

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

Kinney Reservoir, Alpine County

2021 Angler Survey Box Analysis



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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 Reservoir 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. Only CDFW stocks Kinney Reservoir. The RT currently stocked by CDFW are catchable-sized fish due to the combination of high angler usage and immediate proximity to a state highway.

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 Lake Tahoe.

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 2021, Kinney Reservoir had 19 respondents compared to 20 in 2020 (Ewing 2021) (**Table 1**). These anglers landed 58 fish and fished for 76.5 hours compared to 18 fish caught and 56 hours fished in 2020 (Ewing 2021). The 2021 catch per hour was 0.76, compared to 0.32 in 2020, while catch per angler was 3.05, compared to 0.90 in 2020.

Table 1. Collection of average effort and catch statistics recorded from the 2020–2021 angler survey box (ASB) at Kinney Reservoir.

Year	Respondents	Hours Fished	Fish Landed	Catch per Hour	Catch per Angler
2020	20	56	18	0.32	0.90
2021	19	76.5	58	0.76	3.05

Two anglers (10.5%) reported fishing from a float tube, which resulted in the best success in terms of catch per angler for a second straight year (2021=7.50; 2020=4.00) (**Table 2**). However, catch per hour was 0.56, and fourth lowest in this category. One angler (5.3%) reported fishing from boat/kayak, which resulted in the second highest rate in terms of catch per angler (6.00). This boat angler however recorded the highest catch per hour value of 1.50. In 2021, shore/wading anglers had the third highest catch per angler value (2.50) for a second consecutive year (2020=0.46). In 2021, three

anglers who did not report their method of fishing had a 2.33 catch per angler value. One multiple method angler did not report catching any fish in 2021.

Table 2. The number of anglers and catch per angler based on angling method at Kinney Reservoir from 2020–2021.

Method	2020			2021		
	Number of Anglers	Catch per Angler	Catch Per Hour	Number of Anglers	Catch per Angler	Catch Per Hour
Boat/Kayak	3	0.33	0.22	1	6.00	1.50
Float tube	1	4.00	0.57	2	7.50	0.56
Shore or Wading	13	0.46	0.17	12	2.50	0.85
Multiple	3	2.33	0.70	1	0.00	0.00
No Record	0	NA	NA	3	2.33	1.14

In 2021, anglers used various combinations of gear while fishing at Kinney Reservoir (**Table 3**). One angler (5.3%) used flies to catch fish and reported the highest catch rate (6.00 catch per angler) for a second consecutive year (2020=4.00) (Ewing 2021). However, the catch per hour value was 0.25, a decrease from 2020. In 2021, lure anglers had the second highest catch per angler value and the highest catch per hour value of 2.17. In 2021, bait anglers had a 3.90 catch per angler value and 1.24 catch per hour value, both increases from the 2020 values of 0.89 and 0.27. In 2021, four multiple gear anglers recorded no fish caught for a second consecutive year while one angler who did not record gear type caught zero fish.

Table 3. The number of fish landed by the type of gear from 2020–2021 at Kinney Reservoir.

Gear	2020			2021		
	Number of Fish	Catch per Angler	Catch per Hour	Number of Fish	Catch per Angler	Catch per Hour
Bait	8 (44.4%)	0.89	0.27	39 (67.2%)	3.90	1.24
Lure	6 (33.3%)	0.86	0.50	13 (22.4%)	4.33	2.17
Fly	4 (22.2%)	4	0.57	6 (10.3%)	6.00	0.25
Multiple	0 (0.00%)	0	0	0 (0.00%)	0	0
No Record	NA	NA	NA	0 (0.00%)	0	0
Total	18			58		

In 2021, 96.4% (n=53) of identified fish landed were RT, while BK and LCT each made up 1.8% (n=1) each, respectively. In 2020, 100% (n=18) of fish landed were RT.

In 2021, fish landed ranged from <6 inches (in.) to one caught that was over 26 in. In 2020, all landed fish (n=18) that were measured at Kinney Reservoir were less than 18.0 in. in total length (**Figure 2**). In 2021, the modal length class at Kinney Reservoir was the 10.0–11.9 in. (n = 28) which is similar to 2020 when the modal length classes were the 10.0–11.9 in. (n = 6) and 12.0–13.9 in. (n = 6) length classes, respectively.

