

California Department of Fish and Wildlife  
Inland Fisheries Assessment and Monitoring Program

# **LAKE BERRYESSA SPORT FISHERY EVALUTATION - 2024**

by

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## ABSTRACT

Lake Berryessa is the largest lake in Napa County, and the fifth largest human-made lake in California. It was formed in 1957 with the completion of the Monticello Dam on the Putah Creek watershed, and today it supports a complex fishery that is a popular location for both novice and professional anglers. The objective of this study is to assess the annual sport fishery of Lake Berryessa by documenting catch composition by both species and size, as well as angler success rate and satisfaction. To accomplish this, anglers were interviewed from June 26th through September 25th, of 2024. Results indicate that anglers most commonly fished for anything, with 38% of them targeting any species, while the second and third most common fishes targeted by anglers were black bass (21%) and trout (17%). Overall anglers were satisfied with their fishing experience and content with the size of fish caught, however they were somewhat disappointed with the number of fish caught.

## INTRODUCTION

Lake Berryessa was formed in 1957 with the completion of the Monticello Dam as a result of the Solano Project. Owned by the Bureau of Reclamation and operated in conjunction with Solano County Water Agency and the Solano Irrigation District, the reservoir provides flood control protection as well as water supply for significant portions of Solano County (USBR 2024). As one of the largest reservoirs in the state, Lake Berryessa provides ample angling opportunities for a variety of sport fish including black bass (*Micropterus spp.*), Rainbow Trout (*Oncorhynchus mykiss*), Eagle Lake Trout (*Oncorhynchus mykiss aquilarum*), Chinook Salmon (*Oncorhynchus tshawytscha*), and Kokanee Salmon (*Oncorhynchus nerka*). Currently, California Department of Fish and Wildlife (CDFW) has been stocking Chinook, Kokanee, Rainbow Trout, and Eagle Lake Trout for the past several years. Creel surveys are frequently conducted as an effective means to assess the performance of a fishery. This study was designed to determine fish species composition, size of caught fish, catch per unit effort (CPUE), and angler experience for June through September of 2024. The information provided in this report will be used to assess the effectiveness of current and future lake management plans.

## METHODS

### **Study Location**

Located in northeastern Napa County Lake Berryessa resides at an elevation of 135 meters (443 feet) above sea level. With a surface area of 8,400 hectares (20,700 acres) and maximum depth of 84 meters (275 feet), the reservoir has a storage capacity of 1.6-million-acre feet. The lake is approximately 37 kilometers (23 miles) long and 4.8 kilometers (3 miles) across at its widest point with approximately 265 kilometers (165 miles) of shoreline (USBR 2024). Inflow to the lake is provided by four main tributaries: Capell Creek, Pope Creek, Putah Creek, and Elicuera Creek, while outflow continues into Putah Creek.

### **Data Collection**

CDFW conducted access point angler surveys at Markley Cove and Capell Cove boat launches from June 26 through September 25, 2024. A total of 8.5 surveys were conducted from 0800h to 1300h on a random selection of weekdays and weekend days. Additionally, weather conditions and surface water temperatures were recorded at the beginning of each survey. Anglers were surveyed after finishing their fishing trip to ensure results reflected the complete trip. The following information was collected during the survey: number of anglers, number of rods used, total hours fished, species targeted, number of fish kept and released (separated by species), and county of residence. Additionally, anglers were asked to rate their satisfaction of their overall experience, number of fish caught, and size of fish caught. Satisfaction ratings were on a scale from 1 to 5, 1 being very dissatisfied and 5 being very satisfied, however anglers that did not catch anything that day were only asked to rate their overall experience. Fish kept by anglers were identified to species and total length measured to the nearest millimeter.

## RESULTS

Over the course of the study 35 angler groups were interviewed, representing 66 individual anglers for a total of 315 hours spent fishing (Figure 1). Approximately 21% (n = 14) of anglers interviewed targeted black bass, 17% (n=11) trout, 6% (n=4) Chinook, 6% (n=4) Kokanee, 12% (n=8) multiple species, and 38% (n=25) did not have a target species.

