

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

Silver Lake, Amador County
2017 Angler Survey Box Analysis



Photo courtesy of Angie Montalvo

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Introduction

Silver Lake (Silver) is an El Dorado Irrigation District (EID) managed reservoir in Amador County. At full capacity Silver covers 385 surface acres and it is situated at approximately 7,275 feet above mean sea level. Silver is located off Highway 88, approximately eight miles west of the Carson Pass and 20 miles southwest of Lake Tahoe (Figure 1). The Silver Fork American River is the main source of inflow and outflow for the reservoir and is a part of the South Fork American River watershed. Silver is open all year to the public with a five trout daily take and a 10 in possession bag limit regulation.



Figure 1. Silver Lake (Amador County).

California Department of Fish and Wildlife (CDFW) fish files indicate Silver Lake has been stocked since 1930 by CDFW for recreational fishing. Historically, Silver has been stocked with rainbow trout (*Oncorhynchus mykiss*) (RT), Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) (CT-L), brook trout (*Salvelinus fontinalis*) (BK), brown trout (*Salmo trutta*) (BN), and lake trout (*Salvelinus namaycush*) (LT). Currently only RT and BN are stocked in Silver by CDFW and EID (Appendix 1).

In order to assess the fishery, CDFW installed two angler survey boxes (ASBs) in 2015, one at the public launch ramp along Highway 88, and the other along the dam (Figure 2). Anglers voluntarily complete a survey sheet after their fishing trip, and deposit it in the box. CDFW uses the data to assess angler satisfaction, species composition, and general angler statistics at Silver. This report covers the data collected from Silver Lake's ASB for 2015 - 2017.



Figure 2. Silver Lake Angler Survey Box Locations.

Methods

Anglers were asked to complete a voluntary survey form about their fishing experience for that day. The survey asks anglers for information regarding hours fished, type of gear used,

method of fishing, and the number of landed fish. They were also asked the size and species of the fish landed and whether they kept or released their catch. Finally, 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 pertain to satisfaction of overall angling experience, size, and number of fish. The back of the survey form is reserved for anglers who have any additional comments.

Results

Twelve anglers responded to the survey in 2017 (Table 1). Cumulatively, these anglers reported nine fish landed, the lowest total in the last three years (n = 25, 2015; n = 92, 2016). In 2017, the average catch per angler was 0.75 while hours per angler was 3.42, respectively. Like the number of fish landed, the catch per angler decreased from both 2015 (2.08 catch per angler) and 2016 (2.56 catch per angler). Forty-one hours of fishing were reported for an average catch per hour of 0.22 in 2017, down from 2015 (0.36 catch per hour) and 2016 (0.66 catch per hour).

Table 1. Collection of average effort and catch statistics recorded from the 2015 - 2017 Angler Survey Boxes at Silver Lake.

Year	Respondents	Hours Fished	Fish Landed	Catch per Angler	Catch per Hour	Hours per Angler
2015	12	47.0	25	2.08	0.36	4.27
2016	36	138.5	92	2.56	0.66	3.85
2017	12	41.0	9	0.75	0.22	3.42

Anglers reported using bait and lures while fishing at Silver Lake (Table 2). Four (33%) anglers used bait and landed seven fish in 2017, resulting in the highest method of take (1.75 catch per angler). Zero anglers recorded fly fishing as an angling method for a third consecutive year.

Table 2. The frequency of anglers that used each angling method and their corresponding catch rates from 2015 - 2017.

Angling Method	2015		2016		2017	
	Number of Anglers	Catch per Angler	Number of Anglers	Catch per Angler	Number of Anglers	Catch per Angler
Bait	2	2.00	18	3.28	4	1.75
Lure	2	4.00	8	3.50	4	0.50
Fly	0	0.00	0	0.00	0	0.00
Multiple	6	0.83	9	0.33	2	0.00
Not recorded	2	4.00	1	0.00	2	0.00

Seventy-eight percent ($n = 7$) of fish landed were RT in 2017. Brown trout and one unidentified trout each made up 11% ($n = 1$) of the total catch, respectively (Figure 3).

