1-2 describes the proportion of household contacts who reported fishing in the twelve months prior to the telephone interview (hereafter referred to as the twelve-month prevalence rate). The prevalence rate was lowest in Los Angeles (6.4%), Riverside (6.8%) and San Bernardino (5.8%) counties and highest in San Luis Obispo county (12.9%). The number of twelve-month angling households living in Los Angeles county was computed as $202,374 = 3,162,100 * 0.064$, where 3,162,100 is the number of households living in Los Angeles county (Table 4.1-1) and 6.4% is the county's

twelve-month prevalence rate. The number of angling households in the other seven counties was computed by the same procedure.

The average number of twelve-month anglers per twelve-month angling household (computed from telephone survey data) varied only slightly among counties, the overall average being 1.88 anglers per angling household. The total number of twelve-month anglers living in Los Angeles county was estimated as $392,606 = 202,374 * 1.94$, where 202,374 is the number of twelve-month angling households (Table 4.1-2) and 1.94 is the average number of anglers per angling household in Los Angeles county. The number of twelve-month anglers in the other seven counties was computed by the same procedure.

According to Table 4.1-2, almost 500,000 angling households and 900,000 anglers lived in the eight coastal counties in 1989. Over 40% of these angling households and anglers lived in Los Angeles county. The number of anglers living in Los Angeles was about 2.5 times larger than the number in either San Diego or Orange counties, which had the second and third largest angling populations. This result is due to Los Angeles' large population, which swamped the effect of its relatively low prevalence rate.

The average number of household trips made in the previous year by twelve-month angling households, as reported in Table 4.1-3, was based on the experience of the key angler (the household member who had fished the most in the previous year). As part of the telephone interview, the key angler was asked to enumerate the trips that he or she had made in the previous year. The key angler's response provides a good approximation to the number of household trips made per year by all household members, since (as will be seen in Section 4.1.2) household members made very few trips without the key angler.

The average number of household trips per twelve-month angling household should not be confused with:

- 1) the average number of angler trips per twelve-month angling household, which would be higher, depending on how many household members participated on each of the household trips; or
- 2) the average number of trips per angler, which would be lower, since the key angler by definition made more trips than anyone else in the household.

Table 4.1-3 also describes the total number of household trips made in the previous year. This was computed for Los Angeles county as $1,663,514 = 202,374 * 8.22$, where 202,374 is the number of twelve-month angling households in the county (Table 4.1-2) and 8.22 is the average number of household trips per angling household as reported by telephone respondents living in Los Angeles county.

A similar computation was made for each of the other seven counties.

According to Table 4.1-3, the mean number of household trips was lowest in Los Angeles (8.22), Riverside (7.16) and San Bernardino (6.25) counties, and highest in San Luis Obispo (12.54) and Santa Barbara (13.17) counties. Los Angeles county residents made about the same number of household trips per year as Orange and San Diego county residents combined. The three counties together accounted for about 80% of the 4.2 million household trips made in 1989.

Another question asked in the telephone survey was whether any of the finfishing trips made by the key angler in the previous twelve months involved spearfishing and, if so, the number of spearfishing trips made by the key angler. Table 4.1-4 provides statistics regarding spearfishing households and trips. For example, the number of spearfishing households in Los Angeles county was computed as $6,274 = 202,374 * 0.031$, where 202,374 is the number of twelve-month angling households in the county (Table 4.1-2) and 3.1% is the proportion of key anglers in the telephone survey who reported making at least one spearfishing trip in the previous year. The total number of household spearfishing trips per year was computed as $38,899 = 6,274 * 6.2$, where 6.2 is the average number of household spearfishing trips per spearfishing household (as reported by key anglers in the telephone survey). Similar statistics were computed for the other seven counties. The sample sizes used to estimate the average number of spearfishing trips were quite small for some of the counties and should be viewed with caution.

Table 4.1-4 also describes the proportion of total household finfishing trips in the previous year that involved spearfishing. For example, this was computed for Los Angeles county as $2.3\% = 38,899/1,663,514$, where 38,899 is the number of household spearfishing trips in the previous year and 1,663,514 is the number of household fishing trips in the previous year (Table 4.1-3). Similar computations were made for the other seven counties. The results suggest that spearfishing occurred on a relatively small proportion (4.4%) of household finfishing trips.

4.1.1.3 Participation by Survey Wave (Tables 4.1-5a to 4.1-5d, 4.1-6a to 4.1-6e, 4.1-7a to 4.1-7e)

Tables 4.1-5a through 4.1-5d pertain to the March-April, May-June, July-August and September-October survey waves respectively. The tables describe, for each county of residence, the proportion of household contacts who fished in each survey wave (hereafter referred to as two-month prevalence rates), the number of two-month angling households, and average and total numbers of anglers represented by two-month angling households.

The March-April prevalence rate for Los Angeles county (Table 4.1-5a) was computed as $2.3\% = 6.4\% * 35.9\%$, where 6.4% is the county's twelve-month prevalence rate (Table 4.1-2) and 35.9% is the proportion of key anglers contacted in early May who reported fishing in March-April. It should be noted that the sample size reported in the table ($n=68$) is the sample size used to calculate the proportion of key anglers interviewed in early May who fished in March-April (35.9%). The sample size for the twelve-month prevalence rate (6.4%) is given in Table 4.1-2. The number of two-month angling households living in Los Angeles county in the March-April survey wave was computed as $72,728 = 3,162,100 * 0.023$, where 3,162,100 is the total number of households living in Los Angeles county (Table 4.1-1) and 2.3% is the aforementioned two-month prevalence rate. The number of two-month anglers was computed as $124,365 = 72,728 * 1.71$, where 1.71 is the mean number of persons per two-month angling households who fished during the survey wave.

Similar computations were made for all counties and all survey waves. The two-month prevalence rates, total number of two-month angling households, and total number of two-month anglers described in Tables 4.1-5a through 4.1-5d all exhibit a seasonal pattern, gradually increasing to a peak in July-August and declining thereafter.

Tables 4.1-6a through 4.1-6d describe, for each survey wave and county of residence, the average and total number of household trips made by two-month angling households and the breakdown of trips by fishing mode. Table 4.1-6e describes the total number of household trips made in all four survey waves and was obtained by summing the appropriate figures from Table 4.1-6a through 4.1-6d.

The total number of household beach trips made by Los Angeles residents in March-April (Table 4.1-6a) was computed as $21,818 = 72,728 * 0.30$, where 72,728 is the number of two-month angling households living in the county (Table 4.1-5a) and 0.30 is the average number of household beach trips made in March-April by these two-month angling households. The total number of pier, CPFV and private boat trips were similarly computed on the basis of the average number of household trips made in each of these modes by two-month angling households. Similar computations were made for other survey waves and counties.

Estimation of the mean number of trips made in each fishing mode by two-month angling households was complicated by the presence of suspected outliers in the data. While these outliers were rare events and did not appear to occur in modes, counties or survey waves in any systematic manner, they typically exerted an inordinate influence on mean values when they did occur. In order to identify outliers in an explicit and consistent manner, we used a discordancy test suggested by Barnett and Lewis (1984).

We divided the telephone survey data on the number of household trips made in each of the four fishing modes by two-month angling households into subsamples, each subsample consisting of a particular combination of fishing mode, county and survey wave (128 subsamples in all for the four modes, eight counties and four survey waves). We transformed the data in each subsample by increasing the number of household trips made by each of the respondents in the subsample (t_i) by one:

$$x_i = t_i + 1. \quad [1]$$

We ordered the t_i 's from lowest to highest values, denoting $t_{(1)}$ the lowest and $t_{(n)}$ the highest value. In situations where $t_{(n)}$ alone was separated from the rest of the sample by a gap (i.e., a single outlier was suspected), we computed a test statistic for $t_{(n)}$ of the form:

$$\theta = \frac{x_{(n)}}{\sum_i x_i}. \quad [2]$$

In situations where $t_{(n-k+1)}, \dots, t_{(n)}$ were separated from the rest of the sample by a gap (i.e., $k \geq 2$ outliers were suspected), the test statistic took the form:

$$\theta = \frac{x_{(n-k+1)} + \dots + x_{(n)}}{\sum_i x_i}. \quad [3]$$

[2] and [3] measure the value(s) of the suspected outlier(s) relative to the sum of values contained in the entire sample. The reason for transforming the t_i 's in the manner of [1] prior to computing the test statistic was to ensure that observations for which $t_i = 0$ (corresponding to two-month angling households who did not fish at all in a particular mode during the survey wave) carried some weight in the denominator of [2] and [3].

The t_i 's in each subsample were exponentially distributed, with $t_i = 0$ occurring with the highest frequency and frequency declining thereafter for increasingly higher values of t_i . Using tables of critical values provided by Barnett and Lewis (1984) for test statistics [2] and [3] associated with exponentially distributed variables such as t_i , we identified observations in the upper 5% of the test statistic distribution as outliers. We reduced the influence of these outliers on our estimates of the mean number of household trips associated with each subsample (that is, each combination of fishing mode, county of residence and survey wave) by: 1) resetting the outlier(s) to the value of the nearest observation in the remaining 95% of the distribution, and 2) computing the mean value of each modified subsample.

For example, if $t_{(n)}$ corresponded to a value for the test statistic [2] that appeared in the upper 5% of the test statistic distribution, we reset $t_{(n)}$ to the value of $t_{(n-1)}$, and computed the mean as:

$$\bar{t} = \frac{t_{(1)} + \dots + t_{(n-2)} + 2t_{(n-1)}}{n} \quad [4]$$

Similarly if $t_{(n-k+1)}, \dots, t_{(n)}$ corresponded to a value for the test statistic [3] that appeared in the upper 5% of the test statistic distribution, we reset $t_{(n-k+1)}, \dots, t_{(n)}$ to the value of $t_{(n-k)}$ and computed the mean as:

$$\bar{t} = \frac{t_{(1)} + \dots + t_{(n-k-1)} + (k+1)t_{(n-k)}}{n} \quad [5]$$

Tables 4.1-7a through 4.1-7e are similar to 4.1-6a through 4.1-6e except that they pertain to angler trips rather than household trips. Mail respondents were asked to provide information regarding the number of household members who fished with them on their most recent fishing trip. For those whose most recent trip was in beach mode, the mean number of household members (including the respondent) who fished per beach trip was 1.43 persons. The mean values for the other modes were 1.86 persons per pier trip, 1.42 persons per CPFV trip and 1.53 persons per private boat trip. The angler trip estimates in Tables 4.1-7a through 4.1-7e were obtained by multiplying the household trip estimates from Tables 4.1-6a through 4.1-6e by the appropriate estimate of mean number of household members fishing per trip. For example, the number of angler beach trips made in March-April by two-month angling households living in Los Angeles county was computed in Table 4.1-7a as $31,200 = 21,818 * 1.43$, where 21,818 was the total number of household beach trips made by Los Angeles county residents in March-April (Table 4.1-6a) and 1.43 was the aforementioned mean number of household members who fished per beach trip.

4.1.1.4 Trips by Origin and Destination (Tables 4.1-8a to 4.1-8e, 4.1-9a to 4.1-9e)

One detail provided by telephone respondents for each of the five most recent trips made in each fishing mode during the survey wave was the county of destination (i.e., the county where fishing occurred in the case of shore-based trips and the county from which the boat departed in the case of boat-based trips). These data were used to generate Tables 4.1-8a through 4.1-8d, which describe the distribution of household trips from each of the eight coastal counties of residence to each of the six fishing counties (Los

Angeles, Orange, San Diego, San Luis Obispo, Santa Barbara and Ventura), by survey wave and fishing mode.

The estimation procedure can be illustrated by considering the i^{th} telephone respondent living in Los Angeles county who made at least one beach trip in March-April. We estimated B_{ik} , the number of beach trips made by respondent i to county k , as follows:

$$B_{ik} = \begin{cases} n_{ik} & \text{if } B_i \leq 5 \\ B_i * n_{ik}/5 & \text{if } B_i > 5 \end{cases} \quad [6]$$

where B_i is the total number of beach trips made by respondent i in March-April and n_{ik} is the number of respondent i 's five most recent beach trips in March-April that were made to county k ($k=1, \dots, 6$). For respondents who made more than five beach trips in March-April, [6] assumes that the respondent's five most recent trips were representative of all the respondent's beach trips during the survey wave. For these anglers, B_{ik} was estimated by multiplying the total number of beach trips made during the survey wave (B_i) by the proportion of the angler's five most recent beach trips that occurred in county k ($n_{ik}/5$).

We then estimated the total number of beach trips made in March-April by Los Angeles county residents to county k as:

$$B_k = 21,818 * \Sigma_i B_{ik} / \Sigma_k \Sigma_i B_{ik}, \quad [7]$$

where 21,818 is the total number of household beach trips made by Los Angeles county residents in March-April (Table 4.1-6a) and $\Sigma_i B_{ik} / \Sigma_k \Sigma_i B_{ik}$ is the proportion of these trips in our sample made to county k . The estimation procedure described above was similarly applied to all counties of residence, fishing modes and survey waves.

Table 4.1-8e describes the distribution of household trips from each of the eight counties of residence to each of the six fishing counties in all survey waves and was obtained by summing the appropriate figures in Tables 4.1-8a through 4.1-8d. Some highlights of Table 4.1-8e are as follows:

- 1) Los Angeles, San Diego, San Luis Obispo and Ventura county residents made at least 90% of their beach and pier trips in their own county of residence. Orange county residents made over three-fourths of their beach and pier trips in Orange county; the remainder were made in Los Angeles county. Riverside county residents made 70% of their beach trips in Orange county, while San Bernardino county residents divided their beach trips evenly between Orange and San Diego counties. Riverside and San Bernardino county residents made 62% of their

pier trips in Orange county and the remainder in Los Angeles and San Diego counties.

2) San Diego county residents made 100% and San Luis Obispo county residents made 90% of their CPFV trips in the county of residence. Los Angeles and Orange county residents made about two-thirds of their CPFV trips in their county of residence. Riverside county residents made 60% of their CPFV trips in San Diego county and the remaining 40% in Los Angeles and Orange counties. San Bernardino county residents divided their CPFV trips approximately evenly among Los Angeles, Orange and San Diego counties, while Santa Barbara county residents divided their trips between San Luis Obispo and Santa Barbara counties.

3) The proportion of private boat trips made in the county of residence was about 75% for Santa Barbara county residents, 85% for Los Angeles residents, 90% for Orange county residents, and over 95% for San Diego, San Luis Obispo and Ventura county residents. Riverside and San Bernardino county residents divided their private boat fishing among Los Angeles, Orange and San Diego counties.

Tables 4.1-9a through 4.1-9e are similar to Tables 4.1-8a through 4.1-8e except that they pertain to angler trips rather than household trips. The figures in these tables were computed by multiplying each household trip estimate from Tables 4.1-8a through 4.1-8e by the mean number of household members who fished per trip (Using information from mail respondents regarding their most recent trip, we estimated the mean number of household members who fished per beach trip to be 1.43 persons; values for the other modes were 1.86 persons per pier trip, 1.42 persons per CPFV trip and 1.53 persons per private boat trip). Thus for example, the number of beach angler trips made in Los Angeles county by two-month angling households living in Los Angeles county was computed in Table 4.1-9a as $31,200 = 21,818 * 1.43$, where 21,818 is the corresponding number of household trips from Table 4.1-8a and 1.43 is the mean number of household members who fished per beach trip.

The reader is reminded that the origin-destination information in Tables 4.1-8a through 4.1-8e and Tables 4.1-9a through 4.1-9e pertains only to trips made by coastal county residents during March-October. As will be discussed in Section 4.1.3, a significant number of CPFV trips in San Diego county and of trips in all modes in San Luis Obispo county during these months were made by noncoastal county residents.

4.1.1.5 Trips by Area Fished (Table 4.1-10a to 4.1-10f, 4.1-11a to 4.1-11f)

Mail survey respondents were asked to describe where they fished on their most recent trip. As a visual aid, they were provided with a map describing 22 fishing areas within three miles of shore and an additional 17 areas that covered fishing outside three miles (see the map in Appendix B). If the most recent fishing trip occurred in a shore-based mode, the respondent was asked to identify where most of the fishing took place (from among the 22 inshore areas). If the most recent trip occurred in a boat-based mode, the respondent was asked to identify the boat's departure area (from among the 22 inshore areas) and the area where most of the fishing took place (from among the 39 inshore and offshore areas). The 22 inshore areas represent subareas within counties and closely follow county boundaries as follows: San Diego=areas 1 thru 7; Orange=areas 8 and 9; Los Angeles=areas 10 thru 12; Ventura=areas 13 thru 15; Santa Barbara=areas 16 thru 18; San Luis Obispo=areas 19 thru 22.

For each fishing mode, the distribution of household trips among the 22 inshore areas (Tables 4.1-10a through 4.1-10d) was accomplished by apportioning the total number of household trips made in each fishing county (Tables 4.1-8a through 4.1-8d) among subareas within the county on the basis of information provided by mail respondents regarding the location of their most recent trip. For example, we estimated the proportion of beach trips occurring in each of the seven subareas bordering San Diego county (P_j for $j=1, \dots, 7$) on the basis of information from mail respondents whose most recent trip occurred in beach mode in San Diego county. We then computed the T_j 's, the number of household beach trips in March-April in each area j , as

$$T_j = 7,781 * P_j \quad \text{for } j=1, \dots, 7, \quad [8]$$

where 7,781 is the total number of household beach trips made in March-April in San Diego county (Table 4.1-8a). The same proportions P_j were also applied to the total number of household beach trips made in San Diego county in May-June, July-August and September-October (also from Table 4.1-8a). An important assumption underlying this procedure is that the P_j 's are unbiased estimates of the population proportions. This assumption is valid to the extent that the data provided by respondents whose most recent trip occurred in beach mode in San Diego county were representative of trips made in that mode and county.

The number of household beach trips made in areas 8-22 were estimated by the same procedure used for areas 1-7. The number of pier trips in each area was also estimated in the same manner, using estimates of the total number of pier trips in each of the six fishing counties and four survey waves (Table 4.1-8b) and frequency distributions for fishing areas within each county

generated from data provided by mail respondents whose most recent trip occurred in pier mode. For both beach and pier modes, the frequency distribution of trips among areas within each fishing county was assumed to be the same for all four survey waves. Insufficient sample size made it impractical to obtain a separate frequency distribution for each survey wave.

The number of household CPFV trips departing from each of the 22 inshore areas in each of the four survey waves was estimated in a manner similar to the shore-based trips. The only difference was as follows: CPFV sample sizes were sufficiently large to generate two frequency distributions for the fishing areas within each county, one for trips made in March-June and the other for trips made in July-October.³ The distributions were based on data provided by respondents whose most recent trip occurred in CPFV mode. These trips were allocated to the March-June or July-October frequency distribution on the basis of the month when the trip took place, which may not correspond to the month in which the respondent participated in the survey. The March-June frequency distribution was applied to CPFV trips made in the March-April and May-June survey waves and the July-October distribution for CPFV trips was applied to CPFV trips made in July-August and September-October, using estimates of the number of CPFV trips made in each survey wave and fishing county from Table 4.1-8c.

The procedure for allocating household private boat trips among the 22 inshore areas was similar to the procedure used for household CPFV trips. As was the case for CPFV trips, the sample size for private boat trips was sufficiently large to generate separate frequency distributions for March-June and July-October. Separate distributions for different seasons were deemed desirable to reflect the effect of seasonal changes in weather and species availability on the areal distribution of fishing trips. Although this could not be done for shore-based trips because of insufficient sample size, seasonal variations in species availability also tend to be less pronounced in the shore modes.

The sample size used to determine the proportion of trips occurring in each subarea within a fishing county are reported in Tables 4.1-10a through 4.1-10d beneath the highest numbered fishing area within each county. For example, in Table 4.1-10a, the distribution of beach trips among the 7 fishing areas in San Diego county was based on a sample size of 25, which is reported under fishing area 7. Because the same frequency distribution was applied to all trips made in San Diego county, regardless of survey wave, the sample size is the same across survey waves. The same is

³ The one exception was Santa Barbara county, where the sample size was too small to allow separate frequency distributions for March-June and July-October.

true for Table 4.1-10b. In Tables 4.1-10c and 4.1-10d, the sample sizes associated with each county differ from March-April and May-June to July-August and September-October, reflecting the use of different frequency distributions for March-June and July-October.

Tables 4.1-10e and 4.1-10f differ from Tables 4.1-10c and 4.1-10d in that they pertain to the 39 fishing areas rather than the 22 areas of departure. Just as separate frequency distributions for area of departure were applied to trips made in March-June and July-October, separate distributions were also used for fishing areas. The procedure for estimating trips by fishing area, however, differed somewhat from the procedure used for areas of departure. The reason for this is that some fishing areas are fished by boats departing from several different counties.

Taking as an example CPFV trips made in March-April, the number of these trips made to fishing area j (T_j) was computed as

$$T_j = \sum_{k=1}^6 T_{jk} \quad j=1, \dots, 39 \quad [9]$$

where T_{jk} is the number of CPFV trips made to area j from county k in March-April. T_{jk} in turn was computed as

$$T_{jk} = T_k * P_{jk}, \quad [10]$$

where T_k is the total number of CPFV trips departing from county k in March-April (Table 4.1-8c) and P_{jk} is the proportion of trips departing from county k for which the fishing area was j . The P_{jk} 's were based on data provided by mail respondents whose most recent trip occurred in CPFV mode in March-June.

A similar procedure was used to estimate the distribution of private boat trips among the 39 fishing areas. The sample sizes used to compute the frequency distributions of trips across fishing areas were very close (± 5) to the sample sizes used to compute the frequency distributions for area of departure, as previously described for Tables 4.1-10c and 4.1-10d.

Table 4.1-10a describes the number of household trips in beach mode in each of the 22 inshore areas shown on the map in Appendix B. According to the table, area 10 accounted for over 55,000 household trips and area 11 for over 28,000 household trips. These two areas, which border densely populated Los Angeles county, accounted for almost 30% of all household trips made by southern California residents over the survey period. Areas 5 through 9 and area 12, each of which borders San Diego, Orange or Los Angeles county, were also popular fishing areas; about 16,000-26,000 household trips were made to each of these areas over the four survey waves.

Table 4.1-10b describes the number of household trips in pier mode in each of the 22 inshore areas. According to the table, about 60,000-70,000 household trips took place in each of areas 4, 9, 10 and 12 during the four survey waves. These areas, each of which border San Diego, Orange or Los Angeles county, accounted for over 50% of all household pier trips. Areas 7 and 11 were also popular, accounting for about 45,000 and 30,000 household trips respectively over the survey period.

Table 4.1-10c describes the number of household trips made from CPFV's departing from each of the 22 inshore areas. Over 240,000 household trips departed from area 10 (in Los Angeles county) and almost 160,000 household trips departed from area 2 (in San Diego county) over the survey period. These two areas accounted for almost 50% of all household trips made from CPFV's in southern California. Areas 8 and 9 (in Orange county) were also popular departure points, accounting for over 75,000 household trips each. The most popular port of departure in areas north of Los Angeles county was area 14 (Port Hueneme in Ventura county).

Table 4.1-10d describes the number of household trips made from private boat in each of the four survey waves by area of departure. Area 10 alone accounted for more than 20% of all private boat household trips made during the survey period (240,000 household trips). Areas 2 and 9 accounted for about 150,000 household trips each, areas 8 and 12 for about 100,000 household trips each, and areas 3, 7 and 14 for about 50,000 household trips each. Each of the aforementioned areas (with the exception of area 14) is located in San Diego, Orange or Los Angeles county.

Table 4.1-10e describes the number of CPFV household trips made in each of the four survey waves to the 39 fishing areas described in Appendix B. The most popular fishing areas were 26 (Santa Catalina Island) and 31 (offshore from Orange and Los Angeles counties). These two areas combined accounted for over 25% of all CPFV household trips made by southern California residents during the four survey waves. Area 30 (offshore from San Diego and Orange counties) and areas 38-39 (Mexican waters) were also popular fishing areas, each accounting for over 50,000 household trips.

Tables 4.1-10f describes the number of household trips made in private boat mode to the 39 fishing areas described in Appendix B. The most popular areas for private boat fishing were 26 (Santa Catalina Island)(almost 150,000 household trips) and areas 30 and 31 (about 100,000 household trips each). These three areas together accounted for about one-third of all private boat household trips by coastal county residents. About 50,000 household trips were made in each of areas 4, 9, 10, 23, 29, 32 and 38.

Tables 4.1-11a through 4.1-11f are similar to Tables 4.1-10a through 4.1-10f, except that they pertain to angler trips rather than household trips. Tables 4.1-11a through 4.1-11f were obtained by multiplying the number of household trips occurring in each area, fishing mode and survey wave (Tables 4.1-10a through 4.1-10f) by an appropriate estimate of the mean number of household members fishing per trip (Using information from mail respondents regarding their most recent trip, we estimated the mean number of household members who fished per beach trip to be 1.43 persons; values for the other modes were 1.86 persons per pier trip, 1.42 persons per CPFV trip and 1.53 persons per private boat trip). Thus for example, the number of angler beach trips made in area 1 in March-April was computed as $890 = 622 * 1.43$, where 622 is the number of household beach trips made in the same area and survey wave (Table 4.1-10a) and 1.43 is the mean number of household members who fished per beach trip.

4.1.2 Trips Made Without the Key Angler by Coastal County Residents During the Telephone Survey Period (Tables 4.1-12, 4.1-13)

As part of the telephone survey, the respondent (i.e., the key angler in the household) was asked to enumerate trips made by other household members in the previous two months in which the respondent did not participate. Table 4.1-12 describes the number of two-month angling households in each county of residence who fished without the key angler in each survey wave. The number of two-month angling households living in Los Angeles county who fished in March-April without the respondent was computed in the table as $6,327 = 72,728 * 0.087$, where 72,728 is the number of two-month angling households living in Los Angeles county in March-April (Table 4.1-6a) and 8.7% is the proportion of key anglers in these households who indicated that someone else in the household had fished at least once during the survey wave without them. Similar computations were made for other counties and survey waves in the table.

Because of the small number of two-month angling households in our sample who had fished without the key angler, we were unable to obtain county-level estimates of the average and total number of trips made by these households without the key angler. We were, however, able to obtain approximate non-county-specific estimates of the mean number of household and angler trips made without the respondent in each survey wave. In Table 4.1-13, the total number of household trips made in March-April without the respondent was computed as $23,855 = 15,490 * 1.54$, where 15,490 is the total number of two-month angling households who fished without the key angler in March-April (Table 4.1-12) and 1.54 is the mean number of household trips made without the key angler by these households. The total number of angler trips made in March-April without the key angler was computed as $36,498 = 23,855 * 1.53$, where 1.53 is

the mean number of household members who fished on household trips made without the key angler.

The proportion of total household trips made without the key angler in March-April was $5.3\% = 23,855/(426,226+23,855)$, where 426,226 is the number of household trips on which the key angler participated (Table 4.1-6a). The proportion of total angler trips made without the key angler was $5.3\% = 36,498/(650,028+36,498)$, where 650,028 is the number of angler trips made by and with the key angler (Table 4.1-7a). Similar computations were made for the other survey waves in the table. The small proportion of total trips made without the key angler suggests the important role of the key angler in setting the household's fishing patterns.

4.1.3 Annual Trips Made by Non-Coastal County Residents (Tables 4.1-14, 4.1-15, 4.1-16a, 4.1-17a)

4.1.3.1 Trips Made During Months Covered by the Telephone Survey

As indicated in Section 2.2.3, noncoastal county residents who fished in southern California during the four survey waves were identified by intercept interviews conducted by the California Department of Fish and Game in southern California as part of the MRFSS creel survey. Information from the creel survey regarding the proportion of anglers intercepted in each fishing mode, survey wave and fishing county who did not live in the eight-county telephone survey area was useful for estimating the number of trips made during the telephone survey period by these noncoastal county residents. Table 4.1-14 indicates that these proportions tended to be modest (0.0%-15.8%) for most modes, survey waves and fishing counties, with the following exceptions:

- 1) Approximately one-third of the CPFV trips made in San Diego county during the survey waves March-April, May-June and July-August were made by noncoastal county residents.

- 2) Significant proportions of fishing trips made in San Luis Obispo county in all modes and survey waves were made by noncoastal county residents.

Table 4.1-16a describes the number of household trips made in southern California in 1989 by noncoastal county residents, by fishing county, mode and time of year. The number of beach trips made by these individuals in Los Angeles county in March-April was computed as follows:

- 1) The total number of household trips made to Los Angeles beaches by both coastal and noncoastal county residents was computed as $27,925 = 27,813/(1-0.004)$, where 27,813 is the number of such trips made by coastal county residents (Table 4.1-8a) and 0.4% is the

proportion of total trips to Los Angeles beaches made by noncoastal county residents (Table 4.1-14).

2) The number of household trips by noncoastal county residents in Los Angeles county in March-April was computed as $112 = 27,925 - 27,813$.

Estimates for most of the fishing counties and modes were similarly generated for each survey wave on the basis of information contained in Tables 4.1-8a through 4.1-8d and Table 4.1-14. The few exceptions to this are described next.

As indicated in Section 2.2.1.1, the MRFSS covers only trips made in U.S. waters, so that the proportions of total CPFV and private boat trips made by noncoastal county residents, as estimated with MRFSS data, also pertain to trips made in U.S. waters. Thus the procedure described above for estimating trips made by noncoastal county residents was modified somewhat for San Diego and Orange counties, which serve as points of departure for virtually all boat-based trips departing from U.S. ports to fish in Mexican waters. The modified procedure utilized Table 4.1-15, which describes for each survey wave the number of household and angler trips made by coastal county residents from CPFV's and private boats departing from San Diego and Orange counties to fish in Mexican waters.⁴

The procedure, as it was applied to CPFV household trips in San Diego, was as follows:

1) According to Table 4.1-8c, 36,128 household trips were made by coastal county residents in March-April from CPFV's departing from San Diego county. We estimated the number of these trips destined for U.S. rather than Mexican waters to be $23,098 = 36,128 - 13,030$, where 13,030 is the number of trips destined for Mexican waters (Table 4.1-15).

⁴ As indicated in Section 4.1.1.5, we estimated the total number of partyboat and private boat trips made to each of the 39 designated fishing areas by: 1) estimating the number of trips departing from each of the six fishing counties to each of the 39 areas, and 2) summing the results across fishing counties to obtain the total number of trips in each area. The results of the second step were previously reported in Tables 4.1-10e, 4.1-10f, 4.1-11e and 4.1-11f. The results of the first step as they pertain to Mexican waters (areas 38 and 39 on the map in Appendix B) are reported in Table 4.1-15.

2) We computed the number of household CPFV trips made in March-April by noncoastal county residents as $9,899 = 23,098 / (1 - 0.300) - 23,098$, where 23,098 is the number of household CPFV trips made by coastal county residents during March-April in U.S. waters (as calculated in Step 1 and 30.0% is the proportion of CPFV trips in San Diego county made by noncoastal county residents (Table 4.1-14).

The two-step procedure described above was also applied to private boat trips departing from San Diego and Orange counties using results from Tables 4.1-8d, 4.1-14 and 4.1-15. The estimates of noncoastal participation generated by this procedure do not take into account trips made by noncoastal county residents to Mexican waters.

4.1.3.2 Trips Made During Months Not Covered by the Telephone Survey

Unpublished statistics from the 1989 MRFSS survey indicate that the proportions of annual shore-based, CPFV and private boat trips made in southern California by noncoastal county residents during the off-season months (January-February and November-December) were 13.9%, 19.8% and 5.8% respectively. Using this information, we estimated the number of off-season beach trips to Los Angeles county by noncoastal county residents to be $284 = 1,763 / (1 - 0.139) - 1,763$, where $1,763 = 112 + 0 + 1,478 + 173$ is the number of trips by noncoastal county residents during March-October (Table 4.1-16a) and 13.9% is the aforementioned proportion of their total shore trips occurring in the off-season. This procedure was similarly applied to all six fishing counties and four modes. The off-season trip estimates are included in Table 4.1-16a along with trip estimates for the telephone survey period to yield estimates of annual fishing effort by noncoastal county residents.

Table 4.1-17a is similar to Table 4.1-16a, except that it pertains to angler trips rather than household trips. Table 4.1-17a was obtained by multiplying the number of household trips occurring in each fishing mode, county and time of year (Table 4.1-16a) by an appropriate estimate of the mean number of household members fishing per trip (Using information from mail respondents regarding their most recent trip, we estimated the mean number of household members who fished per beach trip to be 1.43 persons; values for the other modes were 1.86 persons per pier trip, 1.42 persons per CPFV trip and 1.53 persons per private boat trip). Thus for example, the number of angler beach trips reported for Los Angeles county in March-April in Table 4.1-17a was computed as $160 = 112 * 1.43$, where 112 is the number of household beach trips made in the same county and survey wave (Table 4.1-16a) and 1.43 is the mean number of household members who fished per beach trip.

4.1.4 Annual Trips Made by Coastal County Residents (Tables 4.1-16b, 4.1-17b)

Table 4.1-16b describes the total number of household trips made in 1989 by coastal county residents, by fishing county, fishing mode and time of year. The number of trips made in each fishing county during each of the four telephone survey waves are the same as those previously reported in Tables 4.1-8a through 4.1-8d. As indicated in Section 4.1.3, our data did not allow us to estimate the number of household trips made in the off-season, since those months were not covered in the telephone survey. Unpublished statistics from the 1989 MRFSS were again found to be helpful. According to the MRFSS, the proportions of annual shore, CPFV and private boat trips made by coastal county residents in the off-season months were 19.3%, 20.9% and 18.7% respectively. Using this information, the number of off-season beach trips made in Los Angeles county by coastal county residents was estimated as $23,549 = 98,467 / (1 - 0.193) - 98,467$, where 98,467 is the total number of such trips made by coastal county residents in March-October (Table 4.1-8e) and 19.3% is the aforementioned proportion of their total shore trips occurring in the off-season.

This procedure was similarly applied to all six fishing counties and four modes, with the following exceptions: For CPFV trips departing from San Diego county and private boat trips departing from San Diego and Orange counties, the procedure was modified slightly to reflect the fact (previously noted in Section 4.1.3) that the MRFSS concerns itself only with trips made in U.S. waters. Thus for example, we estimated the number of off-season CPFV trips in San Diego county as $34,408 = (262,722 - 132,500) / (1 - 0.209) - (262,722 - 132,500)$, where 262,722 is the total number of household CPFV trips made by coastal county residents in San Diego county during March-October (Table 4.1-8e), 132,500 is the number of these trips that were destined for Mexican waters (Table 4.1-15), and 20.9% is the aforementioned proportion of their CPFV trips in U.S. waters occurring in the off-season.

The number of off-season private boat trips departing from San Diego and Orange counties were also estimated with this modified procedure. Although the procedure did not allow us to count the number of off-season trips to Mexican waters, this was felt to be a minor omission. During the off-season months, CPFV operators in San Diego offer a limited number of trips to Mexican waters, preferring instead to focus on fishing in local waters and whale-watching excursions. The number of private boat trips departing from U.S. ports to fish in Mexican waters also tends to decline significantly during the off-season.

Table 4.1-17b is similar to Table 4.1-16b, except that it pertains to angler trips rather than household trips. Tables 4.1-17b was obtained by multiplying the number of household trips occurring in each fishing mode, county and time period (Table 4.1-

16b) by an appropriate estimate of the mean number of household members fishing per trip (Using information from mail respondents regarding their most recent trip, we estimated the mean number of household members who fished per beach trip to be 1.43 persons; values for the other modes were 1.86 persons per pier trip, 1.42 persons per CPFV trip and 1.53 persons per private boat trip). Thus for example, the number of angler beach trips reported for Los Angeles county in March-April in Table 4.1-17b was computed as $39,772 = 27,813 * 1.43$, where 27,813 is the number of household beach trips made in the same county and survey wave (Table 4.1-16b) and 1.43 is the mean number of household members who fished per beach trip.

4.1.5 Annual Trips Made by Coastal and Non-Coastal County Residents

4.1.5.1 Trips by County, Mode and Time of Year (Tables 4.1-16c, 4.1-17c, 4.1-18a to 4.1-18b)

Table 4.1-16c describes the number of household trips made in southern California in 1989 by fishing county, mode and time of year. The table includes trips made by both coastal and noncoastal county residents and was obtained by summing corresponding figures from Tables 4.1-16a and 4.1-16b. Table 4.1-17c was obtained by summing corresponding figures from Tables 4.1-17a and 4.1-17b; it is similar to Table 4.1-16c except that it pertains to angler trips rather than household trips.

Table 4.1-18a describes the total number of household trips made in southern California in 1989 by county of residence, fishing mode and time of year. The difference between this table and Table 4.1-16c is that it categorizes trips by county of residence rather than fishing county. The numbers of trips made in each of the four survey waves, as presented in Table 4.1-18a, were obtained by summing corresponding estimates of fishing effort by noncoastal (Table 4.1-16a) and coastal (Tables 4.1-6a through 4.1-6d) county residents. The numbers of off-season trips in each mode were obtained by summing fishing effort by noncoastal (Table 4.1-16a) and coastal county residents.

The number of off-season trips made in each mode by coastal county residents was estimated by the following procedure: Unpublished information from the MRFSS indicating that the proportions of total shore, CPFV and private boat trips made by coastal county residents in the off-season months were 19.3%, 20.9% and 18.7% respectively. Using this information, we estimated the number of off-season beach trips made by Los Angeles county residents as $23,300 = 97,424 / (1 - 0.193) - 97,424$, where 97,424 is the total number of such trips made in March-October (Table 4.1-6e) and 19.3% is the aforementioned proportion of total shore-based trips occurring in the off-season. This procedure was similarly used to estimate the number of off-season beach and pier trips associated with each of the eight counties of residence.

For CPFV and private boat trips, the procedure was modified slightly to reflect the fact (previously noted in Section 4.1.3) that the MRFSS does not cover trips made in Mexican waters.

1) Table 4.1-15 describes the number of CPFV and private boat trips made by coastal county residents to Mexican waters. In order to distribute these trips by county of residence, we assumed that trips to Mexican waters followed the same distribution among counties of residence as trips in general, as indicated in Table 4.1-8e. For example, Table 4.1-8e indicates that Los Angeles county residents made 23.2% or 60,921 of the 262,722 CPFV trips that departed from San Diego county during March-October. We thus assumed that 23.2% or 30,740 of the 132,500 household CPFV trips made to Mexican waters during March-October (Table 4.1-15) were made by Los Angeles county residents. Using this information we estimated the number of off-season CPFV trips by Los Angeles county residents as $34,408 = (390,677 - 30,740)/(1 - 0.209) - (390,677 - 30,740)$, where 390,677 is the total number of household CPFV trips made by Los Angeles county residents during March-October (Table 4.1-6e), 30,740 is the number of these trips destined for Mexican waters, and 20.9% is the aforementioned proportion of CPFV trips in U.S. waters occurring in the off-season.

2) Table 4.1-8e indicates that Los Angeles county residents made 4.7% or 26,661 = 15,358 + 11,303 of the 567,640 = 271,875 + 295,764 private boat trips that departed from San Diego and Orange counties during March-October. Assuming that 4.7% or 3,714 of the 79,017 household private boat trips made to Mexican waters during March-October (Table 4.1-15) were made by Los Angeles county residents, we estimated the number of off-season private boat trips by Los Angeles county residents as $83,108 = (365,032 - 3,714)/(1 - 0.187) - (365,032 - 3,714)$, where 365,032 is the total number of household private boat trips made by Los Angeles county residents during March-October (Table 4.1-6e), 3,714 is the number of these trips that were destined for Mexican waters, and 18.7% is the aforementioned proportion of private boat trips in U.S. waters occurring in the off-season.

The procedures used to estimate the number of off-season CPFV and private boat trips by Los Angeles county residents were similarly applied to the other seven counties of residence.

In 1989, 5.5 million angler trips were made in southern California by coastal and noncoastal county anglers (Table 4.1-17c): 11% from beaches, 22% from piers, 30% from CPFV's and 37% from private boats. For the 5.1 million angler trips made by coastal county residents,⁵ the mode distribution was 10% beach, 22% pier, 29% CPFV and 39% private boat (Table 4.1-17b). For the 0.4 million angler trips made by noncoastal county residents, the distribution was 13% beach, 21% pier, 49% CPFV and 17% private boat (Table 4.1-17a).

Two-thirds of all beach trips, 80% of all pier trips and over 85% of all CPFV and private boat trips occurred in Los Angeles, Orange and San Diego counties. Of these three counties, Los Angeles accounted for the largest share of private boat trips (with San Diego and Orange close behind) and beach trips. Roughly equal numbers of pier and CPFV trips occur in Los Angeles and San Diego. Of the three northernmost counties (San Luis Obispo, Santa Barbara, Ventura), San Luis Obispo accounted for the largest share of beach and pier trips while Ventura accounted for the largest share of CPFV and private boat trips (Tables 4.1-16c and 4.1-17c).

4.1.5.2 CPFV Trips in San Diego County (Table 4.1-19)

Relative to other counties, San Diego draws a disproportionate number of CPFV passengers from outside the county (Table 4.1-14). Table 4.1-19 describes the number of household and angler trips made in 1989 from San Diego CPFV's by San Diego county residents, other coastal county residents and noncoastal county residents. Given that San Diego county residents made all their CPFV trips during the four survey waves in San Diego county (Tables 4.1-8e and 4.1-9e), we assumed that this same tendency also applied to the off-season months. On this basis all of the CPFV trips made by San Diego county residents in 1989 (156,109 household trips according to Table 4.1-18a and 221,675 angler trips according to Table 4.1-18b) were assumed to have been made in San Diego county. The number of household and angler trips by noncoastal county residents on San Diego CPFV's were obtained from Table 4.1-16a (62,658 household trips) and Table 4.1-17a (88,975 angler trips). The number of household trips made by coastal county residents living outside San Diego was estimated by subtracting the number made by

⁵ The annual number of household trips made by coastal county residents in 1989 was 3.3 million according to Table 4.1-16b (based on two-month recall) and 4.2 million according to Table 4.1-3 (based on twelve-month recall). Given that detailed recall of fishing trips tends to deteriorate significantly when the recall period exceeds two months (Hyatt and Worrall 1977), we consider 3.3 million household trips to be the more definitive estimate of annual fishing effort by coastal county residents.

San Diego county residents from the number made by all coastal and noncoastal county residents (297,130 household trips according to Table 4.1-16b and 421,924 angler trips according to Table 4.1-17b).

San Diego CPFV operators draw a large proportion of their clientele from outside the county. According to Table 4.1-19, 43% of their passengers in 1989 originated from San Diego county, 39% from other coastal counties and 17% from noncoastal counties.

4.1.6 Comparison of Survey Results Regarding Fishing Effort with Results from Other Data Sources

4.1.6.1 CPFV Logbook Program (Table 4.1-20)

The California Department of Fish and Game routinely obtains estimates of CPFV fishing effort and catch by species from CPFV logbooks. Although not all CPFV operators participate in the logbook program, the logbook data provide useful information regarding the distribution of CPFV fishing effort across counties that are realistic to the extent that logbook participation rates are similar across counties. Table 4.1-20 compares 1989 logbook estimates of the distribution of angler trips by county of departure with our estimates (Table 4.1-17c). Our estimates are four percentage points higher for Orange county and four percentage points lower for San Luis Obispo county than the logbook estimates, but the two data distributions are otherwise virtually identical.

4.1.6.2 Marine Recreational Fishery Statistics Survey (Table 4.1-21)

Table 4.1-21 compares estimates of fishing effort in southern California in 1989 from our survey and the MRFSS. As indicated in Section 2.2.1.1, the MRFSS summary statistics: 1) pertain to southern California as a whole, 2) measure effort in terms of angler trips, 3) combine beach and pier trips into a single "shore" mode, and 4) include CPFV and private boat trips destined for U.S. but not Mexican waters. For purposes of the table we obtained comparable estimates of fishing effort by: 1) summing the number of angler trips in beach and pier modes in southern California (Table 4.1-17c) into a single estimate of annual shore effort, and 2) subtracting the annual number of CPFV and private boat angler trips departing from southern California to fish in Mexican waters (Table 4.1-15) from the annual number of CPFV and private angler trips departing from southern California (Table 4.1-17c).

Table 4.1-21 indicates that our estimate of shore fishing effort is 4% lower than the MRFSS estimate, while our estimates of CPFV and private boat effort are 29% and 17% higher than the respective MRFSS estimates. Both surveys covered the same eight southern California counties in the telephone canvass and both used two-month survey waves and two-month recall. The protocol used by telephone interviewers to elicit trip information (described in Section 2.2.1 for our survey) and the procedure for accommodating

outliers (described in Section 4.1.1.3 for our survey) differed somewhat between the two surveys. However the extent to which the differences indicated in Table 4.1-21 can be attributed to: 1) methodological differences between the two surveys or 2) the statistical variation that is normally present between samples is difficult to ascertain and beyond the scope of this report.

4.2 Trip Characteristics

Mail respondents were asked to provide selected details of their most recent fishing trip. Tables 4.2-1 through 4.2-7 summarize trip information regarding target species, fishing success, bait used, and motivation for trip.

4.2.1 Target Species (Tables 4.2-1, 4.2-2a to 4.2-2b)

Mail respondents were asked to identify the target species on their most recent fishing trip by circling one or more of the following categories: albacore/tuna, marlin/swordfish, bass/bonito/barracuda, yellowtail, rockfish/lingcod, shark, halibut/other flatfish, no particular species, or other. Those who circled "other" were also provided the opportunity to write in the name(s) of these other species. Tables 4.2-1, 4.2-2a and 4.2-2b describe the proportion of trips in each fishing mode targeted at each species category. It should be noted that the counties in the tables represent counties where the fishing occurred and not the respondent's county of residence. Also, the percentages assigned to each target species within each fishing county do not necessarily sum to one, since some respondents designated more than one target species.

Table 4.2-1 describes the proportion of trips in beach and pier modes targeted at bass/bonito/barracuda (denoted the 3B's), rockfish/lingcod, shark, halibut/other flatfish, and no particular species (denoted "Any Fish" in the table). Albacore/tuna, marlin/swordfish and yellowtail are not customarily targeted in the shore modes, and the proportions of respondents who circled these species categories were too low to warrant inclusion in the table. A significant number of respondents whose most recent trip was in beach mode reported targeting species other than those listed in the questionnaire. The two major write-in candidates were croaker (including corbina) and perch. Rather than lumping these species into the "other" category, the table treats each as a distinct species category. For pier trips, the "other" category was not dominated by any particular species, so the proportion reporting "other" is not broken down by species.

Although the popularity of some target species with shore anglers may vary seasonally, sample sizes were too small to allow separate estimates by survey wave. Even aggregating across survey waves, it was necessary to group beach trips in Orange and Los

Angeles counties together because of the small sample sizes (n=16 and n=8 respectively).

According to Table 4.2-1, the proportion of beach trips targeted at no particular species was highest in San Diego county (48.0%) and gradually declined moving northward to San Luis Obispo county (10.8%). The proportions of trips targeted at bass/bonito/barracuda and croaker were higher in the southernmost counties (San Diego, Orange and Los Angeles), while the proportions targeted at rockfish/lingcod, shark, and halibut/other flatfish tended to be higher in the northernmost counties (Ventura, Santa Barbara and San Luis Obispo). These geographic differences reflected variations in the geographic distribution of fish species.