### SPECIES TARGETED

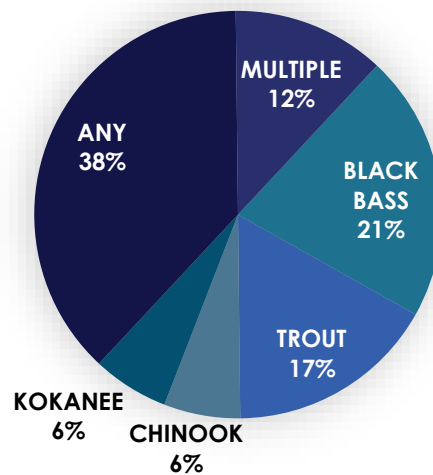


FIGURE 1: THE PERCENT OF ANGLERS TARGETING EACH SPECIES

The majority of anglers were generalists with no specific target species and fished for a total of 125 hours (Figure 2). The most sought-after target species by anglers were trout with 69 hours spent targeting them, followed by black bass at 64 hours, Chinook at 28 hours, Kokanee at 21 hours, and other species at 8.5 hours.

### HOURS FISHED PER TARGET SPECIES

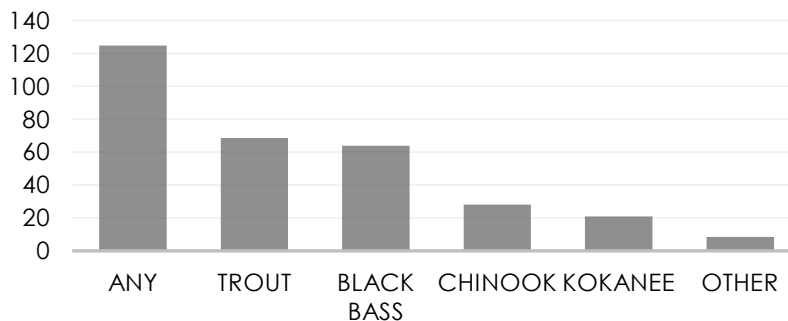


FIGURE 2: NUMBER OF HOURS ANGLERS SPENT FISHING PER TARGET SPECIES

The majority of fish caught were black bass ( $n=42$ ), followed closely by trout ( $n=38$ ), then Bluegill ( $n=12$ ), Chinook ( $n=7$ ), and 9 fish of various species (Figure 3). Only two species were kept by interviewed anglers and were still intact to be measured, Rainbow Trout and Chinook Salmon. The average length of Rainbow

Trout was 389.25 mm (n=4) and the average for Chinook Salmon was 406.83 mm (n=6). On average anglers utilized 1.3 rods during their fishing trip. Across all species anglers had a catch per unit effort (CPUE) of 0.16 fish per hour and a harvest per unit effort (HPUE) of 0.06 fish per hour.

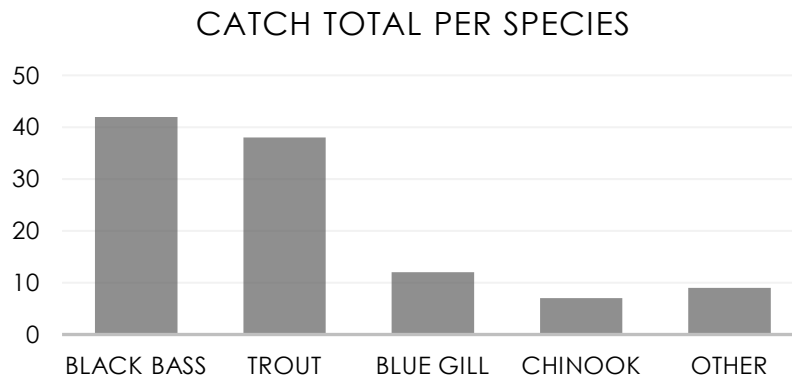


FIGURE 3: TOTAL AMOUNT OF EACH SPECIES CAUGHT

Interviewed anglers resided in the following California counties: 41% (n=27) Solano, 21% (n=14) Sacramento, 14% (n=9) Sonoma, 12% (n=8) Napa, 6% (n=4) Yolo, and the remaining 6% (n=4) represented 3 other counties (Alameda, Nevada, and Placer) (Figure 4).

