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## **RESULTS OF THE 2015 ECONOMIC SURVEY OF CENTRAL VALLEY ANGLERS**

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OF CENTRAL VALLEY ANGLERS**

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## **Executive Summary**

In 2015, we conducted a survey of adult California license holders who fish on the Sacramento River system to assess their interest in pursuing new salmon fishing opportunities above dams that could occur as a result of improvements in fish passage. About 76% of Sacramento River anglers – 34% comprising anglers who had fished for salmon in the past year and 42% who had not – indicated that they may be interested. These anglers tend to be younger and better educated than non-interested anglers. They also participate more in activities such as fish planting, visiting Central Valley dams and fish hatcheries, fishing tournaments and fishing clubs.

Whether angler interest in new salmon fishing opportunities above dams is actually realized depends on factors such as: (1) fishing and habitat conditions including water quality and flow, (2) regulations, (3) distance between angler's home and the fishing site, and (4) availability of amenities such as boat ramps (which are commonly used by salmon anglers but not common above dams). To the extent that a newly established salmon fishery attracts many new anglers, it could adversely affect the aesthetic conditions (scenic beauty, peace and quiet, lack of crowding) valued by anglers who currently fish above dams.

## **I. Introduction**

California's Central Valley includes two major river systems – the Sacramento and the San Joaquin. The two rivers drain into the Sacramento/San Joaquin Delta (the largest estuary on the Pacific Coast) and flow through San Francisco Bay to the Pacific Ocean. Fishing in the Central Valley occurs on multiple water bodies, including rivers/creeks, lakes/reservoirs, and Delta waterways. Central Valley fisheries are exclusively sport fisheries, with angler participation occurring in a variety of modes, including shore, private angler-owned boats, and chartered guide boats. Central Valley anglers target a variety of gamefish, including (among others) Chinook salmon, steelhead, resident trout, striped bass, largemouth/smallmouth bass, sturgeon and catfish. NOAA's National Marine Fisheries Service (NOAA Fisheries) has listed several wild Central Valley salmonid stocks under the Endangered Species Act (ESA) – including Sacramento River winter-run Chinook (endangered), Central Valley spring-run Chinook (threatened), and Central Valley steelhead (threatened) – and is responsible for the recovery of these stocks.

Salmon fishery management is coordinated by the Pacific Fishery Management Council and subject to requirements of the Magnuson-Stevens Fishery Conservation and Management Act (USDOC 2007). NOAA Fisheries has major responsibility for the non-tribal ocean commercial fishery, tribal managers manage tribal fisheries, and the Pacific coast states (including California) manage the recreational fisheries in their respective waters. Fishery managers also engage in other activities – e.g., habitat restoration, scientific data collection and research – to sustain salmon populations and ocean and freshwater fisheries and recover ESA-listed stocks.

The Sacramento River system is an important focus of NOAA Fisheries' efforts to improve habitat and fish passage (which is affected by fish ladders and dams) for ESA-listed salmonids. Although such efforts are expected to enhance salmonid recovery, their effects on recreational fisheries are not well understood. The purpose of this survey is to better understand potential effects of such actions and the circumstances under which they would likely encourage recreational fishing. To help address these questions, this survey:

- Provides baseline information on Sacramento River anglers – including the size of the angling population and their fishing behavior, demographics and expenditures. Sacramento River anglers also fish on other Central Valley water bodies (i.e., lakes/reservoirs, Delta waterways). To provide a comprehensive profile of these anglers, the survey covers the range of their fishing activities on all such water bodies.
- Assesses angler receptivity to fishing at potentially new salmon fishing locations above dams. Rather than focusing on any particular Central Valley location(s), the survey considers anglers' general attitudes regarding potential new salmon fishing opportunities and whether and how those attitudes correlate with existing fishing behavior and demographics. Also, although fishing conditions are known to be a major motivating factor for anglers, little is known about other factors (e.g., environmental conditions, recreational amenities) that may also affect their fishing decisions. An important aspect of this survey is to determine how all such factors affect anglers' receptivity to fishing in unaccustomed areas above dams.

## II. Survey Preparation and Sampling Protocols

The Central Valley Angler Survey was conducted in 2015 by CIC Research, a contractor with extensive experience in angler surveys. The target population for the survey consisted of anglers who fish on California's Sacramento River system. Of these individuals, those who were 18 years and older and participated in Sacramento River fishing at least once in the previous 12 months were eligible to participate in the survey. The survey consisted of two components: (1) a random telephone survey of licensed anglers, and (2) a follow-up mail survey.

The California Department of Fish and Wildlife (CDFW) administers the Central Valley Salmon and Steelhead Harvest Monitoring Project (CVSSHMP), an annual creel survey of anglers who fish on the Sacramento River system, including major tributaries such as the American, Feather and Yuba Rivers. The CVSSHMP allows CDFW to derive species-specific estimates of fishing effort (angler trips), numbers of fish kept and released, and catch per unit effort (numbers of fish kept and released per angler hour), as well as residential location of anglers (based on information on zip code of residence).

According to results of the 2011-12 CVSSHMP (the most recent data available at the time we were planning our survey), about 76% of fishing trips on the Sacramento River system was attributable to anglers residing in the following 14 counties: Amador, Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Shasta, Solano, Sutter, Tehama, Yolo and Yuba. The rivers covered by the creel survey fall largely within this 14-county area, suggesting the strong influence of residential proximity on fishery participation. California residents who lived outside the 14-county area and out-of-state residents accounted for 22% and 2%, respectively, of anglers encountered in the creel.

CDFW maintains an electronic fishing license database known as the Automated License Data System (ALDS). CDFW allowed our survey contractor, CIC Research, to draw a random sample of anglers who purchased their license in the 14-county Sacramento River area (Figure II-1) and recruit them for our survey. To safeguard angler privacy, the database of survey responses that CIC Research provided to NOAA Fisheries identified respondents using dummy ID's rather than personal identifiable information.

Sampling from the entire ALDS (which includes anglers who purchase licenses in all of California's 58 counties) to identify anglers who fished on the Sacramento River system would have required extensive and costly telephone screening, as only a small fraction of licensed anglers was expected to fish on the Sacramento River. This is particularly true given that California fishing licenses cover saltwater as well as freshwater fishing. We therefore decided that anglers in the ALDS who purchased their license in the 14-county Sacramento River area would serve as the sample frame for this survey. This frame enabled us to represent in our survey not only anglers residing in the 14-county area (who, according to the CVSSHMP, account for the large majority of trips on that river system) but also California and out-of-state anglers who purchased their license in that area even though they did not live there. Most license sales outside the 14-county area occur in counties that are adjacent to the Pacific Ocean or San Francisco Bay and/or are far from the Sacramento River (e.g., southern California). Anglers who purchase their license in these latter counties are much more likely to be saltwater anglers than Sacramento River anglers.



Figure II-1. 14-county area covered by the Sacramento River system (pink and green areas, including county boundaries), with Sacramento/San Joaquin River Delta outlined in green.



In addition to facilitating design of our sample frame, the CVSSHMP also provides aggregate estimates of fishing effort (number of angler days) on the Sacramento River system. We used CVSSHMP effort estimates for 2014-15 to expand trip-level results of our survey to the population. However effort is not comparable to the number of individual anglers as some anglers fish more than once during the year. Given that the CVSSHMP does not estimate the number of anglers who fish on the Sacramento River system (information that we needed to expand angler-level results from our survey to the population), the protocol for our telephone survey was designed to estimate this ourselves.

An important note: As indicated above, our sampling goal (as reflected in our use of the 14-county Sacramento River area as our sample frame) was to provide representative coverage of Sacramento River anglers. Thus questions in our survey regarding fishing on various Central valley waterbodies – including the San Joaquin River, lakes/reservoirs and Delta as well as the Sacramento River – were intended to provide complete coverage of Central Valley fishing activities pursued by *Sacramento River anglers* rather than provide representative coverage of all anglers who fish on each waterbody type. Also, while dams also exist on the San Joaquin River system, we did not attempt to representatively sample San Joaquin River anglers due to the very limited salmon fishery and associated difficulty of obtaining even a modest sample of salmon anglers on that river system.

## **II.A. Telephone Survey**

CIC Research used their Computer-Assisted Telephone Interview (CATI) software to contact a random sample of anglers from the ALDS who purchased their license in the 14-county Sacramento River area. All telephone calls were made from CIC's calling center in San Diego.

CIC interviewers asked those contacted: (1) if they were at least 18 years old, and (2) if they had fished on the Sacramento River system in the past 12 months. Anglers who indicated 'yes' to both (1) and (2) were asked two additional questions: (3) the number of days fished on the Sacramento River system in the past 12 months, and (4) whether they would be willing to complete a follow-up mail survey.

- Questions (1) and (2) were used to determine the angler's eligibility for the mail survey. These questions were also used to estimate the proportion of adult anglers in the sample frame who fished on the Sacramento River system. This proportion would allow us to estimate the population of Sacramento River anglers by multiplying the proportion by the total number of anglers in the frame.
- Question (3) provided us with baseline information on angler avidity. This data was used to evaluate the extent of non-response bias in the mail survey, i.e., whether more avid anglers would be more likely to return the mail survey than less avid anglers.
- Question (4) was used to recruit for the mail survey.

To increase telephone response rates, CIC Research made up to 4-6 attempts to reach license holders randomly selected from the sample frame, varying the calls by time of day and day of the week. Anglers who did not answer their phone but later called the contractor's number that appeared on caller ID heard a recorded message indicating the purpose of the call. By making them aware that the call was not for marketing purposes, CIC hoped to make anglers more receptive to picking up the phone the next time

they received a call from that number. Telephone screeners employed by CIC Research had an average 2-5 years of experience with angler surveys, so were well versed in engaging anglers and soliciting their cooperation.

Dialing results, as summarized in Table II.A-1, indicate that 80,442 households were called. Total dialing attempts exceeded 123,000, with each household called an average of 1.53 times. The high percentage of households who did not pick up the phone (73%) was not surprising, given the prevalence of caller ID and call screening. Of the 21,929 households that were successfully reached, 889 (4%) were unable to participate in the telephone survey because the angler was not home and 6,888 (31%) refused to participate. Of the 14,152 households where callers successfully reached an angler who was willing to be interviewed, 8,134 (57%) were ineligible for the follow-up mail survey (because they were less than 18 years old and/or had not fished on the Sacramento River system in the past 12 months) and 6,017 (43%) were eligible.

Table II.A-1. Telephone survey dialing results

<i>Disposition of attempted household contacts</i>	<i>Number</i>	<i>Proportion</i>
Household never reached	58,514	0.727
Household reached but angler not home	889	0.011
Angler refused to participate in interview	6,888	0.086
Angler interviewed but ineligible for mail survey	8,134	0.101
Angler successfully recruited for mail survey	6,017	0.075
Total	80,442	1.000

## II.B. Mail Survey

NOAA Fisheries economists with survey expertise worked extensively on the format and wording of the mail survey. Biologists and managers from CDFW and NOAA Fisheries with expertise on Central Valley fisheries were also consulted. A GIS analyst produced multiple iterations of the map to improve clarity. A self-addressed, stamped envelope accompanied each mail questionnaire to encourage response.

As part of survey preparation, four focus groups were convened in Sacramento for the purpose of improving the mail questionnaire. Participants in each focus group consisted of a small number of anglers (<10 per group) randomly drawn from our sample frame who had fished on the Sacramento River system in the past 12 months. Efforts were made to ensure that each group included a mix of salmon and non-salmon anglers, less and more experienced anglers, and males and females. At each meeting, each angler individually filled out each section of a draft mail questionnaire and engaged in a section-by-section discussion led by a moderator regarding the content, design, format and wording of the questionnaire, including the map. The material covered in each focus group varied somewhat, depending on changes to the questionnaire made as the result of feedback received from the previous group. Focus group input led to notable improvements in the wording and format of the mail survey and was particularly valuable in the following areas:

- A number of anglers noted that they fished on Central Valley lakes/reservoirs and Delta waterways as well as rivers. To more fully capture the behavior of salmon anglers, we expanded

the original scope of the questionnaire to include these other waterbodies. We also spent time in several subsequent focus groups eliciting angler perceptions of what constituted the ‘Delta’. To facilitate common understanding, we color coded the map in the final version of the survey to delineate the Delta (Figure II-1 and Appendix C).

- Given the 12-month recall and the sensitivity of some questions, some anglers indicated that it would be much easier to answer numeric questions (e.g., age, days fished, years of fishing experience, income) in interval categories rather than a single number. After weighing the loss of precision versus the higher response rates we would likely get if we used numeric intervals, we decided to convert almost all numeric questions to intervals. One exception were the expenditure questions, which were not converted to interval format due to our interest in obtaining numeric estimates of aggregate expenditures.
- Anglers provided valuable information regarding factors relevant to their choice of fishing location and activities in addition to fishing that they pursue on their fishing trips. Their advice made those questions much more comprehensive than our original version.

Implementation of the mail survey was based on methods recommended by Dillman *et al.* (2009)<sup>1</sup>. The protocol involved the following steps:

- Anglers successfully recruited in the telephone survey received a letter introducing the mail survey, describing its purpose, and urging anglers to participate; the letter also included an 800 number and an email address for anglers who had additional questions. The letter was accompanied by the questionnaire with a printed ID barcode and a business reply envelope. CIC Research used the barcode to track survey returns.
- About 10 days after the first mailing, a reminder postcard was sent, thanking anglers who had returned the questionnaire and asking those who had not yet completed the survey to do so.
- About 10 days after the postcard mailing, a second letter was sent – accompanied by another copy of the mail questionnaire and business reply envelope – thanking those who had returned the first questionnaire and again inviting non-respondents to participate in the survey.

The script used in the telephone recruitment screener is provided in Appendix A. Appendix B includes copies of the initial letter, reminder postcard and second letter, and Appendix C includes a copy of the mail questionnaire. On the last page of the survey, anglers were invited to provide comments regarding the survey and their Central Valley fishing experiences and how those experiences could be improved. Over 30% of respondents provided comments, which are organized by topic in Appendix D. Appendix D provides insights into angler preferences and behavior that are not necessarily covered elsewhere in the survey.

As indicated above, our sample was drawn from anglers who purchased their license in the 14-county Sacramento River area; this included anglers who lived in that area as well as those living elsewhere in California and out of state. Table II.B-1 categorizes the 6,017 telephone respondents who agreed to participate in the mail survey and the number and percent who actually returned the survey by area of residence. The overall survey response rate was 34%, and was highest for anglers living in the 14-county Sacramento River area (35%) and lowest for those living elsewhere in California (30%). After the mail surveys were returned, 360 were excluded from the final dataset. These included questionnaires returned blank, questionnaires returned due to an invalid address, questionnaires that included responses indicating that the angler had not fished on the Sacramento River system, and questionnaires deemed too

internally inconsistent to be useful. Removing these questionnaires from the sample resulted in an adjusted response rate of 36%. All response rates were higher than the projected response rate of 25%, which is fairly typical for mail surveys of this type. Due to our random sampling protocol, we were unable to honor requests from some anglers to allow some of their personal acquaintances to participate in the mail survey.

Table II.B-1. Mail survey response rates

<i>Area of residence</i>	<i>Number of anglers who agreed to participate</i>	<i>Number (percent) of anglers who returned survey</i>	<i>Adjusted response rate</i>
14-county <sup>1</sup>	4,840	1,698 (35%)	37%
Other CA <sup>2</sup>	862	255 (30%)	32%
Out-of-state <sup>3</sup>	315	100 (32%)	36%
Total	6,017	2,053 (34%)	36%

<sup>1</sup> Anglers who lived in and purchased their license in the following 14-county area: Amador, Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Shasta Solano, Sutter, Tehama, Yolo and Yuba

<sup>2</sup> California residents who lived outside the 14-county area but purchased their license in the 14-county area

<sup>3</sup> Out-of-state anglers who purchased their license in the 14-county area

### III. Telephone Survey Results

As indicated in Section II.A, the telephone survey included a question regarding the number of days fished on the Sacramento River system in the past 12 months. The reason for this question was to evaluate the extent of non-response bias in the mail survey, as measured by differences in avidity between telephone respondents who did and did not participate in the mail survey. The comparison in Table III.A-1 indicates that anglers who fished 3-75 days in the past year were somewhat over-represented in the mail survey, and anglers who fished 1-2 days and more than 75 days were under-represented (by six percentage points and one percentage point respectively). Results of a  $\chi^2$  test indicate that the difference between the two distributions is statistically significant, although the mode and median of the distributions are the same. Thus to the extent that demographic and other angler characteristics are correlated with fishing avidity, the survey results may be somewhat more representative of anglers in the middle of the avidity distribution and less representative of those in the tails.

Table III.A-1. Distribution of number of days fished on the Sacramento River system in the past 12 months, shown separately for telephone survey respondents who did not and did respond to the mail survey

<i># days fished</i>	<i>No mail response</i>	<i>Mail response</i>	<i>Total</i>
1-2	0.272	0.210	0.251
3-6	0.277 <sup>1,2</sup>	0.286 <sup>1,2</sup>	0.280 <sup>1,2</sup>
7-12	0.171	0.200	0.181
13-24	0.126	0.133	0.128
25-50	0.092	0.119	0.101
51-75	0.024	0.026	0.025
76-100	0.017	0.011	0.015
101-200	0.015	0.012	0.014
>200	0.006	0.004	0.005
Total	1.000	1.000	1.000
n	3,964	2,052	6,016

$\chi^2=43.403$ , degrees of freedom (df)=8, asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Another objective of the telephone survey was to estimate the total number of anglers who fished on the Sacramento River system in the previous 12 months. Table III.A-2 shows how we derived our estimate of 94,065 anglers.

Table III.A-2. Estimation of population of Sacramento River system anglers

<i>Description</i>	<i>Population</i>
(1) Number of anglers who purchased fishing license in 14-county area in 2014 <sup>1</sup>	221,329
(2) Proportion of anglers who purchased license in 14-county area who had fished on the Sacramento River system in the past 12 months <sup>2</sup>	0.425
(3) # of anglers who fished on Sacramento River system in past 12 months <sup>3</sup>	94,065

<sup>1</sup> Source: CDFW Automated License Data System

<sup>2</sup> Based on results of telephone survey indicating that 6,017 (42.5%) of the 14,152 verifiable anglers reached by telephone interviewers (see Table III.A-1) had fished on the Sacramento River system in the past 12 months

<sup>3</sup> (1)\*(2)

## IV. Mail Survey Results

### IV.A. Approach to Analysis

Some of the mail survey questions required numeric responses (i.e., trip expenses, annual fishing expenses). However, most questions required categorical responses that can be characterized as:

- *nominal* if they had no intrinsic ordering (e.g., fishing mode, gender, race/ethnicity)
- *ordinal* if they were coded to reflect the ordering of *non-numeric* data from low to high (e.g., education – expressed as type of degree rather than number of years of schooling)

- *interval* if they were coded as progressively higher *numeric* intervals (e.g., days fished, years of fishing experience, age, income).

Responses to numeric questions are characterized in this report using statistics such as the mean, median and standard deviation. Responses to categorical questions are characterized using frequency distributions and measures of central tendency appropriate to the type of categorical variable – i.e., mode for nominal variables, mode and median for ordinal and interval variables. We did not provide estimates of the mean interval for interval variables, as the mean would be sensitive to how the responses were coded (numeric size of intervals being unequal across response categories).

The remainder of Section IV summarizes mail survey results. Subsections IV.B.1, IV.C.1, IV.D.1 and IV.E.1 focus on *angler* characteristics (demographics, fishing behavior, etc.), while Subsections IV.B.2, IV.C.2, IV.D.2 and IV.E.2 focus on *trip* characteristics (fishing mode, trip duration, reasons for location choice, etc.). Each subsection provides comparisons that highlight similarities and differences between different groupings of anglers and trips:

- Section IV.B begins with a summary of angler attitudes toward new salmon fishing opportunities above dams – (a) may be interested, (b) probably would not be interested, (c) do not know if would be interested – and the factors affecting their attitudes. Section IV.B.1 describes the extent to which angler demographics and fishing behavior vary among anglers with differing attitudes toward new opportunities. Given that these new opportunities would occur *above dams*, Section IV.B.2 compares characteristics of river fishing trips that occur below versus above dams.
- Section IV.C compares non-salmon and salmon anglers in terms of their attitudes toward new fishing opportunities above dams. Given that the new opportunities would pertain to *salmon only*, Section IV.C.1 describes the extent to which angler demographics and fishing behavior vary between salmon and non-salmon anglers (i.e., anglers who did and did not target salmon in the past 12 months). Section IV.C.2 compares characteristics of river fishing trips based on whether the target species was salmon versus non-salmon species.
- Section IV.D compares anglers who fish on different waterbody combinations in the Central Valley – (a) rivers only, (b) rivers and lakes/reservoirs, (c) rivers and Delta waterways, (d) rivers, lakes/reservoirs and Delta waterways – in terms of their attitudes toward new fishing opportunities above dams. Section IV.D.1 describes how angler demographics and fishing behavior vary, depending on the waterbody type(s) fished by the angler in the past year. Section IV.D.2 compares characteristics of fishing trips by waterbody type: (a) rivers, (b) lakes/reservoirs, (c) Delta waterways.
- Unlike Section IV.C (which focuses on *all* salmon and non-salmon anglers), Section IV.E focuses on the *subset* of salmon and non-salmon anglers who may be interested in new salmon fishing opportunities above dams. Section IV.E.1 describes how angler demographics and fishing behavior vary between non-salmon and salmon anglers who may be interested in these new opportunities. Section IV.E.2 describes characteristics of (a) river trips below dams that target salmon, (b) all river trips below dams, and (c) all river trips above dams – (b) and (c) being inclusive of all target species. Salmon trips are indicative of what salmon anglers currently experience. Because a substantial percent of non-salmon as well as salmon anglers may be interested in salmon fishing opportunities above dams, trips below dams are used as an indicator of what anglers in general (non-salmon as well as salmon anglers) currently experience in that area. Comparisons with trips above dams are helpful for contrasting what areas below and above

dams offer in terms of amenities, fishing conditions, and landscape characteristics.

Statistical tests were used to evaluate similarities and differences among different groups of anglers and trips, as defined in the manner described above. The tables in Sections IV.B, IV.C, IV.D and IV.E reflect the outcome of such tests as follows:

- For variables involving *numeric* responses, mean responses across groups were compared using a t-test if the number of groups was two (equal variances not assumed), and one-way analysis of variance (ANOVA) if the number of groups was greater than two. If the associated two-tailed significance level (p-value) was less than the critical level  $\alpha=0.05$ , the null hypothesis ( $H_0$ ) of no difference in means across groups was rejected. In such cases, the *mean value of each group* is displayed in the table in bold font. If the p-value was greater than 0.05,  $H_0$  could not be rejected and the *overall mean across all groups* is displayed in bold font.
- For variables involving *categorical* responses, a  $\chi^2$  test was used to compare the relative distribution of responses across groups. If the associated two-tailed asymptotic significance was less than  $\alpha=0.05$ , the null hypothesis  $H_0$  of no difference in distributions across groups was rejected and the *distribution of each individual group* is displayed in bold font. If the p-value was greater than 0.05,  $H_0$  could not be rejected and the *overall distribution across all groups* is displayed in bold font.

#### **IV.B. Angler Receptivity to New Salmon Fishing Opportunities Above Dams and Characteristics of Trips Below and Above Dams**

A major focus of the mail survey was to assess angler receptivity to new salmon fishing opportunities above dams and the reasons why anglers were receptive or not. A large majority of anglers (76%) indicated that they may be interested, 15% indicated that they would probably not be interested, and 10% indicated that they did not know if they would be interested (Table IV.B-1). Of the 15% who would probably not be interested, 51% were satisfied with their current location and 46% were not interested in salmon fishing.

Anglers who may be interested in new opportunities above dams indicated that their interest was largely contingent on fishing conditions (noted by 82% of potentially interested anglers), proximity to home (68%), fishing regulations (47%), and facilities at the site (35%) (Table IV.B-1). Some respondents provided handwritten comments describing what specific fishing conditions, regulations and facilities were important to them:

- Desirable fishing conditions noted by several anglers include water conditions (level, flow, temperature), fishing/stocking reports, and bigger fish.
- Regulatory preferences noted by several anglers include catch-and-release, bag limit instead of catch-and-release, longer season, no jeopardy to endangered salmon stocks, and code enforcement.
- Of the 507 anglers who indicated the importance of site facilities, 169 (33%) mentioned boat/launch ramp, 67 (13%) mentioned campgrounds, and 43 (8%) mentioned toilets.

Table IV.B-1. Number and proportion of respondents who may be interested, would probably not be interested and do not know if they would be interested in new salmon fishing opportunities above dams, and factors affecting responses in each attitude category

<i>Attitude</i>	<i>n (proportion)</i>	<i>Factor (n, proportion)<sup>1</sup></i>
May be interested	1470 (0.755)	Fishing conditions (1211, 0.824) Proximity to home (1000, 0.680) Fishing regulations (695, 0.473) Site facilities (507, 0.345) Site characteristics (94, 0.071) Enjoyment (104, 0.064) Policy comments (69, 0.047)
Would probably not be interested	292 (0.150)	Satisfied with current location (148, 0.507) Not interested in salmon (133, 0.455) Site characteristics (11, 0.038) Not interested in river fishing (11, 0.038) Not interested in fishing in general (7, 0.024) Policy comments (13, 0.045)
Do not know if would be interested	184 (0.095)	
Total	1946 (1.000)	

<sup>1</sup> Number (n) and proportion of anglers in each attitude category who cited each factor. Sum of proportions in each attitude category is greater than 1.0 as some anglers cited more than one factor.

#### **IV.B.1. Characteristics of Anglers Based on Receptivity to New Salmon Fishing Opportunities Above Dams**

Anglers with differing attitudes toward new salmon fishing opportunities above dams were compared in terms of demographic characteristics. Results indicate that the three attitude groups (may be interested, probably would not be interested, did not know if would be interested) are similar in a number of respects:

- The gender breakdown is about 90% male, 10% female (Table IV.B.1-2)
- About 78% are Non-Hispanic White, 8% are Hispanic (all races), 5% are Asian, and 2% are African-American (Table IV.B.1-3)
- Household composition is 54% adults only, 27% adults with children, 17% living alone, 2% single parent (Table IV.B.1-4)
- Median annual household income is \$50K-100K (Table IV.B.1-6).

The three groups also differ in several respects:

- Median age of anglers who may be interested or did not know if they would be interested in new salmon fishing opportunities is 45-54 years, while anglers who probably would not be interested tend to be older (median age 55-64 years, Table IV.B.1-1).
- Median education is the same for all three attitude groups (some college), but the percent with at least a 4-year college degree is 38% for those who may be interested, 28% for those who would probably not be interested, and 24% for those who did not know if they would be interested (Table IV.B.1-5).



Table IV.B.1-1. Age distribution, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i>Age (years)</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
18 - 24	<b>0.051</b>	<b>0.047</b>	<b>0.063</b>	0.052
25 - 34	<b>0.147</b>	<b>0.087</b>	<b>0.167</b>	0.140
35 - 44	<b>0.149</b>	<b>0.095</b>	<b>0.126</b>	0.139
45 - 54	<b>0.174<sup>2</sup></b>	<b>0.164</b>	<b>0.184<sup>2</sup></b>	0.173 <sup>2</sup>
55 - 64	<b>0.260<sup>1</sup></b>	<b>0.284<sup>2</sup></b>	<b>0.195</b>	0.257 <sup>1</sup>
>64	<b>0.219</b>	<b>0.324<sup>1</sup></b>	<b>0.264<sup>1</sup></b>	0.238
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1431	275	174	1880

$\chi^2=27.400$ ,  $df=10$ , asymptotic significance (2-tailed)=0.002

<sup>1</sup> mode, <sup>2</sup> median

Table IV.B.1-2. Gender distribution, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i>Gender</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Male	0.905 <sup>1</sup>	0.905 <sup>1</sup>	0.851 <sup>1</sup>	<b>0.900<sup>1</sup></b>
Female	0.095	0.095	0.149	<b>0.100</b>
Total	1.000	1.000	1.000	<b>1.000</b>
n	1417	273	175	1865

$\chi^2=4.995$ ,  $df=2$ , asymptotic significance (2-tailed)=0.082

<sup>1</sup> mode

Table IV.B.1-3. Race/Hispanic origin distribution, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i>Race/Hispanic origin</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Hispanic, all races	0.084	0.045	0.099	<b>0.080</b>
Non-Hispanic:				
White	0.780 <sup>1</sup>	0.828 <sup>1</sup>	0.733 <sup>1</sup>	<b>0.783<sup>1</sup></b>
Asian	0.047	0.056	0.076	<b>0.051</b>
Black/African Amer	0.022	0.019	0.023	<b>0.021</b>
Native American	0.010	0.015	0.006	<b>0.010</b>
Polynesian	0.010	0.000	0.006	<b>0.008</b>
Other	0.047	0.037	0.058	<b>0.047</b>
Total	1.000	1.000	1.000	<b>1.000</b>
n	1382	267	172	1821

<sup>1</sup> mode

$\chi^2=13.924$ ,  $df=12$ , asymptotic significance (2-tailed)=0.306

Table IV.B.1-4. Distribution by household type, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i>Household type</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Live alone	0.159	0.217	0.194	<b>0.171</b>
Adults only	0.543 <sup>1</sup>	0.551 <sup>1</sup>	0.500 <sup>1</sup>	<b>0.540<sup>1</sup></b>
Single parent	0.028	0.015	0.012	<b>0.024</b>
Adults w/children	0.271	0.217	0.294	<b>0.265</b>
Total	1.000	1.000	1.000	<b>1.000</b>
n	1369	267	170	1806

$\chi^2=11.452$ , df=6, asymptotic significance (2-tailed)=0.075

<sup>1</sup> mode

Table IV.B.1-5. Education distribution, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i>Education</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Some high school	<b>0.029</b>	<b>0.055</b>	<b>0.087</b>	0.038
High school graduate	<b>0.164</b>	<b>0.219</b>	<b>0.225</b>	0.178
Tech/professional school	<b>0.070</b>	<b>0.058</b>	<b>0.098</b>	0.071
Some college	<b>0.353<sup>1,2</sup></b>	<b>0.391<sup>1,2</sup></b>	<b>0.347<sup>1,2</sup></b>	0.358 <sup>1,2</sup>
4-year college graduate	<b>0.247</b>	<b>0.164</b>	<b>0.162</b>	0.227
Postgraduate degree	<b>0.136</b>	<b>0.113</b>	<b>0.081</b>	0.128
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1424	274	173	1871

$\chi^2=39.804$ , df=10, asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Table IV.B.1-6. Annual household income distribution, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i>Annual household income</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Less than \$10K	0.025	0.038	0.037	<b>0.028</b>
\$10-25K	0.088	0.132	0.092	<b>0.095</b>
\$25-50K	0.207	0.196	0.190	<b>0.204</b>
\$50-100K	0.364 <sup>1,2</sup>	0.366 <sup>1,2</sup>	0.393 <sup>1,2</sup>	<b>0.367<sup>1,2</sup></b>
\$100-250K	0.276	0.223	0.258	<b>0.266</b>
>\$250K	0.041	0.045	0.031	<b>0.040</b>
Total	1.000	1.000	1.000	<b>1.000</b>
n	1377	265	163	1805

$\chi^2=10.083$ , df=10, asymptotic significance (2-tailed)=0.433

<sup>1</sup> mode, <sup>2</sup> median

Anglers with different attitudes about salmon fishing opportunities above dams were also compared in terms of their fishing behavior and preferences. The three groups are similar in the following respects:

- Median and mode of number of days fished in the past 12 months on the Sacramento River system is 3-6 days (Table IV.B.1-7).
- Average annual fishing expenditures (excluding trip-specific expenditures) are \$1,394.00 (Table IV.B.1-9).

The three groups also differ in several respects:

- Boat ownership is similar for anglers who may be interested and probably would not be interested in new fishing opportunities (37% and 34% respectively) but lower for those who did not know if they would be interested (27%) (Table IV.B.1-8).
- Central Valley fishing experience is 21-30 years for anglers who may be interested or did not know if they would be interested, and 31-40 years for anglers who would probably not be interested (Table IV.B.1-10). Not surprisingly, experience follows a similar pattern as age (Table IV.B.1-1), as older anglers are also likely to have more years of fishing experience.

Table IV.B.1-7. Distribution of number of days fished on Sacramento River system in past 12 months, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i># days fished</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
1-2	0.197	0.229	0.266 <sup>1</sup>	<b>0.208</b>
3-6	0.291 <sup>1</sup>	0.305 <sup>1,2</sup>	0.261 <sup>2</sup>	<b>0.290<sup>1,2</sup></b>
7-12	0.197 <sup>2</sup>	0.199	0.223	<b>0.199</b>
13-24	0.135	0.123	0.120	<b>0.132</b>
25-50	0.127	0.092	0.098	<b>0.119</b>
51-75	0.027	0.024	0.011	<b>0.025</b>
76-100	0.010	0.007	0.016	<b>0.010</b>
>100	0.016	0.021	0.005	<b>0.015</b>
Total	1.000	1.000	1.000	<b>1.000</b>
n	1469	292	184	1945

$\chi^2=14.034$ ,  $df=14$ , asymptotic significance (2-tailed)=0.447

<sup>1</sup> mode, <sup>2</sup> median

Table IV.B.1-8. Extent of boat ownership, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams<sup>1</sup>

<i>Boat ownership</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
No	<b>0.631<sup>2</sup></b>	<b>0.665<sup>2</sup></b>	<b>0.729<sup>2</sup></b>	0.644 <sup>2</sup>
Yes	<b>0.369</b>	<b>0.335</b>	<b>0.271</b>	0.356
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1332	245	144	1721

$\chi^2=5.968$ ,  $df=2$ , asymptotic significance (2-tailed)=0.051

<sup>1</sup> The mail survey did not include a question on boat ownership. As a proxy, anglers who spent any money on boat maintenance, moorage, storage, registration, loan payments, insurance or accessories (e.g., trailer, trailer/hitch) in the past year are presumed to be boat owners.

<sup>2</sup> mode

Table IV.B.1-9. Annual fishing expenditures (excluding trip-specific expenditures), shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams<sup>1,2</sup>

	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Mean	\$1381.97	\$1597.94	\$1164.08	<b>\$1394.00</b>
Standard deviation	3557.77	8721.38	3029.83	4604.79
Median	\$420.00	\$345.00	\$248.00	\$380.00
n	1321	238	142	1701

ANOVA  $F(2, 1698)=0.415$ ,  $p=0.661$

<sup>1</sup> Includes expenditures on

- (a) fishing equipment (rods, reels, lines, flies, nets, tackle box, etc.)
- (b) fishing licenses and/or report cards
- (c) other fishing costs (fishing magazine subscriptions, fishing club membership, etc.)
- (d) clothing and equipment bought specifically for fishing (foul weather gear, waders, boots, camping gear, etc.)
- (e) boat related expenses – only if boat was bought mainly for fishing (boat maintenance, mortgage, storage, registration, loan payments, insurance, accessories such as motor, trailer/hitch)
- (f) truck, camper, trailer, van or motor home expenses – only if vehicle was bought mainly for fishing (maintenance, insurance, loan payments, insurance, etc.)

<sup>2</sup> Categories accounting for the majority of expenditures include fishing equipment (23% of total expenditures for anglers who may be interested, 17% for anglers who are probably not interested, 19% for anglers who do not know if they would be interested), licenses (5%, 5%, 5% respectively), clothing/equipment (7%, 5%, 4% respectively), boat-related expenses (28%, 41%, 50% respectively), vehicle-related expenses (34%, 32%, 22% respectively).

Table IV.B.1-10. Distribution of Central Valley fishing experience, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams

<i># years experience</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
0-5	<b>0.150</b>	<b>0.158</b>	<b>0.210<sup>1</sup></b>	0.157
6-10	<b>0.087</b>	<b>0.056</b>	<b>0.072</b>	0.081
11-15	<b>0.072</b>	<b>0.045</b>	<b>0.060</b>	0.067
16-20	<b>0.098</b>	<b>0.064</b>	<b>0.084</b>	0.091
21-30	<b>0.166<sup>1,2</sup></b>	<b>0.154</b>	<b>0.090<sup>2</sup></b>	0.157 <sup>2</sup>
31-40	<b>0.139</b>	<b>0.135<sup>2</sup></b>	<b>0.138</b>	0.138
41-50	<b>0.159</b>	<b>0.195<sup>1</sup></b>	<b>0.168</b>	0.165 <sup>1</sup>
>50	<b>0.130</b>	<b>0.192</b>	<b>0.180</b>	0.143
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1394	266	167	1827

$\chi^2=26.457$ ,  $df=14$ , asymptotic significance (2-tailed)=0.023

<sup>1</sup> mode, <sup>2</sup> median

Respondents were asked if they had participated in certain Central Valley activities in the past three years (Table IV.B.1-11). Anglers in the three attitude groups showed similar participation in some activities – e.g., visiting Central Valley rivers to watch fish spawn (10%) – but differed in their participation in most major activities. For instance, the percentage of anglers in each attitude group who participated in the following activities is as follows:

- fish planting (27% of those who may be interested, 20% of those who probably would not be interested, 13% of those who did not know if they would be interested)
- visited Central Valley dam (23%, 12%, 12% respectively)
- participated in a Central Valley fishing tournament (18%, 8%, 15% respectively)
- belonged to fishing club/organization (11%, 7%, 6% respectively)
- visited Central Valley fish hatchery (10%, 8%, 2% respectively).