According to Table 4.2-1, approximately one-fourth to one-half of all pier trips were not targeted at any particular species. A significant proportion of trips were targeted at bass/bonito/barracuda and halibut/other flatfish, and lesser proportions were targeted at rockfish/lingcod and shark.

Tables 4.2-2a and 4.2-2b describe the proportion of trips in CPFV and private boat modes targeted at various species. For CPFV trips, sample sizes were sufficiently large to allow separate breakdowns for March-April, May-June, July-August and September-October for San Diego county, and separate breakdowns for March-June and July-September for Orange, Los Angeles, Ventura and San Luis Obispo counties. The sample size for Santa Barbara county was too small to allow any breakdown by season. For private boat trips, sample sizes for all fishing counties were sufficiently large to allow separate breakdowns for March-June and July-October.

Table 4.2-2a illustrates geographic and seasonal differences in species targeted by CPFV anglers. CPFV trips in San Luis Obispo county were targeted almost exclusively on rockfish/lingcod and halibut/other flatfish, while a greater diversity of species were targeted in the other five counties. For instance, albacore/tuna were targeted in San Diego, and yellowtail was targeted in San Diego, Orange and Los Angeles counties. Bass/bonito/barracuda were important target species in all counties except for San Luis Obispo.

The proportions targeting albacore and yellowtail in San Diego increased from spring to summer, reflecting the seasonal availability of these species. The decline in the proportion targeting halibut and rockfish/lingcod from spring to summer reflected both a diversion of fishing effort to albacore and yellowtail in the summer months and a seasonal change in halibut and rockfish availability.

Table 4.2-2b illustrates geographic and seasonal differences in species availability to private boat anglers. Private boat trips out of San Luis Obispo were targeted almost exclusively on rockfish/lingcod, halibut/other flatfish, and "other" species, the most common write-in candidate for "other" being salmon. Yellowtail was a popular target species in San Diego, Orange and Los Angeles counties, while albacore/tuna were targeted largely in San Diego and Los Angeles counties. Halibut/other flatfish were targeted in all six counties, and bass/bonito/barracuda were popular targets in all counties except San Luis Obispo. A substantial proportion of trips made in the summer months from Orange and Los Angeles counties were targeted at marlin/swordfish.

The seasonal changes in targeting behavior described in this section pertain to 1989, the year of the survey. Year-to-year variations in targeting behavior can be expected, since availability of some species varies annually as well as seasonally.

4.2.2 Catch and Keep Statistics (Tables 4.2-3, 4.2-4)

Mail respondents were asked to describe, by species category, the number of fish that they caught and the number of fish caught that they actually kept on their most recent fishing trip. Table 4.2-3 describes the proportion of trips made in each fishing mode for which the respondent reported catching any fish and keeping any fish. Catch and keep proportions for beach mode (58.0% and 40.7% respectively) were similar to those for pier mode (55.2% and 36.5% respectively). Catch and keep proportions were significantly higher for private boat mode (76.6% and 59.4% respectively) and highest for CPFV mode (81.1% and 71.2% respectively).

Table 4.2-4 is a more detailed version of Table 4.2-3 in that it describes the proportion of trips on which the respondent reported catching and keeping any fish and catching and keeping the species targeted. It provides catch and keep proportions for each of the major target species in each fishing mode. For example, for beach trips targeted at bass/bonito/barracuda, 64.2% reported catching and 36.8% reported keeping fish (not necessarily bass/bonito/barracuda), while 42.1% reported catching and 21.1% reported keeping their target species (bass/bonito/barracuda).

For trips made in beach and pier modes, catch and keep proportions were highest for trips targeted at "other" species. As indicated in Section 4.2.1, "other" target species consisted largely of perch and croaker in the case of beach trips but were not dominated by any particular species in the case of pier trips. The lowest catch and keep proportions in both beach and pier modes were experienced by anglers who did not target any particular species. These anglers may have been less skilled and/or less interested in catching fish than those who had a specific target species in mind.

For CPFV trips, catch and keep proportions were lowest for trips targeted at shark. For trips targeted at other major target species, catch proportions were 82.9%-87.2% and keep proportions were 71.4%-75.6%. Catch and keep proportions for the target species were highest for trips targeted on bass/bonito/barracuda or rockfish/lingcod, lower for trips targeted on albacore/tuna or yellowtail, and lowest for trips targeted on shark or halibut/other flatfish. It should be noted that the target species pertain to the species targeted by the angler, which may or may not coincide with what the CPFV operator was targeting.

For private boat trips, catch and keep proportions for the target species were lowest for trips targeted on albacore/tuna or marlin/swordfish. When the target species was albacore/tuna, bass/bonito/barracuda, yellowtail, or rockfish/lingcod, catch and keep proportions for the target species were higher for CPFV trips than private boat trips. The reverse was true for trips targeted at shark or halibut/other flatfish.

4.2.3 Bait Usage (Tables 4.2-5, 4.2-6a to 4.2-6b)

Mail respondents were asked to identify the type of bait used on their most recent fishing trip from among the following choices: anchovy, squid, mackerel, jack mackerel, sardine, other fish and artificial lures. Each fish species used as bait was further categorized as live or dead. Table 4.2-5 describes the proportion of trips in each mode that used each of the various bait types. Tables 4.2-6a and 4.2-6b describe the use of each bait type for selected target species in CPFV and private boat modes. It should be noted that the proportion of trips using live anchovy and the proportion using dead anchovy do not necessarily sum to the proportion using anchovy, since some respondents reported using both live and dead anchovy as bait on their most recent trip; the same applies to the other bait species. It should also be noted that the proportions associated with the respective bait species do not necessarily sum to 100.0%, since some respondents reported using more than one bait species on their most recent trip.

According to Table 4.2-5, dead anchovy, dead squid, and live and dead bait of other (unspecified) species were the most popular fish baits in beach mode. For pier trips, the most popular fish baits were dead anchovy, squid and mackerel. CPFV anglers relied largely on live anchovy and dead squid, while private boaters relied on anchovy (live and dead) and dead squid. Artificial lures were used on a large proportion (27.0%-50.4%) of trips in all fishing modes.

According to Table 4.2-6a live anchovy was used extensively as bait on CPFV trips, regardless of target species. Dead squid was also a popular bait when targeting on bass/bonito/barracuda, rockfish/lingcod, and halibut/other flatfish. Live mackerel and live sardine were used on albacore/tuna trips, while squid and

mackerel were used on trips targeted at yellowtail and shark. Artificial lures were used on approximately half of all CPFV trips, regardless of target species.

According to Table 4.2-6b live anchovy was used extensively as bait on private boat trips, regardless of target species. Dead anchovy was also an important source of bait, particularly for trips targeted at rockfish/lingcod, shark, and halibut/other flatfish. Mackerel was commonly used as live bait on marlin/swordfish trips and as live and dead bait on shark trips. Squid was also an important source of bait for all target species and was more frequently used dead than alive. Artificial lures were used on approximately one-half to two-thirds of private boat trips.

4.2.4 Motivation for Fishing (Table 4.2-7)

Respondents were asked to indicate on a scale of 1 to 7 (1=Not at all important, 7=Very important) the importance of various factors in motivating them to make their most recent fishing trip. Table 4.2-7 describes the responses associated with trips made in each of the four fishing modes.

1) "Fishing gives me the opportunity to put food on the table."

The proportions of trips for which this factor had greater than average importance (5-7 on the scale of 1-7) were 12.4%, 11.5% and 13.0% respectively for beach, CPFV and private boat modes. The proportion was even lower for pier trips (6.5%).

2) "I enjoy the challenge of catching fish."

The proportion of respondents reporting that this factor had more than average importance was 82.4% for beach trips, 78.6% for pier trips, 83.2% for CPFV trips and 83.7% for private boat trips.

3) "A species that I particularly like to fish for was available at this time."

The proportion of respondents reporting that this factor had more than average importance was highest for CPFV (43.9%) and private boat (43.1%) trips, somewhat less for beach trips (31.0%), and lowest for pier trips (17.9%).

4) "A bait that I like to fish with was available at this time."

The proportion of respondents reporting that this factor had more than average importance was 14.0% for beach trips, 11.7% for pier trips, 19.2% for CPFV trips and 17.5% for private boat trips.

5) "Fishing gives me the opportunity to relax and 'get away from it all'."

A significant proportion of respondents reported that this factor had more than average importance (94.6% beach, 88.8% pier, 88.2% CPFV, 89.9% private boat).

6) "Fishing gives me the opportunity to do something with family and friends."

A significant proportion of respondents reported that this factor had more than average importance (77.9% beach, 85.0% pier, 83.4% CPFV, 86.9% private boat).

7) "I went fishing to please someone else."

This tended to be a minor motivating factor. The proportion reporting that it had more than average importance was 5.5% for beach trips, 17.2% for pier trips, 10.5% for CPFV trips and 8.3% for private boat trips.

The results indicate that respondents generally viewed fishing trips as opportunities to relax and socialize while enjoying the challenge of catching fish. Species availability was a more important motivating factor for boat-based than shore-based trips.

4.3 Angler Characteristics

Mail respondents were asked for demographic information regarding age, gender, ethnicity, employment status, income and household size. They were also asked questions regarding fishing ability, boat ownership, subscription to fishing magazines, membership in fishing organizations, and age when first fished. Characteristics of respondents and their households are described in Tables 4.3-1 through 4.3-5.

4.3.1 Angler Characteristics by County of Residence (Table 4.3-1)

Table 4.3-1 describes angler and household characteristics on the basis of county of residence. Some highlights of the table are as follows:

1) For all counties, the median age of the respondent (the key angler in the household) was 35-44 years.

2) The vast majority of respondents were male (88.4%-92.3%).

3) The proportion of respondents who were non-Hispanic White ranged from a low of 77.3% in Los Angeles to a high of 89.5% in San Luis Obispo. Reflecting its ethnic diversity, Los Angeles had the largest representation of Hispanics (10.8%) and Blacks

(6.3%) and the second-largest representation of Asians (5.1%). The largest representation of Asians was in San Diego county (5.4%).

4) About 66.5%-79.1% of the respondents worked more than 35 hours per week and 6.3%-15.1% were retired.

5) The proportion of respondents who had at least a four-year college degree ranged from a low of 22.2% in San Bernardino and noncoastal counties to a high of 34.7% in Orange county.

6) The proportion of respondents who described their fishing ability as greater than intermediate ranged from a low of 32.9% in Los Angeles county to a high of 46.0% in Orange county.

7) One-half to two-thirds of the respondents began fishing before they were 13 years of age except for anglers from noncoastal counties, of whom 34.9% reported fishing prior to their thirteenth birthday.

8) The median age of household members (including the respondent) was 25-34 years for all counties.

9) The median annual household income was \$50,000-60,000 in Orange county, \$30,000-40,000 in San Luis Obispo county, and \$40,000-50,000 in all other counties. The proportion of households with annual income greater than \$100,000 was highest in Orange (14.5%) and Los Angeles (11.9%) counties and lowest in San Luis Obispo (4.1%) and noncoastal (4.6%) counties.

10) Average household size (including the respondent) ranged from 2.6 to 3.0 persons per household.

11) The proportion of household members (including the respondent) who were male ranged from 60%-67%. The proportion who had ever fished was 78%-89% and the proportion of those who had ever fished who were male was 68%-75%.

12) About 54.4%-63.8% of all household members living in the coastal counties who had ever saltwater fished had their first fishing experience before they were 13 years of age. For those living in noncoastal counties, 40.7% began fishing before their thirteenth birthday.

13) The proportion of households who belonged to at least one organization pertaining to fishing, hunting or other wildlife-related activities ranged from a low of 8.9% in Los Angeles county to over 16% in San Luis Obispo and Ventura counties. The National Rifle Association and Ducks Unlimited were the organizations with the largest (though still modest) membership among angling households. Most of the other 100+ organizations identified by respondents consisted largely of local fishing and hunting clubs.

14) The proportion of households who subscribed to at least one magazine pertaining to fishing, hunting or other wildlife-related activities ranged from a low of 32.4% in Santa Barbara to a high of 44.9% in Orange. Of the 100+ magazines identified by respondents, the most popular included Western Outdoor News, Fishing and Hunting News, Saltwater Sportfishing, Field and Stream and California Angler. By far the most widely read magazine was Western Outdoor News, which was read by over 20% of the respondents in Los Angeles, Orange, Riverside, San Bernardino and Ventura counties and 11.6%-14.6% of the respondents in San Diego, San Luis Obispo, Santa Barbara and noncoastal counties.

4.3.2 Angler Characteristics by Predominant Mode of Fishing (Table 4.3-2)

Table 4.3-2 provides a demographic profile of respondents on the basis of their predominant mode of fishing. For purposes of the table, the predominant mode is defined as the mode in which the respondent made the most trips in the previous twelve months. According to the table:

1) For all modes, the median age of respondents was 35-44 years.

2) The proportion of respondents who were male was higher for the boat modes (92.5%-94.1%) than for the shore modes (82.0%-88.2%).

3) Non-Hispanic White respondents were represented more in the private boat mode (91.0%) than in the other three modes (82.0%-84.9%). The representation of Asians was highest in beach mode (6.2%) and lowest in private boat mode (1.0%). Hispanics had a higher representation in beach, pier and CPFV modes (7.8%-7.9%) than in private boat mode (5.0%). Blacks had the smallest representation in all modes.

4) Employment status did not seem to vary significantly among modes. The proportion of respondents employed at least 35 hours per week was 69.7%-75.6% and the proportion retired was 10.1%-11.5%.

5) The proportion of respondents who had at least a four-year college degree was lowest for pier mode (24.8%), highest for beach mode (35.5%), and about the same (26.6%-27.8%) for the two boat modes.

6) The average number of trips taken per year was lowest for CPFV mode (6.3 trips), highest for beach mode (16.4 trips), and about the same for pier and private boat modes (12.2-12.6 trips).

7) For all respondents who shared the same predominant mode, the proportion of trips made in the predominant mode ranged from 77.3% (pier) to 87.0% (private boat). Respondents tended to fish in their preferred mode almost to the exclusion of all other modes.

8) The proportion of respondents who described their fishing ability as greater than intermediate was highest for private boat mode (42.7%) and lowest for pier mode (35.8%).

9) Approximately 59.3%-61.6% of respondents whose predominant mode was beach, pier or private boat made their first fishing trip before they were 13 years of age. For those whose predominant mode was CPFV, the proportion was slightly lower (52.2%).

10) The median age of household members (including the respondent) was the same (25-34 years), regardless of the predominant mode of the respondent.

11) The median annual household income was \$30,000-40,000 for pier mode and \$40,000-50,000 for the other three modes. The proportion of households with annual income greater than \$100,000 was highest for beach (10.0%) and private boat (9.7%) modes and lowest for pier mode (4.4%).

12) Average household size (including the respondent) ranged from 2.8 to 3.0 persons per household.

13) The proportion of household members (including the respondent) who were male was 59%-65%. The proportion who had ever fished was 82%-89% and the proportion of those who had ever fished who were male was 64%-76%.

14) About 51.5% of respondents whose predominant mode was private boat owned a boat that could be used for saltwater fishing (The other 48.5% presumably fished on someone else's boat). A significant proportion of respondents associated with the other three modes (16.3%-26.7%) also owned a boat that could be (but was not necessarily) used for saltwater fishing.

15) Depending on mode, 54.6%-62.4% of all household members who had ever fished began fishing before they were 13 years of age.

4.3.3 Angler Characteristics by Ethnic Background of Respondent (Table 4.3-3)

Table 4.3-3 provides a demographic profile of respondents on the basis of their ethnic background. According to the table:

1) The median age of respondents was 25-34 years for Hispanics and 35-44 years for other ethnic groups.

2) The proportion of respondents who were male ranged from 78.7% for Asians to 100.0% for Blacks, with the rates for Hispanics and Whites being 92.2% and 91.0% respectively.

3) Employment status varied more among ethnic groups than among counties (Table 4.3-1) and fishing modes (Table 4.3-2). Hispanic respondents included a lower proportion of retired people (2.5%) than Asian (8.2%), Black (11.1%) and White (11.8%) respondents. Asian respondents included a significant proportion of students (12.2%).

4) The proportion of respondents who had at least a four-year college degree was lowest for Hispanics (14.4%), highest for Asians (39.6%), and approximately the same (22.2% and 27.7% respectively) for Blacks and Whites.

5) Asians made the fewest number of trips per year (6.3) and Whites the most (9.8).

6) The proportion of trips made in the two boat modes was lowest for Asians (40.5%) and Hispanics (46.4%), higher for Whites (67.3%), and highest for Blacks (84.4%). Asians made very few of their trips in private boat mode (6.8%), while Blacks and Whites made a plurality of their trips from private boats (47.6% and 40.0% respectively). Trips made by Hispanics were divided approximately equally among modes.

7) The proportion of respondents who described their fishing ability as greater than intermediate was highest for Blacks (40.7%) and Whites (40.2%) and lowest for Asians (29.2%) and Hispanics (22.2%).

8) For Asian, Black and Hispanic respondents, 48.1%-51.3% made their first saltwater fishing trip before they were 13 years of age. For White respondents, the proportion was somewhat higher (57.2%).

9) For all ethnic groups, the median age of household members (including the respondent) was 25-34 years.

10) The median annual household income was \$30,000-40,000 for Hispanics and \$40,000-50,000 for the other three ethnic groups. The proportion of households with annual income greater than \$100,000 was highest for Whites (8.6%) and lowest for Hispanics (1.8%).

11) Average household size (including the respondent) ranged from 2.8 to 3.5 persons.

12) The proportion of household members (including the respondent) who were male ranged from 62% to 71%. The proportion who had ever fished was 81%-85%. The proportion of those who had ever fished who were male was lowest for Asians (68%) and Whites (72%) and highest for Blacks and Hispanics (81% for both).

13) The rate of boat ownership varied significantly among ethnic groups: 4.1% for Asians, 11.1% for Blacks, 19.7% for Hispanics and 32.8% for Whites.

14) The proportion of household members who had ever fished who began fishing before they were 13 years of age was lowest for Blacks (50.0%) and highest for Hispanics (60.8%).

4.3.4 Characteristics of Boat Owners and Non-Boat Owners (Table 4.3-4)

Table 4.3-4 compares the demographics of boat owning and non-boat owning respondents and their households. According to the table:

1) The median age of both boat owning and non-boat owning respondents was 35-44 years.

2) The proportion of respondents who were male was higher for boat owners (95.5%) than non-boat owners (88.8%).

3) A larger proportion of Non-Hispanic Whites was found among boat owners (92.5%) than non-boat owners (82.5%). The reverse was true for other ethnic groups.

4) The proportion of respondents falling into the various employment categories did not vary much between boat owners and non-boat owners.

5) The proportion of respondents who had at least a four-year college degree was approximately equal for boat owners (27.8%) and non-boat owners (26.5%).

6) Boat owners made almost twice as many fishing trips per year (14.0 trips) as non-boat owners (7.7 trips).

7) Boat owners made over half of their fishing trips in private boat mode while non-boat owners divided their trips fairly evenly across modes.

8) A larger proportion of boat owners than non-boat owners (54.0% versus 32.5% respectively) described their fishing ability as greater than intermediate.

9) The proportion of respondents who made their first fishing trip before their thirteenth birthday was 66.7% for boat owners and 54.0% for non-boat owners.

10) The median age of household members (including the respondent) was 25-34 years for both boat owning and non-boat owning households.

11) The median annual household income was \$50,000-60,000 for boat owners and \$40,000-50,000 for non-boat owners. The proportion of households with annual income higher than \$100,000 was higher for boat owners (14.5%) than non-boat owners (5.4%).

12) Average household size was approximately the same for boat owners and non-boat owners (3.0 and 2.8 persons respectively).

13) The proportion of household members (including the respondent) who were male was 61% for boat owners and 64% for non-boat owners. The proportions of household members who had ever fished were 89% and 83% respectively and the proportions of those who had ever fished who were

male were 69% and 74% respectively for boat owners and non-boat owners.

14) The proportion of household members who had ever fished and who began fishing before they were 13 years of age was 64.6% for boat owning households and 56.0% for non-boat owning households.

4.3.5 Boat Ownership by Non-Angling and Angling Populations (Table 4.3-5)

Both angling and non-angling households contacted in the telephone survey were asked if they owned a boat that could be used for saltwater fishing and, if so, whether the boat was moored or launched. Table 4.3-5 summarizes the responses to those questions. The number of non-angling households is the difference between total households in each county (Table 4.1-1) and the number of angling households (Table 4.1-2). The number of non-angling boat owners was computed by multiplying the number of non-angling households by the proportion of non-angling telephone respondents who own a boat. The number of angling boat owners was similarly computed by multiplying the number of angling households by the proportion of twelve-month angling households contacted in the telephone survey who owned a boat.

Boat owners comprised a significantly larger fraction of angling households (20.5%-29.6%) than of non-angling households (2.4%- 4.0%). Because the number of non-angling households was so much larger than the number of angling households, however, the number of non-angling boat owners (160,035) was greater than the number of angling boat owners (108,746). Non-angling households were less likely to moor their boats than angling households if they lived in Riverside and San Bernardino counties, about equally likely if they lived in Los Angeles, Orange, San Diego and Ventura counties, and more likely if they lived in San Luis Obispo and Santa Barbara counties.

4.4 Expenditures on Fishing

Mail respondents were asked to provide information about annual household expenditures on boats, licenses and fishing gear. They were also asked to describe household expenditures associated with their most recent fishing trip. This section summarizes the expenditure data.

4.4.1 Boat-Related Expenditures (Table 4.4-1)

According to Table 4.4-1, the median length of boats owned by twelve-month angling households in Ventura county was 21-25 feet and 16-20 feet for all other counties. Mean boat length was greater than 22 feet in Orange, Los Angeles and Ventura counties

and less than 19 feet in Santa Barbara and San Luis Obispo counties.

The boat expenditure categories described in Table 4.4-1 include boat maintenance and repair, insurance, electronic equipment, slip rental, outboard motors and trailers, boat crew and other miscellaneous expenditures (but not boat mortgage expenses). Average annual expenditures ranged from approximately \$720 for San Luis Obispo to almost \$3,600 for Orange county.

Recognizing that boats can be used for a variety of leisure activities, we asked respondents to estimate the percent of time their boat was used for saltwater fishing. The percentages ranged from about 30% for boat owners from Los Angeles, Riverside and noncoastal counties to greater than 55% for boat owners from Orange and San Diego counties. We estimated annual boat expenditures attributable to saltwater fishing by multiplying total annual boat expenditures by the percent of time the boat was used for saltwater fishing. Annual expenditures attributable to saltwater fishing were approximately \$2,100 for Orange county boat owners, approximately \$1,000 for San Diego and Ventura boat owners, and less than \$700 for boat owners from other counties.

4.4.2 Expenditures on Licenses and Fishing Gear (Table 4.4-2)

Table 4.4-2 describes average annual expenditures on licenses and fishing gear by twelve-month angling households. Expenditures were highest for Orange county households (\$188.31) and lowest for households from noncoastal counties (\$76.67).

4.4.3 Trip-Related Expenditures (Table 4.4-3a to 4.4-3d)

Tables 4.4-3a through 4.4-3d describe average expenditures per household trip for trips made in beach, pier, CPFV and private boat modes. These figures represent expenses incurred by all household members during the mail respondent's most recent fishing trip. The reason that this information was requested on a household trip rather than an angler trip basis was that some costs (e.g., mileage costs, lodging, boat fuel for private boat trips) are difficult to allocate among household members.

The expenditure categories include tackle, bait, trip-specific licenses (as opposed to annual license fees), equipment rental and diving supplies. Also included are expenditures for food, beverage and lodging that would not have been incurred if the respondent had not gone fishing.⁶ For trips made in CPFV mode, passenger fees

⁶ Mail respondents were also asked to provide information on income foregone as a result of the fishing trip. However, since foregone income does not represent an out-of-pocket expenditure, it is not included in Tables 4.4-3a through 4.4-3d.

are included as a trip expenditure. For trips made in private boat mode, boat fuel is included as a trip expenditure.

Trip expenditures also include mileage costs, which were computed by multiplying average round trip travel distance attributable to fishing by \$0.20 per mile. The travel distance attributable to fishing was estimated as follows: For respondents who reported that their most recent trip was made in combination with other activities (such as business, visiting relatives, or other vacation activities), the travel distance was assumed to be the number of miles from where the respondent slept the night before he or she went fishing to the shore fishing or boat departure site. For respondents whose most recent trip was not made in combination with other activities, the travel distance was assumed to be the number of miles from the respondent's home to the shore fishing or boat departure site.

For beach and pier trips, mileage and food were the major cost items (Tables 4.4-3a and 4.4-3b). For CPFV trips, boat fees comprised about 50% of trip expenses, with mileage and food being of secondary importance (Table 4.4-3c). For private boat trips, boat fuel, mileage and food were the major cost items (Table 4.4-3d).

4.4.4 Total Annual Expenditures (Tables 4.4-4, 4.4-5)

Table 4.4-4 describes total annual fishing expenditures, by county of residence and expenditure category. For twelve-month angling households living in the coastal counties, expenditures in each category were computed as follows:

- 1) Annual expenditures on licenses and gear were computed by multiplying the number of twelve-month angling households in each county (Table 4.1-2) by average expenditures per household for the same county (Table 4.4-2).

- 2) Annual boat-related expenditures were estimated for each county by multiplying the number of twelve-month angling households who owned a boat that could be used for saltwater fishing (Table 4.3-5) by average annual boat-related expenditures attributable to saltwater fishing (Table 4.4-1).

- 3) Annual trip-related expenditures were computed for each fishing mode by multiplying the estimated number of household trips made in 1989 by residents of each county (Table 4.1-18a) by average expenditures per

household trip associated with the same mode and county (Tables 4.4-3a through 4.4-3d).

For twelve-month angling households who lived in noncoastal counties, total annual expenditures in each category were computed as follows:

1) As indicated in Section 2.2.3, potential respondents for our survey who lived outside the telephone survey area were recruited from the sample of anglers intercepted at southern California fishing sites in the MRFSS creel survey. In general, while intercept surveys may result in a random sample of fishing trips, they do not generate a random sample of anglers. The reason for this is that anglers who fish more frequently are likely to be over-represented in intercept samples. A bias-corrected estimate for the mean number of trips per year can be obtained from an intercept sample by using the following formula (Thomson, in press):

$$\bar{T} = \frac{\sum_i (1/T_i) T_i}{\sum_i (1/T_i)} = \frac{n}{\sum_i (1/T_i)}, \quad [11]$$

where T_i is the annual number of trips made by individual i and n is the sample size.

Using [11], we estimated the mean number of trips made in southern California by noncoastal county residents to be 1.62, based on a sample size of 105. We estimated the number of twelve-month angling households who fished in southern California but lived in noncoastal counties to be $165,362 = 267,886/1.62$, where 267,886 is the total number of household trips (all modes) made by these households (Table 4.1-18a). We then estimated total expenditures on fishing gear and licenses to be $\$12,678,305 = 165,362 * \76.67 , where $\$76.67$ is mean annual gear and license expenditures per angling household living in noncoastal counties (Table 4.4-2).

2) We estimated the number of twelve-month angling households living in noncoastal counties who owned a boat that could be used for saltwater fishing as $41,010 = 165,362 * 0.248$, where 24.8% is the proportion of these households interviewed in the telephone survey who were boat owners. We then estimated total annual boat-related expenditures for these households to be $\$18,967,125 = 41,010 * \462.50 , where $\$462.50$ is mean annual boat-related expenditures for these households (Table 4.4-1).

3) Annual trip-related expenditures were computed for each fishing mode by multiplying the estimated number of household trips made in each mode in 1989 by noncoastal county residents (Table 4.1-18a) by average expenditures per household trip associated with the same mode (Tables 4.4-3a through 4.4-3d).

According to Table 4.4-4, an estimated \$536 million was spent on saltwater fishing in southern California in 1989, about 16% on licenses and gear, 22% on boat-related expenses and 61% on trip-related expenses. Los Angeles county residents accounted for 37% of these total expenditures, Orange county 22%, San Diego county 14%, noncoastal county residents 12% and all other counties (Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura) 15%. Of the \$328 million spent on trip-related expenses, the distribution among fishing modes was 5% beach, 9% pier, 51% CPFV and 35% private boat. Los Angeles county residents spent more than residents of any other county on fishing licenses and gear and on pier, CPFV and private boat fishing. San Diego county residents spent the most on beach fishing and Orange county residents spent the most on boat-related expenditures.

Table 4.4-5 describes the distribution of trip-related expenditures (totaling \$328 million in 1989 according to Table 4.4-4) by fishing county. Expenditures associated with each fishing county were estimated by allocating the expenditures associated with each county of residence (Table 4.4-4) according to the distribution of trips from each county of residence to each of the six fishing counties (Table 4.1-8e). Thus for example, we estimated expenditures for beach trips by Los Angeles county residents in Los Angeles county to be $\$2,918,203 = \$3,275,200 * 0.891$, where $\$3,275,200$ represents total expenditures on beach trips by Los Angeles county residents (Table 4.4-4) and $89.1\% = 86,798/97,423$ is the proportion of total beach trips made by Los Angeles county residents in Los Angeles county (Table 4.1-8e). Similar calculations were done for all combinations of residence and fishing counties and the results summed across counties of residence to yield expenditures on beach trips by fishing county. This procedure was similarly applied to expenditures associated with the other three fishing modes.

According to Table 4.4-5, 37% of annual trip-related expenditures occurred in Los Angeles county, 25% in San Diego county, 23% in Orange county and 15% in the three northernmost counties (San Luis Obispo, Santa Barbara and Ventura). The counties accounting for most of the expenditures in each fishing mode (from highest to lowest) were San Diego, Los Angeles and San Luis Obispo for beach trips; Los Angeles, San Diego and Orange for pier and CPFV trips; and Los Angeles, Orange and San Diego for private boat trips.

5.0 Contingent Valuation

The economic value that people place on a good or service can be measured by the maximum amount that they are willing to pay for it. Economic value has two components: 1) what a person actually pays for a good, and 2) the benefit over and above actual expenditures that the person obtains from the good. The second component, which can be measured in monetary terms like the first component, is sometimes referred to as "net benefit" or "net willingness-to-pay". The economic value of a good varies among individuals, depending on their tastes and preferences and how much money they have available to spend.

Although catching fish is not the only motivation for fishing (see Section 4.2.4), an increase in the availability of a prized species of fish is likely to enhance the fishing experience for at least some anglers. Even if the enhancement is provided at no additional cost to anglers, the benefits that they obtain from it can still be measured according to the economic yardstick of value described above by an increase in net benefits (the "return" that the angler gets over and above actual expenditures).

5.1 Methodology for Contingent Valuation

One method commonly used by resource economists to measure the change in net benefits associated with an improvement in the provision of a good or service is the contingent valuation method (hereafter referred to as CVM). CVM involves the use of survey questions to directly elicit the net benefit that respondents would obtain from the improvement being considered. This net benefit is measured in dollar terms and is intended to reflect the respondent's preferences regarding the improvement.

In general CVM surveys consist of two components: 1) a scenario describing the nature of the improvement being considered, and 2) appropriate questions which elicit respondents' net willingness-to-pay for the improvement. The scenario describes the status quo, the change from the status quo that the respondent is being asked to value, and the means by which the respondent can expect to pay for the improvement (i.e., the payment vehicle). It is important in CVM that the scenario be understandable and plausible to the respondent. Thus CVM attempts to measure net benefits (that portion of economic value for which individuals do not pay) by posing hypothetical questions which, in order to be plausible, are stated in terms of actual payments.

In this survey, respondents were asked four different sets of contingent valuation questions pertaining to four target species: California halibut, yellowtail, white sea bass, and bass caught from piers. Each of the four scenarios described the current expected catch rate of the subject species and the increase in the

rate that the respondent was being asked to value.⁷ For the halibut, yellowtail and white sea bass scenarios, the payment vehicle was the ocean enhancement sportfishing stamp. For the pier fishing scenario, the payment vehicle was a pier admission fee.

The elicitation method used in the survey was the so-called "take it or leave it" approach, in which respondents were asked if they were willing to pay a designated dollar amount for the enhancement described in the scenario. This approach is less burdensome than so-called "bidding game" or "payment card" approaches, which require respondents to more specifically pinpoint their net willingness-to-pay values. The "take it or leave it" approach is also less informative than these other approaches, since it tells us only whether or not a respondent is willing to pay a designated amount for an enhancement; it does not tell us how much more or less than the designated amount the respondent is willing to pay.

The "take it or leave it" approach requires that the dollar amount designated in the willingness-to-pay question be deliberately varied among respondents. Given a sufficiently large sample and a sufficiently wide range of dollar values, mean or median willingness-to-pay can be estimated by fitting a logistic or probit regression curve to the proportion of respondents willing to pay each designated amount (Mitchell and Carson, 1989). Analysis of this type will be undertaken in future papers. This report, however, is concerned with descriptive rather than analytical aspects of the CVM data.

In this survey, the dollar amounts designated for each of the four contingent valuation scenarios were obtained as follows: As part of its mail survey pretest, HBRS tested a wide range of dollar values for the purpose of pinpointing a range that captured what most anglers would be willing to pay for each of the four enhancements. Pretest results indicated that most anglers would be willing to pay an amount less than or equal to \$25 for the proposed enhancements of California halibut and white sea bass, an amount less than or equal to \$35 for the yellowtail enhancement, and an amount less than or equal to \$30 for the enhancement to bass

⁷ Other techniques are available that estimate net benefits by drawing inferences from angler behavior rather than relying on angler responses to hypothetical questions. These so-called "revealed preference" models involve the use of cross-sectional or time-series data on participation and catch rates to estimate the angler response to catch enhancements. The enhancements that we were interested in valuing, however, were significantly higher than anglers' normal range of experience and not reflected in existing data.

fishing from piers. Based on these results, HBRS randomly assigned a dollar value from \$1 to \$25 to Questions 38 and 44 of the mail questionnaire (Would you be willing to pay an extra \$_____per year for your ocean enhancement sportfishing stamp if it would increase the catch rate as described above?). Similar random assignments from \$1 to \$35 and from \$1 to \$30 were made to Questions 41 and 47 respectively.

5.2 Results of Contingent Valuation (Tables 5.2-1a to 5.2-1d, 5.2-2a to 5.2-2d, 5.2-3, 5.2-4a to 5.2-4d)

Table 5.2-1a describes the proportion of respondents who were willing to pay for the enhancement to halibut fishing, according to the dollar amount that they were asked to pay and their county of residence. Thus for instance, of the 44 Los Angeles residents who provided a definitive response (Yes or No) when asked if they were willing to pay \$1, \$2, \$3, \$4 or \$5 for the proposed enhancement in halibut fishing, 68.2% responded Yes. Tables 5.2-1b through 5.2-1d provide similar information regarding enhancement of yellowtail, white sea bass, and pier fishing, respectively. All four tables show a general though not uniformly consistent tendency for the proportion responding Yes to decline as the dollar amounts increased.

Table 5.2-2a describes, separately for those who were and were not willing to pay the amount designated in their questionnaire, the proportion of respondents who fished for halibut and the proportion who would increase their halibut fishing if the enhancement were to actually occur. Tables 5.2-2b through 5.2-2d respectively provide similar information for the enhancement in yellowtail, white sea bass, and pier fishing. The results of all four tables indicate that respondents who were willing to pay for the enhancement were more likely to:

- 1) currently fish for the species, and
- 2) expect to increase their fishing for the species as a result of the enhancement

than respondents who were not willing to pay.

An important aspect of validating results from a contingent valuation survey is determining the extent to which responses reflect respondents' true valuations of the scenario(s) presented or are affected by extraneous factors. For instance:

- 1) The payment vehicle used in the halibut, yellowtail and white sea bass scenarios was an increase in the ocean enhancement sportfishing stamp. The payment vehicle used in the pier fishing scenario was a pier admission fee. Both these payment vehicles were intended to lend realism and plausibility to the scenarios

presented. They might have also lead some respondents to erroneously conclude that their responses would be used as the basis for an increase in license fees or establishment of pier admission fees.

2) The increases in catch rate described in each of the scenarios were significantly higher than the levels normally experienced by anglers. Respondents might have been unwilling to express a positive value for these changes if they were skeptical that they could be achieved.

In order to facilitate our understanding of the contingent valuation responses, we asked respondents to indicate on a scale of 1 to 4 (1=Definitely true, 2=Probably true, 3=Probably false, 4=Definitely false) the effect of four different factors on their responses to the contingent valuation questions. The results, which are reported in Table 5.2-3, can be summarized as follows:

1) "My main concern was that the ocean enhancement sportfishing stamp may be increased."
Depending on the county, 51.5%-63.7% of respondents felt that this was definitely or probably true.

2) "I just don't want to have to pay more to fish, regardless of the conditions."
Again depending on county, 42.4%-59.8% felt that this was definitely or probably true.

3) "My responses reflected the fact that I didn't really think the improved catch rate could have been achieved."
About 46.8%-60.3% of respondents living in the eight coastal counties felt that this statement was definitely or probably true. Respondents living in noncoastal counties were less skeptical; 39.5% of them felt it was definitely or probably true.

4) "My responses reflected my best guess as to whether the increased catch rates would have been worth the extra money."
Over three-fourths (75.2%-81.7%) of the respondents in each county of residence indicated that this was definitely or probably true.

Although a substantial proportion of respondents were concerned about bearing the costs associated with the enhancements and/or were skeptical about whether the enhancements could be achieved, over three-fourths still felt that their responses reflected their true valuations.

In addition to describing the effect of the above four factors on their responses to the enhancement questions, anglers were also asked: "Are there any other factors that affected your answers?" The 556 write-in responses to this question are reported in Appendix C.

Table 5.2-4a describes the proportion of respondents in each county who made at least one halibut trip during the previous year and the average number of halibut trips made by these respondents during the year. It also describes the proportion of respondents in each county who predicted that they would increase their halibut fishing in response to the enhancement and the average increase in the number of halibut trips per year that would be made by these individuals in response to the enhancement. Tables 5.2-4b through 5.2-4d provide similar statistics for the yellowtail, white sea bass and pier fishing enhancements.

To some extent, Tables 5.2-4a through 5.2-4d reflect geographic differences in species availability. For instance, the proportion of anglers who targeted yellowtail and would increase the number of yellowtail trips as a result of the enhancement was lowest for Ventura, Santa Barbara and San Luis Obispo counties, where yellowtail are least available. Aside from these geographic differences, each of the four enhancements could be expected to have a significant effect on the number of anglers targeting the enhanced species and on the number of trips made by these anglers.

6.0 Participation in Shellfishing (Tables 6.0-1 to 6.0-2)

Although the survey focused largely on finfishing, we were also interested in estimating participation in shellfishing, for which little information is currently available. Thus each household contacted in the telephone survey was asked if any household member had participated in shellfishing in the previous two months. Each two-month shellfishing household was also asked the number of shellfishing trips made by each household member and the type of shellfish (lobster, abalone or clams) targeted on each trip.

Estimates of the number of households in each county of residence who participated in shellfishing in each survey wave are provided in Table 6.0-1. The estimates were made by multiplying the total number of households in each county (Table 4.1-1) by the proportion of households contacted in the telephone survey who reported shellfishing in the previous two months. The total number of shellfishing households living in the eight coastal counties was estimated to be 19,293 in March-April, 29,088 in May-June, 10,737 in July-August, and 29,005 in September-October.

Because the two-month prevalence rates for shellfishing were so low, the sample of shellfishing households was not sufficiently large to estimate the numbers of shellfishers and shellfishing

trips made in each survey wave on a county-by-county basis. Instead, the total number of shellfishers in each survey wave was estimated in Table 6.0-2 by multiplying the number of shellfishing households in all counties (Table 6.0-1) by the mean number of shellfishers per shellfishing household (estimated from the sample of active shellfishing households in all counties). The total number of shellfisher trips was similarly estimated by multiplying the number of shellfishing households in all counties (again from Table 6.0-1) by the mean number of shellfisher trips per shellfishing household. The number of shellfishing trips was lowest in July-August (56,192), highest in September-October (166,428), and 72,928 and 85,234 in March-April and May-June respectively.

The distribution of shellfishing trips by target species is also described in Table 6.0-2. Of the 380,782 trips made during the four survey waves, the distribution was 46% abalone, 30% lobster and 24% clam.

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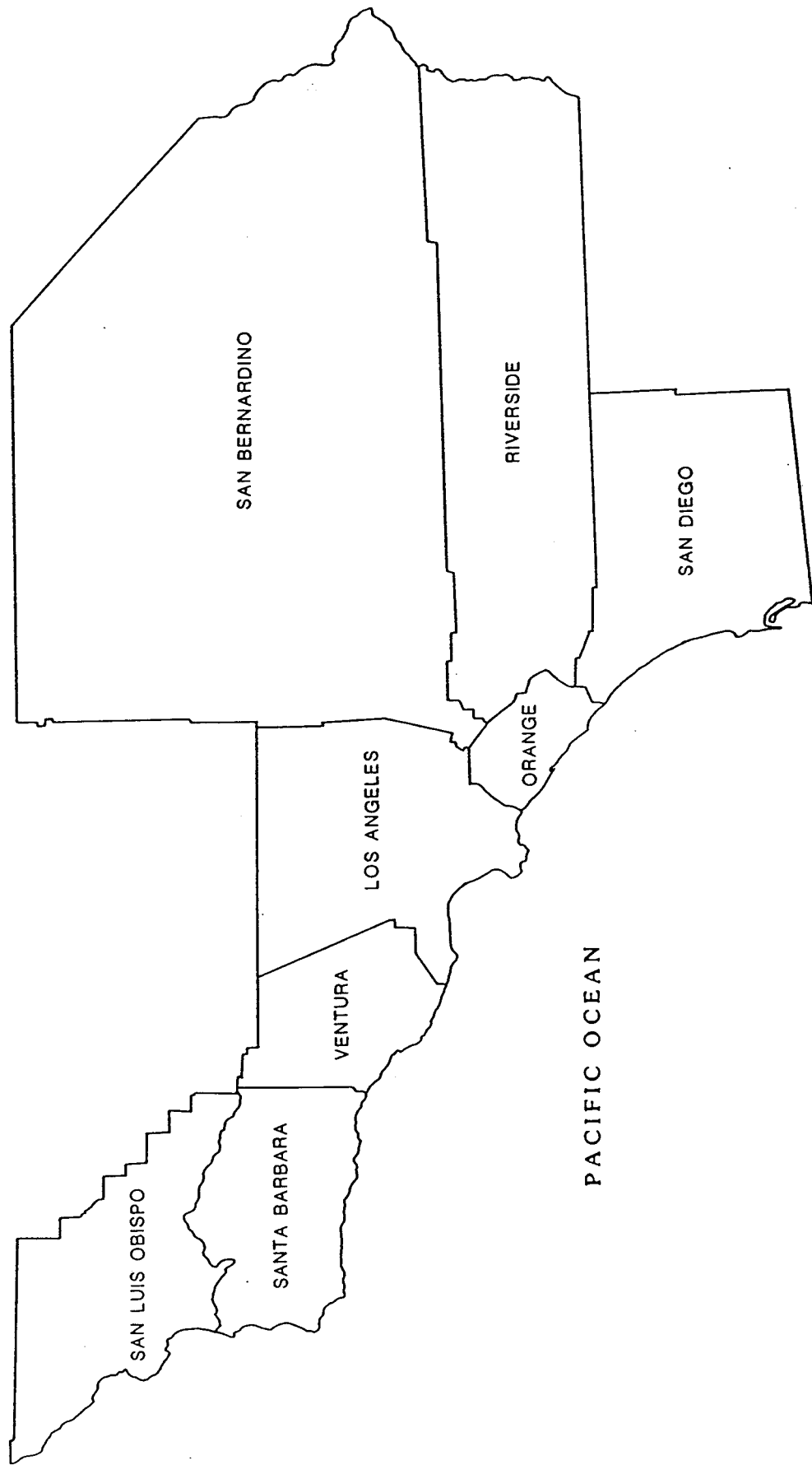


FIGURE 1. COUNTIES COVERED BY THE TELEPHONE SURVEY

Table 2.4-1a. Disposition of Household Contacts in March-April Survey Wave.

County of Residence	12-Month Angling Households							Non-Anglers	Refusals	Communic. Problems	Grand Total
	Unwilling Mail	Willing Mail	Total Phone	Phone & Mail	Neither	Total	Anglers				
Los Angeles	5	58	63	33	1	64	771	226	157	1,218	
Orange	4	80	84	55	1	85	582	148	43	858	
Riverside	2	71	73	44	4	77	773	210	38	1,098	
San Bernardino	4	77	81	50	5	86	919	224	53	1,282	
San Diego	2	82	84	50	3	87	564	169	29	849	
San Luis Obispo	3	86	89	66	1	90	451	94	16	651	
Santa Barbara	5	77	82	57	1	83	699	196	62	1,040	
Ventura	4	83	87	56	4	91	609	180	35	915	
Total	29	614	643	411	20	663	5,368	1,447	433	7,911	

Unwilling Mail = # of 12-month angling households who completed the telephone survey but refused to participate in the mail survey.
 Willing Mail = # of 12-month angling households who completed the telephone survey and expressed willingness to participate in the mail survey.
 Total Phone = Unwilling Mail + Willing Mail.
 Phone & Mail = # of 12-month angling households who completed the telephone and mail surveys.
 Neither = # of respondents who identified themselves as 12-month angling households but were unwilling to participate further in the telephone survey.
 Total = # of 12-month angling households identified in the telephone survey = Total Phone + Neither.
 Non-Anglers = # of household contacts that were not 12-month angling households.
 Refusals = # of household contacts who refused to participate at all in the telephone interview.
 Communic. Problems = # of telephone contacts made with non-English speaking households.
 Grand Total = Total Anglers + Non-Anglers + Refusals + Communic. Problems.

Table 2.4-lb. Disposition of Household Contacts in May-June Survey Wave.

County of Residence	12-Month Angling Households							Non-Anglers	Refusals	Communic. Problems	Grand Total
	Unwilling Mail	Willing Mail	Total Phone & Mail	Neither	Total	Anglers	Total				
Los Angeles	5	67	72	2	74	1,395	268	175	1,912		
Orange	5	98	103	5	108	1,028	205	68	1,409		
Riverside	9	80	89	4	93	1,410	222	69	1,794		
San Bernardino	7	95	102	4	106	1,614	210	75	2,005		
San Diego	4	106	110	5	115	995	163	55	1,328		
San Luis Obispo	3	107	110	4	114	828	115	14	1,071		
Santa Barbara	6	96	102	6	108	899	109	42	1,158		
Ventura	9	106	115	4	119	1,034	146	61	1,360		
Total	48	755	803	34	837	9,203	1,438	559	12,037		

Unwilling Mail = # of 12-month angling households who completed the telephone survey but refused to participate in the mail survey.
 Willing Mail = # of 12-month angling households who completed the telephone survey and expressed willingness to participate in the mail survey.
 Total Phone = Unwilling Mail + Willing Mail.
 Phone & Mail = # of 12-month angling households who completed the telephone and mail surveys.
 Neither = # of respondents who identified themselves as 12-month angling households but were unwilling to participate further in the telephone survey.
 Total = # of 12-month angling households identified in the telephone survey = Total Phone + Neither.
 Non-Anglers = # of household contacts that were not 12-month angling households.
 Refusals = # of household contacts who refused to participate at all in the telephone interview.
 Communic. Problems = # of telephone contacts made with non-English speaking households.
 Grand Total = Total Anglers + Non-Anglers + Refusals + Communic. Problems.

Table 2.4-1c. Disposition of Household Contacts in July-August Survey Wave.

