

A GENERAL SURVEY OF INLAND ANGLERS IN CALIFORNIA

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1 INTRODUCTION

1.1 Background and Scope

The California Department of Fish and Wildlife (Department) recognizes the need to update information on angler preference and satisfaction in California. The most recent general survey of the preferences of inland anglers occurred in 1988 through a contract with the California State University, Chico (Fletcher et al., 1988). The lack of current information on angler preferences and satisfaction could be a contributing factor in the overall declining trend in the purchase of sport fishing licenses that dropped from 2,275,555 in 2000 to 1,643,348 in 2019 (CDFW, 2022).

This survey aims to provide an overview of inland angler preferences, satisfaction, and limitations. By doing so, it can update our understanding of the level of use of established fisheries and increase our knowledge of fisheries that may have developed in popularity over the past three decades. This survey also sought to identify knowledge gaps and to highlight areas where obtaining additional information about fishery utilization and angler preferences would assist the Department in decision making. Gaining a current perspective of these preferences is important to better serve the angling community and guide the direction of inland fisheries management.

1.2 Funding

This Inland Angler Preference Survey was funded with Sport Fish Restoration Act grant G2198010, with 75% of funding provided by the U.S. Fish and Wildlife Service and a 25% state match.

1.3 Survey Goals and Objectives

The goal of the survey was to update information on preferences of California anglers to optimize alignment of inland fishery management with the expectations of the fishing public, based on angler experiences.

To address this goal, the survey had two objectives:

1. Assess and evaluate angler preferences, satisfaction, and limitations for fishing in the state's inland waters to inform California's fishery management programs.
2. Increase knowledge of angler preferences to inform angler retention, reactivation, and recruitment efforts.

2 SURVEY DESIGN AND IMPLEMENTATION

2.1 Approach

This survey focused on learning about resident adult anglers (18 years and older) who bought annual or lifetime fishing licenses and fished the inland waters of California from 2017-2019. The survey did not include those who purchased reduced-fee licenses. Twenty-two survey questions were developed, in consultation with the Department's

Human Dimensions Specialist, to gain a general picture of inland angler preferences, satisfaction, limitations, and demographics.

Resident and non-resident anglers who bought short-term (1- or 2-day) fishing licenses were not sampled nor were non-resident anglers who bought 10-day licenses. Also, since fishing licenses were the starting point for deriving the sampling frame, anglers who only fished on Free Fishing Days were not surveyed.

2.2 Materials and Methods

The primary means for anglers to take the survey was through a printed booklet received in the mail. Survey recipients were also given the option of filling out the survey online. Key definitions, including that of “inland waters”, from the state fishing regulations, are reproduced in Appendix A. The text of the survey is reproduced in Appendix B. The survey was only given in English.

In determining sample size, the goal was to have a 95% confidence level that the sample drawn would be within 3% of the true population of annual or lifetime licensed resident anglers. To achieve that goal, it was estimated that 1066 completed responses were needed. Assuming a 20% completion rate, it was calculated that the Department would need to send surveys to 5320 anglers.

Mailing addresses were chosen as the primary means of contact because anglers must provide their driver’s license and address when purchasing a fishing license. Information was collected from the Department’s Automated License Data System (ALDS) database. Email addresses were considered for contacting anglers however this information is voluntary and only provided by about 25% of license buyers.

Due to concerns that rural anglers might be underrepresented in the sampling, a stratified random sample design was used. United States Census classifications and zip codes were used to differentiate between urban and rural residents; zip codes not associated with US Census Urbanized Areas (UA), or Urban Clusters (UC) were considered rural. The Department’s Human Dimensions Specialist determined that of the 5320 anglers needed to be contacted, the random sampling should be stratified to obtain 5075 from urban zip codes and 245 from rural zip codes to reflect the proportion of urban and rural areas in California.

The Department contracted with the Office of State Publishing to: a) print the survey booklets, print the accompanying cover letter, provide pre-addressed postage-paid return envelopes, and provide the mailing envelopes for sending these materials; b) assemble printed materials and place them into the mailing envelopes; and c) send them out for delivery by the United States Postal Service (USPS).

To submit their responses, participants had the option to return the completed survey booklet in the return envelope or take the survey online. A unique, 4-digit identifying code was assigned to each survey booklet and allowed the Department to: a) track how many and which mailers were returned unopened, to the Department, by the USPS as

“Return to Sender”; b) know which surveys were completed, so that they could be matched to zip codes or other demographic data; and c) ensure a participant only submitted one set of responses. If a unique code was used more than once, only data from the first submission was included.

2.3 Survey Implementation

The survey booklets and materials were mailed in October 2020. The survey was conducted during the COVID-19 pandemic so returned surveys were accepted for an extended period. Due to pandemic restrictions and mandatory remote telework, survey submissions were collected until May 2021; surveys returned or submitted online after that time were not included in the analysis.

Data from the booklets were entered into an Excel spreadsheet and checked for quality assurance and control. Results from the online surveys were converted from the proprietary format of the Survey Monkey software to Excel spreadsheet format. The two Excel spreadsheets underwent a quality assurance and quality control check to eliminate errors and then combined to form a working database.

2.4 Survey Analysis

Basic analysis of the survey data was conducted within Excel, including determination of percentages, exploratory data analysis, plotting histograms, and descriptive statistics including mean, median, and mode.

2.5 Survey Limitations

This survey was intended to provide an overview of the preferences of inland anglers, but several limitations and caveats must be acknowledged. First, the selected group of anglers were only adult residents who purchased annual or lifetime fishing licenses. Short-term (1- or 2-day) fishing license holders may have differing attitudes, preferences, satisfaction levels, and limitations, but these were not captured in this study. From 2017-2019, resident and non-resident anglers bought an average of 501,513 1-day licenses and an average of 94,530 2-day licenses per year (CDFW, 2022). Second, the use of mailing addresses to select survey participants favored a certain demographic of respondents. An address is required from anglers during their initial purchase of a fishing license but is not mandatory to update if a change occurs, especially if subsequent licenses are purchased in person. This means respondents were anglers who retained their mailing address for the last 1-3 consecutive years. Lastly, the survey was only provided in English and this likely discouraged or excluded those not fluent in the language from participating.

3 RESULTS AND DISCUSSION

Of the 5320 mailers sent out, anglers completed 962 mail-in surveys and 219 online surveys (22.2% preliminary response rate). Some returns were invalidated (e.g., no unique code was submitted in an online survey) leaving 949 valid surveys in total (17.8% valid response rate).

3.1 Question 1: Have you fished any inland waters (freshwater) of California in the past three years (2017, 2018, 2019)?

Because California uses the same fishing license for both marine and inland anglers, this first question determined what percentage of respondents fished inland waters. All subsequent survey questions pertain to inland anglers only, therefore the respondents who did not fish inland waters were not included in the analysis of those questions.

Since 884 of survey respondents were inland anglers, all following questions (Questions 2 through 21) only used data from those inland anglers. In most questions, sample sizes were further adjusted in the analysis and noted in the text.

Due to question wording, it is not known how many of the 7% of respondents who answered “No” were solely marine anglers versus those who just had not fished inland waters during past three years.

Table 1.1 Have you fished inland waters in the past 3 years?

Did you fish inland waters?	Sample size	Percentage
Yes	884	93%
No	65	7%

3.2 Question 2: Where did you primarily fish?

This question examined the relative usage of publicly owned inland waters versus privately owned inland waters. Of the 884 respondents to this survey, 861 answered this question (n=861, 97%), while 23 did not (3%).

Of the 25% of respondents who primarily fished both publicly and privately owned waters, it is unclear if they fished these waters equally. In retrospect, the third option should have been worded, “Both publicly owned and private waters about equally”. The question focused on ownership of waters fished but did not address reasons for their choices or if they paid for fishing access.

Table 2.1 Where did you primarily fish (n=861)?

Ownership of waters	Percentage
Publicly owned waters	74%
Privately owned waters	1%
Both publicly owned and private waters	25%

Fishery Management Considerations

Since most respondents mainly fished public waters, the Department could evaluate the appropriate priority and level of effort to expend on working to maintain or facilitate angler access to publicly owned waters.

3.3 Question 3: What type of inland waters did you fish?

This question examined what types of inland waters anglers fished. This was a “check all that apply” question. Out of the 884 respondents to this survey, 863 answered this question (n=863, 98%), while 21 did not (2%).

Most inland anglers fished flatwater (ponds, lakes, or reservoirs) and running waters (creeks, streams, or rivers) (72%-86%), while 9%-14% of anglers fished tidally influenced waters, sloughs, or canals (Figure 3.1).

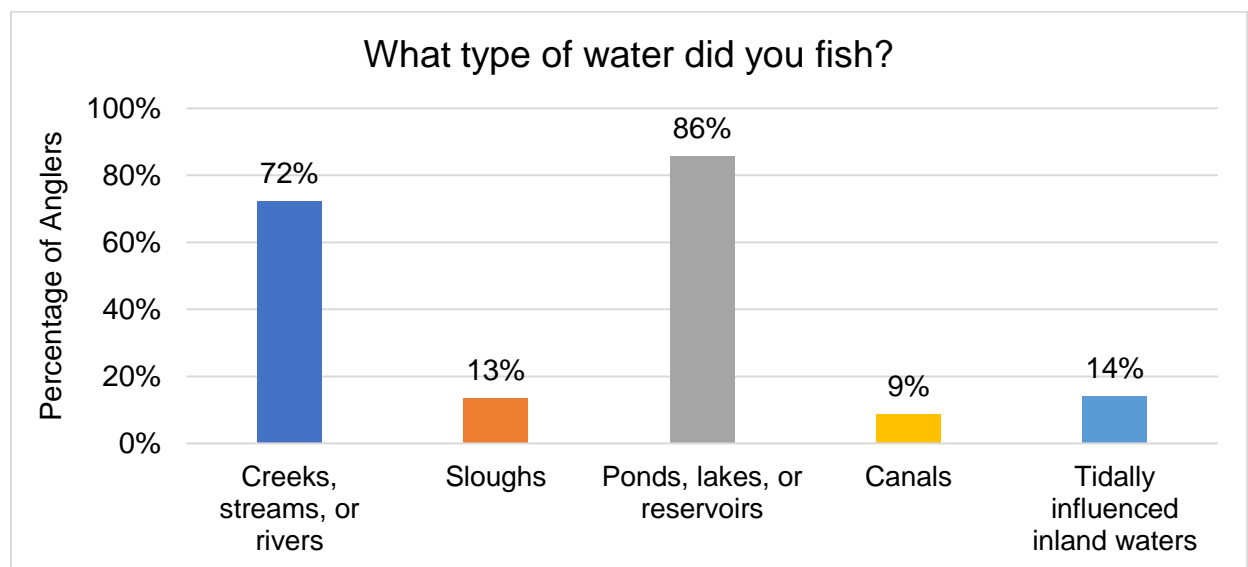


Figure 3.1 What type of inland water did you fish? (n=863)

Fishery Management Considerations

Tidally influenced waters might be locally and even regionally favored by subgroups of anglers. For example, tidally influenced inland waters like those found in the Sacramento-San Joaquin Delta provide year-round habitat for resident fishes such as catfish, bullhead, various panfish, and Largemouth Bass. Tidally influenced waters can be seasonally important fisheries for migrating anadromous fishes such as Chinook Salmon, White Sturgeon, Striped Bass, and American Shad.

Sloughs, while fished by less than 15% of anglers, might be very important to those anglers whose favorite species to catch are catfish and bullheads. Sloughs might also be important to panfish, Largemouth Bass, and Striped Bass anglers.

Even canals, with less than 10% reported utilization, might be locally important. For example, the Delta Mendota Canal and California Aqueduct could provide a local and

low-cost venue for fishing for species such as Striped Bass, catfish, and bullhead for residents in nearby rural areas.

3.4 Question 4: In a typical year, how many fishing trips did you go on during each season?

This question examined how many fishing *trips* were taken in each season, not the number of days fished. A single day can constitute a trip, or a trip can encompass multiple days. During survey development, asking two questions, one regarding trips and one regarding days, was considered. Due to concerns about the length of the survey, the decision was made to only ask about the number of trips taken.

Out of the 884 respondents to this survey, 840 answered this question (95%), while 44 did not (5%). Of the 884 respondents, the number of anglers who answered the seasonal aspect of the question varied widely between seasons (n= 441-774) and statistics were calculated using these adjusted sample sizes.