Table IV.B.1-11. Proportion of anglers who participated in selected Central Valley (CV) activities in past three years, shown separately for anglers who may be, probably would not be, and did not know if they would be interested in new salmon fishing opportunities above dams<sup>1</sup>

<i>Central Valley activity</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Fish planting (Project Kokanee, etc.)	<b>0.269</b>	<b>0.202</b>	<b>0.130</b>	0.246	20.615 (0.000)
Visited CV dam	<b>0.232</b>	<b>0.120</b>	<b>0.120</b>	0.205	27.835 (0.000)
Participated in CV fishing tournament	<b>0.178</b>	<b>0.082</b>	<b>0.147</b>	0.161	16.947 (0.000)
Visited CV river to watch fish spawn	0.101	0.092	0.065	<b>0.097</b>	2.515 (0.284)
Belonged to fishing club/organization	<b>0.105</b>	<b>0.065</b>	<b>0.060</b>	0.095	7.353 (0.025)
Visited CV fish hatchery	<b>0.098</b>	<b>0.082</b>	<b>0.022</b>	0.088	11.954 (0.003)
Participated in CV fishing derby	0.061	0.062	0.054	<b>0.060</b>	0.125 (0.929)
Participated in fishing seminar	0.048	0.068	0.038	<b>0.050</b>	2.722 (0.256)
Attended fish festival	0.048	0.045	0.033	<b>0.046</b>	0.856 (0.652)
Participated in Delta clean-up	0.032	0.014	0.011	<b>0.027</b>	5.125 (0.077)
Helped teach the public to fish (Fishing in the City, etc.)	0.014	0.017	0.000	<b>0.013</b>	2.882 (0.237)
Participated in CV lake clean-up	0.011	0.017	0.011	<b>0.012</b>	0.828 (0.661)
Participated in CV river clean-up	<b>0.009</b>	<b>0.024</b>	<b>0.000</b>	0.010	7.592 (0.022)
Other	0.022	0.017	0.011	<b>0.020</b>	1.138 (0.566)

<sup>1</sup> Sum of each column 2-5 exceeds 1.0 as some anglers selected more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 2 df) in parentheses pertains to contingency table with columns consisting of attitude toward new salmon fishing opportunities above dams and rows pertaining to whether or not the angler engaged in the particular activity.

#### IV.B.2. Characteristics of River Fishing Trips Below and Above Dams

In considering the possibility of new salmon fishing opportunities above dams, it is instructive to consider characteristics of trips currently made on rivers below and above dams. The results of statistical tests indicate that trips in these two areas differ in every respect considered.

- The percentage of trips made from shore, boat (private boat, hired guide), and other modes (including a combination of shore and boat modes) is 41%, 47% and 12% respectively for trips below dams and 81%, 7% and 12% respectively for trips above dams (Table IV.B.2-1).
- The percentage of trips involving adults only, adults with children and anglers fishing alone is 67%, 16% and 17% respectively for trips below dams, and 58%, 26% and 16% respectively for trips above dams (Table IV.B.2-2).

- About 21% of trips below dams and 52% of trips above dams involve overnight stays away from home (Table IV.B.2-3).
- Per capita expenditures are lower for trips below (\$100.21) than above (\$158.84) dams (Table IV.B.2-4).

Table IV.B.2-1. Distribution of most recent river fishing trip by mode, shown separately for trips made below and above dams

<i>Fishing mode</i>	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>
Shore	<b>0.410</b>	<b>0.812<sup>1</sup></b>	0.456
Private boat	<b>0.412<sup>1</sup></b>	<b>0.053</b>	0.370
Hired guide	<b>0.062</b>	<b>0.015</b>	0.056
Shore/private boat	<b>0.086</b>	<b>0.068</b>	0.084
All else	<b>0.030</b>	<b>0.053</b>	0.033
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1020	133	1153

$\chi^2=89.509$ ,  $df=4$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.B.2-2. Distribution of most recent river trip by type of fishing party, shown separately for trips made below and above dams

<i>Fishing party</i>	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>
Alone	<b>0.173</b>	<b>0.160</b>	0.172
Adults only	<b>0.671<sup>1</sup></b>	<b>0.576<sup>1</sup></b>	0.660
Adults w/children	<b>0.155</b>	<b>0.264</b>	0.168
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1020	133	1153

$\chi^2=10.741$ ,  $df=2$ , asymptotic significance (2-tailed)=0.004

<sup>1</sup> mode

Table IV.B.2-3. Distribution of most recent river fishing trip by duration, shown separately for trips made below and above dams

<i>Trip duration</i>	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>
Overnight	<b>0.211</b>	<b>0.524<sup>1</sup></b>	0.249
Day	<b>0.789<sup>1</sup></b>	<b>0.476</b>	0.751
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1070	147	1217

$\chi^2=67.541$ ,  $df=1$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.B.2-4. Per capita expenditures on most recent river fishing trip, shown separately for trips made below and above dams<sup>1,2</sup>

	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>
Mean	<b>\$100.21</b>	<b>\$158.84</b>	\$107.67
Standard deviation	186.00	247.43	195.71
Median	\$38.33	\$55.00	\$40.00
n	775	113	888

t-value=-2.421, df=131, p-value (2-tailed)=0.017

<sup>1</sup> Includes expenditures on

- (a) gas for vehicles, bridge tolls, etc.
- (b) entry/day use/parking fees, etc.
- (c) derby/tournament fees
- (d) tackle, gear, bait, lures, etc. – if bought specifically for this trip
- (e) guide fees – if hired a guide
- (f) rental boat fees – if rented a boat
- (g) private boat fuel, launch fees, etc. – if fished from private boat
- (h) food and beverage from grocery/convenience stores
- (i) food and beverage from delis/fast food/restaurants
- (j) clothing, toiletries, camping supplies, etc. – if bought specifically for this trip
- (k) non-fishing recreation (horseback riding, hunting, etc.) – if engaged in other types of recreation on this trip
- (l) lodging – if spent any nights away from home on this trip

<sup>2</sup> Categories accounting for the majority of expenditures include gas (22% of total expenditures on trips below dams and 22% on trips above dams), tackle/gear (14% and 9% respectively), guide fees (21% and 7% respectively), private boat costs (6% and 0% respectively), groceries (11% and 15% respectively), food/beverage services (6% and 11% respectively), lodging (10% and 25% respectively).

Anglers were asked to identify factors that affected their location choice on their most recent fishing trip (Table IV.B.2-5). The factors selected reflect not only angler preferences but also what each location (below/above dams) has to offer in terms of amenities and landscape characteristics.

- Location choice factors that affect trips below dams *more* than trips above dams include: proximity to home (63% below dams versus 48% above dams), type of species (59% versus 47%), boat ramp (31% versus 2%), easy boat access to water (29% versus 6%), good parking (25% versus 16%), local fishing reports (22% versus 10%), variety of species (18% versus 11%).
- Factors that affect trips below dams *less* than trips above dams include: past use and familiarity with site (38% below dams versus 51% above dams), peace and quiet (35% versus 61%), not too crowded (33% versus 54%), scenic beauty (28% versus 70%), clean water (not contaminated) (21% versus 45%), overnight accommodations (6% versus 25%).
- Factors that affect trips below and above dams *similarly* include: good fishing conditions (lake level, river flow, water temperature, water clarity, etc.) (34%), easy shore access to water (33%), safe location for people/vehicles/belongings (20%).



Table IV.B.2-5. Proportion of river trips influenced by each location factor, shown separately for trips made below and above dams<sup>1</sup>

<i>Location factor</i>	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Not far from home	<b>0.629</b>	<b>0.483</b>	0.610	8.742 (0.003)
Type of species available at this location	<b>0.590</b>	<b>0.469</b>	0.575	8.340 (0.004)
Past use and familiarity with site	<b>0.376</b>	<b>0.510</b>	0.394	8.753 (0.003)
Peace & quiet	<b>0.351</b>	<b>0.605</b>	0.384	36.605 (0.000)
Not too crowded	<b>0.326</b>	<b>0.544</b>	0.355	27.798 (0.000)
Good fishing conditions (lake level, river flow, water temperature, water clarity, etc.)	0.336	0.395	<b>0.344</b>	1.830 (0.176)
Scenic beauty	<b>0.275</b>	<b>0.701</b>	0.331	117.003 (0.000)
Easy shore access to water	0.320	0.381	<b>0.328</b>	2.835 (0.092)
Boat ramp	<b>0.308</b>	<b>0.020</b>	0.270	56.379 (0.000)
Easy boat access to water	<b>0.286</b>	<b>0.061</b>	0.257	36.343 (0.000)
Clean water (not contaminated)	<b>0.205</b>	<b>0.449</b>	0.237	48.599 (0.000)
Good parking (convenient, enough spaces)	<b>0.247</b>	<b>0.163</b>	0.236	4.665 (0.031)
Local fishing reports	<b>0.219</b>	<b>0.102</b>	0.204	11.632 (0.001)
Safe location for people/vehicles/belongings	0.203	0.184	<b>0.200</b>	0.262 (0.608)
Variety of species available at this location	<b>0.177</b>	<b>0.109</b>	0.168	4.945 (0.026)
Conveniently located, even if not close to home	0.139	0.197	<b>0.146</b>	2.784 (0.095)
Trash cans	0.098	0.075	<b>0.095</b>	0.868 (0.352)
Overnight accommodations (campground, etc.) for anglers who spent at least one night away from home on this trip	<b>0.062</b>	<b>0.252</b>	0.087	57.056 (0.000)
Location chosen by someone else	0.085	0.068	<b>0.083</b>	0.393 (0.531)
Guide/outfitter services	0.073	0.027	<b>0.067</b>	3.417 (0.065)
Fishing regulations	0.066	0.048	<b>0.064</b>	0.624 (0.430)
Flush toilets	0.065	0.048	<b>0.063</b>	0.819 (0.365)
Boating safety (safe flow, not too much debris, etc.)	<b>0.060</b>	<b>0.007</b>	0.053	7.923 (0.005)
Pit toilets	0.049	0.061	<b>0.050</b>	0.253 (0.615)
Tackle/bait shop	0.051	0.041	<b>0.049</b>	0.784 (0.376)
Picnic areas	0.042	0.068	<b>0.046</b>	2.028 (0.154)
Fish planting/stocking information	<b>0.027</b>	<b>0.129</b>	0.040	38.502 (0.000)
Place to eat out (deli, fast food, restaurant, etc.)	0.037	0.041	<b>0.038</b>	0.001 (0.969)
Grocery or convenience store	0.030	0.041	<b>0.031</b>	0.149 (0.699)
Gas station	0.027	0.027	<b>0.027</b>	0.057 (0.811)
Full service marina	0.020	0.014	<b>0.019</b>	0.846 (0.358)
Shower	0.012	0.020	<b>0.013</b>	0.505 (0.477)
Fishing derby	0.010	0.000	<b>0.009</b>	2.649 (0.104)
Playground	0.006	0.007	<b>0.006</b>	0.033 (0.857)

<i>Location factor</i>	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Fishing tournament	0.003	0.000	<b>0.003</b>	0.689 (0.406)
Rental boat	0.002	0.007	<b>0.003</b>	1.281 (0.258)
Laundry	0.003	0.000	<b>0.003</b>	0.413 (0.521)
n	967	147	1114	

<sup>1</sup> Sum of each column 2-4 exceeds 1.0 as some anglers selected more than one factor.

<sup>2</sup>  $\chi^2$  test statistic with asymptotic significance (two-tailed, 1 df) in parentheses pertains to contingency table with columns consisting of fishing locations (below or above dams) and rows pertaining to whether or not the particular factor was relevant to the angler's location choice.

Anglers were asked if they participated in any activities other than fishing on their most recent fishing trip (Table IV.B.2-6). About 41% of trips below dams and 13% of trips above dams involved no activities other than fishing. For trips that did involve other activities, the prevalence of these other activities is consistently lower for trips below than above dams. The most notable of these differences include:

- being with family and friends (38% of trips below dams versus 58% above dams)
- scenery/wildlife viewing (26% versus 45%)
- picnicking/BBQ/eating/drinking (17% versus 33%)
- walking/jogging/hiking (11% versus 44%)
- swimming (10% versus 33%)
- camping (10% versus 25%).

Table IV.B.2-6. Proportion of river trips involving activities other than fishing, shown separately for trips made below and above dams<sup>1</sup>

<i>Activity</i>	<i>Below dam</i>	<i>Above dam</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Being with family/friends	<b>0.378</b>	<b>0.576</b>	0.405	20.151 (0.000)
No other activities	<b>0.410</b>	<b>0.132</b>	0.372	43.364 (0.000)
Scenery/wildlife viewing	<b>0.258</b>	<b>0.451</b>	0.285	25.586 (0.000)
Picnicking/BBQ/eating/drinking	<b>0.172</b>	<b>0.326</b>	0.193	22.067 (0.000)
Walking/jogging/hiking	<b>0.108</b>	<b>0.444</b>	0.154	117.711 (0.000)
Swimming	<b>0.099</b>	<b>0.333</b>	0.131	66.319 (0.000)
Camping	<b>0.102</b>	<b>0.250</b>	0.122	24.491 (0.000)
Boating/rafting/kayaking for purposes other than fishing	0.103	0.090	<b>0.101</b>	0.161 (0.688)
Hunting	0.041	0.042	<b>0.041</b>	0.001 (0.970)
Biking	0.037	0.049	<b>0.038</b>	0.778 (0.378)
Backpacking	<b>0.024</b>	<b>0.063</b>	0.030	7.223 (0.007)
Waterskiing, jet skiing, etc.	0.021	0.042	<b>0.024</b>	2.333 (0.127)
Horseback riding	0.004	0.000	<b>0.004</b>	0.723 (0.395)
Other activities	<b>0.018</b>	<b>0.049</b>	0.022	6.124 (0.013)
n	902	144	1046	

<sup>1</sup> Sum of each column 2-4 exceeds 1.0 as some anglers selected more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 1 df) in parentheses pertains contingency table with columns consisting of fishing locations (below or above dams) and rows pertaining to whether or not the angler engaged in the particular activity.

#### IV.C. Comparisons of Non-Salmon and Salmon Fishing

Given that the fishing opportunities above dams that we are considering pertain to salmon, it was somewhat surprising to find that large percentages of non-salmon anglers (70%) as well as salmon anglers (85%) may be interested in such opportunities (Table IV.C-1). We reconfigured Table IV.C-1 so that the sum across all cells equals 1.0 (effectively weighting anglers in each target species and attitude category according to their representation in the overall sample). Results indicate that 76% of Sacramento River anglers may be interested in new salmon fishing opportunities, 42% comprising non-salmon anglers and 34% comprising salmon anglers (Table IV.C-2).

Table IV.C-1. Proportion of anglers who may be, probably would not be, and do not know if they would be interested in new salmon fishing opportunities above dams, shown separately for non-salmon and salmon anglers

<i>Target species</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>	<i>n</i>
Non-salmon	<b>0.698<sup>1</sup></b>	<b>0.184</b>	<b>0.118</b>	<b>1.000</b>	1152
Salmon	<b>0.851<sup>1</sup></b>	<b>0.092</b>	<b>0.057</b>	<b>1.000</b>	752
Total	0.758	0.148	0.094	1.000	1904

$\chi^2=58.254$ ,  $df=2$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.C-2. Overall distribution of anglers by target species (non-salmon, salmon) and attitude toward new salmon fishing opportunities above dams

<i>Target species</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
Non-salmon	0.422	0.111	0.071	0.605
Salmon	0.336	0.036	0.023	0.395
Total	0.758	0.148	0.094	1.000

Factors equally important to non-salmon and salmon anglers who may be interested in new salmon fishing opportunities above dams include quality of fishing conditions (82%) and fishing regulations (47%). Handwritten comments by anglers suggest that bag limit versus catch-and-release would be a regulatory issue, particularly since salmon anglers below dams are accustomed to having a season and bag limit. Other important factors include proximity of the fishing site to home (65% of non-salmon anglers, 71% of salmon anglers) and facilities at the site (31% non-salmon, 39% salmon). Factors cited by anglers who probably would not be interested in new opportunities above dams include satisfaction with current fishing locations (43% of non-salmon anglers, 75% of salmon anglers), and lack of interest in salmon fishing (58% non-salmon, 10% salmon) (Table IV.C-3).

Table IV.C-3. Proportion of anglers who cited factors that contribute to their *interest* in new salmon fishing opportunities above dams, and proportion of anglers who cited factors that contribute to their *lack of interest* in such opportunities – shown separately for non-salmon and salmon anglers<sup>1</sup>

<i>Attitude and contributing factors</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>	$\chi^2$ ( <i>signif</i> ) <sup>2</sup>
Anglers who may be interested:				
Quality of fishing experience	0.811	0.839	<b>0.823</b>	1.937 (0.164)
Fishing regulations	0.455	0.494	<b>0.472</b>	2.122 (0.145)
Proximity of site to home	<b>0.652</b>	<b>0.714</b>	0.679	6.354 (0.012)
Facilities at the site	<b>0.308</b>	<b>0.394</b>	0.346	11.452 (0.001)
n	804	640	1444	
Anglers who probably would not be interested:				
Satisfied with current fishing locations	<b>0.425</b>	<b>0.754</b>	0.505	22.554 (0.000)
Not interested in salmon fishing	<b>0.575</b>	<b>0.101</b>	0.459	47.104 (0.000)
Not interested in river fishing	0.038	0.043	<b>0.039</b>	0.046 (0.831)
Not interested in fishing in general	0.024	0.029	<b>0.025</b>	0.063 (0.803)
n	212	69	281	

<sup>1</sup> Sum of contributing factors – computed separately for interested non-salmon anglers, interested salmon anglers, non-interested non-salmon anglers and non-interested salmon anglers – exceeds 1.0 as some anglers selected more than one factor.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 1 df) in parentheses pertains to contingency table with columns pertaining to non-salmon and salmon anglers and rows pertaining to whether or not the angler selected the factor.

#### IV.C.1. Characteristics of Non-Salmon and Salmon Anglers

Non-salmon and salmon anglers were compared in terms of demographic characteristics. Results indicate that the two groups are similar in the following respects:

- Median age of anglers is 45-54 years (Table IV.C.1-1)
- Household composition is 54% adults only, 26% adults with children, 17% live alone, 2% single parent (Table IV.C.1-4)
- Median annual household income is \$50K-100K (Table IV.C.1-6).

Non-salmon and salmon anglers differ in the following respects:

- The gender breakdown is 89% male and 11% female for non-salmon anglers, 92% male and 8% female for salmon anglers (Table IV.C.1-2)
- Both groups are 8% Hispanic (all races) and 78% White, while Asians and African Americans combined have a higher representation among non-salmon anglers (9%) than salmon anglers (6%) (Table IV.C.1-3)
- While median education is the same for both groups (some college), the percent of anglers with at least a 4-year college degree is higher for non-salmon anglers (37%) than salmon anglers (32%) (Table IV.C.1-5).

Table IV.C.1-1. Age distribution, shown separately for non-salmon and salmon anglers

<i>Age (# years)</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
18-24	0.061	0.035	<b>0.051</b>
25-34	0.133	0.141	<b>0.136</b>
35-44	0.137	0.145	<b>0.140</b>
45-54	0.165 <sup>2</sup>	0.177 <sup>2</sup>	<b>0.170<sup>2</sup></b>
55-64	0.246	0.277 <sup>1</sup>	<b>0.259<sup>1</sup></b>
>64	0.257 <sup>1</sup>	0.224	<b>0.244</b>
Total	1.000	1.000	<b>1.000</b>
n	1173	764	1937

$\chi^2=10.476$ ,  $df=5$ , asymptotic significance (2-tailed)=0.063

<sup>1</sup> mode, <sup>2</sup> median

Table IV.C.1-2. Gender distribution, shown separately for non-salmon and salmon anglers

<i>Gender</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Male	<b>0.889<sup>1</sup></b>	<b>0.921<sup>1</sup></b>	0.901
Female	<b>0.111</b>	<b>0.079</b>	0.099
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1158	760	1918

$\chi^2=5.440$ ,  $df=1$ , asymptotic significance (2-tailed)=0.020

<sup>1</sup> mode

Table IV.C.1-3. Race/Hispanic origin distribution, shown separately for non-salmon and salmon anglers

<i>Race/Hispanic origin</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Hispanic, all races	<b>0.080</b>	<b>0.076</b>	0.079
Non-Hispanic:			
White	<b>0.779<sup>1</sup></b>	<b>0.783<sup>1</sup></b>	0.781 <sup>1</sup>
Asian	<b>0.061</b>	<b>0.045</b>	0.055
Black/African Amer	<b>0.030</b>	<b>0.011</b>	0.022
Native American	<b>0.008</b>	<b>0.014</b>	0.010
Polynesian	<b>0.004</b>	<b>0.014</b>	0.008
Other	<b>0.037</b>	<b>0.058</b>	0.045
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1131	739	1870

$\chi^2=20.041$ ,  $df=6$ , asymptotic significance (2-tailed)=0.003

<sup>1</sup> mode

Table IV.C.1-4. Distribution of household types, shown separately for non-salmon and salmon anglers

<i>Household type</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Live alone	0.172	0.177	<b>0.174</b>
Adults only	0.552 <sup>1</sup>	0.523 <sup>1</sup>	<b>0.541<sup>1</sup></b>
Single parent	0.019	0.030	<b>0.024</b>
Adults w/children	0.257	0.270	<b>0.262</b>
Total	1.000	1.000	<b>1.000</b>
n	1130	730	1860

$\chi^2=3.181$ ,  $df=3$ , asymptotic significance (2-tailed)=0.365

<sup>1</sup> mode

Table IV.C.1-5. Education distribution, shown separately for non-salmon and salmon anglers

<i>Education</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Some high school	<b>0.043</b>	<b>0.036</b>	0.040
High school graduate	<b>0.173</b>	<b>0.203</b>	0.185
Technical/professional school	<b>0.065</b>	<b>0.078</b>	0.070
Some college	<b>0.351<sup>1,2</sup></b>	<b>0.364<sup>1,2</sup></b>	0.357 <sup>1,2</sup>
4-year college degree	<b>0.218</b>	<b>0.226</b>	0.221
Postgraduate degree	<b>0.150</b>	<b>0.093</b>	0.128
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1167	760	1927

$\chi^2=15.722$ ,  $df=5$ , asymptotic significance (2-tailed)=0.008

<sup>1</sup> mode, <sup>2</sup> median

Table IV.C.1-6. Annual household income distribution, shown separately for non-salmon and salmon anglers

<i>Annual household income</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Less than \$10K	0.032	0.019	<b>0.027</b>
\$10K-25K	0.096	0.090	<b>0.094</b>
\$25-50K	0.197	0.217	<b>0.205</b>
\$50-100K	0.365 <sup>1,2</sup>	0.381 <sup>1,2</sup>	<b>0.371<sup>1,2</sup></b>
\$100-250K	0.261	0.265	<b>0.263</b>
>\$250K	0.048	0.029	<b>0.041</b>
Total	1.000	1.000	<b>1.000</b>
n	1117	733	1850

$\chi^2=8.374$ ,  $df=5$ , asymptotic significance (2-tailed)=0.137

<sup>1</sup> mode, <sup>2</sup> median

In terms of fishing behavior, the only notable similarity between non-salmon and salmon anglers is boat ownership (39%, Table IV.C.1-8). The two groups differ in the following respects:

- Non-salmon anglers tend to fish less often on the Sacramento River system than salmon anglers (median 3-6 days for non-salmon anglers, 7-12 days for salmon anglers) (Table IV.C.1-7)
- Mean annual fishing expenditures (excluding trip-specific expenses) is \$1,183.91 for non-salmon anglers and \$1,716.59 for salmon anglers (Table IV.C.1-9)

- Median number of years of Central Valley fishing experience is the same for both groups (21-30 years), but the percent with more than 20 years of experience is 58% for non-salmon anglers and 65% for salmon anglers (Table IV.C.1-10).

Table IV.C.1-7. Distribution of number of days fished on the Sacramento River system in the past 12 months, shown separately for non-salmon and salmon anglers

# days fished	Non-salmon	Salmon	Total
1-2	<b>0.249</b>	<b>0.143</b>	0.207
3-6	<b>0.313<sup>1,2</sup></b>	<b>0.250<sup>1</sup></b>	0.288 <sup>1</sup>
7-12	<b>0.199</b>	<b>0.197<sup>2</sup></b>	0.198 <sup>2</sup>
13-24	<b>0.118</b>	<b>0.159</b>	0.134
25-50	<b>0.086</b>	<b>0.172</b>	0.120
51-75	<b>0.019</b>	<b>0.038</b>	0.026
76-100	<b>0.006</b>	<b>0.018</b>	0.010
>100	<b>0.012</b>	<b>0.024</b>	0.016
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1215	792	2007

$\chi^2=85.989$ ,  $df=7$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Table IV.C.1-8. Extent of boat ownership, shown separately for non-salmon and salmon anglers<sup>1</sup>

Boat ownership	Non-salmon	Salmon	Total
No	0.617 <sup>2</sup>	0.597 <sup>2</sup>	<b>0.613<sup>2</sup></b>
Yes	0.383	0.403	<b>0.387</b>
Total	1.000	1.000	<b>1.000</b>
n	549	154	703

$\chi^2=0.204$ ,  $df=1$ , asymptotic significance (2-tailed)=0.651

<sup>1</sup> The mail survey did not include a question on boat ownership. As a proxy, anglers who spent any money on boat maintenance, moorage, storage, registration, loan payments, insurance or accessories (e.g., trailer, trailer/hitch) in the past year are presumed to be boat owners.

<sup>2</sup> mode

Table IV.C.1-9. Annual fishing expenditures (excluding trip-specific expenditures), shown separately for non-salmon and salmon anglers<sup>1,2</sup>

<i>Expenditures</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Mean	<b>\$1183.91</b>	<b>\$1716.59</b>	\$1398.88
Standard deviation	4972.11	4002.28	4611.57
Median	\$290.00	\$570.00	\$382.50
n	1039	703	1742

t-value=-2.468, df=1688, p-value (2-tailed)=0.014

<sup>1</sup> Includes expenditures on

- (a) fishing equipment (rods, reels, lines, flies, nets, tackle box, etc.)
- (b) fishing licenses and/or report cards
- (c) other fishing costs (fishing magazine subscriptions, fishing club membership, etc.)
- (d) clothing and equipment bought specifically for fishing (foul weather gear, waders, boots, camping gear, etc.)
- (e) boat related expenses – only if boat was bought mainly for fishing (boat maintenance, moorage, storage, registration, loan payments, insurance, accessories such as motor, trailer/hitch)
- (f) truck, camper, trailer, van or motor home expenses – only if vehicle was bought mainly for fishing (maintenance, insurance, loan payments, insurance, etc.)

<sup>2</sup> Categories accounting for the majority of expenditures include fishing equipment (21% of total expenditures by non-salmon anglers and 21% by salmon anglers), licenses (6% and 4% respectively), clothing/equipment (7% and 6% respectively), boat-related expenses (31% and 34% respectively), vehicle-related expenses (33% and 34% respectively).

Table IV.C.1-10. Distribution of Central Valley fishing experience, shown separately for non-salmon and salmon anglers

<i># years experience</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
0-5	<b>0.188<sup>1</sup></b>	<b>0.103</b>	0.155
6-10	<b>0.084</b>	<b>0.077</b>	0.082
11-15	<b>0.070</b>	<b>0.065</b>	0.068
16-20	<b>0.078</b>	<b>0.103</b>	0.088
21-30	<b>0.141<sup>2</sup></b>	<b>0.184<sup>1,2</sup></b>	0.158 <sup>2</sup>
31-40	<b>0.137</b>	<b>0.147</b>	0.141
41-50	<b>0.156</b>	<b>0.176</b>	0.164 <sup>1</sup>
>50	<b>0.144</b>	<b>0.145</b>	0.144
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1138	739	1877

$\chi^2=31.134$ , df=7, asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Participation in selected Central Valley activities in the past three years is consistently lower for non-salmon than salmon anglers (Table IV.C.1-11):

- fish planting (20% of non-salmon anglers versus 30% of salmon anglers)
- visited Central Valley dam (15% versus 28%)
- participated in Central Valley fishing tournament (11% versus 23%)
- belonged to fishing club/organization (7% versus 15%)
- visited Central Valley river to watch fish spawn (7% versus 13%)
- visited Central Valley fish hatchery (7% versus 11%)



- participated in Central Valley fishing derby (5% versus 8%)

Table IV.C.1-11. Proportion of anglers who participated in selected Central Valley (CV) activities in past three years, shown separately for non-salmon and salmon anglers<sup>1</sup>

<i>Central Valley activity</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Fish planting (Project Kokanee, etc.)	<b>0.203</b>	<b>0.297</b>	0.240	23.030 (0.000)
Visited Central Valley dam	<b>0.147</b>	<b>0.278</b>	0.199	51.358 (0.000)
Participated in CV fishing tournament	<b>0.113</b>	<b>0.231</b>	0.159	50.185 (0.000)
Belonged to fishing club/organization	<b>0.065</b>	<b>0.145</b>	0.097	35.376 (0.000)
Visited CV river to watch fish spawn	<b>0.072</b>	<b>0.128</b>	0.094	17.711 (0.000)
Visited CV fish hatchery	<b>0.072</b>	<b>0.109</b>	0.086	8.358 (0.004)
Participated in CV fishing derby	<b>0.049</b>	<b>0.080</b>	0.061	7.609 (0.006)
Participated in fishing seminar	<b>0.041</b>	<b>0.064</b>	0.050	5.439 (0.020)
Attended fish festival	0.039	0.053	<b>0.045</b>	2.059 (0.151)
Participated in Delta clean-up	0.025	0.028	<b>0.026</b>	0.184 (0.668)
Helped teach the public to fish (Fishing in the City, etc.)	<b>0.007</b>	<b>0.021</b>	0.013	7.422 (0.006)
Participated in CV lake clean-up	0.009	0.015	<b>0.011</b>	1.579 (0.209)
Participated in CV river clean-up	0.010	0.011	<b>0.010</b>	0.104 (0.748)
Other activities	0.019	0.023	<b>0.020</b>	0.349 (0.555)

<sup>1</sup> Sum of each column 2-4 exceeds 1.0 as some anglers selected more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 1 df) in parentheses pertains to contingency table with columns consisting of target species (non-salmon or salmon) and rows pertaining to whether or not the angler engaged in the particular activity.

#### IV.C.2. Characteristics of Non-Salmon and Salmon River Fishing Trips

This section compares river trips targeted at salmon versus other (non-salmon) species. Almost 50% of mail survey respondents identified more than one target species on their most recent fishing trip. To more clearly distinguish salmon from non-salmon trips, this section focuses only on trips where anglers identified a single target species. The smaller sample sizes are a result of this filtering as well as the fact that we are focusing on one waterbody type (rivers). It would have been informative to provide similar tables for non-salmon trips broken down by species, but sample sizes were not adequate to do so.

Non-salmon and salmon trips are similar in the following respects:

- Consistent with the age distribution of anglers (Table IV.C.1-1), the large majority of both non-salmon and salmon trips (84%) involve adults fishing together or alone rather than with children (Table IV.C.2-2).
- There is no statistically significant difference in per capita trip expenditures (\$88.33, Table IV.C.2-4). While higher boat use increases the cost of salmon trips, more overnight stays away from home increase the cost of non-salmon trips.

Non-salmon and salmon trips also differ in several respects:

- While fully half of non-salmon trips on rivers occur from boats (private boats or hired guides) (50% boat, 44% shore), an even larger percent of salmon trips are boat-based (74% boat, 22% shore) (Table IV.C.2-1).
- Overnight trips comprise a larger percent of non-salmon trips (25%) than salmon trips (15%) (Table IV.C.2-3).

Table IV.C.2-1. Distribution of most recent river fishing trip by mode, shown separately for non-salmon and salmon trips

<i>Fishing mode</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Shore	<b>0.438</b>	<b>0.215</b>	0.390
Private boat	<b>0.459<sup>1</sup></b>	<b>0.626<sup>1</sup></b>	0.495 <sup>1</sup>
Hired guide	<b>0.042</b>	<b>0.117</b>	0.058
Shore/private boat	<b>0.047</b>	<b>0.018</b>	0.041
All else	<b>0.015</b>	<b>0.025</b>	0.017
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	601	163	764

$\chi^2=39.230$ ,  $df=4$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.C.2-2. Distribution of most recent trip by type of fishing party, shown separately for non-salmon and salmon trips

<i>Fishing party</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Alone	0.164	0.190	<b>0.170</b>
Adults only	0.666 <sup>1</sup>	0.669 <sup>1</sup>	<b>0.667<sup>1</sup></b>
Adults w/children	0.169	0.141	<b>0.163</b>
Total	1.000	1.000	<b>1.000</b>
n	608	163	771

$\chi^2=1.131$ ,  $df=2$ , asymptotic significance (2-tailed)=0.568

<sup>1</sup> mode

Table IV.C.2-3. Distribution of most recent river fishing trip by duration, shown separately for non-salmon and salmon trips

<i>Trip duration</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Overnight	<b>0.246</b>	<b>0.145</b>	0.225
Day	<b>0.754<sup>1</sup></b>	<b>0.855<sup>1</sup></b>	0.775 <sup>1</sup>
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	617	166	783

$\chi^2=7.776$ ,  $df=1$ , asymptotic significance (2-tailed)=0.005

<sup>1</sup> mode

Table IV.C.2-4. Per capita expenditures on most recent river fishing trip, shown separately for non-salmon and salmon trips<sup>1,2</sup>

<i>Trip duration</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Mean	\$85.93	\$97.71	<b>\$88.33</b>
Standard deviation	143.77	152.68	145.53
Median	\$40.00	\$40.00	\$40.00
n	465	119	584

t-value=-0.735, df=169, p-value (2-tailed)=0.463

<sup>1</sup> Includes expenditures on

- (a) gas for vehicles, bridge tolls, etc.
- (b) entry/day use/parking fees, etc.
- (c) derby/tournament fees
- (d) tackle, gear, bait, lures, etc. – if bought specifically for this trip
- (e) guide fees – if hired a guide
- (f) rental boat fees – if rented a boat
- (g) private boat fuel, launch fees, etc. – if fished from private boat
- (h) food and beverage from grocery/convenience stores
- (i) food and beverage from delis/fast food/restaurants
- (j) clothing, toiletries, camping supplies, etc. – if bought specifically for this trip
- (k) non-fishing recreation (horseback riding, hunting, etc.) – if engaged in other types of recreation on this trip
- (l) lodging – if spent any nights away from home on this trip

<sup>2</sup> Categories accounting for the majority of expenditures include gas (25% of total expenditures for non-salmon trips and 20% for salmon trips), tackle/gear (12% and 11% respectively), guide fees (9% and 33 % respectively), private boat costs (6% and 6% respectively), groceries (16% and 11% respectively), food/beverage services (6% and 5% respectively), lodging (14% and 3% respectively).

Anglers were asked to identify factors that affected their location choice on their most recent fishing trip (Table IV.C.2-5). Factors that affect non-salmon and salmon river trips similarly include:

- past use/familiarity with the site (35%)
- good fishing conditions (31%)
- scenic beauty (27%).

Factors that affect non-salmon trips less than salmon trips include:

- type of species (54% non-salmon versus 68% salmon)
- boat ramp (21% versus 41%)
- easy boat access to water (18% versus 43%)
- good parking (19% versus 32%)
- local fishing reports (18% versus 33%)
- guide/outfitter services (5% versus 10%).

Factors that affect non-salmon trips more than salmon trips include:

- not too crowded (34% non-salmon versus 18% salmon)
- peace and quiet (34% versus 19%)
- easy shore access to water (32% versus 19%).

Table IV.C.2-5. Proportion of river trips influenced by each location factor, shown separately for non-salmon and salmon trips<sup>1</sup>

<i>Location factor</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Type of species available at this location	<b>0.539</b>	<b>0.678</b>	0.581	6.999 (0.008)
Not far from home	0.570	0.566	<b>0.569</b>	0.084 (0.772)
Past use/familiarity with site	0.338	0.382	<b>0.351</b>	0.092 (0.762)
Good fishing conditions (lake level, river flow, water temperature, water clarity, etc.)	0.307	0.316	<b>0.309</b>	0.129 (0.720)
Not too crowded	<b>0.344</b>	<b>0.184</b>	0.295	15.780 (0.000)
Peace & quiet	<b>0.341</b>	<b>0.191</b>	0.295	10.443 (0.001)
Easy shore access to water	<b>0.315</b>	<b>0.191</b>	0.277	4.990 (0.025)
Scenic beauty	0.301	0.204	<b>0.271</b>	3.187 (0.074)
Boat ramp	<b>0.212</b>	<b>0.408</b>	0.271	11.727 (0.001)
Easy boat access to water	<b>0.183</b>	<b>0.428</b>	0.257	20.837 (0.000)
Good parking (convenient, enough spaces)	<b>0.189</b>	<b>0.316</b>	0.228	4.469 (0.035)
Local fishing reports	<b>0.181</b>	<b>0.329</b>	0.226	13.130 (0.000)
Clean water (not contaminated)	0.195	0.204	<b>0.198</b>	0.196 (0.658)
Safe location for people/vehicles/belongings	0.158	0.211	<b>0.174</b>	0.308 (0.579)
Conveniently located even if not close to home	0.126	0.151	<b>0.134</b>	0.516 (0.473)
Location chosen by someone else	<b>0.083</b>	<b>0.145</b>	0.102	7.621 (0.006)
Trash cans	0.083	0.132	<b>0.098</b>	2.541 (0.111)
Variety of species available at this location	0.083	0.099	<b>0.088</b>	0.600 (0.439)
Fishing regulations	0.074	0.072	<b>0.074</b>	1.020 (0.312)
Overnight accommodations (campground, etc.) for anglers who spent at least one night away from home on this trip	0.072	0.072	<b>0.072</b>	0.982 (0.322)
Guide/outfitter services	<b>0.046</b>	<b>0.099</b>	0.062	13.260 (0.000)
Flush toilets	<b>0.037</b>	<b>0.118</b>	0.062	6.547 (0.011)
Pit toilets	0.046	0.046	<b>0.046</b>	0.116 (0.734)
Boating safety (safe flow, not much debris, etc.)	<b>0.014</b>	<b>0.112</b>	0.044	10.709 (0.001)
Picnic areas	0.043	0.026	<b>0.038</b>	1.683 (0.195)
Fish planting/stocking information	<b>0.034</b>	<b>0.007</b>	0.026	9.664 (0.002)
Grocery or convenience store	0.020	0.026	<b>0.022</b>	0.016 (0.899)
Places to eat (deli, fast food, restaurant, etc.)	0.017	0.033	<b>0.022</b>	2.377 (0.123)
Full service marina	0.020	0.020	<b>0.020</b>	11.727 (0.730)

<i>Location factor</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Tackle/bait shop	0.017	0.020	<b>0.018</b>	0.128 (0.721)
Gas station	0.014	0.013	<b>0.014</b>	0.008 (0.929)
Shower	0.009	0.020	<b>0.012</b>	1.296 (0.255)
Derby	0.003	0.007	<b>0.004</b>	2.174 (0.140)
Playground	0.003	0.007	<b>0.004</b>	0.036 (0.850)
Rental boat	0.003	0.000	<b>0.002</b>	0.808 (0.369)
Laundry	0.000	0.007	<b>0.002</b>	0.268 (0.605)
Tournament	0.000	0.000	0.000	2.716 (0.099)
n	349	152	501	

<sup>1</sup> Sum of each column 2-4 exceeds 1.0 as some anglers selected more than one factor.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 1 df) in parentheses pertains to contingency table with columns consisting of target species (non-salmon, salmon) and rows pertaining to whether or not the particular factor was relevant to the angler's location choice.