County of Residence	12-Month Angling Households							Grand Total	
	Unwilling Mail	Willing Mail	Total Phone & Mail	Neither	Total Anglers	Refusals	Communic. Problems		
Los Angeles	5	83	88	57	10	98	277	230	1,945
Orange	4	59	63	45	4	67	169	53	1,041
Riverside	4	62	66	44	2	68	163	51	1,273
San Bernardino	2	44	46	33	4	50	156	45	1,233
San Diego	4	41	45	31	3	48	122	36	742
San Luis Obispo	7	58	65	49	2	67	44	13	603
Santa Barbara	3	53	56	33	2	58	71	28	592
Ventura	6	55	61	46	3	64	111	35	854
Total	35	455	490	338	30	520	1,113	491	8,283

Unwilling Mail = # of 12-month angling households who completed the telephone survey but refused to participate in the mail survey.
 Willing Mail = # of 12-month angling households who completed the telephone survey and expressed willingness to participate in the mail survey.
 Total Phone & Mail = Unwilling Mail + Willing Mail.
 Phone & Mail = # of 12-month angling households who completed the telephone and mail surveys.
 Neither = # of respondents who identified themselves as 12-month angling households but were unwilling to participate further in the telephone survey.
 Total = # of 12-month angling households identified in the telephone survey = Total Phone + Neither.
 Non-Anglers = # of household contacts that were not 12-month angling households.
 Refusals = # of household contacts who refused to participate at all in the telephone interview.
 Communic. Problems = # of telephone contacts made with non-English speaking households.
 Grand Total = Total Anglers + Non-Anglers + Refusals + Communic. Problems.

Table 2.4-1d. Disposition of Household Contacts in September-October Survey Wave.

County of Residence	12-Month Angling Households										Grand Total
	Unwilling Mail	Willing Mail	Total Phone	Phone & Mail	Neither	Total	Non-Anglers	Refusals	Communic. Problems	Grand Total	
Los Angeles	7	58	65	44	2	67	929	200	221	1,417	
Orange	5	61	66	42	6	72	695	162	66	995	
Riverside	4	55	59	39	4	63	949	156	63	1,231	
San Bernardino	4	59	63	46	5	68	1,508	266	75	1,917	
San Diego	12	58	70	45	2	72	72	181	53	1,100	
San Luis Obispo	7	73	80	58	3	83	642	87	21	833	
Santa Barbara	9	58	67	50	5	72	697	105	46	920	
Ventura	3	56	59	46	1	60	604	90	51	805	
Total	51	478	529	370	28	557	6,818	1,247	596	9,218	

Unwilling Mail = # of 12-month angling households who completed the telephone survey but refused to participate in the mail survey.
 Willing Mail = # of 12-month angling households who completed the telephone survey and expressed willingness to participate in the mail survey.
 Total Phone = Unwilling Mail + Willing Mail.
 Phone & Mail = # of 12-month angling households who completed the telephone and mail surveys.
 Neither = # of respondents who identified themselves as 12-month angling households but were unwilling to participate further in the telephone survey.
 Total = # of 12-month angling households identified in the telephone survey = Total Phone + Neither.
 Non-Anglers = # of household contacts that were not 12-month angling households.
 Refusals = # of household contacts who refused to participate at all in the telephone interview.
 Communic. Problems = # of telephone contacts made with non-English speaking households.
 Grand Total = Total Anglers + Non-Anglers + Refusals + Communic. Problems.

Table 2.4-1e. Disposition of Household Contacts, All Survey Waves.¹

County of Residence	12-Month Angling Households							Grand Total		
	Unwilling Mail	Willing Mail	Total Phone & Mail	Neither	Total	Non-Anglers	Refusals		Communic. Problems	
Los Angeles	22	266	288	180	15	303	4,435	971	783	6,492
Orange	18	298	316	208	16	332	3,057	684	230	4,303
Riverside	19	268	287	179	14	301	4,123	751	221	5,396
San Bernardino	17	275	292	202	18	310	5,023	856	248	6,437
San Diego	22	287	309	206	13	322	2,889	635	173	4,019
San Luis Obispo	20	324	344	259	10	354	2,400	340	64	3,158
Santa Barbara	23	284	307	208	14	321	2,730	481	178	3,710
Ventura	22	300	322	227	12	334	2,891	527	182	3,934
Total	163	2,302	2,465	1,669	112	2,577	27,548	5,245	2,079	37,449

¹ Obtained by summing corresponding values from Tables 2.4-1a through 2.4-1d. Unwilling Mail = # of 12-month angling households who completed the telephone survey but refused to participate in the mail survey. Willing Mail = # of 12-month angling households who completed the telephone survey and expressed willingness to participate in the mail survey. Total Phone = Unwilling Mail + Willing Mail. Phone & Mail = # of 12-month angling households who completed the telephone and mail surveys. Neither = # of respondents who identified themselves as 12-month angling households but were unwilling to participate further in the telephone survey. Total = # of 12-month angling households identified in the telephone survey = Total Phone + Neither. Non-Anglers = # of household contacts that were not 12-month angling households. Refusals = # of household contacts who refused to participate at all in the telephone interview. Communic. Problems = # of telephone contacts made with non-English speaking households. Grand Total = Total Anglers + Non-Anglers + Refusals + Communic. Problems.

Table 4.1-1. Estimated number of fishing households, by county of residence and year of most recent fishing trip.

	County of Residence							Total	
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara		Ventura
# households	3,162,100	808,200	358,300	457,800	867,400	78,400	130,900	213,300	6,076,400
% ever fished	20.8% (4697)	29.2% (3153)	26.8% (4263)	25.9% (5023)	27.2% (3044)	37.2% (2643)	29.6% (2931)	31.2% (3099)	24.3% ¹ (28853)
# angling households by year of most recent fishing trip:									
<1971	73,165	16,577	13,605	16,102	22,240	2,740	4,062	2,926	151,416
1971-1975	26,185	8,138	4,436	7,110	11,926	1,179	1,198	1,579	61,751
1976-1980	78,556	22,303	9,366	15,579	14,826	2,566	3,333	4,087	150,617
1981-1985	83,177	34,962	14,492	19,448	24,496	4,023	4,843	5,991	191,432
1986-1987	126,306	40,990	19,816	20,912	46,091	5,167	6,510	7,013	272,804
1988-1989	270,326	113,024	34,308	39,419	116,355	13,490	18,800	44,955	650,678
Total	657,717	235,994	96,024	118,570	235,933	29,165	38,746	66,550	1,478,699

¹ Estimated by dividing total # of angling households (1,478,699) by total # of households (6,076,400).

Table 4.1-2. Estimated twelve-month prevalence rate, total number of angling households, number of anglers per angling household, and total number of anglers in previous year, by county of residence.

County of Residence	12-Month Prevalence Rate	Total # Angling Households	# Anglers/ Household	Total # Anglers
Los Angeles	6.4% (4738)	202,374	1.94 (287)	392,606
Orange	9.8% (3389)	79,204	1.82 (284)	144,151
Riverside	6.8% (4424)	24,364	1.86 (278)	45,317
San Bernardino	5.8% (5333)	26,552	1.86 (272)	49,387
San Diego	10.0% (3211)	86,740	1.84 (297)	159,602
San Luis Obispo	12.9% (2754)	10,114	1.84 (321)	18,610
Santa Barbara	10.5% (3051)	13,745	1.93 (299)	26,528
Ventura	10.4% (3225)	22,183	1.83 (314)	40,595
Total	7.7% ¹	465,276	1.88 ²	876,796

¹ Estimated by dividing total # of angling households (465,276) by total # of households (6,076,400 according to Table 4.1-1).

² Estimated by dividing total # of anglers (876,796) by total # of angling households (465,276).

Table 4.1-3. Estimated average and total number of household trips in previous year, by county of residence.

County of Residence	# of 12-Month Angling Households	Average # Household Trips	Total # Household Trips
Los Angeles	202,374	8.22 (285)	1,663,514
Orange	79,204	9.77 (289)	773,823
Riverside	24,364	7.16 (278)	174,446
San Bernardino	26,552	6.25 (272)	165,950
San Diego	86,740	10.44 (291)	905,566
San Luis Obispo	10,114	12.54 (321)	126,830
Santa Barbara	13,745	13.17 (299)	181,022
Ventura	22,183	9.63 (311)	213,622
Total	465,276	9.04 ¹	4,204,773

¹ Estimated by dividing total # of household trips (4,204,773) by total # of 12-month angling households (465,276).

Table 4.1-4. Estimated number of spearfishing households and household spearfishing trips made per year, as absolute number and proportion of total household fishing trips, by county of residence.

	County of Residence							Total	
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara		
# angling households	202,374	79,204	24,364	26,552	86,740	10,114	13,745	22,183	465,276
% spearfishing households	3.1% (293)	6.5% (293)	3.2% (281)	3.6% (274)	6.0% (298)	8.0% (327)	12.6% (302)	8.5% (316)	4.9% ¹
# spearfishing households	6,274	5,148	780	956	5,204	809	1,732	1,886	22,789
Average # household spearfishing trips	6.2 (9)	12.2 (19)	2.9 (9)	4.7 (9)	5.7 (18)	8.6 (26)	12.8 (37)	8.8 (27)	8.1 ² (154)
Total # household spearfishing trips	38,899	62,806	2,262	4,493	29,663	6,957	22,170	16,597	183,847
Spearfishing trips as % of total trips	2.3%	8.1%	1.3%	2.7%	3.3%	5.5%	12.2%	7.8%	4.4% ³

¹ Estimated by dividing total # of spearfishing households (22,789) by total # of angling households (465,276).

² Estimated by dividing total # of household spearfishing trips (183,847) by total # of spearfishing households (22,789).

³ Estimated by dividing total # of household spearfishing trips (183,847) by total # of household trips (4,204,773 according to Table 4.1-3).

Table 4.1-5a. Estimated prevalence rate, total number of angling households, average number of anglers per angling household, and total number of anglers in March-April, by county of residence.

County of Residence	2-Month Prevalence Rate	Total # Angling Households	# Anglers/ Household	Total # Anglers
Los Angeles	2.3% (68)	72,728	1.71 (24)	124,365
Orange	3.8% (79)	30,712	1.52 (31)	46,682
Riverside	1.5% (74)	5,375	1.63 (16)	8,761
San Bernardino	1.5% (77)	6,867	1.80 (20)	12,361
San Diego	3.9% (85)	33,829	1.52 (33)	51,420
San Luis Obispo	4.8% (88)	3,763	1.45 (33)	5,456
Santa Barbara	4.8% (83)	6,283	1.53 (38)	9,613
Ventura	4.5% (87)	9,599	1.61 (38)	15,454
Total	2.8% ¹	169,156	1.62 ²	274,112

¹ Estimated by dividing total # of angling households (169,156) by total # of households (6,076,400 according to Table 4.1-1).

² Estimated by dividing total number of anglers (274,112) by total # of angling households (169,156).

Table 4.1-5b. Estimated prevalence rate, total number of angling households, average number of anglers per angling household, and total number of anglers in May-June, by county of residence.

County of Residence	2-Month Prevalence Rate	Total # Angling Households	# Anglers/ Household	Total # Anglers
Los Angeles	3.0% (74)	94,863	1.46 (35)	138,500
Orange	5.9% (98)	47,684	1.71 (59)	81,540
Riverside	2.8% (90)	10,032	1.81 (37)	18,158
San Bernardino	2.5% (97)	11,445	2.00 (41)	22,890
San Diego	4.8% (108)	41,635	1.77 (52)	73,694
San Luis Obispo	6.3% (106)	4,939	1.63 (52)	8,051
Santa Barbara	6.2% (101)	8,116	1.72 (60)	13,960
Ventura	6.1% (114)	13,011	1.70 (67)	22,119
Total	3.8% ¹	231,726	1.64 ²	378,912

¹ Estimated by dividing total # of angling households (231,726) by total # of households (6,076,400 according to Table 4.1-1).

² Estimated by dividing total # of anglers (378,912) by total # of angling households (231,726).

Table 4.1-5c. Estimated prevalence rate, total number of angling households, average number of anglers per angling household, and total number of anglers in July-August, by county of residence

County of Residence	2-Month Prevalence Rate	Total # Angling Households	# Anglers/ Household	Total # Anglers
Los Angeles	4.2% (81)	132,808	1.98 (53)	262,960
Orange	6.8% (55)	54,958	1.58 (38)	86,834
Riverside	3.8% (61)	13,615	1.85 (34)	25,188
San Bernardino	3.1% (39)	14,192	1.57 (21)	22,281
San Diego	6.4% (38)	55,514	1.92 (24)	106,587
San Luis Obispo	7.8% (56)	6,115	1.76 (34)	10,762
Santa Barbara	6.6% (51)	8,639	1.69 (32)	14,600
Ventura	7.4% (59)	15,784	1.62 (42)	25,571
Total	5.0% ¹	301,625	1.84 ²	554,783

¹ Estimated by dividing total # of angling households (301,625) by total # of households (6,076,400 according to Table 4.1-1).

² Estimated by dividing total # of anglers (554,783) by total # of angling households (301,625).

Table 4.1-5d. Estimated prevalence rate, total number of angling households, average number of anglers per angling household, and total number of anglers in September-October, by county of residence.

County of Residence	2-Month Prevalence Rate	Total # Angling Households	# Anglers/ Household	Total # Anglers
Los Angeles	2.9% (70)	91,701	1.56 (32)	143,054
Orange	5.5% (61)	44,451	1.59 (34)	70,677
Riverside	2.9% (57)	10,391	1.54 (24)	16,002
San Bernardino	2.4% (58)	10,987	1.71 (24)	18,788
San Diego	5.8% (66)	50,309	1.74 (38)	87,538
San Luis Obispo	6.9% (79)	5,410	1.62 (42)	8,764
Santa Barbara	5.5% (67)	7,200	1.83 (35)	13,176
Ventura	5.2% (56)	11,092	1.57 (28)	17,414
Total	3.8% ¹	231,540	1.62 ²	375,413

¹ Estimated by dividing total # of angling households (231,540) by total # of households (6,076,400 according to Table 4.1-1).

² Estimated by dividing total # of anglers (375,413) by total # of angling households (231,540).

Table 4.1-6a. Average and total number of household trips made in March-April of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence								Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	
# angling households	72,728	30,712	5,375	6,867	33,829	3,763	6,283	9,599	169,156
Avg # household trips	2.39 (23)	2.49 (29)	2.45 (16)	1.35 (19)	2.78 (30)	2.83 (30)	3.26 (38)	2.95 (37)	2.52 ¹ (222)
Total # household trips:	173,820	76,473	13,169	9,270	94,045	10,649	20,483	28,317	426,226
Beach	21,818	9,521	0	343	7,781	1,882	5,655	8,063	55,063
Pier	12,364	8,599	2,365	2,403	20,636	1,505	4,210	1,344	53,426
CPFV	50,910	25,491	6,074	4,464	31,799	1,994	2,890	5,663	129,285
Private boat	88,728	32,862	4,730	2,060	33,829	5,268	7,728	13,247	188,452

¹ Estimated by dividing total # of household trips (426,226) by total # of angling households (169,156).

Table 4.1-6b. Average and total number of household trips made in May-June of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence							Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	
# angling households	94,863	47,684	10,032	11,445	41,635	4,939	8,116	231,726
Avg # household trips	2.20 (35)	3.27 (59)	3.05 (37)	2.25 (43)	3.66 (52)	4.79 (52)	3.75 (60)	2.85 ¹ (405)
Total # household trips:	208,699	155,927	30,598	25,751	152,384	23,658	30,435	661,540
Beach	24,664	16,213	803	801	24,981	6,717	11,281	89,363
Pier	37,945	16,213	5,417	6,867	45,382	8,495	5,438	131,612
CPFV	78,736	45,300	9,229	7,210	29,977	2,865	4,383	185,116
Private boat	67,353	78,202	15,148	10,873	52,044	5,581	9,333	255,448

1 Estimated by dividing total # of household trips (661,540) by total # of angling households (231,726).

Table 4.1-6c. Average and total number of household trips made in July-August of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence								Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	
# angling households	132,808	54,958	13,615	14,192	55,514	6,115	8,639	15,784	301,625
Avg # household trips	2.74 (54)	3.38 (36)	2.54 (34)	1.96 (22)	3.62 (23)	4.18 (34)	3.29 (32)	3.41 (41)	3.05 ¹ (276)
Total # household trips:	363,894	185,758	34,582	27,816	200,961	25,561	28,422	53,823	920,818
Beach	37,186	7,694	2,042	0	12,213	5,932	9,157	14,048	88,272
Pier	70,388	15,938	8,441	5,393	44,966	6,298	9,848	11,838	173,110
CPFV	150,073	75,842	14,840	14,760	24,426	2,507	3,715	19,730	305,893
Private boat	106,246	86,284	9,258	7,664	119,355	10,824	5,702	8,208	353,540

¹ Estimated by dividing total # of household trips (920,818) by total number of angling households (301,625).

Table 4.1-6d. Average and total number of household trips made in September-October of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence								Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	
# angling households	91,701	44,451	10,391	10,987	50,309	5,410	7,200	11,092	231,540
Avg # household trips	2.96 (31)	2.16 (34)	2.26 (24)	1.81 (24)	3.54 (38)	3.29 (42)	3.58 (35)	4.11 (27)	2.93 ¹ (255)
Total # household trips:	271,435	96,014	23,484	19,886	178,094	17,799	25,776	45,588	678,076
Beach	13,755	11,113	1,351	0	22,639	4,274	6,768	4,770	64,669
Pier	44,016	14,669	1,766	2,527	41,253	1,785	4,608	13,089	123,713
CPFV	110,958	20,892	9,975	5,494	51,818	2,976	3,024	10,648	215,785
Private boat	102,705	49,341	10,391	11,866	62,383	8,764	11,376	17,082	273,908

∞ ∞ ¹ Estimated by dividing total # of household trips (678,076) by total # of angling households (231,540).

Table 4.1-6e. Estimated number of household trips made in March-October of 1989, by fishing mode and county of residence.¹

	County of Residence								Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	
Total # household trips:	1,071,348	514,172	101,832	82,724	625,483	77,667	105,116	161,817	2,686,659
Beach	97,424	44,540	4,196	1,145	67,614	18,804	32,861	30,784	297,367
Pier	164,714	55,419	17,990	17,190	152,238	18,084	24,104	32,125	481,863
CPFV	390,677	167,525	40,119	31,927	138,021	10,342	14,012	43,458	836,080
Private boat	365,032	246,688	39,528	32,462	267,611	30,437	34,139	55,450	1,071,348

¹ Obtained by summing corresponding values from Tables 4.1-6a through 4.1-6d.

Table 4.1-7a. Average and total number of angler trips made in March-April of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence							Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	
# angling households	72,728	30,712	5,375	6,867	33,829	3,763	6,283	169,156
Avg # angler trips	3.61 (23)	3.78 (29)	3.77 (16)	2.10 (18)	4.33 (30)	4.35 (29)	5.07 (38)	3.84 ¹ (219)
Total # angler trips:	262,243	116,085	20,261	14,452	146,422	16,383	31,844	650,028
Beach	31,200	13,615	0	491	11,126	2,691	8,086	78,739
Pier	22,997	15,995	4,399	4,470	38,382	2,800	7,830	99,372
CPFV	72,292	36,197	8,625	6,338	45,155	2,832	4,104	183,585
Private boat	135,754	50,279	7,237	3,152	51,758	8,060	10,824	288,332

¹ Estimated by dividing total # of angler trips (650,028) by total # of angling households (169,156).

Table 4.1-7b. Average and total number of angler trips made in May-June of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence							Total	
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara		Ventura
# angling households	94,863	47,684	10,032	11,445	41,635	4,939	8,116	13,011	231,726
Avg # angler trips	3.38 (35)	4.98 (58)	4.74 (36)	3.56 (43)	5.82 (52)	7.70 (51)	5.76 (59)	4.06 (67)	4.43 ¹ (401)
Total # angler trips:	320,703	237,314	47,507	40,792	242,328	38,013	46,750	52,882	1,026,289
Beach	35,270	23,184	1,148	1,146	35,723	9,605	16,132	5,582	127,789
Pier	70,578	30,155	10,076	12,773	84,411	15,801	10,114	10,890	244,798
CPFV	111,806	64,326	13,106	10,239	42,568	4,068	6,223	10,531	262,866
Private boat	103,050	119,649	23,177	16,635	79,627	8,539	14,280	25,879	390,836

¹ Estimated by dividing total # of angler trips (1,026,289) by total # of angling households (231,726).

Table 4.1-7c. Average and total number of angler trips made in July-August of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence							Total
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	
# angling households	132,808	54,958	13,615	14,192	55,514	6,115	8,639	301,625
Avg # angler trips	4.21 (54)	5.10 (36)	3.96 (34)	3.01 (22)	5.74 (23)	6.59 (34)	5.26 (32)	4.72 ¹ (276)
Total # angler trips:	559,759	280,357	53,860	42,715	318,401	40,317	45,412	1,423,502
Beach	53,176	11,003	2,920	0	17,465	8,482	13,095	126,229
Pier	130,922	29,644	15,701	10,031	83,637	11,715	18,318	321,988
CPFV	213,104	107,696	21,073	20,959	34,685	3,560	5,275	434,368
Private boat	162,557	132,015	14,165	11,725	182,613	16,560	8,724	540,917

¹ Estimated by dividing total # of angler trips (1,423,502) by total # of angling households (301,625).

Table 4.1-7d. Average and total number of angler trips made in September-October of 1989, and breakdown of trips by fishing mode and county of residence.

	County of Residence							Total	
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara		Ventura
# angling households	91,701	44,451	10,391	10,987	50,309	5,410	7,200	11,092	231,540
Avg # angler trips	4.54 (31)	3.34 (34)	3.40 (24)	2.79 (24)	5.53 (38)	5.00 (42)	5.55 (35)	6.53 (27)	4.53 ¹ (255)
Total # angler trips:	416,240	148,333	35,281	30,656	278,133	27,067	39,948	72,421	1,048,079
Beach	19,670	15,891	1,932	0	32,374	6,112	9,678	6,820	92,477
Pier	81,871	27,284	3,286	4,700	76,731	3,321	8,571	24,345	230,108
CPFV	157,561	29,667	14,165	7,801	73,582	4,225	4,294	15,121	306,415
Private boat	157,139	75,491	15,898	18,155	95,446	13,409	17,405	26,135	419,079

¹ Estimated by dividing total # of angler trips (1,048,079) by total # of angling households (231,540).

Table 4.1-7e. Estimated number of angler trips made in March-October of 1989, by fishing mode and county of residence.¹

Total # angler trips:	Los	Orange	Riverside	San	San	San Luis	Santa	Total	
	Angeles	Orange	Riverside	Bernardino	Diego	Obispo	Barbara	Ventura	
	1,558,945	782,089	156,907	128,615	985,284	121,780	163,954	250,323	4,147,898
Beach	139,317	63,692	6,000	1,637	96,688	26,890	46,992	44,021	425,235
Pier	306,367	103,079	33,461	31,974	283,162	33,636	44,833	59,753	896,266
CPFV	554,762	237,885	56,969	45,336	195,990	14,685	19,896	61,710	1,187,234
Private boat	558,500	377,433	60,477	49,668	409,445	46,569	52,233	84,839	1,639,163

¹ Obtained by summing corresponding values from Tables 4.1-7a through 4.1-7d.

Table 4.1-8a. Estimated number of household trips in beach mode, by county of residence, fishing county and survey wave.

	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April:									
Los Angeles	21,818	5,995	---	---	---	---	---	---	27,813
Orange	---	3,526	---	343	---	---	---	---	3,869
San Diego	---	---	---	---	7,781	---	---	---	7,781
San Luis Obispo	---	---	---	---	---	1,882	587	---	2,469
Santa Barbara	---	---	---	---	---	---	5,068	1,910	6,978
Ventura	---	---	---	---	---	---	---	6,153	6,153
Total	21,818	9,521	0	343	7,781	1,882	5,655	8,063	55,063
May-June:									
Los Angeles	24,664	---	---	---	---	---	---	418	25,082
Orange	---	16,213	803	229	---	---	---	---	17,245
San Diego	---	---	---	572	24,981	---	---	---	25,553
San Luis Obispo	---	---	---	---	---	6,717	3,156	---	9,873
Santa Barbara	---	---	---	---	---	---	8,125	---	8,125
Ventura	---	---	---	---	---	---	---	3,485	3,485
Total	24,664	16,213	803	801	24,981	6,717	11,281	3,903	89,363
July-August:									
Los Angeles	26,561	4,397	408	---	---	---	---	---	31,366
Orange	10,625	3,297	1,225	---	---	---	---	---	15,147
San Diego	---	---	408	---	12,213	---	---	---	12,621
San Luis Obispo	---	---	---	---	---	5,932	2,707	---	8,639
Santa Barbara	---	---	---	---	---	---	6,450	---	6,450
Ventura	---	---	---	---	---	---	---	14,048	14,048
Total	37,186	7,694	2,042	0	12,213	5,932	9,157	14,048	88,272
September-October:									
Los Angeles	13,755	---	450	---	---	---	---	---	14,205
Orange	---	11,113	901	---	---	---	---	---	12,014
San Diego	---	---	---	---	22,639	---	---	---	22,639
San Luis Obispo	---	---	---	---	---	3,938	---	---	3,938
Santa Barbara	---	---	---	---	---	---	6,768	---	7,104
Ventura	---	---	---	---	---	---	---	4,770	4,770
Total	13,755	11,113	1,351	0	22,639	4,274	6,768	4,770	64,670

Table 4.1-8b. Estimated number of household trips in pier mode, by county of residence, fishing county and survey wave.

	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April :									
Los Angeles	12,364	---	---	---	---	---	---	---	12,364
Orange	---	8,599	2,365	2,403	---	---	---	---	13,367
San Diego	---	---	---	---	20,636	---	---	---	20,636
San Luis Obispo	---	---	---	---	---	1,505	---	---	2,739
Santa Barbara	---	---	---	---	---	---	1,234	---	3,456
Ventura	---	---	---	---	---	---	2,976	480	864
Total	12,364	8,599	2,365	2,403	20,636	1,505	4,210	1,344	53,426
May-June:									
Los Angeles	37,945	2,457	1,003	1,891	---	---	---	---	43,296
Orange	---	13,756	4,414	2,090	---	---	---	---	20,260
San Diego	---	---	---	2,886	45,382	---	255	---	48,523
San Luis Obispo	---	---	---	---	---	8,495	2,379	---	10,874
Santa Barbara	---	---	---	---	---	---	2,804	---	2,804
Ventura	---	---	---	---	---	---	---	5,855	5,855
Total	37,945	16,213	5,417	6,867	45,382	8,495	5,438	5,855	131,612
July-August:									
Los Angeles	63,169	5,844	3,449	---	---	---	---	---	72,462
Orange	---	10,094	2,632	3,569	---	---	---	---	16,295
San Diego	7,219	---	2,360	1,824	44,966	---	---	---	56,369
San Luis Obispo	---	---	---	---	---	6,298	2,206	---	8,504
Santa Barbara	---	---	---	---	---	---	7,642	---	7,642
Ventura	---	---	---	---	---	---	---	11,838	11,838
Total	70,388	15,938	8,441	5,393	44,966	6,298	9,848	11,838	173,110
September-October:									
Los Angeles	32,796	1,294	---	---	---	---	---	---	34,091
Orange	11,220	13,375	1,766	2,527	---	---	---	---	28,887
San Diego	---	---	---	---	41,253	---	---	---	41,253
San Luis Obispo	---	---	---	---	---	1,785	2,056	---	3,841
Santa Barbara	---	---	---	---	---	---	2,552	---	2,552
Ventura	---	---	---	---	---	---	---	13,089	13,089
Total	44,016	14,669	1,766	2,527	41,253	1,785	4,608	13,089	123,713

Table 4.1-8c. Estimated number of household trips in CPFV mode, by county of residence, fishing county and survey wave.

Fishing County	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April:									
Los Angeles	50,910	4,823	1,745	---	---	---	---	---	57,477
Orange	---	19,290	---	3,538	---	---	---	---	22,828
San Diego	---	---	4,329	---	31,799	---	---	---	36,128
San Luis Obispo	---	---	---	---	---	1,994	2,376	---	4,370
Santa Barbara	---	---	---	---	---	---	514	1,175	1,689
Ventura	---	1,378	---	926	---	---	---	4,488	6,792
Total	50,910	25,491	6,074	4,464	31,799	1,994	2,890	5,663	129,285
May-June:									
Los Angeles	44,000	4,234	2,361	3,177	---	---	---	---	53,771
Orange	17,368	36,409	3,327	1,711	---	---	---	---	58,815
San Diego	---	4,657	3,541	2,322	29,977	---	---	---	40,497
San Luis Obispo	---	---	---	---	---	2,569	877	872	4,318
Santa Barbara	---	---	---	---	---	296	3,506	---	3,803
Ventura	17,368	---	---	---	---	---	---	6,544	23,912
Total	78,736	45,300	9,229	7,210	29,977	2,865	4,383	7,416	185,116
July-August:									
Los Angeles	107,310	21,523	817	5,070	---	---	---	4,540	139,260
Orange	6,455	45,608	4,765	4,056	---	---	---	---	60,884
San Diego	30,660	7,174	9,258	5,634	24,426	396	---	1,222	78,770
San Luis Obispo	---	---	---	---	---	2,111	2,151	---	4,262
Santa Barbara	---	---	---	---	---	---	1,564	---	1,564
Ventura	5,648	1,537	---	---	---	---	---	13,968	21,153
Total	150,073	75,842	14,840	14,760	24,426	2,507	3,715	19,730	305,893
September-October:									
Los Angeles	58,505	2,458	---	1,553	---	---	---	---	62,516
Orange	13,113	9,832	1,972	---	---	---	---	---	24,917
San Diego	30,261	8,603	7,075	3,941	51,818	---	---	5,628	107,327
San Luis Obispo	---	---	---	---	---	2,659	1,366	---	4,025
Santa Barbara	---	---	464	---	---	317	1,658	---	2,439
Ventura	9,078	---	464	---	---	---	---	5,020	14,562
Total	110,958	20,892	9,975	5,494	51,818	2,976	3,024	10,648	215,785

Table 4.1-8d. Estimated number of household trips in private boat mode, by county of residence, fishing county and survey wave.

	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
Fishing County									
March-April:									
Los Angeles	75,789	---	4,730	---	---	113	---	1,613	82,245
Orange	---	32,862	---	2,060	4,108	---	---	---	39,030
San Diego	---	---	---	---	29,721	---	---	---	29,721
San Luis Obispo	---	---	---	---	---	5,155	2,543	---	7,698
Santa Barbara	4,621	---	---	---	---	---	5,185	---	9,806
Ventura	8,318	---	---	---	---	---	---	---	19,952
Total	88,728	32,862	4,730	2,060	33,829	5,268	7,728	11,634	188,452
May-June:									
Los Angeles	67,353	4,297	4,055	5,027	---	---	---	745	81,477
Orange	---	68,749	5,129	2,806	---	---	---	---	76,684
San Diego	---	5,156	5,964	3,040	52,044	---	---	638	66,842
San Luis Obispo	---	---	---	---	---	5,581	2,620	---	8,201
Santa Barbara	---	---	---	---	---	---	6,713	---	6,713
Ventura	---	---	---	---	---	---	---	---	15,531
Total	67,353	78,202	15,148	10,873	52,044	5,581	9,333	16,914	255,448
July-August:									
Los Angeles	94,943	18,489	4,330	---	---	---	---	---	117,763
Orange	---	67,795	2,688	7,664	---	---	---	---	78,146
San Diego	11,303	---	2,240	---	119,355	---	---	---	132,898
San Luis Obispo	---	---	---	---	---	10,824	2,160	---	12,984
Santa Barbara	---	---	---	---	---	---	3,542	---	3,542
Ventura	---	---	---	---	---	---	---	8,208	8,208
Total	106,246	86,284	9,258	7,664	119,355	10,824	5,702	8,208	353,541
September-October:									
Los Angeles	69,110	---	2,372	2,225	---	---	---	---	73,707
Orange	15,358	49,341	8,019	5,297	---	---	---	---	78,015
San Diego	---	---	---	3,920	62,383	---	---	---	66,303
San Luis Obispo	---	---	---	---	---	8,764	977	---	9,741
Santa Barbara	---	---	---	---	---	---	9,980	---	9,980
Ventura	18,237	---	---	424	---	---	419	17,082	36,162
Total	102,705	49,341	10,391	11,866	62,383	8,764	11,376	17,082	273,908

Table 4.1-8e. Estimated number of household trips in March-October, by county of residence, fishing county and fishing mode.

Fishing County	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
Beach:									
Los Angeles	86,798	10,391	859	---	---	---	---	418	98,467
Orange	10,625	34,150	2,929	572	---	---	---	---	48,275
San Diego	---	---	408	572	67,614	---	---	---	68,595
San Luis Obispo	---	---	---	---	---	18,469	6,450	---	24,918
Santa Barbara	---	---	---	---	---	336	26,411	1,910	28,657
Ventura	---	---	---	---	---	---	---	28,456	28,456
Total	97,423	44,541	4,196	1,144	67,614	18,805	32,861	30,784	297,368
Pier:									
Los Angeles	146,274	9,595	4,452	1,891	---	---	---	---	162,212
Orange	11,220	45,824	11,177	10,589	---	---	---	---	78,810
San Diego	7,219	---	2,360	4,710	152,237	---	255	---	166,781
San Luis Obispo	---	---	---	---	---	18,083	7,875	---	25,958
Santa Barbara	---	---	---	---	---	---	15,974	480	16,454
Ventura	---	---	---	---	---	---	---	31,646	31,646
Total	164,713	55,419	17,989	17,190	152,237	18,083	24,104	32,126	481,861
CPFV:									
Los Angeles	260,725	33,037	4,922	9,800	---	---	---	4,540	313,024
Orange	36,936	111,139	10,064	9,305	---	---	---	---	167,443
San Diego	60,921	20,434	24,204	11,897	138,020	396	---	6,850	262,722
San Luis Obispo	---	---	---	---	---	9,333	6,769	872	16,975
Santa Barbara	---	---	464	---	---	613	7,243	1,175	9,495
Ventura	32,095	2,915	464	926	---	---	---	30,019	66,419
Total	390,677	167,525	40,118	31,928	138,020	10,342	14,012	43,457	836,079
Private boat:									
Los Angeles	307,195	22,786	15,488	7,252	---	113	---	2,358	355,192
Orange	15,358	218,747	15,836	17,827	4,108	---	---	---	271,875
San Diego	11,303	5,156	8,204	6,960	263,503	---	---	638	295,764
San Luis Obispo	---	---	---	---	---	30,324	8,299	---	38,624
Santa Barbara	4,621	---	---	---	---	---	25,421	---	30,042
Ventura	26,556	---	---	424	---	---	419	52,455	79,853
Total	365,032	246,689	39,527	32,463	267,611	30,437	34,139	55,451	1,171,349

Table 4.1-9a. Estimated number of angler trips in beach mode, by county of residence, fishing county and survey wave.

Fishing County	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April:									
Los Angeles	31,200	8,572	---	---	---	---	---	---	39,772
Orange	---	5,043	---	490	---	---	---	---	5,533
San Diego	---	---	---	---	11,127	---	---	---	11,127
San Luis Obispo	---	---	---	---	---	2,691	839	---	3,530
Santa Barbara	---	---	---	---	---	---	7,247	2,731	9,978
Ventura	---	---	---	---	---	---	---	8,799	8,799
Total	31,200	13,615	0	490	11,127	2,691	8,087	11,530	78,740
May-June:									
Los Angeles	35,270	---	---	---	---	---	---	598	35,868
Orange	---	23,185	1,148	327	---	---	---	---	24,660
San Diego	---	---	---	818	35,723	---	---	---	36,541
San Luis Obispo	---	---	---	---	---	9,605	4,512	---	14,118
Santa Barbara	---	---	---	---	---	---	11,619	---	11,619
Ventura	---	---	---	---	---	---	---	4,983	4,983
Total	35,270	23,185	1,148	1,145	35,723	9,605	16,132	5,581	127,789
July-August:									
Los Angeles	37,983	6,287	584	---	---	---	---	---	44,854
Orange	15,193	4,715	1,752	---	---	---	---	---	21,660
San Diego	---	---	584	---	17,465	---	---	---	18,049
San Luis Obispo	---	---	---	---	---	8,483	3,871	---	12,354
Santa Barbara	---	---	---	---	---	---	9,223	---	9,223
Ventura	---	---	---	---	---	---	---	20,089	20,089
Total	53,176	11,002	2,920	0	17,465	8,483	13,095	20,089	126,229
September-October:									
Los Angeles	19,670	---	644	---	---	---	---	---	20,314
Orange	---	15,892	1,288	---	---	---	---	---	17,180
San Diego	---	---	---	---	32,374	---	---	---	32,374
San Luis Obispo	---	---	---	---	---	5,631	---	---	5,631
Santa Barbara	---	---	---	---	---	481	9,678	---	10,159
Ventura	---	---	---	---	---	---	---	6,821	6,821
Total	19,670	15,892	1,932	0	32,374	6,112	9,678	6,821	92,478

Table 4.1-9b. Estimated number of angler trips in pier mode, by county of residence, fishing county and survey wave.

Fishing County	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April:									
Los Angeles	22,997	---	---	---	---	---	---	---	22,997
Orange	---	15,994	4,399	4,470	---	---	---	---	24,863
San Diego	---	---	---	---	38,383	---	---	---	38,383
San Luis Obispo	---	---	---	---	---	2,799	2,295	---	5,094
Santa Barbara	---	---	---	---	---	---	5,535	893	6,428
Ventura	---	---	---	---	---	---	---	1,607	1,607
Total	22,997	15,994	4,399	4,470	38,383	2,799	7,831	2,500	99,372
May-June:									
Los Angeles	70,578	4,569	1,866	3,517	---	---	---	---	80,530
Orange	---	25,587	8,210	3,887	---	---	---	---	37,684
San Diego	---	---	---	5,368	84,411	---	474	---	90,253
San Luis Obispo	---	---	---	---	---	15,801	4,425	---	20,226
Santa Barbara	---	---	---	---	---	---	5,215	---	5,215
Ventura	---	---	---	---	---	---	---	10,890	10,890
Total	70,578	30,156	10,076	12,773	84,411	15,801	10,115	10,890	244,798
August-September:									
Los Angeles	117,494	10,870	6,415	---	---	---	---	---	134,779
Orange	---	18,775	4,896	6,638	---	---	---	---	30,309
San Diego	13,428	---	4,389	3,393	83,637	---	---	---	104,847
San Luis Obispo	---	---	---	---	---	11,714	4,103	---	15,817
Santa Barbara	---	---	---	---	---	---	14,214	---	14,214
Ventura	---	---	---	---	---	---	---	22,019	22,019
Total	130,922	29,645	15,700	10,031	83,637	11,714	18,317	22,019	321,985
September-October:									
Los Angeles	61,001	2,407	---	---	---	---	---	---	63,408
Orange	20,869	24,877	3,285	4,700	---	---	---	---	53,731
San Diego	---	---	---	---	76,731	---	---	---	76,731
San Luis Obispo	---	---	---	---	---	3,320	3,824	---	7,144
Santa Barbara	---	---	---	---	---	---	4,747	---	4,747
Ventura	---	---	---	---	---	---	---	24,346	24,346
Total	81,870	27,284	3,285	4,700	76,731	3,320	8,571	24,346	230,106

Table 4.1-9c. Estimated number of angler trips in CPFV mode, by county of residence, fishing county and survey wave.

Fishing County	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April:									
Los Angeles	72,292	6,848	2,477	---	---	---	---	---	81,618
Orange	---	27,392	---	5,023	---	---	---	---	32,416
San Diego	---	---	6,148	---	45,155	---	---	---	51,302
San Luis Obispo	---	---	---	---	---	2,831	3,374	---	6,206
Santa Barbara	---	---	---	---	---	---	730	1,669	2,399
Ventura	---	1,957	---	1,316	---	---	---	6,372	9,645
Total	72,292	36,197	8,625	6,339	45,155	2,831	4,104	8,041	183,585
May-June:									
Los Angeles	62,479	6,012	3,352	4,512	---	---	---	---	76,355
Orange	24,663	51,701	4,724	2,429	---	---	---	---	83,518
San Diego	---	6,613	5,029	3,297	42,567	---	---	---	57,506
San Luis Obispo	---	---	---	---	---	3,647	1,245	1,239	6,131
Santa Barbara	---	---	---	---	---	421	4,979	---	5,400
Ventura	24,663	---	---	---	---	---	---	9,292	33,955
Total	111,805	64,326	13,105	10,238	42,567	4,068	6,224	10,531	262,865
July-August									
Los Angeles	152,381	30,562	1,160	7,200	---	---	---	6,446	197,749
Orange	9,166	64,763	6,766	5,760	---	---	---	---	86,455
San Diego	43,537	10,187	13,146	8,000	34,685	562	---	1,736	111,853
San Luis Obispo	---	---	---	---	---	2,998	3,054	---	6,052
Santa Barbara	---	---	---	---	---	---	2,221	---	2,221
Ventura	8,020	2,183	---	---	---	---	---	19,835	30,038
Total	213,104	107,696	21,073	20,959	34,685	3,560	5,275	28,017	434,368
September-October:									
Los Angeles	83,077	3,490	---	2,205	---	---	---	---	88,772
Orange	18,621	13,961	2,800	---	---	---	---	---	35,382
San Diego	42,971	12,216	10,047	5,597	73,582	---	---	7,992	152,404
San Luis Obispo	---	---	---	---	---	3,776	1,939	---	5,716
Santa Barbara	---	---	659	---	---	450	2,355	---	3,463
Ventura	12,891	---	659	---	---	---	---	7,128	20,678
Total	157,560	29,667	14,165	7,801	73,582	4,226	4,294	15,120	306,415

Table 4.1-9d. Estimated number of angler trips in private boat mode, by county of residence, fishing county and survey wave.

	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
March-April:									
Los Angeles	115,956	---	7,237	---	---	173	---	2,469	125,835
Orange	---	50,279	---	3,152	6,285	---	---	---	59,716
San Diego	---	---	---	---	45,473	---	---	---	45,473
San Luis Obispo	---	---	---	---	---	7,887	3,890	---	11,778
Santa Barbara	7,071	---	---	---	---	---	7,933	---	15,004
Ventura	12,727	---	---	---	---	---	---	17,799	30,526
Total	135,754	50,279	7,237	3,152	51,758	8,060	11,824	20,268	288,332
May-June:									
Los Angeles	103,050	6,574	6,205	7,692	---	---	---	1,139	124,660
Orange	---	105,186	7,847	4,293	---	---	---	---	117,326
San Diego	---	7,889	9,125	4,651	79,627	---	---	977	102,268
San Luis Obispo	---	---	---	---	---	8,539	4,008	---	12,547
Santa Barbara	---	---	---	---	---	---	10,271	---	10,271
Ventura	---	---	---	---	---	---	---	---	---
Total	103,050	119,649	23,176	16,636	79,627	8,539	14,279	23,763	390,835
July-August:									
Los Angeles	145,263	28,289	6,625	---	---	---	---	---	180,177
Orange	---	103,726	4,112	11,726	---	---	---	---	119,564
San Diego	17,293	---	3,427	---	182,613	---	---	---	203,333
San Luis Obispo	---	---	---	---	---	16,561	3,305	---	19,865
Santa Barbara	---	---	---	---	---	---	5,419	---	5,419
Ventura	---	---	---	---	---	---	---	12,558	12,558
Total	162,556	132,015	14,165	11,726	182,613	16,561	8,724	12,558	540,918
September-October:									
Los Angeles	105,738	---	3,629	3,404	---	---	---	---	112,771
Orange	23,497	75,492	12,269	8,105	---	---	---	---	119,363
San Diego	---	---	---	5,998	95,446	---	---	---	101,444
San Luis Obispo	---	---	---	---	---	13,409	1,495	---	14,904
Santa Barbara	---	---	---	---	---	---	15,270	---	15,270
Ventura	27,903	---	---	648	---	---	641	---	55,328
Total	157,139	75,492	15,898	18,155	95,446	13,409	17,405	26,135	419,079

Table 4.1-9e. Estimated number of angler trips in March-October, by county of residence, fishing county and fishing mode.

Fishing County	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
Beach:									
Los Angeles	124,122	14,860	1,228	---	---	---	---	598	140,807
Orange	15,193	48,834	4,188	818	---	---	---	---	69,033
San Diego	---	---	584	818	96,688	---	---	---	98,090
San Luis Obispo	---	---	---	---	---	26,410	9,223	---	35,633
Santa Barbara	---	---	---	---	---	481	37,768	2,731	40,980
Ventura	---	---	---	---	---	---	---	40,692	40,692
Total	139,315	63,694	6,000	1,636	96,688	26,891	46,991	44,021	425,236
Pier:									
Los Angeles	272,070	17,846	8,281	3,517	---	---	---	---	301,714
Orange	20,869	85,233	20,789	19,695	---	---	---	---	146,586
San Diego	13,428	---	4,389	8,761	283,161	---	474	---	310,213
San Luis Obispo	---	---	---	---	---	33,634	14,647	---	48,282
Santa Barbara	---	---	---	---	---	---	29,712	893	30,605
Ventura	---	---	---	---	---	---	---	58,862	58,862
Total	306,366	103,079	33,460	31,973	283,161	33,634	44,833	59,754	896,261
CPFV:									
Los Angeles	370,229	46,912	6,990	13,916	---	---	---	6,446	444,494
Orange	52,449	157,817	14,290	13,212	---	---	---	---	237,770
San Diego	86,508	29,016	34,370	16,893	195,988	562	---	9,728	373,066
San Luis Obispo	---	---	---	---	---	13,253	9,612	1,239	24,104
Santa Barbara	---	---	659	---	---	870	10,285	1,669	13,483
Ventura	45,574	4,140	659	1,316	---	---	---	42,627	94,315
Total	554,761	237,886	56,968	45,338	195,988	14,686	19,897	61,709	1,187,232
Private boat:									
Los Angeles	470,008	34,863	23,696	11,096	---	173	---	3,608	543,443
Orange	23,497	334,682	24,229	27,276	6,285	---	---	---	415,969
San Diego	17,293	7,889	12,552	10,648	403,160	---	---	977	452,519
San Luis Obispo	---	---	---	---	---	46,396	12,698	---	59,094
Santa Barbara	7,071	---	---	---	---	---	38,894	---	45,964
Ventura	40,630	---	---	648	---	---	641	80,256	122,175
Total	558,499	377,434	60,476	49,668	409,445	46,569	52,233	84,840	1,639,164

Table 4.1-10a. Estimated number of household trips by coastal county residents in beach mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	622	2,044	1,010	1,811	5,488
2	311	1,022	505	906	2,744
3	622	2,044	1,010	1,811	5,488
4	0	0	0	0	0
5	1,867	6,133	3,029	5,433	16,463
6	1,867	6,133	3,029	5,433	16,463
7	2,490 (25)	8,177 (25)	4,039 (25)	7,244 (25)	21,950
8	1,806	8,048	7,069	5,607	22,528
9	2,063 (15)	9,197 (15)	8,078 (15)	6,407 (15)	25,747
10	15,893	14,333	17,923	8,117	56,266
11	7,947	7,166	8,962	4,059	28,133
12	3,973 (7)	3,583 (7)	4,481 (7)	2,029 (7)	14,067
13	1,295	734	2,957	1,004	5,991
14	2,267	1,284	5,176	1,757	10,484
15	2,591 (19)	1,467 (19)	5,915 (19)	2,008 (19)	11,981
16	2,463	2,868	2,276	2,507	10,114
17	2,258	2,629	2,087	2,298	9,271
18	2,258 (34)	2,629 (34)	2,087 (34)	2,298 (34)	9,271
19	988	3,949	3,456	1,575	9,968
20	141	564	494	225	1,424
21	776	3,103	2,715	1,238	7,832
22	564 (35)	2,257 (35)	1,975 (35)	900 (35)	5,696
Total	55,063	89,363	88,271	64,670	297,367

Table 4.1-10b. Estimated number of household trips by coastal county residents in pier mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	1,423	3,346	3,888	2,845	11,502
2	1,423	3,346	3,888	2,845	11,502
3	1,423	3,346	3,888	2,845	11,502
4	8,539	20,078	23,325	17,070	69,013
5	712	1,673	1,944	1,423	5,751
6	1,423	3,346	3,888	2,845	11,502
7	5,693	13,386	15,550	11,380	46,009
	(29)	(29)	(29)	(29)	
8	3,018	4,575	3,680	6,523	17,796
9	10,349	15,685	12,615	22,364	61,013
	(31)	(31)	(31)	(31)	
10	5,299	18,555	31,055	14,610	69,520
11	2,355	8,247	13,802	6,494	30,898
12	4,710	16,494	27,605	12,987	61,795
	(21)	(21)	(21)	(21)	
13	0	0	0	0	0
14	463	3,137	6,342	7,012	16,953
15	401	2,718	5,496	6,077	14,693
	(28)	(28)	(28)	(28)	
16	2,212	1,795	4,891	1,633	10,531
17	1,244	1,009	2,751	919	5,923
18	0	0	0	0	0
	(25)	(25)	(25)	(25)	
19	1,486	5,898	4,612	2,083	14,079
20	325	1,290	1,009	456	3,080
21	696	2,765	2,162	977	6,599
22	232	922	721	326	2,200
	(59)	(59)	(59)	(59)	
Total	53,426	131,612	173,110	123,713	481,861

Table 4.1-10c. Estimated number of household trips by coastal county residents in CPFV mode, by survey wave and departure area (see map-Appendix B).