The annual frequency distribution (aggregating all seasons) is heavily skewed towards most anglers taking 15 trips or less per year (63%), with the largest group taking 5 trips or less per year (29%, Figure 4.1). In all four seasons, a large majority of anglers took 7 trips or less per season, with summer having the most trips (Figures 4.2).

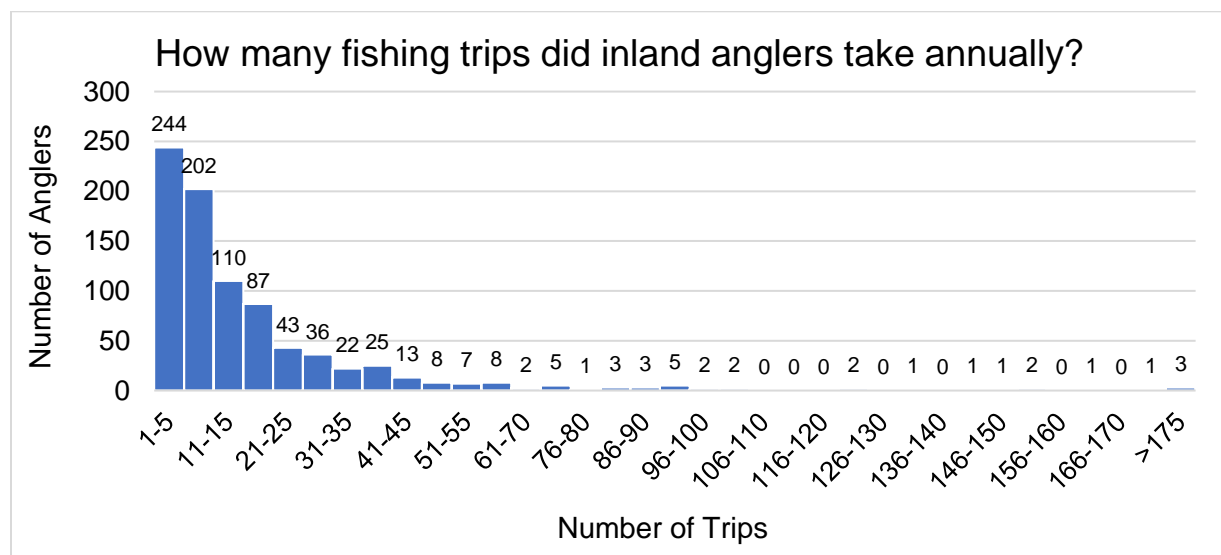


Figure 4.1. Frequency of fishing trips by inland anglers per year (n=840).

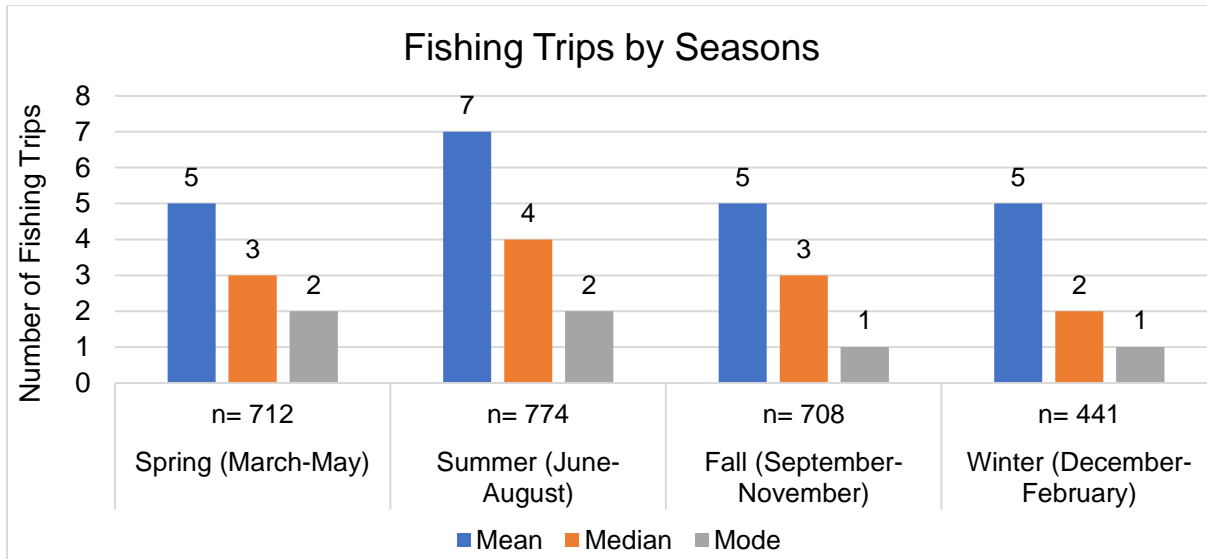


Figure 4.2. Mean, median, and mode fishing trips per season, rounded to whole numbers.

3.5 Question 5: About how many hours did you spend fishing on a typical fishing day?

This question examined how long inland anglers typically fished in a day. Out of the 884 respondents to this survey, 860 answered this question (97%), while 24 did not (3%). Nearly three quarters (74%) of respondents typically fished four hours or more in a day, while 27% of anglers typically fished less than four hours (Table 5.1).

Table 5.1. How long did you fish in a typical day (n=860)?

Hours Fished	Percentage
Less than four hours	27%
Four to eight hours	68%
More than eight hours	6%

Fishery Management Considerations

For anglers who fish for shorter periods of time, understanding the reasons for that choice could provide valuable insights to fishery managers. For example, if data indicates that many anglers want more choices/opportunities to fish before or after work or do not want to spend an entire weekend day fishing, this information could be incorporated into fishery management planning.

Understanding angler constraints and preferences, specifically in relation to single day trips, might yield especially valuable insights in a targeted survey of short term (1 or 2 day) license buyers. Anglers may have different motivations or preferences between single day and multiday trips. For example, a single day trip might be completely focused on fishing while a weeklong trip only includes angling as one of a set of outdoor activities. In future surveys, it may be very useful to combine such questions to achieve deeper insights into angler preferences.

3.6 Question 6: Please check the maximum distance you were willing to travel, in the past three years, to go fishing.

This “check only one answer” question examined the maximum distance an inland angler was willing to travel to go fishing. The question does not address anglers’ preferred or ideal distance, or how far they could travel.

Out of the 884 respondents to this survey, 867 answered this question (n=867, 98%), while 17 did not (2%). Most respondents were willing to travel more than 100 miles to go fishing (54%), while very few respondents were unwilling to travel at least 25 miles (7%) (Figure 6.1).

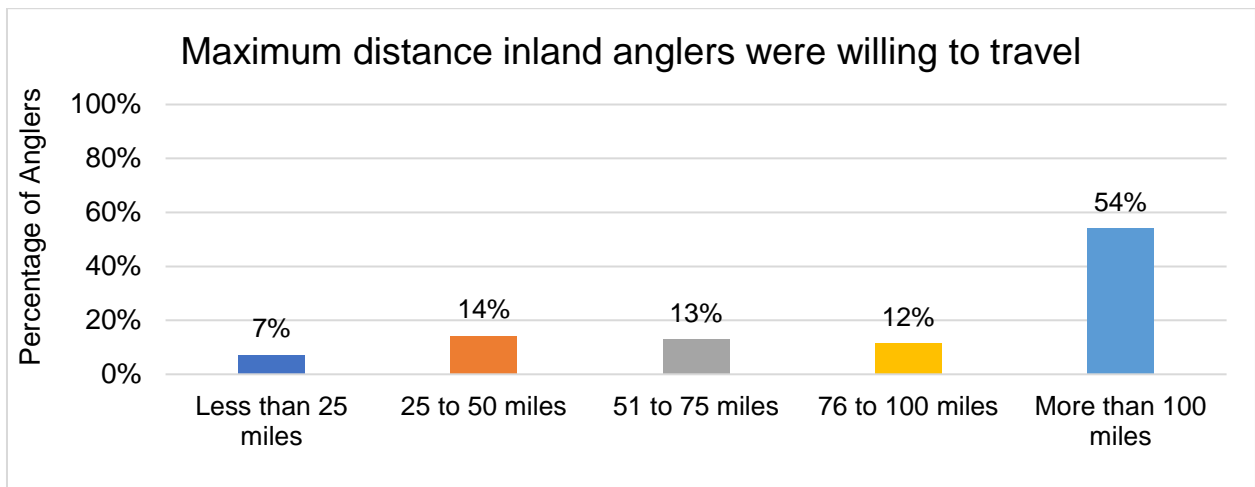


Figure 6.1. Maximum distance inland anglers were willing to travel (n=867).

Fishery Management Considerations

Although a slight majority indicated willingness to travel over 100 miles to fish, a large minority (21%) indicated they were unwilling to travel more than 50 miles. These results in tandem with the results of question 7 suggest that for a significant number of anglers, distance to a fishery is an important consideration.

3.7 Question 7: Did the distance you had to travel to reach fishing locations limit the number of times that you went fishing?

This “yes/no” question examined if distance limited the number of times inland anglers went fishing. Out of the 884 respondents, 864 answered this question (98%), while 20 did not (2%). Half of respondents answered that the distance needed to travel to reach fishing locations limited the number of times they went fishing (Table 7.1).

Table 7.1. Did travel distance limit the number of times you fished (n=864)?

Was travel distance limiting?	Percentage
Yes	51%
No	49%

Fishery Management Considerations

Slightly more than half of inland anglers reported that the distance to travel limited the number of times they fished. Understanding the constraints and tradeoffs anglers consider when deciding how far and how often to go fishing could help the Department assess and evaluate the potential benefits of providing fishing opportunities closer to concentrations of anglers or prospective anglers. Providing fishing opportunities closer to more anglers might increase the frequency of fishing trips, encourage more people to try angling, and perhaps improve both angler satisfaction levels, and annual and short-term license sales.

3.8 Question 8: How did you fish inland waters?

This question examines how anglers access the water, that is, from a boat, on the shore/wading, on a pier, on the ice, and under the water. Out of the 884 respondents to this survey, 867 answered this question (98%), while 17 did not check anything (2%).

Since this was a “check all answers that apply” question, the categories were not mutually exclusive; an angler may have fished in several or all the ways listed. The most common ways of accessing the water were fishing from shore or wading (84%) or fishing from motorized boats (56%, Figure 8.1). A third of anglers fished inland waters from human powered watercraft (33%). Participation in ice fishing (0.3%) and going underwater (1%, spearfishing or to handpick crayfish) had minimal participation.

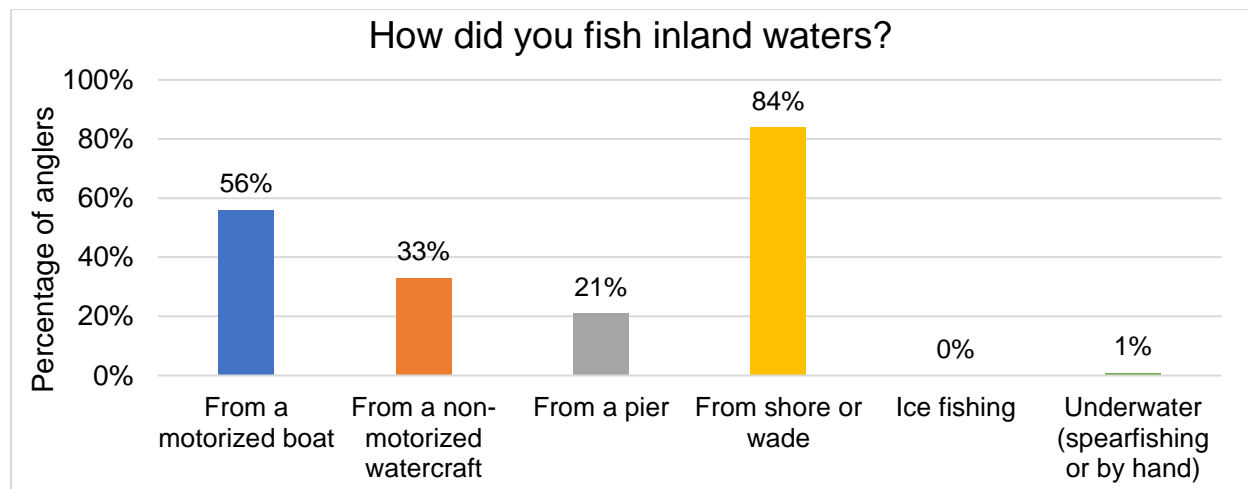


Figure 8.1. How did you fish inland waters? (n=867)

Fishery Management Considerations

Since fishing from shore does not require specialized wading gear or watercraft, it provides the lowest cost of access for fishing. This also holds true for piers, with the added benefit of increased accessibility for anglers with mobility and visual constraints, assuming the pier is properly designed.