Anglers were asked if they participated in activities other than fishing on their most recent trip (Table IV.C.2-6). About 46% of non-salmon and salmon trips involve no activities other than fishing. For the remaining 54% of trips, activities that are similarly common on non-salmon and salmon trips include:

- being with family/friends (36%)
- scenery/wildlife viewing (24%)
- picnicking/BBQ/eating/drinking (14%)
- swimming (9%).

Activities that are more common on non-salmon than salmon trips include:

- camping (11% non-salmon versus 5% salmon)
- walking/jogging/hiking (11% versus 3%).

No major activities are more common on salmon than non-salmon trips.

Table IV.C.2-6. Proportion of river trips involving activities other than fishing, shown separately for non-salmon and salmon trips<sup>1</sup>

<i>Activity</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
No other activities besides fishing	0.449	0.493	<b>0.462</b>	0.335 (0.563)
Being with family/friends	0.360	0.357	<b>0.359</b>	0.001 (0.976)
Scenery/wildlife viewing	0.252	0.200	<b>0.237</b>	0.009 (0.924)
Picnicking/BBQ/eating/drinking	0.160	0.121	<b>0.148</b>	0.888 (0.346)
Camping	<b>0.111</b>	<b>0.050</b>	0.092	4.853 (0.028)
Swimming	0.105	0.057	<b>0.090</b>	2.291 (0.130)
Walking/jogging/hiking	<b>0.114</b>	<b>0.029</b>	0.088	8.240 (0.004)
Boating/rafting/kayaking for purposes other than fishing	0.052	0.071	<b>0.058</b>	0.536 (0.464)
Hunting	0.031	0.064	<b>0.041</b>	2.491 (0.115)
Biking	0.028	0.014	<b>0.024</b>	0.563 (0.453)
Waterskiing, jetskiing, etc.	0.022	0.014	<b>0.019</b>	0.265 (0.607)
Backpacking	0.006	0.000	<b>0.004</b>	1.624 (0.203)
Horseback riding	0.003	0.000	<b>0.002</b>	0.538 (0.463)
Other activities	0.037	0.007	<b>0.028</b>	2.436 (0.119)
n	325	140	465	

<sup>1</sup> Sum of each column 2-4 exceeds 1.0 as some anglers selected more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 1 df) in parentheses pertains to contingency table with columns consisting of target species (non-salmon, salmon) and rows pertaining to whether or not the angler engaged in the particular activity.

#### IV.D. Comparisons by Waterbody Type (Rivers, Lakes/Reservoirs, Delta Waterways)

Quite a few anglers who fish on the Sacramento River system also fish on Central Valley lakes/reservoirs and/or Delta waterways. Given that the new salmon fishing opportunities that we are considering pertain to *river* areas above dams, it was instructive to consider whether anglers who fish exclusively on rivers would be more receptive to these opportunities than anglers who diversify their fishing among waterbody types. In this section, diversification is characterized in terms of waterbody types fished in the past year: (a) rivers only, (b) rivers and lakes/reservoirs only (river/lake), (c) rivers and Delta waterways only (river/Delta), (d) rivers, lakes/reservoirs and Delta (river/lake/Delta).

Interestingly, river/lake/Delta anglers constitute a higher percentage of anglers who may be interested in new fishing opportunities above dams (30%) than anglers who would probably not be interested (17%) (Table IV.D-1). The reverse is true for river-only anglers (25% interested versus 34% not interested) and river/lake anglers (37% versus 42%). River/Delta anglers are distributed equally (7-8%) between those who may and probably would not be interested.

We reconfigured Table IV.D-1 so that the sum across all cells equals 1.0 (effectively weighting anglers in each waterbody and attitude category according to their representation in the overall sample). Of the 76% of anglers who may be interested in new river fishing opportunities above dams, only 19% are

river-only anglers. The remainder fish on multiple waterbodies – river/lake 28%, river/lake/Delta 23%, and river/Delta 6% (Table IV.D-2).

We also considered whether salmon and non-salmon anglers differ in their waterbody preferences. Non-salmon anglers are more likely to fish on rivers only and rivers/lakes (32% and 40% respectively) than salmon anglers (20% and 33%). Conversely, salmon anglers are more likely to fish on rivers/Delta and rivers/lakes/Delta (10% and 37% respectively) than non-salmon anglers (7% and 21%) (Table IV.D-3).

Table IV.D-1. Distribution of anglers by waterbody type(s) fished in the past year, shown separately for anglers who may be, probably would not be, and don't know if they would be interested in new salmon fishing opportunities above dams

<i>Waterbody type(s)</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
River only	<b>0.250</b>	<b>0.336</b>	<b>0.349</b>	0.272
River/lake	<b>0.369<sup>1</sup></b>	<b>0.422<sup>1</sup></b>	<b>0.355<sup>1</sup></b>	0.375 <sup>1</sup>
River/Delta	<b>0.079</b>	<b>0.074</b>	<b>0.096</b>	0.080
River/lake/Delta	<b>0.302</b>	<b>0.168</b>	<b>0.199</b>	0.273
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1293	244	166	1703

$\chi^2=29.408$ ,  $df=6$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.D-2. Overall distribution of anglers by waterbody type(s) fished in the past 12 months and interest in new salmon fishing opportunities above dams

<i>Waterbody type(s)</i>	<i>May be interested</i>	<i>Probably not interested</i>	<i>Don't know if interested</i>	<i>Total</i>
River only	0.190	0.048	0.034	0.272
River/lake	0.280	0.060	0.035	0.375
River/Delta	0.060	0.011	0.009	0.080
River/lake/Delta	0.230	0.024	0.019	0.273
Total	0.759	0.143	0.097	1.000

Table IV.D-3. Distribution of anglers by waterbody type(s) fished in the past 12 months, shown separately for non-salmon and salmon anglers

<i>Waterbody type(s)</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
River only	<b>0.316</b>	<b>0.204</b>	0.271
River/lake	<b>0.402<sup>1</sup></b>	<b>0.326</b>	0.371 <sup>1</sup>
River/Delta	<b>0.071</b>	<b>0.098</b>	0.082
River/lake/Delta	<b>0.211</b>	<b>0.372<sup>1</sup></b>	0.276
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	1042	705	1747

$\chi^2=68.783$ ,  $df=3$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

#### IV.D.1. Characteristics of Anglers by Waterbody Type(s) Fished

Anglers who fished the four combinations of Central Valley water body types in the past year were compared in terms of demographic characteristics. Results indicate that the four groups are similar in the following respects:

- Median age of anglers is 45-54 years (Table IV.D.1-1)
- Household composition is 53% adults only, 27% adults with children, 17% live alone, and 3% single parent (Table IV.D.1-4).

The four groups also differ in a number of respects:

- Anglers who fish river only, river/Delta and river/lake/Delta are 91-93% male, while river/lake anglers are 87% male (Table IV.D.1-2)
- For river-only and river/lake anglers, the race/Hispanic origin breakdown is: Hispanic (all races) 6-7%, White 81-85%, Asian 3-5%, African American 1%. For river/Delta and river/lake/Delta anglers, the breakdown shows more diversity: Hispanic (all races) 9-11%, White 68-70%, Asian 8-11%, African American 4-5% (Table IV.D.1-3).
- Median education is the same for all groups (some college), but the percent with at least a 4-year college degree varies as follows: river only 46%, river/lake 38%, river/Delta 32%, river/lake/Delta 26% (Table IV.D.1-5).
- Median annual household income is \$50K-100K, but the percent earning more than \$100K is higher for river-only anglers (39%) than the other groups (26-29%) (Table IV.D.1-6). This is consistent with the higher educational attainment of river-only anglers.

Table IV.D.1-1. Age distribution, shown separately by waterbody type(s) fished in the past 12 months

<i>Age</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
18-24	0.034	0.065	0.043	0.051	<b>0.051</b>
25-34	0.127	0.162	0.129	0.154	<b>0.148</b>
35-44	0.131	0.129	0.193	0.156	<b>0.142</b>
45-54	0.203 <sup>2</sup>	0.172 <sup>2</sup>	0.171 <sup>2</sup>	0.147 <sup>2</sup>	<b>0.174<sup>2</sup></b>
55-64	0.241	0.258 <sup>1</sup>	0.243 <sup>1</sup>	0.267 <sup>1</sup>	<b>0.255<sup>1</sup></b>
>64	0.263 <sup>1</sup>	0.214	0.221	0.224	<b>0.231</b>
Total	1.000	1.000	1.000	1.000	<b>1.000</b>
n	464	650	140	468	1722

$\chi^2 = 19.793$ ,  $df=15$ , asymptotic significance (2-tailed)=0.180

<sup>1</sup> mode, <sup>2</sup> median



Table IV.D.1-2. Gender breakdown, shown separately by waterbody type(s) fished in the past 12 months

<i>Gender</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
Male	<b>0.905<sup>1</sup></b>	<b>0.874<sup>1</sup></b>	<b>0.906<sup>1</sup></b>	<b>0.926<sup>1</sup></b>	0.899 <sup>1</sup>
Female	<b>0.095</b>	<b>0.126</b>	<b>0.094</b>	<b>0.074</b>	0.101
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	461	644	139	462	1706

$\chi^2 = 8.431$ , df=3, asymptotic significance (2-tailed)=0.038

<sup>1</sup> mode

Table IV.D.1-3. Race/Hispanic origin distribution, shown separately by waterbody type(s) fished in the past 12 months

<i>Race/Hispanic origin</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
Hispanic, all races	<b>0.057</b>	<b>0.070</b>	<b>0.109</b>	<b>0.093</b>	0.076
Non-Hispanic:					
White	<b>0.848<sup>1</sup></b>	<b>0.813<sup>1</sup></b>	<b>0.682<sup>1</sup></b>	<b>0.698<sup>1</sup></b>	0.781 <sup>1</sup>
Asian	<b>0.048</b>	<b>0.034</b>	<b>0.109</b>	<b>0.077</b>	0.055
Black/African Amer	<b>0.009</b>	<b>0.006</b>	<b>0.039</b>	<b>0.046</b>	0.020
Native American	<b>0.002</b>	<b>0.019</b>	<b>0.000</b>	<b>0.011</b>	0.011
Polynesian	<b>0.002</b>	<b>0.003</b>	<b>0.023</b>	<b>0.009</b>	0.006
Other	<b>0.033</b>	<b>0.054</b>	<b>0.039</b>	<b>0.066</b>	0.051
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	455	625	129	454	1663

$\chi^2 = 80.017$ , df=18, asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.D.1-4. Distribution of household types, shown separately by waterbody type(s) fished in the past 12 months

<i>Household type</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
Live alone	0.185	0.151	0.243	0.171	<b>0.173</b>
Adults only	0.549 <sup>1</sup>	0.546 <sup>1</sup>	0.456 <sup>1</sup>	0.521 <sup>1</sup>	<b>0.533<sup>1</sup></b>
Single parent	0.016	0.025	0.029	0.031	<b>0.025</b>
Adults w/children	0.251	0.277	0.272	0.277	<b>0.270</b>
Total	1.000	1.000	1.000	1.000	<b>1.000</b>
n	443	628	136	451	1658

$\chi^2 = 11.070$ , df=9, asymptotic significance (2-tailed)=0.271

<sup>1</sup> mode

Table IV.D.1-5. Education distribution, shown separately by waterbody type(s) fished in the past 12 months

<i>Education</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
Some high school	<b>0.028</b>	<b>0.028</b>	<b>0.072</b>	<b>0.051</b>	0.038
High school graduate	<b>0.148</b>	<b>0.167</b>	<b>0.209</b>	<b>0.182</b>	0.169
Tech/professional school	<b>0.046</b>	<b>0.060</b>	<b>0.079</b>	<b>0.096</b>	0.068
Some college	<b>0.315<sup>1,2</sup></b>	<b>0.370<sup>1,2</sup></b>	<b>0.324<sup>1,2</sup></b>	<b>0.412<sup>1,2</sup></b>	0.363 <sup>1,2</sup>
4-year college graduate	<b>0.267</b>	<b>0.251</b>	<b>0.194</b>	<b>0.184</b>	0.232
Postgraduate degree	<b>0.197</b>	<b>0.124</b>	<b>0.122</b>	<b>0.075</b>	0.130
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	461	646	139	468	1714

$\chi^2 = 65.090$ ,  $df=15$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Table IV.D.1-6. Annual household income distribution, shown separately by waterbody type(s) fished in the past 12 months

<i>Household income</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
<\$10K	<b>0.032</b>	<b>0.028</b>	<b>0.038</b>	<b>0.015</b>	0.026
\$10K-25K	<b>0.086</b>	<b>0.101</b>	<b>0.128</b>	<b>0.062</b>	0.088
\$25K-50K	<b>0.187</b>	<b>0.223</b>	<b>0.173</b>	<b>0.208</b>	0.205
\$50K-100K	<b>0.302<sup>1,2</sup></b>	<b>0.387<sup>1,2</sup></b>	<b>0.368<sup>1,2</sup></b>	<b>0.442<sup>1,2</sup></b>	0.378 <sup>1,2</sup>
\$100K-250K	<b>0.296</b>	<b>0.237</b>	<b>0.256</b>	<b>0.261</b>	0.261
>\$250K	<b>0.097</b>	<b>0.024</b>	<b>0.038</b>	<b>0.011</b>	0.041
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	443	615	133	452	1643

$\chi^2 = 75.278$ ,  $df=15$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Annual fishing expenditures (excluding trip-specific expenses) show no statistically significant difference among anglers in the four waterbody categories – averaging \$1380.07 per angler (Table IV.D.1-9). However anglers do exhibit some differences in fishing behavior:

- Median participation (number of days fished) on the Sacramento River system in the past year is lower for river-only anglers (3-6 days) than for river/lake, river/Delta and river/lake/Delta anglers (7-12 days) (Table IV.D.1-7).
- Boat ownership is 20% for river-only anglers, 34% for river/lake anglers, 41% for river/Delta anglers, and 48% for river/lake/Delta anglers (Table IV.D.1-8).
- Median years of Central Valley fishing experience is 16-20 years for river-only anglers, 21-30 years for river/lake and river/Delta anglers, and 31-40 years for river/lake/Delta anglers (Table IV.D.1-10)

Table IV.D.1-7. Distribution of number of days fished on Central Valley rivers, shown separately by waterbody type(s) fished in the past 12 months

# river fishing days	River only	River/lake	River/Delta	River/lake/Delta	Total
1-2	<b>0.375<sup>1</sup></b>	<b>0.157</b>	<b>0.229</b>	<b>0.109</b>	0.209
3-6	<b>0.318<sup>2</sup></b>	<b>0.319<sup>1</sup></b>	<b>0.264<sup>1</sup></b>	<b>0.216<sup>1</sup></b>	0.286 <sup>1</sup>
7-12	<b>0.138</b>	<b>0.227<sup>2</sup></b>	<b>0.250<sup>2</sup></b>	<b>0.214<sup>2</sup></b>	0.201 <sup>2</sup>
13-24	<b>0.091</b>	<b>0.136</b>	<b>0.083</b>	<b>0.191</b>	0.134
25-50	<b>0.056</b>	<b>0.127</b>	<b>0.139</b>	<b>0.183</b>	0.124
51-75	<b>0.016</b>	<b>0.019</b>	<b>0.014</b>	<b>0.035</b>	0.022
76-100	<b>0.002</b>	<b>0.010</b>	<b>0.000</b>	<b>0.021</b>	0.010
>100	<b>0.004</b>	<b>0.004</b>	<b>0.021</b>	<b>0.031</b>	0.013
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	485	670	144	486	1785

$\chi^2 = 211.135$ ,  $df=21$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Table IV.D.1-8. Extent of boat ownership, shown separately by waterbody type(s) fished in the past 12 months<sup>1</sup>

Boat ownership	River only	River/lake	River/Delta	River/lake/Delta	Total
No	<b>0.800<sup>2</sup></b>	<b>0.661<sup>2</sup></b>	<b>0.589<sup>2</sup></b>	<b>0.517<sup>2</sup></b>	0.653 <sup>2</sup>
Yes	<b>0.200</b>	<b>0.339</b>	<b>0.411</b>	<b>0.483</b>	0.347
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	415	596	124	429	1564

$\chi^2 = 76.761$ ,  $df=3$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> The mail survey did not include a question on boat ownership. As a proxy, anglers who spent any money on boat maintenance, moorage, storage, registration, loan payments, insurance or accessories (e.g., trailer, trailer/hitch) in the past year are presumed to be boat owners.

<sup>2</sup> mode

Table IV.D.1-9. Annual fishing expenditures (excluding trip-specific expenses), shown separately by waterbody type(s) fished in the past 12 months<sup>1,2</sup>

	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
Mean	\$1147.84	\$1225.42	\$1290.04	\$1841.93	<b>\$1380.07</b>
Standard deviation	6697.10	4056.08	2393.56	3749.40	4747.16
Median	\$250.00	\$350.00	\$352.50	\$670.00	\$370.00
n	411	587	122	427	1547

ANOVA F(3,1543)=1.901, p-value (2-tailed)=0.128

<sup>1</sup> Includes expenditures on

- (a) fishing equipment (rods, reels, lines, flies, nets, tackle box, etc.)
- (b) fishing licenses and/or report cards
- (c) other fishing costs (fishing magazine subscriptions, fishing club membership, etc.)
- (d) clothing and equipment bought specifically for fishing (foul weather gear, waders, boots, camping gear, etc.)
- (e) boat related expenses – only if boat was bought mainly for fishing (boat maintenance, moorage, storage, registration, loan payments, insurance, accessories such as motor, trailer/hitch)
- (f) truck, camper, trailer, van or motor home expenses – only if vehicle was bought mainly for fishing (maintenance, insurance, loan payments, insurance, etc.)

<sup>2</sup> Categories accounting for the majority of expenditures include fishing equipment (24% of total expenditures by river-only anglers, 19% by river/lake anglers, 18% by river/Delta anglers, 23% by river/lake/Delta anglers), licenses (7%, 6%, 5%, 4% respectively), clothing/equipment (7%, 6%, 5%, 7% respectively), boat-related expenses (34%, 22%, 40%, 32% respectively), vehicle-related expenses (26%, 44%, 32%, 32% respectively).

Table IV.D.1-10. Distribution of Central Valley fishing experience, shown separately by waterbody type(s) fished in the past 12 months

<i>Fishing experience</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>
0-5	<b>0.303<sup>1</sup></b>	<b>0.110</b>	<b>0.178<sup>1</sup></b>	<b>0.070</b>	0.156
6-10	<b>0.078</b>	<b>0.079</b>	<b>0.070</b>	<b>0.083</b>	0.079
11-15	<b>0.073</b>	<b>0.057</b>	<b>0.047</b>	<b>0.076</b>	0.066
16-20	<b>0.080<sup>2</sup></b>	<b>0.106</b>	<b>0.093</b>	<b>0.091</b>	0.094
21-30	<b>0.138</b>	<b>0.176<sup>1,2</sup></b>	<b>0.163<sup>2</sup></b>	<b>0.165</b>	0.162 <sup>1,2</sup>
31-40	<b>0.107</b>	<b>0.150</b>	<b>0.171</b>	<b>0.154<sup>2</sup></b>	0.141
41-50	<b>0.116</b>	<b>0.169</b>	<b>0.116</b>	<b>0.200<sup>1</sup></b>	0.159
>50	<b>0.105</b>	<b>0.154</b>	<b>0.163</b>	<b>0.161</b>	0.143
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	449	635	129	460	1673

$\chi^2 = 124.162$ , df=21, asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Anglers were asked whether or not they participated in selected Central Valley activities in the past three years. Participation in each activity is consistently highest for river/lake and/or river/lake/Delta anglers (Table IV.D.1-11):

- Fish planting (28-29% of river/lake and river/lake/Delta anglers, 17-19% of river-only and river/Delta anglers)

- Visited Central Valley dam (28% river/lake/Delta, 22% river/lake, 12-14% river-only and river/Delta)
- Participated in Central Valley fishing tournament (31% river/lake/Delta, 12-15% river/lake and river/Delta, 6% river-only)
- Visited Central Valley river to watch fish spawn (11-13% river/lake and river/lake/Delta, 4-5% river only and river/Delta)
- Belonged to fishing club/organization (20% river/lake/Delta, 15% river/lake, 2-5% river-only and river/Delta)
- Visited Central Valley fish hatchery (10-12% river/lake/Delta and river/lake, 3-6% river-only and river/Delta)
- Participated in Central Valley fishing derby (14% river/lake/Delta, 8% river/Delta, 1-3% river-only and river/lake anglers)

Table IV.D.1-11. Proportion of anglers who participated in selected Central Valley (CV) activities in past three years, shown separately by waterbody type(s) fished in the past 12 months<sup>1</sup>

<i>Central Valley activity</i>	<i>River only</i>	<i>River/lake</i>	<i>River/Delta</i>	<i>River/lake/Delta</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Fish planting (Project Kokanee, etc.)	<b>0.171</b>	<b>0.282</b>	<b>0.188</b>	<b>0.296</b>	0.248	28.431 (0.000)
Visited Central Valley dam	<b>0.120</b>	<b>0.224</b>	<b>0.139</b>	<b>0.280</b>	0.204	43.897 (0.000)
Participated in CV fishing tournament	<b>0.062</b>	<b>0.124</b>	<b>0.146</b>	<b>0.311</b>	0.160	123.81 (0.000)
Visited CV river to watch fish spawn	<b>0.047</b>	<b>0.133</b>	<b>0.042</b>	<b>0.113</b>	0.097	29.939 (0.000)
Belonged to fishing club/organization	<b>0.023</b>	<b>0.054</b>	<b>0.146</b>	<b>0.198</b>	0.092	109.564 (0.000)
Visited CV fish hatchery	<b>0.058</b>	<b>0.115</b>	<b>0.028</b>	<b>0.103</b>	0.089	19.199 (0.000)
Participated in CV fishing derby	<b>0.008</b>	<b>0.031</b>	<b>0.083</b>	<b>0.144</b>	0.060	95.11 (0.000)
Participated in fishing seminar	<b>0.031</b>	<b>0.052</b>	<b>0.042</b>	<b>0.070</b>	0.050	8.001 (0.046)
Attended fish festival	<b>0.029</b>	<b>0.048</b>	<b>0.014</b>	<b>0.070</b>	0.046	13.049 (0.005)
Participated in Delta clean-up	0.023	0.036	0.007	0.027	<b>0.027</b>	4.449 (0.217)
Helped teach the public to fish (Fishing in the City, etc.)	<b>0.002</b>	<b>0.015</b>	<b>0.014</b>	<b>0.023</b>	0.013	7.944 (0.047)
Participated in CV river clean-up	0.002	0.015	0.000	0.016	<b>0.011</b>	7.669 (0.053)
Participated in CV lake clean-up	<b>0.002</b>	<b>0.001</b>	<b>0.007</b>	<b>0.031</b>	0.010	29.247 (0.000)
Other activities	0.014	0.019	0.007	0.031	0.020	4.915 (0.000)

<sup>1</sup> Sum of each column 2-6 exceeds 1.0 as some anglers selected more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 3 df) in parentheses pertains to contingency table with columns consisting of waterbody combinations and rows pertaining to whether or not the angler engaged in the particular activity.

#### IV.D.2. Characteristics of Fishing Trips by Waterbody Type

Fishing trips on rivers, lakes/reservoirs and Delta waterways differ in terms of almost all of the trip characteristics examined. It is important to note that the characterizations of lake/reservoir and Delta fishing provided here pertain only to trips made by Sacramento River anglers on lakes/reservoirs and Delta waterways and are thus not necessarily representative of all trips made by all anglers on those latter waterbodies.

- The distribution of trips between shore- versus boat-based (private boat and hired guide) modes is 49% versus 38% for rivers, 34% versus 50% for lakes, and 23% versus 71% for the Delta. The proportion of trips involving a combination of shore and boat fishing is fairly modest for all waterbody types (Table IV.D.2-1).
- About 83% of river and Delta trips and 77% of lake trips involve fishing without children. Rivers account for the largest percent of trips involving adult anglers fishing alone (19%) (Table IV.D.2-2).
- The percent of trips involving overnight stays away from home is lowest for the Delta (22%) and highest for lakes (31%) (Table IV.D.2-3).
- Average per capita expenditures are lowest for lake trips (\$69.35) and highest for river trips (\$110.30) (Table IV.D.2-4). River trips are more likely to involve hired guides than lake or Delta trips.

Table IV.D.2-1. Mode distribution of most recent fishing trip, shown separately by waterbody type

<i>Fishing mode</i>	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>
Shore	<b>0.491<sup>1</sup></b>	<b>0.335</b>	<b>0.230</b>	0.426 <sup>1</sup>
Private boat	<b>0.326</b>	<b>0.492<sup>1</sup></b>	<b>0.691<sup>1</sup></b>	0.405
Hired guide	<b>0.058</b>	<b>0.003</b>	<b>0.015</b>	0.041
Shore/private boat	<b>0.086</b>	<b>0.142</b>	<b>0.059</b>	0.095
All else	<b>0.039</b>	<b>0.028</b>	<b>0.005</b>	0.033
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1123	358	204	1685

$\chi^2=144.160$ ,  $df=8$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.D.2-2. Distribution of most recent trip by type of fishing party, shown separately by waterbody type

<i>Fishing party</i>	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>
Alone	<b>0.186</b>	<b>0.131</b>	<b>0.082</b>	0.162
Adults only	<b>0.639<sup>1</sup></b>	<b>0.639<sup>1</sup></b>	<b>0.744<sup>1</sup></b>	0.651 <sup>1</sup>
Adults w/children	<b>0.175</b>	<b>0.230</b>	<b>0.174</b>	0.187
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1182	374	207	1763

$\chi^2=22.474$ ,  $df=4$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Table IV.D.2-3. Distribution of most recent fishing trip by trip duration, shown separately by waterbody type

<i>Trip duration</i>	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>
Overnight	<b>0.259</b>	<b>0.314</b>	<b>0.221</b>	0.266
Day	<b>0.741<sup>1</sup></b>	<b>0.686<sup>1</sup></b>	<b>0.779<sup>1</sup></b>	0.734 <sup>1</sup>
Total	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>	1.000
n	1194	376	208	1778

$\chi^2=6.865$ ,  $df=2$ , asymptotic significance (2-tailed)=0.032

<sup>1</sup> mode

Table IV.D.2-4. Per capita expenditures on most recent fishing trip, shown separately by waterbody type<sup>1,2</sup>

	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>
Mean	<b>\$110.30</b>	<b>\$69.35</b>	<b>\$83.26</b>	\$97.76
Standard deviation	203.73	86.69	106.22	174.43
Median	\$40.00	\$39.75	\$45.75	\$40.00
n	869	300	164	1333

ANOVA  $F(2, 1330)=6.851$ ,  $p=0.001$

<sup>1</sup> Includes expenditures on

(a) gas for vehicles, bridge tolls, etc.

(b) entry/day use/parking fees, etc.

(c) derby/tournament fees

(d) tackle, gear, bait, lures, etc. – if bought specifically for this trip

(e) guide fees – if hired a guide

(f) rental boat fees – if rented a boat

(g) private boat fuel, launch fees, etc. – if fished from private boat

(h) food and beverage from grocery/convenience stores

(i) food and beverage from delis/fast food/restaurants

(j) clothing, toiletries, camping supplies, etc. – if bought specifically for this trip

(k) non-fishing recreation (horseback riding, hunting, etc.) – if engaged in other types of recreation on this trip

(l) lodging – if spent any nights away from home on this trip

<sup>2</sup> Categories accounting for the majority of expenditures include gas (22% of total expenditures for river trips, 29% for lake/reservoir trips, 30% for Delta trips), entry/day use/parking (3%, 8%, 6% respectively), tackle/gear (12%, 13%, 19% respectively), guide fees (18%, 3%, 3% respectively), private boat costs (4%, 8%, 14% respectively), groceries (13%, 20%, 13% respectively), food/beverage services (8%, 4%, 5% respectively), lodging (15%, 6%, 4% respectively).

Anglers were asked to identify factors that affected their location choice on their most recent fishing trip (Table IV.D.2-5). The factors selected reflect not only angler preferences but also what each waterbody type has to offer in terms of amenities and landscape characteristics.

Factors that affect trips similarly across waterbody types include:

- good fishing conditions (36%)
- good parking (24%)
- local fishing reports (21%)
- conveniently located even if not close to home (16%)
- trash cans (10%)

- location chosen by someone else (8%)
- flush toilets (7%)

Factors that affect trips differently across waterbody types include the following:

- Proximity of the fishing site to home is more important for rivers (60%) and lakes (69%) than the Delta (46%).
- Type of species available is important for all waterbody types (56% rivers, 53% lakes, 65% Delta)
- Variety of species is more important on lake and Delta trips (27% and 28% respectively) than river trips (16%).
- Aesthetic aspects of the site are important for all waterbody types but especially for lakes and rivers. These include peace and quiet (47% lakes, 39% rivers, 29% Delta), not too crowded (48% lakes, 37% rivers, 31% Delta), and scenic beauty (42% lakes, 34% rivers, 11% Delta).
- Easy shore access to water matters more for rivers (34%) and lakes (32%) than the Delta (21%) – not surprising given that a higher proportion of river and lake trips occur in shore mode than Delta trips.
- Boat-related amenities tend to be more important for Delta waterways and lakes. These include boat ramps (38% Delta, 35% lakes, 26% rivers), easy boat access to water (41% Delta, 35% lakes, 25% rivers), and boat safety (29% Delta and lakes, 5% rivers). This is not surprising given that a higher percent of lake and Delta trips occur from boats than river trips.

Table IV.D.2-5. Proportion of trips influenced by each location factor, shown separately by waterbody type<sup>1</sup>

<i>Location factor</i>	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Not too far from home	<b>0.600</b>	<b>0.689</b>	<b>0.459</b>	0.602	29.494 (0.000)
Type of species available at location	<b>0.562</b>	<b>0.525</b>	<b>0.647</b>	0.565	8.113 (0.017)
Past use/familiarity with site	<b>0.395</b>	<b>0.464</b>	<b>0.440</b>	0.415	6.150 (0.046)
Peace & quiet	<b>0.394</b>	<b>0.466</b>	<b>0.285</b>	0.397	18.411 (0.000)
Not too crowded	<b>0.368</b>	<b>0.475</b>	<b>0.314</b>	0.384	18.467 (0.000)
Good fishing conditions (lake level, river flow, flow temperature, water clarity, etc.)	0.346	0.405	0.319	<b>0.355</b>	5.603 (0.061)
Scenic beauty	<b>0.343</b>	<b>0.418</b>	<b>0.111</b>	0.332	58.725 (0.000)
Easy shore access to water	<b>0.337</b>	<b>0.319</b>	<b>0.213</b>	0.319	12.628 (0.002)
Boat ramp	<b>0.258</b>	<b>0.346</b>	<b>0.377</b>	0.290	19.260 (0.000)
Easy boat access to water	<b>0.245</b>	<b>0.349</b>	<b>0.411</b>	0.286	32.619 (0.000)
Clean water (not contaminated)	<b>0.246</b>	<b>0.378</b>	<b>0.097</b>	0.256	57.338 (0.000)
Good parking (convenient, enough spaces)	0.226	0.282	0.213	<b>0.236</b>	5.583 (0.061)
Safe location for people/vehicles/belongings	<b>0.197</b>	<b>0.290</b>	<b>0.217</b>	0.219	14.081 (0.001)
Local fishing reports	0.201	0.212	0.271	<b>0.211</b>	5.144 (0.076)
Variety of species available at location	<b>0.162</b>	<b>0.273</b>	<b>0.280</b>	0.199	31.554 (0.000)
Conveniently located even if not close to	0.145	0.174	0.198	<b>0.157</b>	4.823 (0.090)



<i>Location factor</i>	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
home					
Overnight accommodations	<b>0.095</b>	<b>0.185</b>	<b>0.082</b>	0.113	25.008 (0.000)
Trash cans	0.094	0.129	0.087	<b>0.100</b>	4.312 (0.116)
Location chosen by someone else	0.086	0.075	0.072	<b>0.082</b>	0.764 (0.683)
Flush toilets	0.062	0.091	0.082	<b>0.070</b>	4.200 (0.122)
Boat safety (safe flow, not much debris, etc.)	<b>0.051</b>	<b>0.094</b>	<b>0.087</b>	0.064	10.674 (0.005)
Fish planting/stocking information	<b>0.044</b>	<b>0.137</b>	<b>0.005</b>	0.059	56.012 (0.000)
Picnic areas	<b>0.045</b>	<b>0.113</b>	<b>0.043</b>	0.059	24.246 (0.000)
Pit toilets	0.049	0.075	0.063	<b>0.056</b>	3.714 (0.156)
Tackle/bait shop	0.049	0.046	0.087	<b>0.052</b>	5.688 (0.058)
Fishing regulations	<b>0.063</b>	<b>0.024</b>	<b>0.029</b>	0.051	11.111 (0.004)
Guide/outfitter services	<b>0.065</b>	<b>0.008</b>	<b>0.010</b>	0.047	28.123 (0.000)
Grocery or convenience store	0.033	0.038	0.063	<b>0.037</b>	4.486 (0.106)
Place to eat out (deli, fast food, restaurant, etc.)	0.037	0.032	0.043	<b>0.037</b>	0.487 (0.784)
Full service marina	<b>0.020</b>	<b>0.056</b>	<b>0.082</b>	0.035	26.545 (0.000)
Gas station	0.028	0.032	0.043	<b>0.031</b>	1.349 (0.509)
Fishing derby	<b>0.008</b>	<b>0.027</b>	<b>0.058</b>	0.018	26.579 (0.000)
Showers	0.014	0.021	0.010	<b>0.015</b>	1.471 (0.479)
Fishing tournament	<b>0.003</b>	<b>0.035</b>	<b>0.014</b>	0.011	28.397 (0.000)
Playground	<b>0.007</b>	<b>0.027</b>	<b>0.000</b>	0.010	13.859 (0.001)
Rental boats	<b>0.004</b>	<b>0.024</b>	<b>0.000</b>	0.008	16.314 (0.000)
Laundry	0.003	0.011	0.000	<b>0.004</b>	5.810 (0.055)
n	1195	373	207	1775	

<sup>1</sup> Sum of each column 2-5 exceeds 1.0 as some anglers selected more than one factor.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance( two-tailed, 2 df) in parentheses pertains to contingency table with columns consisting of waterbody types and rows pertaining to whether or not the particular factor was relevant to the angler's location choice.

The percentage of trips that involve no activities other than fishing is highest for the Delta (48%) and lowest for lakes (25%). An activity important on all waterbody types is being with family and friends (43%). Generally speaking, lake and river trips are more likely to involve non-fishing activities than Delta trips. These include:

- scenery/wildlife viewing (34% lakes, 29% rivers, 16% Delta)
- picnicking/BBQ/eating/ drinking (25% lakes, 19% rivers, 12% Delta)
- camping (24% lakes, 13% rivers, 10% Delta)
- walking/jogging/hiking(17% lakes, 16% rivers, 14% Delta)
- swimming (20% lakes, 14% rivers, 7% Delta)
- boating/rafting/kayaking for purposes other than fishing (19% lakes, 10% rivers, 8% Delta).

Table IV.D.2-6. Proportion of trips involving activities other than fishing, shown separately by waterbody type<sup>1</sup>

<i>Other activities</i>	<i>River</i>	<i>Lake</i>	<i>Delta</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Being with family/friends	0.412	0.480	0.401	<b>0.425</b>	5.679 (0.058)
No other activities besides fishing	<b>0.359</b>	<b>0.253</b>	<b>0.484</b>	0.351	30.374 (0.000)
Scenery/wildlife viewing	<b>0.289</b>	<b>0.337</b>	<b>0.156</b>	0.284	20.471 (0.000)
Picnicking/BBQ/eating/ drinking	<b>0.194</b>	<b>0.247</b>	<b>0.120</b>	0.197	13.007 (0.001)
Camping	<b>0.133</b>	<b>0.236</b>	<b>0.099</b>	0.151	26.857 (0.000)
Walking/jogging/hiking	<b>0.158</b>	<b>0.171</b>	<b>0.042</b>	0.148	19.710 (0.000)
Swimming	<b>0.141</b>	<b>0.197</b>	<b>0.068</b>	0.145	17.077 (0.000)
Boating/rafting/kayaking (for purposes other than fishing)	<b>0.099</b>	<b>0.194</b>	<b>0.083</b>	0.118	25.655 (0.000)
Hunting	0.044	0.059	0.047	<b>0.047</b>	1.440 (0.487)
Biking	0.040	0.042	0.016	<b>0.038</b>	2.936 (0.230)
Backpacking	0.034	0.042	0.010	<b>0.033</b>	4.035 (0.133)
Waterskiing, jetskiing, etc.	0.022	0.042	0.026	<b>0.027</b>	4.114 (0.128)
Horseback riding	0.004	0.011	0.005	<b>0.005</b>	2.987 (0.225)
Other activities	0.025	0.022	0.005	<b>0.022</b>	2.936 (0.230)
n	1126	356	192	1674	

<sup>1</sup> Sum of each column 2-5 exceeds 1.0 as some respondents selected more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (two-tailed, 2 df) in parentheses pertains to contingency table with columns consisting of waterbody types and rows pertaining to whether or not the angler engaged in the particular activity.