Departure Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	565	633	0	0	1,197
2	20,322	22,780	48,474	66,047	157,623
3	3,952	4,429	7,271	9,907	25,559
4	6,210	6,960	13,330	18,163	44,663
5	0	0	0	0	0
6	0	0	0	0	0
7	5,081 (43)	5,695 (43)	9,695 (87)	13,209 (87)	33,680
8	11,722	30,202	24,567	10,054	76,546
9	11,106 (37)	28,613 (37)	36,317 (57)	14,863 (57)	90,898
10	41,671	38,984	112,013	50,285	242,953
11	11,495	10,754	12,110	5,436	39,795
12	4,311 (40)	4,033 (40)	15,137 (46)	6,795 (46)	30,276
13	0	0	0	0	0
14	4,657	16,397	18,950	13,045	53,049
15	2,135 (35)	7,515 (35)	2,203 (48)	1,517 (48)	13,370
16	1,689	3,803	1,564	2,439	9,495
17	0	0	0	0	0
18	0 (25)	0 (25)	0 (25)	0 (25)	0
19	2,046	2,021	1,202	1,135	6,404
20	0	0	0	0	0
21	1,953	1,929	1,749	1,651	7,282
22	372 (47)	367 (47)	1,311 (39)	1,238 (39)	3,289
Total	129,284	185,116	305,893	215,786	836,079

Table 4.1-10d. Estimated number of household trips by coastal county residents in private boat mode, by survey wave and departure area (see map-Appendix B).

Departure Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	0	0	0	0	0
2	8,492	19,098	78,432	39,130	145,151
3	7,076	15,915	23,965	11,956	58,913
4	4,246	9,549	6,536	3,261	23,591
5	0	0	4,357	2,174	6,531
6	2,123	4,774	0	0	6,897
7	7,784 (42)	17,506 (42)	19,608 (61)	9,782 (61)	54,681
8	16,434	32,288	34,565	34,507	117,793
9	22,596 (38)	44,396 (38)	43,581 (52)	43,508 (52)	154,082
10	61,020	60,451	72,901	45,628	240,000
11	5,306	5,257	5,608	3,510	19,680
12	15,918 (31)	15,770 (31)	39,254 (42)	24,569 (42)	95,511
13	0	0	0	0	0
14	9,607	7,478	5,682	25,035	47,802
15	10,345 (27)	8,053 (27)	2,526 (39)	11,127 (39)	32,051
16	7,132	4,882	2,361	6,653	21,028
17	2,229	1,526	945	2,661	7,360
18	446 (19)	305 (19)	236 (30)	665 (30)	1,652
19	4,834	5,149	8,288	6,218	24,488
20	0	0	276	207	484
21	2,506	2,670	4,144	3,109	12,429
22	358 (43)	381 (43)	276 (47)	207 (47)	1,223
Total	188,451	255,447	353,541	273,908	1,071,347

Table 4.1-10e. Estimated number of household trips by coastal county residents in CPFV mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	1,777	1,992	0	0	3,768
2	0	0	0	0	0
3	0	0	0	0	0
4	5,330	5,975	8,752	11,925	31,983
5	592	664	5,001	6,814	13,072
6	1,777	1,992	1,875	2,555	8,199
7	671	1,730	4,675	4,297	11,373
8	2,014	5,190	7,611	3,115	17,929
9	2,817	4,838	19,377	8,181	35,213
10	0	0	3,165	1,421	4,586
11	2,948	2,757	12,660	5,683	24,048
12	1,474	1,379	6,330	2,842	12,024
13	200	703	0	0	903
14	599	2,110	2,203	1,517	6,429
15	70	158	1,387	1,012	2,628
16	822	2,357	391	610	4,180
17	0	0	0	0	0
18	91	90	112	106	399
19	637	630	673	636	2,575
20	546	540	336	318	1,740
21	1,366	1,349	1,234	1,165	5,114
22	455	450	785	741	2,432
23	6,114	16,643	12,681	9,411	44,848
24	1,674	2,082	0	0	3,756
25	2,948	2,757	441	303	6,449
26	33,635	35,873	44,503	19,719	133,731
27	4,290	6,217	23,867	11,242	45,617
28	592	664	625	852	2,733
29	8,884	9,958	10,628	14,481	43,951
30	11,611	24,742	27,313	13,813	77,478
31	12,609	22,814	46,774	20,523	102,720
32	2,672	5,599	3,606	1,724	13,601
33	751	2,199	4,733	3,542	11,225
34	0	0	441	303	744
35	4,421	4,136	6,955	3,693	19,206
36	1,275	1,259	1,122	1,059	4,715
37	592	664	1,250	1,704	4,210
38	9,476	10,622	23,756	32,368	76,223
39	3,554	3,983	20,630	28,109	56,277
Total	129,284	185,116	305,893	215,786	836,079

Table 4.1-10f. Estimated number of household trips by coastal county residents in private boat mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	0	0	0	0	0
2	0	0	11,658	5,816	17,474
3	1,607	3,613	6,995	3,490	15,704
4	4,820	10,839	23,315	11,632	50,606
5	2,410	5,420	11,658	5,816	25,303
6	1,607	3,613	0	0	5,220
7	5,381	11,486	9,993	8,812	35,672
8	4,337	8,520	13,790	13,767	40,415
9	10,842	21,301	18,267	17,140	67,549
10	19,191	19,011	8,832	5,528	52,562
11	2,742	2,716	8,832	5,528	19,818
12	10,966	10,864	8,832	5,528	36,190
13	0	0	444	1,955	2,398
14	2,956	2,301	666	2,932	8,854
15	1,478	1,150	877	3,909	7,425
16	3,736	2,557	1,265	3,564	11,122
17	1,868	1,279	633	1,782	5,561
18	183	195	403	564	1,345
19	1,833	1,953	5,525	4,145	13,456
20	2,016	2,148	2,210	1,658	8,032
21	1,650	1,757	2,210	1,658	7,275
22	550	586	1,381	1,036	3,553
23	12,213	9,332	5,766	23,997	51,308
24	0	0	0	0	0
25	0	0	5,888	3,685	9,574
26	25,415	31,468	53,596	39,252	149,731
27	3,826	4,846	7,420	5,215	21,307
28	0	0	0	0	0
29	6,426	14,452	18,652	9,306	48,837
30	12,409	25,750	34,467	24,065	96,691
31	24,038	31,206	31,334	23,607	110,185
32	12,911	12,334	12,220	9,325	46,790
33	5,096	3,835	1,520	5,692	16,142
34	0	0	0	0	0
35	0	0	0	0	0
36	1,933	1,882	1,381	1,036	6,233
37	0	0	0	0	0
38	1,607	3,613	29,511	15,488	50,219
39	2,410	5,420	13,989	6,979	28,798
Total	188,452	255,448	353,541	273,908	1,071,349

Table 4.1-11a. Estimated number of angler trips by coastal county residents in beach mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	890	2,923	1,444	2,590	7,847
2	445	1,462	722	1,295	3,924
3	890	2,923	1,444	2,590	7,847
4	0	0	0	0	0
5	2,670	8,770	4,332	7,770	23,542
6	2,670	8,770	4,332	7,770	23,542
7	3,561 (25)	11,693 (25)	5,776 (25)	10,360 (25)	31,389 (25)
8	2,582	11,508	10,108	8,017	32,215
9	2,951 (15)	13,152 (15)	11,552 (15)	9,163 (15)	36,818
10	22,727	20,496	25,631	11,608	80,462
11	11,363	10,248	12,815	5,804	40,231
12	5,682 (7)	5,124 (7)	6,408 (7)	2,902 (7)	20,115
13	1,852	1,049	4,229	1,436	8,567
14	3,242	1,836	7,401	2,513	14,992
15	3,705 (19)	2,098 (19)	8,459 (19)	2,872 (19)	17,133
16	3,522	4,101	3,255	3,586	14,463
17	3,228	3,759	2,984	3,287	13,258
18	3,228 (34)	3,759 (34)	2,984 (34)	3,287 (34)	13,258
19	1,412	5,647	4,942	2,252	14,253
20	202	807	706	322	2,036
21	1,109	4,437	3,883	1,770	11,199
22	807 (35)	3,227 (35)	2,824 (35)	1,287 (35)	8,145
Total	78,739	127,789	126,229	92,479	425,236

Table 4.1-11b. Estimated number of angler trips by coastal county residents in pier mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	2,647	6,224	7,231	5,292	21,394
2	2,647	6,224	7,231	5,292	21,394
3	2,647	6,224	7,231	5,292	21,394
4	15,883	37,346	43,385	31,751	128,364
5	1,324	3,112	3,615	2,646	10,697
6	2,647	6,224	7,231	5,292	21,394
7	10,588 (29)	24,897 (29)	28,923 (29)	21,167 (29)	85,576
8	5,614	8,509	6,844	12,133	33,100
9	19,249 (31)	29,175 (31)	23,465 (31)	41,598 (31)	113,487
10	9,856	34,513	57,762	27,175	129,306
11	4,380	15,339	25,672	12,078	57,469
12	8,761 (21)	30,678 (21)	51,344 (21)	24,155 (21)	114,939
13	0	0	0	0	0
14	861	5,834	11,796	13,043	31,533
15	746 (28)	5,056 (28)	10,223 (28)	11,304 (28)	27,329
16	4,114	3,338	9,097	3,038	19,587
17	2,314	1,877	5,117	1,709	11,017
18	0 (25)	0 (25)	0 (25)	0 (25)	0
19	2,763	10,970	8,579	3,875	26,186
20	604	2,400	1,877	848	5,728
21	1,295	5,142	4,021	1,816	12,275
22	432 (59)	1,714 (59)	1,340 (59)	605 (59)	4,092
Total	99,372	244,798	321,985	230,107	896,262

Table 4.1-11c. Estimated number of angler trips by coastal county residents in CPFV mode, by survey wave and departure area (see map-Appendix B).

Departure Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	802	899	0	0	1,700
2	28,857	32,347	68,883	93,787	223,824
3	5,611	6,290	10,325	14,068	36,294
4	8,818	9,884	18,929	25,791	63,422
5	0	0	0	0	0
6	0	0	0	0	0
7	7,214 (43)	8,087 (43)	13,767 (87)	18,757 (87)	47,825
8	16,646	42,888	34,885	14,277	108,696
9	15,770 (37)	40,630 (37)	51,570 (57)	21,105 (57)	129,075
10	59,173	55,357	159,059	71,404	344,993
11	16,324	15,271	17,196	7,719	56,509
12	6,121 (40)	5,727 (40)	21,494 (46)	9,649 (46)	42,992
13	0	0	0	0	0
14	6,614	23,283	26,909	18,524	75,330
15	3,031 (35)	10,672 (35)	3,129 (48)	2,154 (48)	18,986
16	2,399	5,400	2,221	3,463	13,483
17	0	0	0	0	0
18	0 (25)	0 (25)	0 (25)	0 (25)	0
19	2,905	2,870	1,707	1,612	9,094
20	0	0	0	0	0
21	2,773	2,739	2,483	2,345	10,340
22	528 (47)	522 (47)	1,862 (39)	1,759 (39)	4,671
Total	183,586	262,865	434,368	306,415	1,187,234

Table 4.1-11d. Estimated number of angler trips by coastal county residents in private boat mode, by survey wave and departure area (see map-Appendix B).

Departure Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	0	0	0	0	0
2	12,292	29,219	120,000	59,869	222,080
3	10,827	24,350	36,667	18,293	90,136
4	6,496	14,610	10,000	4,989	36,095
5	0	0	6,667	3,326	9,993
6	3,248	7,305	0	0	10,553
7	11,910 (42)	26,784 (42)	30,000 (61)	14,967 (61)	83,661
8	25,144	49,400	52,884	52,795	180,223
9	34,572 (38)	67,926 (38)	66,680 (52)	66,568 (52)	235,746
10	93,361	92,490	111,538	69,811	367,200
11	8,118	8,043	8,580	5,370	30,111
12	24,355 (31)	24,128 (31)	60,059 (42)	37,590 (42)	146,132
13	0	0	0	0	0
14	14,698	11,441	8,694	38,304	73,137
15	15,828 (27)	12,322 (27)	3,864 (39)	17,024 (39)	49,038
16	10,912	7,470	3,613	10,180	32,174
17	3,410	2,334	1,445	4,072	11,261
18	682 (19)	467 (19)	361 (30)	1,018 (30)	2,528
19	7,395	7,878	12,680	9,513	30,467
20	0	0	423	317	740
21	3835	4,085	6,340	4,757	19,016
22	548 (43)	584 (43)	423 (47)	317 (47)	1,871
Total	288,332	390,835	540,916	419,080	1,639,163

Table 4.1-11e. Estimated number of angler trips by coastal county residents in CPFV mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	2,523	2,828	0	0	5,351
2	0	0	0	0	0
3	0	0	0	0	0
4	7,569	8,484	12,428	16,934	45,416
5	841	943	7,102	9,676	18,562
6	2,523	2,828	2,663	3,629	11,643
7	953	2,456	6,639	6,102	16,150
8	2,860	7,369	10,807	4,423	25,459
9	4,000	6,871	27,515	11,617	50,002
10	0	0	4,494	2,018	6,512
11	4,186	3,916	17,977	8,070	34,149
12	2,093	1,958	8,989	4,035	17,074
13	284	999	0	0	1,282
14	851	2,996	3,129	2,154	9,130
15	100	225	1,970	1,437	3,732
16	1,167	3,347	555	866	5,935
17	0	0	0	0	0
18	129	128	159	150	567
19	905	894	956	903	3,657
20	776	766	478	451	2,471
21	1,939	1,916	1,752	1,655	7,262
22	646	639	1,115	1,053	3,453
23	8,682	23,633	18,007	13,363	63,685
24	2,376	2,956	0	0	5,333
25	4,186	3,916	626	431	9,158
26	47,762	50,940	63,195	28,001	189,898
27	6,092	8,828	33,892	15,964	64,777
28	841	943	888	1,210	3,881
29	12,615	14,141	15,091	20,562	62,410
30	16,487	35,133	38,785	19,614	110,019
31	17,905	32,395	66,419	29,143	145,863
32	3,395	7,950	5,120	2,448	19,313
33	1,067	3,122	6,721	5,029	15,939
34	0	0	626	431	1,057
35	6,278	5,873	9,876	5,245	27,273
36	1,810	1,788	1,593	1,504	6,695
37	841	943	1,775	2,419	5,978
38	13,456	15,084	33,733	45,963	108,236
39	5,046	5,656	29,295	39,915	79,913
Total	183,586	262,865	434,368	306,415	1,187,234

Table 4.1-11f. Estimated number of angler trips by coastal county residents in private boat mode, by survey wave and fishing area (see map-Appendix B).

Fishing Area	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
1	0	0	0	0	0
2	0	0	17,836	8,899	26,735
3	2,458	5,528	10,702	5,339	24,027
4	7,374	16,584	35,672	17,797	77,428
5	3,687	8,292	17,836	8,899	38,714
6	2,458	5,528	0	0	7,986
7	8,234	17,574	15,289	13,482	54,579
8	6,635	13,036	21,100	21,064	61,835
9	16,588	32,591	27,948	26,224	103,350
10	29,362	29,087	13,513	8,458	80,420
11	4,195	4,155	13,513	8,458	30,321
12	16,778	16,621	13,513	8,458	55,370
13	0	0	679	2,991	3,670
14	4,522	3,520	1,018	4,486	13,547
15	2,261	1,760	1,358	5,981	11,360
16	5,716	3,913	1,935	5,454	17,018
17	2,858	1,956	968	2,727	8,509
18	280	299	616	862	2,058
19	2,804	2,987	8,453	6,342	20,587
20	3,085	3,286	3,381	2,537	12,289
21	2,524	2,689	3,381	2,537	11,131
22	841	896	2,113	1,586	5,436
23	18,686	14,278	8,822	36,715	78,501
24	0	0	0	0	0
25	0	0	9,009	5,639	14,647
26	38,884	48,147	82,001	60,055	229,088
27	5,853	7,414	11,353	7,979	32,600
28	0	0	0	0	0
29	9,832	22,112	28,538	14,238	74,720
30	19,985	39,397	52,735	36,820	147,938
31	36,778	47,745	47,942	36,118	168,584
32	19,754	18,871	18,697	14,268	71,589
33	7,796	5,868	2,325	8,708	24,698
34	0	0	0	0	0
35	0	0	0	0	0
36	2,958	2,879	2,113	1,586	9,536
37	0	0	0	0	0
38	2,458	5,528	45,151	23,697	76,834
39	3,687	8,292	21,403	10,678	44,061
Total	288,332	390,835	540,916	419,080	1,639,163

Table 4.1-12. Estimated number of two-month angling households who made at least one fishing without the key angler, by survey wave and county of residence.

	Los Angeles		Orange		Riverside		San Bernardino		San Diego		San Luis Obispo		Santa Barbara		Ventura		Total
March-April:																	
# angling households	72,728	30,712	5,375	6,867	33,829	3,763	6,283	9,599	169,156								
% fish without key angler	8.7% (23)	7.1% (28)	6.3% (16)	5.3% (19)	13.3% (30)	10.0% (30)	5.4% (37)	11.1% (36)	9.2% ¹ (219)								
# fish without key angler	6,327	2,181	339	364	4,499	376	339	1,065	15,490								
May-June:																	
# angling households	94,863	47,684	10,032	11,445	41,635	4,939	8,116	13,011	231,725								
% fish without key angler	6.1% (33)	10.3% (58)	5.6% (36)	4.7% (43)	15.1% (53)	3.9% (51)	10.3% (58)	6.0% (67)	8.6% ¹ (399)								
# fish without key angler	5,787	4,911	562	538	6,287	193	836	781	19,894								
July-August:																	
# angling households	132,808	54,958	13,615	14,192	55,514	6,115	8,639	15,784	301,625								
% fish without key angler	7.5% (53)	13.9% (36)	8.8% (34)	0.0% (22)	4.3% (23)	8.8% (34)	12.5% (32)	14.6% (41)	8.3% ¹ (275)								
# fish without key angler	9,961	7,639	1,198	0	2,387	538	1,080	2,304	25,107								
September-October:																	
# angling households	91,701	44,451	10,391	10,987	50,309	5,410	7,200	11,092	231,541								
% fish without key angler	0.0% (31)	6.1% (33)	0.0% (24)	4.2% (24)	5.3% (38)	4.8% (42)	0.0% (35)	3.7% (27)	2.8% ¹ (254)								
# fish without key angler	0	2,712	0	461	2,666	260	0	410	6,509								

¹ Estimated by dividing total # angling households that fish without key angler by total # angling households.

Table 4.1-13. Average and total number of household trips and angler trips made without the key angler by two-month angling households living in coastal counties, by survey wave

	Survey Wave				
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Total
# households that fished without key angler	15,490	19,894	25,107	6,509	
Average # household trips w/o key angler	1.54 (11)	2.50 (30)	3.79 (29)	1.66 (9)	
Total # household trips w/o key angler	23,855	49,735	95,156	10,805	179,551
% of total household trips made without the key angler	5.3%	7.0%	9.4%	1.6%	6.3% ¹
Average # household members/household trip w/o key angler	1.53 (15)	1.33 (31)	1.55 (26)	1.25 (8)	1.47 ² (80)
Total # angler trips w/o key angler	36,498	66,148	147,492	13,506	263,644
% of total angler trips made without the key angler	5.3%	6.1%	9.4%	1.3%	6.4% ³

¹ Estimated by dividing total # household trips without key angler (179,551) by total # household trips with and without key angler (2,866,210 = 2,686,659 + 179,551, where 2,686,659 is total # of household trips with key angler according to Table 4.1-6e).

² Estimated by dividing total # angler trips without key angler (263,644) by total # household trips without key angler (179,551).

³ Estimated by dividing total # angler trips without key angler (263,644) by total # angler trips with and without key angler (4,411,542 = 4,147,898 + 263,644, where 4,147,898 is total # of angler trips with key angler according to Table 4.1-7e).

Table 4.1-14. Fraction of anglers intercepted in MRFSS creel survey who were noncoastal county residents, by county of intercept, fishing mode and survey wave.¹
County of Intercept

	County of Intercept					
	San Diego	Orange	Los Angeles	Ventura	Santa Barbara	San Luis Obispo
Shore-Beach and Pier:						
Mar-Apr	2.5% (80)	2.9% (70)	0.4% (226)	0.0% (33)	3.5% (29)	30.0% (30)
May-Jun	0.0% (99)	1.7% (118)	0.0% (117)	2.2% (45)	3.7% (54)	42.2% (45)
Jul-Aug	9.0% (78)	6.2% (178)	4.5% (288)	7.1% (42)	5.3% (94)	60.5% (43)
Sep-Oct	2.2% (46)	3.9% (104)	1.2% (170)	0.0% (34)	0.0% (12)	41.4% (29)
CPFV:						
Mar-Apr	30.0% (60)	2.9% (35)	0.0% (41)	6.3% (32)	8.7% (23)	26.7% (15)
May-Jun	32.7% (150)	8.2% (85)	7.5% (94)	13.7% (51)	8.7% (23)	63.6% (11)
Jul-Aug	37.8% (156)	15.8% (57)	7.1% (182)	6.7% (60)	8.7% (23)	53.1% (32)
Sep-Oct	12.8% (149)	12.5% (40)	3.9% (180)	0.0% (100)	8.7% (23)	38.6% (44)
Private boat:						
Mar-Apr	2.1% (94)	0.0% (55)	0.8% (119)	2.1% (47)	3.1% (32)	17.4% (23)
May-Jun	3.1% (131)	6.4% (78)	1.0% (99)	0.0% (40)	6.7% (45)	31.4% (35)
Jul-Aug	3.4% (177)	5.7% (159)	3.2% (216)	2.6% (38)	4.2% (24)	36.0% (75)
Sep-Oct	0.0% (50)	0.0% (95)	2.0% (245)	2.3% (43)	8.7% (23)	25.0% (20)

¹ Data provided courtesy of John Witzig, National Marine Fisheries Service, Silver Spring, Maryland.

Table 4.1-15. Estimated number of household and angler trips made by coastal county residents from CPFV's and private boats departing from southern California to fish in Mexican waters, by fishing mode, county of departure and survey wave.

County of Departure	Survey Wave				Total
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	
Household Trips:					
CPFV-					
San Diego	13,030	14,605	44,386	60,477	132,500
Private Boat-					
San Diego	4,017	9,033	41,968	20,938	75,955
Orange	0	0	1,532	1,530	3,062
Angler Trips:					
CPFV-					
San Diego	18,502	20,740	63,028	85,878	188,149
Private Boat-					
San Diego	6,145	13,820	64,210	32,035	116,211
Orange	0	0	2,344	2,340	4,685

Table 4.1-16a. Estimated number of household trips in 1989 by noncoastal county residents, by fishing county, mode and time of year.

	Fishing County							Total
	Los Angeles	Orange	San Diego	San Luis Obispo	Santa Barbara	Ventura		
BEACH:								
Mar-Apr	112	116	200	1,058	253	0	1,738	
May-Jun	0	298	0	7,208	312	78	7,897	
Jul-Aug	1,478	1,001	1,248	13,232	361	1,074	18,394	
Sep-Oct	173	488	509	2,782	0	0	3,951	
Off-Season	284	307	316	3,920	149	186	5,163	
Total	2,046	2,210	2,273	28,200	1,075	1,338	37,143	
PIER:								
Mar-Apr	50	399	529	1,174	125	0	2,277	
May-Jun	0	350	0	7,939	108	132	8,529	
Jul-Aug	3,414	1,077	5,575	13,025	428	905	24,424	
Sep-Oct	414	1,172	928	2,714	0	0	5,228	
Off-Season	626	484	1,135	4,012	107	167	6,532	
Total	4,504	3,483	8,167	28,864	768	1,203	46,990	
CPV:								
Mar-Apr	0	682	9,899	1,592	161	457	12,790	
May-Jun	4,360	5,254	12,581	7,545	362	3,796	33,897	
Jul-Aug	10,643	11,425	20,896	4,825	149	1,519	49,457	
Sep-Oct	2,537	3,560	6,877	2,530	232	0	15,736	
Off-Season	4,330	5,165	12,406	4,072	223	1,425	27,621	
Total	21,870	26,085	62,658	20,564	1,128	7,197	139,502	
PRIVATE BOAT:								
Mar-Apr	663	0	551	1,622	314	428	3,578	
May-Jun	823	5,243	1,849	3,754	482	0	12,152	
Jul-Aug	3,893	4,631	3,200	7,304	155	219	19,402	
Sep-Oct	1,504	0	0	3,247	951	815	6,554	
Off-Season	424	608	345	981	117	92	2,567	
Total	7,307	10,482	5,946	16,907	2,019	1,590	44,251	

¹ Off-season includes January, February, November and December.

Table 4.1-16b. Estimated number of household trips in 1989 by coastal county residents, by fishing county, mode and time of year.¹

		Fishing County							Total
		Los Angeles	Orange	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total	
BEACH:									
Mar-Apr		27,813	3,869	7,781	2,469	6,978	6,153	55,063	
May-Jun		25,082	17,245	25,553	9,873	8,125	3,485	89,363	
Jul-Aug		31,366	15,147	12,621	8,639	6,450	14,048	88,271	
Sep-Oct		14,205	12,014	22,639	3,938	7,104	4,770	64,670	
Off-Season		23,549	11,545	16,405	5,960	6,854	6,805	71,118	
Total		122,015	59,820	84,999	30,879	35,511	35,261	368,485	
PIER:									
Mar-Apr		12,364	13,367	20,636	2,739	3,456	864	53,426	
May-Jun		43,296	20,260	48,523	10,874	2,804	5,855	131,612	
Jul-Aug		72,462	16,295	56,369	8,504	7,642	11,838	173,110	
Sep-Oct		34,091	28,887	41,253	3,841	2,552	13,089	123,713	
Off-Season		38,794	18,848	39,887	6,208	3,935	7,568	115,241	
Total		201,007	97,657	206,668	32,166	20,389	39,214	597,102	
CPFV:									
Mar-Apr		57,477	22,828	36,128	4,370	1,689	6,792	129,284	
May-Jun		53,771	58,815	40,497	4,318	3,803	23,912	185,116	
Jul-Aug		139,260	60,884	78,770	4,262	1,564	21,153	305,893	
Sep-Oct		62,516	24,917	107,327	4,025	2,439	14,562	215,786	
Off-Season		82,708	44,242	34,408	4,485	2,509	17,549	185,901	
Total		395,732	211,686	297,130	21,460	12,004	83,968	1,021,980	
PRIVATE BOAT:									
Mar-Apr		82,245	39,030	29,721	7,698	9,806	19,952	188,452	
May-Jun		81,477	76,684	66,842	8,201	6,713	15,531	255,448	
Jul-Aug		117,763	78,146	132,898	12,984	3,542	8,208	353,541	
Sep-Oct		73,707	78,015	66,303	9,741	9,980	36,162	273,908	
Off-Season		81,699	61,830	50,559	1,068	6,910	8,884	228,249	
Total		436,891	333,705	346,323	47,508	36,951	98,220	1,299,598	

¹ Off-season includes January, February, November and December.

Table 4.1-16c. Estimated number of household trips in 1989 by coastal and noncoastal county residents, by fishing county, mode and time of year.¹
Fishing County

	Los Angeles					San Diego		San Luis Obispo		Santa Barbara		Ventura	Total
BEACH:	27,925	3,985	7,981	3,527	7,231							6,153	56,801
Mar-Apr	25,082	17,543	25,553	17,081	8,437							3,563	97,260
May-Jun	32,844	16,148	13,869	21,871	6,811							15,122	106,665
Jul-Aug	14,378	12,502	23,148	6,720	7,104							4,770	68,621
Sep-Oct	23,833	11,853	16,721	9,879	7,003							6,991	76,280
Off-Season	124,061	62,031	87,272	59,078	36,586							36,599	405,627
PIER:	12,414	13,766	21,165	3,913	3,581							864	55,703
Mar-Apr	43,296	20,610	48,523	18,813	2,912							5,987	140,141
May-Jun	75,876	17,372	61,944	21,529	8,070							12,743	197,534
Jul-Aug	34,505	30,059	42,181	6,555	2,552							13,089	128,941
Sep-Oct	39,420	19,332	41,022	10,220	4,042							7,736	121,772
Off-Season	205,511	101,140	214,835	61,030	21,157							40,418	644,091
CPFV:	57,477	23,510	46,027	5,962	1,850							7,249	142,074
Mar-Apr	58,131	64,069	53,078	11,863	4,165							27,708	219,013
May-Jun	149,903	72,309	99,666	9,087	1,713							22,672	355,350
Jul-Aug	65,053	28,477	114,204	6,555	2,671							14,562	231,522
Sep-Oct	87,038	49,407	46,814	8,557	2,732							18,974	213,523
Off-Season	417,602	237,771	359,788	42,024	13,132							91,165	1,161,483
PRIVATE BOAT:	82,908	39,030	30,272	9,320	10,120							20,380	192,030
Mar-Apr	82,300	81,927	68,691	11,955	7,195							15,531	267,600
May-Jun	121,656	82,777	136,098	20,288	3,697							8,427	372,943
Jul-Aug	75,211	78,015	66,303	12,988	10,931							37,013	280,462
Sep-Oct	82,122	62,438	50,904	9,865	7,027							18,459	230,815
Off-Season	444,197	344,187	352,269	64,415	38,970							99,810	1,343,848

¹ Off-season includes January, February, November and December.

Table 4.1-17a. Estimated number of angler trips in 1989 by noncoastal county residents, by fishing county, mode and time of year.

	Fishing County							Total
	Los Angeles	Orange	San Diego	San Luis Obispo	Santa Barbara	Ventura		
BEACH:								
Mar-Apr	160	165	285	1,513	362	0	2,485	
May-Jun	0	426	0	10,308	446	112	11,293	
Jul-Aug	2,114	1,432	1,785	18,922	516	1,535	26,304	
Sep-Oct	247	697	728	3,978	0	0	5,650	
Off-Season	407	439	452	5,605	214	266	7,383	
Total	2,927	3,160	3,251	40,326	1,538	1,913	53,115	
PIER:								
Mar-Apr	92	743	984	2,183	233	0	4,235	
May-Jun	0	652	0	14,767	200	245	15,864	
Jul-Aug	6,351	2,003	10,369	24,226	796	1,683	45,428	
Sep-Oct	770	2,181	1,726	5,047	0	0	9,724	
Off-Season	1,164	901	2,112	7,462	198	311	12,149	
Total	8,377	6,479	15,192	53,685	1,427	2,239	87,400	
CPFV:								
Mar-Apr	0	968	14,057	2,261	229	648	18,163	
May-Jun	6,191	7,460	17,864	10,712	515	5,390	48,132	
Jul-Aug	15,113	16,223	29,672	6,852	212	2,157	70,229	
Sep-Oct	3,603	5,055	9,765	3,593	330	0	22,346	
Off-Season	6,149	7,334	17,617	5,782	317	2,023	39,222	
Total	31,056	37,040	88,975	29,200	1,602	10,219	198,092	
PRIVATE BOAT:								
Mar-Apr	1,015	0	844	2,481	480	655	5,474	
May-Jun	1,259	8,022	2,830	5,743	738	0	18,592	
Jul-Aug	5,956	7,085	4,897	11,174	238	335	29,685	
Sep-Oct	2,301	0	0	4,968	1,455	1,303	10,027	
Off-Season	648	930	528	1,500	179	141	3,927	
Total	11,180	16,038	9,098	25,866	3,089	2,434	67,706	

¹ Off-season includes January, February, November and December.

Table 4.1-17b. Estimated number of angler trips in 1989 by coastal county residents, by fishing county, mode and time of year.¹

	Fishing County							Total
	Los Angeles	Orange	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total	
BEACH:								
Mar-Apr	39,772	5,533	11,127	3,530	9,978	8,799	78,739	
May-Jun	35,868	24,660	36,541	14,118	11,619	4,983	127,789	
Jul-Aug	44,854	21,660	18,049	12,354	9,223	20,089	126,229	
Sep-Oct	20,314	17,180	32,374	5,631	10,159	6,821	92,479	
Off-Season	33,675	16,510	23,459	8,522	9,800	9,732	101,698	
Total	174,483	85,543	121,550	44,155	50,779	50,424	526,934	
PIER:								
Mar-Apr	22,997	24,863	38,383	5,094	6,428	1,607	99,372	
May-Jun	80,530	37,684	90,253	20,226	5,215	10,890	244,798	
Jul-Aug	134,779	30,309	104,847	15,817	14,214	22,019	321,985	
Sep-Oct	63,408	53,731	76,731	7,144	4,747	24,346	230,107	
Off-Season	72,157	35,057	74,190	11,547	7,319	14,077	214,348	
Total	373,871	181,644	384,404	59,828	37,923	72,939	1,110,610	
CPFV:								
Mar-Apr	81,618	32,416	51,302	6,206	2,399	9,645	183,586	
May-Jun	76,355	83,518	57,506	6,131	5,400	33,955	262,865	
Jul-Aug	197,749	86,455	111,853	6,052	2,221	30,038	434,368	
Sep-Oct	88,772	35,382	152,404	5,716	3,463	20,678	306,415	
Off-Season	117,445	62,824	48,859	6,369	3,563	24,920	263,981	
Total	561,939	300,595	421,924	30,474	17,046	119,236	1,451,215	
PRIVATE BOAT:								
Mar-Apr	125,835	59,716	45,473	11,778	15,004	30,526	288,332	
May-Jun	124,660	117,326	102,268	12,547	10,271	23,763	390,835	
Jul-Aug	180,177	119,564	203,333	19,865	5,419	12,558	540,916	
Sep-Oct	112,771	119,363	101,444	14,904	15,270	55,328	419,080	
Off-Season	124,999	94,600	77,355	13,592	10,572	28,102	349,220	
Total	668,442	510,569	529,873	72,686	56,536	150,277	1,988,383	

¹ Off-season includes January, February, November and December.

Table 4.1-17c. Estimated number of angler trips in 1989 by coastal and noncoastal county residents, by fishing county, mode and time of year.¹
Fishing County

	Los Angeles	Orange	San Diego	San Luis Obispo	Santa Barbara	Ventura	Total
BEACH:							
Mar-Apr	39,932	5,698	11,412	5,043	10,340	8,799	81,224
May-Jun	35,868	25,086	36,541	24,426	12,065	5,095	139,082
Jul-Aug	46,968	23,092	19,834	31,276	9,739	21,624	152,533
Sep-Oct	20,561	17,877	33,102	9,609	10,159	6,821	98,129
Off-Season	34,082	16,949	23,911	14,127	10,014	9,998	109,081
Total	177,410	88,703	124,801	84,481	52,317	52,337	580,049
PIER:							
Mar-Apr	23,089	25,606	39,367	7,277	6,661	1,607	103,607
May-Jun	80,530	38,336	90,253	34,993	5,415	11,135	260,662
Jul-Aug	141,130	32,312	115,216	40,043	15,010	23,702	367,413
Sep-Oct	64,178	55,912	78,457	12,191	4,747	24,346	239,831
Off-Season	73,322	35,958	76,302	19,009	7,518	14,389	226,498
Total	382,249	188,123	399,596	113,513	39,351	75,179	1,198,011
CPFV:							
Mar-Apr	81,618	33,384	65,359	8,467	2,628	10,293	201,749
May-Jun	82,546	90,978	75,370	16,843	5,915	39,345	310,997
Jul-Aug	212,862	102,678	141,525	12,904	2,433	32,195	504,597
Sep-Oct	92,375	40,437	162,169	9,309	3,793	20,678	328,761
Off-Season	123,594	70,158	66,476	12,151	3,880	26,944	303,203
Total	592,995	337,635	510,899	59,674	18,648	129,456	1,649,307
PRIVATE BOAT:							
Mar-Apr	126,850	59,716	46,317	14,259	15,484	31,181	293,806
May-Jun	125,919	125,348	105,098	18,290	11,009	23,763	409,427
Jul-Aug	186,133	126,649	208,230	31,039	5,657	12,893	570,601
Sep-Oct	115,072	119,363	101,444	19,872	16,725	56,631	429,107
Off-Season	125,647	95,531	77,882	15,093	10,751	28,243	353,147
Total	679,622	526,608	538,970	98,553	59,625	152,711	2,056,089

¹ Off-season includes January, February, November and December.

Table 4.1-18a. Estimated number of household trips in 1989 by coastal and noncoastal county residents, by county of residence, fishing mode and time of year.¹

County of Residence

	Los Angeles	Orange	River-side	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Other	Total
BEACH:										
Mar-Apr	21,818	9,521	0	343	7,781	1,882	5,655	8,063	1,738	56,801
May-Jun	24,664	16,213	803	801	24,981	6,717	11,281	3,903	7,897	97,260
Jul-Aug	37,186	7,694	2,042	0	12,213	5,932	9,157	14,048	18,394	106,666
Sep-Oct	13,755	11,113	1,351	0	22,639	4,274	6,768	4,770	3,951	68,620
OffSeas	23,300	10,652	1,004	274	16,170	4,497	7,859	7,362	5,163	76,281
Total	120,724	55,192	5,200	1,419	83,784	23,301	40,720	38,146	37,143	405,628
PIER:										
Mar-Apr	12,364	8,599	2,365	2,403	20,636	1,505	4,210	1,344	2,277	55,703
May-Jun	37,945	16,213	5,417	6,867	45,382	8,495	5,438	5,855	8,529	140,141
Jul-Aug	70,388	15,938	8,441	5,393	44,966	6,298	9,848	11,838	24,424	197,534
Sep-Oct	44,016	14,669	1,766	2,527	41,253	1,785	4,608	13,089	5,228	128,941
OffSeas	39,393	13,254	4,302	4,111	36,409	4,325	5,765	7,683	6,532	121,773
Total	204,107	68,673	22,292	21,301	188,647	22,409	29,869	39,808	46,990	644,092
CPFV:										
Mar-Apr	50,910	25,491	6,074	4,464	31,799	1,994	2,890	5,663	12,790	142,075
May-Jun	78,736	45,300	9,229	7,210	29,977	2,865	4,383	7,416	33,897	219,013
Jul-Aug	150,073	75,842	14,840	14,760	24,426	2,507	3,715	19,730	49,457	355,350
Sep-Oct	110,958	20,892	9,975	5,494	51,818	2,976	3,024	10,648	15,736	231,521
OffSeas	95,103	41,533	7,379	6,860	18,088	2,663	3,702	10,572	27,621	213,523
Total	485,780	209,058	47,498	38,787	156,109	13,005	17,714	54,030	139,502	1,161,482
PRIVATE BOAT:										
Mar-Apr	88,728	32,862	4,730	2,060	33,829	5,268	7,728	13,247	3,578	192,030
May-Jun	67,353	78,202	15,148	10,873	52,044	5,581	9,333	16,914	12,152	267,600
Jul-Aug	106,246	86,284	9,258	7,664	119,355	10,824	5,702	8,208	19,402	372,942
Sep-Oct	102,705	49,341	10,391	11,866	62,383	8,764	11,376	17,082	6,554	280,462
OffSeas	83,108	49,562	8,329	6,667	52,993	7,001	7,852	12,736	2,567	230,815
Total	448,140	296,250	47,857	39,129	320,604	37,438	41,991	68,186	44,251	1,343,849

¹ Off-season includes January, February, November and December.

Table 4.1-18b. Estimated number of angler trips in 1989 by coastal and noncoastal county residents, by county of residence, fishing mode and time of year.¹

County of Residence

	County of Residence										Total
	Los Angeles	Orange	River-side	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Other	Total	
BEACH:											
Mar-Apr	31,200	13,615	0	491	11,126	2,691	8,086	11,530	2,485	81,224	
May-Jun	35,270	23,184	1,148	1,146	35,723	9,605	16,132	5,582	11,293	139,082	
Jul-Aug	53,176	11,003	2,920	0	17,465	8,482	13,095	20,088	26,304	152,533	
Sep-Oct	19,670	15,891	1,932	0	32,374	6,112	9,678	6,820	5,650	98,127	
Offseas	33,319	15,232	1,435	392	23,124	6,431	11,238	10,528	7,383	109,082	
Total	172,636	78,924	7,435	2,029	119,812	33,321	58,230	54,549	53,115	580,048	
PIER:											
Mar-Apr	22,997	15,995	4,399	4,470	38,382	2,800	7,830	2,500	4,235	103,607	
May-Jun	70,578	30,155	10,076	12,773	84,411	15,801	10,114	10,890	15,864	260,662	
Jul-Aug	130,922	29,644	15,701	10,031	83,637	10,715	18,318	22,019	45,428	367,415	
Sep-Oct	81,871	27,284	3,286	4,700	76,731	3,321	8,571	24,345	9,724	239,832	
Offseas	73,270	24,652	8,003	7,647	67,720	8,044	10,722	14,290	12,149	226,497	
Total	379,637	127,731	41,464	39,621	350,882	41,680	55,555	74,043	87,400	1,198,013	
CPFV:											
Mar-Apr	72,292	36,197	8,625	6,338	45,155	2,832	4,104	8,042	18,163	201,748	
May-Jun	111,806	64,326	13,106	10,239	42,568	4,068	6,223	10,531	48,132	310,998	
Jul-Aug	213,104	107,696	21,073	20,959	34,685	3,560	5,275	28,017	70,229	504,597	
Sep-Oct	157,561	29,667	14,165	7,801	73,582	4,225	4,294	15,121	22,346	328,761	
Offseas	135,047	58,977	10,479	9,742	25,685	3,781	5,257	15,013	39,222	303,203	
Total	689,809	296,862	67,448	55,078	221,675	18,466	25,153	76,723	198,092	1,649,307	
PRIVATE BOAT:											
Mar-Apr	135,754	50,279	7,237	3,152	51,758	8,060	10,824	20,267	5,474	293,806	
May-Jun	103,050	119,649	23,177	16,635	79,627	8,539	14,280	25,879	18,592	409,428	
Jul-Aug	162,557	132,015	14,165	11,725	182,613	16,560	8,724	12,558	29,685	570,602	
Sep-Oct	157,139	75,491	15,898	18,155	95,446	13,409	17,405	26,135	10,027	429,106	
Offseas	127,155	75,830	12,743	10,200	81,080	10,711	12,014	19,486	3,927	353,147	
Total	685,655	453,263	73,220	59,868	490,525	57,280	64,247	104,325	67,706	2,056,089	

¹ Off-season includes January, February, November and December.

Table 4.1-19. Estimated number of household and angler trips in 1989 from CPFV's in San Diego county, by San Diego county residents, other coastal county residents and non-coastal county residents.

Trip Type	Residency of Angler			Total
	San Diego County ¹	Other Coastal Counties ²	Non-Coastal Counties ³	
Household Trip	156,109	141,021	62,658	359,788
Angler Trip	221,675	200,249	88,975	510,899

¹ Household trips obtained from Table 4.1-18a and angler trips from Table 4.1-18b. Tables 4.1-8e and 4.1-9e indicate that San Diego county residents made all their CPFV trips during the four survey waves in San Diego county. Assuming that this held true during the off-season as well,

² Household trips obtained by subtracting 156,109 from the number of CPFV household trips made in San Diego county by all coastal county residents (297,130 according to Table 4.1-16b). Angler trips obtained by subtracting 221,675 from the number of CPFV angler trips made in San Diego county by all coastal county residents (421,924 according to Table 4.1-17b).

³ Household trips obtained from Table 4.1-16a and angler trips from Table 4.1-17a.

Table 4.1-20. Comparison of percent distribution of CPFV angler trips in 1989 by county of landing, as estimated from Southern California Sportfish Economic Survey and CPFV logbooks.

County of Departure	Southern California Survey ¹	CPFV Logbooks ²
-----	-----	-----
Los Angeles	36%	35%
Orange	20%	16%
San Diego	31%	31%
San Luis Obispo	4%	8%
Santa Barbara	1%	1%
Ventura	8%	9%

¹ From Table 4.1-17c.

² From California Department of Fish and Game.

Table 4.1-21. Comparison of number of angler trips made in 1989 in southern California by fishing mode, as estimated from Southern California Sportfish Economic Survey and Marine Recreational Fishery Statistics Survey.

Fishing Mode	Southern California Sportfish Economic Survey ¹	Marine Recreational Fishery Statistics Survey ²
Shore	1,778,060	1,852,000
CPFV	1,461,158	1,134,000
Private Boat	1,935,193	1,660,000
Total	5,174,411	4,646,000

¹ Number of shore-based angler trips obtained by summing beach and pier estimates in Table 4.1-17c. Number of CPFV angler trips computed as 1,461,158 = 1,649,307 - 188,149, where 1,649,307 is the total number of CPFV angler trips (from Table 4.1-17c) and 188,149 is the number of these trips made to Mexican waters (from Table 4.1-15). Number of private boat angler trips computed as 1,935,193 = 2,056,089 - 120,896, where 2,056,089 is the total number of private boat angler trips (from Table 4.1-17c) and 120,896 is the number of these trips made to Mexican waters (from Table 4.1-15).

² Provided courtesy of John Witzig, National Marine Fisheries Service, Silver Spring, MD.