The Department can consider the utility of differentiating and tracking trends between angler use of motorized versus non-motorized watercraft, especially if requirements for

launch facilities differ between motorized and non-motorized watercraft. If the use of human powered watercraft increases, then it may be useful to assess the portion of different types and their requirements for launching. Such information might provide useful input in the development and improvement of boating access for anglers.

3.9 Question 9: Have you used any of these methods for inland fishing in the past 3 years?

This question addressed uncommon methods of inland angling and asked anglers to “check all that apply”. The percentages are based on the number of respondents who checked the box divided by the total number of respondents who fished inland waters (n=884).

These methods were used by a very small minority of respondents. In the case of bow and arrow, spear or speargun, and dip net, only 1% of inland anglers reported using these methods, while hands and traps alone were used by 5%.

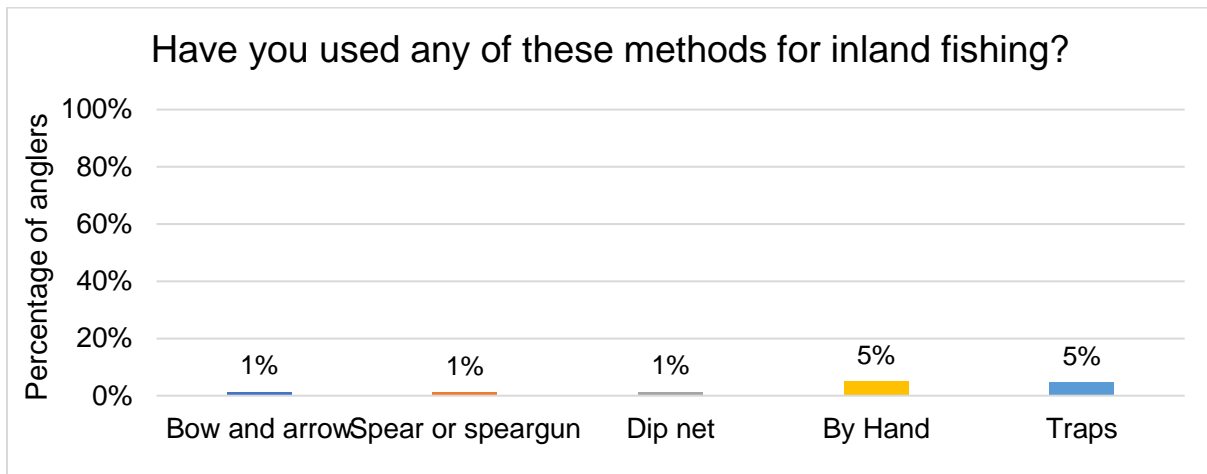


Figure 9.1. Have you used any of these methods for inland angling? (n=884)

3.10 Question 10: When fishing, how often did you use the following kinds of baits, lures, and flies?

This question was “check all that apply” to determine how many inland anglers used various types of baits, lures, and flies. Anglers use various baits and artificial lures depending on the target species and the water fished, but this question did not differentiate between gear use and target species. Please see Appendix B for complete wording of question and categories.

Of the 884 respondents, there was variation in the number of anglers who answered the different parts of the question (n=726-839). Overall, respondents regularly used a wide variety of baits, lures, and flies. This ranged from 90% of respondents who used unscented artificial lures down to 60% for those who used artificial flies (Table 10.1). Most inland anglers used both live baits and artificial baits (86%) and dead baits were used by nearly two thirds of inland anglers (64%). Also, 90% of respondents used

unscented artificial lures and 73% of respondents used, at least some of the time, scented artificial lures and/or artificial lures with bait tipped hooks (Figure 10.1).

Unscented artificial lures were the only category that a majority of respondents commonly used (56%, “all the time” and “frequently” combined), while artificial flies were commonly used by less than a quarter of respondents (24%, Figure 10.2).

Fishery Management Considerations

California’s fishing regulations define artificial lures as being unscented (see Appendix A for the regulation text), but nearly three quarters of respondents used, at least some of the time, scented artificial lures and/or artificial lures with bait tipped hooks. As currently defined under the freshwater fishing regulations, such artificial lures are classified as “bait” rather than as artificial lures. Thus, they would be prohibited in an artificial lure only regulation. The potential for excluding some anglers should be considered when evaluating artificial lure only regulations.

Furthermore, while 90% of respondents used various types of artificial lures, the least used option was artificial flies, which were used by 60% of respondents. Thus, adopting an artificial fly only regulation rather than an artificial lure only regulation potentially excludes inland anglers who use artificial lures generally but not artificial flies specifically. These findings should be considered when evaluating artificial fly only fishing regulations.

Table 10.1. How often did you use the following kinds of baits, lures, and flies?

Method	Sample size	All the time	Frequently	Sometimes	Rarely	Never
Live bait	839	13%	31%	27%	15%	14%
Dead bait	726	6%	20%	21%	17%	36%
Artificial bait	794	14%	32%	27%	13%	14%
Scented artificial lures and/or w/ hooks that are tipped w/ bait	761	9%	25%	25%	14%	27%
Unscented artificial lures w/ hooks not tipped w/ bait	815	18%	38%	25%	9%	10%
Artificial flies	736	9%	15%	17%	19%	40%

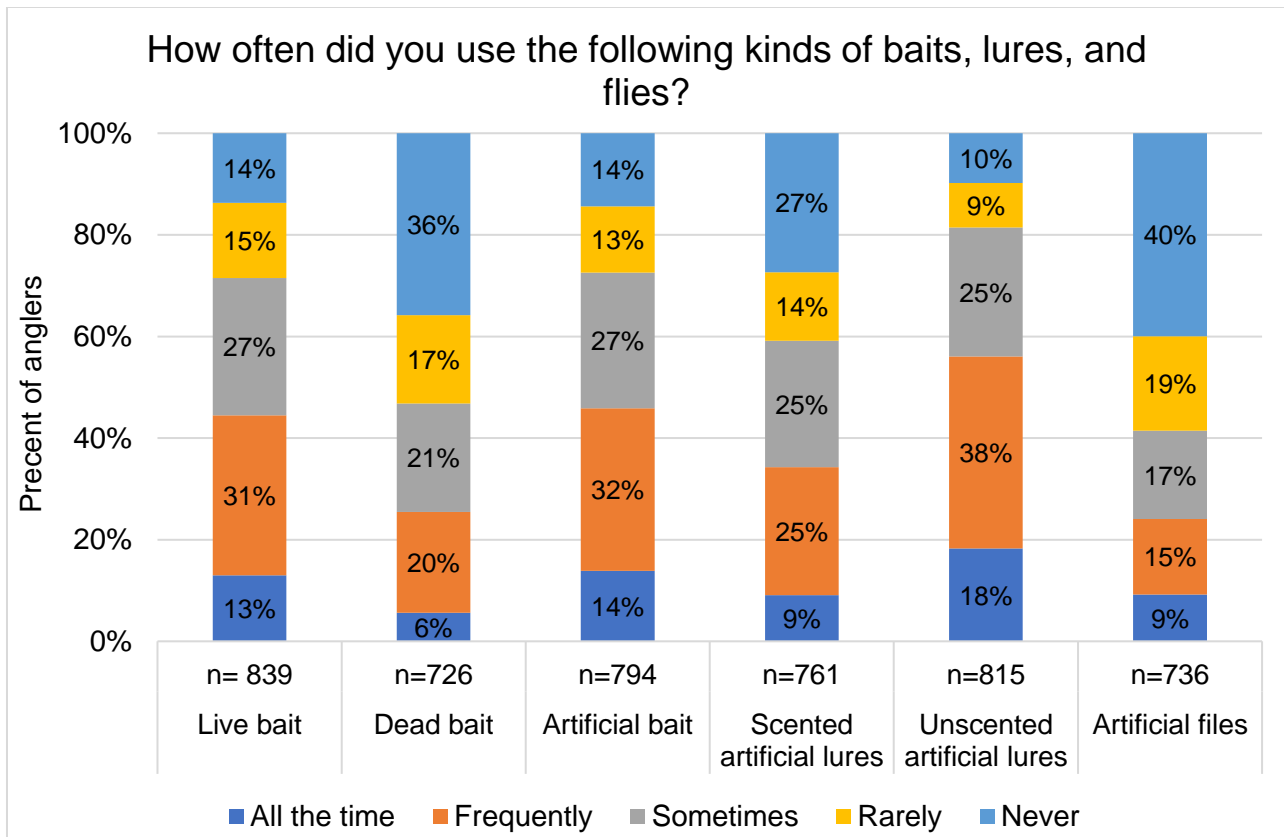


Figure 10.1. How often did you use the following kinds of baits, lures, and flies?

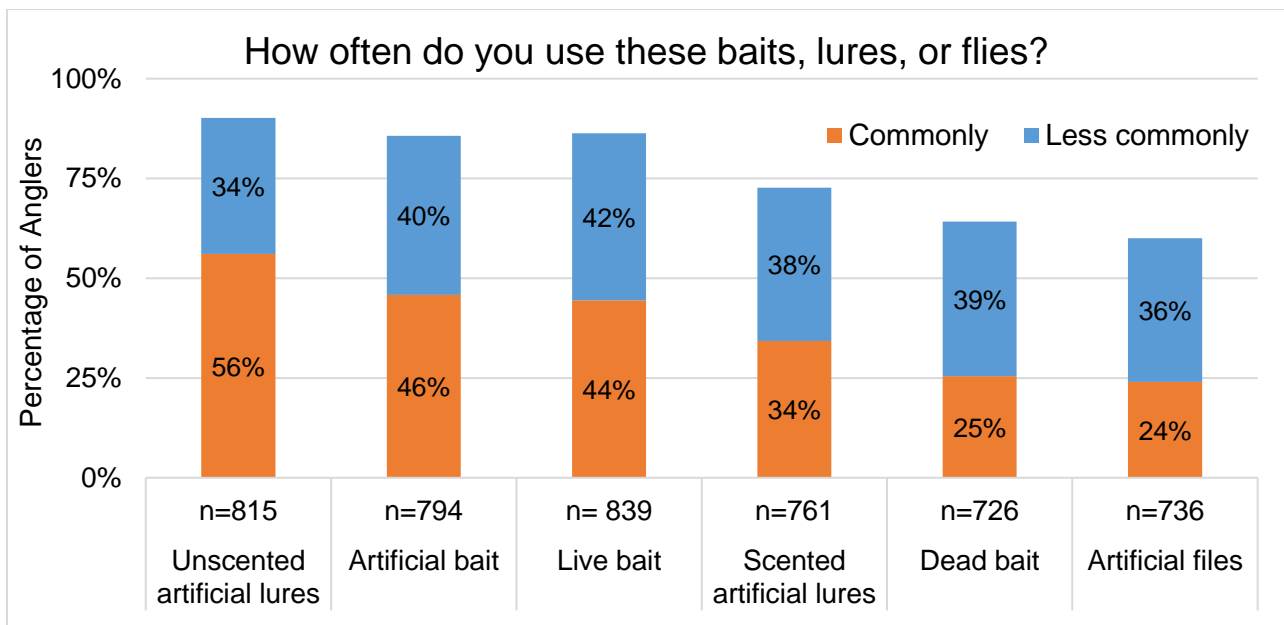


Figure 10.2. How often do you use these baits, lures, or flies? Categories of “All the time” and “Frequently” are combined as “Commonly” while “Sometimes” and “Rarely” are combined as “Less commonly”. “Never” is excluded from this figure.

3.11 Question 11: In the past 3 years, on average, how often did you fish for each of the following species?

This question determined how many inland anglers fished for various species or groups of species. It was a twelve-part question with a “choose only one answer” format. Please see Appendix B for complete wording of question and categories.