#### IV.E. Synthesis of Angler and Trip Characteristics Relevant to Considering New Salmon Fishing Opportunities Above Dams

Of the 76% of Sacramento River anglers who may be interested in new salmon fishing opportunities above dams, 42% are non-salmon anglers and 34% are salmon anglers (Table IV.C-2). While Section IV.C.1 focuses on all non-salmon and salmon anglers, this section focuses only that subset who may be interested in new opportunities above dams.

##### IV.E.1. Characteristics of Anglers Who May Be Interested in New Salmon Fishing Opportunities Above Dams

Results of statistical tests indicate that non-salmon and salmon anglers who are interested in new fishing opportunities above dams share a number of demographic characteristics:

- About 17% are of median age (45-54 years), with 35% being 18-44 years and 48% being >54 years old (Table IV.E.1-1).
- About 54% live in adults-only households, 26% are adults with children, 17% live alone, and 3% are single parents (Table IV.E.1-4).
- About 36% are from households with median income \$50-100K and 32% come from households with income greater than \$100K (Table IV.E.1-6).

Non-salmon and salmon anglers also have demographic differences:

- Women comprise 11% of non-salmon anglers and 8% of salmon anglers (Table IV.E.1-2)
- Differences in race/Hispanic origin appear slight, despite their statistical significance: 8-9% Hispanic (all races), 77-78% White, 5% Asian, and 1-3% African-American (Table IV.E.1-3).
- About 97% of both non-salmon and salmon anglers have at least a high school degree, while 41% of non-salmon anglers and 35% of salmon anglers have at least a 4-year college degree (Table IV.E.1-5).

Table IV.E.1-1. Age distribution, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Age (# years)</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
18-24	0.061	0.037	<b>0.050</b>
25-34	0.142	0.155	<b>0.148</b>
35-44	0.149	0.152	<b>0.151</b>
45-54	0.173 <sup>2</sup>	0.175 <sup>2</sup>	<b>0.174<sup>2</sup></b>
55-64	0.250 <sup>1</sup>	0.272 <sup>1</sup>	<b>0.260<sup>1</sup></b>
>64	0.224	0.208	<b>0.217</b>
Total	1.000	1.000	<b>1.000</b>
n	784	624	1408

$\chi^2=5.657$ ,  $df=5$ , asymptotic significance (2-tailed)=0.341

<sup>1</sup> mode, <sup>2</sup> median

Table IV.E.1-2 Gender distribution, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Gender</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Male	<b>0.887<sup>1</sup></b>	<b>0.924<sup>1</sup></b>	0.904 <sup>1</sup>
Female	<b>0.113</b>	<b>0.076</b>	0.096
n	<b>1.000</b>	<b>1.000</b>	1.000

$\chi^2=5.386$ ,  $df=1$ , asymptotic significance (2-tailed)=0.020

<sup>1</sup> mode

Table IV.E.1-3. Race/Hispanic origin distribution, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Race/Hispanic origin</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Hispanic, all races	<b>0.086</b>	<b>0.081</b>	0.084
Non-Hispanic:			
White	<b>0.787<sup>1</sup></b>	<b>0.772<sup>1</sup></b>	0.780 <sup>1</sup>
Asian	<b>0.049</b>	<b>0.046</b>	0.048
Black/African-American	<b>0.032</b>	<b>0.010</b>	0.022
Native American	<b>0.007</b>	<b>0.015</b>	0.010
Polynesian	<b>0.007</b>	<b>0.015</b>	0.010
All else	<b>0.033</b>	<b>0.061</b>	0.046
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	756	606	1362

$\chi^2=17.769$ ,  $df=6$ , asymptotic significance (2-tailed)=0.007

<sup>1</sup> mode

Table IV.E.1-4. Distribution by household type, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Household type</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Live alone	0.160	0.156	<b>0.158</b>
Adults only	0.548 <sup>1</sup>	0.535 <sup>1</sup>	<b>0.542<sup>1</sup></b>
Single parent	0.024	0.034	<b>0.028</b>
Adults with children	0.268	0.275	<b>0.271</b>
Total	1.000	1.000	<b>1.000</b>
n	750	596	1346

$\chi^2=1.270$ ,  $df=3$ , asymptotic significance (2-tailed)=0.736

<sup>1</sup> mode

Table IV.E.1-5. Education distribution, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Education</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Some high school	<b>0.026</b>	<b>0.034</b>	0.029
High school graduate	<b>0.147</b>	<b>0.184</b>	0.163
Technical/professional school	<b>0.069</b>	<b>0.071</b>	0.070
Some college	<b>0.351<sup>1,2</sup></b>	<b>0.358<sup>1,2</sup></b>	0.354 <sup>1,2</sup>
4-year college graduate	<b>0.242</b>	<b>0.252</b>	0.246
Postgraduate degree	<b>0.165</b>	<b>0.102</b>	0.137
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	781	620	1401

$\chi^2=14.028$ ,  $df=5$ , asymptotic significance (2-tailed)=0.015

<sup>1</sup> mode, <sup>2</sup> median

Table IV.E.1-6. Annual household income distribution, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Household income</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
<\$10K	0.029	0.020	<b>0.025</b>
\$10K-25K	0.089	0.084	<b>0.087</b>
\$25K-50K	0.195	0.222	<b>0.207</b>
\$50K-100K	0.351 <sup>1,2</sup>	0.376 <sup>1,2</sup>	<b>0.362<sup>1,2</sup></b>
\$100K-250K	0.283	0.272	<b>0.278</b>
>\$250K	0.052	0.026	<b>0.041</b>
Total	1.000	1.000	<b>1.000</b>
n	752	604	1356

$\chi^2=8.434$ ,  $df=5$ , asymptotic significance (2-tailed)=0.134

<sup>1</sup> mode, <sup>2</sup> median

Non-salmon and salmon anglers exhibit a number of statistically significant differences in fishing behavior:

- Median number of days fished on the Sacramento River system is 3-6 days for non-salmon anglers and 7-12 days for salmon anglers (Table IV.E.1-7).
- About 28% of non-salmon anglers and 48% of salmon anglers are boat owners (Table IV.E.1-8).
- Average annual fishing expenditures (excluding trip-specific expenses) are \$1106 for non-salmon anglers and \$1751 for salmon anglers (Table IV.E.1-9).
- Differences in Central Valley fishing experience appear slight, despite their statistical significance. Median years of experience is 21-30 years for both non-salmon and salmon anglers (Table IV.E.1-10).
- Non-salmon anglers are more likely than salmon anglers to fish on rivers only (31% non-salmon versus 18% salmon) and rivers/lakes (40% versus 32%), but are less likely to fish on rivers/Delta (7% non-salmon versus 10% non-salmon) and rivers/lakes/Delta (23% versus 40%) (Table IV.E.1-11).

Table IV.E.1-7. Distribution of number of days fished on the Sacramento River system in the past 12 months, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i># days fished</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
1-2	<b>0.252</b>	<b>0.125</b>	0.195
3-6	<b>0.320<sup>1,2</sup></b>	<b>0.256<sup>1</sup></b>	0.292 <sup>1</sup>
7-12	<b>0.189</b>	<b>0.202<sup>2</sup></b>	0.195 <sup>2</sup>
13-24	<b>0.112</b>	<b>0.166</b>	0.136
25-50	<b>0.092</b>	<b>0.173</b>	0.128
51-75	<b>0.020</b>	<b>0.038</b>	0.028
76-100	<b>0.006</b>	<b>0.016</b>	0.010
>100	<b>0.009</b>	<b>0.025</b>	0.016
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	803	640	1443

$\chi^2=73.223$ ,  $df=7$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Table IV.E.1-8. Extent of boat ownership, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams<sup>1</sup>

<i>Boat ownership</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
No	<b>0.716<sup>2</sup></b>	<b>0.522<sup>2</sup></b>	0.629 <sup>2</sup>
Yes	<b>0.284</b>	<b>0.478</b>	0.371
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	725	586	1311

$\chi^2=52.108$ ,  $df=1$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> The mail survey did not include a question on boat ownership. As a proxy, anglers who spent any money on boat maintenance, moorage, storage, registration, loan payments, insurance or accessories (e.g., trailer, trailer/hitch) in the past year are presumed to be boat owners.

<sup>2</sup> mode

Table IV.E.1-9. Annual fishing expenditures (excluding trip-specific expenses), shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams<sup>1,2</sup>

<i>Expenditures</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Mean	<b>\$ 1106.40</b>	<b>\$ 1750.60</b>	\$ 1394.80
Standard deviation	3082.00	4093.35	3583.27
Median	\$ 298.50	\$ 604.50	\$ 424.00
n	718	582	1300

t-value=-3.143, df=1057, p-value (2-tailed)=0.002

<sup>1</sup> Includes expenditures on

- (a) fishing equipment (rods, reels, lines, flies, nets, tackle box, etc.)
- (b) fishing licenses and/or report cards
- (c) other fishing costs (fishing magazine subscriptions, fishing club membership, etc.)
- (d) clothing and equipment bought specifically for fishing (foul weather gear, waders, boots, camping gear, etc.)
- (e) boat related expenses – only if boat was bought mainly for fishing (boat maintenance, moorage, storage, registration, loan payments, insurance, accessories such as motor, trailer/hitch)
- (f) truck, camper, trailer, van or motor home expenses – only if vehicle was bought mainly for fishing (maintenance, insurance, loan payments, insurance, etc.)

<sup>2</sup> Categories accounting for the majority of expenditures include fishing equipment (24% of total expenditures by non-salmon anglers and 22% by salmon anglers), licenses (7% and 4% respectively), clothing/equipment (8% and 7% respectively), boat-related expenses (26% and 30% respectively), vehicle-related expenses (32% and 36% respectively).

Table IV.E.1-10. Distribution of Central Valley fishing experience, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i># years experience</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
0-5	<b>0.191<sup>1</sup></b>	<b>0.098</b>	0.150
6-10	<b>0.086</b>	<b>0.088</b>	0.087
11-15	<b>0.077</b>	<b>0.068</b>	0.073
16-20	<b>0.086</b>	<b>0.111</b>	0.097
21-30	<b>0.145<sup>2</sup></b>	<b>0.192<sup>1,2</sup></b>	0.166 <sup>1,2</sup>
31-40	<b>0.133</b>	<b>0.147</b>	0.139
41-50	<b>0.151</b>	<b>0.169</b>	0.159
>50	<b>0.131</b>	<b>0.129</b>	0.130
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	766	605	1371

$\chi^2=27.678$ , df=7, asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode, <sup>2</sup> median

Table IV.E.1-11. Distribution of waterbody type(s) fished in the past 12 months, shown separately for non-salmon and salmon anglers who may be interested in salmon fishing opportunities above dams

<i>Waterbody type(s)</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>
Rivers only	<b>0.305</b>	<b>0.180</b>	0.249
Rivers/lakes	<b>0.401<sup>1</sup></b>	<b>0.324<sup>1</sup></b>	0.366 <sup>1</sup>
Rivers/Delta	<b>0.066</b>	<b>0.098</b>	0.080
Rivers/lakes/Delta	<b>0.229</b>	<b>0.398</b>	0.305
Total	<b>1.000</b>	<b>1.000</b>	1.000
n	699	571	1270

$\chi^2=57.968$ ,  $df=3$ , asymptotic significance (2-tailed)=0.000

<sup>1</sup> mode

Non-salmon anglers generally engage in Central Valley activities much less frequently as salmon anglers (Table IV.E.1-12). The most popular activities include:

- fish planting (22% of non-salmon anglers versus 33% of salmon anglers)
- visiting CV dam (17% versus 31%)
- participating in CV fishing tournament (12% versus 25%)
- membership in fishing club/organization (7% versus 16%)
- visiting CV river to watch fish spawn (7% versus 14%)
- visiting CV fish hatchery (8% versus 13%).

Table IV.E.1-12. Proportion of anglers who participated in selected Central Valley (CV) activities in past three years, shown separately for non-salmon and salmon anglers who may be interested in new salmon fishing opportunities above dams<sup>1</sup>

<i>Central Valley activity</i>	<i>Non-salmon</i>	<i>Salmon</i>	<i>Total</i>	$\chi^2$ (signif) <sup>2</sup>
Fish planting (Project Kokanee, etc.)	<b>0.219</b>	<b>0.330</b>	0.268	22.292 (0.000)
Visited Central Valley dam	<b>0.168</b>	<b>0.311</b>	0.231	40.999 (0.000)
Participated in CV fishing tournament	<b>0.122</b>	<b>0.252</b>	0.179	40.708 (0.000)
Belonged to fishing club/organization	<b>0.066</b>	<b>0.158</b>	0.110	31.583 (0.000)
Visited CV river to watch fish spawn	<b>0.072</b>	<b>0.136</b>	0.107	16.056 (0.000)
Visited CV fish hatchery	<b>0.076</b>	<b>0.125</b>	0.100	9.762 (0.002)

<sup>1</sup> Includes all activities with at least one value  $\geq 0.100$ . Sum of each column 2-4 exceeds 1.0 as some anglers participate in more than one activity.

<sup>2</sup> Each  $\chi^2$  test statistic with asymptotic significance (2-tailed, 1 df) in parentheses pertains to contingency table with columns consisting of target species (salmon or non-salmon) and rows pertaining to whether or not the angler engaged in the particular activity.



#### **IV.E.2. Characteristics of Salmon River Trips and All River Trips Below and Above Dams**

This section describes characteristics of river trips targeting salmon and river trips below and above dams (all target species). The salmon trips are an indicator of what salmon anglers currently experience. Because a substantial percent of non-salmon as well as salmon anglers may be interested in salmon fishing opportunities above dams, we consider trips below dams (regardless of target species) as an indicator of what non-salmon anglers currently experience. Comparisons with trips above dams are helpful for contrasting what areas below and above dams have to offer in terms of amenities, fishing conditions, and landscape characteristics.

Notable differences exist among the trip types examined (Table IV.E.2-1):

- About 74% of salmon trips, 47% of trips below dams, and only 7% of trips above dams occur in boat-based modes (private boat, hired guide). Shore mode accounts for a slight majority of trips below dams and a large majority of trips above dams.
- The percent of trips involving adults only is higher for salmon trips and trips below dams (67%) than trips above dams (58%), while the percent of trips involving adults with children is lower for salmon trips and trips below dams (16%) than trips above dams (26%). The percent of trips involving anglers fishing alone is the same for all trip types (16-17%).
- Overnight trips comprise a smaller percent of salmon trips and trips below dams (15% and 21% respectively) than trips above dams (52%)
- Mean per capita trip expenditures are \$88 for salmon trips, \$100 for trips below dams, and \$159 for trips above dams.
- About 41-46% of salmon trips and trips below dams and 13% of trips above dams do not involve activities other than fishing. The most popular non-fishing activities are: being with family/friends (36-38% of salmon trips and trips below dams versus 58% of trips above dams), scenery/wildlife viewing (24-26% versus 45%), picnicking/BBQ/eating/drinking (15-17% versus 33%), walking/jogging/hiking (3-11% versus 44%), swimming (9-10% versus 33%), camping (5-10% versus 25%). Boating/rafting/kayaking for purposes other than fishing occurs on 6% for salmon trips and 10% of trips below and above dams.

Table IV.E.2-1. Distribution of trips by fishing mode, type of fishing party and trip duration, mean per capita trip expenditures, and proportion of trips involving activities other than fishing, shown separately for river trips targeting salmon and all river trips (all species) below and above dams

<i>Characteristic</i>	<i>Salmon<sup>1</sup></i>	<i>All species below dams<sup>2</sup></i>	<i>All species above dams<sup>2</sup></i>
Fishing mode:			
Shore	0.215	0.410	0.812
Private boat	0.626	0.412	0.053
Hired guide	0.117	0.062	0.015
Shore/private boat	0.018	0.086	0.068
All else	0.025	0.030	0.053
Total	1.000	1.000	1.000
Fishing party:			
Alone	0.170	0.173	0.160
Adults only	0.667	0.671	0.576
Adults with children	0.163	0.155	0.264
Total	1.000	1.000	1.000
Trip duration:			
Overnight	0.145	0.211	0.524
Day	0.855	0.789	0.476
Total	1.000	1.000	1.000
Mean per capita trip expenditures <sup>3</sup>	\$88.33	\$100.21	\$158.84
Other activities pursued on fishing trip: <sup>4</sup>			
Being with family/friends	0.359	0.378	0.576
No other activities	0.462	0.410	0.132
Scenery/wildlife viewing	0.237	0.258	0.451
Picnicking/BBQ/eating/drinking	0.148	0.172	0.326
Picnicking/BBQ/eating/drinking	0.029	0.108	0.444
Walking/jogging/hiking	0.090	0.099	0.333
Swimming	0.050	0.102	0.250
Camping	0.058	0.101	0.101
Boating/rafting/kayaking for purposes other than fishing			

<sup>1</sup> Sources: Tables IV.C.2-1 to IV.C.2-4, Table IV.C.2-6

<sup>2</sup> Sources: Tables IV.B.2-1 to IV.B.2-4, Table IV.B.2-6

<sup>3</sup> Includes expenditures on:

(a) gas for vehicles, bridge tolls, etc.

(b) entry/day use/parking fees, etc.

(c) derby/tournament fees

(d) tackle, gear, bait, lures, etc. – if bought specifically for this trip

(e) guide fees – if hired a guide

(f) rental boat fees – if rented a boat

(g) private boat fuel, launch fees, etc. – if fished from private boat

(h) food and beverage from grocery/convenience stores

(i) food and beverage from delis/fast food/restaurants

(j) clothing, toiletries, camping supplies, etc. – if bought specifically for this trip

(k) non-fishing recreation (horseback riding, hunting, etc.) – if engaged in other types of recreation on this trip

(l) lodging – if spent any nights away from home on this trip

<sup>4</sup>Includes activities with at least one value  $\geq 0.100$

Anglers were asked to identify factors that affected their location choice on their most recent fishing trip. Table IV.E.2-2 describes the importance of each factor for river trips targeting salmon and for river trips below and above dams (all target species). The factors selected reflect not only what anglers deem important but also what the areas below and above dams have to offer in terms of amenities, fishing conditions, and landscape characteristics.

- Factors that are important for all trip types: types of species available (68% of salmon trips, 59% of trips below dams, 47% of trips above dams), not far from home (57%, 63%, 48% respectively), fishing conditions (31%, 34%, 34%), safe location for people/vehicles/belongings (17%, 20%, 20%), conveniently located even if not close to home (13%, 15%, 15%), trash cans (10%, 10%, 10%)
- Factors whose importance is highest for salmon trips and lowest for trips above dams: easy boat access to water (43% of salmon trips, 29% of trips below dams, 6% of trips above dams), boat ramp (41%, 31%, 2% respectively), local fishing reports (33%, 22%, 10%), good parking (32%, 25%, 16%), boating safety (11%, 6%, 1%).
- Factors whose importance is lowest for salmon trips and highest for trips above dams: peace and quiet (19% of salmon trips, 35% of trips below dams, 61% of trips above dams), not too crowded (18%, 33%, 54% respectively), fish planting/stocking (1%, 3%, 13%)
- Factors that are similarly important for salmon trips and trips below dams, and highest for trips above dams: scenic beauty (27% of salmon trips, 28% of trips below dams, 70% of trips above dams), past use/familiarity (35%, 38%, 51% respectively), clean water (20%, 21%, 45%), overnight accommodations (7%, 6%, 25%).
- Factors that are similarly important for trips below and above dams and different (lower or higher) for salmon trips: easy shore access (19% of salmon trips, 33% of trips below dams, 33% of trips above dams), location chosen by someone else (15%, 8%, 8% respectively), guide/outfitter (10%, 7%, 7%).

Table IV.E.2-2. Proportion of trips influenced by each location factor – shown separately for river trips targeting salmon and all river trips (all species) below and above dams<sup>1</sup>

<i>Location factor</i>	<i>Salmon</i> <sup>2</sup>	<i>All species below dams</i> <sup>3</sup>	<i>All species above dams</i> <sup>3</sup>
Type of species available at this location	0.678	0.590	0.469
Not far from home	0.569	0.629	0.483
Past use/familiarity with site	0.351	0.376	0.510
Good fishing conditions (lake level, river flow, water temperature, water clarity, etc.)	0.309	0.344	0.344
Not too crowded	0.184	0.326	0.544
Peace & quiet	0.191	0.351	0.605
Easy shore access to water	0.191	0.328	0.328
Scenic beauty	0.271	0.275	0.701
Boat ramp	0.408	0.308	0.020
Easy boat access to water	0.428	0.286	0.061
Good parking (convenient, enough spaces)	0.316	0.247	0.163
Local fishing reports	0.329	0.219	0.102
Clean water (not contaminated)	0.198	0.205	0.449
Safe location for people/vehicles/belongings	0.174	0.200	0.200
Conveniently located even if not close to home	0.134	0.146	0.146
Location chosen by someone else	0.145	0.083	0.083
Trash cans	0.098	0.095	0.095
Variety of species available at this location	0.088	0.177	0.109
Overnight accommodations (campground, etc.) for anglers who spent at least one night away from home on this trip	0.072	0.062	0.252
Guide/outfitter services	0.099	0.067	0.067
Flush toilets	0.118	0.063	0.063
Boating safety (safe flow, not much debris, etc.)	0.112	0.060	0.007
Fish planting/stocking information	0.007	0.027	0.129

<sup>1</sup> Includes all factors with at least one value  $\geq 0.100$ . Sum of each column exceeds 1.0 as some anglers selected more than one factor.

<sup>2</sup> Source: Table IV.C.2-5

<sup>3</sup> Source: Table IV.B.2-5

## V. Summary and Conclusions

### V.A. Angler Demographics and Behavior and Comparison with Adult California Population

A random telephone survey of California fishing license holders was conducted in 2015 to identify anglers who were at least 18 years old and had fished on the Sacramento River system in the past 12 months. Anglers who met both these criteria were asked to complete a follow-up mail survey. Based on survey results, the population of Sacramento River anglers was estimated at 94,065 persons who (according to CDFW) made 532,465 trips on the Sacramento River system during the 2014-15 season (Table III.A-2). These anglers spend about \$142.9 million per year on Sacramento River fishing – including \$53.4 million in trip-related expenditures (\$100.21 per angler trip, Table IV.B.2-4) and \$89.4 million in annual fishing expenditures other than trip-specific expenses (\$951.08 per angler, Table V.A-1). Note that the trip-related expenditures pertain only to trips below dams, as an estimate of the number of trips above dams is not available.

The \$951.08 used to estimate aggregate annual expenditures (other than trip-specific expenditures) is based on the following rationale: Due to the difficulty of apportioning expenditures on items such as fishing equipment, boats and vehicles between fisheries within and outside the Central Valley, we asked anglers not only about their expenditures but also whether they had fished outside as well as inside the Central Valley in the past 12 months. As indicated in Table V.A-1, the difference between mean expenditures for anglers who fished both inside and outside the Central Valley versus anglers who fished exclusively in the Central Valley was found to be statistically significant. Thus the mean for Central Valley only anglers (\$951.08) was used to estimate total annual expenditures on Central Valley fisheries.

Table V.A-1. Annual fishing expenditures (excluding trip-specific expenses), shown separately for anglers whose expenditures pertain to fisheries inside and outside the Central Valley and anglers whose expenditures pertain to Central Valley fisheries only<sup>1,2</sup>

<i>Expenditures</i>	<i>Inside &amp; outside CV</i>	<i>CV only</i>	<i>Total</i>
Mean	<b>\$1859.87</b>	<b>\$951.08</b>	\$1399.66
Standard deviation	6091.39	2405.62	4630.30
Median	\$555.00	\$280.00	\$380.00
n	849	871	1720

t-value=4.050, df=1101, p-value (2-tailed)=0.000

<sup>1</sup> Includes expenditures on

- (a) fishing equipment (rods, reels, lines, flies, nets, tackle box, etc.)
- (b) fishing licenses and/or report cards
- (c) other fishing costs (fishing magazine subscriptions, fishing club membership, etc.)
- (d) clothing and equipment bought specifically for fishing (foul weather gear, waders, boots, camping gear, etc.)
- (e) boat related expenses (maintenance, moorage, storage, registration, loan payments, insurance, accessories such as motor, trailer/hitch) – only if boat was bought mainly for fishing
- (f) truck, camper, trailer, van or motor home expenses (maintenance, insurance, loan payments, insurance, etc.) – only if vehicle was bought mainly for fishing

<sup>2</sup> Categories accounting for the majority of expenditures include fishing equipment (21% of total expenditures by inside/outside CV anglers and 23% by CV only anglers), licenses (5% and 6% respectively), clothing/equipment (7% and 6% respectively), boat-related expenses (30% and 35% respectively), vehicle-related expenses (36% and 27% respectively).

Sacramento River anglers tend to be older, predominantly male, less diverse, and more educated than the general adult ( $\geq 18$  years) California population (Table V.A-2). While median age is 35-54 years old for both groups, 50% of anglers and a lesser 30% of adult Californians are older than 54 years old. Females comprise about 10% of the angling population but 50% of the California population. Ethnic/racial composition of the angling population is 8% Hispanic (all races), 78% White, 5% Asian, 2% African-American – compared to 33%, 44%, 14% and 5% respectively for adult Californians. About 96% of anglers have at least a high school degree and 36% have at least a 4-year college degree, compared to 82% and 31% respectively of adult Californians. California median household income (\$61,818) falls within the range of anglers' median income (\$50-100K). Finer comparisons are not possible due to the size of the income intervals used in the angler survey.

Table V.A-2. Demographic comparisons of California adult population with salmon and non-salmon anglers who may be interested in salmon fishing opportunities above dams<sup>1</sup>

<i>Demographic characteristic (description, Census data year)</i>	<i>California (Census)<sup>2</sup></i>	<i>Sacramento River anglers</i>
Age (proportion of persons ≥18 yrs, 2010):		
18-24	0.140	0.052
25-34	0.190	0.140
35-54	0.373 <sup>4,5</sup>	0.313 <sup>4,5</sup>
55-64	0.144	0.257
>64 years	0.152	0.238
Total	1.000	1.000
Gender (proportion female, 2010)	0.503	0.100
Race/Hispanic origin (proportion of persons ≥18 yrs, 2010):		
Hispanic (all races)	0.331	0.080
Non-Hispanic:		
White	0.444 <sup>4</sup>	0.783 <sup>4</sup>
Asian	0.136	0.051
Black/African American	0.050	0.021
All else	0.039	0.065
Total	100.0	100.0
Education (proportion of persons ≥25yrs, 2011-15):		
High school graduate or higher	0.818	0.959
Bachelor's degree or higher	0.314	0.355
Median household income (2011-15, in 2015\$)	\$61,818	\$50-100K

<sup>1</sup> Because anglers had to be at least 18 years of age to qualify for the mail survey, Census estimates of age and race were configured so that they also pertain to persons ≥ 18 years old. Census estimate of % female provided here pertains to all ages as an estimate could not be found specific to females ≥ 18 years old. Household type not included due to difficulty of mapping Census household definitions to the ones used in this survey.

<sup>2</sup> Census sources:

(a) California Department of Finance, 2010 Census, Summary File 1, Table 1,

[http://www.dof.ca.gov/Reports/Demographic\\_Reports/Census\\_2010/#SF1](http://www.dof.ca.gov/Reports/Demographic_Reports/Census_2010/#SF1)

(b) 2010 Census Interactive Population Search – California, <http://www.census.gov/2010census/popmap/ipmtext.php?fl=06>

(c) U.S. Census Bureau, Quick Facts California, <http://www.census.gov/quickfacts/table/PST045216/06>

Sources (a) and (b) together enabled estimation of age distribution, except that ages 35-44 and 45-54 in our survey had to be lumped together as 35-54 for comparability with the Census.

Gender and race/Hispanic origin derived from (a).

Education and income derived from (c).

<sup>3</sup> Age taken from Table IV.B.1-1, gender from Table IV.B.1-2, race/Hispanic origin from Table IV.B.1-3, and household income from Table IV.B.1-6. Because education estimates provided by the Census pertain to persons ≥ 25 years old, estimates for anglers provided in this table are also limited to survey respondents ≥ 25 years old and thus differ slightly from Table IV.B.1-5

<sup>4</sup> mode, <sup>5</sup> median

## V.B. Receptivity of Anglers to New Salmon Fishing Opportunities Above Dams

The major purpose of our survey was to determine the receptivity of Sacramento River anglers to new salmon fishing opportunities above dams that could occur as a result of improvements in fish passage. About 76% of Sacramento River anglers indicated that they may be interested in such opportunities (Table IV.B-1). Interested anglers tend to be younger than anglers who would probably not be interested (median age 45-54 years versus 55-64 years respectively, Table IV.B.1-1) and better educated (38% versus 28% with at least a 4-year college degree, Table IV.B.1-5). In terms of fishing behavior, interested and disinterested anglers are similar in terms of median number of days fished on the Sacramento River system (3-6 days per year, Table IV.B.1-7), boat ownership (37% and 34% respectively, Table IV.B.1-8), and average annual fishing expenditures excluding trip-specific expenses (\$1394, Table IV.B.1-9), but differ in terms of years of Central Valley fishing experience (21-30 years for interested anglers, 31-40 years for disinterested anglers, Table IV.B.1-10). Not surprisingly, fishing experience follows a similar pattern as age (Table IV.B.1-1). Interested anglers tend to be more avid participants than disinterested anglers in activities such as fish planting (27% of interested versus 20% of disinterested anglers), visiting Central Valley dams (23% versus 12%), participating in Central Valley fishing tournaments (18% versus 8%), belonging to fishing clubs/organizations (11% versus 7%), and visiting Central Valley hatcheries (10% versus 8%) (Table IV.B.1-11).

Of the 76% of Sacramento River anglers who may be interested in new opportunities above dams, non-salmon anglers comprise 42% and salmon anglers comprise 34% (Table IV.C-2). Comparisons of salmon and non-salmon anglers who are interested in fishing opportunities above dams reveal some notable differences:

- **Demographics:** The two groups share similar demographics except for education, with the proportion having at least a 4-year college degree being 41% for non-salmon anglers and 35% for salmon anglers (Table IV.E.1-5).
- **Fishing behavior:** Non-salmon and salmon anglers are similar in terms of Central Valley fishing experience (median 21-30 years, Table IV.E.1-10). However, they differ in terms of days fished on the Sacramento River system (3-6 days for non-salmon anglers versus 7-12 days for salmon anglers, Table IV.E.1-7), boat ownership (28% versus 48% respectively, Table IV.E.1-8), and average annual fishing expenditures excluding trip-specific expenses (\$1194 versus \$2154, Table IV.E.1-9). Non-salmon anglers are more likely to fish on rivers only (31% non-salmon versus 18% salmon) and rivers/lakes (40% versus 32%), but are less likely to fish on rivers/Delta (7% non-salmon versus 10% salmon) and rivers/lakes/Delta (23% versus 40%) (Table IV.E.1-11).
- **Participation in fish-related Central Valley activities:** While both groups are similarly inclined to visit Central Valley rivers to watch fish spawn (10%), salmon anglers participate at higher rates in activities such as fish planting (33% salmon versus 22% non-salmon), visiting Central Valley dams (31% versus 17%), participating in a Central Valley fishing tournament (25% versus 12%), belonging to fishing clubs/organizations (16% versus 7%), visiting Central Valley rivers to watch fish spawn (14% versus 7%), and visiting Central Valley hatcheries (13% versus 8%) (Table IV.E.1-13).

The reasons why non-salmon anglers are so receptive to new salmon fishing opportunities above dams are not clear. However, given that salmon anglers are defined here as anglers who targeted salmon at least once in the past year, non-salmon anglers by definition may have gone salmon fishing in previous



years and thus may not be completely devoid of such experience. Moreover, among anglers who indicated that they would *not* be interested in new salmon fishing opportunities, 43% of non-salmon anglers (compared to 75% of salmon anglers) cited satisfaction with current fishing locations as a reason for their disinterest (Table IV.C-3). This suggests another possible reason for the receptiveness of non-salmon anglers to new opportunities, namely, that they may not be as content with their current fishing locations as salmon anglers. *Non-salmon as well as salmon anglers should be considered as potential participants in new salmon fisheries above dams. However, the motivations of the two groups may differ.*

Potential interest does not necessarily translate to actual participation in new fishing opportunities, which is contingent on conditions above dams. The most important contingencies cited by anglers were quality of fishing (cited by 82% of all interested anglers), proximity of the fishing site to home (cited by 65% of interested non-salmon anglers and 71% of interested salmon anglers), fishing regulations (cited by 47% of interested anglers), and facilities (cited by 31% of interested non-salmon anglers and 39% of interested salmon anglers) (Table IV.C-3).

- **Quality of fishing:** The importance of fishing conditions above dams is not surprising, given that 34% of both non-salmon and salmon anglers consider fishing conditions (i.e., water flow, temperature, clarity) to be important determinants of the location choices that they currently make (Table IV.E.2-2). *This is also a reminder that passage is a necessary but not sufficient condition for development of a salmon fishery above dams. Habitat (including water) conditions must also be adequate for salmon to flourish and to sustain angler interest.*
- **Proximity to home:** As indicated in Section IV.E.2, the median one-way travel distance between angler residence and fishing site is 29 miles, and the mean distance (65 miles) is very close to the 75th percentile value (66 miles). *Participation in fishing areas above dams would be positively affected by proximity to residential concentrations of anglers, with the number living within a 65 mile radius of the site being a meaningful threshold. Data on angler zipcode of residence (e.g., from CDFW's Automated License Data System or the Central Valley Salmon and Steelhead Harvest Monitoring Project) would be useful for locating such areas of concentration.*
- **Fishing regulations:** Given the importance of regulatory distinctions such as bag limits versus catch-and-release to anglers (see "Fishery Management: Regulations" in Appendix D) and given that the salmon fishery is currently managed with bag limits as well as seasons, *anglers will likely consider bag limit versus catch-and-release to be an important regulatory consideration above dams.*
- **Facilities:** Based on handwritten comments provided by anglers who cited facilities as an important consideration above dams, boat ramps were their first priority. This is consistent with survey results regarding the importance of (a) easy boat access to water and (b) boat ramps on salmon trips (43% and 41% respectively) and on trips (non-salmon as well as salmon) below dams (41% and 31% respectively) (Table IV.E.2-2). The importance of boat-related amenities is not surprising, given that 74% of salmon trips and 47% of trips below dams occur in boat modes (Table IV.E.2-1). By contrast, only 7% of trips above dams occur in boat modes (Table IV.E.2-1) and easy boat access to water and boat ramps affects location choice for only 11% and 2% respectively of trips above dams (Table IV.E.2-2). *High boat usage below dams and low boat usage above dams suggests that development of a salmon fishery above dams will require additional boat-related amenities. The incentive to invest in such amenities will likely depend on the number of people expected to use them and thus proximity to residential concentrations of*

*anglers.*

- Other factors: Aesthetic conditions are notably more important determinants of location choice for trips above than below dams (including salmon trips below dams). For instance, scenic beauty is cited as an important location factor on 27% of salmon trips, 28% of trips below dams (all species), and 70% of trips above dams (all species). Similar patterns exist for peace and quiet (19%, 35% and 61% respectively), not too crowded (18%, 33%, 54%), and clean water (20%, 21%, 45%) (Table IV.E.2-2). *The importance of aesthetic conditions to anglers who currently fish above dams suggests that newcomers attracted to such areas by the prospect of salmon fishing will likely also experience similarly satisfactory aesthetics. However, to the extent that a newly established salmon fishery attracts many new anglers, it could adversely affect the peace and quiet and lack of crowding valued by anglers who currently fish above dams.*

Finally, it should be noted that our analysis focuses only on one aspect of fish passage, i.e., potential new salmon fishing opportunities above dams. A more comprehensive economic analysis of passage at any specific Central Valley location would depend on how it is achieved at that location (addition/improvement of ladders, dam removal), how much it costs, and positive and negative effects of passage on fisheries and other activities both below and above the dam.

## **V.C. Lessons Learned**

The following are lessons that we learned from the survey and ways to improve future surveys.

- Our experience with this as well as past angler surveys confirms the value of focus groups. Pretesting the survey with focus groups helped us see wording, formatting and other aspects of the survey from the perspective of anglers and improved our understanding of the varying experiences that they brought to the survey.
- One of our objectives was to estimate the size of the angling population, based on the proportion of adult license holders in our designated 14-county area who had fished on the Sacramento River system in the past 12 months. This proportion could not be estimated by a mail survey alone (without telephone screener), as we would have no way of distinguishing between non-respondents who had not fished on the Sacramento River system and non-respondents who had fished on the Sacramento River but refused to participate in the mail survey. The telephone screening questions enabled us to make this distinction. The telephone survey presented some challenges due to the prevalence of caller ID and call screening (this is an issue for telephone surveys in general, including polling and marketing surveys). However, in addition to its importance for estimating the size of the angling population, the telephone survey also alerted anglers to the upcoming arrival of the mail questionnaire and provided personal (albeit brief) human contact between interviewer and angler that hopefully encouraged anglers to respond to the mail survey.
- In addition to enclosing a paper survey with our letters to respondents, we could have also provided them with a link to an internet survey. A benefit of internet surveys is that they can be programmed to reduce respondent error by incorporating skip patterns and having anglers reconsider out-of-range or inconsistent answers. However, given that we could not stretch our funding to do both, we opted for the paper survey as not all anglers have access to the internet or would be comfortable filling out internet surveys of the length and complexity of our survey.

