

State of California
California Department of Fish and Wildlife
North Central Region

Kinney Reservoir, Alpine County

2020 Angler Survey Box Analysis



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August 2021

Introduction

In August, 2020, the California Department of Fish and Wildlife (CDFW) installed an angler survey box (ASB) at Kinney Reservoir, located along Highway 4, to evaluate the fishery (**Figure 1**). Anglers voluntarily completed a survey form after their fishing trip, and deposited it in the ASB. CDFW uses these data to assess angler satisfaction, species composition/sizes, and general angler statistics at Kinney Reservoir.

Environmental Setting

Kinney Reservoir is located in the Humboldt-Toiyabe National Forest of the Sierra Nevada mountain range in Alpine County. Kinney Reservoir is within the Carson River watershed. Much of the surrounding habitat consists of open bedrock, shrubs, hardwood forest, and coniferous forest (CalFire).

Kinney Reservoir

Kinney Reservoir is an approximately 40-acre reservoir in Alpine County (38.553725 N, 119.810028 W), situated at 8,369 feet above mean sea level (**Figure 1**). The shoreline is a mix of rocks, sand, and conifer forest. The lake bottom appears to be primarily composed of mud and various-sized rock substrate. Water leaving Kinney Reservoir flows into Kinney Creek and eventually into the East Carson River. Kinney Lake receives water from Kinney Creek, and rain and snowmelt runoff from the immediate area. CDFW historically stocked Kinney Reservoir with fingerling and catchable-sized Lahontan Cutthroat Trout (*Oncorhynchus clarkii henshawi*; LCT), fingerling-sized Brook Trout (*Salvelinus fontinalis*; BK), and catchable-sized Rainbow Trout (*Oncorhynchus mykiss*; RT), with the last recorded stocking of RT in June 2021. CDFW currently manages Kinney Reservoir as a “put and take” fishery. Kinney Reservoir is open all year for fishing and other recreational opportunities, but has limited access during the winter season when there is snow.