Of the 884 respondents, the number of anglers who answered the different parts of the question varied widely, from 631 to 848 (n= 631-848). The category “Other species” was not included in the analyses, though it often was listed in addition to a checked off species. The main answers were carp (12 individuals), crayfish (7), “mackinaw” (2, lake trout), “squawfish” (1, Sacramento pikeminnow), and “brook trout and brown trout” (1). Most respondents fished for five species or groups of species. In order from most fished to least fished, they are trout, panfish, Striped Bass, black bass, and catfish/bullhead (Tables 11.1, 11.2, Figure 11.1). All other species or groups of species are fished for by less than 50% of inland angler respondents.

Trout were extremely popular with inland anglers, with more than 90% of respondents reported fishing for them. Trout are the only group “commonly” fished for by most anglers (Figure 11.1, in orange).

The next most fished for species were panfish, Striped Bass, and black bass - all warmwater species. These species/groups were all “commonly” fished for by 24-28% of anglers, however those percentages jumped to about 62-68% when including “less commonly” (Table 11.2). Catfish and bullheads were “commonly” fished for by about 18% anglers.

All other species/groups were commonly fished for by less than 8% of anglers, which included anadromous Chinook Salmon, steelhead Rainbow Trout, Kokanee Salmon, and landlocked Chinook Salmon - all cold-water species. These species were “commonly” fished for about 5-8% of the time by anglers, but these percentages jumped to 28-36% when including “less commonly”. The smallest percentage of fished species were White Sturgeon and American Shad and were fished by 15-18% of inland anglers (Figure 11.1).

Table 11.1. In the past 3 years, on average, how often did you fish for each of the following species?

Species	Sample Size	All the time	Frequently	Sometimes	Rarely	Never
Trout	848	35%	33%	19%	7%	7%
Panfish	715	8%	17%	23%	21%	32%
Striped Bass	699	7%	18%	25%	14%	36%
Black Bass	706	11%	17%	18%	16%	38%
Catfish and Bullhead	707	6%	12%	21%	17%	43%
Steelhead	669	2%	4%	13%	16%	64%
Anadromous Chinook Salmon	666	2%	6%	11%	12%	69%
Landlocked Chinook Salmon	665	1%	4%	11%	13%	72%
Kokanee	670	2%	4%	11%	11%	72%
American Shad	631	0%	1%	5%	12%	82%
White Sturgeon	651	1%	3%	5%	7%	85%

Table 11.2. (How often) did you fish for this species? “Commonly” combines results for “All the time” and “Frequently” responses, while “Less Commonly” combines “Sometimes” and “Rarely”. Positive responses are combined into “Yes” and “Never” is categorized as “No”.

Did you fish for this species? How Often?	Sample Size	Yes		No
		Commonly	Less Commonly	Never
Trout	848	68%	25%	7%
Panfish	715	24%	44%	32%
Striped Bass	699	25%	39%	36%
Black Bass	706	28%	34%	38%
Catfish and Bullhead	707	18%	39%	43%
Steelhead	669	6%	30%	64%
Anadromous Chinook Salmon	666	8%	23%	69%
Landlocked Chinook Salmon	665	5%	24%	72%
Kokanee	670	6%	23%	72%
American Shad	631	1%	16%	82%
White Sturgeon	651	3%	12%	85%

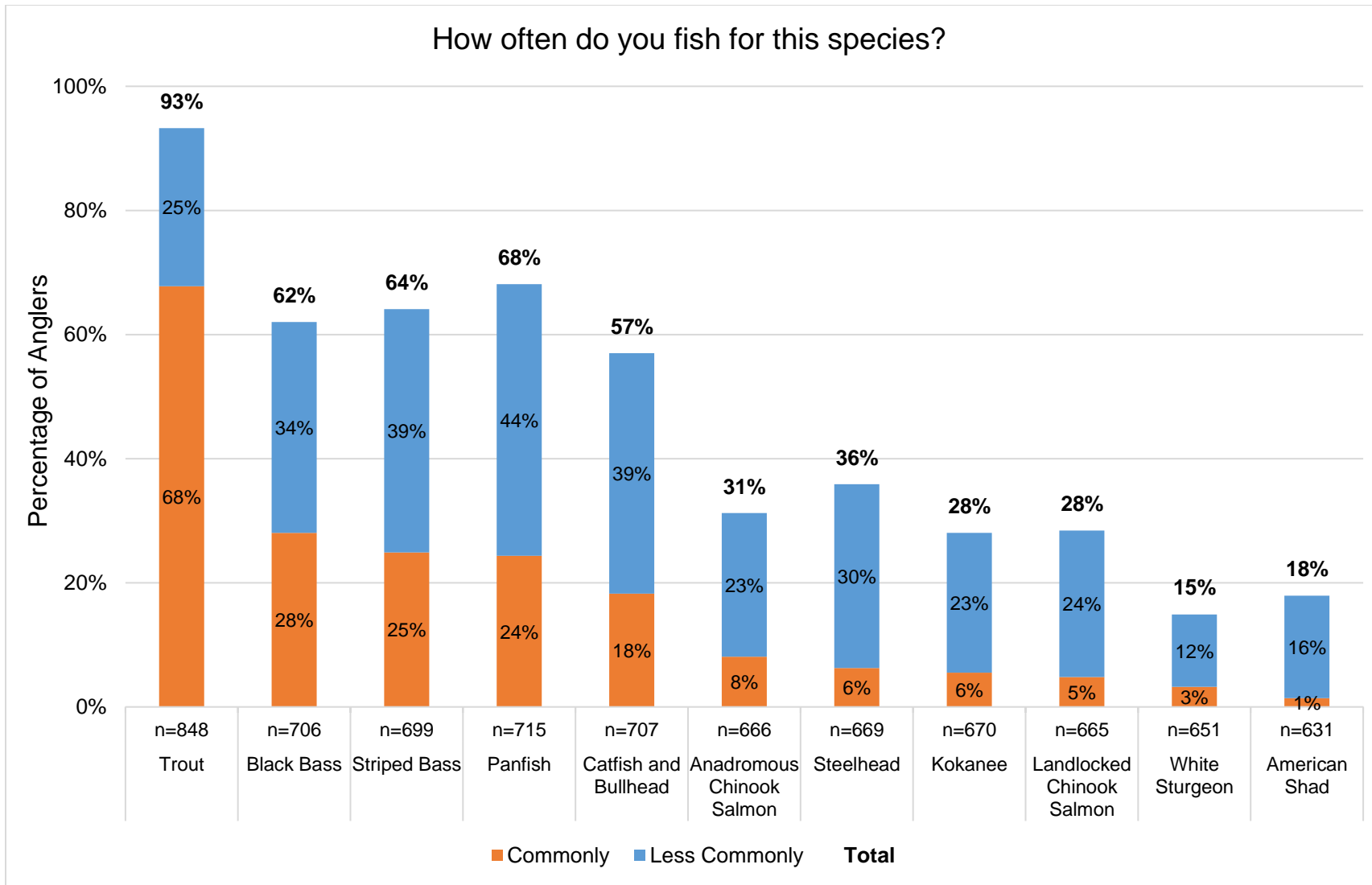


Figure 11.1. How often do you fish for this species? “Commonly” combined results for “All the time” and “Frequently,” while “Less Commonly” combines “Sometimes” and “Rarely.” Total percentages of anglers (“Yes”) are in bold above bars, while “Never” responses were excluded.

Fishery Management Considerations

Trout were, by far, the most fished for group of all species; 93% of respondents targeted them in some way and 35% of respondents fished for them “all the time” (Tables 11.1, 11.2). These results are expected since trout have widespread distribution in California (enhanced through stocking efforts) and can be caught with all forms of gear, tackle, and bait, making them a great target for all angling levels.

The second most popular group of fish were **panfish**. Species within this category are often easy to catch and do not require sophisticated or expensive fishing gear or boats. Many people find them tasty, and some populations already provide sustainable, consumptive fisheries. The species group is well-suited for young anglers and can provide “fast action” (high catch rates). Increasing the opportunities for panfish angling in the state could provide multiple benefits to anglers such as year-round accessible fisheries.

As California’s only native panfish and warmwater gamefish, special consideration should be given to **Sacramento Perch**. Historically, this species was widely distributed within the Sacramento-San Joaquin drainage and thought to be very abundant (Moyle, 2002). Today, the species is functionally extirpated within its native range, a Fish Species of Special Concern, and a federal Species of Greatest Conservation Need. Still, it can provide a unique angling experience. By focusing on production and expansion of this species, especially in its native range the Department could increase the number of self-sustaining, genetically diverse populations for conservation biology purposes and provide new and expanded fishing opportunities. The new fisheries could boost participation in sport fishing because perch can grow large for a panfish (reportedly up to 24 inches in length) and is tasty, as evidenced from the popular consumptive fishery at Crowley Lake.

Striped Bass was the third most fished for species/group of species, with 64% of respondents reporting fishing for them during the survey period. These results are comparable to **black bass**, the fourth most fished for group, with 62% of respondents commonly fishing for them. Black bass are widely distributed throughout California waters and can provide trophy and fast action fisheries. They may be caught from shore or boat, depending on the season and water, and can be caught with all forms of gear, tackle, and bait. The popularity of black bass is obvious from all the coverage in various fishing media, organized tournaments, clubs, and organizations.

Also notable is the finding that more than half of respondents fished for **catfish or bullhead** (57%). Even when focusing on “commonly” fished for species groups, catfish/bullhead were still the fifth most popular. Further development of fisheries for ictalurids might be a good tool for the recruitment, reactivation, and retention of anglers considering their popularity. Improvement of catfish fisheries like channel catfish could be an important means of providing angling opportunities in the face of climate change.

Steelhead Trout, anadromous Chinook Salmon, landlocked Chinook Salmon, and Kokanee Salmon were commonly fished for by 5-8% of anglers. There is potential to catch these species from shore with basic fishing gear and simple fishing techniques, however greater success comes from using more expensive gear and specialized

techniques, often in combination with a motorized boat. The know-how and cost of using these methods creates knowledge and financial barriers to angler participation in these valued, harvest-oriented fisheries.

American Shad and White Sturgeon were fished for by an even smaller minority of anglers, though this may be due to their relatively limited geographic distribution in California’s inland waters. Both species were commonly fished for by less than 5% of inland anglers. Note, the White Sturgeon fisheries in San Pablo Bay and San Francisco Bay are not included in inland water designations.

3.12 Question 12: Which of these species is your favorite to fish for?

This question about an inland angler’s favorite fish was a twelve-part question with a “choose only one answer” format. The percentages for “Yes” are based on the number of respondents who checked the bubble divided by the total number of respondents who fished inland waters (n=884).

The intent was for anglers to check only one bubble for their favorite fish species, but some respondents treated this as a “check all that apply” format. The results presented are a combination of some individual’s single favorite fish and some other individuals’ several favorite fishes. Thus, the results should be collectively viewed as the anglers’ view of “favorite fishes” rather than their single, favorite fish.

The results exhibit the same pattern as Question 11 for the top five clusters of species. The progression of species in Figure 12.1 resembles that of Figure 11.1. For the “Other” category, not included in these analyses, carp and crayfish were listed most frequently (3 each), spotted bass (1), and “other” (5, not specified in the write-in field).