Surveys that provide both paper and internet options and sufficient sample to compare response rates and characteristics of respondents who select each option would be valuable contributions to the field of survey methodology.

- Based on focus group suggestions, we formatted most of the numeric questions (e.g., days fished, years of fishing experience) so anglers could respond by checking a numeric interval rather than providing a single number. While this likely eased some of the burden on respondents, it also compromised the precision of these estimates.
- To help us understand characteristics of different types of fishing trips, we asked anglers to provide details of their most recent trip. Our focus on the most recent trip was intended to improve recall. Repeating the survey every few months throughout the year would have further improved recall by shortening the recall period but was too costly for us to consider.
- The survey was conducted in the third consecutive year of drought in California. Although salmon fishing on the river was sustained by a sizeable year class returning from the ocean that year, overall Central Valley fishing conditions were impaired, with lake access particularly diminished by low water levels (see “Fishing Experiences/Conditions”, Appendix D). Given the year-to-year variability in fishing conditions, it would be useful to repeat surveys like this periodically to see how angler behavior changes under different fishing and economic conditions.
- In our question regarding target species on their most recent fishing trip, we provided anglers with a lengthy list of species and asked them to check all that applied. To obtain more meaningful responses to this question, we should have asked instead for the top 1-3 species targeted on the trip.
- We neglected to ask anglers whether they owned a boat that they used for Central Valley fishing. As a proxy, we assumed that anglers who had made boat-related expenditures in the past 12 months (i.e., expenditures for maintenance, moorage, storage, registration, loan payments, insurance, accessories such as motor or trailer/hitch for boats bought mainly for fishing) were boat owners. Obviously it would have been better to ask this directly.

## VI. References

Dillman, Don. A., Jolene D. Smyth and Leah Melani Christian. 2009. *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. New York: Wiley.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 2007. *Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265) As amended by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2007 (P.L. 109-479)*. 12 Jan. 2007. 16 U.S.C. §§ 1801 et seq.

## **VII. Acknowledgements**

We thank focus group participants for providing input that notably improved the survey and thank survey respondents for providing us with valuable insights into the behavior and opinions of Central Valley anglers. NOAA Fisheries' West Coast Region was a proponent of this research, NOAA Fisheries' Office of Habitat Conservation provided funding for the survey, and NOAA Fisheries' Office of Science and Technology, Economics Program funded our work with the focus groups. The California Department of Fish and Wildlife provided limited access to their Automated License Data System to CIC Research, the contractor who implemented this survey and provided us with data that excluded personally identifiable information. CDFW's Central Valley Salmon and Steelhead Monitoring Project shared data and expertise on Central Valley fisheries. Aaron Mamula and Giselle Samonte (NOAA Fisheries) and Jeremy Notch (UC Santa Cruz/NOAA Fisheries affiliate) reviewed this report.

**APPENDIX A**

**CENTRAL VALLEY ANGLER SURVEY  
TELEPHONE RECRUITMENT SCREENER**

## **Introduction**

Hello. May I speak to \_\_\_\_\_.

Hello. I'm calling on behalf of the National Marine Fisheries Service. We're calling California fishing license holders for a study of anglers who fish on the Sacramento River System . Do you have time to answer just a few questions?

## **The Screener**

Q1 First, are you 18 years of age or older?

1. Yes (CONTINUE)
2. No (THANK AND TERMINATE)

Q2 In the past 12 months, did you fish in California's Sacramento River System? By the Sacramento River System I mean the Sacramento River, the American River, the Feather River and the Yuba River and also any smaller rivers and creeks that connect with these 4 rivers. So, keeping these in mind, did you fish in the Sacramento River System in the past 12 months?

1. Yes (CONTINUE)
2. No (THANK & TERMINATE)
9. DK (THANK & TERMINATE)

Q3. We'd also like to know how many days you fished in the Sacramento River System in the past 12 months. Please count up each individual day that you fished and, if you took any overnight trips, please count each day that you fished on those trips separately. Over the past 12 months, did you fish on the Sacramento River System for ... (READ CHOICES)

1. 1-2 days
2. 3-6 days
3. 7-12 days
4. 13-24 days
5. 25-50 days
6. 51-75 days
7. 76-100 days
8. 101-200 days
9. more than 200 days
99. DK (PROBE FOR BEST GUESS)

**The Invitation**

Q4. Thank you for that information. This call is part of a larger research study to help fishery managers learn more about where habitat restoration on the Sacramento River system might do the most good for anglers. I'd like to send you a questionnaire to fill out and return to us. Is that something you could help us out with?

- 1. Yes (SKIP TO Q6a/b)
- 2. No (CONTINUE)

Q5. Very few anglers were selected for this survey so your help is critical to its success. Your participation is important to fishery managers. The survey should not take more than 25 minutes to complete. We would really appreciate your participation. Could you help us out?

- 1. Yes
- 2. No (THANK & TERMINATE)

Q6a. (IF LICENSE INFO INCLUDES ADDRESS, SAY:) Can I verify your name and address from your license? I show your name on your license as (READ SPELLING OF NAME) and your mailing address is . . . (CONFIRM ADDRESS, INCLUDING SPELLING OF STREET NAME AND CITY/TOWN NAME).

Name \_\_\_\_\_  
Mailing address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_  
Phone \_\_\_\_\_

Q6b. (IF LICENSE INFO DOES NOT INCLUDE ADDRESS, SAY:) First let me verify the spelling of your name. (READ SPELLING OF NAME & CONFIRM) And would you please give me your mailing address? (CONFIRM SPELLING OF ADDRESS WITH RESPONDENT BEFORE CONTINUING)

Name \_\_\_\_\_  
Mailing address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_  
Phone \_\_\_\_\_

Thank you again for your help. In the next few weeks, you will be receiving a questionnaire in the mail. There will be a name and telephone number on the questionnaire for you to call in case you have any questions about the survey. We look forward to receiving your completed questionnaire. Goodbye.

**APPENDIX B**

**CENTRAL VALLEY ANGLER SURVEY  
INITIAL LETTER, REMINDER POSTCARD, AND SECOND LETTER  
USED IN MAIL SURVEY**



INITIAL LETTER

UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Southwest Fisheries Science Center



Date

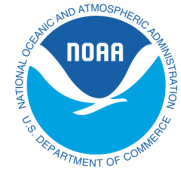
Dear <fname>,

About a week ago, we called you about participating in a survey about your fishing experiences on the Sacramento River system. Thank you for your willingness to participate in this project. As you can see, enclosed with this letter are the questionnaire and a postage-paid business reply envelope. Your answers matter!! The questionnaire will take approximately 25 minutes to complete. We ask that you please take your time, note the instructions along the way, and give your best answer to each question. If you have any questions or concerns about this study, please feel free to contact us at 888-978-1767 or [fishingsurvey@ciresearch.com](mailto:fishingsurvey@ciresearch.com)

We appreciate your participation and the time you set aside to be part of this study. We look forward to receiving your response.

Many thanks,

Cindy Thomson  
Economics Team Leader



**How was I selected?**

NOAA Fisheries Service is conducting a study to learn more about the activities and preferences of Sacramento River anglers. You have been identified in a phone survey of license holders as someone who fished on the Sacramento River system in the past year. Only a random sample of anglers was selected for this study, so your help is critical to its success.

**What’s this study about anyway?**

NOAA Fisheries is interested in learning more about fishing from the angler’s perspective – how much fishing you do on the Sacramento River relative to the rest of the Central Valley, what your fishing trips are like, how much you spend on fishing, and demographic characteristics of anglers like you. We are interested in hearing from all types of anglers – regardless of how often you fish or how much you care about fishing. Although NOAA Fisheries does not manage recreational fisheries, we do sponsor projects to improve habitat and fish passage for salmon that may affect other species as well. This survey will help us gain a better understanding of how habitat improvements on the Sacramento River system may affect your salmon and non-salmon fishing opportunities. We plan to share the results of the survey with our colleagues at the California Department of Fish and Wildlife.

**Anything else I should know?**

Your responses are voluntary and will be kept confidential; that is, your responses will never be publicly associated with your name or address. This study has been reviewed and approved by the Office of Management and Budget to meet the requirements of the Paperwork Reduction Act (OMB Control Number 0648-0710, expires 1/31/18).

POSTCARD

Last week we mailed you a questionnaire asking about your fishing activities on the Sacramento River system in the past year. If you have already completed and returned the survey to us, **please accept our sincere thanks**. If you have not had a chance to return it, we request that you do so in the next few days. The survey was sent to a small sample of recreational anglers, so it is important that your survey be included in the study to accurately reflect the fishing community.

In case you did not receive a questionnaire or it has been misplaced, we will be mailing you another questionnaire in the next week.. Again, we greatly appreciate your help with this important study.

Thank you for sharing your fishing experiences with us.

Sincerely,



Cindy Thomson  
Economics Team Leader



2<sup>ND</sup> LETTER



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Southwest Fisheries Science Center

Date

Dear <fname>,

If you have already mailed in the questionnaire for the Central Valley Sport Fishing Survey, we thank you for your response. If you have not yet returned it, we are writing again to ask for your help. We know your time is valuable and you may feel that your response is not important. However, regardless of how often or seldom you fish, your answers are very important to the success of the study. We ask that you please take the time to complete the enclosed questionnaire.

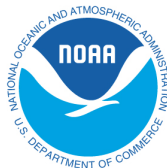
If you have any questions or concerns about this study, please feel free to contact us at 888-978-1767 or [fishingsurvey@cicresearch.com](mailto:fishingsurvey@cicresearch.com).

Again, we appreciate your participation and the time that you set aside to be part of this study. We look forward to receiving your response.

Many thanks,

A handwritten signature in black ink that reads "Cindy Thomson".

Cindy Thomson  
Economics Team Leader



### **About the study**

NOAA Fisheries would like to hear about your fishing experiences on the Sacramento River and the Central Valley in general, how much you spend on fishing, and demographic characteristics of anglers like you. Collecting this information is critical for understanding how habitat improvements on the Sacramento River system may affect your fishing opportunities.

The survey should take approximately 25 minutes to complete. Your responses are voluntary and will be kept confidential; that is, your responses will never be associated with your name or mailing address. This study has been reviewed and approved by the Office of Management and Budget to meet the requirements of the Paperwork Reduction Act (OMB Control Number 0648-0710, expires 1/31/18).

**APPENDIX C**  
**CENTRAL VALLEY ANGLER SURVEY**  
**MAIL QUESTIONNAIRE**

# Central Valley Sport Fishing



Photo credits: Matt Johnson (top left), Cyril Michel (top right), Cindy Thomson (bottom right), Jeremy Notch (bottom left)

**We want to learn about your fishing experience in the Central Valley!**  
**Participation in this survey is voluntary.**

**Your Response is Important!**

Please address any questions you have regarding this survey to:  
888-978-1767 or [fishingsurvey@cicresearch.com](mailto:fishingsurvey@cicresearch.com)



**NOAA FISHERIES**

OMB Control Number: 0648-0710

Expiration date: 1/31/18

Public reporting burden for this collection of information is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to Cindy Thomson, NOAA, National Marine Fisheries Service, 110 Shaffer Rd., Santa Cruz, CA 95060. Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subjected to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number

## INTRODUCTION

This survey pertains to your fishing in the Central Valley. For purposes of the survey, the Central Valley is defined as the area depicted on the map below – including the Sacramento and San Joaquin Rivers and their tributaries (medium blue), nearby lakes and reservoirs (dark blue), and the Sacramento/San Joaquin Delta (green). **If you fished on tributaries, lakes or reservoirs that are not named on the map but are connected to the Sacramento River or San Joaquin River, the survey covers those fishing trips as well.**



## SECTION A

### Your Fishing Experiences in the Central Valley in the Past 12 Months

The questions in this section pertain to your fishing in the past 12 months on Central Valley waterbodies – including rivers and creeks, lakes and reservoirs, and Delta waterways.

A1. Over the past 12 months, did you fish on any Central Valley water bodies – including rivers/creeks, lakes/reservoirs, or Delta waterways?

- Yes → Continue to **Question A2**
- No → Thank you. Please check the “No” box and do not fill out the questionnaire. Just return it in the envelope provided.

Questions A2 and A3 pertain to the number of fishing trips that you made on Central Valley waterbodies in the past 12 months. **For purposes of these questions, a fishing trip covers the time from when you left your home to when you returned. Some fishing trips are completed within one day. Other fishing trips involve overnight stays away from home where you may have fished on one or more days.**

A2. How many **one-day** fishing trips did you make on Central Valley waterbodies in the past 12 months?

Central Valley waterbody	Number of ONE-DAY fishing trips in past 12 months in the Central Valley by waterbody type									
	0	1-2	3-6	7-12	13-24	25-50	51-75	76-100	101-200	>200
Rivers/creeks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lakes/reservoirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delta waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A3. How many **overnight** trips did you make on Central Valley waterbodies in the past 12 months where you fished on one or more days away from home?

Central Valley waterbody	Number of OVERNIGHT fishing trips in past 12 months in the Central Valley by waterbody type									
	0	1-2	3-6	7-12	13-24	25-50	51-75	76-100	101-200	>200
Rivers/creeks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lakes/reservoirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delta waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Questions A4 through A9 pertain to the number of **days** that you fished in the Central Valley in the past 12 months. If any of your Central Valley fishing trips were overnight trips, count each day that you fished on those trips separately.

A4. Over the past 12 months, did you fish on any Central Valley rivers or creeks?

- Yes → Continue to **Question A5**
- No → Skip to **Question A6 on Page 5**

A5. Over the past 12 months, about how many **days** did you spend fishing on Central Valley rivers and creeks? *Count partial days as full days.*

River/creek (see map)	Days fished in past 12 months								
	Check <b>one</b> box per row for <b>only</b> those rivers/creeks that you fished.								
	1-2	3-6	7-12	13-24	25-50	51-75	76-100	101-200	>200
Sacramento River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clear Creek	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stony Creek	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feather River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yuba River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bear River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
American River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cosumnes River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
San Joaquin River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mokelumne River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calaveras River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stanislaus River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuolumne River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Merced River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chowchilla River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fresno River	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Central Valley rivers/creeks ( <i>please specify</i> ):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A6. Over the past 12 months, did you fish on any Central Valley lakes or reservoirs?

- Yes → Continue to **Question A7**
- No → Skip to **Question A8**

A7. Over the past 12 months, about how many days did you spend fishing on Central Valley lakes and reservoirs?

Lake/reservoir (see map)	Days fished in past 12 months								
	Check <b>one</b> box per row for <b>only</b> the lakes/reservoirs that you fished.								
	1-2	3-6	7-12	13-24	25-50	51-75	76-100	101-200	>200
Shasta Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Black Butte Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lake Almanor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lake Oroville	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Bullards Bar Reservoir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engelbright Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camp Far West Reservoir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Folsom Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camanche Reservoir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Hogan Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New Melones Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don Pedro Reservoir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lake McClure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eastman Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hensley Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Millerton Lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Central Valley lakes/ reservoirs (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A8. Over the past 12 months, did you fish on any Delta waterways? Delta waterways include sloughs, canals, tracts, rivers, creeks, lakes, bays, etc.

- Yes → Continue to **Question A9**
- No → Skip to **Question A10 on Page 6**

A9. Over the past 12 months, about how many days did you spend fishing on Delta waterways?

Days fished on Delta waterways in past 12 months								
Check <b>one</b> box.								
1-2	3-6	7-12	13-24	25-50	51-75	76-100	101-200	>200
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A10. Over the past 12 months, which of the following species did you **target** while fishing on Central Valley rivers and creeks, lakes and reservoirs, and Delta waterways? *Check all that apply.*

Target species	Species targeted in the Central Valley in past 12 months, regardless of whether you caught them For <u>each</u> waterbody that you fished (columns), check <u>all</u> species that you targeted.		
	Rivers/creeks	Lakes/reservoirs	Delta waterways
Largemouth bass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smallmouth bass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spotted bass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Striped bass (striper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White bass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bass, don't know what kind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bluegill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Catfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crappie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
King (Chinook) salmon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kokanee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Splittail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sturgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brown trout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rainbow trout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trout, don't know what kind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steelhead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whatever I could catch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other fish ( <i>please specify</i> )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SECTION B**  
**Your Most Recent Fishing Trip in the Central Valley**

The questions in this section pertain to your **most recent** fishing trip in the Central Valley.

B1. Thinking about your **most recent** fishing trip in the Central Valley, did you do **most** of your fishing on a river or creek, lake or reservoir, or a Delta waterway? Check **one** box only.

- River or creek → Continue to **Questions B2 & B3 below**
- Lake or reservoir → Skip to **Question B4 on Page 8**
- Delta waterway → Skip to **Question B5 on Page 8**

**Answer Questions B2 & B3 only if your most recent Central Valley fishing trip was on a river or creek.**

B2. On which river/creek did you do **most** of your fishing on your **most recent** Central Valley fishing trip?

Location fished on your <b>most recent</b> Central Valley fishing trip <i>Check <b>one</b> box only.</i>	River/creek (see map)
<input type="checkbox"/>	Sacramento River
<input type="checkbox"/>	Clear Creek
<input type="checkbox"/>	Stony Creek
<input type="checkbox"/>	Feather River
<input type="checkbox"/>	Yuba River
<input type="checkbox"/>	Bear River
<input type="checkbox"/>	American River
<input type="checkbox"/>	Cosumnes River
<input type="checkbox"/>	San Joaquin River
<input type="checkbox"/>	Mokelumne River
<input type="checkbox"/>	Calaveras River
<input type="checkbox"/>	Stanislaus River
<input type="checkbox"/>	Tuolumne River
<input type="checkbox"/>	Merced River
<input type="checkbox"/>	Chowchilla River
<input type="checkbox"/>	Fresno River
<input type="checkbox"/>	Other Central Valley river/creek ( <i>please specify</i> ): _____

B3. Please name a landmark (city, town, marina, launch ramp, bridge, street, highway, hatchery, dam, park, etc.) close to where you did most of your fishing on your **most recent** Central Valley fishing trip.

\_\_\_\_\_

**Now skip to Question B6 on Page 9.**

**Answer Question B4 only if your most recent Central Valley fishing trip was on a lake or reservoir.**

B4. On which lake/reservoir did you do **most** of your fishing on your **most recent** Central Valley fishing trip?

Location fished on your <b>most recent</b> Central Valley fishing trip <i>Check <b>one</b> box only.</i>	Lake/reservoir (see map)
<input type="checkbox"/>	Shasta Lake
<input type="checkbox"/>	Black Butte Lake
<input type="checkbox"/>	Lake Almanor
<input type="checkbox"/>	Lake Oroville
<input type="checkbox"/>	New Bullards Bar Reservoir
<input type="checkbox"/>	Engelbright Lake
<input type="checkbox"/>	Camp Far West Reservoir
<input type="checkbox"/>	Folsom Lake
<input type="checkbox"/>	Camanche Reservoir
<input type="checkbox"/>	New Hogan Lake
<input type="checkbox"/>	New Melones Lake
<input type="checkbox"/>	Don Pedro Reservoir
<input type="checkbox"/>	Lake McClure
<input type="checkbox"/>	Eastman Lake
<input type="checkbox"/>	Hensley Lake
<input type="checkbox"/>	Millerton Lake
<input type="checkbox"/>	Other Central Valley lake/reservoir ( <i>please specify</i> ): _____

**Now skip to Question B6 on Page 9.**

**Answer Question B5 only if your most recent Central Valley fishing trip was on a Delta waterway.**

B5. Please name the Delta waterway (slough, canal, tract, river, creek, lake, bay, etc.) where you did most of your fishing on your **most recent** Central Valley fishing trip. If you're not sure where you fished in the Delta, enter a landmark or town that was close to where you fished.

\_\_\_\_\_

B6. Which of the following species did you **target** on your **most recent** Central Valley fishing trip, regardless of whether you caught any? Check **all** that apply.

Species targeted on most recent trip, regardless of whether you caught any <i>Check all that apply.</i>	Target species
<input type="checkbox"/>	Largemouth bass
<input type="checkbox"/>	Smallmouth bass
<input type="checkbox"/>	Spotted bass
<input type="checkbox"/>	Striped bass (striper)
<input type="checkbox"/>	White bass
<input type="checkbox"/>	Bass, don't know what kind
<input type="checkbox"/>	Bluegill
<input type="checkbox"/>	Carp
<input type="checkbox"/>	Catfish
<input type="checkbox"/>	Crappie
<input type="checkbox"/>	King (Chinook) salmon
<input type="checkbox"/>	Kokanee
<input type="checkbox"/>	Perch
<input type="checkbox"/>	Shad
<input type="checkbox"/>	Splittail
<input type="checkbox"/>	Sturgeon
<input type="checkbox"/>	Sunfish
<input type="checkbox"/>	Brown trout
<input type="checkbox"/>	Rainbow trout
<input type="checkbox"/>	Trout, don't know what kind
<input type="checkbox"/>	Steelhead
<input type="checkbox"/>	Whatever I could catch
<input type="checkbox"/>	Other fish ( <i>please specify</i> ): _____

B7. In what mode did you fish on your **most recent** Central Valley fishing trip? Check **all** that apply.

- Riverbank (including wading)
- Lake/reservoir shoreline
- Delta shoreline (pier, bank, etc.)
- Private boat
- Rental boat
- Hired guide

B8. Why did you choose the **particular location** of your **most recent** Central Valley fishing trip?

<i>Check <b>all</b> that apply.</i>	<b>Reason(s) for location choice on <u>most recent</u> trip</b>
<input type="checkbox"/>	Type of species available at this location
<input type="checkbox"/>	Variety of species available at this location
<input type="checkbox"/>	Fish planting and stocking information
<input type="checkbox"/>	Local fishing reports
<input type="checkbox"/>	Fishing regulations
<input type="checkbox"/>	Good fishing conditions (lake level, river flow, water temperature, water clarity, etc.)
<input type="checkbox"/>	Fishing derby
<input type="checkbox"/>	Fishing tournament
<input type="checkbox"/>	Not too crowded
<input type="checkbox"/>	Easy shore access to water
<input type="checkbox"/>	Easy boat access to water
<input type="checkbox"/>	Boating safety (safe flow, not much debris, etc.)
<input type="checkbox"/>	Clean water (not contaminated)
<input type="checkbox"/>	Scenic beauty
<input type="checkbox"/>	Peace and quiet
<input type="checkbox"/>	Not too far from home
<input type="checkbox"/>	Conveniently located even if not close to home
<input type="checkbox"/>	Good parking (convenient, enough spaces)
<input type="checkbox"/>	Safe location for people/vehicles/belongings
<input type="checkbox"/>	Boat ramp
<input type="checkbox"/>	Full service marina
<input type="checkbox"/>	Guide/outfitter services
<input type="checkbox"/>	Rental boats
<input type="checkbox"/>	Tackle/bait shop
<input type="checkbox"/>	Picnic areas
<input type="checkbox"/>	Trash cans
<input type="checkbox"/>	Pit toilets
<input type="checkbox"/>	Flush toilets
<input type="checkbox"/>	Showers
<input type="checkbox"/>	Laundry
<input type="checkbox"/>	Grocery or convenience store
<input type="checkbox"/>	Place to eat out (deli, fast food, restaurant, etc.)
<input type="checkbox"/>	Gas station
<input type="checkbox"/>	Playground
<input type="checkbox"/>	Overnight accommodations (campground, etc.), for anglers who spent at least one night away from home on this trip
<input type="checkbox"/>	Past use and familiarity with site
<input type="checkbox"/>	Location chosen by someone else
<input type="checkbox"/>	Other (please specify): _____

B9. What other activities did you participate in on your **most recent** trip – besides fishing?

<i>Check <b>all</b> that apply.</i>	<b>Activities on <u>most recent</u> trip</b>
<input type="checkbox"/>	Swimming
<input type="checkbox"/>	Boating/rafting/kayaking (for purposes other than fishing)
<input type="checkbox"/>	Water skiing, jet skiing, etc.
<input type="checkbox"/>	Walking/jogging/hiking
<input type="checkbox"/>	Camping
<input type="checkbox"/>	Backpacking
<input type="checkbox"/>	Biking
<input type="checkbox"/>	Picnicking/BBQ/eating/drinking
<input type="checkbox"/>	Scenery/wildlife viewing
<input type="checkbox"/>	Being with family/friends
<input type="checkbox"/>	Horseback riding
<input type="checkbox"/>	Hunting
<input type="checkbox"/>	Other (please specify): _____
<input type="checkbox"/>	No other activities besides fishing

B10. Fishing can involve a day trip or an overnight trip away from home. Did you spend any nights away from home on your **most recent** trip?

- Yes → *Continue to **Question B11***
- No → *Skip to **Question B14 on Page 12***

B11. How many nights were you away from home on your **most recent** trip?  
 \_\_\_\_\_ nights

B12. Where did you spend your night(s) away from home on your **most recent** trip? *Check **all** that apply.*

- Backcountry/primitive camping
- Car, van, camper, etc. parked in no-fee area
- Campground
- RV park
- Cabin/cottage
- Fishing resort/lodge
- Hotel/motel
- Home of family/friends
- Aboard boat
- Other (*please specify*): \_\_\_\_\_

B13. How many days did you fish on your **most recent** trip?

\_\_\_\_\_ days fished



B14. Did you make your **most recent** trip alone or with other people?

- Alone → *Skip to Question B18*
- With other people → *Continue to Question B15*

B15. How many people were with you on this trip?

Yourself + \_\_\_\_ people

B16. How many of the people with you actually fished?

Yourself + \_\_\_\_ people

B17. How many of the people with you were under the age of 18?

\_\_\_\_ children under age 18

B18. Approximately how much money did you **personally** spend on **yourself and others** on your **most recent** trip? *Please include expenses related to this trip only.*

Cost category	Fill in the blanks. Write "0" if a particular category does not pertain to your <b>most recent</b> trip.	
	Your estimated expenditure (\$)	Number of people covered by this expenditure (including yourself)
Gas for vehicle, bridge tolls, etc.		
Entry/day use/parking fees, etc.		
Derby/tournament fees		
Tackle, gear, bait, lures and other such items, <i>if bought specifically for this trip</i>		
Guide fees, <i>if you hired a guide</i>		
Rental boat fees, <i>if you rented a boat</i>		
Private boat fuel, launch fees, etc., <i>if you fished from a private boat</i>		
Food and beverage from grocery/convenience stores		
Food and beverage from delis/fast food/restaurants		
Clothing, toiletries, camping supplies, etc., <i>if bought specifically for this trip</i>		
Non-fishing recreation (horseback riding, hunting, etc.), <i>if you engaged in other types of recreation on this trip</i>		
Lodging, <i>if you spent any nights away from home on this trip</i>		
Other ( <i>please specify</i> ): _____		
<b>Total Estimated Trip Cost</b> (sum of all costs)		

## SECTION C

### Questions About Your Other Fish- and Water-Related Activities

C1. Please indicate whether you have participated in any of the following activities in the Central Valley in the past 3 years.

Participated in past 3 years	Central Valley Activity (check <u>all</u> that apply)
<input type="checkbox"/>	Belonged to fishing club or organization
<input type="checkbox"/>	Participated in fishing derby
<input type="checkbox"/>	Participated in fishing tournament
<input type="checkbox"/>	Attended fishing seminar
<input type="checkbox"/>	Helped teach the public to fish (Fishing in the City, etc.)
<input type="checkbox"/>	Helped with fish planting (Project Kokanee, etc.)
<input type="checkbox"/>	Toured Central Valley hatchery
<input type="checkbox"/>	Toured Central Valley dam
<input type="checkbox"/>	Visited Central Valley river to watch fish spawn
<input type="checkbox"/>	Attended festival (Coleman Return of the Salmon Festival, Stanislaus River Festival, Wild and Scenic River Festival, Rio Vista Bass Festival, etc.)
<input type="checkbox"/>	Volunteered for Central Valley river/creek cleanup
<input type="checkbox"/>	Volunteered for Central Valley lake/reservoir cleanup
<input type="checkbox"/>	Volunteered for Delta waterway cleanup
<input type="checkbox"/>	Belonged to watershed stewardship organization (Resource Conservation District, local watershed council, river trust, etc.)
<input type="checkbox"/>	Other (please specify): _____

C2. Suppose that efforts to restore habitat and improve fish passage on Central Valley rivers led to new or improved salmon fishing opportunities in restored areas or areas above dams. Would you consider fishing for salmon at new or improved fishing locations in the Central Valley? Please select the one column that best describes your level of interest.

<p><input type="checkbox"/> <b>I may be interested</b> in new Central Valley salmon fishing locations, depending on: (check all that apply)</p> <p style="text-align: center;">↓</p> <p><input type="checkbox"/> The quality of fishing at the location</p> <p><input type="checkbox"/> Fishing regulations at the new location</p> <p><input type="checkbox"/> How close the location is to my home</p> <p><input type="checkbox"/> The types of facilities available at the location → Please indicate types of facilities that particularly interest you (boat ramp, campground, etc.): _____</p> <p><input type="checkbox"/> Other reason(s) why you may be interested in new salmon fishing locations (please specify): _____</p> <p>_____</p> <p>_____</p>	<p><input type="checkbox"/> <b>I probably would not be interested</b> in new Central Valley salmon fishing locations because: (check all that apply)</p> <p style="text-align: center;">↓</p> <p><input type="checkbox"/> Salmon fishing doesn't interest me that much.</p> <p><input type="checkbox"/> Fishing in rivers doesn't interest me that much.</p> <p><input type="checkbox"/> Fishing in general doesn't interest me that much.</p> <p><input type="checkbox"/> My current fishing locations suit me fine.</p> <p><input type="checkbox"/> Other reason(s) why you probably would not be interested in new salmon fishing locations (please specify): _____</p> <p>_____</p> <p>_____</p>	<p><input type="checkbox"/> <b>I don't know</b> if I would be interested.</p>
--	--	---

C3. Over the past 12 months, have you done any fishing in the U.S. outside the Central Valley?

- Yes → Continue to **Question C4**  
 No → Skip to **Question C5**

C4. In the past 12 months, how many total days did you go freshwater or saltwater fishing anywhere in the U.S., **including the Central Valley**?

	Number of days fishing in past 12 months anywhere in the U.S. Include both saltwater and freshwater days. Check <b>one</b> box.								
	1-2	3-6	7-12	13-24	25-50	51-75	76-100	101-200	>200
# of days fished in freshwater or saltwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C5. This question pertains to your non-trip expenditures in the past 12 months on freshwater and saltwater fishing in the U.S., including the Central Valley. **We are interested here in your expenditures over and above what you spent on individual fishing trips.** Approximately how much money did you spend in the past 12 months in each of the following categories?

Fishing cost category <i>Include all non-trip expenditures for freshwater and saltwater fishing in the U.S., including the Central Valley.</i>	Estimated expenditures (\$) <i>Enter "0" if you spent nothing in the category</i>
Fishing equipment (rods, reels, lines, lures, flies, nets, tackle box, etc.)	
Fishing licenses and/or report cards	
Other fishing costs such as fishing magazine subscription, fishing club membership, etc.	
Clothing and equipment such as foul weather gear, waders, boots, camping gear, etc. <i>(report total annual expenses but <b>only</b> for items that were bought mainly for fishing)</i>	
Boat-related expenses <i>(report total annual expenses but <b>only</b> if the boat was bought mainly for fishing):</i>	
Boat maintenance, moorage, storage, registration	
Loan payments	
Insurance	
Boat accessories (motor, trailer/hitch, etc.)	
Other boat-related expenses <i>(please specify):</i> _____	
Truck, camper, trailer, van, or motor home expenses <i>(report total annual expenses but <b>only</b> for vehicles that were bought mainly for fishing):</i>	
Maintenance, registration	
Loan payments	
Insurance	
Other truck, camper, trailer, van or motor home-related expenses <i>(please specify):</i> _____	
Other costs <i>(please specify):</i> _____	
<b>Total Annual Fishing Costs</b> (sum of all costs)	

Check this box if you had no expenditures in the above categories in the past 12 months.

SECTION D  
More About You

The following questions will help us learn more about people who fish in the Central Valley. The information you provide will remain strictly confidential and you will not be identified with your answers.

D1. How many years have you fished in the Central Valley? *Include total years fished in the Central Valley since you were a child.*

\_\_\_\_\_ years

D2. What is your age?

- |                                |   |
|--------------------------------|---|
| <input type="checkbox"/> 18-24 | <input type="checkbox"/> 45 - 54            |
| <input type="checkbox"/> 25-34 | <input type="checkbox"/> 55 - 64            |
| <input type="checkbox"/> 35-44 | <input type="checkbox"/> 65 years and older |

D3. You are:  Male  Female

D4. Are you Hispanic or Latino?

- Yes  No

D5. Which of the following best describes you? *Check **all** that apply.*

- |   |  |
|---|--|
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Caucasian or White                        |
| <input type="checkbox"/> Asian                            | <input type="checkbox"/> Native Hawaiian or Other Pacific Islander |
| <input type="checkbox"/> Black or African American        | <input type="checkbox"/> Other ( <i>please specify</i> ) _____     |

D6. What is the highest level of education you have completed? *Check **one** box only.*

- |   |  |
|---|--|
| <input type="checkbox"/> Some high school                 | <input type="checkbox"/> Some college            |
| <input type="checkbox"/> High school graduate             | <input type="checkbox"/> 4-year college graduate |
| <input type="checkbox"/> Technical or professional school | <input type="checkbox"/> Postgraduate degree     |

D7. Including yourself, how many adults and children (under 18) live in your household?

\_\_\_\_\_ adults, including yourself      \_\_\_\_\_ children under 18

D8. Which of the following categories best describes your household's total annual income before taxes in 2014?

- |  |  |
|--|--|
| <input type="checkbox"/> Less than \$10,000  | <input type="checkbox"/> \$50,000 - \$99,999   |
| <input type="checkbox"/> \$10,000 - \$24,999 | <input type="checkbox"/> \$100,000 - \$249,999 |
| <input type="checkbox"/> \$25,000 - \$49,999 | <input type="checkbox"/> \$250,000 or more     |



## **APPENDIX D**

### **CENTRAL VALLEY ANGLER SURVEY COMMENTS OF MAIL SURVEY RESPONDENTS**

At the end of the mail questionnaire, anglers were invited to provide comments about the survey and their Central Valley fishing experiences, including how those experiences could be improved. Over 30% of respondents provided comments. This appendix is a transcript of those comments, provided verbatim except for correction of misspellings. The comments are organized by topic. In cases where a comment covered multiple topics, the sentences comprising the comment were split up by topic.

The topics are as follows:

- Survey (83 comments)
- Fishing Experiences/Conditions (121 comments)
- Fishery Management: Licenses (42 comments)
- Fishery Management: Regulations (75 comments)
- Fishery Management: Enforcement (58 comments)
- Fishery Management: Stocking (33 comments)
- Fishery Management: Public Outreach (18 comments)
- Site Conditions: Access (52 comments)
- Site Conditions: Amenities (28 comments)
- Site Conditions: Cleanliness (33 comments)
- Site Conditions: Cost Other Than Licenses (16 comments)
- Site Conditions: Invasive/Non-Native Species (20 comments)
- Site Conditions: Safety (11 comments)
- Site Conditions: Users (17 comments)
- Policy: Habitat (9 comments)
- Policy: Water (65 comments)

## Survey

*Angler comments regarding the survey (comments 1-83) included suggestions for how we could have done better (1-48). Others cautioned that the time period covered by the survey did not represent their typical behavior (49-53), provided names of personal acquaintances who might also want to participate in the survey (54-56), and provided comments or clarifications regarding specific questions in the survey (57-79).*

1. I think your use of "Central Valley" in this survey is too inclusive! I grew up in the Central Valley, near Modesto, that is Central Valley to me. The Delta is its own entity.
2. A family survey would be good. This was done as individual (just myself). My entire family fishes a lot and the results would be quite different especially for financial question.
3. You should have an internet accessible form to save paper. We have not caught any fish in the locations we have travelled.
4. Sorry for the delayed response, I had lost the envelope to the original survey. You sent me a second survey, I used that envelope. Doing an electronic survey would have been good, and probably cheaper.
5. I think you missed a big opportunity to determine how your customers feel about the quality of fishing (How good was the fishing!). Why was that question avoided? Quality of fishing is always low because you have too many fishermen and too few fish. NOAA fisheries need to institute catch and release everywhere, especially on streams and rivers. This is the only way to accommodate all of your customers. Institute and ad campaign to promote catch and release.
6. I did not fish in the defined area. It would be helpful in the future to avoid this if the phone questionnaire knew specifically what bodies of water pertained to the survey. I fished around Lake Tahoe and the Truckee River.
7. Money and activity questions are contrary to my ideal for what fishing means to me. I have lived 40 years in the wilderness on my own fishing stream. Surveys like these have no consideration for the romantic and spiritual benefits of fishing. This survey could only have been created for any bureaucrats who have some ulterior motive for gathering more data. I suspect greater insidious regulation. Stewardship is a value that cannot be legislated, it must be instilled by passion.
8. I am not sure how helpful my survey is because I mainly fish on the Fall River in Shasta City, which feeds into Sacramento River. We recently bought Hobi fishing kayaks and plan to do more fishing in other locations. I am only into fly fishing which I think would have been good to ask in this questionnaire. Also who participates in "catch and release".
9. I feel that many of the questions were totally inappropriate. It is not your business how much my payments are or are not. It's none of your business if my vehicle was bought for fishing. Most people use their vehicles for a multitude of things. When I agreed to do this survey, I did not think it would be so invasive.
10. Some of the questions asked throughout the survey were unnecessary as well as irrelevant to fishing. Some questions I did not answer due to that reason.
11. I enjoyed the survey till it got off topic and started asking about camping. I prefer them to be about fish and fishing only.
12. I am not sure what this survey will tell you. I purchase a fishing license every year, but fish only when we are at Weaver Lake (Nevada County) or on the Yuba. I am a "fun" fisherman. I fish for fun, not necessarily for the catch.
13. What is the purpose of this survey?