Table 4.2-1. Proportion of trips in beach and pier modes targeted a selected species, by fishing county.¹

BEACH:	San Diego	Orange-Los Angeles	Ventura	Santa Barbara	San Luis Obispo
3B's	28.0%	12.5%	10.0%	11.4%	2.7%
Rockfish	4.0%	8.3%	15.0%	25.7%	45.9%
Shark	4.0%	4.2%	15.0%	11.4%	8.1%
Halibut	16.0%	25.0%	35.0%	34.3%	29.7%
Any Fish	48.0%	33.3%	30.0%	28.6%	10.8%
Perch	12.0%	20.8%	35.0%	25.7%	32.4%
Croaker	20.0%	29.2%	10.0%	0.0%	0.0%
	(25)	(24)	(20)	(35)	(37)

PIER:	San Diego	Orange	Los Angeles	Ventura	Santa Barbara	San Luis Obispo
3B's	26.7%	45.2%	60.9%	30.0%	24.0%	4.9%
Rockfish	3.3%	16.1%	13.0%	16.7%	20.0%	13.1%
Shark	6.7%	9.7%	8.7%	13.3%	8.0%	13.1%
Halibut	13.3%	29.0%	52.2%	46.7%	60.0%	18.0%
Any Fish	56.7%	29.0%	30.4%	40.0%	24.0%	50.8%
Other	16.7%	16.1%	13.0%	16.7%	8.0%	21.3%
	(30)	(31)	(23)	(30)	(25)	(61)

¹ Estimated on the basis of information provided by mail respondents whose most recent fishing trip was in beach or pier mode. Totals do not necessarily sum to 100.0%, because some respondents designated more than one target species.

3B's=bass/bonito/barracuda
 Halibut=halibut/other flatfish
 Rockfish=rockfish/lingcod
 Any Fish=no particular species
 Other=particular species other than albacore/tuna, bass/bonito/barracuda, halibut/other flatfish, marlin/swordfish, rockfish/lingcod, shark and yellowtail.

Table 4.2-2a. Proportion of trips in CPFV mode targeted at selected species by fishing county.¹

	San Diego				Orange	
	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Mar-Jun	Jul-Oct
Albacore	4.8%	16.3%	34.1%	53.5%	2.9%	7.0%
3B's	38.1%	46.5%	52.9%	20.9%	76.5%	75.4%
Yellowtail	14.3%	44.2%	58.8%	53.5%	20.6%	26.3%
Rockfish	42.9%	25.6%	24.7%	16.3%	20.6%	14.0%
Shark	4.8%	4.7%	4.7%	2.3%	2.9%	1.8%
Halibut	14.3%	14.0%	12.9%	7.0%	29.4%	26.3%
Any Kind	28.6%	9.3%	7.1%	4.7%	11.8%	17.5%
Other	0.0%	4.7%	3.5%	4.7%	5.9%	0.0%
	(21)	(43)	(85)	(43)	(34)	(57)

	Los Angeles		Ventura		Santa Barbara	San Luis Obispo	
	Mar-Jun	Jul-Oct	Mar-Jun	Jul-Oct	Mar-Oct	Mar-Jun	Jul-Oct
Albacore	7.5%	9.3%	0.0%	0.0%	0.0%	0.0%	5.3%
3B's	67.5%	81.4%	40.0%	62.5%	45.8%	6.3%	13.2%
Yellowtail	32.5%	48.8%	11.4%	12.5%	0.0%	0.0%	0.0%
Rockfish	32.5%	16.3%	60.0%	50.0%	54.2%	97.9%	84.2%
Shark	0.0%	2.3%	0.0%	2.1%	0.0%	0.0%	2.6%
Halibut	35.0%	30.2%	34.3%	29.2%	37.5%	22.9%	2.6%
Any Kind	10.0%	7.0%	11.4%	14.6%	4.2%	2.1%	5.3%
Other	5.0%	4.7%	8.6%	4.2%	12.5%	0.0%	0.0%
	(40)	(43)	(35)	(48)	(24)	(48)	(38)

¹ Estimated on the basis of information provided by mail respondents whose most recent fishing trip was in CPFV mode. Totals do not necessarily sum to 100.0%, because some respondents designated more than one target species.

Albacore=albacore/tuna

3B's=bass/bonito/barracuda

Halibut=halibut/other flatfish

Marlin=marlin/swordfish

Rockfish=rockfish/lingcod

Any Fish=no particular species.

Other=particular species other than albacore/tuna, bass/bonito/barracuda, halibut/other flatfish, marlin/swordfish, rockfish/lingcod, shark and yellowtail.

Table 4.2-2b. Proportion of trips in private boat mode targeted at selected species, by fishing county.¹

	San Diego		Orange		Los Angeles	
	Mar-Jun	Jul-Oct	Mar-Jun	Jul-Oct	Mar-Jun	Jul-Oct
Albacore	10.0%	20.7%	2.8%	1.9%	10.3%	15.0%
Marlin	7.5% ²	6.9%	2.8%	19.2%	0.0%	17.5%
3B's	57.5%	50.0%	66.7%	59.6%	58.6%	52.5%
Yellowtail	32.5%	44.8%	30.6%	17.3%	24.1%	22.5%
Rockfish	37.5%	13.8%	13.9%	11.5%	17.2%	12.5%
Shark	12.5%	13.8%	16.7%	15.4%	3.4%	10.0%
Halibut	45.0%	31.0%	36.1%	38.5%	37.9%	25.0%
Any Kind	7.5%	10.3%	13.9%	19.2%	20.7%	20.0%
Other	2.5%	8.6%	8.3%	3.8%	17.2%	10.0%
	(40)	(58)	(36)	(52)	(29)	(40)

	Ventura		Santa Barbara		San Luis Obispo	
	Mar-Jun	Jul-Oct	Mar-Jun	Jul-Oct	Mar-Jun	Jul-Oct
Albacore	0.0%	2.6%	0.0%	0.0%	0.0%	2.1%
Marlin	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%
3B's	40.7%	57.9%	23.8%	44.8%	0.0%	2.1%
Yellowtail	0.0%	2.6%	4.8%	3.4%	0.0%	0.0%
Rockfish	37.0%	50.0%	33.3%	48.3%	76.2%	70.2%
Shark	11.1%	10.5%	9.5%	13.8%	7.1%	2.1%
Halibut	40.7%	44.7%	66.7%	72.4%	19.0%	57.4%
Any Kind	18.5%	10.5%	9.5%	0.0%	4.8%	2.1%
Other	7.4%	10.5%	0.0%	6.9%	31.0%	8.5%
	(27)	(38)	(21)	(29)	(42)	(47)

¹ Estimated on the basis of information provided by mail respondents whose most recent fishing trip was in private boat mode. Totals do not necessarily sum to 100.0%, because some respondents designated more than one target species.

Albacore=albacore/tuna

3B's=bass/bonito/barracuda

Halibut=halibut/other flatfish

Marlin=marlin/swordfish

Rockfish=rockfish/lingcod

Any Fish=no particular species.

Other=particular species other than albacore/tuna, bass/bonito/barracuda, halibut/other flatfish, marlin/swordfish, rockfish/lingcod, shark and yellowtail.

² All marlin trips reported by respondents fishing in San Diego county occurred in June.

Table 4.2-3. Proportion of trips for which respondents reported catching and keeping any fish, by fishing mode.¹

	Fishing Mode			
	Beach	Pier	CPFV	Private Boat
% catch any fish	58.0% (150)	55.2% (221)	81.1% (716)	76.6% (564)
% keep any fish	40.7% (140)	36.5% (212)	71.2% (684)	59.4% (532)

¹ Estimated on the basis of information provided by mail respondents for their most recent fishing trip.

Table 4.2-4. Proportion of trips for which respondents reported catching any fish, keeping any fish, catching their target species, and keeping their target species, by fishing mode and target species.¹

BEACH:	Target Species					
	3B's	Rockfish	Shark	Halibut	Any Fish	Other
% catch any fish	63.2% (19)	57.6% (33)	66.7% (12)	62.8% (43)	39.5% (43)	77.4% (53)
% keep any fish	36.8% (19)	35.7% (28)	50.0% (10)	41.0% (39)	26.2% (42)	63.3% (49)
% catch target	42.1% (19)	50.0% (32)	41.7% (12)	26.2% (42)	39.5% (43)	72.0% (50)
% keep target	21.1% (19)	40.0% (30)	25.0% (12)	17.1% (41)	26.2% (42)	57.1% (49)

PIER:	Target Species					
	3B's	Rockfish	Shark	Halibut	Any Fish	Other
% catch any fish	61.0% (59)	55.2% (29)	70.8% (24)	63.8% (69)	49.0% (96)	77.1% (35)
% keep any fish	45.6% (57)	44.8% (29)	40.9% (24)	42.2% (64)	30.1% (93)	66.7% (33)
% catch target	49.2% (59)	27.6% (29)	50.0% (24)	42.0% (69)	49.0% (96)	60.6% (33)
% keep target	34.5% (58)	20.7% (29)	30.4% (23)	18.2% (66)	30.1% (93)	57.6% (33)

Table 4.2-4 - cont.

CPFV:	Target Species					
	Albacore	3B's	Yellowtail	Rockfish	Shark	Halibut
% catch any fish	87.2% (86)	86.3% (342)	83.9% (205)	84.2% (279)	70.0% (20)	82.9% (158)
% keep any fish	75.6% (82)	73.0% (319)	71.4% (196)	79.1% (263)	63.2% (19)	73.3% (150)
% catch target	51.2% (86)	80.8% (338)	35.1% (205)	72.4% (279)	35.0% (20)	31.0% (158)
% keep target	46.5% (86)	67.9% (330)	32.2% (202)	68.1% (273)	10.5% (19)	18.1% (155)

PRIVATE BOAT:	Target Species						
	Albacore	Marlin	3B's	Ytail	Rockfish	Shark	Halibut
% catch any fish	70.6% (34)	67.7% (31)	86.7% (233)	80.9% (94)	83.2% (197)	85.5% (55)	83.0% (224)
% keep any fish	64.5% (31)	48.1% (27)	62.4% (221)	65.5% (87)	74.9% (183)	63.5% (52)	63.9% (216)
% catch target	23.5% (34)	23.3% (30)	74.1% (232)	34.0% (94)	69.0% (197)	67.9% (53)	58.0% (224)
% keep target	23.5% (34)	12.9% (31)	50.7% (225)	29.0% (93)	62.4% (189)	40.7% (54)	36.7% (221)

¹ Estimated on the basis of information provided by mail respondents for their most recent fishing trip.

Albacore=albacore/tuna

3B's=bass/bonito/barracuda

Halibut=halibut/other flatfish

Marlin=marlin/swordfish

Rockfish=rockfish/lingcod

Any Fish=no particular species.

Other=particular species other than albacore/tuna,
bass/bonito/barracuda, halibut/other flatfish,
marlin/swordfish, rockfish/lingcod, shark and yellowtail.

Table 4.2-5. Proportion of trips for which respondents reported using live and dead bait, by bait species and fishing mode.¹

Bait	Fishing Mode			
	Beach	Pier	CPFV	Private Boat
Anchovy	34.5%	66.4%	84.2%	71.1%
Live	2.7%	12.3%	76.5%	43.9%
Dead	33.1%	59.5%	13.4%	33.5%
Squid	31.1%	43.6%	50.6%	43.4%
Live	0.7%	0.5%	18.1%	7.6%
Dead	30.4%	43.2%	37.4%	37.0%
Pac. Mackerel	6.1%	27.3%	15.4%	17.3%
Live	0.0%	3.2%	9.2%	8.8%
Dead	6.1%	25.9%	7.3%	9.7%
Jack Mackerel	2.0%	9.5%	3.8%	4.4%
Live	0.7%	3.6%	2.0%	2.5%
Dead	1.4%	6.4%	1.8%	2.1%
Sardine	2.7%	6.8%	9.8%	5.1%
Live	0.0%	0.9%	8.4%	3.2%
Dead	2.7%	6.4%	2.0%	1.9%
Other	42.6%	23.2%	6.6%	8.5%
Live	25.7%	10.5%	4.1%	4.6%
Dead	19.6%	13.2%	2.7%	4.6%
Artificial Lures	27.0%	35.9%	38.1%	50.4%
Sample Size	(148)	(220)	(714)	(567)

¹ Estimated on the basis of information provided by mail respondents for their most recent fishing trip.

Table 4.2-6a. Proportion of CPFV trips for which respondents reported using various species of live and dead bait, by target species.¹

Bait	Target Species					
	Albacore	3B's	Yellowtail	Rockfish	Shark	Halibut
Anchovy	93.0%	91.5%	92.2%	84.3%	78.9%	92.5%
Live	93.0%	90.1%	90.7%	67.1%	78.9%	84.9%
Dead	3.5%	7.0%	7.4%	26.1%	21.1%	15.7%
Squid	29.1%	60.1%	57.4%	54.6%	57.9%	61.6%
Live	16.3%	21.9%	31.4%	12.9%	36.8%	16.4%
Dead	16.3%	44.6%	33.8%	46.8%	42.1%	51.6%
Pac Mack	32.6%	16.9%	26.0%	15.0%	52.6%	18.9%
Live	27.9%	9.6%	22.1%	6.4%	15.8%	9.4%
Dead	7.0%	8.7%	6.9%	10.0%	42.1%	11.3%
Jack Mack	10.5%	3.2%	6.4%	3.2%	10.5%	5.7%
Live	5.8%	2.0%	3.9%	1.4%	0.0%	2.5%
Dead	4.7%	1.2%	2.5%	1.8%	10.5%	3.1%
Sardine	24.4%	7.0%	16.2%	8.2%	15.8%	8.8%
Live	24.4%	6.4%	15.7%	5.7%	5.3%	6.9%
Dead	0.0%	1.5%	1.5%	3.2%	10.5%	2.5%
Other	11.6%	6.7%	5.4%	5.7%	26.3%	6.3%
Live	8.1%	5.0%	2.9%	2.1%	10.5%	4.4%
Dead	3.5%	1.7%	2.5%	3.6%	15.8%	1.9%
Artificial Lures	45.3%	42.3%	49.5%	40.4%	52.6%	43.4%
Sample Size	(86)	(343)	(204)	(280)	(19)	(159)

¹ Estimated on the basis of information provided by mail respondents whose most recent fishing trip was in CPFV mode.

Albacore=albacore/tuna
 Marlin=marlin/swordfish
 3B's=bass/bonito/barracuda
 Rockfish=rockfish/lingcod
 Halibut=halibut/other flatfish

Table 4.2-6b. Proportion of private boat trips for which respondents report using various species of live and dead bait, by target species.¹

Bait	Target Species						
	Albacore	Marlin	3B's	Ytail	Rockfish	Shark	Halibut
Anchovy	82.4%	46.9%	79.1%	78.9%	70.9%	68.5%	82.2%
Live	79.4%	37.5%	59.6%	67.4%	35.7%	44.4%	52.0%
Dead	8.8%	15.6%	29.4%	24.2%	44.4%	38.9%	41.3%
Squid	35.3%	28.1%	50.2%	46.3%	63.3%	55.6%	49.3%
Live	14.7%	18.8%	10.2%	18.9%	6.6%	11.1%	9.3%
Dead	23.5%	12.5%	41.7%	33.7%	58.7%	46.3%	41.8%
Pac Mack	20.6%	65.6%	20.4%	21.1%	18.4%	53.7%	19.1%
Live	17.6%	56.3%	9.4%	12.6%	6.1%	29.6%	9.3%
Dead	5.9%	15.6%	12.3%	11.6%	13.3%	37.0%	11.1%
Jack Mack	14.7%	15.6%	1.7%	5.3%	4.1%	9.3%	3.1%
Live	8.8%	15.6%	1.7%	4.2%	0.5%	5.6%	0.9%
Dead	5.9%	3.1%	0.0%	1.1%	3.6%	5.6%	2.2%
Sardine	14.7%	12.5%	3.4%	11.6%	5.1%	11.1%	4.4%
Live	14.7%	12.5%	2.6%	8.4%	2.0%	9.3%	2.7%
Dead	0.0%	0.0%	0.9%	3.2%	3.1%	1.9%	1.8%
Other	11.8%	3.1%	8.1%	7.4%	8.7%	7.4%	7.6%
Live	8.8%	3.1%	4.7%	4.2%	2.6%	1.9%	4.0%
Dead	2.9%	0.0%	3.8%	3.2%	7.7%	5.6%	4.0%
Artificial Lures	67.6%	65.6%	62.1%	67.4%	52.0%	61.1%	51.6%
Sample Size	(34)	(32)	(235)	(95)	(196)	(54)	(225)

¹ Estimated on the basis of information provided by mail respondents whose most recent fishing trip was in private boat mode.

Albacore=albacore/tuna
 3B's=bass/bonito/barracuda
 Halibut=halibut/other flatfish
 Marlin=marlin/swordfish
 Rockfish=rockfish/lingcod

Table 4.2-7. Respondent motivation for fishing, by fishing mode, on a scale of 1 to 7 (1=Not at all important, 7=Very important).

Beach							
Scale	Food	Challenge	Fish	Bait	Relax	Social	Please
1	51.7%	2.0%	34.5%	60.6%	0.7%	5.5%	81.4%
2	8.3%	0.7%	8.3%	9.9%	1.3%	4.1%	4.8%
3	13.8%	2.7%	9.0%	7.0%	2.0%	2.1%	2.8%
4	13.8%	12.2%	17.2%	8.5%	1.3%	10.3%	5.5%
5	6.2%	8.2%	9.0%	4.9%	6.0%	11.0%	1.4%
6	1.4%	17.7%	11.7%	2.1%	14.8%	13.1%	0.7%
7	4.8%	56.5%	10.3%	7.0%	73.8%	53.8%	3.4%
	(151)	(147)	(145)	(142)	(149)	(145)	(145)
Pier							
Scale	Food	Challenge	Fish	Bait	Relax	Social	Please
1	70.3%	4.2%	51.9%	64.3%	0.9%	3.8%	67.5%
2	9.0%	0.0%	9.0%	8.9%	0.9%	1.9%	6.7%
3	7.1%	3.3%	9.4%	8.0%	2.3%	1.9%	3.8%
4	7.1%	14.0%	11.8%	7.0%	7.0%	7.5%	4.8%
5	0.9%	19.2%	8.0%	3.3%	10.3%	9.9%	4.3%
6	1.4%	14.5%	2.8%	2.8%	16.8%	19.2%	2.9%
7	4.2%	44.9%	7.1%	5.6%	61.7%	55.9%	10.0%
	(212)	(214)	(212)	(213)	(214)	(213)	(209)

Table 4.2-7 - cont.

CPFV							
Scale	Food	Challenge	Fish	Bait	Relax	Social	Please
1	49.8%	2.0%	24.9%	47.5%	2.1%	2.1%	73.5%
2	14.8%	1.7%	7.1%	13.7%	1.1%	0.9%	7.0%
3	11.8%	2.5%	9.2%	9.9%	2.1%	3.4%	4.1%
4	12.1%	10.7%	14.9%	9.7%	6.5%	10.1%	5.1%
5	4.7%	16.1%	13.7%	6.0%	10.9%	14.1%	2.8%
6	2.7%	13.5%	9.8%	3.6%	15.1%	22.1%	3.2%
7	4.1%	53.6%	20.4%	9.6%	62.2%	47.2%	4.5%
	(703)	(713)	(706)	(699)	(709)	(701)	(690)

Private Boat							
Scale	Food	Challenge	Fish	Bait	Relax	Social	Please
1	49.0%	3.1%	25.2%	52.0%	1.1%	1.4%	73.3%
2	11.1%	0.5%	5.6%	8.5%	0.7%	1.1%	6.5%
3	12.3%	3.6%	10.4%	8.7%	2.0%	2.9%	5.2%
4	14.6%	9.0%	15.7%	13.3%	6.4%	7.7%	6.7%
5	7.7%	17.0%	13.9%	6.0%	9.6%	13.2%	2.7%
6	1.8%	15.4%	7.4%	2.8%	14.3%	17.6%	3.1%
7	3.5%	51.3%	21.8%	8.7%	66.0%	56.1%	2.5%
	(569)	(577)	(568)	(565)	(561)	(561)	(554)

¹ Estimated on the basis of information provided by mail respondents for their most recent fishing trip.

Food=Fishing gives me the opportunity to put food on the table.

Challenge=I enjoy the challenge of catching fish.

Fish=Species that I particularly like to fish for was available at this time.

Bait=A bait that I like to fish with was available at this time.

Relax=Fishing gives me the opportunity to relax and "get away from it all."

Social=Fishing gives me the opportunity to do something with family and/or friends.

Please=I went fishing to please someone else.

Table 4.3-1. Selected demographic characteristics of respondents, by county of residence.

RESPONDENT:	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
Age										
1-12	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%
13-16	1.2%	2.0%	2.3%	1.0%	1.0%	2.8%	2.0%	1.8%	2.4%	2.4%
17-24	10.4%	9.0%	9.7%	8.2%	14.9%	8.8%	11.4%	7.7%	12.9%	12.9%
25-34	31.8%	31.3%	27.3%	28.2%	30.8%	28.9%	22.9%	28.1%	18.8%	18.8%
35-44	23.7%	26.4%	36.4%	32.8%	22.9%	24.5%	33.8%	26.7%	21.2%	21.2%
45-54	16.8%	15.9%	13.6%	15.9%	14.9%	14.9%	13.4%	19.5%	25.9%	25.9%
55-64	9.2%	10.4%	5.7%	8.7%	9.0%	8.4%	7.0%	10.0%	10.6%	10.6%
>64	6.4%	5.0%	5.1%	5.1%	6.5%	11.6%	9.0%	6.3%	8.2%	8.2%
	(173)	(201)	(176)	(195)	(201)	(249)	(201)	(221)	(85)	(85)
% Male	91.3%	92.1%	90.4%	90.8%	88.6%	88.4%	92.1%	92.3%	90.6%	90.6%
	(173)	(202)	(177)	(195)	(202)	(250)	(202)	(220)	(85)	(85)
Ethnic Background										
Asian/Pacific	5.1%	3.9%	2.2%	2.0%	5.4%	1.6%	3.9%	3.1%	0.0%	0.0%
Black	6.3%	0.0%	1.7%	3.5%	1.5%	0.4%	1.0%	1.3%	1.2%	1.2%
Hispanic	10.8%	7.8%	4.5%	7.5%	3.5%	6.5%	8.8%	7.6%	5.9%	5.9%
Non-Hisp White	77.3%	86.3%	88.2%	82.4%	86.1%	89.5%	83.9%	85.7%	89.4%	89.4%
Other	0.6%	2.0%	3.4%	4.5%	3.5%	2.0%	2.4%	2.2%	3.5%	3.5%
	(176)	(205)	(178)	(199)	(202)	(248)	(205)	(224)	(85)	(85)
Employment Status										
Empl≥35 hrs/wk	75.1%	77.8%	79.1%	73.5%	74.4%	66.5%	68.0%	75.0%	76.7%	76.7%
Empl<35 hrs/wk	4.5%	4.3%	4.0%	7.5%	6.4%	7.5%	4.9%	4.5%	1.2%	1.2%
Retired	10.2%	6.3%	7.9%	9.0%	9.9%	15.0%	12.1%	11.6%	15.1%	15.1%
Student	5.6%	4.3%	3.4%	3.5%	3.9%	6.3%	8.7%	1.8%	3.5%	3.5%
Homemaker	1.1%	2.4%	1.7%	0.5%	1.5%	1.2%	1.0%	0.4%	2.3%	2.3%
Unemployed	0.0%	0.0%	1.1%	2.0%	1.0%	0.8%	2.4%	1.8%	0.0%	0.0%
Other	3.4%	4.8%	2.8%	4.0%	3.0%	2.8%	2.9%	4.9%	1.2%	1.2%
	(177)	(205)	(177)	(200)	(203)	(254)	(206)	(224)	(86)	(86)

Table 4.3-1 - cont.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
Education										
>8th grade	1.7%	0.5%	1.7%	1.5%	0.0%	0.8%	0.5%	0.0%	0.0%	
8th grade grad	2.8%	4.3%	0.0%	0.0%	1.0%	0.4%	0.5%	1.3%	2.3%	
Some hischool	5.1%	4.3%	9.0%	4.5%	3.4%	6.7%	6.3%	3.1%	7.0%	
Hischool grad	17.0%	11.1%	15.7%	15.6%	10.8%	13.8%	16.5%	12.1%	17.4%	
Some trade/tech	7.4%	3.4%	2.8%	4.5%	3.9%	1.6%	4.9%	4.9%	8.1%	
Trade/tech grad	5.7%	4.8%	4.5%	9.0%	5.9%	7.5%	6.8%	7.2%	4.7%	
Some college	34.1%	40.6%	43.8%	42.7%	44.8%	41.7%	37.9%	43.0%	38.4%	
Bach. degree	15.3%	15.9%	11.2%	10.1%	18.2%	14.6%	15.5%	14.8%	11.6%	
Postgrad work	10.8%	18.8%	11.2%	12.1%	11.8%	13.0%	11.2%	13.5%	10.5%	
	(176)	(207)	(178)	(199)	(203)	(254)	(206)	(223)	(86)	
Fishing Ability										
Novice	6.9%	8.0%	6.8%	6.1%	7.5%	4.8%	4.4%	8.6%	7.1%	
Novice-Inter	10.4%	7.0%	6.3%	12.8%	8.5%	9.6%	12.1%	8.6%	4.7%	
Intermediate	49.7%	39.0%	50.0%	40.3%	47.8%	46.6%	44.2%	42.5%	48.2%	
Inter-Expert	23.7%	37.5%	29.5%	32.7%	30.8%	32.5%	32.0%	34.4%	31.8%	
Expert	9.2%	8.5%	7.4%	8.2%	5.5%	6.4%	7.3%	5.9%	8.2%	
	(173)	(200)	(176)	(196)	(201)	(249)	(206)	(221)	(85)	
First Age Fished										
1-4	2.8%	8.2%	4.5%	2.5%	6.5%	7.1%	4.3%	4.9%	5.8%	
5-8	25.3%	29.8%	20.8%	28.8%	28.4%	33.3%	29.5%	25.4%	15.1%	
9-12	26.4%	24.0%	24.7%	24.2%	27.9%	24.7%	25.6%	25.9%	14.0%	
13-17	16.3%	11.5%	16.9%	11.1%	7.0%	9.0%	13.0%	16.1%	11.6%	
18-24	15.7%	9.1%	15.7%	17.2%	12.9%	13.3%	15.5%	12.1%	22.1%	
25-34	9.6%	12.0%	12.4%	10.1%	10.4%	5.1%	7.2%	8.0%	15.1%	
35-44	2.2%	4.3%	3.4%	5.6%	4.0%	3.9%	4.3%	5.4%	7.0%	
>44	1.7%	1.0%	1.7%	0.5%	3.0%	3.6%	0.5%	2.2%	9.3%	
	(178)	(208)	(178)	(198)	(201)	(255)	(207)	(224)	(86)	

Table 4.3-1 - cont.

	County of Residence							Non Coastal	
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara		Ventura
HOUSEHOLD:									
Age Distribution									
1-12	16.8%	13.1%	20.0%	17.6%	14.4%	17.6%	20.3%	17.1%	13.9%
13-16	5.8%	7.0%	8.2%	7.8%	5.2%	6.5%	5.2%	6.2%	8.4%
17-24	14.9%	14.1%	10.6%	11.7%	15.8%	13.3%	13.7%	12.6%	15.6%
25-34	23.2%	23.9%	20.9%	21.6%	25.2%	20.9%	19.4%	22.5%	18.9%
35-44	18.3%	19.1%	21.1%	22.5%	12.7%	18.5%	22.3%	20.1%	16.4%
45-54	11.1%	11.1%	10.6%	10.1%	11.4%	9.1%	9.8%	11.9%	15.6%
55-64	6.6%	7.6%	5.2%	5.7%	6.5%	7.1%	4.5%	5.9%	6.3%
>64	3.2%	4.0%	3.5%	3.0%	4.1%	7.1%	4.8%	3.8%	5.0%
Household Annual Income									
<\$10K	2.5%	1.0%	2.9%	2.7%	3.2%	5.8%	7.3%	1.4%	2.5%
\$10-20K	11.9%	4.1%	5.8%	9.6%	9.5%	14.5%	9.3%	2.4%	12.3%
\$20-30K	13.1%	9.8%	13.5%	11.8%	15.8%	17.4%	14.5%	11.4%	13.6%
\$30-40K	13.1%	17.4%	12.9%	16.6%	16.8%	22.0%	18.7%	18.6%	24.7%
\$40-50K	15.6%	14.9%	21.1%	17.1%	13.7%	15.8%	11.4%	17.1%	12.3%
\$50-60K	12.5%	9.8%	12.3%	14.4%	10.5%	10.0%	13.5%	13.3%	11.1%
\$60-70K	7.5%	13.9%	9.4%	8.0%	10.5%	4.1%	8.3%	10.0%	7.4%
\$70-80K	4.4%	6.7%	9.9%	7.5%	7.9%	2.9%	6.7%	6.7%	8.6%
\$80-90K	5.0%	6.7%	3.5%	3.7%	2.6%	2.9%	2.6%	2.9%	3.7%
\$90-100K	2.5%	2.1%	2.3%	2.1%	1.6%	0.4%	1.6%	2.9%	0.0%
\$100-110K	3.1%	2.6%	2.3%	2.7%	2.1%	0.4%	1.6%	3.3%	1.2%
\$110-120K	1.3%	2.6%	1.2%	1.6%	0.5%	1.2%	0.5%	1.4%	0.0%
\$120-130K	1.9%	3.1%	0.0%	0.0%	3.2%	0.0%	1.0%	1.0%	1.2%
\$130-140K	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%
>\$140K	5.0%	5.2%	2.9%	2.1%	2.1%	2.5%	3.1%	3.3%	1.2%
	(160)	(194)	(171)	(187)	(190)	(241)	(193)	(210)	(81)

Table 4.3-1 - cont.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
Average Household Size-										
# Persons	2.64 (180)	2.93 (208)	3.03 (179)	2.97 (202)	2.66 (206)	2.88 (259)	3.01 (208)	2.73 (227)	2.78 (86)	
% Male	67% (178)	63% (208)	62% (179)	65% (201)	64% (204)	60% (258)	63% (206)	65% (225)	61% (85)	
% Ever Fished	89% (180)	88% (208)	78% (179)	82% (202)	89% (206)	88% (259)	83% (208)	84% (227)	78% (86)	
% Ever Fished Who Are Male	74% (177)	72% (206)	74% (178)	75% (201)	71% (204)	68% (257)	73% (206)	74% (224)	74% (85)	
First Age Fished										
1-4	7.2%	10.0%	8.1%	5.1%	9.7%	10.0%	9.1%	9.6%	5.6%	
5-8	23.8%	31.0%	21.6%	28.7%	29.7%	30.6%	28.9%	23.8%	15.3%	
9-12	26.1%	22.8%	24.7%	21.2%	23.7%	22.4%	21.3%	23.0%	19.8%	
13-17	15.1%	11.6%	13.5%	12.8%	8.4%	9.2%	12.0%	14.8%	13.6%	
18-24	13.9%	9.0%	14.3%	17.4%	12.3%	13.8%	13.1%	13.4%	19.2%	
25-34	11.4%	10.0%	12.5%	9.3%	9.7%	8.1%	11.0%	8.1%	13.0%	
35-44	1.5%	3.7%	3.6%	4.9%	3.7%	3.6%	3.8%	4.9%	7.9%	
>44	1.0% (178)	1.8% (208)	1.8% (178)	0.7% (198)	3.0% (201)	2.3% (255)	0.8% (207)	2.4% (224)	5.6% (85)	
Belong	8.9% (179)	11.7% (206)	10.1% (178)	10.2% (197)	11.6% (199)	16.1% (255)	10.1% (207)	16.9% (225)	10.5% (86)	
National Rifle Assoc	4.5%	2.9%	7.9%	3.6%	4.5%	2.0%	2.4%	5.3%	1.2%	
Ducks Unlimited	0.6%	0.0%	1.1%	1.0%	0.5%	0.8%	1.0%	1.8%	0.0%	

Table 4.3-1 - cont.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
Subscribe	38.6% (176)	44.9% (207)	38.4% (177)	43.4% (198)	34.0% (203)	36.6% (257)	32.4% (207)	42.2% (223)	36.0% (86)
Western Outdoor News	22.2%	22.7%	20.9%	22.7%	12.8%	13.6%	13.5%	21.5%	11.6%
Fishing and Hunting News	6.8%	4.8%	7.9%	10.1%	7.9%	12.1%	6.3%	5.4%	12.8%
Saltwater Sport-fishing	6.3%	8.2%	4.5%	5.6%	5.9%	4.3%	3.9%	6.7%	2.3%
Field and Stream California	5.1%	4.3%	7.3%	4.5%	6.9%	4.7%	5.8%	5.8%	8.1%
Angler South Coast	5.1%	6.8%	4.5%	4.0%	5.4%	2.3%	3.4%	3.1%	0.0%
Sportfishing	3.4%	7.2%	2.3%	1.0%	3.4%	0.8%	2.4%	6.7%	0.0%
Outdoor Life	2.8%	0.5%	2.8%	2.0%	3.0%	2.3%	5.3%	4.0%	4.7%
American Hunter	1.7%	1.4%	0.6%	1.5%	2.0%	1.6%	0.5%	2.2%	0.0%
Bass Master	1.7%	0.5%	0.6%	2.0%	3.0%	0.4%	1.4%	1.3%	0.0%
Skin Diver	0.6%	2.4%	0.0%	0.0%	1.0%	1.6%	0.5%	1.8%	0.0%

Table 4.3-2. Selected demographic characteristics, by respondent's predominant mode of fishing.

	Predominant Mode			
	Beach	Pier	CPFV	Private Boat
RESPONDENT:				
Age				
1-12	0.6%	0.0%	0.0%	0.2%
13-16	1.1%	1.7%	1.7%	1.3%
17-24	9.0%	11.7%	10.3%	8.2%
25-34	24.7%	28.0%	28.3%	27.6%
35-44	28.1%	32.6%	26.1%	28.8%
45-54	19.1%	12.1%	17.2%	17.7%
55-64	9.0%	7.1%	8.1%	9.7%
>64	8.4%	6.8%	8.3%	6.5%
	(178)	(239)	(629)	(475)
% Male	88.2%	82.0%	92.5%	94.1%
	(178)	(239)	(630)	(478)
Ethnic Background				
Asian/Pacific Islander	6.2%	4.9%	3.0%	1.0%
Black	0.6%	1.6%	2.3%	1.0%
Hispanic	7.9%	7.8%	7.8%	5.0%
Non-Hispanic White	82.0%	82.7%	83.9%	91.0%
Other	3.4%	2.9%	3.0%	1.9%
	(178)	(243)	(640)	(480)
Employment Status				
Employed >35 hrs/week	73.0%	69.7%	74.5%	75.6%
Employed <35 hrs/week	5.1%	7.0%	4.5%	5.2%
Retired	10.1%	11.5%	11.3%	10.4%
Student	5.6%	4.1%	4.7%	3.5%
Homemaker	1.1%	2.0%	1.1%	1.0%
Unemployed	2.2%	2.0%	0.6%	0.8%
Other	2.8%	3.7%	3.3%	3.5%
	(178)	(244)	(644)	(483)
Education				
< 8th grade	1.7%	0.8%	0.5%	1.0%
8th grade grad	1.1%	0.8%	0.8%	0.6%
Some high school	5.1%	6.6%	5.1%	4.1%
High school grad	14.1%	13.5%	13.4%	16.0%
Some trade/tech school	3.4%	3.3%	4.0%	5.0%
Trade/tech school grad	5.6%	6.1%	4.5%	8.7%
Some college	33.3%	45.1%	43.9%	38.0%
Bachelor's degree	16.9%	12.3%	13.7%	15.8%
Postgraduate study	18.6%	11.5%	14.1%	10.8%
	(177)	(244)	(644)	(482)

Table 4.3-2 - cont.

	Predominant Mode			
	Beach	Pier	CPFV	Private Boat
Average # Trips/Year	16.4	12.6	6.3	12.2
Breakdown by Fishing Mode:				
% Beach	78.3%	11.4%	1.9%	3.3%
% Pier	7.1%	77.3%	3.2%	4.3%
% CPFV	7.0%	6.4%	84.8%	5.5%
% Private boat	7.7%	4.9%	10.0%	87.0%
	(178)	(246)	(640)	(485)
Fishing Ability				
Novice	5.7%	7.4%	5.7%	7.5%
Novice-Intermediate	4.5%	13.6%	10.7%	6.8%
Intermediate	49.4%	43.2%	44.9%	43.1%
Intermediate-Expert	33.5%	30.0%	31.8%	33.7%
Expert	6.8%	5.8%	7.0%	9.0%
	(176)	(243)	(633)	(469)
First Age Fished				
1-4	8.4%	5.3%	4.1%	5.2%
5-8	28.7%	27.2%	23.8%	30.3%
9-12	23.6%	26.8%	24.3%	26.1%
13-16	10.7%	11.4%	13.0%	12.6%
17-24	12.4%	13.8%	15.2%	13.0%
25-34	8.4%	7.3%	12.1%	8.9%
35-44	5.6%	4.9%	5.2%	2.7%
>44	2.2%	3.2%	2.6%	1.2%
	(176)	(246)	(639)	(485)
HOUSEHOLD:				
Age Distribution				
1-12	15.2%	21.7%	16.1%	16.3%
13-16	6.8%	6.4%	7.0%	6.3%
17-24	13.7%	13.3%	13.7%	11.7%
25-34	19.9%	20.6%	21.6%	23.1%
35-44	20.5%	21.0%	19.2%	20.0%
45-54	11.0%	9.1%	11.7%	11.6%
55-64	7.0%	4.2%	5.8%	7.1%
>64	5.9%	3.8%	4.9%	3.9%
	(178)	(239)	(629)	(475)

Table 4.3-2 - cont.

	Predominant Mode			
	Beach	Pier	CPFV	Private Boat
Household Annual Income				
<\$10K	5.8%	3.5%	2.3%	3.7%
\$10-20K	9.9%	12.7%	7.9%	6.1%
\$20-30K	16.4%	18.0%	13.5%	10.3%
\$30-40K	17.0%	19.7%	18.2%	15.3%
\$40-50K	16.4%	10.5%	15.9%	17.5%
\$50-60K	8.2%	9.2%	12.0%	13.3%
\$60-70K	7.6%	9.6%	9.7%	9.2%
\$70-80K	2.9%	7.5%	6.7%	8.7%
\$80-90K	3.5%	3.5%	4.3%	4.8%
\$90-100K	2.3%	1.3%	2.2%	1.3%
\$100-110K	1.8%	1.8%	2.2%	2.6%
\$110-120K	1.2%	1.8%	1.0%	1.5%
\$120-130K	1.2%	0.4%	1.5%	1.3%
\$130-140K	0.0%	0.0%	0.0%	0.4%
>\$140K	5.8%	0.4%	2.5%	3.9%
	(171)	(228)	(598)	(458)
Average Household Size- # persons	2.9 (178)	3.0 (246)	2.8 (640)	2.9 (485)
% Ever Fished	86% (178)	89% (246)	82% (640)	86% (485)
% Male	61% (178)	59% (245)	65% (634)	63% (484)
% Ever Fished Who Are Male	71% (178)	64% (243)	76% (631)	72% (484)
Boatownership	26.7% (180)	16.3% (245)	21.5% (642)	51.5% (485)
First Age Fished				
1-4	10.1%	10.6%	7.2%	7.9%
5-8	30.0%	30.8%	23.7%	27.4%
9-12	20.1%	21.0%	23.7%	23.9%
13-16	9.8%	11.3%	13.4%	11.3%
17-24	12.5%	12.6%	13.9%	14.8%
25-34	10.1%	8.7%	11.7%	9.6%
35-44	4.8%	3.2%	4.6%	3.4%
>44	2.6%	1.8%	1.8%	1.7%
	(176)	(246)	(639)	(485)

Table 4.3-3. Selected demographic characteristics, by respondent's ethnic background.

	Ethnic Background			
	Asian	Black	Hispanic	Non-Hisp. White
RESPONDENT:				
Age				
1-12	0.0%	3.7%	0.0%	0.1%
13-16	8.5%	0.0%	3.4%	1.5%
17-24	6.4%	3.7%	17.9%	9.6%
25-34	29.8%	29.6%	36.8%	27.0%
35-44	29.8%	37.0%	23.9%	27.8%
45-54	6.4%	7.4%	12.0%	17.4%
55-64	12.8%	18.5%	4.3%	8.7%
>64	6.4%	0.0%	1.7%	7.9%
	(47)	(27)	(117)	(1375)
% Male	78.7%	100.0%	92.2%	91.0%
	(47)	(27)	(116)	(1379)
Employment Status				
Employed ≥35 hrs/week	65.3%	70.4%	78.0%	73.8%
Employed <35 hrs/week	8.2%	7.4%	5.9%	4.8%
Retired	8.2%	11.1%	2.5%	11.8%
Student	12.2%	3.7%	6.8%	4.1%
Homemaker	0.0%	0.0%	2.5%	1.1%
Unemployed	2.0%	3.7%	1.7%	1.0%
Other	4.1%	3.7%	2.5%	3.4%
	(49)	(27)	(118)	(1406)
Education				
< 8th grade	2.1%	3.7%	2.5%	0.6%
8th grade grad	2.1%	0.0%	1.7%	0.6%
Some high school	8.3%	0.0%	11.9%	5.0%
High school grad	10.4%	18.5%	24.6%	13.7%
Some trade/tech school	6.3%	3.7%	3.4%	4.4%
Trade/tech school grad	4.2%	11.1%	7.6%	6.3%
Some college	27.1%	40.7%	33.9%	41.8%
Bachelor's degree	20.8%	14.8%	10.2%	14.3%
Postgraduate study	18.8%	7.4%	4.2%	13.4%
	(48)	(27)	(118)	(1406)
Average # Trips/Year	6.3	8.0	8.6	9.8
Breakdown by Fishing Mode:				
% Beach	30.2%	5.2%	32.2%	17.0%
% Pier	29.3%	11.4%	21.4%	15.7%
% CPFV	33.7%	35.8%	21.0%	27.3%
% Private boat	6.8%	47.6%	25.4%	40.0%
	(49)	(27)	(118)	(1408)

Table 4.3-3 - cont.

	Ethnic Background			
	Asian	Black	Hispanic	Non-Hisp. White
Fishing Ability				
Novice	8.3%	3.7%	8.5%	6.3%
Novice-Intermediate	14.6%	7.4%	14.5%	8.8%
Intermediate	47.9%	48.1%	54.7%	44.7%
Intermediate-Expert	25.0%	29.6%	18.8%	33.0%
Expert	4.2%	11.1%	3.4%	7.2%
	(48)	(27)	(117)	(1367)
First Age Fished				
1-4	4.1%	0.0%	3.5%	4.9%
5-8	26.5%	14.8%	23.9%	27.2%
9-12	20.4%	33.3%	23.9%	25.1%
13-16	12.2%	11.1%	14.5%	12.8%
17-24	14.3%	22.2%	20.5%	13.9%
25-34	14.3%	3.7%	11.1%	9.3%
35-44	6.1%	7.4%	1.7%	4.7%
>44	2.0%	7.4%	0.9%	2.1%
	(49)	(27)	(117)	(1391)
HOUSEHOLD:				
Age Distribution				
1-12	14.3%	20.7%	18.4%	17.1%
13-16	7.1%	5.7%	7.6%	6.8%
17-24	16.1%	8.0%	19.2%	9.5%
25-34	25.0%	19.5%	26.6%	22.1%
35-44	17.9%	23.0%	15.8%	20.9%
45-54	6.0%	3.4%	8.2%	12.2%
55-64	9.5%	18.4%	3.7%	6.5%
>64	4.2%	1.1%	0.5%	4.9%
	(47)	(27)	(116)	(1375)
Household Annual Income				
<\$10K	6.8%	4.0%	9.6%	2.7%
\$10-20K	18.2%	12.0%	11.4%	7.9%
\$20-30K	11.4%	8.0%	17.5%	13.3%
\$30-40K	9.1%	12.0%	22.8%	17.2%
\$40-50K	4.5%	16.0%	15.8%	16.2%
\$50-60K	13.6%	20.0%	8.8%	12.1%
\$60-70K	6.8%	12.0%	4.4%	9.3%
\$70-80K	11.4%	4.0%	3.5%	7.1%
\$80-90K	6.8%	4.0%	3.5%	4.0%
\$90-100K	4.5%	4.0%	0.9%	1.7%
\$100-110K	4.5%	4.0%	0.9%	2.1%
\$110-120K	2.3%	0.0%	0.0%	1.4%
\$120-130K	0.0%	0.0%	0.9%	1.4%
\$130-140K	0.0%	0.0%	0.0%	0.2%
>\$140K	0.0%	0.0%	0.0%	3.5%
	(44)	(25)	(114)	(1317)

Table 4.3-3 - cont.

	Ethnic Background			
	Asian	Black	Hispanic	Non-Hisp. White
Average Household Size- # Persons	3.5 (49)	2.8 (27)	3.2 (118)	2.8 (1409)
% Ever Fished	85% (49)	81% (27)	84% (118)	85% (1409)
% Male	62% (49)	69% (27)	71% (117)	62% (1405)
% Ever Fished Who Are Male	68% (49)	81% (27)	81% (117)	72% (1400)
Boatownership	4.1% (49)	11.1% (27)	19.7% (117)	32.8% (1395)
First Age Fished				
1-4	6.4%	1.8%	9.6%	7.8%
5-8	31.7%	12.7%	28.3%	25.4%
9-12	18.0%	36.4%	22.9%	22.0%
13-16	17.3%	21.8%	12.6%	11.2%
17-24	10.1%	16.4%	15.0%	13.2%
25-34	10.8%	3.6%	9.2%	9.6%
35-44	3.6%	3.6%	1.7%	4.0%
>44	2.2% (49)	3.6% (27)	0.6% (117)	6.8% (1391)

Table 4.3-4. Selected demographic characteristics of respondents who do and do not own a boat that can be used for saltwater fishing.

RESPONDENT:	Boatowner -----	Non- Boatowner -----
Age		
1-12	0.2%	0.1%
13-16	1.2%	2.2%
17-24	7.6%	11.2%
25-34	26.2%	29.3%
35-44	29.7%	27.2%
45-54	20.2%	14.3%
55-64	8.4%	8.5%
>64	6.5%	7.1%
	(489)	(1124)
 % Male	 95.5%	 88.8%
	(492)	(1125)
 Ethnic Background		
Asian/Pacific Islander	0.4%	4.1%
Black	0.6%	2.1%
Hispanic	4.7%	8.3%
Non-Hispanic White	92.5%	82.5%
Other	1.8%	3.0%
	(494)	(1137)
 Employment Status		
Employed ≥35 hrs/week	74.3%	73.7%
Employed <35 hrs/week	5.6%	5.1%
Retired	10.6%	10.3%
Student	4.2%	5.0%
Homemaker	1.0%	1.4%
Unemployed	0.6%	1.4%
Other	3.6%	3.1%
	(499)	(1143)
 Education		
< 8th grade	1.0%	0.7%
8th grade grad	0.4%	0.9%
Some high school	4.2%	5.9%
High school grad	12.9%	14.8%
Some trade/tech school	4.6%	4.1%
Trade/tech school grad	8.6%	5.5%
Some college	40.6%	41.6%
Bachelor's degree	13.5%	14.3%
Postgraduate study	14.3%	12.2%
	(498)	(1143)

Table 4.3-4 - cont.