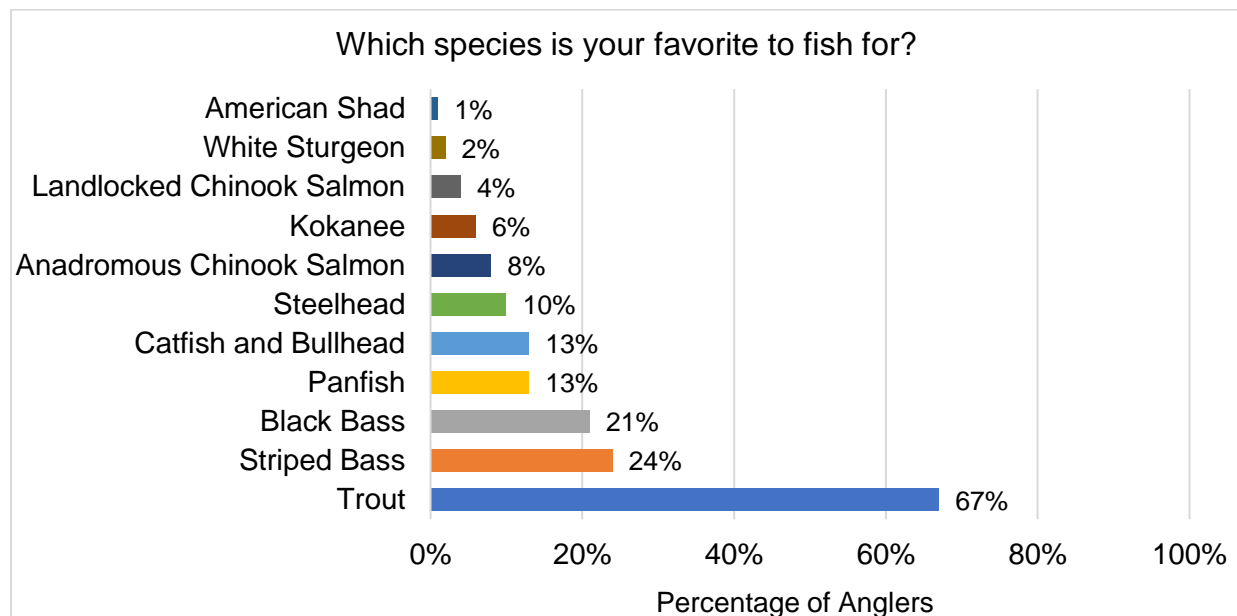


Figure 12.1. What is your favorite species to fish for?

3.13 Question 13: Overall, how satisfied have you been with your inland fishing experiences in California over the past 3 years?

Question 13 took an overall look at angler satisfaction with inland angling. Out of the 884 respondents to this survey, 862 (98%) answered this question, while 22 (2%) did not (n=862).

Two thirds of respondents expressed some degree of satisfaction with their inland fishing experiences in California over the past three years (67%), with nearly a quarter of respondents answering that they were “very satisfied” (24%). A minority (20%) of respondents expressed dissatisfaction, with 4% of respondents reporting they were “very dissatisfied”.

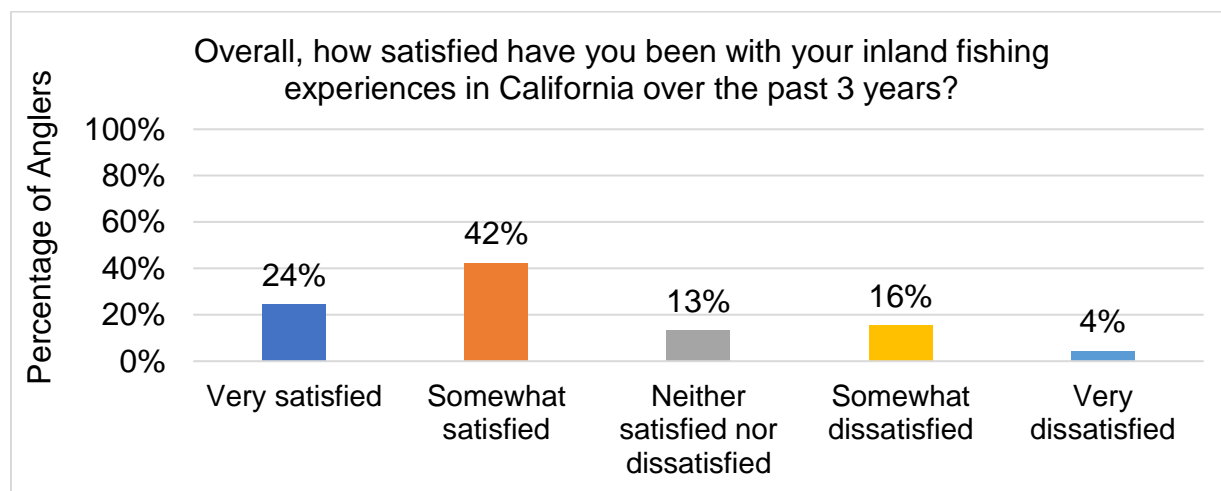


Figure 13.1. Overall, how satisfied have you been with your inland angling experiences in California over the past 3 years?

3.14 Question 14: Please indicate how satisfied, or dissatisfied, you were with each of the following factors in the past 3 years.

This question examined inland angler satisfaction/dissatisfaction with fifteen factors. Please see Appendix B for complete wording of question and factors. Of the 884 respondents, there was considerable variation in the number of anglers who answered the different parts of the question (n=770-855).

The following results group the factors into categories for ease of discussion: B (boating), E (environment, location), F (fish quality), T (trout-specific) (Table 14.1). Presented are combined results for satisfied anglers (very and somewhat) and dissatisfied anglers (somewhat and very). Anglers that responded as neither satisfied nor dissatisfied were considered neutral; these were not interpreted as negative responses.

Of the fifteen factors, a majority of respondents expressed satisfaction with two factors: the natural beauty of the surroundings where they fished (85%) and having fishing opportunities far from home (61%, Figure 14.1). The natural beauty of the surroundings was the only factor where most anglers reported being “very satisfied” (56%, Table 14.1).

For all fifteen factors, anglers expressed some dissatisfaction, which ranged from 6-38% (Table 14.1). Comparing the overall range of percentages in Figure 14.1 shows the level of satisfaction was higher than the level of dissatisfaction, even though 8 of the 15 factors had dissatisfaction levels ranging from 26-38%. The top 6 factors with highest dissatisfaction were: having fishing opportunities close to home, the number of fish caught, the size of fish caught, the opportunity to catch trophy fish, the opportunity to catch wild trout, and the opportunity to catch native trout.

Anglers reported being “neither satisfied nor dissatisfied” as the majority for two factors, the size and/or frequency of organized fishing tournaments (76%) and the number of non-tournament anglers present where they fished (61%, Table 14.1).

Factors related to boating (Category B)

The boating-related factors exhibit mixed results. More anglers were more satisfied than dissatisfied with the availability of boat ramps, with 16% expressing dissatisfaction. Anglers were more dissatisfied than satisfied with the number of non-angler motorized water recreationists present where they fished. More than three quarters (76%) of respondents were neutral regarding fishing tournaments.

Factors related to the surroundings, distance, and presence of anglers (Category E)

For all five factors, satisfaction exceeded dissatisfaction. The two factors with the highest levels of dissatisfaction were “having the fishing spot all to yourself” and “having fishing opportunities close to home”, with combined levels of dissatisfaction (somewhat and very) at 30% and 32%, respectively.

While one might expect that the results for “number of non-tournament anglers present” would track with those for “having the fishing spot all to yourself”, this was not the case. For the former, only 11% of respondents reported being dissatisfied, while 61% were neutral, and 28% were satisfied. For the latter (having the spot to yourself), 30% of respondents were dissatisfied, 31% were neutral, and 40% were satisfied (Table 14.1).

Factors regarding fish numbers, size, and type (Category F)

For three out of four factors regarding fish in general (fish numbers, size, and type), satisfaction exceeded dissatisfaction; however, for the opportunity to catch trophy fish, more anglers reported being dissatisfied than satisfied (Table 14.1). In total, 45% of anglers reported being satisfied with fish size yet only 26% were satisfied with the opportunity to catch trophy fish. This may indicate that anglers were relatively satisfied with the range or average size of fish caught but dissatisfied with the number or frequency of the larger sized fish they were catching.

Factors concerning trout fishing (Category T)

For all three trout related factors, anglers reported being more satisfied than dissatisfied. Surprisingly, more anglers reported dissatisfaction with opportunities to catch wild trout (70%) and native trout (73%) than with opportunities to catch hatchery trout. It is possible that some respondents did not fully understand the definition of the terms “wild” and “native” when referring to trout or other fish. Since 70% of respondents were not satisfied with opportunities to catch wild trout, that may indicate that most anglers might not realize how widely distributed wild trout are in California streams.

Fishery Management Considerations

The general nature of these questions limits the ability to make inferences as to how these factors might contribute to respondents' fishing activities, however they serve as a starting point for further investigation. Future studies can develop a deeper and more detailed understanding of the significance of these factors, the interplay between factors, and how they may vary between different subgroups of inland anglers. It would be beneficial to understand how (dis)satisfaction impacts anglers' fishing habits, fishing methods, and decisions.

Table 14.1 How satisfied or dissatisfied were you with each of these factors in the past 3 years? Factors were categorized for discussion as B (boating), E (environment, location), F (fish quality), and T (trout-specific).

	Factor	Sample Size	Satisfied		Neither	Dissatisfied	
			Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied
B	The availability of boat ramps	770	15%	21%	48%	11%	5%
B	The number and/or frequency of non-angler, motorized water recreationists, such as speed boats, water skiers, jet skiers, etc.)	831	8%	12%	42%	25%	13%
B	The size and/or frequency of organized fishing tournaments	821	5%	6%	76%	9%	4%
E	Having fishing opportunities close to home	835	21%	27%	20%	22%	11%
E	Having fishing opportunities far from home, where you can go to "get away from it all"	844	27%	34%	30%	7%	3%
E	Having the fishing spot all to yourself	839	11%	29%	31%	21%	9%
E	The natural beauty of the surroundings where you fish	847	56%	29%	10%	4%	1%
E	The number of non-tournament anglers present where you fish	831	11%	17%	61%	8%	3%
F	The number of fish caught	841	12%	28%	23%	25%	11%
F	The opportunity to catch trophy fish	831	6%	20%	43%	19%	12%
F	The size of the fish caught	855	11%	34%	29%	21%	5%
F	The type (species or strain) of fish caught	835	14%	33%	41%	9%	3%
T	Opportunity to catch California's native trout	825	13%	27%	33%	18%	9%
T	Opportunity to catch hatchery trout	824	12%	29%	41%	10%	7%
T	Opportunity to catch wild trout	790	10%	24%	36%	19%	11%

How satisfied or dissatisfied were you in the last 3 years with these factors?

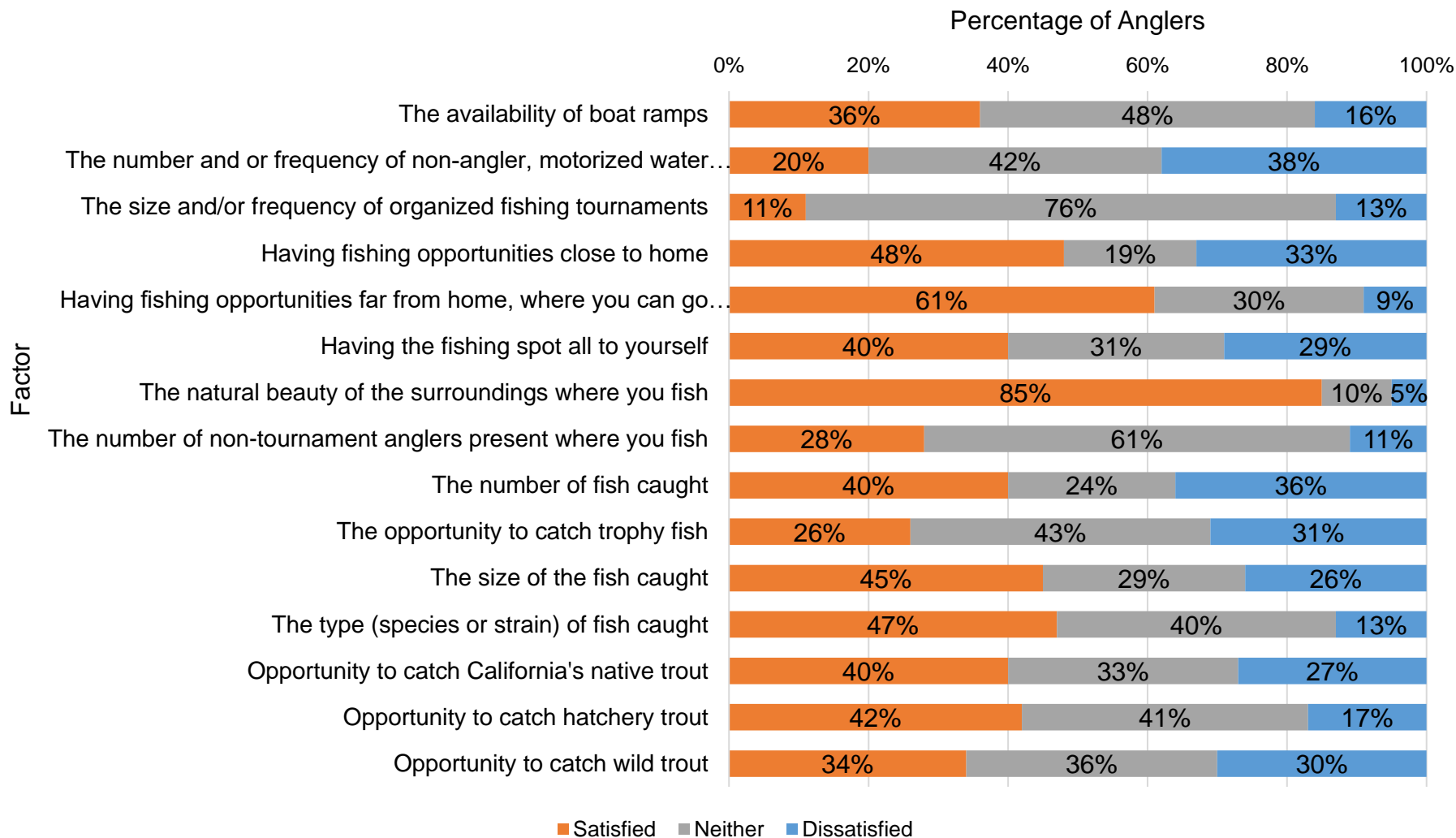


Figure 14.1. How satisfied or dissatisfied were you with each factor in the past 3 years? “Satisfied” combines “very” and “somewhat” satisfied, while “Dissatisfied” includes “somewhat” or “very” dissatisfied anglers.