14. Please make your questions more specific.
15. Too repetitive/long. I don't fish enough for all of this.
16. No more please, I am too old.
17. Don't ever contact me again.
18. If any additional information is needed call@ xxx-xxx-xxxx.
19. Would like a copy of this report.
20. Please send copy in paper form to [address].
21. Would like a free license for the survey.
22. I really didn't fish in Central Valley. More in the foothills and mountains. Sorry.
23. Sorry, took so long. My wife was always around and if she noticed cost I may have received divorce papers.
24. The girl who called me initially did a great job and deserves some recognition for her courtesy and respect.
25. I hope my answers help. I'm relatively new to fishing, but ever since I started, I've been hooked.
26. Thank you for all your hard work. I really appreciate you protecting fisheries for future generations. I look forward to teaching ethical fishing habits to family and friends to protect our fragile fish populations. Please keep up the hard work! Thank you.
27. I hope this survey will serve to help preserve and keep the Central Valley sportfishing for many decades to come. My father, God bless his soul, taught my brother and me how to fish. Fishing was something the boys got to do together and gave us a common bond. Fishing is my hobby and I try to fish different types of species. I now have two young boys and have taught them how to fish. They love fishing and now we can make our own family fishing trip memories.
28. May your efforts help create a sustainable fishing environment to provide future generations a great fishing experience on the American River.
29. Thank you for your time and efforts in maintaining a sustainable wildlife habitat.
30. Thank you for what you are doing! With the drought so rotten I'm very fearful of replenishment capabilities and river/stream survival. Thanks.
31. Great Survey! I didn't know there were this many rivers in the Central Valley, fascinating! And it make me feel a little lame. I haven't fished many of all the great waters available! Such is life.
32. Making a copy of some of the pages so I can use them as a list! Thanks for the opportunity to contribute!
33. Good survey. FYI, my wife and I are avid fly fishermen who catch and release all fish. We are also lifetime members of Trout Unlimited and belong to other conservation organizations.
34. Very good survey. I fished a guided tour one day while on vacation. We caught nothing, horrible fishing guide. Sorry I couldn't help more.
35. To whom it may concern. We have a damn good fishery. I love it and will help to do anything to protect what we have. All my children learn how to fish and obey all laws that apply to fishing. Love your survey and you should do the more often. My kids buy my fishing license every year for Christmas, or my birthday or Father's Day. We love the outdoors. For everyone grandkids and all.
36. Good luck!!! Bring on the big Daddys!!!
37. Thank you! Keep up the great work!
38. Thank you for the work you do!



39. Thank you for considering me for your survey. I truly enjoy fishing and love spending time on the water.
40. Great survey. Thanks!
41. Keep up the good work!
42. I enjoyed filling out this survey.
43. This is a great survey. I hope more people take time to do this survey. We need more management in the area.
44. Thank you for the work you do.
45. Thank you for the opportunity to participate in this survey!!
46. None. Thank you for the survey. Many thanks. Happy fishing.
47. Thanks for taking care of our rivers!
48. No! Thank you!
49. Thank you.
50. This is not a usual report for me. I usually fish quite a bit more. I had back surgery in August so I was out of commission.
51. I understand the difficulties to multivariate data analysis, but this survey, focusing on the last 12 months, only fails to show my overall lifetime utilization of Central Valley fishing locations and species. I target different species at different locations each year depending on many factors, including quality of fishing available, drought related issues (water level and location of migrant fish), specific dates/months available to go fishing and fishing partners and family who visit me and what their fishing interests are.
52. I love to Salmon fish. In 2014 my wife had breast cancer. That is the reason I didn't fish but a couple of days. Most years I put in 30 to 40 days fishing on the Sacramento River. My wife is doing great so look out this year as I will be back to fishing for Salmon again. P.S. I do catch and release most of my Salmon.
53. 2014 wasn't a heavy fishing year for me. In the earlier three years I was in California, all of the numbers and stats were much higher.
54. I am not an avid angler, so may be atypical in regard to the norm. Also, I work in the fishery field so my involvement with fisheries is more than just angling.
55. My situation kept me from fishing this year as much as I would like.
56. Expanding the timeframe under study, i.e., from 12 to 36 months, would have dramatically changed my answers. I fished less in the last 12 months than at any other time in my adult life.
57. I recently moved back to Central Valley. In past years I fished many more days stated in this survey.
58. My fishing friend is an avid fisherman, belongs to a Bass fishing club. He spends many days and nights on California lakes as well as Sacramento and American Rivers as well as the Delta. His phone number is xxx. His name is xxx.
59. Friend who owns boat is xxx. Might be interested in doing this survey.
60. You should send this survey to my husband. He and our son fish 1-2 times per week on average!
61. Don't judge me because my pen is pink. It's the only one I could find! Also, I go crabbing a lot at the Pacific Pier but I don't think that counts for this survey. But just in case it does I've been about 5 times last year. Thanks.
62. No mention of Yolo County, Knights Landing, Lisbon Slough.
63. Survey box on Yuba River, Stockton.
64. Questions in survey referencing "most recent" in section B was confusing!

65. Did not understand why so many questions were about "most recent trip". What steps are being taken to improve water quality? High water quality = better fishing! Reducing ammonia levels from agricultural run-off and wastewater plant discharges need to be addressed.
66. In regards to the "most recent trip" survey to the Feather, I answered those questions based on that particular trip. Normally, I select fishing areas not only based on fishing conditions, but also select clean water, scenic beauty, peace and quiet, safe location for vehicles, etc.. I just didn't think the Feather necessarily qualified for some of those categories.
67. The fishing trip was last year so I don't remember much.
68. Most of my recent fishing has been in the company of friends that own a boat. I do not currently own a boat. Have in the past. So my current frequency of fishing trips is dependent on being invited to join them.
69. My close friend owns a boat, or my expenses would be more.
70. Our trip was combined with a class reunion so it was hard to separate the cost for the trip. We were fly fishing only and would not have gone after Salmon, but if the Salmon populations comes back to outstanding numbers I might go back for a guided trip.
71. Cost of guides was not shown. My costs were about \$1,500 for the year.
72. We don't normally spend so much money on fishing equipment, but last year my husband and I took a fishing trip to Mongolia that required specific rods, flies, etc. The cost of this trip is not included in the cost breakdown.
73. I am in favor of efforts alluded to in part C, question C2.
74. Question C5 is confusing to me.
75. Section C, question#2: I would be much more interested in fishing if Indians were not allowed to use microfilament nets to decimate fish populations to what they are today. Section D, question #5: I was born in the U.S., why does it matter what color I am.
76. Question D4, page 15, antiquated question. This only continues the separation of nationalities. It's the 21st century, come on. Fishing is enjoyed by all nationalities. Nationalities have nothing to do with improving fisheries. Buenos Dias!
77. I would have volunteered to help clear the rivers around my area if I had heard about it. Either way, when my friends and I go fishing we try to leave the area cleaner than when we first got there.
78. I would like to learn more about helping with fish planting and volunteering to cleanup at creeks and lakes.
79. I'm interested in what I can do to help, like picking up trash or the things on page 13-16. If you can send me some kind of literature about it that would be cool. I thank you for doing what you do to keep fishing around. Sorry for the poor spelling and scribbles everywhere! Fish on! Have a good day!
80. I would like more information regarding Central Valley Activity. Fish and water related activities. Please send more information.
81. Can't say I've heard of seminars for fishing in lakes or rivers in area. Would be nice to have occasional seminars in lake or river locations in north valley areas, to not only let folks know what is available in area and to drum up more interest in fishing all Central Valley lakes, rivers and tributaries. Example: Woodson Bridge camp ground could be set up for an extensive 2-day seminar on what's in the river, when and how to catch. Example: Fish and Game with fish companies and magazines would be extremely beneficial. Possibly boat and pole and lure companies all set up. Also many other spots that could serve same seminar type programs.

82. I enjoy taking and teaching inner-city children fishing and camping. If you have any suggestions that might help with our program, please feel free to call, write or email.
83. I would like information on NOAA's "Fisheries Police"??? Thank you.

### **Fishing Experiences/Conditions**

*A sizeable number of anglers described their fishing experiences (comments 84-204). While many of these comments were descriptive in nature (84-159), others included observations regarding past and current fishing conditions (160-204). Given that the survey was conducted in what was then the third consecutive year of severe drought in California, some comments described effects of the drought on fishing conditions (160-184). Several anglers mentioned crowding as an issue (185-189).*

84. As opportunities present themselves, I will probably be back to fish the Sacramento River or its tributaries, for Shad, Salmon and Trout.
85. Fishing at Hat Creek was a great day's trip while visiting relatives in the Redding area. I did not include the costs associated with traveling from my home in Oregon to Redding.
86. I can't think of anything better to do than fishing. Relaxing, entertaining, companionship!
87. I really enjoy fishing these waterways. I really only fish in the American River in the Central Valley, but I do fish on Donner Lake a lot though. I enjoy all my experiences and I hope they can stay that way or get even better.
88. Fishing is a lifelong passion for me. I fish locally, nationally, and internationally. I go wherever fishing is productive. I would much rather fish in California than travel to Montana and Patagonia but that requires that the State maintains the ecosystems and water supplies. I spend a lot of money on fishing, much more than this survey identifies. Maintain and improve California Waterways and the money will stay here.
89. Do a lot of saltwater fishing. Friend has a boat.
90. More hours in a day and more fish. The funny thing about all this, I don't like to eat fish.
91. Lake Berryessa and Clear Lake take up more of my fishing time.
92. I fished the upper Sacramento in 1995 when it was opened again after the R.R. spill. This trip was for 5 days. All areas were catch and release. This trip was one of the worst fishing days on the river since I started in 1946. It was one of the main reasons I moved to Redding. For the past 10 years I had some health problems and did not fish. This past year when one of my boys and I went up on the river, we had our worst 2 days I have ever had. Fish were small and very few. Someone told me all the fish went up stream past Dunsmuir to the colder water. I don't think they would travel that far.
93. Most of my fishing has been done in El Dorado County, south fork American River, Sly Park and other back country creeks. Some ocean spear fishing while diving in and around Fort Bragg, CA, Mendocino County.
94. I mostly have been in the Grizzly Island area for several years. Everything depends on the time of day/night and the tides that come in and out. I recently have been on the Sacramento and Feather Rivers in past years and it also depends on the tides and time of day and night. On the Feather River which is mostly higher in the mountains is where I fly fish every year while hunting or mostly for peace and quiet. I think this is a good way to find out how people really think about fishing in the future.

95. Outside of Bass fishing on Lake Shasta, I fish Smelt with a fly rod and practice catch and release fishing. My fishing in California since 1976 has been limited to Lake Shasta, McCloud River and Stanislaus River, Yuba and Feather Rivers.
96. My wife and I love the outdoors, its serenity and beauty. On our excursions we stop and listen, watch for wildlife. We always pack out garbage others have left behind and keep the track of our passing to a minimum. Thank you for all you do and I think your research is important. Sincerely, xx and xx.
97. I'm newly retired and plan to fish and camp regularly. I would like to know or get more knowledgeable about fishing.
98. I'm usually an avid fisherman. I haven't fished near as much as I've wanted. I plan on changing that this year. I'm hoping to put my trailer in storage at the Delta and tow my boat from Oroville to Delta and stay in a campground with the trailer.
99. I grew up in the Sacramento Valley. I now live in Arizona (18 years). I try to get back to Sacramento area in the fall for a fishing trip every year. I am a lifelong fly-fisherman and love fishing the upper Sacramento, Yuba and Trinity Rivers. Already planning my trip for this year, hopefully hitting some other areas, American River and Truckee possibly.
100. I hike, take pictures and enjoy the fellowship of close friends more than the fishing. Fishing is what gets me to the West's most scenic places.
101. I like to fish and it keeps me away from trouble.
102. Fishing is best enjoyed by great friends and family. Respect the regulations, and clean up after yourselves. We all need to make it clean and safe for the next anglers to enjoy the experience.
103. I have fished in California since probably age 9, starting in the Delta for Stripers and Catfish.
104. Took up Trout fishing at approximately age 14 and loved every minute of it since. Have fished a great number of lakes and streams throughout the area your survey covers, walking the streams, backpacking, fishing the lakes and reservoirs, what a joy. I'm 83 and can't hop the rocks and wade the streams like I used to. Most of my fishing is restricted to fishing close by on the American River or with a group of friends on the Fall River in Northern California. Never did like catching planted Trout.
105. I'm retired, live in the foothills east of Marysville/Yuba City. It's a great area for rivers and lakes. I have access to the Yuba and Feather Rivers, Lake Oroville, Englebright, Bullards Bar, Oroville Afterbay and Collins Lake and Little Grass Valley Lake. All lakes are within a 50 mile radius. Excellent Trout and Bass fishing.
106. Just moved to California in 2010 from upstate New York.
107. Live in Tahoe, that's where I fish primarily. I stopped by the Sunrise area for fishing on the river. Didn't get a bite. Most of my fishing is along Hwy 88 and Hwy 50. Echo Lake, Caples, Silver, American rivers, etc.
108. Love fishing for Trout in the American River near Lotus Park (5 minutes from Sutter's Mill in Coloma).
109. I live 100 yards from the American River. I've been fishing Salmon from July to December for many years. Jan-Jun the river is so low there is no reason to fish for Trout or Steelhead, Shad don't come up unless the water is deeper, and no shad, no Striper. Sacramento River is getting more used so the water is muddy. No reason to fish Sacramento River.
110. I live in South Carolina. Fished only one day in Sacramento River. I caught zero fish! My 29 year old son caught a nice Salmon.
111. I visit friends in Central Valley and fish when I visit. I love fishing anytime, anywhere and always bring a pole when I travel.

112. I only fish 4-6 times a year. They are all guided fly-fishing trips on the Sacramento, Trinity, and Klamath Rivers. I salmon fish the Sacramento about every 4 years.
113. My only regret about fishing the Sacramento River is that I waited so long to do it.
114. I try to buy a fishing license yearly whether I fish or not. Family history in reef netting in Washington State. Generally, a wonderful and relaxing day.
115. My daughter and I really enjoyed our fishing trip on the Sacramento River. Our guide was great, weather great, and the river was beautiful, was out first time to catch Rainbow Trout and hope to come again.
116. Also interested in fishing and crabbing on the coast in the Eureka area.
117. Sacramento River was nice and clean. Lots of fish. Thank you for helping to keep California beautiful.
118. Live in Pittsburgh, PA. Go out West to fish each year. Rockies in California. Grew up in Sacramento.
119. I just started fishing in 2014 up in Oroville, California, so I do not know what I am really fishing for. I would like to start salmon fishing and trout fishing.
120. I live in Massachusetts and fish California once a year with a friend.
121. I love fishing in California. Thank you, NOAA!
122. I love to fish. I only buy line and essentials. I raise my own bait worms. I shop yard sales for rods and reels and lures. The only things I buy new at stores are fishing license and fishing line.
123. I love to fish. Just being by the water is a way of life after 24 years with the County (Santa Clara). I could not wait to retire and move to the mountains where I can live life my way. Fish on.
124. Lots of dead Steelhead on the bank and in water of Feather River.
125. I'm a fan of the Fly Shop outfitter in Redding, CA. I've never had a bad trip, the guides seem very knowledgeable regarding sustainability and frown upon taking fish home. I think \$200 for an all inclusive full day of fishing, 12 miles on one of the most scenic rivers in the US is an incredible value and I'm surprised more people don't take advantage of the opportunity.
126. Sometimes when I fish I use a hook. Like to be on a river or lake and enjoy the area.
127. I fish the Delta two-three time a week year round. Some lakes, and ocean Salmon, as much as I can.
128. I fish to get outdoors. I have fished for food as a kid. I get to spend time with my kids while fishing and it does not cost a lot of money.
129. I have a friend who owns a boat and we try to go out 2-3 weekends a month. We really enjoy the rivers and Delta areas. All fish we catch are released.
130. I have been residing in the State of Texas since June 2006. My responses are the results of a brief visit (15 May-31 May 2014) to fish/visit with family/friends. Looking forward to another return visit!
131. I have had a bad back actually. I was supposed to have surgery but have yet to have it done. I'm trying to self correct it. I just recently started feeling better and I am trying to get my business I had for 12 years before this injury up and going again. A bad back won't keep me from fishing.
132. I have had many great experiences fishing the Central Valley. Looking forward to many more years with my kids and grandchildren.
133. Every time I hear that the Salmon are biting and I get down to Sacramento (100 miles) in a day or two the bite is done and no one in 10 miles is catching fish. Fishing is great, best pastime in the world.
134. Honestly I do more fishing at Whiskey Town Lake in Redding.

135. An avid fisherman for most of my life, I had not been for the last 15 years, but recently started again in order to teach my grandchildren how to fish and enjoy the outdoors.
136. I am mainly a fly fisherman (very experienced), but I sometimes use spinning rods for Salmon or Stripers. The Salmon we have caught in the last 2 years from the Sacramento River have had a terrible muddy taste. I would like to know more about this phenomenon including possible reasons for it.
137. I am new to fishing. Fly fishing is what I am interested in. I hope and I am sure I'll do more.
138. I catch Salmon in saltwater, they are fresh.
139. Very brief time spent on Sacramento River system. River looks to be in good shape. Less Striped Bass than I recall from last trip, all small. Only fished one day.
140. We tend to charter fishing trips several times a year at Bodega Bay or Long Beach. Usually all day trips/family of four. Last year we went twice to Bodega Bay for chartered fishing and crabbing.
141. I will be heading to Oregon this week for 5+ days fishing for Steelhead. Quality of fishery in other locations much better than Sacramento Valley. Access for floating by boat (no motor) limited below South Avenue/Chico. Most fishing downstream of Chico done by motor. Thanks for the opportunity.
142. Salmon and Steelhead fishing has been great on the American River.
143. Salmon in the Delta. Many are not good to eat. They are tired or dying. Sure I'll keep a fresh one (Clarksburg) but usually release them. Need more Stripers, Shad, Sturgeon. I fish California oceans, Mexican waters, and travel out of state to fish. Love Trout fishing (Rainbow), but it sucks. Have 3 boats, marina fees, 2 vehicles to tow. Fishing is expensive, I have lots of gear including crab pots and clam guns. I am a native Californian, age 75. Help!!!
144. I grew up on and fished the Klamath River for 25 years. I moved to Humboldt County and fished the Eel and Trinity Rivers as well as in the Pacific Ocean out of Humboldt Bay and Trinidad Harbor. I have moved to Shasta County and only recently began fishing the Sacramento River. I am glad to see Salmon and all fisheries protected. I am an avid birdwatcher and Audubon member. I hope to see land preserved and protected for future generations for flora, fauna, natural habitat, etc.
145. Just love to fish and relax!! My father was a commercial fisherman in Southern Calif. for approx. 30 years – 1950ish almost before I was thought of!!!
146. As I'm getting older, I find I can still have a great fishing experience in the Central Valley area. Most all areas are easily accessible. Sierra Nevada or Tahoe area – that's a different story.
147. I live in Cottonwood, California. I fish basically on the Sacramento River near the mouth of Battle Creek and some on Shasta Lake.
148. My wife and I both enjoy fishing and plan to do a lot more this year, and just renewed our fishing licenses to do so.
149. Fish a lot at Clear Lake, not Central Valley.
150. Loved fishing last year, currently saving up for a Salmon fish with my cousin when he returns from duty. Feel free to keep me informed about future projects.
151. Nice local rivers, vehicle security always considered. Fish more northerly rivers in California.
152. Fish more lakes in Sierras that do not contribute to Central Valley. Spey Caster, use Crist Mill (A.R.) weekly on Wednesday mornings. Spend a lot of time outside California. Majority of overnight trips camping. Canada or Alaska trips either camp or rent monthly, saves big on lodging costs. Guides/outfitters, air fare are the most expensive aspects of sportfishing. Also fish local ponds, Rancho Seco, etc. Member Granite Bay Fly casters, Fishing and Conservation.

153. I love to fish for Trout in the mountains. I fish creeks like Deer Creek, Mill Creek and Chips Creek. I fish for Trout at Caribou. It's the north fork of the Feather River. In Oroville I fish out at the wildlife area. There are ponds out there with Bass, Bluegill, Trout and Catfish.
154. Really wish that there were more fish in the Yuba River. As many times as we fished there, we only caught 2 fish. We end up fishing there just for convenience and a good day with our family.
155. I'm a native Californian, 69 years old, born in Santa Cruz and for the past 39 years a resident of Nevada County. From the age of 2 1/2, I was raised by my father and have hunted and fished all over Northern California, not just Central Valley. I currently live in Nevada City on 13.45 acres right next to Scotts Flat Lake (reservoir) so my expenses are small. My wife and I have a truck with a slide-in camper. We enjoy camping whenever we can and when we go I always try to get some fishing time, but the camper is not just for fishing. We camp in Oregon almost every year, often on the Rogue or Umpqua. I always buy a year's license and more fishing gear when up there. We also have family in South Carolina, they live on 100 acres with several large ponds. Each year when we visit them I always get in some bass fishing. I realize most of this has nothing to do with the Central Valley, but I just thought I'd give you a little info on me, I'm probably different than most, but I still enjoy fishing.
156. Will retire 12/31/15, hope to become an expert on "fishing the Delta".
157. Very much enjoy Striper fishing in rivers and Delta! Both fly and bait.
158. I think you do a great job with the Oroville/Feather River. I catch lots of fish there and my family loves going there. Thanks.
159. Save the Striper fishing, best fish to eat out of the River.
160. I have been fishing the Sacramento and Feather Rivers my whole life. They are in my backyard. The last 3 to 4 years I have seen a decline in the Salmon run. The water levels are so low due to drought, but the water temps are so warm. A lot of the spots I fish are sanded in due to no water flow. I also see a State that's trying to get rid of the Striper. Why? We have petitions that we sign at our local bait shop. All in all I have had pretty good fishing experiences, a lot of good times.
161. I usually fish much more but the drought hurt the fishing.
162. So disappointed because we went to Irvine Finch Launch on the Sacramento River in October, 2014. After paying for the launch and parking (and the fishing license) we went back down the launch only to find the water level was so low we could not go in. The truck was in the water but the boat was not. The launch needs to be dug deeper. We won't be buying California fishing licenses next year. All our fishing will be in Oregon.
163. Water, low. Fishing, Poor.
164. Because of low water, fishing choices are more difficult.
165. When lakes are low due to lack of water, launch needs to be extended for better access.
166. Drought has affected fishing days.
167. California Steelhead is a flop with low water. No water, no fish.
168. For those who do not boat it is increasingly difficult to find a place to fish around the Delta. More and more the areas are being posted. With the drought the lake levels are not conducive to fishing from the bank therefore it became more important that areas on the Delta be opened to fishing.
169. Salmon fishing was horrible this year. Numbers were down by a minimum of half of what 2013 was. Water stayed warmer for longer periods at a time. Fish stayed out in the bay a lot longer.
170. Weather had a major effect on fish this year. The pumps don't help at all in extreme weather.
171. This reporting period was not a normal period for me with respect to fishing. I'm a VP/volunteer with Project Kokanee. I normally spend much more time fishing than was reported. This is due mostly to the drought.

172. I fish Shasta Lake 1-2 times a week. However, I like to spend a week fishing for Stripers mainly around CA/USA. The past few years have not been good to the fluctuation of water levels in the Sacramento River.
173. Due to low water in rivers and lakes my fishing was reduced by at least 1/2 of normal, for the last 3 years. Rain, rain.
174. Everything is fine but the drought. Last August, 2014, we visited Lake Almador, Buck's Lake and the low water was a deterrent to fishing (also Gold Lake). Creeks were low except Deer Creek (out to Amador) which we thought was an encouraging discovery. Most of our fishing centers on Sierra lakes, but we are very fond of the Owens River, Hat Creek, and the entire east slopes of the Sierras.
175. I have experienced great fishing in the Central Valley, however the last two years has been poor. The current drought and low water flow have caused warmer water temps causing fishing to be very poor.
176. The water all over is too low for fly fishermen. I won't be buying a permit this year.
177. The reason we fished so little is due to surgery recovery and very poor fishing conditions. The water management in this state are some of the worst I've seen and I have fished in 5 different countries. Keep politics out of fishing. I've fished in at least 8 other states and they are all better than California.
178. Recently retired and fished the Central Valley for the first time. Since we live in Reno, we bought an annual California non-resident fishing license. My wife and I were impressed with the Salmon fishing in the Sacramento River. We hope to fish the Central Valley more this year including Bass, Trout, and Salmon. The drought is a major concern in California and Nevada.
179. My second primary fishing is Pyramid Lake in Reno, Nevada. I usually get around 20+ days in every year. I head up there because the fishing is so good and it's hard to find lakes in the fall with water still in them.
180. I go fishing regardless if I catch fish or not and enjoy being on the American and Sacramento Rivers. Catch rates have been very poor! There's just not much fish in numbers during the past 2-3 years, it seems. I'm not sure if drought conditions, poor water quality, high water temperatures are responsible for less fish (Salmon, Steelhead) or other conditions, but would like to know. Thank you.
181. Water shortages have added to the problem. Increased fishing pressure has significantly reduced our numbers of returning Steelhead and Salmon. Other recreational fishermen in the area have resorted to fishing lakes and reservoirs. Fishing the rivers has been spotty and crowded. Bass fishing on the lakes has not been affected nearly as much. We fish the Delta a few times each year and enjoy the fishery. I feel that diverting any more water out of the Delta will have a serious negative impact on the existing fishery.
182. It would be nice if when water is low in Shasta/Oroville lakes they could make roads better to help access low water ramps and straighten our roads so we have less footprints on lake beds and more fish habitat like artificial trees, structures. Plus when water is low improve water storage by removing some islands in the middle of lakes so we can have more water storage and higher lake levels.
183. This past year I have been in school and had little time to fish. In the past when the rain has been better I fished much more often and found the river system to be far superior for catch and fun. The strippers and Catfish are a blast. I love to eat Salmon but have not figured out how to catch that species yet. In my experience, those anglers around me produce few silvers.



184. I grew up in Bullhead City, AZ and fished a pristine Colorado River. The river looked like water at the Woodson Bridge back then, full of life. Last year on a kayak trip I snorkeled from Laughlin down about six miles. The river is almost dead. No plant life, fish, etc. That's why I responded to this.
185. I definitely enjoyed fishing for Shad last year. Most of my fishing trips were for Shad. I also fished for Salmon a few times. I did not enjoy fishing for salmon due to crowded river banks and the actual difficulty of hooking a Salmon. I would definitely go Salmon fishing in a quiet and uncrowded area.
186. Salmon fishing on the Feather River has been so limited the past few years that I'm forced to travel further to find good spots, although very crowded.
187. Fishing gets very crowded.
188. We prefer to fish and camp away from the crowds in a clean and friendly environment.
189. I prefer fishing for wild trout and steelhead in the Central Valley. The opportunities are somewhat limited for truly quality angling without crowds in the few locations where that is available. Have not fished, very little. One day.
190. Having fished in the Central Valley for the past 40 years, I have seen a decline in the fisheries.
191. For years I fished the Sacramento River 40-60 trips a year. The last 4 years the quality of fishing (the catching) has fallen dramatically. Salmon and Stripers were my target species.
192. I feel that fishing quality has degraded so badly that unless it stabilizes or improves in the next 5 years, I may sell my boat and liquidate my fishing equipment. It's rough to try to encourage my grandchildren to take up fishing when there's nothing in the rivers as they were 20 years ago.
193. Last year I landed 1 Salmon all season, where in the past 10 years I averaged 4-6 a season.
194. In the past 12 months, fishing in Central Valley has been terrible. I have not caught a single Salmon nor a keeper size Striper. The number of fish that pass through this area has been small.
195. The fish are not there, fished out. Even pay lakes are not producing as well.
196. When I was a child fishing these same areas, Salmon, Sturgeon, Striper, Shad were plentiful. I would see large numbers of Salmon packed at the fish ladders waiting to enter. I no longer see such numbers and feel our fish populations have dwindled to nothing like the past.
197. Years ago New Hogan Lake had 10 pound Stripers. Today you're lucky to catch a 2 pounder. No food. Same with the Sacramento River, it's dirty, smells. Today, August, 20" Striper, Garcia Bend, Hood Islet, Rio Vista. In other words you have to go to the bay to catch decent fish. Too far.
198. We have thrown tons of gear at trying to catch Salmon, Stripers, etc. And had little success! I feel this area is heavily overfished. I feel more people are illegally fishing than meets the eye. It is sad. These days I feel I plan to just go to enjoy the day rather than expect to catch a fish. I enjoy the outdoors and appreciate the opportunity to be a part of this survey. I am at best a slightly above average fisherman/outdoorsman. Thank you.
199. This was my first year for Salmon, took my son and friend. Fished Sacramento River, Feather River in boat. Did not catch any fish. Went to Oroville, came back to American River. Fished from bank, 20 trips, no fish. Got a little disappointed, not giving up. Fish lakes in boat. Came far west, Folsom, Donner, Chrystal Basin. Ice House also, got to Delta, jigging good, trawling not so good. Thank you for the interest in my fishing. We love to get out into the wild, fishing and hunting is what we do. Looking forward to results. Thanks.
200. If Black Butte Lake fishing was improved, Large Mouth Bass, Small Mouth Bass, Crappie and Catfish numbers up the small cities near that area would prosper. Fishing in Black Butte was great 35 years ago to about 20 years ago.

201. There is no fun in going fishing if you don't catch anything. I have been going or fishing less and less each year for this reason. I hope the Game Dept. has a plan to bring the fish population back!
202. I would fish more often especially if there were more Salmon in the rivers.
203. Very little fish live in rivers.
204. I have fished for Trout for many years, primarily in the Upper Middle fork of the Feather River tributaries and natural lakes. Fishing over the past 25 years has really declines. I don't see nearly as many anglers on these streams and lakes, so I know it's not pressure. I don't believe these waters are being managed or planted. Any insight you might provide would be appreciated.

### **Fishery Management: Licenses**

*Some anglers expressed opinions about fishing licenses (comments 205-246) – most notably, dissatisfaction with the cost of licenses relative to the value of their fishing experiences (205-228). Several noted that cost can discourage anglers who fish occasionally or want to ‘try out’ Central Valley fishing, as well as families with teenagers (205-209). Quite a few advocated for low-cost or free licenses for seniors and veterans (229-239); a few advocated the same for lower-income anglers and Native Californians (239-241). Other suggestions included ‘no-license’ days, a small license that fits in your wallet, and licenses that would be valid for 12 months from date of purchase rather than calendar year (242-246).*

205. I feel the cost of licenses are getting too high. I know families with teenagers that can't afford them.
206. Lower the cost of fishing licenses so my young adult kids and their friends would be more inclined to fish!
207. Make it less expensive for the occasional fisherman, e.g., lower daily/weekly fees based on age, such as young adults.
208. License fees becoming too high for casual fishing.
209. The price of a fishing license has gotten out of hand, it just seems like something so simple as fishing has turned into what it is today. It's too bad for the next generation.
210. Fishing license costs way too much.
211. I wish fishing licenses were cheaper.
212. Reduce license fees.
213. Cheaper hunting and fishing licenses.
214. Fishing in the Central Valley is very difficult. On top of that, fishing is an expensive sport. I would encourage the State of California to lower the cost of a fishing license.
215. Cost of a fishing license keeps going up. When will it stop? The State of California is taking the fun out of it. If it goes up much higher, I will not buy one.
216. Fishing license cost too much. River and lakes have low water and debris.
217. You might get some fish in these waters. The license is \$50. And I feel I get nothing for it.
218. Please do not increase fees. Over the years fishing license fees have gone up with no improvement in fishing quality or waterway quality. Rivers are just as contaminated and fish stock is low. Cost of fishing license too much. God put fish on this land for all people, not to be charged for it. You are taking all our God-given rights away.
219. The cost of a fishing license in California is increasing so much that I wonder what improvements, if any, are being made on behalf of anglers who pay that fee.

220. I believe that if the fishing license fees keep going up, it will be harder and harder to purchase. I think you will have less people buying them, and more people just fishing anyways. Which means we get in trouble if caught without one. I enjoy fishing for the leisure and relaxing time it is. I want to continue to enjoy it. I know things are inevitable, but I had to be truthful.
221. First of all license fees are too high for the quality of fishing available in my area.
222. California has the worst big game and fishing management west of the Rocky Mountains. Every year the price of licenses keep going up and fishing and hunting gets worse. We hunt and fish out of State. And California is far and away the worst State for game and fish management.
223. I understand that people that maintain wildlife have to get paid somehow but California citizens shouldn't have to pay for fishing tags. Once we buy a fishing license we should be able to fish any kind of fish we want. It's already bad enough that CA citizens have to pay for fishing. It would be great if California citizens were allowed to raise bass in their home because I love how bass look.
224. License fees are too expensive.
225. I remember when the license was only \$11.00 in the 1970's, and you got a cool bimonthly magazine called "Outdoor Life", which had nice sketches of wildlife from California, and news about aqueducts and canals being constructed. You did not need special "stamps" for Sturgeon or Steelhead at this time. The money was worth less than today, but it seems rather expensive these days, especially for the casual fisherman. I think more people would fish if the cost was half what it is.
226. I see no reason for the fishing licenses buyers to pay for parking.
227. Lower the prices of fishing licenses. The prices have gone out of control for everything related to fishing, the prices of rods, reels, line, tackle, tags and licenses are making it more of a rich man's hobby than the classic American past time.
228. The fishing license should be like Alaska, \$24.00, not \$47.05.
229. Reduced fishing license for military veterans.
230. I also feel the State should allow its seniors and veterans some break on the cost of the fishing license. Quite a few of the other states do.
231. I think the cost of a resident fishing license is excessive. At age 65 and on a fixed income, I find the expense to be a luxury that is hard to justify.
232. License fees are very excessive and need to be reduced. Substantial discount for veterans needs to be implemented and free to disabled veterans.
233. Free licenses after 70.
234. Why don't seniors get a life time license for a reasonable fee?
235. Expenses for fishing are exorbitant for Social Security income. I only fish with my daughter and her husband, all expenses paid including boat, etc. The present schedule of fishing license fees is or should be an embarrassment to the State, as well as all California Fishermen. Lifetime license fees are absurd. Some license fee discount needed at age 65, at 80, license should be free.
236. I think Vietnam veterans, 65 and older should get free fishing licenses for serving our country and state.
237. Senior discounts on licenses! Annual return of the Salmon Fest: Colman Fish Hatchery. Hat Creek - All round favorite history. I've lived in Lassen, Shasta, Plumas for 40 years next to creeks, lakes, and rivers. I'm passing my fishing holes on to my grandkids in hopes they remain in their memories. I appreciate the efforts from Fish and Wildlife to protect these pristine waters. The Pacific Crest Trail are in my best memories. Thank you for keeping the Sacramento alive.
238. Vets should receive free or discounted fishing license, same for anyone over 65 or retired!

239. I would like to see Senior and Handicap fishing licenses, "low cost" for fixed income people like me. If costs keep going up, I'll stop and sell off my stuff.
240. Fishing license and supplies to fish are making the sport too expensive for low income, fixed income families. People with disabilities used to get a free 5 year license, now they have to renew yearly which causes more paperwork and time waiting to be able to fish. Not everyone is capable of requesting or filling out the forms. It would seem if people had them for more than one 5 year period, the State could cut down on paperwork, time for the forms, by issuing a permanent disabled license. People have to depend on others to help them with the process of getting a renewed license. It's getting to be more about money especially if larger families can't afford the simple fishing for fun, or to help feed their families. It's sad to see this fun sport turning into a money trap.
241. Native Californians should be privy to a reduced fishing license.
242. Fishing licenses are way too long. It's hard to carry all your different report cards and your license with you.
243. Simplify our fishing licenses to a small card we can keep in our wallets. Make sure "special fees" don't get used for other general budgets. (That's dishonest)!!
244. Make a license 12 months from time of purchase, not a calendar year.
245. I wish fishing licenses were valid for 1 year from the date of purchase instead of Jan-Dec. I mainly fish for Bass from April-September, only using my license for 6 months. If licenses were available in 1 year increments from the date of purchase, I would get more out of my license. Perhaps include them on our California ID/drivers' license and renew them with our licenses.
246. Fishing license/hunting license should last a year from the date of purchase and not end at the end of the year.

### **Fishery Management: Regulations**

*Angler provided numerous comments on fishing regulations (comments 247-321). Some wanted regulations simplified – noting that the number and complexity of regulations discouraged fishing and made it hard to know if they were in compliance (247-261). Some expressed support for particular types of regulations (e.g., catch-and-release, managing for native species, no-license days) (262-285). Others noted specific regulations that they would like changed (286-321).*

247. I love fishing in California. However, with so many regulations it is becoming difficult for us who follow rules to continue fishing. I buy a license and required fishing tags for all fish I intend to go for. I am supporting the stats and am glad to do so.
248. California has too many regulations and rules. They have also blocked access to too many areas.
249. Your handbook with the laws is hard to follow. It nitpicks on what to use such as treble hook in one place but not in another place. Same with barbless hook only in some area and barbed hooks are okay just downstream. It's ridiculous and makes a person feel like you're hoping they make a mistake so you can cite them and collect a fine. Some laws are good and some are ridiculous.
250. Two concerns I have as an angler are the cost of fishing license and, in some areas, over-regulations. Having lived and fished in other states I can see that California is making it hard for average people to afford to fish and understand clearly the fishing regulations. I no longer fish for Steelhead because of the (fishing log) you must fill out every time you fish for Steelhead, as an example, of over regulation. Not to mention the requirement to use barbless hooks.