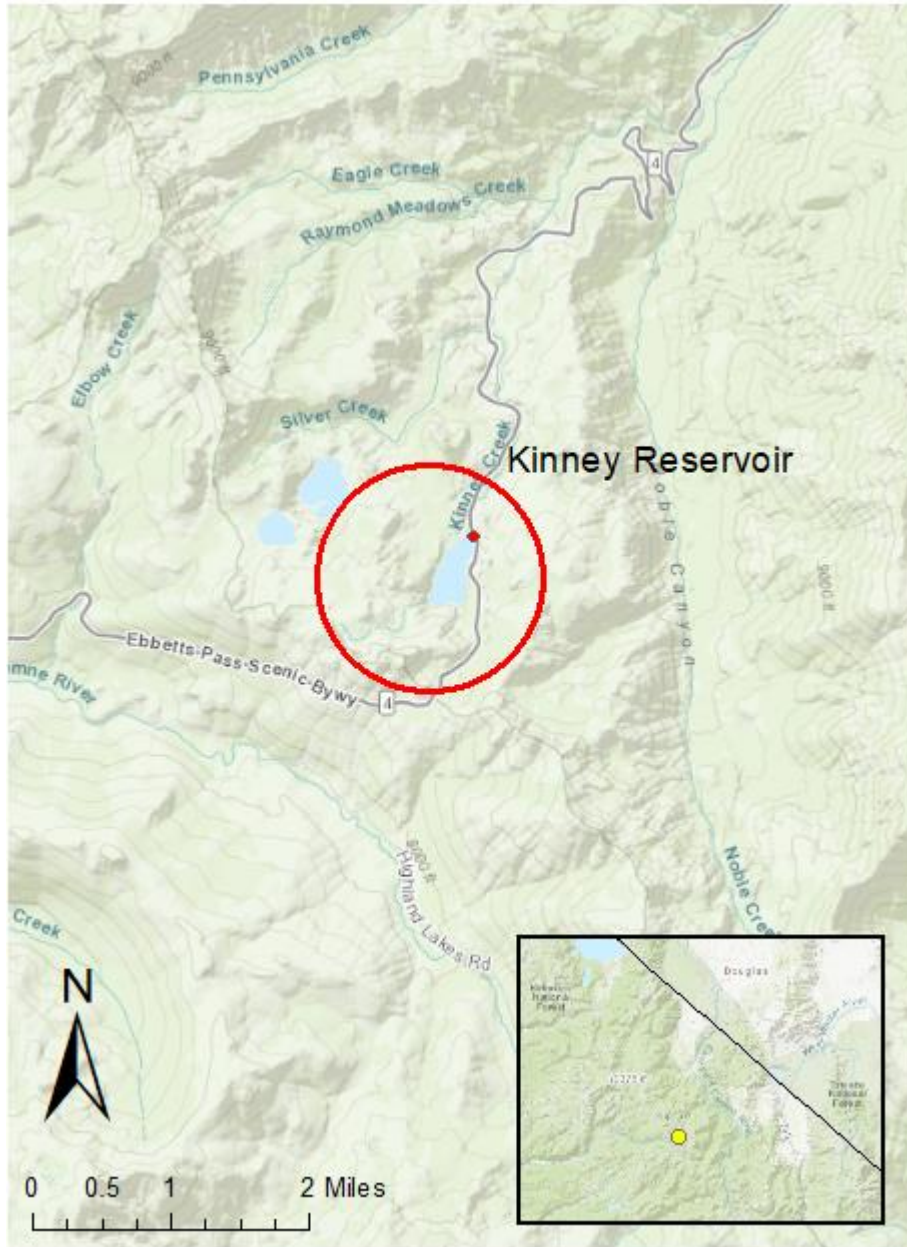


Figure 1. Kinney Reservoir (circled in red), Alpine County. Location of the Angler Survey Box is indicated by the red dot within red circle. Kinney Reservoir is also indicated by yellow dot in smaller data frame in relation to California.

Methods

The survey asked anglers for information regarding hours fished, type of gear used, angling method, and the number of landed fish. This information was used to calculate catch per angler and catch per unit effort. Anglers were also asked the size and species of landed fish and whether they kept or released their catch. Lastly, anglers were asked three questions, and their answers were recorded on a scale of -2 to +2, with “+2” representing most satisfied and “-2” representing least satisfied. The questions pertained to the level of satisfaction with their overall angling experience, and with the size and number of fish they caught. Anglers were able to use the back of the survey form to include additional comments (**Appendix 1**).

Results

In 2020, 20 anglers responded to the survey, catching 18 fish (**Table 1**). Catch per hour was 0.32, while catch per angler was 0.90.

Table 1. Collection of average effort and catch statistics recorded from the 2020 angler survey box (ASB) at Kinney Reservoir.

Respondents	Hours Fished	Fish Landed	Catch per Hour	Catch per Angler
20	56	18	0.32	0.90

In 2020, anglers used either bait, lures, or flies while fishing Kinney Reservoir (**Table 2**). One fly angler had a 0.57 catch per hour value and the highest catch per angler value (4.00), which were both the highest of any recorded gear type. Lure anglers had the second highest catch rate per hour value (0.50) and the third highest catch per angler value (0.86). Bait anglers had the third highest catch per hour value (0.27) and second highest catch per angler value (0.89). Bait anglers also caught the greatest number of fish (n = 8). Multiple -gear type anglers reported zero fish caught.

Table 2. The number of fish landed by the type of gear in 2020 at Kinney Reservoir.

Gear	Number of Fish	Catch per Hour	Catch per Angler
Bait	8 (44.4%)	0.27	0.89
Lure	6 (33.3%)	0.50	0.86
Fly	4 (22.2%)	0.57	4.00
Multiple	0 (0.00%)	0.00	0.00
Total	18		

In 2020, anglers released 33% of RT caught with the greatest number caught in the 10.0–11.9 inch (in.) length class.

In 2020, all landed fish (n=18) that were measured at Kinney Reservoir were less than 18.0 (in.) in total length (**Figure 2**). The RT modal length classes at Kinney Reservoir were the 10.0–11.9 in. (n = 6) and 12.0–13.9 in. (n = 6) length classes, respectively. Of all fish landed in 2020, six (33.3%) were released.