3.15 Question 15: How much of a limitation, or barrier, were the following costs associated with fishing?

This four-part “choose only one answer” per part question examined how much of a limitation each of the angling-related costs imposed. Of the 884 respondents, there was little variation in the number of respondents for each part of the question (n=863-865).

For all four categories, most inland anglers reported some limitation on their fishing opportunities due to costs (Table 15.1), however, most anglers reported that cost was slightly or not limiting when those categories were combined (54%-69%). Furthermore, 8%-20% of anglers reported that costs were very much or an extreme limitation.

For specific categories, 19% of respondents said travel costs were very much or extremely limiting. Few (<10%) respondents reported that the cost of fishing gear was very much or extremely limiting. One in five respondents reported that the cost of fishing licenses and report cards were very much or an extreme limitation.

Table 15.1. How much of a limitation (limit) or barrier were the following costs?

Limiting costs	Sample size	Not a limit	A slight limit	Somewhat of a limit	Very much a limit	An extreme limit
The cost to access fishing areas (e.g., entrance, launch, and parking fees)	864	44%	20%	24%	9%	3%
The cost to travel to fishing locations (e.g., time off work, fuel, lodgings)	863	33%	21%	27%	15%	4%
The cost of fishing gear (e.g., rod, reel, line, terminal gear, accessories)	865	43%	26%	23%	6%	2%
The cost of CDFW fishing license and report cards	864	38%	20%	21%	12%	8%

Fishery Management Considerations

Although results indicate approximately 60% of anglers have some type of cost barrier to fishing, it is possible these results underrepresent lower income anglers. Since this survey was distributed by mail with addresses on file, it may have under sampled those that change housing locations more frequently and favored those with an established, permanent address.

3.16 Question 16: How often did you get information about inland angling from the following sources?

This twelve-part “choose only one answer per part” question examined how important various sources of fishing information were to inland anglers. Of the 884 respondents, there was not much variation in answers per part (n=845-865).

A majority of inland anglers used the following sources for fishing information often or sometimes: friends and family (92%), bait and tackle shops (79%), the internet (71%),

and the Department (53%, Table 16.1). A slight majority (51%) of respondents said they never used social media to get information about inland angling during the period 2017-2019. This could be related to the specific demographics of survey respondents.

Aside from friends and family, bait and tackle shops, the internet, and the Department, the other eight sources were used by a minority of respondents.

Table 16.1 How often did you get information about inland fishing from the following sources?

Info. Source	Sample Size	Often	Sometimes	Never
Outdoor/Fishing programs on TV	865	6%	35%	60%
Outdoor/Fishing programs on the radio	855	2%	15%	83%
Sources on the internet	845	29%	41%	29%
Standalone digital sources such as fishing DVDs, e-books, etc.	857	2%	14%	83%
Social media	861	15%	34%	51%
Daily newspapers	854	3%	25%	72%
Weekly or semimonthly fishing newspapers	862	8%	25%	68%
Monthly or quarterly fishing or outdoor magazines	862	6%	29%	66%
Hard bound or paperback books	858	2%	20%	77%
Bait and tackle shops, fly shops, or outdoors/sporting goods stores	861	24%	55%	21%
Friends, family, or other anglers	865	46%	46%	8%
CA Department of Fish and Wildlife	860	11%	42%	47%

3.17 Question 17: How helpful would it be to receive fishing information from CDFW in these ways?

This question asked inland anglers what they found to be the most useful type of media to obtain information from the Department. This was a ten-part “choose only one answer per part” question. Of the 884 respondents, there was not much variation in how many anglers answered the different parts of the question (n=841-860).

The methods deemed more useful than not by respondents included the Department’s website (84%) emails sent to anglers (70%), pamphlets/brochures (67%), social media posts (55%), interviews in fishing/outdoors magazines (51%), and press releases (51%). Methods involving interviews (5 of the 9 methods) were mostly considered “not useful at all” by respondents, with 3 of them exceeding 60% of responses (Table 17.1). Interview-based methods were also only considered “very useful” by 7%-14% of respondents. While a majority (54%) of respondents did not think interviews in fishing

newspapers would be useful, a third (33%) of respondents did think interviews would be moderately useful, and 13% thought they could be very useful (Table 17.1).

Table 17.1. How helpful would it be to receive fishing information from CDFW in these ways? Bold italics show the majority of respondents deemed the resource “not at all useful.”

Resource	Sample size	Very useful	Moderately useful	Not at all useful
Website	860	50%	34%	16%
Pamphlets or brochures	852	22%	45%	34%
Press releases	841	14%	38%	49%
Emails sent to you	842	32%	38%	29%
Social media posts	842	21%	34%	45%
Interviews on the radio	851	7%	22%	71%
Interviews on television	850	8%	28%	64%
Interviews in daily newspapers	848	9%	26%	66%
Interviews in weekly or semimonthly fishing newspapers	849	13%	33%	54%
Interviews in monthly or quarterly fishing or outdoor magazines	852	14%	37%	49%

Fishery Management Considerations

Given that nearly half (47%) of respondents to Question 16 said they never used the Department as an information source, results for Question 17 are interesting. Specifically, in 6 of 10 categories, a majority (51%-84%) of respondents answered they would find it very or somewhat useful to receive information from the Department (Table 17.1). Further, 84% of respondents thought that it would be very useful (50%) or somewhat useful (34%) to receive fishing information from the Department’s website. This seems at odds with the fact that barely half (53%) of anglers said they had used the Department to obtain fishing information in the past 3 years. The difference may come from Question 16 looking at the past and asking what anglers did in the last few years, whereas Question 17 asks how helpful it would be (in the future) to receive information from the Department.

In summary, responses suggest that inland anglers desire fishing information provided by the Department. The question of what information is relevant and desired, as well as the most effective means to deliver or display information to the overall angling population and especially to various angler subgroups, deserves further investigation and development. The results discussed above can help the Department begin to prioritize where to focus effort and how many resources to devote to providing information, outreach, and education via different types of media.

3.18 Question 18: Do you belong to any sport fishing or angling conservation organizations?

This question determined what percentage of inland anglers belonged to these types of organizations. Out of the 884 respondents to this survey, 873 (99%) answered this question, while 11 (>1%) did not. Most respondents indicated that they did not belong to any sport fishing or angling conservation organizations, though reasons for non-membership were not collected.

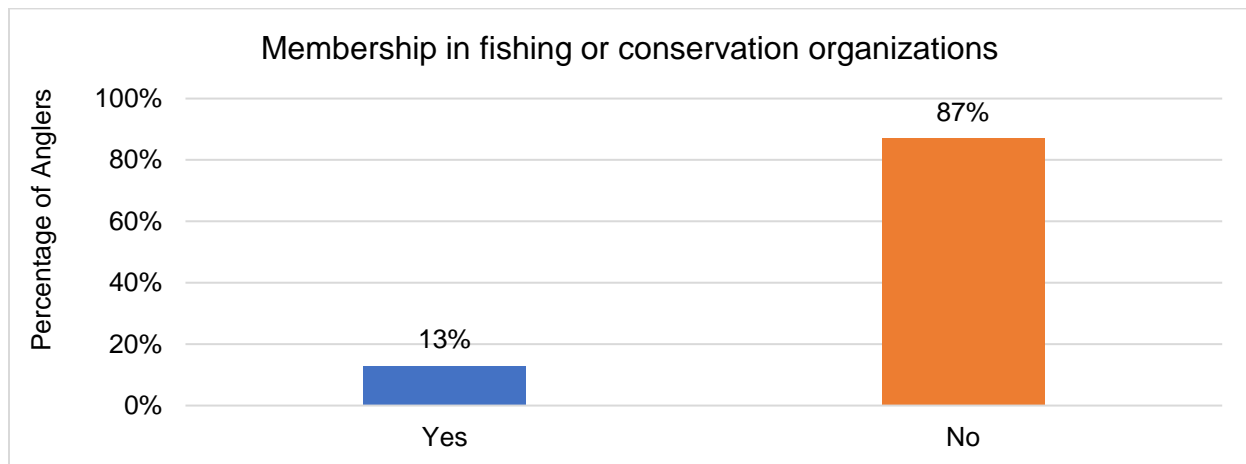


Figure 18.1. Membership in fishing or conservation organizations.

Fishery Management Considerations

Given the low percentage of anglers belonging to organized groups, the Department may need other means of collecting information regarding overall angler attitudes, interests, preferences, satisfaction, and priorities in addition to consulting with organizations. Some of the top fish species targeted by inland anglers (Question 11) are not commonly represented by organized groups (e.g., panfish, catfish/bullhead), which could lead to the interests and preferences of those anglers being underrepresented if the Department only confers with organized groups.

3.19 Question 19: Which best describes your gender?

This question was asked to determine the proportion of inland angler respondents of a particular gender. Out of the 884 respondents to this survey, 871 (99%) answered this question, while 13 (1%) did not.

Of the anglers who answered this question, most selected "Male" (87%), 13% selected "Female", 0% answered "Other", and 1% selected "Prefer not to answer" (Figure 19.1).

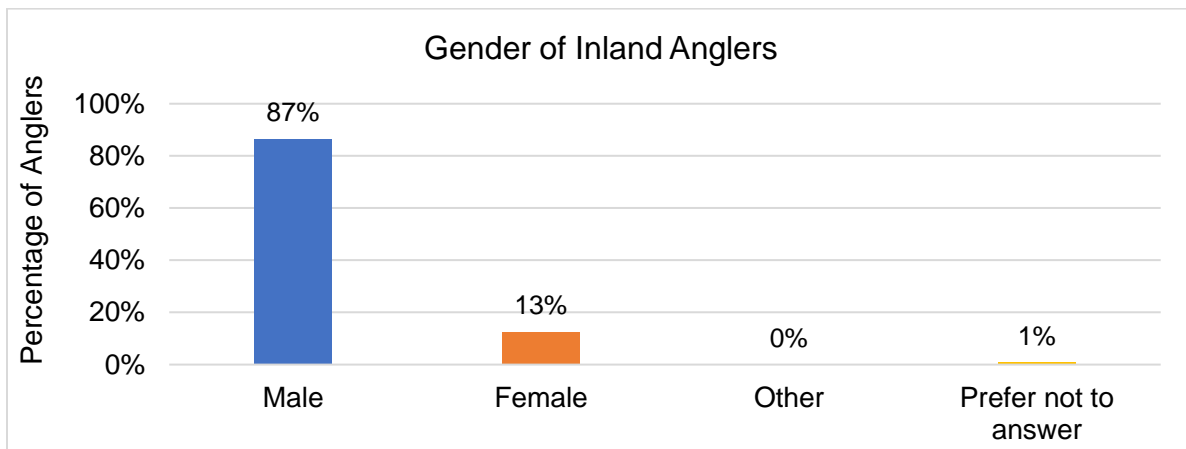


Figure 19.1. Gender of inland anglers.