251. I have recently retired. I intend to fish more. My only concern is all the rules that you have to research and learn to fish by. A new location or fish for another species. Sometimes I find myself not going due to all the rules. Example: Any fishing on the Sacramento River or Trinity River.
252. Too many regulations on fishing. Something that use to be an enjoyable activity is now so highly regulated people are scared to fish with their grandkids, if they do not have license, for fear of fines. Local fishing spots have too many camps setup around them. It makes it dirty and hard to access waterways.
253. The complex regulations and amount of changes makes fishing the Sacramento difficult. The only enforcement agent I have met said it was to discourage fishing. That is a sorry position for California citizens.
254. I have pretty much given up on fishing due to the laws changing. They are just affecting the anglers that obviously do it legally. I used to be an avid Sturgeon angler. Not any longer! The license costs go up every year and for what? I know I will never give up fishing, but I'm sure you hear this a lot.
255. It's hard to know what is in season/legal and where. The laws seem complicated and intimidating.
256. Simplification of regulations. Too many closures and sectioning off of waterways and opportunities. Allow all waterways to be open year round for catch and release fishing.
257. Simplify regulations.
258. Simplification of fishing regulations would be appreciated.
259. Past regulations have been a pain to wade through. Even as a person who tries, and insists kids do as well, to follow all rules, there is a concern that somehow we might inadvertently break a rule. Simplifying the regs to make them more usable and to encourage kids to fish for frog until 18 would further the goals of the fisheries maintenance and stewardship.
260. More clarity on laws regarding access on navigable waterways high water mark access, etc.
261. Need clearer regulations so I can feel safe and confident that I'm doing the right thing.
262. Thank you Fish and Game for buying the gravel bar at Jelly's Ferry for the guys.
263. Leg surgery limited my trips last year. I fly fish and prefer streams and rivers. I'm most concerned about water flow and quality. I'm catch and release and barbless. I'd like stronger regulations and preservation of fish. I prefer fishing outside.
264. I spend a fair amount of money traveling out of state, but would love for CA to manage more streams and rivers for wild trout populations, especially catch and release and/or special regulations.
265. The quality of the fishing experience is paramount to me. No take/single hook artificials/etc. regulations are areas I actively seek out.
266. I love fishing and enjoy the fact that we have so many fish to fish for in California. I'd like to see more catch and release fishing. I see that many people only fish to eat and they keep every fish they catch. I also see many unethical fishermen and watch them snag fish. I wish that people practiced catch and release fishing and cared about the environment (river/lake) around them.
267. I do 99% catch and release at all times and would like to see more people releasing Steelhead, Bass, and Striped Bass.
268. I am a firm believer in fish preservation. I practice catch and release on about 95% of my successful fishing trips. I really only keep stocked Trout that I catch out of lakes. Otherwise, I mainly fish for Largemouth Bass for the sport. I wish other anglers would practice more catch and release.
269. I mostly do catch and release fly fishing. I appreciate having catch/release barbless regulations in some areas. Also like the idea of promoting wild/native trout fisheries.

270. Catch and release for all Central Valley rivers/streams for Trout. Bag limits only in lakes with planted Trout. Minimum bag limits for warm water fish. All California fisheries suffer from over fishing. Emphasis on fish handling during catch and release operations to minimize damage to fish.
271. Still think the best thing is to improve stream/lake habitat and restrict fishing to catch and release.
272. I'd like to see more native species in Central Valley lakes/rivers and less non-native fish. I'd like to see more fish, native of course, in general.
273. More free fishing days will allow new people to try out our sport.
274. Possible 3 to 4 no-license days a year to get more folks into the sport. Many don't want to buy a \$40+ license when hardly interested, and thus never try.
275. Allow cleaning of fish on all waterways.
276. Dis-allow spearfishing on Valley rivers.
277. I believe all hunting and fishing on public lands should at the very least go through long (20 yrs) periods where there is no hunting and fishing. Wildlife needs a chance to recover and begin to thrive again, for example Mt. St. Helens. Create more sport complexes or lands for both, to allow nature to recover. I used to be a hunter and fisherman, loved it but it's been wiped out in my life time. Unbelievable.
278. I would like to see the fish population increase in numbers and I would be willing to cease fishing for a year or two until these numbers came back up. It would ultimately increase our chances of catching fish and ensure a solid future of successful fishing for later generations.
279. Would like to see improved regulations to protect fish and environment fish need to thrive.
280. I appreciate all of your efforts to keep and improve California as a fly fishing destination!
281. Stop closing places to fish.
282. Any suggestions? Private lakes ok.
283. It would be great to have more attention to improvements to community (towns) waterways in the Central Valley and foothills.
284. Washington State has a "catch card" and specific zones which makes amateur fishing a huge pain in the xxx. The process in California is much easier. Please never implement the same system as Washington State.
285. It used to be a law you had to wear your fishing license on your body like a license plate on a car. This was a horrible law. I was hiking a river and had the license ripped off my clothes by the brush, so I had to buy a second license. This law should be repealed.
286. Place slot limits on Stripers, close rivers for Steelhead spawning.
287. I would lower the size limit. On Striper increase the limit. They're non-native and our Salmon are getting hammered. Drought, Stripers, Sucker fish, sea lions, pumps, etc. I'm surprised we have any left.
288. Also, there are too many non-native Striped Bass in the system who gorge on Salmon fry after they are released from Coleman Hatchery. While fishing the Sacramento River, I have caught many Striped Bass so full of Salmon fry that they are sticking out of their mouths. Remove the bag limits on Striped Bass and don't divert any more water. I know that money drives most decisions but let's all try to save our Salmon.
289. Stop "trashing" the Striper because it is not a "native" (most of us are not "natives").
290. Improvements: Quit releasing Salmon smelt when Stripers are in the river systems. Stripers eat them by the gross.

291. The native anadromous trout and salmon should be protected by increasing the limit on all size of stripers (increase to no limit on 10 lb or less would be a good start). I believe it is faulty science to suggest that striped bass do not have a predator effect on the salmon population! For it is evident that they eat them like candy on their way to the ocean. Salmon are infinitely more important to the riparian environment than stripers! The studies on the decline of the insect and plant life where salmon are eradicated are proof enough!
292. I like to see Salmon and Steelhead fishing closely managed in the future.
293. I have fished the valley all of my life and I consider myself to be somewhat of a conservationist, but I also must say that the steelhead report card/survey system that the DFG, or should I say DFW, uses is so ridiculous that I'm embarrassed to pull that encyclopedia sized piece of toilet paper out of my wallet. These guys have got to come up with a better way. Their intentions might be good but what they have come up with is way over the top ridiculous!
294. I would fish the Trinity River for Steelhead except I feel the report card is ridiculous.
295. I believe it is very important to restore Salmon fishery in the Central Valley and in all of California streams that have or had a Salmon run.
296. We need longer winter run season for Salmon.
297. I wish to see wider range for Salmon fishing. Also for Sturgeon, 40-80 inches. Fishing license fee, around \$35-\$40.
298. Barbless hooks for Sturgeon is not necessary. My bait does not hold on the hook. My child has lost multitude fish. The barbless hook law is taking away my money and fun for my child.
299. Regarding sturgeon you make it very dangerous for fishermen to pull a sturgeon out of the water since we cannot use snares any more. Someone will die trying to manhandle this strong fish, it all depends on where they are fishing and the conditions of the landing area. People can be pulled in or lose their footing in the mud.
300. I would encourage the regulatory agencies to consider adjusting regulations for white sturgeon. Studies on gulf sturgeon have shown that selecting for mature, reproductive adults (mainly females) is perhaps the biggest threat to sturgeon populations. Our current slot system does just that and should be adjusted to increase reproductive success.
301. As far as Trout fishing in the tributaries in the High Sierra, I would like to see general regulation limits reduced to 2 hatchery Trout and maybe zero wild. Nobody needs 5 Trout a day, and I have seen good wild Trout fisheries cleaned out by BMT fishermen catching daily limits and then some. We need more catch and release water and artificial flies and lure with barbs and hooks only regulations.
302. I feel that Bass, including all species of Bass, should be more strictly regulated. There have been many occasions where I have seen people taking undersized or over their bag limit. I feel that there should be limitations on Striped Bass because of the heavy overfishing of that species. Also Large Mouth Bass has been affected as well, with bigger fish being caught and not released.
303. I understand it is a means of food but not all fish caught should be eaten. Bass in my opinion is a sport fish and I see Bass Tournaments doing a good job in catch and release. I would like to keep on catching quality bass but due to the heavy overfishing I believe catching quality fish would become extremely difficult or near extinction.
304. Lake specific bag limits on Kokanee, Trout and King Salmon based on population's size in that body of water.
305. DFG closed the upper American without public input or any reasons stated! This is a lightly used fishery with modes populations of sport fish. Open the upper American, no closed season.

306. Close the American river for fishing above Sunrise Blvd. to Hatchery during Salmon and Steelhead spawning season. Continue to transport the Salmon smelts and Steelhead to the bay instead of releasing them in the rivers. I would pay more for my fishing license to continue this practice. It really makes a huge difference.
307. The barbless hook requirements in the American river during the summer and spring are ridiculous. The Steelhead and Salmon are not in the river for the most part, and these restrictions are not needed for Shad and Striped Bass. The game wardens are smart enough to see if you are fishing for Striped Bass with bait or big plugs and Shad stuff looks different from Salmon/Steelhead lure and bait. Again, this is just a scam for Fish and Game to make money.
308. I wish the American River would stay open to Salmon fishing longer. The October 31st shut down really sucks. For the past two to three years the run has been late to arrive and by the time they really start to stack up in there the season is over. One more month of fishing is not going to negatively impact the Salmon.
309. I think the American river, Nimbus Dam, needs more Department of Fish and Game supervisors. The newly renovated side channel at the Nimbus Basin should be closed to fishermen. Many people snag/net Salmon that are spawning or have already spawned out.
310. In reference to our Salmon closure we had a few years back, I missed my fishing, but totally in support of it to help the future of the Salmon. Also wouldn't mind more closures on the American River during low water flows. Thanks for all.
311. I also fish near San Luis Obispo. Ocean fish from Monterey and Trinidad. We need less Trout fishing regulations around Redding area. Now it is only catch and release in Sacramento River.
312. Sonar counter on Sacramento and Feather Rivers. Open Feather River for spring Kings with fin clip on 4/01/15. Any weight not more than 6" from hook. The Creel Survey did a good job! Let sportsmen fillet Salmon, it's very hard to transport fish. Carcass should be returned to river to help young Salmon.
313. Make a fly-fishing only section on the Feather River from the 70 bridge to the hatchery.
314. A review of the early run Chinook Salmon abundance provided by the Feather River Hatchery indicates that over 10,000 or more early run Chinook Salmon entered the hatchery holding tanks during the months of May and June of 2014. It is estimated that another 14,000 or more Salmon that arrived did not enter the hatchery making a total of about 24,000 or more adult Chinook in the river system. The Feather River Hatchery utilized only 1,400 of the hatchery fish for spawning purposes leaving an excess of 8,600 or more hatchery Salmon that served no useful purpose whatever. Many of the protected Spring Run Salmon simply died and rotted in the river during the hot summer months. When the ladders reopened in September, the surviving Spring Run fish and the early Fall Run fish that came in August and early September were slaughtered without being spawned. We are told that this 100% kill of early Salmon is being done in an attempt to set the Fall Run back to October. We feel that this practice is a waste of a valuable resource that could be put to a much better use. In view of this economic waste, we once again propose the following management program for Early Run Chinook on the Feather River. An Early Run season to open on Saturday May 2, 2015 with a possession limit of one (1) fish per angler per day. This season to extend to the opening of the summer/fall run season when the fall run regulations would then take effect. Instead of wasting this valuable resource, this proposal would generate over one million dollars in revenue for Sutter, Yuba, and Butte Counties and fishing related businesses, plus providing recreational opportunities for hundreds of outdoor enthusiasts. This proposal would in no way impact the Feather River Hatchery spawning operation nor affect the early run reproduction of Chinook Salmon.



315. Open the Feather River again to "Springer" fishing. Stop the killing of hatchery "Springers" on the Feather River.
316. I think the Feather River spring Chinook season should be opened up again. I fish limit, the early springers don't last until the hatchery opens on Labor Day. Too many fish just dying in summertime.
317. I would like more productive fishing places. I've been to Feather River 3 times and no luck.
318. My family fishes mostly on Deer Creek on Hwy 32. I have fished here all of my life. About 15 years ago DFG changed the regulations at Deer Creek falls and below to barbless hooks, artificial bait, catch and release. This basically excludes fishing at Potato Patch campground. I would have loved to have taught my daughter to fish at the same place I learned to fish. It makes no sense to have campground like this with basically no fishing. I don't fly fish so no fishing for my family at this spot. I would love to see that change for future generations.
319. We stay at Mill Creek, CA about 3 times a year. Always enjoyed fishing Mill Creek. Then the regs were changed to limit Trout fishing to catch and release, barbless hooks and artificial lures to protect the small Salmon. I miss fishing Mill Creek. It was quiet, scenic and fun. These regs, I thought, were only temporary. They have never been changed back. I like to bait fish and release a number of fish I catch, however we keep a few because we love to eat them. Please open Trout fishing back on Mill Creek, even if there is a small number we are allowed to keep.
320. Persuade the Governor to appoint Fish and Game commissioners who are not anti fishing and hunting.
321. The Department of Fish and Game seems to be anti-hunting and fishing. The new law banning lead in ammo passed by the "dickheads" from the Humane Society will decrease hunting even more, which is their plan.

### **Fishery Management: Enforcement**

*Anglers had numerous comments about enforcement (comments 322-379). Some advocated generally for more and better enforcement (322-343), while others cited particular instances where they observed violations (344-370). Several noted that enforcement is also needed for disruptive boating behavior and trash in the river (371-372). Several others describe their own encounters with wardens (373-379).*

322. Need more California state and federal rangers to patrol and enforce laws and regulations.
323. Many "outlaw" fishermen and little enforcement.
324. Hire more wardens. Provide hotline to rangers.
325. Would like to see more patrols to combat poachers.
326. Better enforcement of fishing regulations on all waterways.
327. Poaching send all poachers to jail.
328. A lot more regulation enforcement. Very important.
329. Increased law enforcement for illegal activities, snagging, etc.
330. We need more game wardens out checking on fishermen.
331. I would like to see more enforcement of the Fish and Game codes.
332. I would like to see more game wardens checking for license holders and limits.
333. I would like to see more game wardens out on patrol and respond to report calls. I made a couple of reports last year on poaching and illegal activity on the rivers and did not see anyone show up.
334. I would like to see more wardens and Fish and Game personnel in the field. Better enforcement of poaching and stricter penalties for violators. I mean stiff fines and jail time.

335. More enforcement of fishing regulations and local waterway laws.
336. More game wardens, patrols on lakes and rivers.
337. Lastly, I would like to see more game wardens patrolling the waters.
338. Better enforcement of rules and regulations on rivers. Higher visibility of Fish and Game in crowded fishing areas.
339. As a big fan of fishing sport, I really hope there is more law enforcement in the hot spots.
340. And I don't like pointing fingers, but many people don't obey the rules and regulations and ultimately are just poaching. Maybe the main waterways are under surveillance but the sloughs and creeks seem to be drying up.
341. Please work at protecting our environment. Please catch poachers. How come we as a society need fishing licenses to fish, but nothing to raise a child.
342. We should punish poachers by making them clean all the litter along the river.
343. Please increase fines for poachers as they do most harm to fishing and waterways. Sturgeon and Salmon are very low in stock and poachers should pay not law abiding citizens. Impound their vehicles or remove possession, also remove possession of their fishing gear, and sell at auction. Profits can be used to fund fish conservation, fish stock, and waterway cleanup.
344. One thing that seriously disturbs me is that I have caught people keeping under sized fish and more than limits. When I contacted Fish and Game at the site of the occurrence, they refused to send someone to deal with it. After fishing all my life in this area, I am not pleased that the amount of available fish is far lower than it used to be. I believe that this poaching is most of the problem and believe that when it is reported it should be dealt with or the problems are going to continue to get worse.
345. There needs to be more wardens doing their jobs correctly. There are so many people that do not care about the regulations. I see it on the American River every time I am out there.
346. A lot of people were fishing without licenses. And so many of them didn't follow fishing regulations. We saw some of them take undersize fish and crabs and also keep snagged fishes.
347. I am tired of seeing people who are poachers and continue to evade Fish and Game. I would like to know why there are only a handful of us who do it the right way. Yet so many people are fishing with no license or required tags and because of this I pay the penalty in higher license prices and high tag prices.
348. We as a group do not feel our regulations are being properly enforced by Fish and Game. Very seldom do we see violators get caught. Such as people taking fish out of season or taking way too many numbers of fish.
349. I would like to see Fish and Game catching the druggies when they do not follow the law. At my favorite spot in the Bend area there are people high on meth snagging fish, not following laws and being thieves. But it seems that Fish and Game are more worried about the wrong people.
350. I feel that when I was a child that Trout fishing was much better. Now the resources seem to be less when it comes to Trout fishing. Plus I see a lot of people fishing illegally on the Delta in the Stockton and Sacramento area.
351. More "policing" of the river around Verona during Shad season, April 15-May 30, The Orientals are taking far more than 25 shad per fishermen. Both banks and in boats. Far more fish than they can eat. I don't believe for a minute that they don't understand the law!
352. Fisheries management is generally very good in the area. One area for improvement would be more ranger patrols to prevent poaching/use of illegal gear (barbed hooks, baits) in special regulation areas like Putah Creek. Well done and thanks!

353. Also, I live in the foothills and have witnessed people, especially Russians, fishing without licenses and taking large numbers of Trout, way more than limits. I have turned them in, but it seems nothing can be done unless a warden actually observes them committing this crime. More wardens would be good, I think, for our fisheries. I really appreciate them and the fisheries/facilities you provide. Thank you.
354. I fish on the Feather River more than any other. When the Stripers run, I wish there was more enforcement to stop poachers from spotlighting fish at Boyd's Pump.
355. The Russians seem to think they can take all of the fish they want, over limit. We need more Fish and Game officers and public help.
356. I did not fish as much this year as I usually do. It is very discouraging how much a fishing license costs now and the poor fishing compared to when I was younger. Too many people out there, too many non-citizens poaching the fish with too little enforcement. Hmong are the worst. They keep everything, no little fish, no bigger fish.
357. I also wish there were more rangers patrolling Sailor Bar during Salmon season. The snagging and use of barbed hooks is out of control.
358. Being fished out by Hmong. Fish and Game on their asses more and check all their licenses. Buckets and buckets of small fish.
359. Unfortunately, poaching is a big problem. Most of the violators I see when caught claim they don't understand the language. Not true. They are repeat offenders that speak English well. Nothing is done to them because they "don't understand". Wrong! The judges are fools or biased, but either way, the wildlife, including fish, is being destroyed. It's time to wake up and protect the resource. It's so bad it is a standing joke around here. Treat, everyone the same.
360. Ignorance is not a valid reason for anyone regardless of their country of origin or language or color.
361. I would also like to comment on illegal fishing. It has always been illegal to snag Salmon, however if you go anywhere these fish school up you will find snaggers using anywhere from 6' to 20' leaders. These so called fishermen drag the line through the fish's mouth and seven out of ten times the hook is on the outside of the fish's mouth. These practices are now illegal in Oregon and Washington. These fish as you know have very little chance of making it to their spawning grounds. But to let these so called sportsmen continue this practice of long-lining should be as illegal as using a weighted treble hook. In my opinion there is nothing more exciting than feeling the violent strike of a Salmon or Steelhead.
362. I think some people are keeping striper bass that measure between 8 and 18 inches. All striper bass I have caught this year have been about 8 inches, none much larger. Also, what happened to all the catfish? When the stripers were not biting, I used to at least catch catfish.
363. Make Asians fish with a State of California fishing license and not let them off free. Punish poachers to the maximum. Thanks.
364. Stricter regulations on those who catch Salmon only for the roe and discard the carcass. You kill it you eat it. The last few years there are so many new guys, even out of state guys. However the same group keep coming back a lot. We didn't see many game wardens this last year. Now the guys are real good about releasing foul hooked Salmon. I'm impressed. This last year was the first year you didn't raise the water level for the Salmon run. I'm sure you know all about it.
365. Everybody should have fishing licenses. The game wardens are afraid of the Orientals. We should all be treated the same. Orientals keep every fish they catch regardless of size or kind. This is bullshit.

366. More game wardens patrolling the local rivers and waterways would be nice. I have seen many unfair practices by anglers fishing in the Sacramento River and it seems to me that the average fisherman these days is greedy.
367. Overfishing during Shad, Salmon, Striper and Sturgeon is obvious by the sometimes hundreds of anglers on shores. Over the last 2 years I have only seen a Fish and Game officer 2 times.
368. While on my Salmon trips on the river, I see illegal immigrants snagging Salmon with weighted treble hooks with no license visible. They then pass the fish to another member of their group and then go back to fishing as though they haven't caught a fish. This is rampant from Nimbus Dam down especially at the Clay Banks during Salmon season. I would like to see more done about this problem. Thank you.
369. Sorry about not responding, but I would like to share that some place I went to they use illegal bait as in baby Salmon. Don't know who but saw those illegal bait on the shore. I also believe some fishermen already max out their tags and still go fish for it and take it home stealing oversize Sturgeon. I love and respect these rare fish. Hope I catch one soon.
370. Obvious poaching needs to be handled by Fish and Game. A lot happens right in front of the fish hatchery near Hazel Ave. (Lake Natoma) and it seems that nothing is done.
371. We could use more patrolling, drunk or inexperienced, or even just plain rude boaters spoil the waterways for fishers and children playing or skiing.
372. Raise the fines for stupid people throwing trash in rivers, lakes, etc. Stop the Indians from using nets across rivers, etc. Then they sell Salmon to whoever.
373. Nicer ranger and game wardens and should be some sort of spacing for boats and shore fishermen on lakes, the boaters have the advantage and they come into your cove and start fishing close to the shore fishermen. Other than that I think you guys do a good job and I support what you do.
374. An observation regarding law enforcement of Fish and Game laws; I understand law enforcement is a challenging and dangerous job. But over the 60+ years I have enjoyed the outdoors I have seen a change in attitude of wardens from "presumed innocent until proven guilty." In increasing interactions I have had with wardens I perceive an attitude that I am presumed to be a law breaker until I prove that I am not. I don't have a fix, it's just an observation, both from me and my outdoors friends.
375. We get searched and our fish counted when we are doing nothing wrong. I do not mind, but it is inconvenient. Especially when the person fishing next to us have caught 3 times their limit and don't get caught or bugged.
376. I have been checked for fishing license but never my ID to see if it's my license.
377. Education for deputies/wardens needs to be much better. Sometimes the only thing standing between a fisherman and a citation is the mood/judgment/personality of the deputy, which is unacceptable. I have been told by a warden that "it just depends" when it comes to certain regs, and that is very scary to know that you can get in trouble even when you're doing everything the way the book says, but that there are still things that are up to the guy stopping you. There are lots of things nobody knows. More constants in the regs!
378. It's hard to get out and fish when you're constantly questioned or harassed by the local DFG or rangers. They treat you like a criminal when all you're out trying to do is spend time with the family.
379. If you have any influence on Fish and Wildlife, a game warden said "I don't know the law, you do?" That's the kind of enforcement we have in the field.

## **Fishery Management: Stocking**

*Anglers had opinions about ways to enhance fish production (comments 380-412) and almost uniformly advocated for increased stocking of rivers, lakes and Delta waterways (380-406). A few mentioned the need for accurate fish planting schedules (407-408). A few others (with one exception) spoke in favor of hatchery production (409-412).*

380. Do not stock fish.
381. Increased stocking of all species.
382. Increase stocking efforts. Would like to see some Pan fish stocking.
383. Would like Fish and Game to plant more fish.
384. It seems that fish planting especially for kids' fishing is woefully less than when I grew up.
385. Replenish Putah Creek in winters, loved fishing there 3 years ago but no more, catch and release only. Solano Lake up to dam. Canyon Creek, spent a lot of time there (and money) years ago.
386. I noticed that there weren't that many Trout plants in the Norcal area. It'll be nice to have more plants up here in the north part of the State so the locals don't have to travel far for Trout.
387. Having fish plants in Oroville or Paradise more often will be nice.
388. I think planting more. There are less and less fish.
389. Increase the number or capacity of hatcheries. When I was younger we caught fish every outing and with limited tackle. Now catching fish seems to be very challenging on the rivers.
390. I would like to see more fish planting in mountain lakes and creeks.
391. We fish the streams in Butte, Tehama, Lassen and Shasta Counties. I've noticed that most of the planting is from Sacramento south of our lakes and streams. Our lakes and streams hardly get planted! We buy our license up here too, so we should see more of the lakes and streams planted here too!
392. Low fish population on the American River (please stock). Need more emphasis on improving the fishing experience, e.g., increase fish populations, reduce boat (motor) presence, increase awareness of hatchery festivals, volunteer opportunities, etc.
393. Return the Striper planting in the Delta, we paid for it with our license over the year.
394. Our fisheries (Trout) need to be stocked more heavily or converted to barbless catch and release.
395. Would like to have Largemouth Bass in Lake Oroville. Smallmouth Bass is kind of boring with small catch but ok for big size.
396. Also, no more junk science agenda related anecdotal creating studies to shut down fish replenishment efforts (i.e., Butte Creek no plant rules a few years ago) being considered in the formation of public policy and resource management.
397. I prefer fishing the Sierra Nevada because I live there and the Trinity Alps because I like to backpack. I only fish in the "Central Valley" for Salmon and Steelhead opportunities. I wish aerial stocking of fingerling Trout in wilderness and other national forest lakes would resume.
398. I do not fish as much since California stopped stocking the rivers and lakes.
399. Would like to see more fish planting in creeks and reservoirs in Butte, Glenn, Tehama, and Plumas counties.
400. I would like to do more overnight trips on the Sacramento River. Stock the river with more fish in the Downtown Sacramento area. Rio Vista gets too much fish.
401. Plant more Trout (Steelhead) in American River in spring and summer. Thank you for ending that stupid "Bay/Delta" stamp/card. Nice job keeping the American River clean!
402. Stock more fish in American River.

403. More stocking needed in remote areas. Many areas that used to be quite good seem to be fished out.
404. I would like stocking Trout to resume in Putah Creek.
405. Stock more fish to local pond, lake and park.
406. Bass fishing is an increasingly popular sport. I'd like to see city planting projects with catch and release programs. There's just not a lot of public areas to fish anymore, so we need more spots.
407. More fish planting and accurate fish planting schedule.
408. If the schedule says fish were planted it should have been planted.
409. Remove hatcheries. Stop letting people kill wild salmon.
410. More hatchery sites for all game fish, not just Salmon.
411. Steelhead fishing in Sacramento River needs to improve. I've caught several native fish, but can't keep them. We need more hatchery fish especially around Red Bluff.
412. Reopen all hatcheries, that someone had a great idea of closing and hiring another guy with a green shirt to mess with the general public.

### **Fishery Management: Public Outreach**

*Some anglers suggested ways to improve public outreach (comments 413-430). To increase understanding of and compliance with regulations, some would like signs to be posted indicating where they can fish and where they need to use barbless hooks (413-420). Several offered suggestions such as education of anglers regarding proper release methods, clean-up days with volunteers allowed to fish for free on that day, and comprehensive guides to fishing and camping (421-425). Others suggested ways to encourage kids to fish (426-430).*

413. Fishing could be improved by making available better information. More information regarding offshore saltwater fish reports would be helpful.
414. Please put up signs saying "No Fishing" or "Barbless hook only."
415. Better signs at fishing and mostly non-fishing areas will help a lot.
416. Put up list of when all/specific fishing seasons start and stop for fresh water and salt water.
417. Would love to know where you can and cannot fish. Online it says no fishing in Yolo county off the levee (Sacramento). But see people doing it all the time. Please update fishing reports daily!
418. Post rules for the area and a map of the most common fishing places. Such as not past the Green Bridge on the Feather River and only non-barbed hooks.
419. Rivers and streams should be marked along access areas pertaining to fish species allowed, general regulations and allowed fishing periods to assist anglers from out of areas to conform with the laws and restrictions for that particular waterway. I am afraid to fish out of area due to constant regulation changes which reduces my fishing time. Catch and release should be allowed all year in areas not marked or specifically identified by Fish and Game.
420. I also think the area would benefit from posting brief fishing regulations around main fishing points such as parks, boat launches, etc.
421. It has occurred to me that many of the fish that are caught are required to be released. Many of these fish will die. Many will die of improper release technique. Perhaps a very short pamphlet distributed with fishing license purchase describing proper release methods would help with survivability. Maybe a campaign of sets to address proper release technique. Or allow fish that would most likely die anyway to be kept or taken.

422. I think you should have special cleanup days, and those who participate should get a free pass for fishing just for a day. I think that would be good for the environment and people and get people involved in taking care of our fishing spots. Thank you.
423. I would probably fish Sacramento River if comprehensive guide to fishing and camping available.
424. I would encourage the State to put more advertisements on television and social media networks to promote conservation and to educate fellow anglers about the importance of preservation.
425. The fishing out here in the area is amazing! I would love for people to know about the help that is given to food shelters/the homeless from the Salmon run. The employees at the hatchery at Folsom are very helpful, informative and nice.
426. We also need more volunteer programs in the city to benefit children.
427. Greater need for local kid friendly fishing opportunities near Chico.
428. I have always loved fishing on the Sacramento Delta, catching Striped Bass and Catfish. What I've always wanted to see is a program through Fish and Game to help younger kids be able to have an opportunity to fish. What I would like to see is a program designed to donate tackle and poles, so those less fortunate would be able to stop by and get a free pole and tackle. Someone under the age of 16 can fish for free but sometimes cannot always afford a pole or tackle. I think this would be a great improvement we can all use to help the youths' fishing experience as well as our own as a Sacramento community. Thank you.
429. I'm involved with a program (Trout in the classroom) with "Gold Country Fly Fishers". There were no eggs available this year at the Folsom hatchery because of not enough fish (Steelhead). The kids were disappointed this year. Continue your work to improve habitat for all fisheries. Thanks.
430. More involvement for kids under 18, as in tournaments for age groups.

### **Site Conditions: Access**

*Access was an issue important to a number of anglers (comments 431-482). Disabled anglers noted the need for parking close to fishing sites and docks where they can safely fish (comments 431-440); this issue is likely to grow in importance, given the age distribution of anglers found in our survey. A major issue was shoreline access (441-477), with several anglers noting the importance of such access for kids learning to fish (441-443). Factors contributing to lack of access include restrictions on use of private and public property (444-453), lack of parking (454-457), and overgrown vegetation (458). In terms of access to water, several noted the need for dredging to address siltation (478-481). One angler wanted more pet friendly access, i.e., loosening of leash laws (482).*

431. Have more places where older and handicapped can get to good fishing areas.
432. I also recently lost my left leg and other than a few handicapped parking places, there are no areas for people with disabilities to fish. Although I am fortunate enough to still use my drift boat and bank fish. But some people with disabilities are not, and these people deserve to fish and hunt like everyone else. Thank you.
433. More handicapped access.
434. Only place handicapped 80 year old can fish, there and Clarksburg, 50 miles away. Rest too hard to get to the water, they need more places for older people to fish at American River, not worth cost \$500, still have to walk to fish. No access for senior or handicapped fisherman. Need more places to fish for Handicapped Seniors.
435. I am handicapped. I can only go where there is a dock.

436. I would like to see easier handicapped access, for instance places where they can get their car very near the water to fish, with a walking distance of 20'-30'
437. Increase access to fishing locations for disabled.
438. David is disabled, but fishes every week. I am his mother, but since the water level is so low, I can't get in and out of the boat very well. I am 83. I need a ramp with something to pull myself up on. Not all ramps or docks have this. Most of our fishing is in the Northern part of the State.
439. Thank you for including me and I hope it helps. The only thing that needs to be improved is handicapped access. The older I get the harder it is to get to my favorite spots.
440. Shoreline access for fishing gets worse every year. No access on Sherman Lake, very little access near Rio Vista Bridge area. A fishing pier was built in Big Break, Oakley, the parking area is 1/2 mile from the "pier," connected by a "gravel" pathway. I'm disabled, try walking with a cane, walker, or wheelchair on Gravel!
441. I think there should be more shore fishing access. It saddens me that I can't take my kids to spots I used to fish when I was a young boy growing up here in the Central Valley.
442. The need to open the complete Delta to bank fishing. Many older and younger people need a place to fish from.
443. I would support anything that creates better fishing habitat in lakes, rivers and streams. I like to take kids fishing. That's the future we need good access to more areas especially in the Delta.
444. We need more areas for fishing, not enough spots, all private. We need better access for family fun, also please open more levees.
445. Access to creeks such as Stoney, Thomas, Mill, deer, etc., are limited by Creekside land owners. They seem to think they own our creek beds.
446. The Sacramento River is being privatized, with much of the bank fishing areas closed to shore fishermen.
447. Seems like every year more land becomes private. It gets harder to catch fish without owning a boat.
448. Improved access to existing government land for fishing should be made.
449. The government and National Conservancy have bought up so much of the land that access to the river is almost impossible for the public. They post it as no trespassing. That is wrong as it also takes away the tax base for the area. When government takes over land it becomes a liability to all citizens. We are overrun by so many agencies that control the river, I can't even get my bank to protect my home. That is wrong when they cause flooding that creates damage. Man does more harm than good in most cases.
450. I would like to see more shore access available. USFWS is acquiring land but much is boat access only. I have friends with boats, but not everyone does. We need more public participation.
451. I am disappointed that the Sacramento Delta is off limits to bank fishing in most areas due to being in a reclamation district, i.e., 307. Most levees in the Sacramento Delta have signs that one cannot fish, trespass, etc. and violators would be prosecuted. In the 80s and 90s most of these levees were accessible and fishing was allowed, now very few areas permit fishing. It is very frustrating for an angler who used to fish the banks since his childhood and now not be allowed to. The banks are safe places to teach young anglers to fish, but if they are not allowed then it becomes more of a challenge. Let's just say the options are limited.
452. Public land access has been greatly hindered by government agencies, USFS, BLM et al. This infringement on our right to access lands that are supported by tax dollars and have restrictions on public access must balance environmental preservation needs and the right of those paying for the maintenance of those lands right to access.



453. Too much restricted access has forced fishermen together creating a lot of "combat fishing". I mostly fish limited access areas like military installations because I have access and there are few other people to disturb you.
454. More river access for bank fishing on the Sacramento River and Feather River with closer parking.
455. I would like to say fishing is not what it used to be due to all river levees closing to the public and no parking on the Sacramento River.
456. I don't fish as much as I used to, because it's too hard to find spots. Most are closed or no parking. A lot of places I fished when I was a kid are closed or off limits. More people, less spots!!
457. It is almost impossible to park close to streams, sloughs, all lead off levee roads in the Delta are posted. All area roads that pass over valley and foothill streams are posted, no parking for one either side of the crossing.
458. Bank fishing seriously hampered by overgrowth.
459. Though on my last trip, I fished for Steelhead, I spent more trips fishing for Chinook Salmon, primarily on the Feather River due to great access for bank fishermen. I fished for Salmon on the Sacramento River a few times, but river access to good fishing areas is extremely poor for bank fishermen.
460. More access to fishing along rivers.
461. More access to river.
462. I would love to see more fishing opportunities for serious fishermen and their families in Sacramento area. The fishing in the city programs are too few and far between. The Sacramento River front area needs more access points and parks.
463. I would like to see more areas along the upper American River accessible to fishing.
464. I would like to see more public access to the American and Yuba Rivers.
465. I wish there was access to where Putah Creek dumps onto the deep water channel. Thank you so much for the work that you and the dept. do!
466. One great improvement would be more Delta access for shore fishing.
467. And it would be nice to fish off the bank on the Sacramento River in Rio Vista, Ryder Island and in the Sloughs around this area. Thank you.
468. Protecting Salmon and Steelhead and the public lands and access should be priority #1.
469. More designated fishing areas with easy access to waterways.
470. Open more spots, plant more fish and create more places to fish so our kids can enjoy what we have.
471. More public access to shore areas.
472. Great fishing on the American River! Great access! Poor access on the Sacramento River in most sections.
473. There are not enough places on the Sacramento River for bank fishing.
474. I would like to see shoreline fishing access for the public along the Sacramento River in designated locations. Fishing piers. This would reduce trespassing and illegal levee encroachments. I would pay a reasonable premium on my fishing license for access to such places.
475. I wish there was a way to access the North Fork Fishing Access Trail of the Feather river other than walking the catwalk of the Caribou Powerhouse. It was damn scary and my dog (Dalmatian/Cattle mix) simply would not do it, as water was being released when we were up there. I love fly fishing in California with my dog. Thank you for asking me to participate in this survey.

476. Trail access and maintenance of trails needs to be improved. Watershed management should be something that is given more attention, manage the watershed and forest, less wild fires, better access to lakes and rivers.
477. Over the last 10 years or so, I have noticed a steady decrease of good fishing locations. Very few areas are accessible, posted no trespass, garbage, water levels too low, snags from garbage, in general very low chance of catching a decent fish. I usually catch and release, but sometimes I, as well as other fishermen, don't catch much.
478. Someone needs to dredge the Feather River and Sacramento River again.
479. Thank you for the survey. I do have one recommendation. Our river system in the Central Valley region is full of silt, mud and debris. It would be very beneficial if our rivers were dredged as they were in years past when the main source for supplies was delivered by boat. The cargo boats would travel upstream as far as Marysville, CA and the waterways were kept open (by dredging) so the boats could travel. Dredging again would tremendously help the Salmon migration and population up the river and double benefit in greatly bolstering flood control measures. Thank you again and God bless.
480. From Feather River on Sacramento River U/S and D/S needs sand removed from both rivers. Not very good access to rivers or fishing holes. Two or three people would fish 4 times a week. Haven't been last four or five years in either river.
481. Have Sacramento River and Feather River to be dredged, not only would waterways have better access, the fishing would be a lot better. As far as levee protection from flooding, you dredge these rivers down 10 to 15 feet to bedrock and clean waterways of debris, you will fish a lot of issues that our waterway systems have.
482. I have a dog, wish for unleash laws.