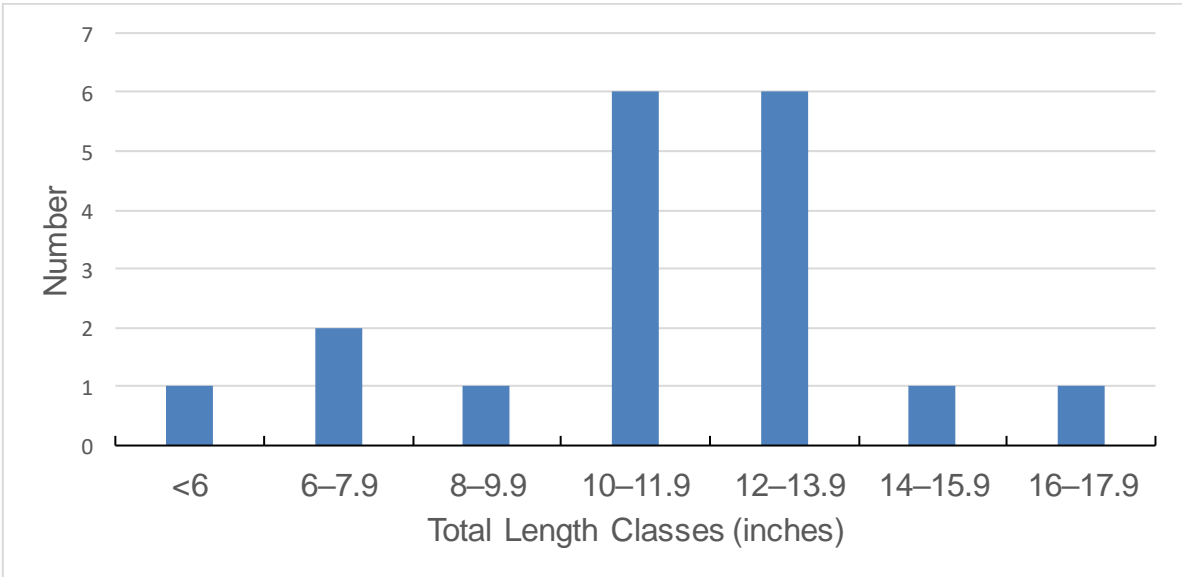


Figure 2. Frequency of fish in each length class that anglers reported landing at Kinney Reservoir in 2020.

One float tube angler (5.0%) had the highest catch per angler value (4.00) (**Table 3**). Three multiple-method anglers (15.0%) had a success rate of 2.33 catch per angler.

Thirteen shore/wading anglers (65%) had a 0.46 catch per angler value. Three boat anglers (15%) had a 0.33 catch per angler value, which was the lowest of any method.

Multiple-method anglers had the highest catch per hour value (0.70) (**Table 3**). The one float tube angler had a 0.57 catch per hour value. Boat anglers (65%) had a 0.22 catch per hour value. Shore/wading anglers had a 0.17 catch per hour value, which was the lowest of any method.

Table 3. The number of anglers, catch per angler, and catch per hour based on angling method at Kinney Reservoir in 2020.

Method	Number of Anglers	Catch per Angler	Catch per Hour
Boat	3	0.33	0.22
Float tube	1	4.00	0.57
Shore or Wading	13	0.46	0.17
Multiple	3	2.33	0.70

In 2020, anglers had a positive average response to their overall fishing experience (0.16), size of fish caught (1.00), and number of fish caught (0.38).

Discussion

Kinney Reservoir anglers caught less than one fish on average per trip and had an average CPUE of 0.32 fish per hour, which is a relatively low success rate. The low catch rates are likely because CDFW did not stock any RT into Kinney in 2020; the most recent fish stocking had occurred in August 2019 (**Appendix 2**).

The greatest number of RT caught in 2020 were equally represented in the 10.0–11.9 in. and 12.0–13.9 in. size classes. This corresponds with anglers being “satisfied” with the size of their catch. It is possible that there is a sustainable balance between number of fish and available resources in Kinney, thus allowing the trout in Kinney to grow large. Anglers were also “satisfied” with the numbers of trout caught in 2020 even though CDFW did not stock any fish in 2020. It is possible that a combination of

previously stocked fish and limited fishing access in the late-fall/winter provided enough holdover fish for anglers to catch.