Fishery Management Considerations

The large disparity among genders in their participation with inland fishing offers the Department the opportunity to reach out to underrepresented prospective anglers. Until the Department understands the causes for the difference in participation rates, methods for education, outreach, and recruitment may not be effective at reaching women and people of other genders who could be prospective anglers.

3.20 Question 20: What is your age?

This question quantified the age of the inland angler respondents. Of the 884 respondents, 848 answered this question (96%), while 36 did not (4%). Most respondents chose the booklet option (n=664, 78%), while a minority chose the online option (n=184, 22%). The mean, median, and mode for each option and their combination shows that the respondents that chose the online option, on average, were close to 10 years younger than survey booklet respondents (Table 20.1).

Examining the overall frequency distribution (booklet and online combined) reveals that ages skewed towards older individuals (Figure 20.1). More than two thirds (68%) of inland angler respondents were 51 years or older. The overall lower levels of participation by individuals 50 years old or younger is notable. There were more anglers in the 71-80 age group compared to each of the 21-30, 31-40, and 41-50 age groups that responded to this survey (Figure 20.1C).

As with the combined distribution, the booklet distribution also had the most respondents in the 61-70 age group (28%, Figures 20.1A). The frequency distribution for the online option was more symmetrical (Figure 20.1B), with most respondents in the 51-60 age group rather than in the 61-70 age group.

The fact that 22% of respondents chose to use the online option is interesting because the URL link to Survey Monkey was only provided on the printed cover letter; an angler choosing the online option had to first read the cover letter then manually enter the URL into their electronic device.

Table 20.1. Age statistics for inland angler respondents.

Source	Mean	Median	Mode
Booklet and Online Combined	56	58	60
Online	49	50	51
Booklet	58	60	60

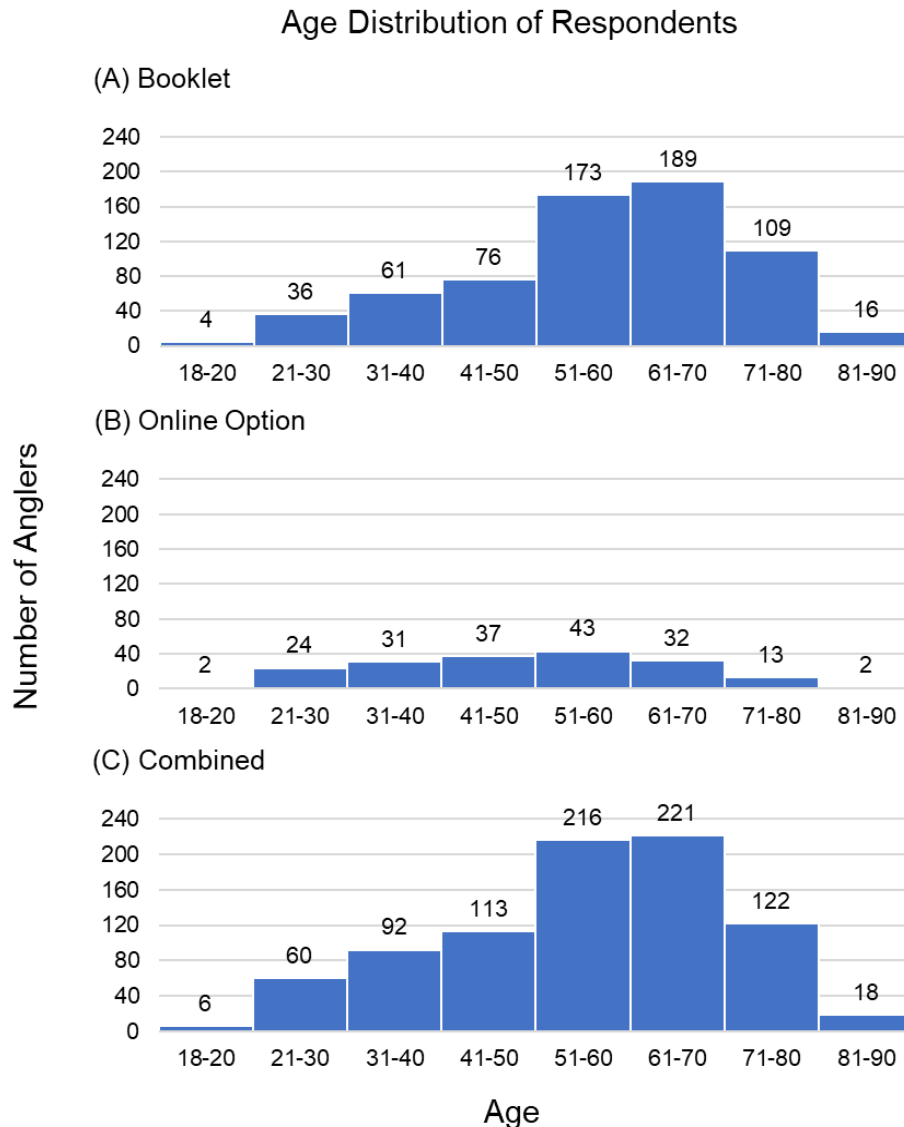


Figure 20.1 A-C. Overall age distribution of inland angler respondents (n=848).

Fishery Management Considerations

The skewed age distribution and lower levels of participation by adults less than 50 years old is a cause for concern. Overall, this age distribution indicates the preferences and data shown throughout this survey reflect an older age group. It is unknown whether this is due to poor recruitment of new anglers or other factors such as survey format. Understanding the reason(s) behind the age structure of the survey respondents is necessary to inform development of effective fishery management measures to improve angler recruitment and retention.

3.21 Question 21: What best describes the highest level of education that you have attained?

This question examined the level of education among inland anglers. Of the 884 respondents, 865 (98%) answered this question while 19 (2%) did not.

Of the inland anglers who answered the question, most (82%) had some college education, while 17% had not attended any college (Figure 21.1). A majority (54%) of those who answered this question had earned a college degree (associate degree or higher). Of those that attended college, those who earned a bachelor's degree or higher (40% of respondents) were comparable to those who had not (42% of respondents, Figure 21.1).

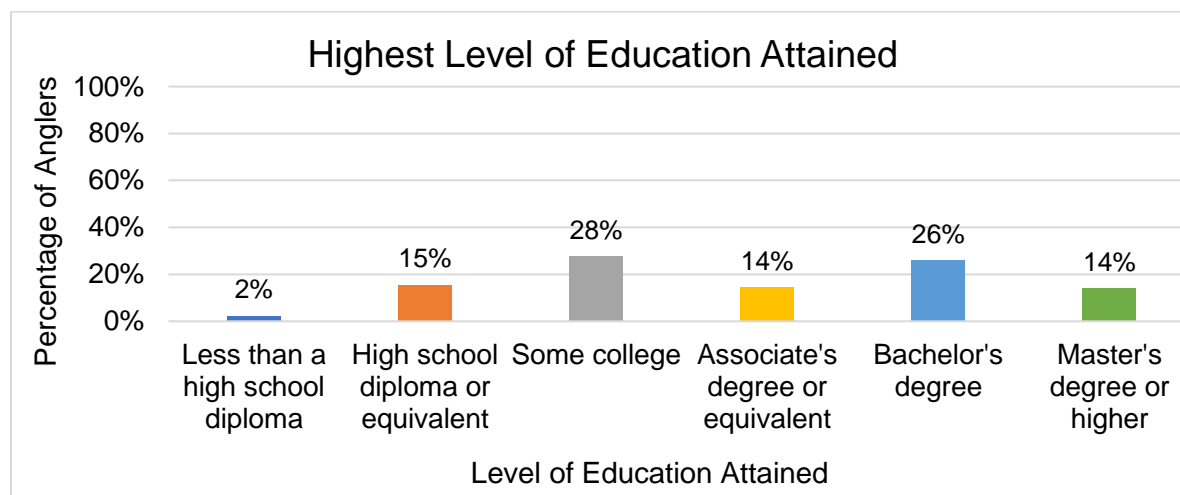


Figure 21.1. Highest level of education attained by inland anglers (n=865).

3.22 Question 22: Finally, what is the zip code of where you reside?

This question was asked to provide demographic information for subsequent analyses beyond the purview of this report and is not reported here.

4 SUMMARY OF FINDINGS

4.1 Demographics of respondents, frequency of fishing activities, and types of waters fished

The overwhelming majority of respondents identified as “male” (87%) while almost all other respondents answered “female” (13%). Most respondents chose the mail-in booklet option (78%), while a minority chose the online option (22%). The median age of overall respondents was 58 years old; for booklet respondents it was 60 years old and for online respondents it was 50 years old. The ratio of young to old anglers in the sample population is unknown, but for respondents, over 68% were 51 years or older. These results suggest possible differences in age with available time and willingness to participate in surveys; a discrepancy in the original sampling population; or that younger people are not being recruited into the sport of angling at a continuous rate. Even

though limited responses were received from younger age groups, results suggest the online reporting option may be more effective for sampling younger anglers. Regarding education, most respondents had some college education (82%) or earned a college degree (associate degree or higher, 54%), and fewer did not attend any college (17%). See sections 3.19, 3.20, and 3.21 for more detail.

Respondents typically took 15 fishing trips or less per year between 2017 and 2019, with most respondents only taking 1 or 2 trips per season. The majority of anglers reported fishing 4-8 hours per day on these trips (68%), were willing to travel over 100 miles for a fishing trip (54%), and predominantly fished flatwater (ponds, lakes, reservoirs, 86%) and running water habitats (creeks, streams, rivers, 72%). When asked if travel distance limited their fishing, results were split with 51% of respondents confirming it was limiting, and 49% reporting it was not. See sections 3.3, 3.4, 3.5, 3.6, and 3.7 for more detail.

4.2 Angling Satisfaction

Two thirds of anglers reported overall satisfaction with their inland fishing experiences, while approximately 1 in 5 expressed dissatisfaction. Additional questions showed that anglers reported majority satisfaction with 2 of 15 factors. The two factors were the natural beauty of the surroundings where they fished (85%) and having fishing opportunities far from home (61%). Respondents were most neutral (neither satisfied or dissatisfied) about the number of non-tournament anglers where they fished (61%) and with the size or frequency of organized fishing tournaments (76%). See sections 3.13 and 3.14 for more detail.

4.4 Methods of Angling

Most anglers used a form of bait, artificial lures, and artificial flies all the time (69%). A small percentage of respondents reported using traps or picking by hand as a means of inland angling (5%), while even fewer respondents reported using dip nets, bow and arrow, or spear/spearguns (1%). Fishing from shore or wading (84%) was the most popular methods of angling in comparison to anglers who reported they fished from motorized (56%) and non-motorized (33%) boats. See sections 3.8, 3.9, and 3.10 for more detail.

4.4 Targeted Species

Trout were, by far, the most fished-for group, with 93% of respondents targeting them in some way and 35% of respondents fishing for them “all the time”. Panfish were the second most fished for group, with 68% of respondents fishing for them to some degree. Striped Bass were the third most fished for species/group of species, with 64% of respondents reporting fishing for them during the survey period, which was slightly more than the 62% of respondents reporting they fished for black bass. The fifth most fished for group was catfish/bullhead (57%). See sections 3.11 and 3.12 for more detail.

4.5 Effectively Communicating Fishing Information to Anglers

There was strong interest from most survey respondents to receive fishing information from the Department, and results suggest that using several communication platforms

to highlight fishing opportunities and distribute information is most effective. To reach the broadest possible audience of inland anglers, using the Internet, fishing/outdoor stores, and the Department's own media and staff have the most potential for circulating information. See questions 3.16 and 3.17 for more detail.

4.6 Looking Ahead

In California, social, political, and economic landscapes have shifted since the forerunner of the Department was created in 1870. Historically, the Department's inland fisheries management emphasized coldwater fishes, particularly trout, relying heavily on hatcheries, habitat protection, and regulations to create or maintain populations.

In the last two decades, precipitation and temperature regimes have varied widely, and the impacts of climate change are becoming increasingly evident, specifically for fish populations and their habitat. As these shifts occur across the landscape, the Department will need to consider the potential for new angling opportunities and reconsider strategies to manage the current fisheries.