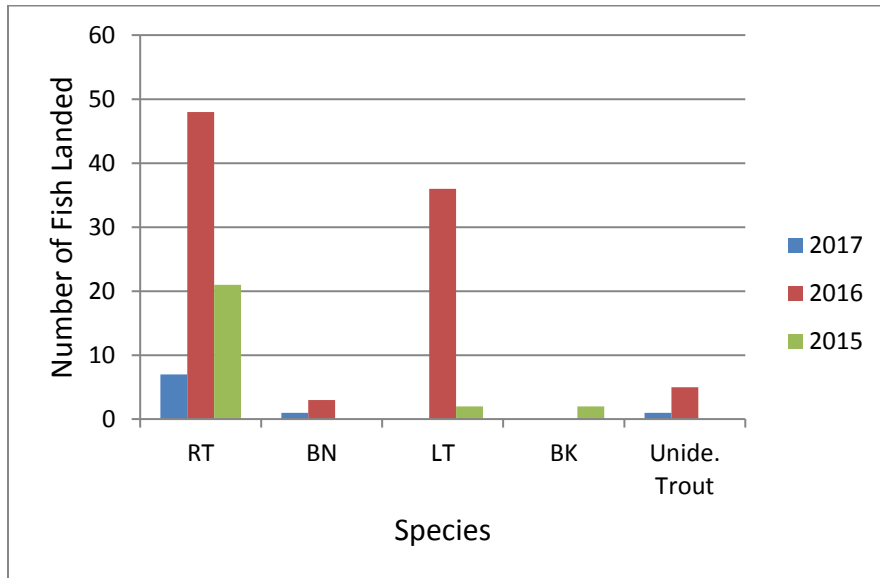


Figure 3. Number of each species of fish caught from Silver Lake from 2015 - 2017.

The modal size class (range in inches) for RT ($n = 4$) was 14.0 - 15.9 in 2017, 10.0 – 11.9 in 2016 ($n = 15$), and 12.0 – 13.9 in 2015 ($n = 11$) (Table 3). The modal size class for BN ($n = 1$) in 2017 was 18.0 - 19.9 and 24.0 – 25.9 ($n = 2$) in 2016. There was one unidentified trout measured in the 10.0 – 11.9 inch size class.

Table 3. Data on kept and released fish at Silver Lake from 2015 - 2017.

Year	Species	Kept	Released	Total Caught	Percent of Total Catch	Percent Released	Modal Size Class
2015	BK	0	2	2	10%	10%	16.0 - 17.9
	RT	11	6	17	85%	30%	12.0 - 13.9
	LT	1	0	1	5%	0%	> 26.0
	Total	12	8	20			

Year	Species	Kept	Released	Unknown disposition	Total Caught	Percent of Total Catch	Percent Released	Modal Size Class
2016	BN	3	0	0	3	3%	0%	24.0 - 25.9
	RT	30	5	13	48	52%	14%	10.0 - 11.9
	LT	20	16	0	36	39%	44%	20.0 - 21.9
	Unknown	5	0	0	5	5%	NA	NA
	Total	58	21	13	92			

Year	Species	Kept	Released	Total Caught	Percent of Total Catch	Percent Released	Modal Size Class
2017	BN	1	0	1	11%	0%	18.0 - 19.9
	RT	6	1	7	78%	14%	14.0 - 15.9
	Unknown	1	0	1	11%	0%	10.0 - 11.9
	Total	8	1	9			

Six anglers (50.0%) reported fishing from a boat, which resulted in the best success in terms of catch per angler (0.83 fish/angler) in 2017 (Table 4). Five anglers (41.7%) reported fishing from shore/wading, which resulted in the second best success rate in terms of catch per angler (0.80 fish/angler) in 2017. One angler (8.3%) reported fishing using multiple methods, which resulted in the no fish caught in 2017. No anglers reported fishing from a float tube/kayak in 2017.

Table 4. The number of anglers and catch per angler based on angling method at Silver Lake in 2017.

Method	Number of Anglers	
	(%)	Catch per Angler
Boat	6(50.0%)	0.83
Shore/Wading	5(41.7%)	0.80
Multiple	1 (8.3%)	0.00
Total	12	

In 2017, anglers reported being satisfied with the fishery in regards to overall satisfaction (0.25), the size of the fish they caught (0.50), and the numbers of fish they caught (0.50). These values are down from 2016 (0.53 overall experience, 1.00 size of the fish, and

0.89 number of fish), but up from 2015 (-1.00 overall experience, -0.90 size of the fish, and -1.00 number of fish).

Table 5. Angler satisfaction response averages for the Silver Lake fishery from 2015 - 2017.

Year	Overall Angling Experience	Size of the Fish	Number of Fish
2015	-1.00	-0.90	-1.00
2016	0.53	1.00	0.89
2017	0.25	0.50	0.50

Discussion

The data gathered from the 2017 Silver Lake ASB has shown that anglers have caught at least 0.75 fish on average per day, which is a large decrease from 2015 and 2016. When compared with the previous two years, catch per unit effort also decreased in 2017. The number of respondents in the 2017 survey decreased three-fold from 2016. In 2015, only 12 anglers responded to the survey, but that was the first year of the ASB so anglers may not have been aware of the ASB locations at the time. The slow bite may have contributed to the lack of angler usage, which can deter people from fishing. With social media and other ways of communicating, if the bite is slow and rumors spread, anglers may defer from fishing that particular lake. In 2017, ASBs at additional stocked recreational fisheries in Alpine and Amador Counties also experienced decreases in angler responses. One possible explanation for the lower response rate is that the general public, especially those with children (who may have less patience for low catch rates compared to adults), chose another form of entertainment, rather than fishing.