Sixty-six percent of trout caught were kept, which may support the “satisfied” size value.

The primary objective when managing recreational fisheries is often to improve the quality of fishing or optimize human benefit (Pollock et al. 1994; Weithman 1999). The overall fishing experience for anglers was positive at Kinney Reservoir. Although the satisfactory values for both “size” and “number” were positive, they were both relatively low. However, angler trip satisfaction can also be influenced by factors other than fishing success (McCormick and Porter 2014). For some anglers, satisfaction with the overall fishing experience may have been due less to the fishing itself, and more to outside factors, such as weather, fishing access, lack of crowds, and scenery.

The number of respondents in the 2020 survey was 20. This is a fair number for an ASB, particularly considering that it was the first year of ASB at Kinney Reservoir, and the ASB was not installed until early August. Ideally, the more respondents, the more feedback it provides CDFW on angler success at the fishery. It is essential CDFW maintain the trend of increasing angler participation in the ASB survey, which provides useful information on the results of fishing trips, which helps directly inform management of the fishery. CDFW staff should continue to notify anglers of the ASB locations at Kinney, and communicate the importance of ASBs to fisheries management.

Only CDFW stocks Kinney Reservoir. The RT currently stocked by CDFW are catchable and trophy-sized fish. These catchable and trophy trout are stocked under a put and take management strategy due to the combination of high angler usage and immediate proximity to a state highway.

Recommendations

- When possible, CDFW should continue to encourage anglers to fill out the ASB forms.
- Collect a minimum of five years’ worth of ASB data to look at fishery trends over time. Data will help CDFW gather more accurate information on the Kinney Reservoir fishery.
- Continue to stock Kinney Reservoir for at least the next five years.

Literature Cited

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- McCormick, J. L. and T. K. Porter. 2014. Effect of fishing success on angler satisfaction on a central Oregon rainbow trout fishery: implications for establishing management objectives. *North American Journal of Fisheries Management* 34:5 938–944.
- Pollock, K. H., C. M. Jones, and T. L. Brown. 1994. Angler survey methods and their applications in fisheries management. American Fisheries Society, Special Publication 25, Bethesda, Maryland.
- Weithman, A. S. 1999. Socioeconomic benefits of fisheries. Pages 193–213 *in* C. C. Kohler and W. A. Hubert, editors. *Inland fisheries management in North America*, 2nd edition. American Fisheries Society, Bethesda, Maryland.

Appendix 1.

Kinney Reservoir

The California Department of Fish and Wildlife is conducting an evaluation of the fishery at Kinney Reservoir. We request your help in this evaluation by providing the following information in this survey. Please use this form for one day's fishing at Kinney Reservoir by one angler only.

Date Fished: _____ # Hours Fished: _____
mm/dd/yyyy

Primary gear type used (check one):

Bait Lure Fly

Primary method or location (check one):

- shore/wading
 float tube
 Boat/kayak

Enter the total number of fish caught by species and size class:

Size	Rainbow trout		Other	
	Kept	Released	Kept	Released
Less than 6"				
6"-7.9"				
8"-9.9"				
10"-11.9"				
12"-13.9"				
14"-15.9"				
16"-17.9"				
18"-19.9"				
20"-21.9"				
22"-23.9"				
24"-25.9"				
26" and Greater				

Please indicate your level of satisfaction with the following statements regarding your fishing experience today:

Least

Neutral

Most

	satisfied			satisfied	
Overall angling experience today:	-2	-1	0	+1	+2
Size of fish:	-2	-1	0	+1	+2
Number of fish:	-2	-1	0	+1	+2

Please use the back of this form for any additional comments. Thank you for helping us manage and protect California's wild trout resources.

Appendix 2. CDFW stocking events at Kinney Reservoir from 2017–2020.

Rainbow Trout		
Year	lbs.	Number
2019	800	1,520
2018	400	400
2017	800	2,400