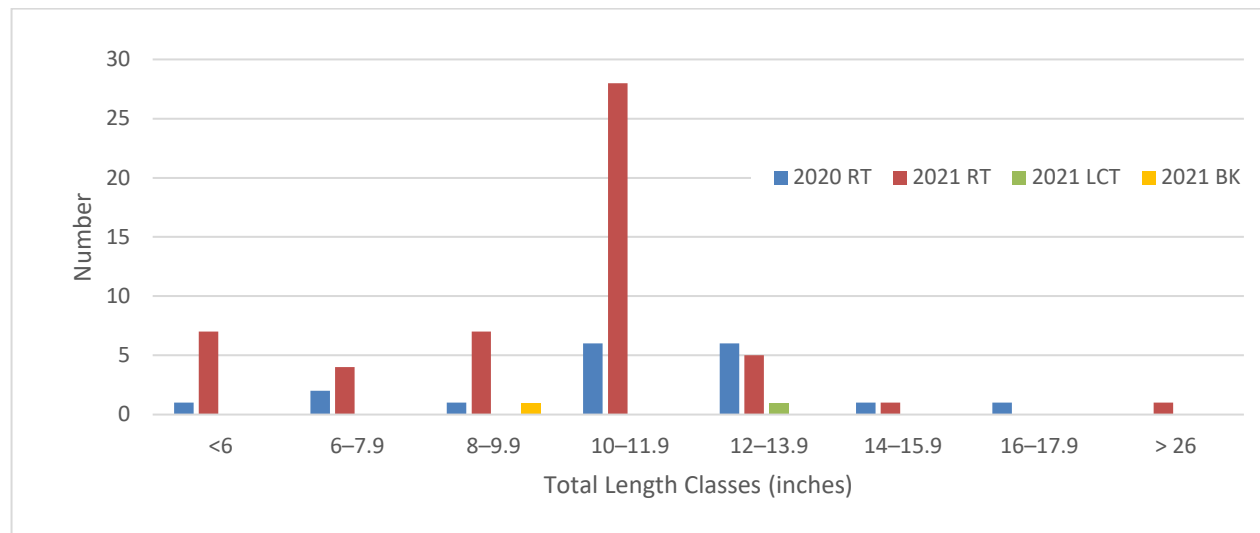


Figure 2. Frequency of fish in each length class that anglers reported landing at Kinney Reservoir from 2020-2021.

In 2021, anglers released 36% of RT caught, similar to 2020 when 33% of RT were released (**Table 4**). One LCT and BK were caught, both being kept. No LCT or BK were reported caught in 2020. Sixty-seven percent of unidentified fish were released in 2021 compared to no unidentified fish being caught in 2020. Of all fish landed in 2021, 23 (39.7%) were released, similar to 2020 when 33.3% were released.

Table 4. Kept and released fish at Kinney Reservoir from 2020–2021.

Year	Species	Kept	Released	Total Caught	Percent of Total Catch	Percent Released
2020	RT	12	6	18	100.0%	33.3%
TOTAL 2020		12	6	18		33.3%
2021	RT	32	21	53	91.4%	36.2%
	LCT	1	0	1	1.7%	0.0%
	BK	1	0	1	1.7%	0.0%
	Other	1	2	3	5.2%	66.7%
TOTAL 2021		35	23	58	100.0%	39.7%

Anglers reported being satisfied with their overall angling experience (0.69) for a second consecutive year (**Table 5**). Angler satisfaction for both Size and Number were also positive for a second consecutive year with Number value increasing to 0.91 in 2021 from 0.38 in 2020.

Table 5. Angler satisfaction response averages for the Kinney Reservoir fishery from 2020–2021.

	Overall Angling Experience	Size of Fish	Number of Fish
2020	0.16	1.00	0.38
2021	0.69	0.64	0.91

Discussion

Kinney Reservoir anglers caught over three fish on average in 2021 compared to less than one fish on average per trip in 2020. In 2021, Kinney Reservoir anglers had an average CPUE of 0.76 fish per hour, over doubling the 0.32 fish per hour reported in 2020. The spike in catch rates are likely because CDFW stocked 1,600 RT in June of 2021. CDFW did not stock any RT into Kinney in 2020; with the most recent fish stocking prior to 2021 occurring in August 2019 (**Appendix 2**).

The greatest number of RT caught in 2021 were in the 10.0–11.9 in. length class which is similar to 2020 when RT were equally represented in the 10.0–11.9 in. and 12.0–13.9 in. size classes. Additionally, 60% of trout caught were kept. The combination of sizes caught and number kept 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 since many of the trout stocked were less than 10.0 in. Anglers were also “satisfied” with the numbers of trout caught in 2021 for a second consecutive year and with more than double the value in 2020. This may have been due to CDFW stocking Kinney Reservoir in 2021 and the absence of stocking in 2020.

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 for a second consecutive year. It is likely the positive “size” and “number” values for a second consecutive year contributed to the positive overall fish experience value. 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. Kinney Reservoir is located over 8,000 feet elevation, with magnificent views and although next to Highway 4, does not receive as much tourist and angler usage as nearby waters.

The number of respondents in the 2021 survey was 19, similar to 20 in 2020. This is a fair number for an ASB, particularly considering that it was the second year of ASB at Kinney Reservoir, and the area was closed for a portion of the summer due to wildfires in the vicinity. 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 Reservoir and communicate the importance of ASBs to fisheries management.

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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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 satisfied		Neutral	Most 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 2017–2021.

Rainbow Trout		
Year	lbs.	Number
2017	800	2,400
2018	400	400
2019	800	1,520
2021	485	1,600