Catch rates for anglers using bait was higher than other forms of identified gear for the first time in the last three years. However having only four bait anglers may make this determination unreliable due to the small sample size.

The 2017 ASB survey showed the majority of fish caught by anglers were RT for a third straight year, which is consistent with the stocking records.

Sixty-seven percent of fish caught in Silver Lake measured greater than 14 inches in total length. This observation does not correspond with stocking data, since it is likely that all fish stocked by CDFW were less than 14 inches (Appendix 1). With a sample size of nine fish, an accurate representation of the fish being caught at Silver may have not been reflected. Anglers were satisfied with the size of fish they were catching for a second consecutive year. EID stocked 1,966.1 lbs. of 2.5 lb. and greater RT into Silver Lake from 2014 - 2017 and anglers reported catching trout in the 30 inch range. It is not known whether the three RT caught over

24 inches in 2015 were holdovers or EID stocked trophies. Regardless, it does not appear that anglers are catching many of these larger RT.

Anglers were also satisfied with the number of fish they were catching for a second consecutive year. The majority of anglers that responded to the survey fished during the summer. In general, trout fishing is slower in the summer rather than the spring and fall during which the overall water temperature is cooler and trout are more active. It is also possible that the 41.7% of anglers fishing from shore were having a more difficult time targeting trout that inhabit greater depths where cooler water is present. It is unknown why only one BN was caught and no LT were caught in 2017. Again, only having 12 anglers respond to the ASBs in 2017 may have not given a true representation of all types of fish caught.

The overall fishing experience for anglers was positive at Silver Lake. With a modal size class in the 14.0 – 15.9 in. length class in 2017, the larger sizes of RT caught may have helped negate the slower catch rates and result in providing a satisfactory fishing experience since for responding anglers. The overall satisfactory angling experience may have also nothing to do with actual fishing, but rather other factors such as great weather, fishing access, and/or lack of crowds.

Recommendations

- To maintain satisfaction with the fishery, CDFW could attempt to increase the average size of trout in the lake by decreasing the number of trout planted if future years' data indicates larger-size fish are rare or absent from the anglers' catch. A decreased volume of planted trout could reduce competition for resources and provide more space for the trout to grow.
- Collect data and continue to promote ASBs in order to help CDFW gather more reliable information on the Silver Lake fishery.
- Add question pertaining to angler expectation on survey sheet.
- Add more ASB locations around Silver Lake.

Appendix 1. Stocking history at Silver Lake since 2014.

CDFW				
Date	Species	Weight (lbs.)	Number	Size
4/16/2014	BN	39.6	25000	Fingerling
4/18/2014	BN	39.6	25000	Fingerling
5/12/2014	RT	3000	6300	Catchable
6/3/2014	RT	415	125,330	Fingerling
6/13/2014	RT	3,000	9900	Catchable
6/18/2014	RT	5000	10000	Catchable
4/15/2015	RT	5000	10000	Catchable
6/1/2015	ELT	2000	8000	Catchable
6/26/2015	RT	1100	2420	Catchable
6/29/2015	RT	429.8	89400	Fingerling
7/13/2015	ELT	2000	6000	Catchable
7/22/2015	ELT	453.5	69975	Fingerling
5/24/2016	BN	54.7	35000	Fingerling
6/23/2016	RT	1200	3,840	Catchable
7/20/2016	RT	434.8	2,000	Catchable
8/12/2016	RT	2000	3,400	Catchable
9/15/2016	RT	255	1,020	Catchable
6/7/2017	BN	19.2	8,460	Fingerling
6/26/2017	ELT	1000	2700	Catchable
7/31/2017	RT	1000	2,900	Catchable
9/5/2017	RT	1000	2,700	Catchable
11/1/2017	ELT	1000	2,900	Catchable

E.I.D.				
Date	Species	Weight (lbs.)	Number	Size
2014	RT	1336.5	2673	Catchable
2014	RT	688.5	275	Trophy
2015	RT	980.1	1960	Catchable
2015	RT	504.9	202	Trophy
2016	RT	1158.3	2317	Catchable
2016	RT	596.7	239	Trophy
2017	RT	341.6	683	Catchable
2017	RT	176	70.4	Trophy