While the methods used in this study had limitations, results provide insight into angler preference and satisfaction, updating information last collected in 1988. This study also highlights a significant knowledge gap regarding angler demographics. The Department lacks comprehensive data on the diverse preferences of California inland anglers, their specific target species, and how they want to enjoy the sport. Still, this study provides a starting point to initiate a collaborative effort with experts who specialize in survey science, especially to help reach and effectively survey groups that were unrepresented or underrepresented here.

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APPENDIX A: Key Definitions from the California Freshwater Fishing Regulations

1.11. ARTIFICIAL LURE.

Any manufactured or man-made non-scented/flavored (regardless if scent is added in the manufacturing process or added afterwards) device complete with hooks, intended to attract fish. Artificial lures include, but are not limited to; spoons, spinners, artificial flies, and plugs, made of metal, plastic, wood, or other non-edible materials.

1.18 BAIT.

Any natural or manufactured product or device which is used to attract fish by the sense of taste or smell, including any product or device to which scents or flavored attractants have been added or externally applied. Bait includes, but is not limited to; scented and flavored paste, scented manufactured fish eggs, and traditional organic baits such as worms, grubs, crickets, leeches, stink baits, insects, crayfish, human food, fish, fish parts, and fish eggs.

1.53. INLAND WATERS

Inland waters are all the fresh, brackish and inland saline waters of the state, including lagoons and tidewaters upstream from the mouths of coastal rivers and streams. Inland waters exclude open or enclosed bays contiguous to the ocean including the waters of San Francisco Bay and the waters of Elkhorn Slough, west of Elkhorn Road between Castroville and Watsonville. See Section 27.00 for the description of San Francisco Bay.

27.00 DEFINITION.

The Ocean and San Francisco Bay District consists of the Ocean and San Francisco Bay, as described herein. The Ocean is the open seas adjacent to the coast and islands and the waters of open or enclosed bays contiguous to the ocean, including the waters of Elkhorn Slough, west of Elkhorn Road between Castroville and Watsonville. ***San Francisco Bay is the waters of San Francisco and San Pablo bays plus all their tidal bays, sloughs, estuaries, and tidal portions of their rivers and streams between the Golden Gate Bridge and the west Carquinez Bridge.*** For purposes of this section, waters downstream of the Trancas Bridge on the Napa River, downstream of the Highway 121 Bridge on Sonoma Creek, and downstream of the Payran Street Bridge on the Petaluma River are tidal portions of the Napa River, Sonoma Creek, and Petaluma River, respectively. Also see Section 1.53.

APPENDIX B: Text of the Inland Angler Preference Survey

Reproduced below as it appeared in the printed survey booklet and including the frequently asked questions (FAQs) that accompanied the survey.

FREQUENTLY ASKED QUESTIONS (FAQs)

Q: How did I get picked to take this survey?

A: You were randomly selected from a list of those who bought fishing licenses in 2019.

Q: Why is CDFW doing this survey?

A: It's been over 30 years since CDFW did a preference survey of inland (freshwater) anglers. CDFW wants to get a general, statewide overview of the experiences and preference of anglers who fish the state's inland waters. This kind of broad survey of preferences has not been done since 1988.

Q: I just did a marine survey, why is CDFW asking me to take another survey?

A: This is a preference survey of inland (freshwater) anglers.

Q: I was at my favorite lake last year and someone from CDFW came up and asked me a bunch of questions about what I caught. I filled an Angler Survey Box form on my favorite stream.

A: CDFW has never stopped doing creel census surveys of inland anglers. In those surveys, we interview anglers about what species of fish they caught, how many they caught, what size were the fish, etc. Creel census and Angler Survey Box forms are focused on your catch for that day and for an individual lake or stream. The Angler Preference Survey that you received will provide CDFW with an overall view by being statewide in scope and by looking at your experiences over the year.

Q: I am very concerned about privacy. How will you protect my private information?

A: The staff who will do data entry and analysis of your survey responses will not know your name. Because we do not want to double count people, we need to use a unique identifier. The unique identifier will not be associated with your personal information. Therefore, the person(s) entering your responses will not have access to any of your personal information and thus cannot connect the unique identifier with your name, address, or any other personal information.

Q: Due to the pandemic shut down, I haven't gone fishing at all this year, should I still fill out the survey?

A: Yes, this survey asks about your experiences and preferences for the past few years (2017, 2018, 2019). We are not asking any questions about your experiences and preferences for the current (2020) year.

Q: Why don't you ask any question related to how the COVID-19 pandemic affects fishing in California?

A: This survey was developed prior to the COVID-19 pandemic. The intent of this survey was always to gauge the preferences of anglers in the recent past years (specifically the last three years - 2017, 2018, 2019). How angler's preferences, interests, and concerns are being affected by the pandemic crisis could be addressed in a later survey. Thus, future Angler Preference Surveys might ask anglers how the pandemic related restrictions have changed their experiences, interests, and preferences for fishing.

Q: What is an "inland water"?

A: Basically, it's non-marine bodies of water in the state. Specifically, the definition of inland waters, from the official fishing regulation booklet (Section 1.53), is: "Inland waters are fresh, brackish and inland saline waters of the state, including lagoons and tidewaters upstream from the mouths of coastal rivers and streams. Inland water exclude open or enclosed bays contiguous to the ocean including the water of San Francisco Bay and the waters of Elkhorn Slough, west of Elkhorn Road between Castroville and Watsonville. See Section 27.00 for the description of San Francisco Bay."

Q: My buddy heard about this survey and wants to take it. How can he sign up to take the survey?

A: Unfortunately, your fishing buddy cannot take the survey on his own. The people selected to take this survey were selected at random. It is very important that we do this so that we get a representative sample of California's anglers.

Q: I still have questions. Can you help me?

A: Yes. You can email this special email address if you still have questions about this survey: anglersurvey@wildlife.ca.gov.

INLAND ANGLER PREFERENCE SURVEY

The California Department of Fish and Wildlife is interested in learning more about the experiences and preferences of Californians who fish inland waters. We are contacting you because you have previously purchased a fishing license. We would appreciate learning more about your experiences and preferences fishing inland waters of California. All of your responses will be kept confidential, and we will not release any personal information.

1) First, have you fished any inland waters (non-ocean) of California in the past 3 years (2017, 2018, and 2019)?

- Yes No

If you selected "Yes", then please continue on to the next question. If you selected "No", and you only fish ocean waters, then please end the survey here and mail it back to us in the prepaid envelope provided.

Please note, the questions in this survey are asking about your experiences and preferences for the past 3 years (2017, 2018, and 2019). In this survey, we are not asking about your experiences and preferences in the current year (2020), which has yet to finish.

2) Where did you primarily fish?

- Publicly owned waters
 Privately owned waters
 Both publicly owned and private waters

3) When fishing in inland waters, what types of water did you fish? Please check all that apply.

- Creeks, streams, or rivers
 Sloughs
 Ponds, lakes, or reservoirs
 Canals
 Tidally influenced inland waters (such as the Sacramento-San Joaquin Delta)

4) In a typical year, how many fishing trips did you go on during each season? Please write in the number of trips to the right of each season.

Spring (March – May) _____

Summer (June – August) _____

Fall (September – November) _____

Winter (December – February) _____

5) About how many hours did you spend fishing on a typical fishing day?

- Less than four hours
 Four to eight hours
 More than eight hours

6) Please check the maximum distance you were willing to travel, in the past 3 years, to go fishing.

- Less than 25 miles
- 25 to 50 miles
- 51 to 75 miles
- 76 to 100 miles
- More than 100 miles

7) Did the distance you had to travel to reach fishing locations limit the number of times that you went fishing?

- Yes
- No

8) How did you fish inland waters? Please check all that apply.

- Fish from a motorized boat
- Fish from a non-motorized (human powered) watercraft, such as canoes, kayaks, rafts, drift boats, float tubes, or paddleboards
- Fish from a pier
- Fish from shore or wade
- Ice fishing
- Underwater (for spearfishing or to pick crayfish by hand)

9) Have you used any of these methods for inland fishing in the past 3 years? Please check all that apply.

- Bow and arrow
- Spear or speargun
- Dip net
- Hand (such as picking crayfish by hand)
- Traps

10) When fishing, how often did you use the following kinds of baits, lures, and flies?

	Never	Rarely	Sometimes	Frequently	All the time
Live bait (worms, crickets, minnows, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dead bait (e.g. roe, cut bait, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Artificial bait (e.g. Power Bait, cheese, marshmallows, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scented (built-in or applied) artificial lures (e.g. spinners, spoons, plugs, jigs, etc.) <i>and/or with hooks that are tipped with bait.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unscented artificial lures (e.g. spinners, spoons, plugs, jigs,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

etc.) with hooks that are **not** tipped with bait.

Artificial flies

11) In the past 3 years, on average, how often did you fish for each of the following species?

	Never	Rarely	Sometimes	Frequently	All the time
Trout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Black Bass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
American Shad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Steelhead	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anadromous Chinook Salmon (in rivers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landlocked Chinook Salmon (in lakes and reservoirs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kokanee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
White Sturgeon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Striped Bass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Panfish such as Crappie, Bluegill, Redear, or Sacramento Perch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Catfish and Bullhead	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12) Which of these species is your favorite to fish for?

- Trout
- Black Bass
- American Shad
- Steelhead
- Anadromous Chinook Salmon (in rivers)
- Landlocked Chinook Salmon (in lakes and reservoirs)
- Kokanee
- White Sturgeon
- Striped Bass
- Panfish such as Crappie, Bluegill, Redear, or Sacramento Perch
- Catfish and Bullhead
- Other (please specify) _____

13) Overall, how satisfied have you been with your inland fishing experiences in California over the past 3 years?

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

14) Please indicate how satisfied, or dissatisfied, you were with each of the following factors in the past 3 years.

	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied
Opportunity to catch California's native trout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The number of fish caught	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunity to catch wild trout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The availability of boat ramps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having fishing opportunities close to home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having the fishing spot all to yourself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The natural beauty of the surroundings where you fish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The number and or frequency of non-angler, motorized water recreationists, such as speed boats, water skiers, jet skiers, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The opportunity to catch trophy fish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The type (species or strain) of fish caught	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having fishing opportunities far from home, where you can go to "get away from it all"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The number of non-tournament anglers present where you fish	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The size and/or frequency of organized fishing tournaments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunity to catch hatchery trout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The size of the fish caught	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15) How much of a limitation, or barrier, were the following costs associated with fishing?

	Not a limitation	A slight limitation	Somewhat of a limitation	Very much of a limitation	An extreme limitation
The cost to access fishing areas (e.g. entrance, launch, and parking fees)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The cost to travel to fishing locations (e.g. time off work, fuel, lodgings)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The cost of fishing gear (e.g. rod, reel, line, terminal gear, accessories)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The cost of CDFW fishing license and report cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16) How often did you get information about inland fishing from the following sources?

	Never	Sometimes	Often
Outdoor/Fishing programs on TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outdoor/Fishing programs on the radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sources on the internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stand alone digital sources such as fishing DVDs, e-books, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Daily newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekly or semimonthly fishing newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monthly or quarterly fishing or outdoor magazines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hard bound or paperback books	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bait and tackle shops, fly shops, or outdoors/sporting goods stores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends, family, or other anglers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CA Department of Fish and Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17) How helpful would it be to receive fishing information from CDFW in these ways?

	Not at all useful	Moderately useful	Very useful
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pamphlets or brochures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Press releases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emails sent to you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media posts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews on the radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews on television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews in daily newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interview in weekly or semimonthly fishing newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interviews in monthly or quarterly fishing or outdoor magazines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for completing our survey. Before you go, we want to get a little bit more information about you just to make sure we are reaching out to the full range of inland anglers in California. Like the rest of your responses, we will keep your answers confidential and will not release any identifying or personal information.

18) Do you belong to any sport fishing or angling conservation organizations?

- Yes No

19) Which best describes your gender?

- Male
 Female
 Other
 Prefer not to answer

20) What is your age? _____

21) What best describes the highest level of education that you have attained

- Less than a high school diploma
 A high school diploma or equivalent
 Some college
 An associate's degree or equivalent
 A bachelor's degree
 A master's degree or higher

22) Finally, what is the zip code of where you reside? _____