	Boatowner -----	Non- Boatowner -----
Average # Trips/Year	14.0	7.7
Breakdown by Fishing Mode:		
% Beach	14.8%	21.8%
% Pier	13.5%	24.3%
% CPFV	19.7%	30.9%
% Private boat	52.0%	23.0%
	(504)	(1159)
 Fishing Ability		
Novice	2.9%	7.8%
Novice-Intermediate	6.0%	10.7%
Intermediate	37.2%	48.9%
Intermediate-Expert	42.1%	27.4%
Expert	11.9%	5.1%
	(487)	(1130)
 First Age Fished		
1-4	7.0%	4.3%
5-8	30.5%	25.7%
9-12	29.2%	23.0%
13-16	10.0%	13.5%
17-24	12.2%	15.3%
25-34	7.8%	10.2%
35-44	2.4%	5.5%
>44	1.0%	2.5%
	(502)	(1152)
 HOUSEHOLD:		
Age Distribution		
1-12	15.6%	18.0%
13-16	6.7%	6.7%
17-24	11.8%	13.9%
25-34	21.0%	22.4%
35-44	21.7%	18.8%
45-54	13.2%	9.8%
55-64	6.2%	6.0%
>64	3.9%	4.4%
	(489)	(1124)

Table 4.3-4 - cont.

	Boatowner -----	Non- Boatowner -----
Household Annual Income		
<\$10K	1.5%	4.3%
\$10-20K	5.3%	10.0%
\$20-30K	9.0%	15.3%
\$30-40K	17.5%	17.7%
\$40-50K	15.8%	15.4%
\$50-60K	12.2%	11.7%
\$60-70K	9.2%	9.1%
\$70-80K	8.5%	6.0%
\$80-90K	6.0%	3.3%
\$90-100K	1.5%	1.8%
\$100-110K	2.8%	1.8%
\$110-120K	2.6%	0.7%
\$120-130K	2.1%	0.9%
\$130-140K	.4%	0.0%
>\$140K	5.6%	2.0%
	(504)	(1075)
Average Household Size-		
† Persons	3.0	2.8
	(504)	(1159)
% Ever Fished		
	89%	83%
	(504)	(1159)
% Male		
	61%	64%
	(502)	(1151)
% Ever Fished Who Are Male		
	69%	74%
	(501)	(1146)
First Age Fished		
1-4	11.3%	7.1%
5-8	27.7%	26.9%
9-12	24.6%	22.0%
13-16	9.6%	13.5%
17-24	13.4%	12.9%
25-34	9.1%	10.8%
35-44	3.1%	4.5%
>44	1.3%	2.3%
	(502)	(1152)

Table 4.3-5. Estimated number of non-angling and angling households in coastal counties who own a boat that can be used for saltwater fishing and % of boats that are moored, by county of residence.

County of Residence	Non-Angling Households			Angling Households		
	Total	% Boat Owners	# Boat Owners	Total	% Boat Owners	# Boat Owners
Los Angeles	2,959,726	2.4% (4361)	71,033	202,374	23.4% (286)	47,356
Orange	728,996	4.0% (2794)	29,160	79,204	23.8% (289)	18,851
Riverside	333,936	3.3% (3924)	11,020	24,364	23.0% (278)	5,604
San Bernardino	431,248	3.1% (4673)	13,369	26,552	23.6% (271)	6,266
San Diego	780,660	2.8% (2751)	21,858	86,740	20.5% (292)	17,782
San Luis Obispo	68,286	4.0% (2275)	2,731	10,114	29.6% (320)	2,994
Santa Barbara	117,155	3.4% (2594)	3,983	13,745	28.4% (299)	3,904
Ventura	191,117	3.6% (2745)	6,880	22,183	27.0% (311)	5,989
Total	5,611,124	2.9% ¹	160,035	465,276	23.4% ³	108,744
						24.0% ²

¹ Estimated by dividing total # non-angling households that own a boat (160,035) by total # non-angling households (5,611,124).

² Estimated by weighting the proportion of boats moored in each county by the number of boatowners living in the county.

³ Estimated by dividing total # angling households that own a boat (108,744) by total # angling households (465,276).

Table 4.4-1. Boat length and annual boat-related expenditures incurred by angling households, by county of residence.

Boat length (feet)	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
6-10	4.8%	3.0%	1.6%	1.6%	6.9%	5.3%	5.1%	1.2%	0.0%
11-15	9.7%	16.4%	11.3%	11.5%	15.5%	33.0%	20.5%	8.4%	20.0%
16-20	41.9%	34.3%	48.4%	41.0%	32.8%	38.3%	51.3%	39.8%	52.0%
21-25	16.1%	16.4%	27.4%	16.4%	24.1%	19.2%	11.5%	25.3%	28.0%
26-30	6.5%	14.9%	4.8%	19.7%	10.3%	2.1%	6.4%	12.1%	0.0%
31-35	11.3%	4.5%	1.6%	4.9%	0.0%	0.0%	0.0%	3.6%	0.0%
36-40	9.7%	7.5%	1.6%	3.3%	6.9%	2.1%	2.6%	3.6%	0.0%
>40	0.0%	3.0%	3.2%	1.6%	3.5%	0.0%	2.6%	6.0%	0.0%
	(62)	(67)	(62)	(61)	(58)	(94)	(78)	(83)	(25)
Average annual expenditures per household (\$):									
Maintenance & repair	\$ 425.57	\$ 932.92	\$ 548.30	\$ 391.68	\$ 532.60	\$ 179.17	\$ 587.85	\$ 633.94	\$ 350.00
Insurance	211.41	440.65	239.88	206.69	321.57	87.08	151.63	263.83	232.55
Electronic equipment	148.61	563.65	79.08	36.00	159.46	98.10	172.06	269.59	268.81
Slip rental	395.22	795.55	103.68	403.98	369.78	51.61	239.75	496.31	193.62
Outboard motor	211.47	274.92	237.12	275.39	222.27	133.48	175.85	81.83	112.14
Boat trailer	100.37	143.68	33.88	29.20	88.57	102.32	49.15	28.19	47.38
Boat crew	9.90	47.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	303.09	357.36	38.62	269.39	277.13	68.59	176.54	200.35	302.00
Total	\$1805.64	\$3556.16	\$1280.56	\$1612.33	\$1971.38	\$ 720.35	\$1552.83	\$1974.04	\$1506.50
	(49)	(63)	(40)	(50)	(55)	(87)	(65)	(65)	(20)
% time for saltwater fishing	31.7%	59.0%	30.7%	39.7%	55.6%	48.1%	40.8%	46.9%	30.7%
	(54)	(70)	(47)	(52)	(56)	(91)	(63)	(69)	(22)
Expenditures attributable to saltwater fishing									
	\$ 572.39	\$2098.13	\$ 393.13	\$ 640.10	\$1096.09	\$ 346.49	\$ 633.55	\$ 925.82	\$ 462.50

Table 4.4-2. Average annual expenditures per angling household on licenses and fishing gear, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Coastal	Non Coastal
Annual expenditure per angling household:										
Licenses	\$ 26.87 (160)	\$ 21.71 (194)	\$ 25.46 (166)	\$ 27.83 (192)	\$ 26.57 (198)	\$ 26.44 (247)	\$ 25.44 (194)	\$ 24.40 (212)	\$ 23.46 (81)	\$ 23.46 (81)
Fishing Gear	149.86 (165)	166.60 (196)	83.74 (169)	88.08 (193)	124.47 (203)	87.95 (250)	99.63 (196)	111.67 (216)	53.21 (82)	53.21 (82)
Sum	\$176.73	\$188.31	\$109.20	\$115.91	\$151.04	\$114.39	\$125.07	\$136.07	\$76.67	\$76.67

Table 4.4-3a. Average number of hours spent fishing, round trip travel distance, and average expenditures per household trip made in beach mode, by county of residence.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
Fishing time- hours	5.1 (14)	3.9 (15)	9.7 (6)	5.8 (11)	4.4 (18)	4.4 (31)	3.9 (36)	8.0 (16)	15.8 (4)
Round trip travel distance-miles	50.6 (14)	85.7 (15)	79.7 (6)	53.6 (11)	51.5 (16)	29.5 (30)	73.1 (36)	51.0 (14)	158.0 (4)
Trip expenditures:									
Terminal tackle	\$ 5.36	\$ 5.40	\$ 2.67	\$ 2.00	\$ 3.35	\$ 2.90	\$ 5.14	\$ 2.93	\$ 6.00
Bait	2.79	4.00	4.83	4.45	2.88	2.20	1.89	2.50	12.50
Licenses	2.86	0.87	0.17	1.00	0.12	2.40	1.06	4.43	0.00
Equipment rental	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diving supplies	1.79	0.07	0.00	5.09	0.59	2.07	0.23	1.43	0.00
Mileage cost	10.12	17.14	15.94	10.72	10.30	5.90	14.62	10.20	31.60
Food and beverage	4.21	6.07	15.00	9.55	21.17	5.57	7.92	2.33	20.00
Lodging	0.00	0.67	15.50	0.00	16.67	0.07	0.00	0.00	25.00
	(14)	(15)	(6)	(11)	(17)	(30)	(35)	(14)	(4)
Total	\$27.13	\$34.22	\$54.11	\$32.81	\$55.08	\$21.13	\$30.86	\$23.82	\$95.10

Table 4.4-3b. Average number of hours spent fishing, round trip travel distance, and average expenditures per household trip made in pier mode, by county of residence.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
Fishing time- hours	7.1 (24)	4.9 (22)	8.9 (14)	9.0 (15)	5.0 (23)	4.0 (45)	5.6 (31)	5.1 (32)	20.9 (15)
Round trip travel distance-miles	60.6 (23)	37.1 (22)	116.2 (13)	103.8 (11)	21.9 (22)	33.7 (46)	45.4 (30)	33.9 (30)	97.7 (15)
Trip expenditures:									
Terminal tackle	\$ 5.27	\$ 6.73	\$ 9.00	\$ 7.83	\$ 2.78	\$ 3.38	\$ 5.68	\$ 4.00	\$ 7.67
Bait	5.36	5.32	11.77	18.42	3.91	2.91	4.35	3.52	5.47
Licenses	0.00	3.05	0.38	5.58	1.96	0.43	0.55	1.07	1.47
Equipment rental	0.00	0.00	0.38	1.00	0.91	0.07	0.32	0.27	1.40
Diving supplies	0.00	0.00	3.46	0.00	0.43	0.09	0.00	0.00	0.00
Mileage cost	12.12	7.42	23.24	20.76	4.38	6.74	9.08	6.78	19.54
Food and beverage	16.55	11.00	10.50	19.67	5.78	7.00	9.97	14.16	21.40
Lodging	10.87	4.00	0.00	16.67	0.00	0.00	0.00	3.87	52.93
	(22)	(22)	(13)	(12)	(23)	(45)	(31)	(30)	(15)
Total	\$50.17	\$37.52	\$58.73	\$89.93	\$20.15	\$20.62	\$29.95	\$33.67	\$109.88

Table 4.4-3c. Average number of hours spent fishing, round trip travel distance, and average expenditures per household trip made in CPFV mode, by county of residence.

	County of Residence							Non Coastal	
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara		
Fishing time- hours	7.1 (78)	7.2 (78)	9.5 (96)	6.7 (113)	6.9 (82)	7.1 (69)	4.8 (57)	7.9 (92)	5.2 (48)
Round trip travel distance-miles	102.6 (78)	87.0 (76)	152.2 (95)	181.2 (112)	45.2 (80)	80.0 (70)	56.0 (54)	87.4 (91)	48.9 (49)
Trip expenditures:									
Passenger fees	\$101.19	\$ 96.39	\$ 98.94	\$ 82.27	\$ 67.59	\$112.01	\$ 30.50	\$ 67.17	\$ 50.19
Terminal tackle	14.84	10.83	12.00	7.50	8.43	19.19	9.30	13.79	8.58
Bait	0.87	0.36	0.54	0.11	1.80	1.10	0.84	0.05	0.21
Licenses	4.73	3.61	4.47	4.19	3.57	12.63	3.73	4.32	6.00
Equipment rental	2.68	1.83	2.58	2.36	1.61	2.28	2.96	2.61	5.74
Diving supplies	0.00	0.00	0.00	0.09	0.04	3.57	1.29	0.00	0.00
Mileage cost	20.52	17.40	30.44	36.24	9.04	16.00	11.20	17.48	9.78
Food and beverage	17.71	17.09	22.66	19.81	10.15	17.44	8.54	18.11	14.90
Lodging	4.12 (78)	2.19 (80)	4.89 (96)	2.54 (113)	0.00 (82)	4.50 (68)	0.00 (56)	2.64 (92)	10.35 (46)
Total	\$166.66	\$149.70	\$179.52	\$155.11	\$102.23	\$188.72	\$ 68.36	\$126.17	\$105.75

Table 4.4-3d. Average number of hours spent fishing, round trip travel distance, and average expenditures per household trip made in private boat mode, by county of residence.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
Fishing time- hours	7.9 (48)	7.3 (82)	6.4 (49)	9.5 (54)	6.1 (73)	5.0 (97)	6.7 (71)	5.4 (76)	10.7 (13)
Round trip travel distance-miles	53.2 (45)	40.0 (77)	147.5 (52)	155.3 (54)	41.7 (73)	46.8 (96)	62.7 (73)	46.8 (77)	154.9 (11)
Trip expenditures (\$):									
Boat fuel	\$ 28.62	\$ 28.11	\$ 18.54	\$ 26.38	\$ 19.24	\$ 10.22	\$ 23.68	\$ 28.43	\$ 22.27
Terminal tackle	10.05	7.47	10.37	15.05	9.87	6.53	12.40	10.33	13.00
Bait	9.04	7.59	6.83	7.76	6.36	4.90	7.00	8.38	5.83
Licenses	4.29	2.33	3.69	7.07	3.61	3.33	1.97	2.41	15.83
Equipment rental	0.40	0.73	0.45	0.51	0.14	0.10	0.68	0.71	3.02
Diving supplies	2.27	1.53	0.00	1.49	0.08	6.72	3.36	2.10	6.25
Mileage cost	10.64	8.00	29.50	31.06	8.34	9.36	12.54	9.36	30.98
Food and beverage	24.00	30.89	23.85	37.40	11.09	10.08	24.23	12.43	57.50
Lodging	4.53 (48)	7.74 (80)	6.08 (51)	5.96 (55)	0.83 (76)	0.93 (98)	6.85 (73)	3.10 (77)	2.67 (11)
Total	\$ 90.84	\$ 94.39	\$ 99.31	\$132.68	\$ 59.56	\$ 52.17	\$ 92.71	\$ 77.25	157.41

Table 4.4-4. Total annual expenditures on saltwater fishing (\$1,000's) by coastal and noncoastal county residents, by expenditure category and county of residence.

County of Residence	Trip-Related Expenditures							Grand Total
	Licenses & Gear	Boat-Related Expenditures	Beach	Pier	CPFV	Private Boat	Total	
Los Angeles	35,765.6	27,106.1	3,275.2	10,240.0	80,960.1	40,709.0	135,184.4	198,056.1
Orange	14,914.9	39,551.8	1,888.7	2,576.6	31,296.0	27,963.0	63,724.3	118,191.0
Riverside	2,660.5	2,203.1	281.4	1,309.2	8,526.8	4,752.7	14,870.1	19,733.7
San Bernardino	3,077.6	4,010.9	46.6	1,915.6	6,016.3	5,191.6	13,170.0	20,258.5
San Diego	13,101.2	19,490.7	4,614.8	3,801.2	15,959.0	19,095.2	43,470.3	76,062.2
San Luis Obispo	1,156.9	1,037.4	492.4	462.1	2,454.3	1,953.1	5,361.9	7,556.2
Santa Barbara	1,719.1	2,473.4	1,256.6	894.6	1,210.9	3,893.0	7,255.1	11,447.6
Ventura	3,018.5	5,544.7	908.6	1,340.3	6,817.0	5,267.4	14,333.3	22,896.5
Non Coastal	12,678.3	18,967.1	3,532.3	5,163.3	14,752.3	6,965.5	30,413.4	62,058.8
Total	88,092.7	120,385.2	16,296.6	27,703.0	167,992.7	115,790.6	327,782.8	536,260.6

Table 4.4-5. Total annual trip-related expenditures on saltwater fishing (\$1,000's) by coastal and noncoastal residents, by fishing mode and fishing county.

Fishing County	Beach	Pier	CPFV	Private Boat	Total
Los Angeles	3,623.1	10,569.4	66,119.6	41,245.1	121,557.2
Orange	2,235.2	5,204.2	35,067.5	33,206.5	75,713.4
San Diego	4,881.6	5,853.5	47,581.8	23,743.1	82,060.0
San Luis Obispo	3,412.1	3,926.0	5,111.3	5,553.5	18,002.9
Santa Barbara	1,177.4	697.3	1,173.6	3,732.0	6,780.3
Ventura	967.1	1,452.5	12,938.9	8,310.2	23,668.7
Total	16,296.5	27,702.8	167,992.7	115,790.5	327,782.5

Table 5.2-1a. Proportion of respondents willing to pay \$1-5, \$6-10, \$11-15, \$16-20 and \$21-25 more to increase halibut catch rate, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
\$ 1-5	68.2% (44)	55.2% (58)	60.5% (43)	66.1% (59)	60.0% (55)	60.7% (61)	59.6% (52)	65.0% (60)	45.0% (20)	
\$ 6-10	45.5% (33)	39.0% (41)	38.8% (49)	45.2% (42)	37.0% (46)	49.3% (67)	35.7% (42)	52.7% (55)	47.1% (17)	
\$11-15	50.0% (30)	45.9% (37)	30.3% (33)	34.4% (32)	28.1% (32)	43.3% (30)	28.6% (35)	56.3% (32)	54.6% (22)	
\$16-20	20.7% (29)	53.6% (28)	40.7% (27)	27.3% (33)	37.5% (32)	28.3% (46)	27.6% (29)	36.8% (38)	25.0% (12)	
\$21-25	30.0% (30)	31.0% (29)	42.9% (21)	24.1% (29)	30.3% (33)	28.9% (38)	21.1% (38)	26.5% (34)	25.0% (12)	

Table 5.2-1b. Proportion of respondents willing to pay \$1-5, \$6-10, \$11-15, \$16-20, \$21-25, \$26-30 and \$31-35 more to increase yellowtail catch rate, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
\$ 1-5	78.3% (23)	64.9% (37)	59.5% (37)	48.5% (33)	62.9% (35)	45.0% (40)	35.3% (34)	54.1% (37)	70.0% (10)	
\$ 6-10	34.4% (32)	58.6% (29)	48.4% (31)	67.9% (28)	63.3% (30)	16.3% (43)	29.4% (34)	47.5% (40)	38.9% (18)	
\$11-15	27.3% (22)	41.2% (34)	50.0% (22)	50.0% (36)	30.0% (30)	17.1% (35)	25.0% (32)	37.8% (37)	33.3% (21)	
\$16-20	25.8% (31)	41.2% (34)	40.7% (27)	37.8% (37)	32.4% (34)	11.1% (45)	23.3% (30)	29.7% (37)	18.2% (11)	
\$21-25	28.0% (25)	31.0% (29)	6.3% (16)	20.0% (25)	17.2% (29)	16.7% (30)	16.7% (30)	26.3% (19)	42.9% (14)	
\$26-30	28.6% (21)	37.5% (16)	32.3% (31)	11.8% (17)	21.7% (23)	15.2% (33)	4.3% (23)	5.9% (34)	40.0% (5)	
\$31-35	18.2% (11)	14.3% (14)	40.0% (10)	22.2% (18)	6.3% (16)	0.0% (22)	15.4% (13)	15.4% (13)	50.0% (2)	

Table 5.2-1c. Proportion of respondents willing to pay \$1-5, \$6-10, \$11-15, \$16-20, and \$21-25 more to increase white sea bass catch rate, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
\$ 1-5	44.4% (45)	59.2% (49)	52.4% (42)	59.3% (59)	57.4% (54)	38.7% (62)	48.3% (60)	55.2% (67)	53.9% (26)	
\$ 6-10	35.0% (40)	40.0% (50)	32.6% (43)	36.7% (49)	40.0% (50)	22.7% (66)	22.6% (53)	35.5% (62)	45.8% (24)	
\$11-15	25.0% (36)	18.2% (33)	27.8% (36)	26.7% (30)	25.6% (39)	11.9% (42)	20.7% (29)	18.2% (33)	29.4% (17)	
\$16-20	24.2% (33)	34.3% (35)	15.6% (32)	15.0% (40)	35.3% (34)	11.1% (54)	13.9% (36)	37.8% (37)	13.3% (15)	
\$21-25	6.3% (16)	11.5% (26)	23.8% (21)	27.8% (18)	5.9% (17)	20.0% (25)	26.1% (23)	20.8% (24)	0.0% (0)	

Table 5.2-1d. Proportion of respondents willing to pay \$1-5, \$6-10, \$11-15, \$16-20, \$21-25, and \$26-30 more to increase the bass catch rate around piers, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
\$ 1-5	66.7% (21)	42.9% (28)	34.1% (44)	54.3% (46)	46.2% (39)	31.4% (51)	48.9% (45)	50.0% (56)	54.2% (24)	
\$ 6-10	33.3% (33)	30.6% (49)	14.3% (35)	24.1% (29)	18.6% (43)	18.6% (43)	29.2% (48)	13.2% (38)	7.1% (14)	
\$11-15	15.2% (46)	7.7% (39)	11.1% (27)	9.8% (41)	5.9% (34)	5.6% (54)	16.7% (36)	9.8% (41)	27.8% (18)	
\$16-20	18.2% (33)	14.3% (28)	10.7% (28)	9.7% (31)	6.5% (31)	11.9% (42)	6.7% (30)	7.9% (38)	22.2% (9)	
\$21-25	11.5% (26)	5.6% (36)	19.2% (26)	3.2% (31)	9.1% (33)	5.1% (39)	0.0% (30)	3.1% (32)	10.0% (10)	
\$26-30	0.0% (11)	11.1% (18)	0.0% (16)	0.0% (18)	0.0% (15)	9.5% (21)	0.0% (14)	10.5% (19)	12.5% (8)	

Table 5.2-2a. Proportion of respondents who currently fish for halibut and the proportion who would increase their halibut fishing if the enhancement were to occur, calculated separately for respondents who were and were not willing to pay the \$ amount designated in their questionnaire for halibut enhancement, by county of residence.

	County of Residence																	
	Los Angeles		Orange		Riverside		San Bernardino		San Diego		San Luis Obispo		Santa Barbara		Ventura		Non Coastal	
Not willing to pay:																		
Fish	26.4%	16.1%	11.3%	16.4%	21.6%	30.8%	35.2%	34.5%	12.8%									
Increase	(91)	(105)	(97)	(110)	(116)	(133)	(122)	(110)	(47)									
Willing to pay:																		
Fish	46.7%	44.9%	33.3%	36.5%	35.8%	56.1%	65.3%	56.9%	22.9%									
Increase	(75)	(89)	(75)	(85)	(81)	(107)	(72)	(109)	(35)									
	66.7%	62.5%	58.7%	59.5%	59.3%	67.0%	59.7%	75.0%	41.2%									
	(75)	(88)	(75)	(84)	(81)	(106)	(72)	(108)	(34)									

Table 5.2-2b. Proportion of respondents who currently fish for yellowtail and the proportion who would increase their yellowtail fishing if the enhancement were to occur, calculated separately for respondents who were and were not willing to pay the \$ amount designated in their questionnaire for yellowtail enhancement, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Coastal	Non Coastal
Not willing to pay:										
Fish	21.9% (105)	29.9% (107)	32.3% (99)	27.5% (116)	34.4% (125)	2.4% (201)	4.6% (151)	7.6% (144)	10.4% (48)	
Increase	25.2% (107)	29.5% (105)	17.0% (100)	22.4% (116)	20.0% (125)	5.9% (201)	6.7% (149)	19.7% (142)	8.5% (47)	
Willing to pay:										
Fish	50.0% (59)	56.9% (86)	62.1% (74)	64.1% (78)	59.7% (72)	15.9% (44)	24.4% (45)	43.8% (73)	56.3% (32)	
Increase	77.6% (58)	80.0% (85)	83.7% (75)	75.6% (78)	71.8% (71)	44.4% (45)	66.7% (45)	73.9% (73)	56.3% (32)	

Table 5.2-2c. Proportion of respondents who currently fish for white sea bass and the proportion who would increase their white sea bass fishing if the enhancement were to occur, calculated separately for respondents who were and were not willing to pay the \$ amount designated in their questionnaire for white sea bass enhancement, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
Not willing to pay:										
Fish	6.7% (118)	6.5% (123)	7.0% (115)	8.9% (124)	4.2% (120)	3.7% (192)	7.0% (142)	6.5% (138)	10.0% (50)	
Increase	16.4% (116)	17.2% (122)	3.5% (115)	10.6% (123)	15.0% (120)	3.1% (193)	9.2% (141)	11.0% (137)	6.1% (49)	
Willing to pay:										
Fish	38.5% (52)	31.4% (70)	28.6% (56)	30.6% (72)	33.8% (74)	36.4% (55)	34.5% (58)	29.7% (84)	18.8% (32)	
Increase	80.4% (51)	78.5% (70)	53.6% (56)	57.8% (71)	71.6% (74)	67.3% (55)	60.3% (58)	67.1% (82)	43.8% (32)	

Table 5.2-2d. Proportion of respondents who currently fish from piers and the proportion who would increase their pier fishing if the bass enhancement were to occur, calculated separately for respondents who were and were not willing to pay the \$ amount designated in their questionnaire for bass enhancement, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
Not willing to pay:										
Fish	23.1% (121)	19.3% (145)	22.5% (142)	23.2% (151)	24.5% (155)	37.6% (205)	34.2% (158)	20.3% (177)	27.1% (59)	
Increase	16.2% (116)	18.9% (159)	11.9% (143)	12.2% (156)	11.1% (162)	17.5% (212)	15.1% (159)	12.9% (179)	10.0% (60)	
Willing to pay:										
Fish	20.0% (35)	25.0% (36)	21.9% (32)	23.5% (34)	21.9% (32)	39.4% (33)	50.0% (42)	37.5% (40)	37.5% (24)	
Increase	80.5% (41)	79.0% (38)	87.1% (31)	77.5% (40)	81.8% (33)	86.1% (36)	72.7% (44)	86.1% (43)	39.1% (23)	

Table 5.2-3. Extent to which four selected factors' affected responses to contingent value questions, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
Fee hike										
Definitely true	19.5%	24.6%	22.4%	28.7%	20.2%	24.3%	25.4%	20.8%	23.1%	(78)
Probably true	37.9%	31.2%	32.9%	32.3%	31.3%	35.1%	38.3%	33.5%	29.5%	(78)
Probably false	18.4%	20.1%	27.6%	20.0%	21.7%	19.5%	13.4%	26.2%	15.4%	(78)
Definitely false	24.1%	24.1%	17.1%	19.0%	26.8%	21.1%	22.9%	19.5%	32.1%	(78)
	(174)	(199)	(170)	(195)	(198)	(251)	(201)	(221)		
Best guess										
Definitely true	33.5%	37.7%	33.7%	45.7%	33.3%	38.6%	35.2%	38.0%	33.3%	(78)
Probably true	42.9%	38.2%	42.0%	36.0%	41.9%	37.8%	45.2%	38.5%	44.9%	(78)
Probably false	10.6%	13.6%	14.8%	12.2%	11.1%	10.4%	6.5%	12.7%	12.8%	(78)
Definitely false	12.9%	10.6%	9.5%	6.1%	13.6%	13.3%	13.1%	10.9%	9.0%	(78)
	(170)	(199)	(169)	(197)	(198)	(249)	(199)	(221)		
Don't want to pay										
Definitely true	30.8%	22.2%	31.6%	26.4%	27.8%	37.1%	37.3%	25.9%	26.6%	(79)
Probably true	17.8%	20.2%	18.4%	18.8%	23.2%	22.7%	20.4%	21.0%	17.7%	(79)
Probably false	23.1%	18.2%	24.7%	26.9%	18.7%	19.9%	17.4%	24.6%	30.4%	(79)
Definitely false	28.4%	39.4%	25.3%	27.9%	30.3%	20.3%	24.9%	28.6%	25.3%	(79)
	(169)	(198)	(174)	(197)	(198)	(251)	(201)	(224)		

Table 5.2-3 - cont.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
Catch rate not possible									
Definitely true	22.5%	19.8%	19.2%	20.8%	18.3%	19.8%	21.1%	20.0%	17.1%
Probably true	27.2%	28.9%	37.2%	26.0%	27.4%	31.3%	39.2%	30.7%	22.4%
Probably false	26.0%	28.9%	27.3%	28.6%	29.4%	28.6%	22.1%	26.0%	34.2%
Definitely false	24.3% (169)	22.3% (197)	16.3% (172)	24.5% (192)	24.9% (197)	20.2% (252)	17.6% (199)	23.3% (215)	26.3% (76)

1 Fee hike=My main concern was that the ocean enhancement sportfishing stamp fee may be increased. Best guess=My responses reflected my best guess as to whether the increased catch rates would have been worth the extra money. Don't want to pay=I just don't want to have to pay more to fish, regardless of the conditions. Catch rate not possible=My responses reflected the fact that I didn't really think the improved catch rate could have been achieved.

Table 5.2-4a. Current participation in halibut fishing and projected future participation in response to enhancement of halibut catch rates, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
% respondents who target halibut	35.7% (171)	29.6% (199)	22.2% (176)	25.4% (197)	27.6% (199)	42.8% (243)	46.2% (199)	45.7% (221)	17.1% (82)	
Average # halibut trips/year	3.26 (61)	3.02 (59)	3.08 (39)	2.84 (50)	4.69 (55)	5.09 (104)	4.42 (92)	3.82 (101)	2.14 (14)	
% respondents who would increase halibut fishing	43.5% (170)	39.4% (198)	30.7% (176)	36.7% (196)	37.4% (198)	40.9% (242)	34.0% (200)	50.2% (217)	23.5% (81)	
Average increase in # halibut trips/year	4.42 (69)	3.99 (74)	3.23 (52)	3.52 (71)	3.11 (70)	5.32 (93)	5.27 (63)	5.01 (102)	4.44 (16)	

Table 5.2-4b. Current participation in yellowtail fishing and projected future participation in response to enhancement of yellowtail catch rates, by county of residence.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
% respondents who target yellowtail	31.8% (170)	42.5% (200)	45.4% (174)	41.8% (196)	43.0% (200)	4.9% (246)	8.9% (202)	19.8% (222)	28.0% (82)
Average # yellowtail trips/year	2.78 (54)	2.33 (85)	2.35 (79)	2.33 (82)	2.88 (86)	1.25 (12)	1.89 (18)	2.80 (44)	1.09 (23)
% respondents who would increase yellowtail fishing	44.4% (171)	52.3% (197)	45.1% (175)	43.9% (196)	38.2% (199)	13.0% (247)	20.7% (198)	37.7% (220)	28.4% (81)
Average increase in # yellowtail trips/year	4.08 (66)	3.91 (96)	4.83 (75)	3.06 (80)	3.57 (74)	2.68 (31)	3.24 (38)	3.39 (79)	2.50 (22)

Table 5.2-4c. Current participation in white sea bass fishing and projected future participation in response to enhancement of white sea bass catch rates, by county of residence.

	County of Residence								
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal
% respondents who target WSBass	16.1% (174)	15.4% (201)	13.9% (173)	17.6% (199)	16.2% (198)	10.8% (250)	14.6% (205)	15.2% (224)	13.3% (83)
Average # WSBass trips/year	1.93 (28)	2.97 (31)	1.88 (24)	2.29 (35)	1.78 (32)	1.89 (27)	2.47 (30)	2.21 (34)	1.45 (11)
% respondents who would increase WSBass fishing	36.5% (170)	39.5% (200)	19.7% (173)	27.9% (197)	36.4% (198)	17.1% (251)	23.6% (203)	32.3% (220)	22.0% (82)
Average increase in # WSBass trips/year	3.46 (56)	3.31 (70)	2.39 (31)	3.06 (53)	3.03 (66)	4.77 (39)	3.84 (43)	2.88 (67)	2.40 (15)

Table 5.2-4d. Current participation in pier fishing and projected future participation in response to enhancement of bass catch rates, by county of residence.

	County of Residence									
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Non Coastal	
% respondents who fish from piers	24.5% (286)	19.4% (289)	18.7% (278)	21.3% (272)	25.7% (292)	35.7% (322)	36.8% (299)	24.1% (311)	26.7% (105)	
Average # pier trips/year	5.49 (70)	5.95 (56)	7.77 (52)	5.60 (58)	9.69 (74)	7.26 (115)	5.86 (110)	6.51 (75)	5.11 (28)	
% respondents who would increase pier fishing	32.0% (172)	30.3% (201)	25.3% (174)	25.1% (199)	23.4% (197)	27.2% (250)	27.7% (206)	27.0% (222)	19.0% (84)	
Average increase in # pier trips/year	5.02 (53)	6.53 (51)	4.52 (42)	4.85 (47)	7.79 (42)	6.66 (59)	8.22 (51)	8.30 (53)	4.14 (14)	

Table 6.0-1. Estimated number of shellfishing households, by county of residence and survey wave.

	County of Residence							Total		
	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara			
# households	3,162,100	808,200	358,300	457,800	867,400	78,400	130,900	213,300	6,076,400	
March-April:										
Prevalence Rate	0.1% (834)	1.0% (610)	0.3% (800)	0.1% (940)	0.3% (620)	1.4% (518)	1.5% (730)	0.4% (687)	0.3% ¹ (5739)	19,293
# Shellfishing Households	3,162	8,082	1,075	458	2,602	1,098	1,964	853		19,293
May-June:										
Prevalence Rate	0.6% (2174)	0.3% (968)	0.3% (1417)	0.3% (1534)	0.2% (1026)	0.9% (875)	1.0% (945)	0.7% (1065)	0.5% ¹ (10004)	29,088
# Shellfishing Households	18,973	2,425	1,075	1,373	1,735	706	1,309	1,493		29,088
July-August:										
Prevalence Rate	0.1% (1428)	0.4% (786)	0.1% (1051)	0.1% (989)	0.2% (562)	0.8% (527)	0.4% (483)	0.3% (695)	0.2% ¹ (6521)	10,737
# Shellfishing Households	3,162	3,233	358	458	1,735	627	524	640		10,737
September-October:										
Prevalence Rate	0.5% (988)	0.7% (709)	0.1% (966)	0.2% (1495)	0.2% (835)	1.2% (687)	1.6% (748)	0.7% (608)	0.5% ¹ (7036)	29,005
# Shellfishing Households	15,811	5,657	358	916	1,735	941	2,094	1,493		29,005

¹ Obtained by dividing total # shellfishing households in each survey wave (19,293 in March-April, 29,088 in May-June, 10,737 in July-August and 29,005 in September-October) by total # households (6,076,400).

Table 6.0-2. Estimated number of shellfishers and shellfisher trips made by coastal county residents, by survey wave.

	Mar-Apr	May-Jun	Jul-Aug	Sep-Oct	Total
	-----	-----	-----	-----	-----
# Shellfishing Households	19,293	29,088	10,737	29,005	
Average # Shellfishers Per Household	1.53 (32)	1.39 (44)	1.70 (17)	1.66 (38)	
Total # Shellfishers	29,518	40,313	18,303	48,118	
Avg # Shellfisher Trips Per Household	3.78 (32)	2.93 (44)	5.28 (17)	5.74 (38)	
Total # Shellfisher Trips	72,928	85,234	56,192	166,428	380,782
% Distribution of Shellfisher Trips by Target Species:					
Lobster	22%	23%	26%	39%	30% ¹
Abalone	63%	58%	53%	29%	46% ¹
Clam	15%	19%	21%	32%	24% ¹
	(27)	(34)	(11)	(30)	
# Shellfisher Trips by Target Species:					
Lobster	16,044	19,604	14,610	64,907	115,165
Abalone	45,945	49,436	29,782	48,264	173,427
Clam	10,939	16,194	11,800	53,257	92,190

¹ Estimated by dividing the total number of trips associated with each target species (115,165 for lobster, 173,427 for abalone, 92,190 for clam) by the total number of trips (380,782).

APPENDIX A
TELEPHONE SURVEY INSTRUMENT

SOUTHERN CALIFORNIA SALTWATER SPORTFISHING SURVEY

Phone Screener Contact Sheet
NOAA Fish-8817

Additional Comments:

Contact Person Name: _____
name

Send Mail Survey To: _____
address or P.O. Box

city, state, zip code

INTERVIEWER CODE __ __

DATE COMPLETED / /
(mo) (day) (yr)

TOTAL NUMBER OF ATTEMPTS __ __

TIME STARTED: __ __ : __ __

TIME ENDED: __ __ : __ __

TOTAL TIME (MINUTES) __ __

SOUTHERN CALIFORNIA SALTWATER SPORTFISHING SURVEY
TELEPHONE INTERVIEW

SECTION 1

Hello, this is _____ from HBRS in Madison, Wisconsin. I am working with the National Marine Fisheries Service and the California Department of Fish and Game on a study of saltwater fishing, shellfishing and boat ownership in southern California. (Probe: if respondent doesn't fish, say "Just so I am sure that I understand--no one in your household goes shellfishing or saltwater fishing, or owns a boat that could be used for saltwater fishing?")

(INTERVIEWER: PLACE "X" HERE IF PROBE WAS USED _____)

SHELLFISHING

1. Has anyone in your household, including yourself, been shellfishing anywhere from San Luis Obispo county to the Mexican border during July or August of this year?

- NO (Skip to Question 3) 1
- YES 2
- DON'T KNOW (Skip to Question 3) 8

2a. How many of your household members have been shellfishing during July or August of this year?

Record number _ _ _

2b. How many times has each person in your household been shellfishing in southern California in July or August of this year?

How many of these trips were for:

	Total Number Of Trips	Lobster	Abalone	Clams
YOURSELF	___ ----->	___	___	___
PERSON #2	___ ----->	___	___	___
PERSON #3	___ ----->	___	___	___
PERSON #4	___ ----->	___	___	___
PERSON #5	___ ----->	___	___	___
PERSON #6	___ ----->	___	___	___

BOAT OWNERSHIP

3. Does anyone in your household own a boat that could be used for saltwater fishing?

NO (Skip to Question 6) 1
 YES 2
 DON'T KNOW 8

4. How long is this boat?

Record number of feet — —
 DON'T KNOW 998

5. Do you moor or launch this boat?

MOOR 1
 LAUNCH 2
 DON'T KNOW 8

SALTWATER SPORTFISHING

6. We are interested in talking with people who have been saltwater fishing for finfish, either from the shore or on a boat trip originating anywhere on the southern California coast from San Luis Obispo county to the Mexican border. Has anyone in your household ever been saltwater fishing in southern California?

NO (Skip to Question 8a) 1
 YES 2

7a. How many members of your household, including yourself, have been saltwater fishing for finfish in southern California in the last 12 months?

NONE 00
 Record number — —

7b. Do you recall the date of the last time someone in your household went saltwater fishing for finfish in southern California? (Probe if they cannot remember month; season of the year would be useful)

Record Month _____ and _____

and

Record Year _____ 19 _____

8a. Did I reach you at your primary residence? (Probe: Primary is where you live now)

- YES 1
- NO, PART TIME/SEASONAL 2
- NO, NON-RESIDENTIAL (Terminate) 3

8b. In what county is your primary residence located?

- LOS ANGELES 01
- ORANGE 02
- RIVERSIDE 03
- SAN BERNADINO 04
- SAN DIEGO 05
- SAN LUIS OBISPO 06
- SANTA BARBARA 07
- VENTURA 08
- OTHER _____ (Terminate) 09
- DONT KNOW 98

(IF NONANGLER)

To help my supervisor verify some of the calls I have made, I just need to get your first name.

That's all the questions I have. I'd like to thank you for your time. (TERMINATE)

SECTION 2

I would like to speak to the person in your household who has been saltwater fishing the most times in the last 12 months. Is that you?

NO-----> Whom should I be talking with?

Name: _____

Is this person available, or when would be a good time to call back?

Day: _____ Time: _____ a.m./p.m.

YES-----> I'd like to ask you a few questions about your saltwater fishing trips in southern California. I want you to know that all of your answers are strictly confidential and that this survey is being conducted in accordance with the Privacy Act of 1974. Therefore, you are not obligated to answer any question if you feel it is an invasion of your privacy.

(GO TO QUESTION 10)

INTRODUCTION WHEN NEW PERSON COMES TO PHONE:

Hello, I am _____ from HBRIS in Madison, Wisconsin. I am working with the National Marine Fisheries Service and the California Department of Fish and Game on a study of saltwater fishing in southern California.

We are interested in talking with people who have been saltwater fishing, either from the shore or on a boat trip originating anywhere on the southern California coast from San Luis Obispo county to the Mexican border.

9. I understand that you have been saltwater fishing in the last 12 months in southern California.

NO (Terminate) 1

YES-----> (Skip to Privacy Act Information). 2

PRIVACY ACT INFORMATION

I'd like to ask you a few questions about your saltwater fishing trips in southern California. Before I start, I want you to know that all of your answers are strictly confidential and that this survey is being conducted in accordance with the Privacy Act of 1974. Therefore, you are not obligated to answer any question if you feel it is an invasion of your privacy.

(GO TO QUESTION 10)

10. How many of your household members, including yourself, have taken saltwater fishing trips in southern California during July or August of this year?

NONE (Skip to Question 24) 00
 Record number of household members — —
 DON'T KNOW (Skip to Question 24) 98

11. How many saltwater fishing trips did you personally take in southern California during July or August of this year? (PROBE: for approximate number of trips).

NONE (Skip to Question 21) 000
 Record number of trips — —
 DON'T KNOW (Skip to Question 21) 998

PARTY OR CHARTER BOAT

12. How many of your saltwater fishing trips during July or August of this year were from a party or charter boat?

NONE (Skip to Question 14) 000
 Record number of party/charter trips — — —

13.

In which county was the boat docked at the end of each trip?	Besides yourself, how many other household members fished during each trip?	Was most of the fishing effort in Mexican water? (Specify Coronado Islands if necessary)
Trip 1 _____ ----->	__ __ ----->	1 No 2 Yes
Trip 2 _____ ----->	__ __ ----->	1 No 2 Yes
Trip 3 _____ ----->	__ __ ----->	1 No 2 Yes
Trip 4 _____ ----->	__ __ ----->	1 No 2 Yes
Trip 5 _____ ----->	__ __ ----->	1 No 2 Yes

(IF MORE THAN 5 TRIPS IN THE LAST 2 MONTHS, ASK QUESTION 13 ABOUT THE 5 MOST RECENT TRIPS.)

PRIVATE OR RENTAL BOAT

14. How many of your saltwater fishing trips during July or August of this year were from a private or rental boat?

NONE (Skip to Question 16) 000
 Record number of private/rental boat trips _ _ _

15.

	In which county was the boat docked at the end of each trip?	Was the boat moored or launched at the beginning of each trip?	Besides yourself, how many other household members fished during each trip?	Was most of the fishing effort in Mexican waters? (Specify Coronado Islands if necessary)
1:	_____	1 M 2 L ----->	__ _ ----->	1 No 2 Yes
2:	_____	1 M 2 L ----->	__ _ ----->	1 No 2 Yes
3:	_____	1 M 2 L ----->	__ _ ----->	1 No 2 Yes
4:	_____	1 M 2 L ----->	__ _ ----->	1 No 2 Yes
5:	_____	1 M 2 L ----->	__ _ ----->	1 No 2 Yes

(IF MORE THAN 5 TRIPS IN THE LAST 2 MONTHS, ASK QUESTION 15 ABOUT THE 5 MOST RECENT TRIPS.)

PIER, DOCK, OR MANMADE STRUCTURE

16. How many of your saltwater fishing trips in July or August of this year were from a pier, dock, or other manmade structure?

NONE (Skip to Question 18) 000
 Record number of shore trips _ _ _

17.

**In what county
 were you fishing
 on each trip?**

**Besides yourself,
 how many other household
 members fished during
 this trip?**

Trip 1	_____	----->	_ _
Trip 2	_____	----->	_ _
Trip 3	_____	----->	_ _
Trip 4	_____	----->	_ _
Trip 5	_____	----->	_ _

BEACHES, BANK

18. How many of your saltwater fishing trips in July or August of this year were from a beach or a bank?

NONE (Skip to Question 20) 000
 Record number of shore trips _ _ _

19.

**In what county
 were you fishing
 on each trip?**

**Besides yourself,
 how many other household
 members fished during
 this trip?**

Trip 1	_____	----->	_ _
Trip 2	_____	----->	_ _
Trip 3	_____	----->	_ _
Trip 4	_____	----->	_ _
Trip 5	_____	----->	_ _

TRIPS BY OTHER HOUSEHOLD MEMBERS

20. Did any member of your household take a saltwater fishing trip in southern California during July or August of this year in which you did not participate?

NO (Skip to Question 23) 1
 YES 2
 DONT KNOW (Skip to Question 23) 8

21. How many trips did household members take during July or August of this year without you?

Record number of trips
 DONT KNOW (Skip to Question 23) 98

22a. How many of these trips were on a boat?

NONE (Skip to Question 22b) 00
 Record number

Was this a party/charter boat
 or a private/rental boat?
 (If private/rental)---->Was this
 boat moored or launched?

How Many Household Members Were On Each Trip?	Party/Charter Boat	Private/Rental Boat Moored	Private/Rental Boat Launched	In Which County Did the Boat Dock at the End of Each Trip?	Was Most of the Fishing Effort in Mexican Waters? (Specify Coronado Islands if necessary)
1: <u> </u> ----> 1	2	3-----> <u> </u>	-----> 1 No	2 Yes	
2: <u> </u> ----> 1	2	3-----> <u> </u>	-----> 1 No	2 Yes	
3: <u> </u> ----> 1	2	3-----> <u> </u>	-----> 1 No	2 Yes	
4: <u> </u> ----> 1	2	3-----> <u> </u>	-----> 1 No	2 Yes	
5: <u> </u> ----> 1	2	3-----> <u> </u>	-----> 1 No	2 Yes	

22b. How many of these trips were from piers, docks, beaches, or banks?

NONE (Skip to Question 23) 00
 Record number _ _

Was Most of the Fishing On
 This Trip From . . .

How Many Household Members Were On Each Trip?	Pier/Dock/Manmade Structure	Beach/Bank	In Which County Did You Fish In?
1: _ _ ----->	1	2----->	_____
2: _ _ ----->	1	2----->	_____
3: _ _ ----->	1	2----->	_____
4: _ _ ----->	1	2----->	_____
5: _ _ ----->	1	2----->	_____

23. Besides the trips we've just been talking about, how many other saltwater fishing trips have you taken in the last year, or from September 1988 through June 1989? (PROBE: for approximate number of trips).

None (Skip to Question 31) 000
 Record number of trips (Skip to Question 25)
 DON'T KNOW (Skip to Question 31) 998

24. How many saltwater fishing trips have you taken from September 1988 through June 1989. (PROBE: for approximate number of trips).