### **Site Conditions: Amenities**

*A number of anglers suggested improvements to site amenities (comments 483-510). Issues most commonly cited were maintenance of boat ramps (483-490) and availability of trash bins (491-499). Several anglers also cited the need for toilets (500-504), campsites (505-507), fishing cleaning stations (508-509), and picnic areas (510).*

483. I would like to see more boat ramps and docks along the Sacramento River. I don't have a jet boat so I am limited as to how far I can get up the river.
484. No improvements needed, all boat ramps, docks I go to are in great condition.
485. I believe that the boat launch ramps on the west side of the Delta, like Grizzly Island, can be improved by lighting up the parking lots and fixing pot holes in the lot by the bridge. Thank you.
486. Better conditions at boat ramps. Open up more and better boat launches on the American River.
487. Improved boat launches in the Chico area to Woodson Bridge area. Launches are very limited in this area of the Sacramento River.
488. Improved streamline permitting for boat ramp maintenance. Many times after high water events county ramps are silted in and not operational until local agencies go through a long process for in-water work to clean out ramps resulting in lost opportunities for access.
489. The river above Colusa is great for Striper, Salmon and Sturgeon. Wards is too far downriver. The Colusa landing is very poorly planted for the average fisherman. Reopen the Colusa State Park launch ramp! Please.

490. From Sacramento to Verona on Garden Highway only have one place to fish, the rest are posted or too hard to get to the water. At Elkhorn boat ramp. It's \$500 to xxxx, have one at xxx \$500.
491. Please put more collecting bins for garbage and fishing lines at the river banks itself, thank you.
492. More trash pickup near facilities.
493. Garbage containers should be provided at fishing sites that have heavy fishing activities.
494. People are very messy and litter a lot. I would like to see more trash cans at popular fishing holes that are not State parks. Out parks are clean, not our riverbanks.
495. They could be improved by having the restrooms cleaned more regularly and having more places to put trash.
496. Put more garbage cans and recycle cans around rivers and lakes so many people don't litter.
497. I love Sacramento due to the easiness about getting to rivers and lakes. It is a huge bummer that people leave so much trash behind, then they close the spot down. Put trash cans everywhere! We are going to find a way to get there, so put a trash can in. We need to keep Sacramento easy, fun, and that small town feel! Jump in the truck and hit the river or lake in under an hour! Love It!
498. Some areas around Knight's Landing, where mostly everyone who lives there fishes, could use more trash cans and signs letting everyone fishing know not to litter.
499. There need to be more centrally located garbage receptacles. Too much trash is left by careless fishermen and transients.
500. Bathrooms clean and ramp fees proper boxes to receive launch fees.
501. More portable potty areas.
502. Access to portable toilets can be a problem her and there. Campgrounds are nice and well maintained where I camp. I fish quite often in the high lakes and streams in the Sierras for Bishop, CA to Eel River North Statte. Primarily Bucks Lake, Collins Reservoir, Almanor, Tahoe and all over in between. Bowman Reservoir, Fuller Lake, Sawmill Lake, Feely Lake and whatever we find. We leave the areas better than when we got there. Pack in/Pack out.
503. I've been concerned about the lack of upkeep of launch ramp parking and bathroom facilities in the Sacramento area.
504. Upstream ramp restroom at Sacramento River in Redding is awful!
505. I love to fish but it would be better if there were more camping options, i.e., camp grounds at lower rates. I know these places have to be maintained and employees need to be compensated but some of the camping places are too pricey, and because of that reason I do most or all of my fishing in areas that are free. Unfortunately this can be very dangerous even though camping grounds are not totally and completely free of danger. But it would be nice to try it out and see if I would enjoy being at a campground for a weekend somewhere.
506. Allow more camping sites along the Feather River (Oroville wildlife area).
507. I want camping sites on the river, close to the Sacramento Marina.
508. I would like to see more fish cleaning stations. And I would like to see better and more parking on our levee system. I have no email, but would like to be sent information by mail.
509. More lakes and reservoirs equipped with fish cleaning stations, would possibly draw more people from the city, having a way to clean fish prior to driving home late than wasting fish.
510. You should build picnic areas on some beaches on the northern part of the Sacramento River – those areas built with the purpose of fishermen where the access should be allowed only for fishing license holders.

## Site Conditions: Cleanliness

*Cleanliness was cited as an issue by a number of anglers (comments 511—543). Consistent with angler requests for more trash bins (see “Site Conditions: Amenities” above), quite a few anglers complained about trash and debris at fishing sites – both on the banks and in the water – and advocated for more education and enforcement (511-540). In addition to litter/trash (511-535), anglers also mention fishing tackle (536-538), derelict boats (539-540) and household items (e.g., washing machines) (541). A few anglers also voiced concerns about effects of water contamination on fish health (542-543).*

511. I take a trash bag every time I fish to clean up the area. Our fishing spots are always trashed. Stiffer penalties need to be implemented for people who leave trash. Many of the spots I fished as a kid are closed.
512. Better enforcement of anglers littering.
513. The only thing that I don't like is all the trash that is left by the people that fish where I go. And mostly because I take my kids and they always get tripped by the old lines and hooks. There's also dead fish left on shore. I'd rather have a clean place to take my kids, where they can enjoy the outdoors and be safe.
514. Pack it in, Pack it out. At my fish spot I pick up all the trash around.
515. Need to have trash removed from campgrounds more often, along with cleaning the toilets (Millsap Bar campground, Berry Creek, CA. Little North Fork).
516. The cleanliness of the river banks could be improved. They are pretty dirty with litter. I don't like the litter but it was too much for me to clean and too nasty.
517. Also, we need your help to educate other fishermen about picking up after themselves and keep the areas clean.
518. I am sure you already know. Most people are not responsible enough to clean up their own mess that they make when they go fishing or boating or camping or even swimming. It is sad and the worst part is they most likely have a half dozen kids running around helping make that mess! You folks have a nice day.
519. Very stiff penalties for those who pollute and leave trash at fishing areas.
520. I still consider myself a novice boater. I am still exploring new waterways every year. It is disappointing to see all of the trash, litter and other debris in the water and on the riverbanks. It would be nice to see people clean up after themselves.
521. I haul more garbage out than fish on my trips. Better garbage/fishing line cleanup need to be addressed. The American River/Folsom Lake is a dump.
522. I'm noticing it's harder and harder to find a decent fishing hole/spot that hasn't been fished out or seeing garbage everywhere! People should have more respect for the environment and other anglers.
523. Improved; more trash clean up and more native plants with improved health.
524. Trash, trash and more trash. Tougher penalties for littering! Don't really enjoy fishing the Central Valley. Would rather spend my money to fish in the Sierras.
525. No matter where I fish, I see too much trash/unnatural debris on the banks and in the water. I'm thinking of the Sacramento River through Redding, where I did most of my fishing last year. Thank you.
526. Also, DFG should enforce more restrictions around pollution in the Nimbus Basin. The last time I fished the basin, people in the side channel had left garbage everywhere because they only cared about illegally catching their limit and getting away.

527. I also feel that the fines for littering around our waterways should be increased. As part of the fine the offender should have to do community service by picking up trash along our rivers and streams.
528. Fishing used to be enjoyable as a kid growing up. Now our local fishing holes are littered with trash, homeless people and illegal Hispanics. The regulations get worse each year and there is a good chance I won't purchase my fishing license next year. Why should I when there are so many illegals getting away with it? I might even quit my job, grow some pot plants, get an EBT card so I can get a free phone, free food, and free health insurance like my worthless neighbor.
529. I think officials should pay more attention to what comes out of our creeks into the rivers.  
"Honestly."
530. You need to get rid of all the garbage, trash, homeless people and bums. They are ruining the land, poaching, defecating and leaving all their trash along the river banks. The Dept. of Fish and Wildlife and other agencies should get them away from the water and fine them if they can't pay for polluting, squatting, and camping in no camping areas.
531. In addition, there should be stricter enforcement of the rules, i.e., a greater presence of wardens. This would reduce the litter problems that exists on all of the lakes and waterways.
532. Police bums that live on my river.
533. I hate to say this but impose heavier fines for those who litter or at least more Game officer presence. The reason I fish is to enjoy the outdoors and nothing ruins it more than to see trash left by other people/fishermen. This may deter people from littering. I suggest to have low level criminals or those who have to serve community service as a disciplinary action to provide shore and watershed cleanups.
534. The homeless are polluting our river ways. You should come by or call me. I'll show you. It is out of control. We must do something now! P.S. Can we actually do something?
535. River needs cleaned of debris.
536. The American River in Sacramento would really benefit from in-river fishing line cleanups.
537. The biggest concern or complaint is the amount of tackle left by fishermen. It's a big problem for wildlife, mainly the birds. It would be nice to see a strict policy about leaving unwanted gear behind. It ruins nature and pollutes the area.
538. Bank fishing sucks or is not permitted around Rio Vista areas, Sherman Island Levee Road. Not enough fishing areas on the San Joaquin River side of Sherman Island bank fishing. Too many snags, loss of fishing gear at Sherman Island, Cache Slough all around the old ferry crossing area, there must be over several tons of lead weights lost in snags. I have lost 10 lbs. there myself. Same with the power lines on Sherman Island Levee Road.
539. Homeless need to be removed from Sacramento River boat launches, along the river. There was a boat beached near Broderick Boat Ramp for a few months with homeless living in it and they camped out on the shore. They moves a few miles downriver past Miller Park leaving a lot of trash by Broderick. A month after they moved, their boat was sunk and burned and left in the river. The shore was also littered with trash.
540. I would like to see a more robust effort to remove sunken, derelict and abandoned boats. Thank you for your efforts.
541. The Delta and river around West Sacramento are filled with household waste (washing machines, dryers, tires, etc.). This discourages a lot of people I know from fishing (lost lures and hooks).
542. Clean up Hogan! Hogan inlet has frogs with extra legs, caused by a parasite, the granddads have a parasite. Looks like fish ich on their tails in creeks above Hogan inlet. Eight Mile Road Delta rivers are filthy, along banks, terrible fishing. Less and less fish every year.

543. I am concerned at the mercury levels in Delta fish. It seems they have been growing in recent years. At what point will these levels stop? When I stop fishing? Thank you respectfully.

### **Site Conditions: Cost Other Than Licenses**

*In addition to the cost of licenses (cited above under "Fishing Management: Licenses"), some anglers noted other costs that discourage them from fishing – e.g., boat launch fees, parking (comments 544-559).*

544. The fees associated with fishing are getting to be rather cost prohibitive. Licenses, stamps, launch fee, etc. are increasingly expensive. Finding a way to lower these costs will allow more people to take up this hobby.
545. (lake only) 1. Stop charging high fees for lake access. 2. Privatize lake and park maintenance. 3. No need to charge for bass tournaments.
546. Expense: Contra Loma, my local reservoir charges \$5 for parking, \$5 for day fishing license, launch fee, trailer fee, muscle cleaning fee, and most visits I don't catch a fish and no one I see is catching fish.
547. Lower the cost of parking and boat launching on Shasta Lake. Low water required unimproved launching of boat yet required \$10.00 parking fee. Not fair. The ramps and roads were built years ago yet fees have been required for less than 25 years.
548. I loved fishing the ocean for Salmon and Rockfish, Striper and Halibut. I can no longer afford to go fishing like I would like to. For me to go fishing on a party boat the total expense is around \$150.00 or more.
549. Most years I fish a little more often, including Black Butte and Shasta. Took overnight trips to the Delta in years past to fish for sturgeon but not since the charge for Sturgeon tags.
550. I own a 28' boat and 18 heavy and medium rods and tons of tackle. This is a lot money and I have all but stopped fishing in the Delta, bay, rivers, and lakes in Northern California. It costs a lot of money. 30-35 trips in the last 4 years, \$3000 to \$4000. Not one fish big enough to eat, not one. I have fished here all my life, where the hell did all the fish go? I eat a lot of fish and none of it came from here. As of now, no more CA License for me. Too much money for zero. This was my passion, no more and give DFG their budget back.
551. I think it is very sad how much it costs to fish, camp, hunt, visit our parks. \$50.00 for a fishing license is way too much. My uncle in Montana pays under \$50.00 for all fishing, hunting, etc.! Federal campgrounds in the mountains should be free! We need more campgrounds and fishing lakes. It costs way too much to live in California for the regular citizen. Sad, sad, sad day when people cannot go fishing, etc., because of fees. As a young adult it was very cheap to fish, hunt, and camp in California! No longer.
552. I have fished for over xx years throughout the Central Valley system and there are getting to be less and less places to fish. My dad and I fished many years on the Yolo County side of the Sacramento River, from Freeport and West Sacramento. There is less access to the river that is free or without paying lots of money. I have seen no improvements for the money we pay each year.
553. I've noticed park fees have increase drastically over the years and, as a result, I have reduced my fishing trips and limit them to mostly rivers and/or areas where fees do not apply.

554. Because of the "state" of California, the high prices of things, gas, licenses, food, etc., it is hard for most people to fish more often. People who poach, and unlicensed fishermen hurt these people. No money for Fish and Wildlife Dept.! Our boat ramps and parks need upgraded, but no money. Where is all the money from gas tax, licenses and fees going?
555. Fishing is lousy and fish are smaller and fewer are caught. And the cost of fishing licenses is outrageous!!! Fishing is cheaper out of State!!!
556. Launch fees are too high.
557. Boat launch fees are far too expensive for people who retired on a fixed income.
558. The cost of Licenses and boat launch fees go up every year. Why? But I love doing it. I've grown up doing it my whole life. Just would like to see better management of our precious resource. Everyone these days is a guide too. Some of those guys are full of themselves.
559. I didn't put as many days in fishing last year as I normally do. I would greatly appreciate any efforts that support Salmon and Steelhead fishing in the rivers near Auburn, CA. One way to improve my personal fishing experience is to not have to pay State park fees on the American River near Auburn, CA. Because of these fees I fished the American River less often. These fees have also put more pressure on the Bear River as others have avoided paying State Park fees as well. Consequently, the Bear River has seen more trash. Anything this survey does to help is greatly appreciated. Thank you.

#### **Site Conditions: Invasive/Non-Native Species**

*A number of anglers noted the presence of invasive/non-native species (comments 560-579) – most notably water hyacinth (560-565), pike minnow (566-570), and sea lions (571-576) – that impair the quality of their fishing experience and/or the health of fish stocks. One angler also mentioned striped bass (577), which is both a non-native species and a popular species targeted by anglers.*

560. More attention ought to be paid to stopping introduction of invasive and non-native species into Central Valley waterways. Catch and relocate them.
561. Better control of Hyacinth. Absolutely awful this year in the Delta.
562. Water Hyacinth has to go. It affects the ability to fish.
563. My last few outings to the Delta, I have noticed an overwhelming amount of plant debris. I think it's water Hyacinth, but I'm no biologist. I just know it is mass-producing at a staggering rate. A rate if unchecked I'm afraid that my kids won't be able to fish the Delta. Nor will any boat be able to wade through it.
564. Way too much Water Hyacinth. This stuff ruined our trip. We were forced to fish in the river above the lock. Water Hyacinth BAD! Clog motors, ruins bait fishing. It is really bad. I won't go try fishing that area again until the Hyacinth is poisoned.
565. The water hyacinth is making it impossible to fish. We took our boat out of the water and took it home a couple of years ago.
566. Poison all invasive species (Sacramento Pike) above Folsom Dam.
567. Aggressively eradicate Northern Pike from spawning areas.
568. Squaw fish are terrorizing upcountry by Moke River creeks and surrounding areas. Squaw fish in Red Lake. Found dead sharks cut open at Caples. Sewage going into upcountry creek. Comanche has really weird fish swimming around, big orange gold fish!? Please mail responses.
569. I catch a lot of Minnow Pike when fishing for Trout and Stripers. I, along with other anglers I know and talk to feel that the Minnow Pike (Squaw Fish, Hard Head, etc.) are bad to the river's

habitat. They eat all the good fish we try to catch and when we catch a Minnow Pike try not to return them back due to the harm they do to the natural habitat. It seems they are growing in numbers. It used to be that I could catch more trout, now I catch 1/2 Trout and 1/2 Hard heads on my fishing trips.

570. I find the Dept. of Fish and Game (DFG) regulating and law enforcement both illogical and in conflict with "best practices". Both Northern Pike and Chinese Mitten Crab are invasive species. It would be more logical to allow the taking of Northern Pike in Davis Lake and Chinese Mitten Crab in the Sacramento River. Both without bag limit and with a computer reporting system to DFG which requires license information. Any Pike caught outside Davis Lake could still be required to surrender to DFG. But enlist the public help to eradicate invasive species and benefit Davis Lake and the Sacramento River levee and delta system.
571. Please do something about the Sea Lions!! They are much better fishermen than us.
572. How about addressing uncommon predators to salmon runs like the sea lions hanging out in mid Sacramento River? You can easily est. the 'uncommon' damage to spawning activities.
573. Find a way to take the seals back to the ocean. They are killing the Salmon and Striper populations.
574. Too many seals in the system.
575. Don't know if Fish and Game has any authority to capture and relocate to the Bay area a Sea Lion or two near the mouth of the American River between Discovery Park and Miller Park boat ramps during the Salmon run. I've seen as many as 6 beautiful Salmon killed per hour while fishing. This probably goes on day and night. Discouraging to all fishermen to say the least. Would like to see an article in the Sacramento Bee from Fish and Game regarding this problem. Thanks!
576. One day I was fishing at the mouth of the American River near Discovery Park. The Nimbus Fish Hatchery was dumping baby Salmon in the river at Discovery Park. There were 3 sea lions eating all of the baby Salmon as they were being dumped. I don't feel this is a very good practice to increase the Salmon survival rates.
577. I also believe we need more control over invasive predator species like Striped Bass "non-native" that are putting large amounts of pressure on natural Salmon, Steelhead and other water endangered fish. If they don't make it to the ocean they can't come back and spawn.
578. I have seen great value in introducing landlocked Salmon in rivers that swim to lakes to live and return up river to spawn. The Chama River in Northern New Mexico does this. The Salmon look like a red ribbon going up river. Great Salmon fishing and bigger Trout. River otters must be removed from trophy rivers. They harvest large number of large Trout. The quality of Trout fishing deteriorates when otters are introduced or their numbers are supported. I have had many fishing trips spoiled by otters.
579. These days I'm seeing more and more crabs and fish like Flounder and Sanddabs up as far as Rio Vista, where 15-20 years ago that would have been unheard of.

### **Site Conditions: Safety**

*A number of anglers cited safety as a concern (comments 580-590).*

580. There are some places I will not use because I don't feel it is safe to leave my vehicle.
581. Security at public launch ramps, too many break-ins to parked cars/trucks.



582. I have concerns about safety while using the boat ramps in the Central Valley. I'm very concerned that my vehicle will be broken into while I'm fishing. I have had my car broken into while I kayaked on the American River.
583. I have a boat but the security at the ramps keep me from using them in my area, such as Butte City, Ord Bend, Irvine Finch.
584. My mom takes me to Rio Vista because it's safer for me and her. We clean up and pick up any trash that may be in the area we are going to fish from. We did go kayaking at Folsom Lake a state park there. But no fishing. We went kayaking and camping for 3 days up at Strawberry Reservoir back in May. Very, very clean place. We loved it. Can't go fishing on Freeport Blvd., because mom said it's not safe for me or her. We have to wait until she said it's safe for us.
585. We usually fish at Tiscornia (not on the beach though). My dad and I walk down further and hike down the rocky riverbank to fish. It is a steep drop down to the rocks, so you have to be careful. As my dad gets older it has been a challenge going up and down (especially if we have a big fish). Maybe a safer spot to fish in that area would be nice while fishing from shore. But there are too many underwater snags and people on the beach area.
586. There's no security anywhere on either river and my vehicle has been vandalized once in 2014 and 2007.
587. I may have to stop fishing because there are so many scary homeless people living on the river. Very sad.
588. Many homeless harassing people and trashing waterways. Stealing.
589. Less homeless people near the river. I don't go fishing alone – am 71 year old female – for fear I might have problems alone.
590. The homeless camps along the Sacramento River are a Major threat to fisheries habitat. In the city of Redding, the homeless are destroying the scenic beauty. It is an environmental disaster. If a farmer or business was causing this much pollution NOAA would fine them heavily. Double standard if you ask me. NOAA should do something about the homeless environmental disaster!

### **Site Conditions: Users**

*Some anglers expressed opinions about the effects of particular activities – e.g., jet skiing/speed boating (comments 591-597), fishing guides (598-601), gold panning (602-604), commercial fishing (605-606), environmental activism (607) – on fish habitat and their fishing experiences.*

591. Limiting ski boating may improve fishing quality, i.e., clearer water, less wake erosion on lakes.
592. I really wish there were more regulations on jet skis to stop the disturbance when fishing. I have been followed many times so they could jump our wake, they get caught in our lines and we lose out tackle.
593. I mostly fish off of a kayak or inflatable boat. It would be great if Fish and Game park rangers could patrol up and down rivers and lakes to keep motorized boaters and jet skis at reasonable speeds in designated areas and make small boaters like me safer out in the water.
594. I'm a fan of float trips, not the motor boats gunning up river to grab Salmon right before they make a big push up river to spawn.
595. There are too many jet skis in my opinion.
596. The speed of boats and crowding along the Sacramento River make fishing peacefully difficult.
597. Too many jet boats on the Sacramento River which hurts the fishing.

598. I think guide companies should be charged a fee for every out of area customer they take to the water to fish. At least on rivers and creeks. And be required to do clean-up days.
599. It seems like every year there's more (fishing guides) on the rivers that take the fun out of finding and catching fish on your own!
600. I would like to know why guides can clean fish in the river and discard the carcass and the general public cannot. Don't think it's right.
601. I am a licensed guide of the Sacramento river, and I do not work much anymore because of too many people, and they have no respect for the resource, mainly Salmon. That side drifting they do should be outlawed, they line or foul hook most of the fish and drift right over the top of where you're fishing. I'm talking about the so called licensed guides, they have no respect for anybody or anything out there. All they're concerned about is making a paycheck.
602. Seeing too much habitat destruction caused by weekend gold panners using pick axes and shovels.
603. Open gold dredging.
604. Enforce laws to make gold miners clean up their mess, miners around American House campground on Slate Creek on La Porre Rd. leave trash and debris in Slate Creek, even above La Porre at St. Louis Bridge, debris and trash in the water.
605. I believe the Salmon are going to go extinct. Way over fished by commercial fishermen. Steelhead are just about gone. Fisherman are walking on the spawning grounds. I fished my whole life from when I was a kid into my 50s. I caught my limit of Salmon and Steelhead every day. Now you would be lucky to catch a couple limits a year and that is putting your heart into it. I don't even keep the fish anymore. It's really sad where this is going. Bottom fishery is just as bad and it's the Russians that keep all the fish they catch. Asians are right behind them.
606. We need to reduce commercial fishing pressure in the ocean not only off California shores but the whole ocean.
607. Cal Wild should spend more time and energy and resources on sport activities, hunting and fishing rather than political activism, enviro nonsense and padding enviro special interest. Hunting and fishing management is conservation. Millions of Dollars of sportsmen's fees are wasted on academic studies and bad science. This time, money and resources should be spent on hatcheries, planting, enforcement and expansion of the outdoor sporting sports. Without sportsmen and women there will be Cal Wild.

**Policy: Habitat**

*Some anglers expressed support for habitat protection and improvement (comments 608-616).*

608. The major concern among myself and friends is the way the water resources are handled here in California. We feel that not enough attention is given to the population and habitat, especially for Salmon and Steelhead.
609. Rivers should be improved regularly due to falling trees. Heavy activities at fishing sites should be improved regularly, such as road and riverbank erosion.
610. As an avid fisherman turned prospector, I feel that I now have a better understanding of what causes poor environments for the Salmon. In my personal opinion, the fisherman/pro prospector/miner is the future. We all need to do our part to keep the waterway in an unchanged environment, be it fishing line and trash, or some gravel in a river bed moved a few feet.
611. I probably sound old, but I have caught some fish I am proud of – a 41 lb. Striped Bass below Paradise Beach on the American River and an 85 lb. Sturgeon in Montezuma Slough. Do not fish

- as much as I did 10 years ago. I remember days landing 10 American Shad, but lucky if I get 4 lately. Improving number of fish and maintaining habitat is most important.
612. There are a lot of things that could be done on the river north of Red Bluff. But you have to have common sense, not books or college degrees to get it done. You need to talk with the fishermen who have seen the drop in Salmon Steelhead over the last 50 years. Common sense. Come and go out with me, I'll show you what I mean, Pilgrim.
  613. I strongly support the restoration of Salmon, Steelhead, and Trout habitat. I regularly spend \$5000+ per year to fish in Idaho, Montana, Wyoming and Alaska. If the fishing was as good here for Salmon and Steelhead I would stay in CA.
  614. We need to improve habitat for all fisheries. The more fish, the more people will go out and enjoy the outdoors. I feel that improvements to the Sacramento River system for Salmon is also an improvement for people.
  615. Sacramento system really needs habitat improvements.
  616. I have been treated as persona non grata by officials. The property I own is on the border of two cities, Redding and the city of Shasta Lake. Both cities, on their General Plan maps, show a four lane road traveling through my property, in order to build thousands of dwelling units and shopping centers. Unfortunately, if this feat is accomplished according to their desires, society will be guilty of the utter destruction of the very same thing that NOAA Fisheries proposes to restore. Two creeks, Moody Creek and Salt Creek, circumvent and dissect this property. As a child, I witnessed salmon presence in these waters. No more is that true. Help me to help us to reclaim, restore, and recover this bountiful ecosystem before it is too late.

## **Policy: Water**

*Quite a few anglers had comments regarding the drought and the dependence of diverse users – fish, agriculture, municipalities, hydropower – on California’s complex water system (comments 617-681). Some anglers expressed at least conditional support for water for salmon and steelhead (621-652). Others expressed concerns about the timing or cost of salmonid restoration, or advocated for uses such as agriculture and municipal water use or more dams/reservoirs for water storage or recreation (653-672). One policy that received multiple comments was Governor Brown’s proposal to build two tunnels beneath the Delta to transport water to Southern California (673-681).*

617. Rain/snow dance!!
618. We need water by whatever means possible.
619. There are lots of issues that could be addressed, mainly water flow and enforcement.
620. I'm very concerned about the increasing saltwater intrusion up the Delta.
621. The fact is, we need more rain to support the fish habitat. The human consumption has overwhelmed the natural process.
622. Realize that our human population growth has to be addressed and controlled before the only wildlife we have left are our relatives.
623. I am quite disturbed at how our salmon fishery is managed. I believe we have had a collapse in fishing opportunities over the past 25 years especially. I have been considering simply fishing Mexico and Alaska more often, as our salmon fishery is becoming so inconsistent. Politics have destroyed our fishery and that is the key. All about the water.
624. I worry about water levels in California streams. I have seen water levels so low that fish populations are endangered and Salmon populations are threatened to extinction. The rivers must

be managed to protect fish populations and every effort should be made to restore Salmon and Steelhead runs. I love Northern California and would be happy to help with money at times. Thanks for including my responses.

625. Every year the Salmon counts go down. I don't like the idea of diverting more water from the Delta.
626. Better water management on the Folsom Dam to benefit habitat and support spawning migration (incoming and juvenile out migration).
627. On the American River, I have noticed extremely low water flow areas from Watt Avenue upstream due to high levels of gravel. I feel it would help the Steelhead and Salmon if there was a way to increase depth of river flow of river in those areas.
628. I would also like to see some of the water restrictions lifted to allow more fishing areas. Thank you for the time.
629. Improve spawning habitat, artificially if necessary. Keep more water in the system for fish.
630. I am concerned about State and Federal restrictions that would be implemented if Salmon were allowed in areas where they haven't been present in recent years. (i.e., vegetation management and fuels treatments). Proper management of watersheds need to take precedence before we lose water quality to wildfire. Further restrictions on watershed management may jeopardize not only the fish, but the entire integrity of the watershed.
631. I hope the Central Valley continues to have fishing available to the general public for another hundred years. We need water in order to fish, so let's first work on the State's water problems before we dive into how people spend their free time.
632. Better water/habitat management for our Steelhead and Salmon. Please.
633. Like to see Steelhead/Salmon runs restored in all areas (maybe especially the San Joaquin River) they formerly were in. They need passage over the Friant Dam. Would be nice to see them back in SoCal.
634. Since I have family owned land located on the Auburn Ranch, I have been following the petition for the removal of the dam in Lincoln, CA. I would like to see this waterway re-opened to the Salmon run above the dam in Lincoln.
635. Please put more emphasis on tearing down old dams. Open up more wild Trout areas. Improve access to the Fall River, if possible.
636. Please remove hydroelectric dams to help restore the wild habitat belonging to the rivers.
637. Removing useless, outdated dams and enforcing stricter regulations are essential.
638. I believe leaving the Red Bluff diversion dam open is the best idea in many years. I've seen great Salmon runs lately. We need to keep what water we have left here in Northern California. Thanks.
639. No on EBMUD proposal to raise the dam level at Lake Pardee. Keep the Mokelumne River wild and scenic!
640. Opening up more spawning grounds for Salmon and Steelhead should be a top priority. Removing a fish ladder around Englebright Dam on Yuba would go a long way. Protecting the little spawning grounds is vital.
641. Please help Auburn Ravine River's restoration so Salmon and Steelhead will return to Auburn and beyond. Install a fish ladder at Hemphill Dam in Lincoln. I saw some pictures of my friend's grandparents catching huge Salmon out of it many decades ago. I've caught lots of Trout there, starting with a 21", 2 1/4 pound Rainbow Trout on my second cast the day I moved to Ophir, CA back in 1982 and always hoped that the other big fish could return. Thank you.
642. I would like to see the Central Valley Steelhead restored above Folsom Dam.

643. While the Central Valley suffers from the worst drought in recent years, I believe it is important that we keep rivers flowing, lakes full and fish from becoming scarce. If this can be accomplished, Central Valley fishing will be improved for every angler's experience.
644. The water flow needs to be regulated more efficiently. During the summer of 2014 Shasta was releasing 14K CFS when it could have saved water by lowering it to approximately 7K. This outflow was early in the year, after realizing the drought levels the water flow dropped drastically to below 5K causing water temps to rise. With temps rising the Salmon had to rush up stream to spawn. The Salmon were dying before they could spawn. The high water temps caused the metamorphosis to happen prematurely. Help save more fish by acting smarter. Talk to the guides, they fish every day, they see what is happening. Thank you.
645. We need to maintain proper water (including temperature controls flows to maximize natural spawning of anadromous fish species and their survival.
646. Please guarantee water to protect and maintain our fish and wildlife. The problem is not that there is not enough water to go around. We have no control over the water supply. The real problem is that we have too many people, and the number of people in California we can control.
647. I have seen fishing get worse every year over the last 65 or 70 years mostly from bad management, and sending water through the pumps and south to Southern California. Palm Springs?
648. The fishing in the Sacramento and San Joaquin Delta has been better. Some of the blame has been put on the Stripper for the decline of Salmon, Shad and other species in the Delta. These Species have lived together for over 100 years. Everybody needs water but I believe the problem is with the pumps that are used to send water south. The more we take from the Delta the less we are going to have.
649. Every person I have spoken with in Tehama County is disgusted with the money squandered on the Red Bluff fish ladder. This town was a tourist destination with a wonderful ecosystem revolving around the lake in out town. Bald Eagles and Osprey were everywhere, along with many other animals. Many businesses have been forced to close and many more are struggling as a result. Several years ago, I would visit family up in area and float tube this area, with minimal danger. I am now forced to learn how to kayak, which involves greater danger and pick up and drop off locations. I would like to see a solution to this issue without wasting too much more of my tax dollars.
650. Quit selling the water up here to Southern California. By doing that you are screwing up the fish while they are up here to spawn.
651. Less water to the Agra business almond growers.
652. Continue and increase water awareness in an effort to sustain or increase Salmon population. Additional support is necessary to minimize farmers' power over water rights and restore the Delta ecosystem, not ruin it.
653. Slow down the water pumping to agriculture and Los Angeles!!! Do a better job of maintaining water levels when baby fish are in these waterways (predation, fungus, parasites, etc.).
654. Promote wild Salmon and Steelhead and prioritize them over agricultural interests.
655. Fish need water to live so sending the water to L.A. is not the answer.
656. I would like to see more hatcheries and dams put in place to help hold more water back for public and environmental uses even in if means higher license fees and more restricted fishing areas. I think we should manage what we have and not try and create/restore new habitat in streams like the San Joaquin River.

657. I strongly disagree that now is the proper time to relocate water supplies in an attempt to restore Salmon habitat, such as in the San Joaquin River, when we have such a serious drought condition. If, in the future, sufficient water supplies are secured, I would not be opposed.
658. I would like to comment on the fact that there is so much money spent on keeping the water 55 degrees or colder on the Sacramento River. Yet the hatchery is on Battle Creek where water temps reach 75 degrees to 80 degrees well into November. In my opinion there should be a hatchery on the Sacramento River. The Steelhead, perhaps the most exciting fresh water fish to catch, actually can return to the river system up to four times, yet at Coleman Fish Hatchery these majestic fish are sliced open instead of being milked and returned to the river.
659. Please stop draining reservoirs in order to maintain so-called Delta water "quality." My own personal favorite, New Melones Reservoir is now 200' below the spillway. Not one drop went to farmers or cities. It was essentially drained to help a bait fish (Delta Smelt) and water quality in the Delta. The reservoirs were built by humans and human purposes should be foremost in the operations of dams. After 3 years of drought where would the fishery be without the reservoirs? Well before reservoirs, they suffered and died for thousands of years without periodic droughts. We should not be sacrificing human jobs (like farming) to save the existence of minor fish species that would have perished in days past. The current operation of Federal and State dams is a crime against humanity!!
660. I believe the State, Fish and Game, etc., do a good job in providing fishing areas for the public. I do think we will need more water supplies (dams, etc.) to provide water for drinking and recreation. We have not kept supply up with demand in the increase in population.
661. California needs to increase its water storage capacity. California's population has grown dramatically but there has been little or no expansion of storage in decades. Wake up politicians. We need to expand resources. An added benefit, recreation for people to enjoy. Thanks.
662. With most of our water going to southern California, I feel our waterways in Northern California may not be around much longer. Even if we do have water we are destroying our lakes and reservoirs by draining them down too low. This is also the reason I haven't been fishing for Salmon or Steelhead, we need all the help we can get to replenish the fishery. With hot or no water in fall or summer I stick to the lakes. Water management is key to bringing back natural migrations of fish. We as people and politics are destroying what is important.
663. I own a drift boat and float the Sacramento River between Redding and Red Bluff. Water released over the past year has been low, affecting the quality to fishing and access. As a state, our water requirements have increased along with our populations. Environmental concerns along with additional fisheries are fine but so is the need for water storage and hydroelectric power, the safest and cleanest method of electric production. Please don't become single minded to the point of excluding other equally important issues. For our waterways to flourish we must maintain existing and by introducing new sources of clean water for the benefit of all, fish and man alike.
664. Although I enjoy sport fishing (at my 81 years don't do much anymore) I feel the most important use for water is irrigation of our crops (never have been a farmer) like a local program for raising Salmon in rice fields in winter months.
665. Adding fish to water systems is great, but we need to do a better job in water management and water quality entering the Delta System. Large pot grows are having a negative impact in all waters in California.
666. Something needs to be done about keeping the lakes and rivers full in this time of drought. Like stop giving it away.
667. I think we should stop sending our water down south.

668. I am very concerned about loss of water going south to agriculture and the negative impacts that fish, fishermen and the environment have to face because of the unending demand for more water. Public education about the environment is essential. Natural resources for everyone to enjoy are more valuable than cotton. Big thanks to U.S. Fish and Wildlife Service, EPA, Cal Fish and Game? Be vigilant and don't back down. Human populations have greatly affected water quality in California and we must draw a line. The Delta is on the verge of becoming another casualty of business power. Fish can't talk but you can. I have seen great declines in King Salmon. Farmers need to know that fish are important, they create jobs, food, recreation. Ban cotton and end California's drought. Research amount of acres growing cotton and how much water it uses. Plant low water/drip dependent crops. No more water giveaways.
669. I think many decisions are being influenced by extreme environmentalist organizations. This means the everyday fishermen's needs or wants take a back seat. I'm a fishery biologist and naturalist, but I also want to enjoy some fishing and even eat my catch. I would like to see better care of the native fisheries but not just more restrictions in areas that are so far from the way they were, it's a waste.
670. I'm also getting tired of hearing about the poor South Central farmers having to let crops dry up because of lack of water. Let's get serious. The poor farmers are really a couple of billionaire farmers growing luxury crops like pistachios that less than 5% of are even sold to Americans! Also the idea of building tunnels from Lake Shasta to Los Angeles by passing the Delta is another Billionaire-backed political sham that is obviously lining the pockets of our State politicians.
671. Over the years I have witnessed a steady decline in our water ways and fish management. Over the years with increasing pumps and aquaducts taking more and more water from Northern California the river flows backwards. To improve waterways, stop shipping water to southern California unless royalties are provided for Northern California Families by the sale of water. Disclose where the money is going by the sale of water to Southern California. Block the aquaduct and stop the tunnel in Clarksburg proposed to take even more water. The river speaks so listen to why there are more worms or parasites in our fish than before.
672. Keep Jerry Brown out of the rivers. Save them for the people who like fishing. Get more dams built. You do not xxxxx going from point A to nowhere. Put the money in dams. For food and fishing.
673. Please don't allow the twin tunnels to be constructed. Preserve the integrity of our Sacramento Delta.
674. Stop the "tunnels".
675. Stop the tunnels!!
676. Stop the tunnels!! Restore the Delta!! Stop the water grab from the agriculture corps. And restore the natural flows in the San Joaquin River. Keep the water in the Delta and no in an orchard irrigating nuts to be sent overseas!!
677. Love fishing in the Delta and local rivers. More water! Stop the tunnels!
678. We pay taxes to maintain the Delta system. We should have use of it. XXXX Governor Brown and his water ideas.
679. Manage water better, no tunnel.
680. Stop the tunnels. Our lakes and rivers cannot sustain sending water to LA in the volume they want. They continue to build and yet there is no plan. Build Auburn Dam and then we can consider sending water in greater volumes.
681. Do not allow the installment of a huge pipeline that Jerry Brown signed do direct Northern CA waters to Southern California. We already have enough trouble sharing water with our wildlife. I

know desalinization plants are expensive and energy costly, but I'm sure SoCal can find other ways.