### Angler County of Residence

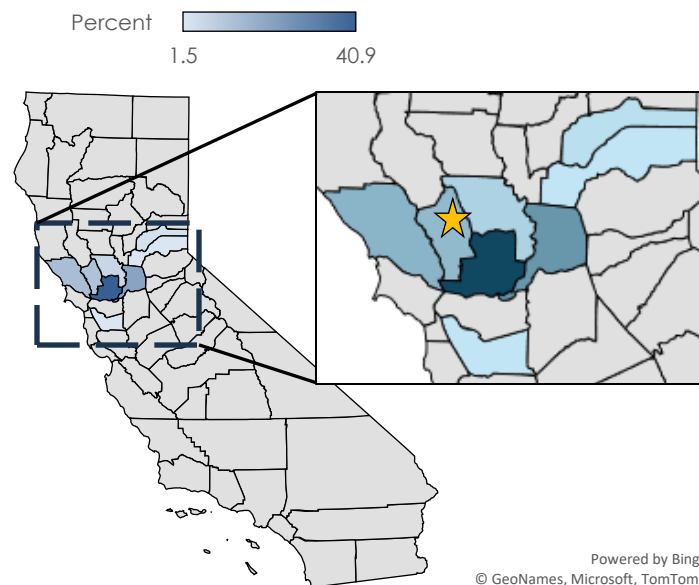


FIGURE 4: MAP DEPICTING THE PERCENT OF ANGLERS INTERVIEWED BY COUNTY.

NOTE: GREY SIGNIFIES 0%, STAR DENOTES LOCATION OF LAKE BERRYESSA.

Angler satisfaction was rated on a scale from 1 to 5, with 1 being very dissatisfied and 5 being very satisfied. Overall anglers across all targeted species rated their satisfaction with their overall fishing experience a 3.9, the number of fish caught a 2.6, and the size of fish a 3.5. Table 1 lists the overall ratings as well as the average ratings for each target species.

TARGET SPECIES	EXPERIENCE	NUMBER	SIZE
ANY	4.3	3.0	3.8
BLACK BASS	4.0	2.1	2.8
TROUT	3.3	2.9	3.7
CHINOOK	4.0	3.3	3.8
KOKANEE	5.0	2.0	N/A
OTHER	3.0	1.5	3.0
OVERALL	3.9	2.6	3.5

TABLE 1: THE AVERAGE ANGLER SATISFACTION RATINGS OVERALL AND GROUPED BY TARGETED SPECIES

NOTE: SIZE IS N/A IF NO FISH WERE MEASURED

Over the course of the study water temperature ranged from 23.6°C – 29°C with an average of 25.6°C. Weather conditions were clear on all sampling days except one, where it was partly cloudy.

## DISCUSSION

The last time CDFW conducted a creel survey at Lake Berryessa was during the summer of 2013. Since then, significant shifts in angler habits have occurred. In 2024 only 6% of anglers interviewed targeted Kokanee, however in 2013 anglers predominantly fished for Kokanee with 68% percent of anglers targeting them. While this year 38% of anglers were fishing for anything, the largest reported target, only 10% of anglers were generalists in 2013. This year 21% of anglers targeted black bass and 17% targeted trout, yet in 2013 only 5% and 10% percent targeted black bass and trout, respectively.

The composition of species caught has shifted over the past decade as well with interviewed anglers in 2013 catching 114 Kokanee, 56 black bass, 56 trout, 38 Chinook, and 2 fish of various species. This contrasts with the 0 Kokanee, 42 black bass, 38 trout, 7 Chinook, and 21 fish of various species caught during 2024. However an important aspect to note is in 2013 there were 31 sampling days, but only 8.5 sampling days in 2024, a 73% decrease, due to personnel

shortages and budget constraints. This 73% decrease in time surveyed will skew total catch numbers, however it will have minimal impact on the CPUE. In 2013 the CPUE was 0.7 fish caught per hour while in 2024 the CPUE was 0.16 fish caught per hour, showing a marked decrease in angler fishing success.

Furthermore, the average length of fish measured during the 2013 survey season for Chinook Salmon was 468 mm while average length was 406 mm during the 2024 survey. In contrast to the decrease in Chinook Salmon size, Rainbow Trout measured on average 384 mm in 2013 and measured 389 mm (n=4) in 2024. Angler satisfaction in 2013 was 4 across all categories, whereas this year overall experience is nearly the same at 3.9, while satisfaction with size of the fish fell slightly to 3.5, and number of fish dropped to 2.5. Considering there was a 77% decrease in CPUE from 2013 to 2024, it is understandable to see a significant drop in anglers' satisfaction of the number of fish caught. Continued annual monitoring will provide a more thorough analysis of these fisheries' performance and anglers' preferences over time.

## LITERATURE CITED

(2024). Lake Berryessa. US Bureau of Reclamation (USBR).  
Available: <https://www.usbr.gov/mp/ccao/berryessa/>