Record number of trips
 DON'T KNOW (Skip to Question 31) 998

PARTY OR CHARTER BOAT

25. How many of these saltwater fishing trips were from a party or charter boat?

NONE (Skip to Question 27) 000
 Record number of party/charter trips

26. How many of these party/charter boat trips were in Mexican waters?

NONE 000
 Record number in Mexican waters

PRIVATE OR RENTAL BOAT

27. How many of these trips were from a private or rental boat?

NONE (Skip to Question 29) 000
 Record number of private/rental boat trips

28. How many of these private or rental boat trips were in Mexican waters?

NONE 000
 Record number in Mexican waters

SHORE

29. How many of these trips were from a pier, dock, or other manmade structure?

NONE 000
Record number of trips _ _ _

30. How many of these trips were from a beach or bank?

NONE 000
Record number of trips _ _ _

SCUBA AND FREE DIVING

31. Did any of these saltwater fishing trips in southern California in the last 12 months involve scuba or free diving to spearfish?

NO SCUBA OR FREE DIVING TRIPS (Skip to Question 34) 00
YES (Record number of trips) _ _

32. How many of these spearfishing trips were boat-based trips?

NONE 00
Record number of boat-based trips _ _

33. How many of these spearfishing trips were shore-based trips?

NONE 00
Record number of shore-based trips _ _

SECTION 4

We are interested in learning more about your saltwater fishing experience in southern California, but I don't want to keep you any longer right now. I would like to send you a questionnaire in the mail that you could complete and mail back to us. Would you please give me your full name and mailing address so I can be sure that the questionnaire gets to you?

(RECORD NAME AND ADDRESS OF 12 MONTH ANGLER BELOW)

Now let me see if I have your address correct. Is it . . .

Name: _____

Address: _____

City: _____, California

Zip: _____

(IF RECEIVED NAME AND ADDRESS, THANK RESPONDENT AND TELL HIM/HER THAT THEY SHOULD RECEIVE THE SURVEY WITHIN THE NEXT WEEK OR TWO)

(IF RESPONDENT IS RELUCTANT TO GIVE YOU HIS/HER NAME AND ADDRESS):

Your participation in this study is voluntary, and your responses are very important. You are one of a small number of anglers who have been randomly selected to represent the many different types of anglers in southern California. Regardless of how seldom or often you go saltwater fishing, your responses help to represent those of other anglers. You can be assured that all your answers to the questionnaire will be kept strictly confidential.

(IF REFUSED NAME AND ADDRESS, ASK IF THEY WOULD AT LEAST GIVE ZIP CODE)

Record zip code _____

(IF REFUSED, THANK RESPONDENT FOR HIS/HER TIME AND TERMINATE INTERVIEW)

APPENDIX B
MAIL SURVEY INSTRUMENT



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
300 S. Ferry Street
Terminal Island, CA 90731

Dear Saltwater Angler:

Thank you for agreeing to fill out the enclosed questionnaire on saltwater sportfishing. During the telephone interview you told us how many saltwater fishing trips you and other members of your household made in the last year. This questionnaire asks about the details of your last trip, especially the number and kinds of fish you may have caught, as well as the time and expenses devoted to that trip. People who have filled it out say it takes about 15-20 minutes to complete--sometimes more, sometimes less.

You are one of a small number of saltwater anglers who are being asked to represent the many different types of saltwater anglers. Even if you go saltwater fishing only once or twice a year, we would like to hear from you. Your answers are very important because they reflect your views and experiences as well as the views and experiences of other saltwater anglers like you. Your answers will help the National Marine Fisheries Service and the California Department of Fish and Game get a better understanding of saltwater angling in southern California and promote better management of the saltwater fishing resources.

Your responses are confidential and your name will not be revealed. Information from the surveys will only be reported in statistical terms, such as 20 percent of saltwater fishing trips took place on party/charter boats. There is an identification number on the back of your survey so that we know who to send reminders to and can avoid recontacting those who have already returned the questionnaire.

The National Marine Fisheries Service and the California Department of Fish and Game have hired HBRS, a professional research firm, to help design and conduct this study. Please return your completed questionnaire in the postage-paid return envelope directly to their offices.

If you have any questions on this study, please feel free to call Mike Welsh or Karol Koshak collect at HBRS, Inc. Their number is (608) 231-1011. You may also call Cindy Thomson of the National Marine Fisheries Service collect at (619) 546-7116.

Sincerely,

E. C. Fullerton
Regional Director



More Information About the Saltwater Angling Study

Q. How was I selected to participate in this study?

A. HBRS originally contacted you by randomly calling southern California households.

Q. How many people are being asked to fill out this questionnaire?

A. Only about 500 saltwater anglers have been selected to take part in this study at this time. Since this is a relatively small number of anglers, everyone's answers are very important.

Q. What is the purpose of this study?

A. The major purpose of this study is to find out how much time and money anglers like you spend on fishing, what kind of fishing activities you prefer, and how changes in the availability of fish are likely to affect your participation.

Q. Why does this questionnaire focus on my last saltwater fishing trip?

A. Even though your last trip may not have been typical for you, it is important for us to learn about all the different types of trips people experience. By asking everyone about their last trip, we will learn about the entire range of different types of saltwater fishing trips taken by residents of southern California.

Q. What if I only go saltwater fishing a few times a year, do you really want me to answer the questionnaire?

A. Yes. There are many people in southern California who only go saltwater fishing once or twice a year. Your responses are important because they represent the experience of many anglers like you.

Q. How will this information be used?

A. This information will be used by the National Marine Fisheries Service and the California Department of Fish and Game to promote better management of the saltwater fishing resources. It will help us to set priorities and to anticipate future changes in the public's use of these resources.

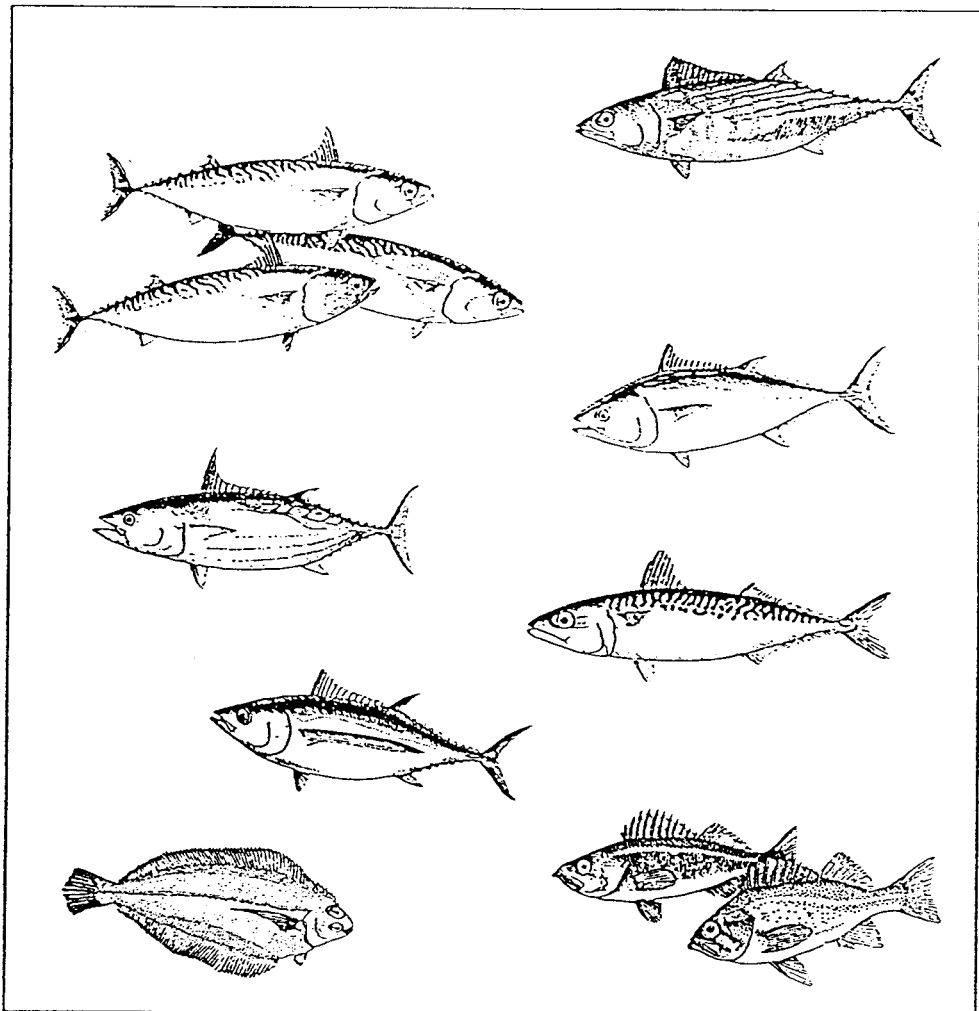
Q. Will my name be used?

A. ABSOLUTELY NOT! Our survey records are confidential. The only reason we keep any record of your name is to mail you a reminder if you haven't returned the completed questionnaire. You may be assured that no personal information will be revealed.

Q. What if I have questions about the survey?

A. If you have questions about this survey, please call Mike Welsh or Karol Koshak collect at HBRS, Inc. Their number is (608) 231-1011. You may also call Cindy Thomson of the National Marine Fisheries Service collect at (619) 546-7116.

1989 SALTWATER SPORTFISHING SURVEY



National Marine Fisheries Service
and the
California Fish and Game Department



The purpose of this survey is to collect information about your saltwater fishing experience. A thorough understanding of what people are fishing for and how many fish they catch is important in managing our saltwater fishing resources.

In this first section we would like to ask about your **last** saltwater finfishing trip in southern California. To help us understand your responses, we want to be sure that we are "speaking a common language." We have listed some definitions of some of the key terms in this survey.

Saltwater Fishing Trips: Trips on which you fished for finfish, such as rockfish or tuna, as opposed to trips on which you fished for shellfish, such as clams or abalone.

Southern California: For this study, we mean the area from San Luis Obispo County to the Mexican border.

Trips in Southern California: Fishing trips in the area between San Luis Obispo County and the Mexican border. These could be trips in which you fished from the shore or a manmade structure, as well as trips made on a boat, including any boat trips during which you fished Mexican waters, but boarded the boat in southern California.

Household: The individuals who live with you in your house or apartment. However, if you are in the military or in school and live in group quarters, all questions should be answered only about you.

Length of Trip: For this survey, a fishing trip starts when you leave your house and ends when you return to your house, even if your fishing trip was part of a trip with several purposes.

1. What month did you take your last saltwater fishing trip in southern California? (FILL IN BLANK)

_____ month

2. Did you do any scuba diving or free diving as part of your last saltwater fishing trip? (CIRCLE ONE NUMBER)

1 No

2 Yes

3. On your last saltwater fishing trip, what did you do most of your fishing from? (CIRCLE ONE NUMBER)

1 Pier, jetty or other manmade structure----->SKIP TO QUESTION 7

2 Beach or bank----->SKIP TO QUESTION 7

3 Party/charter boat

4 Private or rental boat

5 Other (please describe: _____)

4. On your last saltwater fishing trip, in what area of southern California did you launch or board the boat? (Please refer to the enclosed map to find the number of the area. For example, if you boarded the boat in San Diego Bay, your trip started in Map Area 2.)

_____ map area

5. Was the boat moored or launched at the beginning of your last saltwater fishing trip? (CIRCLE ONE NUMBER)

1 Moored

2 Launched

6. About how many hours did you spend on the boat on your last saltwater fishing trip? (Include all time spent on the boat from when the boat departed until it arrived back at shore.)

_____ hours on the boat

7. On your last saltwater fishing trip, in what area did you do MOST of your fishing? (Please refer to the enclosed map. For example, someone fishing less than 3 miles off the coast of Point Loma fished in Map Area 4. Someone fishing more than 3 miles from shore off Point Arguello fished in Map Area 36.)

_____ map area

8. About how many hours did you actually spend fishing on your last saltwater fishing trip? (FILL IN BLANK)

_____ hours spent fishing

9. On your last saltwater fishing trip, what were you primarily fishing for? (CIRCLE ALL THAT APPLY)

- 1 Albacore/tuna
- 2 Marlin/swordfish
- 3 Bonito/barracuda/bass
- 4 Yellowtail
- 5 Rockfish/lingcod
- 6 Shark
- 7 Halibut/other flatfish
- 8 No particular species
- 9 Other (please describe: _____)

10. On your last saltwater fishing trip, which of the following baits did you use? (CIRCLE ALL THAT APPLY)

- | | |
|-------------------------|-------------------------|
| 1 Live anchovy | 7 Live Jack mackerel |
| 2 Dead anchovy | 8 Dead Jack mackerel |
| 3 Live squid | 9 Live sardines |
| 4 Dead squid | 10 Dead sardines |
| 5 Live Pacific mackerel | 11 Other live bait fish |
| 6 Dead Pacific mackerel | 12 Other dead bait fish |
| | 13 Artificial lures |

11. Did you catch any finfish on your last saltwater fishing trip? (CIRCLE ONE NUMBER)

- 1 No-----> SKIP TO QUESTION 13
- 2 Yes

12. How many fish did you catch and keep on your last saltwater fishing trip? (In the first column, please include all fish you caught, even those you released or gave away.) (FILL IN BLANKS; IF NONE, WRITE 0)

	TOTAL Number of Fish Caught	How Many of These Fish Did You Keep For Yourself?
Albacore/tuna	_____----->	_____
Marlin/swordfish	_____----->	_____
Bonito/barracuda/bass	_____----->	_____
Yellowtail	_____----->	_____
Rockfish/lingcod	_____----->	_____
Shark	_____----->	_____
Halibut/other flatfish	_____----->	_____
Other (please describe: _____)	_____----->	_____

Very few of us get to go fishing as often as we would like because of time and budget constraints. In this next section, we would like to learn about the time and money you spent on your last saltwater fishing trip in southern California.

13. How many hours did you actually spend traveling from your home to the area from which you shore fished or the area from which your boat departed on your last saltwater fishing trip? (1/4 hour, 3 hours, etc.) (FILL IN BLANK)

_____ hours traveling

14. What is the one-way distance, in miles, from your home to the area from which you shore fished or the area from which your boat departed on your last saltwater fishing trip? (FILL IN BLANK)

_____ miles from home

15. Was your last saltwater fishing trip made in combination with other activities such as business, visiting relatives, or other vacation activities? (CIRCLE ONE NUMBER)

- 1 No-----> SKIP TO QUESTION 17
2 Yes

16. What is the one-way distance, in miles, from where you slept the night before your last saltwater fishing trip to the area from which you shore fished or the area from which your boat departed? (FILL IN BLANK)

_____ miles

17. On your last saltwater fishing trip, did anyone in your household (including yourself) spend any money on lodging that they would not have spent if they had not gone fishing? (CIRCLE ONE NUMBER)

- 1 No
2 Yes----->About how much did your household spend on lodging? (FILL IN BLANK)

\$ _____ total spent

18. On your last saltwater fishing trip, did anyone in your household (including yourself) spend any money on food and beverages that they would not have spent if they had not gone fishing? (CIRCLE ONE NUMBER)

- 1 No
2 Yes----->About how much did your household spend on food and beverages? (FILL IN BLANK)

\$ _____ total spent

19. On your last saltwater fishing trip, about how much money did your household (including yourself) spend for each of the following items? (FILL IN BLANKS; IF NOTHING, WRITE 0)

	Expenses on Last Trip
Fuel for private boat	\$ _____
Fees for party, charter or rental boat	\$ _____
Terminal tackle (hooks, lines, sinkers, lures, etc.)	\$ _____
Bait	\$ _____
Licenses bought specifically for this trip	\$ _____
Rental of fishing equipment	\$ _____
Diving supplies (compressed air, spears, etc.)	\$ _____

20. If you had not gone fishing on the day(s) of your last saltwater fishing trip, would you have been doing work associated with your job? (CIRCLE ONE NUMBER)

- 1 No-----> SKIP TO QUESTION 22
2 Yes

21. If you had been working instead of fishing, would your income for that week or month have been higher? (CIRCLE ONE NUMBER)

- 1 No
2 Yes-----> About how much more would you have earned? (FILL IN BLANK)
\$ _____

22. How important were each of the following factors in your decision to take your last saltwater fishing trip instead of doing something else? Please rate each factor, with 1 being "not at all important" and 7 being "very important" in your decision to take your last trip. (CIRCLE ONE NUMBER FOR EACH ITEM)

	Not At All Important					Very Important	
Fishing gives me the opportunity to put food on the table	1	2	3	4	5	6	7
I enjoy the challenge of catching fish	1	2	3	4	5	6	7
A species that I particularly like to fish for was available at this time	1	2	3	4	5	6	7
A bait that I like to fish with was available at this time	1	2	3	4	5	6	7

	Not At All Important					Very Important	
	1	2	3	4	5	6	7
Fishing gives me an opportunity to relax and "get away from it all"	1	2	3	4	5	6	7
Fishing gives me the opportunity to do something with family and/or friends	1	2	3	4	5	6	7
I went fishing to please someone else	1	2	3	4	5	6	7

Sometimes people plan their fishing trips with household members or friends so that they can fish together as a group. Other times people plan trips by themselves. The next three questions ask about the group aspect of your last saltwater fishing trip.

23. Did any household members or friends go with you on your last saltwater fishing trip?
(CIRCLE ONE NUMBER)

- 1 No-----> SKIP TO QUESTION 26
- 2 Yes

24. How many household members or friends went with you on your last saltwater fishing trip?
(FILL IN BLANK)

_____ household members or friends

25. In this question, we would like to learn about each household member or friend who went with you on your last saltwater fishing trip. (FOR EACH FISHING GROUP MEMBER, CIRCLE AGE, SEX, WHETHER PERSON FISHED, AND WHETHER PERSON IS PART OF YOUR HOUSEHOLD)

	Is this person 16 years old or older?		Sex of Person?		Did this person fish during your last trip?		Is this person a member of your household?	
	No	Yes	Male	Female	No	Yes	No	Yes
Person 1	No	Yes	Male	Female	No	Yes	No	Yes
Person 2	No	Yes	Male	Female	No	Yes	No	Yes
Person 3	No	Yes	Male	Female	No	Yes	No	Yes
Person 4	No	Yes	Male	Female	No	Yes	No	Yes
Person 5	No	Yes	Male	Female	No	Yes	No	Yes
Person 6	No	Yes	Male	Female	No	Yes	No	Yes
Person 7	No	Yes	Male	Female	No	Yes	No	Yes

We are also interested in learning whether you fished outside of southern California in the last two months.

26. Did you personally take any saltwater fishing trips outside of southern California in the past 2 months? (CIRCLE ONE NUMBER)

- 1 No-----> SKIP TO QUESTION 28
- 2 Yes

27. How many of your saltwater fishing trips outside of southern California in the last 2 months were . . . (FILL IN BLANKS)

	Number of trips in last 2 months
Shore Trips:	
in Mexico	_____
in northern California	_____
elsewhere in the United States	_____
 Boat Trips Originating:	
in Mexico	_____
in northern California	_____
elsewhere in the United States	_____

Some background information about you and the people living in your household will help us understand your fishing experience. By "household," we mean all the individuals who live with you in your house or apartment. However, if you are in the military or in school and live in group quarters, all questions should be answered only about you.

28. How would you describe your fishing ability? (CIRCLE ONE NUMBER)

- | | | | | |
|--------|--------------|---|---|--------|
| 1 | 2 | 3 | 4 | 5 |
| Novice | Intermediate | | | Expert |

29. How old were you when you first went saltwater fishing? (FILL IN BLANK)

_____ years old

30. Please describe the age, sex and saltwater fishing experience of all other members of your household. (FILL IN BLANKS FOR EACH HOUSEHOLD MEMBER)

	Age	Sex of Person		Has this person ever been saltwater fishing?	How old was this person when he/she first went saltwater fishing?
Member 1	_____	Male	Female	No Yes----->	_____
Member 2	_____	Male	Female	No Yes----->	_____
Member 3	_____	Male	Female	No Yes----->	_____
Member 4	_____	Male	Female	No Yes----->	_____
Member 5	_____	Male	Female	No Yes----->	_____

31. Do you or any other member of your household subscribe to any magazines pertaining to fishing, hunting or other wildlife-related activities? (CIRCLE ONE NUMBER)

1 No

2 Yes----->Which magazines? (CIRCLE ALL THAT APPLY)

1 California Angler

2 Fishing and Hunting News

3 Marlin Magazine

4 Saltwater Sportfishing

5 South Coast Sportfishing

6 Tournament Digest

7 Western Outdoor News

8 Other (please describe: _____)

32. Do you or any member of your household belong to any organizations pertaining to fishing, hunting or other wildlife-related activities? (CIRCLE ONE NUMBER)

1 No

2 Yes----->Which organizations? (CIRCLE ALL THAT APPLY)

1 Balboa Angling Club

2 National Coalition for Marine Conservation (NCCMC)

3 San Diego Marlin Club

4 San Diego Oceans Foundation

5 Sportfishing Association of California (SAC)

6 Tuna Club

7 United Anglers

8 Other (please describe: _____)

33. Do you or any member of your household own a boat that can be used for saltwater fishing? (CIRCLE ONE NUMBER)

1 No----->SKIP TO QUESTION 37

2 Yes

34. How long is this boat? (FILL IN BLANK)

_____ feet

35. Over the past 12 months, about what percent of the time was the boat used for saltwater fishing rather than for freshwater fishing, cruising, or other activities? (FILL IN BLANK)

_____ percent of time boat used for saltwater fishing

36. Over the past 12 months, about how much did all members of your household spend on each of the following boat-related expenses? (FILL IN BLANK; IF NONE, WRITE 0)

	Amount Spent in Last 12 Months
Boat maintenance and repair	\$ _____
Boat insurance	\$ _____
Boat electronic equipment	\$ _____
Slip rental	\$ _____
Purchase/maintenance of outboard motor(s)	\$ _____
Purchase/maintenance of boat trailer	\$ _____
Boat crew	\$ _____
Other boat expenses (please describe: _____ _____)	\$ _____

37. Over the past 12 months, about how much did all members of your household spend on each of the following? (FILL IN BLANK; IF NONE, WRITE 0)

	Amount Spent in Last 12 Months
Purchase and repair of saltwater fishing gear and equipment (rods, reels, tackle boxes, etc.)	\$ _____
Annual fishing license fees	\$ _____

There are many actions that could be taken to enhance fish populations off the coast of southern California, but all of these actions would cost money.

Currently, saltwater anglers help fund fishery enhancement activities through the mandatory purchase of special yearly fishing stamps. For example, ocean anglers must currently purchase a yearly \$1 ocean enhancement sportfishing stamp to fish off the coast of California south of Point Arguello.

In this next section we will ask how you would feel about paying various amounts for your ocean enhancement sportfishing stamp **if the money could be used to increase the catch rate of various saltwater species**. To help you in your evaluation we have included a description of the catch rate for each species under current conditions as well as what the catch rates might be after enhancement of the species. These catch rates described in the next section correspond to the average person, so if you are above average in your fishing ability, your own catch rate would be higher. **There are no right or wrong answers to these questions.**

CALIFORNIA HALIBUT ENHANCEMENT

California Halibut is a very popular saltwater sportfishing target species in southern California. Currently, saltwater anglers catch about 1 halibut for every 5 days spent fishing for California Halibut. It may be possible to increase the average catch rate to 1 California Halibut for every 2 days of fishing effort.

38. Would you be willing to pay an extra \$ _____ per year for your ocean enhancement sportfishing stamp if it would increase the catch rate as described above? (CIRCLE ONE NUMBER)

- 1 No
- 2 Yes

39. How many trips did you take in the last 12 months for which you were primarily fishing for California Halibut? (CIRCLE ONE NUMBER)

- 1 None
- 2 One trip
- 3 Two trips
- 4 Three trips
- 5 More than three trips----->How many trips? _____ trips

40. If the catch rate increased as described above, would you increase the number of trips you take in an average year to fish primarily for California Halibut? (CIRCLE ONE NUMBER)

- 1 No
- 2 Yes----->How many extra trips do you think you might take in an average year? (FILL IN BLANK)
_____ extra trips

YELLOWTAIL ENHANCEMENT

Current statistics on the catch rate for Yellowtail indicate that on trips for which Yellowtail is the target species, it takes about 14 days of fishing effort for each Yellowtail caught. It may be possible to increase the catch rate to 1 Yellowtail for every 3 days of fishing.

41. Would you be willing to pay an extra \$_____ per year for your ocean enhancement sportfishing stamp if it would increase the catch rate as described above? (CIRCLE ONE NUMBER)

- 1 No
- 2 Yes

42. How many trips did you take in the last 12 months for which you were primarily fishing for Yellowtail? (CIRCLE ONE NUMBER)

- 1 None
- 2 One trip
- 3 Two trips
- 4 Three trips
- 5 More than three trips----->How many trips? _____ trips

43. If the catch rate increased as described above, would you increase the number of trips you take in an average year to fish primarily for Yellowtail? (CIRCLE ONE NUMBER)

- 1 No
- 2 Yes----->How many extra trips do you think you might take in an average year? (FILL IN BLANK)

_____ extra trips

WHITE SEA BASS ENHANCEMENT

White Sea Bass is a fairly rare species. Current statistics on the catch rate for White Sea Bass show that on trips for which White Sea Bass is the target species, it takes about 20 days of fishing effort for each White Sea Bass caught. It may be possible to increase the catch rate to 1 White Sea Bass for every 3 days of fishing.

44. Would you be willing to pay an extra \$ _____ per year for your ocean enhancement sportfishing stamp if it would increase the catch rate as described above? (CIRCLE ONE NUMBER)
- 1 No
 - 2 Yes
45. How many trips did you take in the last 12 months for which you were primarily fishing for White Sea Bass? (CIRCLE ONE NUMBER)
- 1 None
 - 2 One trip
 - 3 Two trips
 - 4 Three trips
 - 5 More than three trips----->How many trips? _____ trips
46. If the catch rate increased as described above, would you increase the number of trips you take in an average year to fish primarily for White Sea Bass? (CIRCLE ONE NUMBER)
- 1 No
 - 2 Yes----->How many extra trips do you think you might take in an average year? (FILL IN BLANK)
_____ extra trips

The last three cases we asked about involved species which are generally caught from boats. In this next case we will ask about fishing from a pier where you would have to pay for each trip to the pier.

ENHANCEMENT OF PIER FISHING FOR BASS

Very few bass are caught from piers. Biologists suspect that the major reason is a lack of suitable habitat around the pier. This lack of habitat could be eliminated through the construction of artificial reefs. Suppose that a local chamber of commerce was proposing to build an artificial reef around the local fishing pier. With this reef, you could expect to catch a bass once every two trips to the pier. However, in exchange for installing the artificial reef, the chamber of commerce would require you to pay to fish from the pier.

47. Would you be willing to pay \$ _____ per day to fish from such a pier? (CIRCLE ONE NUMBER)

1 No

2 Yes

48. If the catch rate for sea bass from piers increased as described above, would you increase the number of trips on which you fish from piers? (CIRCLE ONE NUMBER)

1 No

2 Yes----->How many extra trips do you think you might take in an average year? (FILL IN BLANK)

_____ extra trips

In the previous sections, there were a number of questions where we asked whether you would pay various amounts for improvements in four different types of fishing.

49. To help us better understand your responses to the previous questions, we would like to know the extent to which various factors affected your answers to the improvement questions. Please tell us whether the following statements were true or not for you when answering the previous questions. (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Definitely True	Probably True	Probably False	Definitely False
My main concern was that the ocean enhancement sportfishing stamp fee may be increased.	1	2	3	4
My responses reflected my best guess as to whether the increased catch rates would have been worth the extra money.	1	2	3	4
I just don't want to have to pay more to fish, regardless of the conditions.	1	2	3	4
My responses reflected the fact that I didn't really think the improved catch rate could have been achieved.	1	2	3	4
Are there any other factors that affected your answers? (please describe below)				

The last few questions are for classification purposes only. All of your answers are strictly confidential.

50. Which of the following best describes your current employment status? (CIRCLE ONE NUMBER)

- 1 Employed at least 35 hours per week
- 2 Employed less than 35 hours per week
- 3 Retired
- 4 Student
- 5 Homemaker
- 6 Unemployed
- 7 Other (please describe _____)

51. What is your ethnic background? (CIRCLE ONE NUMBER)

- 1 Hispanic
- 2 Non-Hispanic White
- 3 Black
- 4 Asian/Pacific Islander
- 5 Other (please describe _____)

52. What is the highest level of education you have completed? (CIRCLE ONE NUMBER)

- 1 Less than 8th grade
- 2 Eighth grade graduate
- 3 Some high school
- 4 High school graduate
- 5 Some trade or technical school
- 6 Trade or technical school graduate
- 7 Some college
- 8 Bachelor's degree
- 9 Postgraduate study

53. Are you . . . (CIRCLE ONE NUMBER)

- 1 Male
- 2 Female

54. How old are you? (FILL IN BLANK)

_____ years old

55. Which of the following best describes your household's 1988 annual income before taxes?
(CIRCLE ONE NUMBER)

- | | |
|------------------------|--------------------------|
| 01 Less than \$10,000 | 09 \$80,000 - \$89,999 |
| 02 \$10,000 - \$19,999 | 10 \$90,000 - \$99,999 |
| 03 \$20,000 - \$29,999 | 11 \$100,000 - \$109,999 |
| 04 \$30,000 - \$39,999 | 12 \$110,000 - \$119,999 |
| 05 \$40,000 - \$49,999 | 13 \$120,000 - \$129,999 |
| 06 \$50,000 - \$59,999 | 14 \$130,000 - \$139,999 |
| 07 \$60,000 - \$69,999 | 15 \$140,000 or more |
| 08 \$70,000 - \$79,999 | |

56. What is the zip code of your permanent address? (FILL IN BLANKS)

Do you have any other comments regarding this questionnaire or your fishing experiences?

Thank you very much for your help! Please return survey in the enclosed envelope to HBRIS, Inc.,
4513 Vernon Boulevard, Madison, WI 53705.

APPENDIX C
RESPONDENT COMMENTS

1. Never fish for one particular species. I would not want to pay \$21 per year more to catch halibut when I would be equally as happy catching bonito.
2. Conservation.
3. I don't pay for anything (15 year old).
4. Fishing licenses are too expensive now. Any additional cost would make it impossible for a lot of fishermen to fish legally. Licenses have [continued] to rise over the last few years. I feel we cannot afford any more increases.
5. We own a motor/sailboat. With the excitement of fishing only after a good "southeastern wind" day, I always want to preserve marine life. I enjoy it immensely. Please help preserve and promote marine beauty.
6. Why should I pay more when I see and meet people fishing without licenses? "License!"
7. I would be more interested in improving the catch rate of the scarce species than the more abundant ones.
8. My concern is to help populate the oceans with fish of any kind, no matter how much it costs.
9. Pollution is fish caught from piers.
10. I don't fish some species because they're not available in my area.
11. Time is generally spent two-thirds freshwater to one-third saltwater fishing. Southern California also features barge fishing with shuttle to and from shore. It's a bit expensive so only once or twice a year is preferred.
12. Improvement of marine conditions for marine life.
13. If posted on up-to-date information on what is hitting and whether or not weather permits, with proper fish tackle. Nine out of ten trips yo get what you want.
14. My main concern is that the ocean ecology is well managed and that fishing revenues are used toward that end.
15. Artificial reefs near piers would be beneficial to the habitat, but not worth \$26 per day.

16. The ocean close to shore is so polluted, I can't think of anyone I know who would eat their catch. To pay extra to catch something you only throw back doesn't make sense. I think we would all rather see a clean ocean attempt for the money.

17. I just enjoy going fishing once in awhile to do something different with the kids and wife. By putting anymore fee to the cost of life would only bring more bitterness towards the way I feel already. I don't think the government, state, or any other private institution should make the cost of life any higher for the people who went to their wars and fought their battles for them, and now want to get blood out of a turnip!

18. Too many people fish without the license already. Need more enforcement of people having a license. It's not fair. The people who get the license have to when there are so many that don't.

19. When I purchased my license, the clerk was misinformed about the procedure. I wanted to purchase a license and an ocean enhancement stamp. I was told that in order to fish in the ocean, the stamp I would need was Pacific Ocean fishing, not the enhancement stamp even though I fish only in Southern California. However, next year I will know better and insist on a freshwater license with an ocean enhancement stamp.

20. Money.

21. I'm not a fisherman, only did it as a favor to my uncle.

22. More serious management of our ocean and marine life.

23. Not really interested in fishing.

24. Though I answered that I would support increases in the price of the fishing stamp, I would choose two of the three, preferably the one for yellowtail and pier conditions.

25. Fishing has too much pressure. I think three things need to be done to increase the fishing for the future. 1) Stop using the anchovy for fertilizer. 2) Stop cutting the kelp beds. 3) Fine the city for dumping raw sewer into the waterways.

26. I feel the main problem with poor fishing conditions is that commercial boats keep the shorts and never get to be legals for sport fishermen.

27. Costs of individual fees going up.

28. I don't mind paying for better fishing.

29. Pier atmospheres and people make me avoid fishing there even though when I was a kid we fished from the pier often.

30. Not favorite fish to eat.

31. Replenishment of fish and natural resources into the oceanic environment to improve current conditions.

32. I fish rarely and purely to relax and enjoy being out with family and friends. If the fees for saltwater fishing go up to far, I will fish in a pond someplace. I don't eat the fish, but I enjoy giving the meat to family and friends.

33. I would probably continue to fish the same amount no matter what.

34. Many states that border the ocean do not impose special tariffs (fees) for ocean fishing, but rather have only one flat rate.

35. Pricing some people out of fishing, particularly pier fishing, which I don't do.

36. I fish for anything for fun!

37. The mention of false reefs is, in my opinion, the best way to improve overall fishing. Not just around the piers, but in the deeper water where the larger fish seem to be. In my days of diving, I have seen old tires form a reef that lobster would gather around, and also other small fish could be found there, thus bringing larger fish to that area to feed.

38. I would like to see more attention paid to wildlife. If it takes more money, then it will just have to be paid by fishermen.

39. My answers are based on how much of a raise in cost and the type of fish being fished for not so much if my amount of catch will be so much greater. I go whether I catch fish or not.

40. The excitement of fishing and not knowing what or how big of a fish you will hook up with.

41. I think some of the fees for fishing licenses should be used to restrict commercial fishermen from fishing closer than 100 miles off the coast. I have seen these boats working as close as five miles from shore and one-quarter mile from party boats.

42. I don't fish often enough to want to pay extra money for my license. It's already high.

43. I don't fish often, only when they are hitting good in some areas.

44. The reef is an excellent idea, but people will not pay \$11 to fish off a pier. They will just go around the pier.

45. I do not like to fish.

46. Worth a few extra bucks for stamps.

47. Too many violators are never caught. Cost of overall license is too high now. I can fish Arizona and Mexico almost as cheap on a nonresident license. I realize it's not saltwater, but I feel the point is still made. The cost for seven family members.

48. I don't go fishing enough.

49. I don't fish that often. Also do not have a great preference so certain adjustments for a particular fish don't catch my interest.

50. Pier fishing is about the only free fishing left for the youngsters (who have little or no money) and seniors living on a fixed income. I feel if the businesses around the pier would contribute more, the reef could be built. They would benefit from more customers.

51. California fishing fees are too high for any conditions. You never catch enough to make the trip worthwhile.

52. I really enjoy deep sea fishing. It already costs too much to go, so leave it alone so people like me can enjoy the sport. Thanks.

53. Fishing off the Southern California coast has degraded over the past 10 to 15 years.

54. I just like to fish. It does not matter to me whether I catch any fish or not. I enjoy the feeling and meeting the different people who go fishing.

55. I don't fish (saltwater) enough to give a true picture of fishing in saltwater and the different types of fish.

56. I only go out on the ocean to enjoy the boating. I don't eat fish.

57. I feel fishing fees are already too high.

58. I don't think sportfishermen should be charged to fish the oceans. Charge us to fish the lakes and streams that must be stocked and maintained.

59. Fish very occasional regardless of conditions, but fees seem alright.
60. I feel saltwater fees are being diverted to enhance freshwater sportfishing and not being spent on saltwater activities.
61. The fees for halibut and yellowtail are too high. It bothers me that the vast majority of my license fee goes to other than saltwater fishing. I only fish saltwater.
62. Making it more expensive would limit the amount of fishermen, plus create more money to improve fish supply. Good move.
63. Base license is way too expensive in the first place. Paying more is an unacceptable solution to the little or no effort taken by the state in protecting and enhancing fishing.
64. Total charges amount to \$37--completely unrealistic. \$10 each stamp, or make species specific stamps available at a reasonable yearly fee.
65. Frequency that I get to go fishing.
66. Like to catch fish each time out.
67. I do more freshwater fishing than saltwater.
68. Fish projects should be encouraged for the environment also, not just for the sake of increasing the catch rates!
69. The desire to see the replenishment of the species that were once abundant in the waters of southern California.
70. I don't fish, I dive.
71. Yes, the government screws us enough already. Want an example? Just look at what they're doing with the white striper bass stamp money.
72. I only fish for shark and rockfish on central California reefs. I'm not interested in yellowtail or halibut. However, a raise in stamp fees wouldn't upset me. It's still a small price to pay.
73. I don't fish for those fish. Just fish for fun.
74. I don't think people will pay just to fish.
75. I don't fish for species mentioned.

76. Money goes for the wrong things, not to help fishing of any type. More money without improvement.
77. Lack of knowledge of other types of fish than cod, rockfish and halibut.
78. I think all saltwater fishing should be free. More money just promotes more "do-nothing" jobs, and a bigger bureaucracy converting human energy to soiled waste!
79. Commercial gill netting of halibut in shallow water (less than 150 feet) is the main reason for the decline of this fish. Charging an enhancement fee will not be effective until they are banned!
80. I would pay a modest amount for the enhancement of fish catch as a whole.
81. If the improved catch rate could be achieved, it still would not be worth the extra fees.
82. If there were fish caught, I would be more willing to pay for catching fish than if I didn't catch anything. I wouldn't want to pay if I didn't catch anything.
83. Yes, I don't think you should have to have a license to fish if you have to pack into the rocks for one-half hour to one hour to a good fishing spot. Lots of work and sometimes very expensive.
84. Cost of fishing on a fixed social security income.
85. Physical mobility.
86. General increase in species.
87. \$4 per day for pier fishing is too much.
88. The primary interest I have in any "ocean enhancement" program is that the program be beneficial to the ocean in the long run and that the program be aimed at removing foreign fishermen from closer than 12 miles from our coasts.
89. Yes, the governor and his Fish and Game do nothing for fisherman and hunters except raise license fees. The governor and his friends that manage the Fish and Game, we all wonder.
90. I pier fish a few times a year.
91. Gill netting--do not want to subsidize this!
92. Pier fishing.

93. It is in my best interest to say that no amount of money will increase anyone's bag of fish. The only way this will be achieved is the restricting of gill nets and setting limits for trollers. It is also true to say that one's experience with fishing limits one to how much he/she will catch, so those figures are irrelevant.
94. Not enough information as to how and for what the increased fees would be spent. I would need to know more about the specific plans.
95. I don't think we should have to pay to fish the ocean at all!
96. I already pay enhancement stamp fee. Not aware as to where the money goes.
97. Although I marked yes on the enhancement stamps for halibut and yellowtail, I don't experience extreme difficulty catching these fish. I marked them yes out of a desire to see their numbers increased, especially halibut. White sea bass are so rare I would gladly pay \$30 per year to increase their numbers.
98. Data on artificial reefs is not conclusive for fishery enhancement (i.e. increase recruitment to artificial reef).
99. Preserve species for the future.
100. Wish to support the improvement of all types of fishing along the southern California coast.
101. Very rarely saltwater fish-am not willing to pay more for a once a year trip.
102. The rates may be too high.
103. I already spent more than I should on fishing.
104. Most of these fish are taken in large quantities by commercial fishing. Improvement would only help these people. Cut back on commercial fishing and these increases will come.
105. Lack of interest in pier fishing.
106. They have already raised license fees and stamps, and it hasn't improved fishing.
107. I don't have a problem paying a small fee to increase the population of game species. I fish for salmon out of Port San Luis. They have done an excellent job in increasing the salmon catch and would support such actions as the salmon enhancement project.

108. Cut out the commercial boats raping our bait fish.
109. I believe that there is enough money for fishing improvement. I think that the existing programs are the wrong programs. I think artificial reefs are extremely good for fishing and should receive a lot of attention by Fish and Game.
110. Species of fish had most affect. I like bass, rockfish, and halibut.
111. Pollution of catch off pier or shoreline. I'm very concerned about the edible nature of fish caught in these areas. I'm careful about the fresh catch I order in restaurants too.
112. I would hope that the extra monies would help replenish the fish where they have been depleted.
113. You can buy them cheaper in the market.
114. Gill nets should be banned from all saltwaters because they kill much more sea life than they intend to keep.
115. My responses reflect my inability to pay at this time.
116. I don't accept much of what the California Fish and Game has to say. They have lied and mismanaged the fisheries for years. I don't know if the situation can be turned around.
117. I feel that the described rates could be reached now with little extra costs. California's ocean fisheries management simply doesn't exist.
118. More fish, more fishermen!
119. Improve the catch before you raise rates and also make allowances for people who cannot pay the added charges.
120. State of California only makes money. None is spent on the tide waters.
121. I don't think people who fish once a year should have to pay the same dollar amount as people who fish 12 or 24 times a year.
122. The area that I'm concerned about is woefully mismanaged, overfished, polluted and generally not shown the respect any habitat deserves.
123. Fishing for certain fish which are a challenge to me and provide good eating.
124. I would pay more, but the amounts seemed high.

125. No yellowtail in this area.
126. I only fish for certain species of fish: halibut, tuna, marlin, and swordfish. If it meant paying an extra fee for the benefit of all, I would pay it.
127. More marlin needed.
128. I like to go fishing when I can. Catch them and return them to the sea.
129. The pleasure of being out on a boat.
130. I'm from out of state and only fish on rare occasions in saltwater.
131. I'm willing to pay a moderate fee for any enhancement program approved by Fish and Game, even though I may not receive individual benefit.
132. Because I fish for the enjoyment of the sport, I may not necessarily increase my frequency of fishing. However, fishing is much more enjoyable when I catch fish.
133. I don't believe that the sportfisherman should pay any additional fees, while California Fish and Game allows the use of any GILL NETS!
134. I would consider paying some enhancement fee for white sea bass if the Department of Fish & Game would ban gill nets from inshore fisheries.
135. I go fishing for relaxation, that is why I don't really care what kind of fish I will catch or whether I catch a fish or not.
136. The money that I spend on upkeep, license, taxes, insurance, and gate fees are enough for the amount and kind of fish that I catch.
137. Too many people on the piers, etc. here now. We need more piers and jetties.
138. Commercial fishing takes all the fish.
139. Fishing licenses cost enough as is. If the money was used properly, the fees wouldn't need to be increased nearly as often as they are.
140. Spend the money on salmon, and I'll say yes all day long. I think the salmon project at Ventura was the reason I caught four salmon at Hueneme a year ago.

141. I would not mind paying extra for a license, as long as I knew for a fact that all my license money went to sportfishing activities/services only.

142. Commercial fishing takes as many large, small, whatever is in the net. They're screwing up the fishing conditions, so get your extra money from them.

143. Yes, the commercial fisherman, foreign and domestic.

144. None of these, or fishing in general, are important to me.

145. Availability of piers.

146. No one can improve fishing catch. The ocean is a big place. It's the fishermen!

147. I don't target any particular fish on a trip, except maybe albacore or marlin. I enjoy the fact that we can't predict what will be caught on local fishing trips.

148. My opinion of this questionnaire is that I'm happy that there are concerns over the depletion of the fish within our coastal waters and that stamp fee revenue will go to replenish the ocean.

149. I would like to see the gill netters stop fishing with that technique.

150. I would definitely pay more for ocean enhancement stamps if a direct correlation between fees and catch could be established and proven. I have not seen any increase in catch related to previous increases in license fees, etc. Also, commercial interests need to be more regulated. They do what they want.

151. The enjoyment of ocean-going fishing as opposes to shoreline (pier) fishing.

152. Pollution, illegal taking of game fish, all and including commercial use of bait for fertilizer cause me to have doubts about the future of our ocean's environment as far as sportfishing and a species ability to reproduce to an optimum level. Whatever the cost to help restore, it is not even close to the price we will one day have to pay if we lose it!

153. Gill nets within three miles of shore in Area 17 are ruining sportfishing in this area.

154. We pay too much in taxes now! Yet every single time there is anything where I might get some good out of it, we have to pay again. Stop it now!

155. Probably the fact that the number of anglers today has a very big impact on the local fishing conditions.

156. Very definitely. I feel it is a waste of money for private sportfishermen to pay extra money to increase fishing counts. As I feel gill netters and net commercial fishermen would ruin this resource as they have the rest of our coastal fishing resources.

157. Yes, I have never bought a license. The boat is not mine. I like to fish, but don't think it's worth paying like you suggest.

158. In my opinion, the first thing that has to be done is to ban gill nets in inshore areas. Providing more sportman's money for more fish benefits commercial fishermen more than it does sportfishermen.

159. I don't feel that the Department of Fish & Game does enough for the money I now pay to fish. The license fees keep going up, and the quality of fishing keeps going down.

160. Money spent is not the point of fishing. I don't fish well, but enjoy the experience of going on the boat and enjoying myself.

161. My family and I fish mainly for enjoyment, not for specific fish. Besides, it seems like all we catch is mackerel!

162. Yellowtail? As far as I know, they aren't born in California waters. If you want to enhance the fishery, send money to Mexico. Good luck.

163. My particular 18 foot boat limits me to 10 miles off shore in good weather. I'm willing to pay more than at present, even if catch does not improve. I limit my fishing partners to one meal per family per trip. Launching facilities in southern California are crowded now. If the catch was improved to your projection, the launching facilities would be overwhelmed to the point of making it too much of a hassle to go fishing.

164. Mismanagement of California Fish & Game.

165. I believe rules for licenses and fees for charters have increased with very little benefits for the sportfisherman, and I believe everyone is getting fed up with the license fees and hunter rates going up with little improvement and restrictors on commercial fishermen (gillnets) and pollution of ocean.

166. I like to eat yellowtail and bass. I also like halibut, but \$10 is too much to pay.

167. I want the coast to be inhabited with more species and more fish.

168. Since we are retired and on a fixed income, any increased fees will make a difference as to whether we can go fishing at all.

169. Cost effectiveness of the program.

170. Saltwater fish is my favorite as far as eating my catch, but I do more fresh water fishing, much more.

171. Possible use of ocean enhancement revenues to fund marine hatchery program, such as Santa Monica Bay's halibut research effort and Scripps Institute's white sea bass breeding program could have a very beneficial effect on these popular (or formerly popular) fisheries.

172. My primary fishing is either surf in rocky natural points where you usually hike in. To me, it is more to get away and relax and fish. About four years ago, I stopped fishing for albacore and yellowtail due to lack of fish. That is, due to catching too much fish in migratory route by foreign countries before it reaches coast of California.

173. I have little trust in this survey. I've seen many tax monies in California either wasted or misappropriated. If fees go up and fishing is not enhanced, I would remain politically active and refuse to pay exorbitant fees.

174. We fish just for fun and an occasional fish dinner.

175. Do not enjoy ocean saltwater fishing.

176. Sportfishing out of Redondo, California seems to be more of a joke to deckhands and captains involved. I've been lied to regarding catches, etc.

177. Certain species need to be protected, like white sea bass--that's my main thinking.

178. Don't like yellowtail or white sea bass, just species which I fish for table food, tuna, wahoo.

179. I only go saltwater fishing about three to four times a year.

180. I definitely enjoy fishing, and the fishing rates are more than reasonable. The increase in catch rates would be great!

181. One fishing trip per year that is financed by my boss (company yearly fishing trip). I go only once a year to be with the boss and fellow employees.

182. I believe California anglers already pay quite enough to fish. At over \$22 per year, per person, it gets expensive. To pay for no absolute guarantee the fish will bite on any given day would be a waste of money. Biologists can study anything, but you cannot make the fish bite.

183. On pier fishing, many species are so full of toxins, therefore, fishing from a pier does not interest me.

184. I didn't feel I should pay for a species I don't fish for.

185. The increases appear to be too much in view of the number of people that buy licenses.

186. I feel that sportsmen pay plenty of money now, and fee increases may only advance catch by commercial units. I enjoy fishing and will continue and currently do contribute to wildlife funds. If necessary, I will pay or contribute to enhance fishing.

187. We are senior citizens and debate now how many times we would fish if we bought a license. I used to fish almost every day before I started working five years ago. Now retired since November.

188. I feel stamp fees could be increased, but I feel there needs to be a separation of salt water and fresh water licenses and fees. I very rarely fish fresh water, so I resent having to buy that as a main license.

189. Taking in consideration the increase in water pollution, I don't believe the catch rate can be increased.

190. Mainly a surf fisherman.

191. I based my answers on the enhancement of the type of fish which I prefer to fish for.

192. We don't fish for those fish mentioned.

193. The choice of fish to be caught.

194. Yes, I live on a fixed income of social security and cannot afford these high prices just to go fishing and they only last one year. I think it is very nice of California to have two days of free fishing. That really helps us who cannot afford the high expense.

195. I have a general interest in fishing, not an interest in any specific species.

196. Fishing just for sport!

197. I would definitely like to see ocean fisheries improved, but I do not believe it to be possible with all the bureaucratic red tape involved.

198. I have not nor plan to fish primarily for California halibut, yellowtail, white sea bass or from piers. I fish mainly when I have a good chance of bagging my limit to have something to show for my time, effort, money. I don't go fishing to fish, I go to catch fish.

199. Too many people on the piers to fish.

200. I personally think that the commercial fisherman is taking three-fourths of the fish population anyway, so the more fish, the more we take (at my cost). Doesn't sound fair!

201. Primarily fish for calico and sand bass. However, I will take anything that bites, which has been very poor catch rate over past 24 months.

202. Boating (when moored) is extremely expensive when all cost factors are figured, and every year there is another reason to increase fees for one related service, so I'm very hesitant to go for any increases for whatever purpose.

203. I did the very best I could, but I really don't fish enough.

204. I honestly believe that as an example, the sea bass fishing was ruined by the nearsightedness of the Department of Fish & Game with their allowable limits. Read in the Los Angeles Times every day, so many boats and so many anglers got 200 or 300 codfish species. This is absolutely ridiculous.

205. Don't fish from the pier.

206. All the fish described are migratory. Why should I pay more money for larger catches for purse seiners, gill netters, and long liners? They've ruined the fishing already (along with the oil companies and sewage districts). Why should the general public pay for commercial fishers and Asian poachers. Like hell! I always see them, where's the Department of Fish & Game?

207. I have not fished for halibut or white sea bass in the past. They don't affect me, so I answered no. With the enhancement, I may start fishing for them. I would be in favor of the fees for them also. I'm sure it would be worth the money spent.

208. I fish for enjoyment and food. I don't care what I catch as long as it's good eating. Costs are getting too high for what your chances are for a good day.

209. I primarily surf fish in southern California and probably my answers are not applicable for this survey.

210. Willing to pay to fish from pier because it would still be much cheaper than charter boats.

211. I give a lot of money to Fish and Game, I can see paying \$6 for a saltwater stamp. I also believe white sea bass should be controlled more and should have a very low catch limit. P.S. There is a lot of fish in the sea!

212. California already has the highest fishing license fee of any state. I feel if politics was not involved in managing the California Fish & Game Department, the fishermen would receive better value for his fee and many of these problems could be solved through better management.

213. If dollars are thrown at prolonging certain species, the only benefactors of the short lived enhancement would be the gill netters and drift netters who have caused the depletion to begin with. They take the majority of all fish indiscriminately. Take the nets out of the water and the fish may return themselves.

214. My last two saltwater trips were primarily spent catching mackerel and throwing them back. I would like to see more game fish in southern California even if there was a cost increase in license!

215. I would be willing to pay extra fees to fish from a boat, but not from a pier. I fish from a pier more for social relaxation than to catch fish.

216. I don't fish for white sea bass from a pier or for halibut. Responses were made to Questions 38 to 48 for that reason. I oppose the increased amount in fees for that reason.

217. I do the majority of my fishing in fresh water.

218. My main concern for pier fishing is I like to take my family to the pier, and if they charged, I really couldn't afford to do it. And my family would lose a valuable resource and time together having fun.

219. I would not mind paying a little more to improve ocean fishing and help save sport fish.

220. Types of fish: I love bass and halibut. Cost of yellowtail trips and pier fishing (I hate pier fishing!)

221. None, I don't care for your wording on Question number 51. I'm born in this country, unlike most.

222. I think the commercial boats and foreign fishing boats would benefit the most from enhancement.

223. There were no methods given for the methods of increasing halibut and yellowtail counts.

224. I consider the present ocean enhancement sportfishing stamp fee as being an unfair fishing tax and a waste of money.

225. The trips and gear are extremely expensive. If each trip would produce more, the cost would be worth it.

226. I love to fish!

227. If commercial harvesting of the ocean resources are not regulated from shore to the nine mile bank, all the money that is spent on hatcheries and captive breeding will be in vain. Drift nets, gill nets, and long lining, and purse seining has decimated the population of all species associated with this survey. If commercial fishing is stopped in this area, catch rates would increase dramatically.

228. I don't want to see the price of a ocean fishing stamp to raise to amount that the average income family cannot enjoy taking house guests from the Midwest on a day's fishing jaunt.

229. I feel that any extra research or study that can help keep our oceans rich and alive is good.

230. Yes, I don't go ocean fishing as often as I/we would like to because of the cost involved on party boats.

231. I am for the enhancement stamp. Mostly for salmon. \$3 is a small price to pay for quality fishing of any species. What I resent most are the exorbitant launching rates at fresh water lakes in California. Too bad I don't have more room.

232. I don't get to fish that often anymore, so if I only go out two or three times a year, I don't want it to be too expensive. I also fresh water fish two to three times a year as well.

233. Port San Luis at Avila Beach. Sports fishermen and commercial fishermen, as a group, have donated time and money to their salmon enhancement program. They raise and release 30,000 to 50,000 salmon a year, which has improved our central coast salmon fishing greatly. I usually go ocean fishing once or twice a week during salmon season, but the last couple years I've lost three of my fishing buddies have passed on. Guess I'll have to buy my own boat.

234. Yes, I'm mostly a freshwater fisherman.

235. I feel that we pay enough to fish already off the rock. All my family love fishing along the coast. We were raised on fishing and taking only what we could use. My grandchildren love to go fishing with Grandma. They are learning how to go fishing, and they love it. Their parents work.

236. It's hard to justify paying extra money for a man or any person who may catch only one halibut, yellowtail, or bass per year.

237. I feel that the cost of fishing is already too high--increased catch of game fish would make the money spent easier to accept!

238. I enjoy fishing, and it's fun to catch, but it is no big deal whether I do or don't.

239. No reductions for senior citizens. Many states do! If we got a break, I would be glad to pay for enhancements!

240. If the fees are increased to help increase the catch rate, will the fish species be properly farmed to allow increased fishing?

241. Limited fishing experience. I do not fish for specific species. Increases in fees would make me fish less often.

242. The halibut is the only species that I have in my area, so I wouldn't travel south to fish yellowtail or white sea bass.

243. Gill netting in shallow water is absolutely ridiculous. I don't care how much you collect and spend on research and enhancement, if the gill netters are there, it won't mean a thing. Halibut shorts are gill netted, and they don't have a chance to reproduce.

244. I don't mind paying more to fish. I think fishermen as a whole need to realize that the ocean and all its inhabitants are invaluable and things are getting worse out there. Things need improvement, and improvement takes money, and the ocean fisherman should be and is one of the sources of the money needed.

245. Financially unable to put out more of my income than I am now doing. My fishing trip was a gift from my children.

246. I mainly go fishing just to get away from the daily routine. I don't have a great need to catch fish, although it does make for a better trip. My last fishing trip, we were bottom fishing and the winds were too strong to hold a spot. We didn't catch any fish, but it was still a lot more fun than working.

247. \$21 to fish from a pier? I would pay only if it was worth it and to make it worth it would require a great deal. Why should the sports enthusiast pay increased fees to enhance fishing for greater yields for the commercial fishermen. Commercial fees should increase and be payable yearly.

248. Only rock cod is caught.

249. I prefer to fish in the surf because I'm not good in boats, and pier fishing is often crowded in my area. Perch in this section are great challenges and keep my interest!

250. I fish in the surf (area 19) for perch and do very little pier fishing (crab and mackerel). All pier fishing is free.

251. License and stamps cost too much now. Just think how many more you would sell if you lowered the price. Making more by selling more! Lots of people either can't afford or refuse to pay the money asked for license and stamps. Let's not cater to the rich. Others like to fish too.

252. I dive. What's there is what I get. I haven't seen a yellowtail. Divers aren't the real problem. It's the boats with their nets stripping the oceans.

253. Yes, I would pay the increased amount for fish I like to eat and catch (albacore, halibut).

254. Fishing is more of a social and recreational event with me than a "fish catching event." I primarily fish for the small (6" to 8") fish that are found at piers. It doesn't really matter too much if any at all are caught.

255. Local conditions, personal fish preference, equipment limitations (boat, etc.)

256. I don't like buying a fishing license in the first place and oppose any increase in fees, regardless of reason. I see no reason why one should pay to fish in the ocean.

257. I fish 20 to 30 times a year, and the fish I catch is because I know where to look for them. To catch fish, you have to think like a fish.

258. I would not be adverse to paying more to improve fishing for certain species of fish if I knew that all the money would go directly to those programs.

259. License and fees presently charged are going higher, while fishing success is declining yearly. The size of the fish are smaller and number landed are less each trip.

260. Most improvements would primarily help commercial fishermen. We senior citizens need to pay less money, not more. Regardless what we do, the off-shore drilling is already ruining our fishing.

261. The type of fish being caught.

262. To improve sportfishing, prohibit the taking of anchovies!

263. I'm mainly a fresh water fisherman. Most of the saltwater fishing I do is for salmon.

264. Right now I pay \$1 enhancement fee to fish below Pt. Conception, and I don't believe I would pay more because the commercial fishermen are fishing in too close and ruining the fishing with their gill nets.

265. I think that \$20 plus is a large price to pay. If it were \$10 or so, I would be more apt to pay that. Also, I am most often successful in my fishing trips so the catches would have to be dramatically higher/better to affect me.

266. Most of the reason I go fishing or diving is to get away for a day and just have a good time, regardless of whether I clean up on the fishing or not.

267. If these stamps were for specific species, it would be more fair. I don't fish for these species and shouldn't have to pay to help those who do.

268. Not a serious fisherman.

269. For the stamps that are lesser, I felt I would use, I feel \$28 to fish on a pier is a bit high. If you do that, you would have to charge the same for surf fishing.

270. I go about all I have time for regardless!

271. I only fish for halibut because yellowtail and white sea bass are rare in the Santa Barbara Channel.

272. The Department of Fish & Game is in the pocket of the commercial fishermen. For \$100. they can take tons of fish, mono nets destroying fishing by killing everything, gill nets--ha. This ocean belongs to everyone, not commercial fishermen. They take all and give nothing back.

273. The price of the licenses now are expensive enough, plus the extra expenses to get there; and to be able to net. Plus the fishing gear which you use.

274. I believe that all the enhancement you can do with fish would be great for the gill netters; that would increase their catch rate, not ours!

275. Yes, commercial fishing.

276. I have confidence that your goals are achievable and would pay to support them in principle, not because I wanted to catch more fish.

277. Gill net laws should be looked at and changed. Good fishing is a thing of the past in the Santa Barbara area.

278. The ocean enhancement cost sounds like a good idea, but seeing it really work is doubtful. Hunting and fishing license fees go up and you get less in return. I do not mind spending the money when you can really see it make a difference.

279. Ocean fishing from a boat, as a total experience, is much more rewarding than fishing from a pier. Therefore, would not be inclined to support fees regardless of increased catch.

280. Daily fee for fishing off pier in enhanced area too high!

281. Tends to be bureaucracy enhancement. Things could be accomplished as seen in other states that do not charge fees. Notably, Florida, east coast.

282. Costs are extremely high, and desired effects cannot be guaranteed!

283. I fish for fun only, to be with friends.

284. Yes, for Fish & Game to do more to control all net fishing. Note: Like last year when the large blue fin tuna were caught. At first, why did the Fish & Game put the school off limits to save these large fish? When net fish are caught, they are all used, not just the one the netters bring in but what they throw away are brought in and used for cat and dog food and fertilizer. And cut back on squid and anchovy taken.

285. I wouldn't mind paying more money, but not that much more. Cut the last three figures in half.

286. The enhancement of any of the aforementioned saltwater species is worth the money.

287. Pier fishing excluded in the above answers. I feel is far too expensive and out of the line.

288. I enjoy fishing; catch or no catch makes little concern. I don't want to pay more money to sit in my boat to use the tackle I own and buying more tackle to try catching fish.

289. I am primarily a fly fisherman and fish for trout.

290. I really do not fish much, only one or two times a year. My son is the one who enjoys diving and fishing.

291. Fee increases are just another way to increase the bureaucracy.

292. My responses reflected the fact that I don't think that extra money is going to make this type of fishing any better.

293. Mainly interested in rockfish, lingcod, and halibut fishing, so most of the proposals would not affect me.

294. I just fish for the fun of it. We usually will throw them back.

295. Commercial fishing.

296. There are too many people on the boats, they pack you in like sardines. Lines tangle all day long, which take a lot of fishing time to fix.

297. I cannot afford to go on any more yellowtail trips. I never have fished from a pier.

298. Regulate gill netters.

299. California halibut enhancement and probably yellowtail and white sea bass. I would spend more for my ocean enhancement stamp if we could enforce more size limit laws. Example: One trip a year or so ago, I saw some Asians pull in some undersize halibut, cut, and eat it right there (on pier). There should be no law to keep people from fishing to eat, but this group had the best rods and reels, hundreds of dollars in tackle, and plenty to snack on!

300. On my last business trip, I went to Maine three days early to go fishing. I paid \$18 for a three-day stamp and had the best fish I have ever had in California. Your fees have driven fishing right out of the reach of a modest income. I think, along with others, you keep the fees high to keep the fishermen low. A friend's son is low income and can't afford your fees, but loves to fish, so he goes fishing without a license!

301. Gill nets.

302. Gill netters are taking all the sportfish. Stop gill netting in coastal waters!

303. For the record, I don't think increased fees will necessarily lead to increased catch. Additionally, I think the real problem is with unrestrained takes and abuses by commercial fishermen. I would be willing only if commercial fishermen were surcharged proportionately the same. To charge for piers would deprive many people from fishing opportunities. A lot of the people who fish for free from piers do so for food alone. The species of fish isn't that important.

304. The ocean has been a great natural resource available to me my entire life. I would support any reasonable measures to insure this resource for future generations and to increase preservation of this resource. We need to increase awareness to save the ocean from man's abuse of this ecosystem.

305. I take very little from the ocean. I also believe in following the fishing laws, and if all other fishermen did the same, fish population would increase. At the same time, I would not object to a small increase to protect those laws.

306. I do not fish "specific." Regrading myself as a somewhat lazy fishermen, I can't see paying large sums toward any sport, except my boats have cost an arm and a leg!

307. The fact that when I go fishing, I just go for the fun, sport and the fact that it's food, but not for the type of fish or price per fish.

308. I spend more time fishing fresh water and have a hard time accepting license fee increases annually, when 75 percent of anglers with licenses live in southern California, and 75 percent of fresh water enhancement programs take place in areas more than five hours' travel time away. Spend the bulk of the money where the bulk of the licenses are bought, and then I may support more increases.

309. The fishing has "decreased" considerably in the last few years. We used to catch several good fish from shore. Now we hardly get a bite, and the fish we catch are very small.

310. The license fees that are already being collected solve this problem if it were properly used. The decline in catch rates, in my mind, is not caused by the sport angler, but by commercial netting (I have first-hand knowledge) and by water pollution and lack of fresh water runoff and by dredging.

311. I just enjoy fishing, and living 3,000 miles away in New York, my fishing experience is different, different ocean, different fish.

312. Fishing permits are too high for out of state anglers.

313. There should be one refuge from the necessity to pay. Fishing off a pier has been that place, and I don't think the bad publicity resulting from charging would justify the gains. Suggest California Fish & Game tap the volunteer resource to assist in improving fisheries habitat around piers, etc.

314. I don't care about fishing for the listed species.

315. As for fishing from the pier, I feel that the fish in these areas aren't very pollution free. Therefore, I would not be willing to pay more for these fish. The reason I would pay more to fish for yellowtail is because catching them is such a rush.

316. Would the increased fee be contributed to people and programs or get lost in overhead, administrator's salaries, and/or diverted by the legislature? How long before results noted in the fish catches and who would enforce non-paying fishing and fishermen?

317. One concern was that by increasing all of the species listed, the license would become unaffordable to all but the wealthiest fishermen, which isn't fair. I was hoping to find a question pertaining to a general increase in the game species listed and how much I would be willing to pay to enhance all of their availability. I am against lowering any size limit off the individual species in order to bring up catch rates, however.

318. Fishing already costs too much. Why should Americans pay for the fish that other commercial foreign countries are exploiting.

319. I have heard many complaints about the fish license charge and the license size. I am sure if there is an increase less people will purchase licenses and the fish area communities suffer from loss of money. I can understand the state charging a license fee for fishing in controlled or maintained areas such as beaches, piers, streams, or lakes where fish are stocked. But to charge to fish in the Pacific Ocean, which is a place that me and my friends go for the freedom of the sea and openness--it's wrong. I go fishing in the ocean not only for fish, but for the freedom and peace of mind. I don't take fish unless we keep them for food. If you really want to do something for the sportfisher, do something about the gill net fishermen fishing daily in sportfishing areas. It's getting to be a joke. More and more friends are taking trips to Mexico to fish. It's cheaper to pay for one trip to Mexico fishing and get more fish than 12 local trips and less fish. No, I don't think there should be any increased cost for fishing licenses. Last year I purchased four licenses for my family. This year, only one due to the increase in the cost.

320. I don't catch fish for eating except halibut. I bring the fish home for my cats. They love it. There are very few things today that don't cost a lot of money to do. Think of those families who go fishing off piers. Just wouldn't fare. If one could increase halibut, it would be nice, but \$16 per year is too much money.

321. I think more than anything else we should clean our waters and restrict fishing areas (some) especially other countries, like Japan. We should also outlaw net fishing. I'm not against any increase in fishing licenses if the money goes to the following or for the following areas: to clean our waters, to outlaw net fishing, or to restrict areas (some) so we don't fish out our waters.

322. Ocean enhancement would be a great idea. Our waters are polluted.

323. Are you going to tell the fish that they are not allowed to pass a certain boundary? Or that they can only swim in a designated area?

324. The dollar amounts seemed excessive.

325. It wouldn't increase the count of fish that interest me.

326. I go fishing when there is time to go, not because of this thought of "more fish out there to catch." I don't feel that the fishing fee should be increased in cost.

327. Yes, being retired.

328. I would pay \$7 for pier fishing because it would keep a lot of people from fishing off the pier.

329. It seems that every year the fishing license goes up and up in price, and I think the size of the license is foolish.

330. I am allergic to cold weather and can't go fishing often. And for as many times I can go fishing, I feel that what I pay for in licenses and other stamps is enough. I would rather not participate in this survey, but this is how you wanted it. The amount of fish can increase itself if there were restrictions on quantity and quality catch per person or party boat.

331. I don't fish that much, but when I do, which is two or three times a year, it could be expensive.

332. I would pay at least ten times the amount mentioned if it would, in any degree, enhance the sportfishing catch rate.

333. I enjoy the challenge of fishing and really don't need guarantees.

334. I have serious doubts about the methodology advocated by the previous examples given. I feel that excessive taking of fish without allowing them to reproduce is the major problem with low fish population. Stricter size limitations are required to improve fishing, not artificially raising the population (similar to trout stocking). Commercial fishing is also an important factor to the lack of success of the recreational fisherman.

335. I have just retired and now may be more interested in spending some time fishing.

336. I don't really believe that if the fees were increased that they would go anywhere except in someone's pocket. The only thing they care about is commercial fishing interest and their own pocket books.

337. Yes, I certainly would like to see better catch rates, especially with white sea bass and yellowtail, as well as halibut and others, but certainly would not be willing to accept \$7 for one species, \$8 for another, etc. such that fees become so much as to eliminate many from the sport.

338. Yes, the Pacific rim community in the Los Angeles and Orange County areas openly defy all fishing laws on an hourly basis by taking huge numbers of small (five inches) fish and depleting the ocean's resources! On a massive scale, 14 poles a piece.

339. People are going to pay whatever it costs. Majority of people don't buy license to begin with. More money should be spent on building artificial reefs in close to mainland.

340. I would be able to pay more money to fish, but the people that I see on the pier and off the rocks are mostly poor people. I would hate to see this recreation made too expensive for them.

341. Only one thought one how the Department of Fish and Game could save time and make \$5 per angler. How about an extra rod stamp? Everybody I know would pay it. We are also freshwater fishermen as well.

342. A per day fee is unacceptable to me.

343. If increased cost (per species or per trip) would increase the quality of the ocean environment off the southern California, then I'm for it! I would certainly be described as a casual fisherman (in frequency). Yet, I am quite concerned about the pollution we have caused in our oceans. I feel charging for pier fishing is an excellent idea, regardless of the installation of reefs. Additional funds should be raised (by increased license fees) to help clean our oceans.

344. Money is not a factor. Increasing the amount of any desirable fish close to shore to be caught by young, poor, old and short trip fisherman who can't go on boats would be desirable.

345. About pier fishing, I can recall catching white sea bass and yellowtail from Redondo Beach pier in the 1940's and 1950's, as well as halibut. I would like to see it return.

346. The cost is too high for the amount of fishing trips that I take.

347. The catch rate increase might not be experienced by me, but it would mean more fish out there and just might help the next generation.

348. I am not a fisherman, nor do I even like to fish much.

349. In most cases, I feel the causes for the poor catch rates are the amount of debris, trash, spillage, etc. cause the decrease, not the fisherman. Of course, oil must be transported!

350. I don't fish as much as I would like to due to the fact I moved farther from the coast.

351. I do not think that saltwater fishermen have received a fair shake from the California Fish and Game. Most money spent on saltwater research, etc. has benefitted commercial interests, not sport fishing.

352. No, answered all questions to the best of my knowledge.

353. I would like to see more programs to enhance the fishing off the California coast and all over! But a lot of people can't afford a \$30 stamp. It doesn't sound like a lot, but in my case, raising a family, it's hard to afford the boat, gas, and every other thing considered, and rising costs!

354. Lack of money.

355. When I go to the pier, I just like to relax, even if the fish aren't biting. When I pay for a charter boat, I like to catch fish.

356. Ocean pollution seems to me is where we should start. Why enhance fish numbers when they are not fit to eat. I am all for enhancing fish numbers, but ocean pollution must be controlled first.

357. I do not fish in the ocean at this time to really think about these questions.

358. Fishing licenses are ever increasing. I think more of that money should go to improve the environment we use.

359. Use of regular license fees other than ocean stamps for saltwater fishing--"fund breakdown," diversions, etc.

360. There are lots of anglers in southern California. An increase in the fish caught per trip might equate to an offsetting increase in anglers which might produce the previous amount of fish caught. In other words, would supply meet demand near the original number of fish caught per angler? If so, the benefits would be a large increase in the state's coffers (license) and in tourism. Plus, more pollution and its negative affects on fish production.

361. I would not like to pay extra for enhancement and have the commercial fishermen benefit from the extra charges to sport fishermen.

362. Pier and jetty fishing would be better if only people with a fishing license could fish. I would be willing to pay more of an ocean enhancement stamp for better enforcement.

363. Most of my ocean fishing is from the surf, so questions do not apply.

364. Raising the fees by \$12 or \$13 to achieve better results in all areas is acceptable. But raising fees by \$30 or more seems to be expensive. I fish primarily for the enjoyment and the time spent with family and friends. I don't need it to cost a fortune for the chance of a few more fish.

365. I am from the east coast and have fished both sides of the Atlantic Ocean, the Mediterranean Sea, South China Sea, English Channel, and the Strait of Gibraltar, none of which require a saltwater license or stamp and all of which produce a higher catch per trip.

366. The increased rates for people who only fish once or twice a year would not be worth my effort to get a license. If the rate increased to \$5 for ocean stamp for everyone, then it would be worth it. Also, if California enforced the need to have a license, then the revenue would be large enough to do all the stuff said in this booklet.

367. Fees increased to enhance fishing seems to get poorer. I go fishing to enjoy myself and a few nice fish keep me going back.

368. It might help unpollute our waters.

369. Would like it if chances of catching yellowtail and fish of that class were more readily available. The drive and expense is high when no fish are caught, but when they are caught, the expense or extra expense is worth it.

370. Too much commercial fishing with gill nets and long lines. Enhancement should be paid by commercial fees, particularly foreign nation's boats. I would be willing to pay more for fish purchased at stores.

371. My fishing license is too expensive already! Where does this money go? License-\$19.25, Ocean enhancement-\$1.00, Colorado River-\$3.00, Striped bass-\$3.50 for a total of \$26.75.

372. Stop the gill netters, and we would have something to fish for!

373. I come from the Midwest (Illinois/Minnesota) where fishing is free and licenses are cheap. It still makes me mad to have to pay to fish in a freshwater lake and to pay so much for a license. In fact, I used to buy a license every year. Now, I buy a one day license and only twice this year.

374. I think the license fees are high already. I would pay a little more for enhancement, but I doubt the bureaucracy would spend it well. I think the halibut fishing is getting better. I would like to see the white sea bass come back and would pay more, not \$7.

375. If I felt the enhancement fee would eliminate the gill netters, I would be willing to pay whatever it takes. The rod and reel fisherman is getting the short end of the regulations regarding size and amount of fish, while the rules for the net fisherman let them catch and keep anything that ideas in their nets. Pretty unfair!

376. More fish is good, but \$26 a day to fish is crazy.

377. A stamp fee increase, which would improve conditions on several species of ocean fish, would be acceptable to me.

378. I don't fish with a pole. I use a mask and fins and only help friends.

379. We fish just for the fun of it. The less it costs, the more trips we can take.

380. I believe that the government of this state has too many damn restrictions on the people, and that every day it costs us, the people, hundreds of dollars more for what was freely given to us by a higher power, and where does it stop! Get your so called educated people, and get the hell out of the way.

381. I enjoy being on the ocean fishing. Catching fish is a bonus. I release most fish.

382. Fishing is an affordable leisure sport that can be enjoyed by everyone. Don't Californiaize it.

383. We very rarely have a yellowtail run in area 21, as well as white sea bass. We have a good halibut population, but as I'm in construction and the summer run is my busiest work time of year, \$20 is too much for pier fishing.

384. Yes, I would like my area (San Luis Obispo) to get the same percentage of any monies to better our area. I would like to see the enhancement of halibut first since they would be a fish that would be available to the majority of anglers.

385. I looked at the benefit/cost ratio. I fish for recreation, not food, so increased catch is not a big thing. I'm willing to contribute something to habitat restoration, etc., but about \$10 a year or so. I'd think fish "stamps" as in duck stamps makes sense, but \$24 per year seems awfully high, unless I were a commercial fisherman.

386. I don't feel that it is man's place to interfere with the natural order; even though, at times, his motives are unselfish. I believe that the greatest concern regarding fish should focus on minimizing man's exploitation of natural resources, especially those exploitative practices which interfere with the oceanic order of life. I feel that we ought to be seeing more from the fishes point of view and less from man's point of view.

387. I have never fished for those types of fish, so I can't say that I would be willing to even go for those types of fish. I don't really like to fish off a pier.

388. Three of the four examples given are not fish contiguous to the central coast, water colder. Morro Bay, Vandenberg.

389. Commercial fishermen and netters should not be permitted to fish within ten miles of shore. They destroy the fish they don't take and vacuum the ocean floor of the sport fisherman's species. I contribute annually to the private Sportman's Salmon Fishing Enhancement program out of Port San Luis--approximately \$10 to \$25.

390. I am retired and enjoy fishing on the pier without license or cost. I'm sure many other people on fixed incomes feel the same.

391. I go fishing for the fun of it, not for any particular type. Therefore, I do not wish to pay more for particular types. A lot of people enjoy fishing and the only place they can afford to fish is off a pier because it is free, and licenses are not required.

392. Yes, certain species do not seem to come to this area (19), and \$27 per day is way too much to fish from a pier. \$5 or under would be fine.

393. Yes, usually I surf fish from beach areas, usually not boats or piers.

394. I would pay more if needed, but I would only go fishing when my fish supply is low, and don't waste any.

395. In this area, we have a salmon enhancement project that is showing success but needs money to continue. If small increased fees would directly support these private projects, I would definitely support.

396. Just because more fish are being caught doesn't mean I will be going fishing. It's a matter of having the time to fish.

397. Yes, the state wants more for a fishing license, but I can't see where they have done anything for the people who fish. I've fished off the coast of Santa Barbara since 1943 and used to catch my limit of fish whenever I would go, but commercial fishing boats took everything and never thought about what would be there today. "Drift nets" that kill many fish that game fish feed on are used off the coast. It's not worth the time and effort to go anymore. I go fish off a public pier which is free in California. The cost is not the point. It's a fact there will be nothing done. I gave my boat to my son who uses it for water skiing.

398. The steady yearly increase of license fees. I just fish from the surf. I use sand crabs for bait instead of buying bait.

399. Oregon fishing licenses are only \$5. Why has California gone up all the time when you don't seem to see much improvement?

400. It's true more fish mean a better ratio for a catch, but the challenge is not as exciting.

401. The cost of current licenses keeps me from fishing from anywhere but the pier. I could afford one, but it is not a high priority for me.

402. The time I spend fishing is so little that I am not concerned about the catch rate, so the questions don't address my situation. I have relatives who really enjoy fishing, however, and I have answered the questions with them in mind. They like to fish, catch fish, and are satisfied with the catch rate. Fishing should be inexpensive so all can enjoy it.

403. Thank you for letting me take part in this survey.

404. The major factor that I consider is accessibility to the handicapped. There are areas, such as steep ladders or unsteady platforms which keep me from going where I want to.

405. One reason for doing this type of fishing is that it doesn't cost hardly anything to go, other than personal expenses.

406. People fish for fun and food. Halibut can be caught from shore or boat and are good eating.

407. \$22 is a bit much. I would be willing to pay \$10 more.

408. Amount of charge.

409. The particular type of fish I fish for is perch. So far, it is pretty abundant where I fish.

410. I only like surf fishing!

411. Presently, in the Ventura county area, sportfisher (charters) are not too appealing due to all the restrictions and ill-mannered personnel. Generally, it is more of a hassle to charter a boat for fishing and spend most of the time riding (transiting) Example: nine hours, \$50 (two people), two legal bass (barely). I can go to the fish market for much less and not put up with house imposed bull.

412. To date, California Fish and Game have done little to manage our fisheries until it was almost too late to save the stock; i.e., overfishing was allowed almost to the point of extinction of the resource. Sportfishing concerns do not rate well with the Fish and Game. Case in point, the continuation of gill netting!

413. The fish species names are not the ones I usually go fishing for. If yellowtail were more available, I would go fishing, especially for them more often.

414. I am willing to pay higher fees to fish if it will help the kinds of fish that I fish for.

415. I live two and one-half hours from San Diego, where most of the yellowtail are caught. If I was sure I would catch a yellowtail, I might make the trip.

416. What governed program says that it couldn't do a better job if they only had more money? The answer--none.

417. Sirs: You want me to pay extra for something you cannot deliver. You're selling a bowl of goldfish to us, but are putting them in the ocean instead. And you believe those fish I pay for will hang around for me to catch cause I bought your stamp? Limit commercial to 75 miles or outer reef. No Japs, Russians, etc. within 250 miles. So the price goes up, so what? Then it would be fun again. For \$100 to \$250, one can be commercial and rape the ocean with nothing said. Now you want me to feed the commercial fishers. To heck with them--welfare!

418. Pay more okay for sport fishing. Helps everyone.

419. I do not fish as a sport, only for fun with friends.

420. Yellowtail are rarely caught in the areas I fish regularly. I'm very skeptical as to whether increased sportfishing fees would benefit the recreational angler, or just fatten up the gill netters.

421. Poor people can't afford to go out on charter boats, let alone own their own boat. Pier fishing is all that is left. Therefore, if fees are charged for that, there would be no fishing for them at all.

422. My saltwater fishing depends primarily on invitations from friends who own oceangoing boats. I do not care for charter boat fishing.

423. As long as purse seiners operate illegally, we don't have a chance in Area 14.

424. A good many years ago, they built a brick water Hermosa which affected the current at Redondo, the flounder and halibut disappeared. After that (I'm not sure this is the true case), but this did happen. I was born in Los Angeles 12-27-12.

425. I enjoy fishing for game fish.

426. I don't partake in fishing enough to give an authoritative answer.

427. I no longer own my boat.

428. How the fees would be attached? What areas are to be targeted?

429. I wouldn't mind paying \$5 to \$10 for a saltwater stamp, but more than that and I'd just fish freshwater.

430. I don't think it would be fair to charge me an extra \$21 for my enhancement stamp if I've never fished for yellowtail.

431. I think the Department of Fish and Game could make more money if they would somehow make sure that everyone that fishes on a boat or pier has a license. There are people who fish all year and never buy a license and that hurts all of us. I think the landings would help by saying show you license and you get a ticket to ride or something to that effect. I think overall your department does a good job, but it could get better.

432. Some things that make me mad about going fishing are gillnetters and longliners.

433. I do not go fishing to specifically aim at catching a species of fish. Halibut is a very popular fish amongst other fishermen, and I would be glad to see an increase in its population.

434. I feel the improvement of all fish habitat on our coasts would be of benefit to man and fish. To do this, I'm sure a fee increase is necessary on all counts.

435. I have doubts about more money would help. Any, unless it helped get rid of the heavy gillnet fishing, by the United States and especially other countries (Japan, etc.). That is why I return 95 percent of all fish I catch.

436. The outing and fellowship and challenge are what is important to me.

437. I would be willing to pay to improve the fish population off the California coast.

438. Fishing fees are high enough.

439. I care about our saltwater habitat, and if these rate increases will provide a better and protected habitat for rare species in particular and other species in general, then I would not mind paying more. But my experiences with the fish and game management in California in case of some land species (such as deer), have shown that increased rates won't necessarily change things for the better. However, I believe making artificial reefs are worth investing in, but not necessarily around piers which make for a very crowded and miserable fishing time.

440. The amount of the fee increase, which I believe is too high in some cases (e.g., \$24 per year for yellowtail) compared to the possible benefits achieved thereby. I would pay a reasonable yearly fee for the enhancement of all such species.

441. I am primarily a freshwater fisherman and only occasionally saltwater fish when invited by an experienced saltwater fisherman.

442. Get rid of the gill nets. No matter what improvements are made to the fish stock, I will not see more fish as long as there are gill nets competing with me.

443. I feel that for the improvement indicated, the dollar amounts sought are well worth it if the improvement can be obtained.

444. Fish and Game gets enough money out of us, and the cost usually goes up \$1 or \$2 every year. Why should we have to have a special stamp for certain fish? When you go fishing, you never know what you're going to catch. If I caught a halibut when fishing for bass, I would have to throw it back because I don't have a stamp. That's not right. If I bought all these stamps to cover all the bases, it would end up costing \$50 for a license. I'll support a general increase on a license, but this stamp idea is bullshit.

445. I believe that if the cost of the ocean enhancement stamp were to increase about as much as suggested that: One, there would probably be a noticed decrease in their sales and an increase in tickets and fines being issued by wardens for not having them. Second, the state of condition of southern California saltwater is I believe caused by the industry in the area, also the large tanker traffic, the pollution spills (Example Santa Monica bay). Also, if there were to be a sizable increase in the price of fishing licenses, I believe some people would stop buying them.

446. The suggested fees are high enough to discourage many people from fishing at all. While this would increase the fish population, I don't believe it is fair to make the sport available only to people such as myself who could afford these increases. Any improvement in coastal habitat would benefit the entire population directly or indirectly. Revenues from the state should be used to fund such things.

447. Commercial fishing has to be limited to help increase the catch rate, not the increase in development area attracts for fish habitation.

448. To preserve ocean life.

449. I feel something needs to be done to improve ocean fishing. Restricting the types and amount of commercial fishing done would improve conditions.

450. California Fish and Game couldn't manage these resources if the ocean enhancement fees were \$100 per angler. They lack the personnel, motivation, and supervision to regulate and spend our license and enhancement fees.

451. Would go fishing more if had my own boat and more time.
452. Concern--lack of recreational fish/fishing off shoreline as compared to prior years. Too much commercial exploitation!
453. I have only minimal interest in improving the sports fishery for halibut and no interest in the other species.
454. I don't mind paying more if the catch can improve, but I think \$10 is a little high for yellowtail.
455. I just don't go too often (three to four times a year).
456. Whatever the cost, I usually will spend the money to make a fishing trip.
457. We should pay more to fish southern California waters. I definitely believe we can increase catch rates with "catch/release," new fishery technology, strict size limits, and number limits. This is reflected in recent increases in barracuda, calico bass and white sea bass catches.
458. I would rather pay a set fee for the development of all species than to pay an increased set fee for species that I never fish for. I have never fished specifically for halibut and have never been on a boat where a legal white sea bass has been caught.
459. I think the commercial and net boats should be required to fish further out in the open seas. We (California) should have more game wardens on board boats in fishing areas and more harbor police.
460. The three species of fish are generally not the species I go fishing for specifically. The yellowtail increase is reflective of the fact that they happen into kelp areas where I primarily fish. The other species are not specific fishing trip fish.
461. The fishing license and combination of stamps required are already too expensive for the amount of fish caught.
462. I don't bass fish often enough to justify the cost. I rarely have the opportunity.
463. Paying more money does not mean catching more fish. Who will get the money from the increased fees? How can "they" charge for something they have no control over (more money = more fish).
464. Paying too much for fishing fees.

465. Get rid of those tankers, oil rigs, and barges that haul waste out to sea and the polluted factors that dump into our seas, and fishing will be better! Then folks will pay more, as it is you can't eat the fish anyway, you might get sick.

466. I am just not interested in fishing period. Thank you.

467. I fish off the pier for fun and enjoy the company of my friends when I get to the beach.

468. Please ban gillnets! No toxic waste in ocean. Must stop, will have long term effects. Greenpeace. Long liners gotta go too! Death traps hurting our precious resources!

469. I don't know about boat fishing or statistics. I like just to fish and relax. I don't spend a lot to do it. Paying extra a day to catch something special isn't fun, just catching something or enjoying the day is important to me.

470. It's pretty sad that hundreds of dolphins are being killed.

471. I don't mind paying a little more for the care of taking of sportfishing, but make sure it is worth it.

472. Am retiring and moving from California in very near future to Oklahoma where I'll be doing lots of freshwater fishing.

473. Enhancement fee is the cheapest part of ocean fishing. Boat fees, gear and tackle are the high items.

474. Environmental factors, how will what you do affect the ocean's ecosystem? Very important!

475. If the catch rate was to be improved, it would be the commercial fishermen that would benefit.

476. I fish more for fun, but halibut I would easily pay more for because it is my favorite fish.

477. Yes, there is no way to ensure the use of the money for these purposes.

478. I have seen a lot of good skippers that can take you to the fish without upping the rate on anything.

479. License fees keep going up, and us anglers never see anything in return. Someone just keeps getting richer or hiring another family member to collect a paycheck.

480. Sportfishing will only get better when commercial fishing is cut back to the amount of commercial boats that were around in the early 1950's.

481. Large bay front businesses are ruining our fishing conditions and habitat. They should be paying heavily to restore conditions, not the innocent sportsmen, fishermen.

482. How much increase?

483. Most of the fish listed are not very abundant.

484. I think that an addition stamp for fishing certain species would be a better idea. People who only fish abalone or lobster would probably be upset at having to buy an expensive enhancement stamp.

485. Both times I have been saltwater fishing this year were as a non-paying guest of someone else.

486. Most of my fishing is in Mexico!

487. Pollution, longliners, and gillnets. Money can't stop the Japs or pollution.

488. I definitely would pay more to fish for yellowtail and halibut, but I think that pier fishing should have a size limit and someone to enforce it.

489. I don't fish for most of the species that were mentioned.

490. The nominal fees you ask for yearly rates of obviously better fishing, doesn't matter to me. For all the additional money asked for only adds up to one trip. I'd gladly pay it to enhance our fish life.

491. It wouldn't bother me to pay a higher amount of money for ocean stamps on my license. I think \$12-\$24 is excessive.

492. All fish are consumed on board before returning to port. One or two fish per trip.

493. Charter boats have the yellowtail fished out of oceanside. Halibut must be 22 inches for legal size. It does me no good to pay extra money to catch more "undersize" halibut.

494. Yes, I work with fresh fish every day and can buy all I want cheaper than it costs anywhere else.

495. Willing to pay to preserve and enhance the resource. If the sportsman isn't willing to pay, why should anyone else? P.S. I'd pay even more even without higher catch rates.

496. White sea are very rare in my area (zones 18, 19, 36).

497. My personal interest in sportfishing generally pertains to abalone and lobster.
498. The price of \$22 is too high. A reasonable fee of \$2, \$3, or \$4 may be more acceptable to all anglers.
499. Except for halibut, these fish are not in this area, and I don't want to pay to improve fishing where I don't fish.
500. I have no extra money and fish to eat as the motivation.
501. Even though I don't get out as often as I'd like to, I do enjoy fishing. I don't think I'd like to have to pay more money just to go. It's not always so important if I catch something as if I just get out.
502. I don't want to be limited to where I can fish or what kind of fish I can fish for by the amount of money I have in my pockets.
503. Current rules allowing drag boats to operate in prime halibut waters during their annual mating is a scandalous disregard for our natural resources. Nets do not respect size of fish as we sportfishermen do. The problem of more fish can be solved without more money being spent.
504. What would be the negative effects to other ocean life to increase some sportfish species?
505. Doubtful that I could go fishing for these specific species.
506. We just fish for fun. It doesn't matter what we catch. Also, we enjoy being able to fish from the pier at no charge.
507. If I wanted to pay for fish, I would purchase it at a fish market!
508. I am all for enhancement, but I have real doubts as to its effectiveness until drastic measures are taken to stop pollution and overfishing foreign and domesticly.
509. License fees are too expensive now.
510. No questions pertaining to gill netting, long lining, foreign commercial fishing that affects our local habitats.
511. I feel that the present rates for licensing are excessive (i.e. fishing and hunting permits).
512. When I fish, it is not my primary concern, since I fish on Scuba.

513. I'm more concerned with the abuses of fishing areas and want to see an increase in the fish population and not in catch. Too many new comers in California and commercial overkill have wiped out areas in which my family and I have lived for 70 years in coastal California.

514. Although I make a lot of money, fishing is very popular with poor people. To raise the fees, regardless of the productivity, would be disproportionate penalty for lower income fishers. Fishing is one of the last inexpensive recreations left. Let's keep it that way.

515. Whether these programs are implemented or not, I will continue to catch fish. Further, I rarely fish for yellowtail or white sea bass.

516. I believe that until the "gill net" situation is resolved, our fishing along the coast will probably remain pretty much the same.

517. Not really, but my greatest concern after coastal fishing for 40 years is the use of gillnets!

518. As long as you allow the sea otter to run rampant, we will have lousy fishing, no shellfish, no pismo clams, etc. Abalone is a thing of the past in San Luis Obispo county. Artificial reefs work well in other areas.

519. I would be willing to spend extra enhancement money for halibut, but believe \$16 is excessive.

520. I don't think it's fair to charge people to enjoy fishing. It eliminates many poor people from a good and healthy recreation.

521. I enjoy fishing enough to not worry about the catch rate. If I'm not catching fish, then I am doing something wrong, not the fish.

522. I would be happy to pay for special permits for yellowtail, etc., but am concerned about the timeliness of these increases can be brought about. Will I live to see it?

523. I fish for shark at night. I am not really interested in other saltwater fish.

524. I would like to obtain a 50-state license or no fee for retired, over 55, for any U.S. vet, and no fee for disabled. Please respond.

525. I only fish off the piers.

526. I don't fish for any of these "special" fish.

527. I really don't fish, and it's not my sport. I went a couple of times with my boyfriend!

528. Yes, I don't fish that much. I primarily scuba dive.

529. Species given in questions we do not fish for yet.

530. I would agree to any reasonable price increases as long as the majority of the increase was to enhance fishing in my map area.

531. Most of my fishing activities are for scuba diving or free diving for abalone, scallops, crabs, lobsters, mostly crustaceans.

532. We do already pay enough taxes (enhancement)! I don't believe you even came close to real issues of saltwater fishing.

533. The type of fish I like to eat.

534. I'm concerned about commercial longlines and gillnets. How are you going to do what you say?

535. I don't want to pay a ton of more money to increase halibut, yellowtail, and other species stocks so that commercial fishermen can enjoy the results! Sportsmen pay for all the costs to improve habitat, populations, etc., and we get to receive a small percentage of the results, while commercial operators suck up all our work and money. That's big time B.S.!

536. Total price for the license.

537. Most of my fishing is done on charter boat. I fish for whatever bites. I don't eat fish, so I catch and release.

538. I would be willing to pay more for the fish I am after, not all the others. I personally would be willing to pay an extra \$30 for a California halibut sticker (if it would help the catch)!

539. With drift nets and set nets endemic along the coast, your catch rate estimates are pie in the sky. No money for the commercial fishermen.

540. My wife and I fish for relaxation and because we enjoy surf fishing. Our children rarely go with us anymore. As often as we go because we are getting older, the rise in cost would not be fair. Your questionnaire seems to be more directed toward the sportfisherman.

541. I am not a fisherman. I take the kid if he wants to go.

542. I am an Arizona resident--can't answer these.

543. I am a freshwater bass fisherman. I don't go to the ocean to fish. If I am there, I will fish, but it is not that important to me.
544. Yes, the prices seemed awful high.
545. Risk reward to enhance fishing is well worth it. Hope young people can enjoy!
546. Since we do not fish from a bank or pier, we do not see the need for extra money. We feel that the annual fee we pay (\$102) is more than adequate.
547. I don't really think I'll be doing that much saltwater fishing because I live so far away.
548. For the distance I have to travel and the time I spend fishing per year, a significant cost in each trip would make a difference to me.
549. I feel that the above mentioned will not do any good if Fish and Game doesn't get enough help to enforce the regulations.
550. I have only been saltwater fishing once. I would be willing to pay a few more dollars for the license if it will improve the fishing.
551. I don't live in California, so I don't know.
552. Live in Arizona. Don't want to pay a full year's increase for a day or so of fishing per year.
553. My saltwater trip was actually a vacation to my grandparents'. I don't get to southern California but once a year.
554. Increasing the rates wouldn't affect my fishing other than decreasing the trips I took. It's always beneficial to enhance the "fish grounds."
555. Gillnetting and longlining is a major problem for fish availability.
556. Commercial fishing (gill net) etc. would deplete any extra fish. I know of too many that are not ethical about their fishing practices, so why should I pay extra for improving their catches.

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