

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

New Spicer Meadow Reservoir, Alpine and Tuolumne Counties

2015 - 2016 Angler Survey Box Analysis



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Introduction

New Spicer Meadow Reservoir (Spicer) is formed by the New Spicer Dam on Highland (NCPA 2012), Hobart, and Wilderness Creeks, with additional water diverted from the North Fork Stanislaus River. Spicer is in both eastern Tuolumne County and western Alpine Counties, California, 39 miles south of South Lake Tahoe (Figure 1).

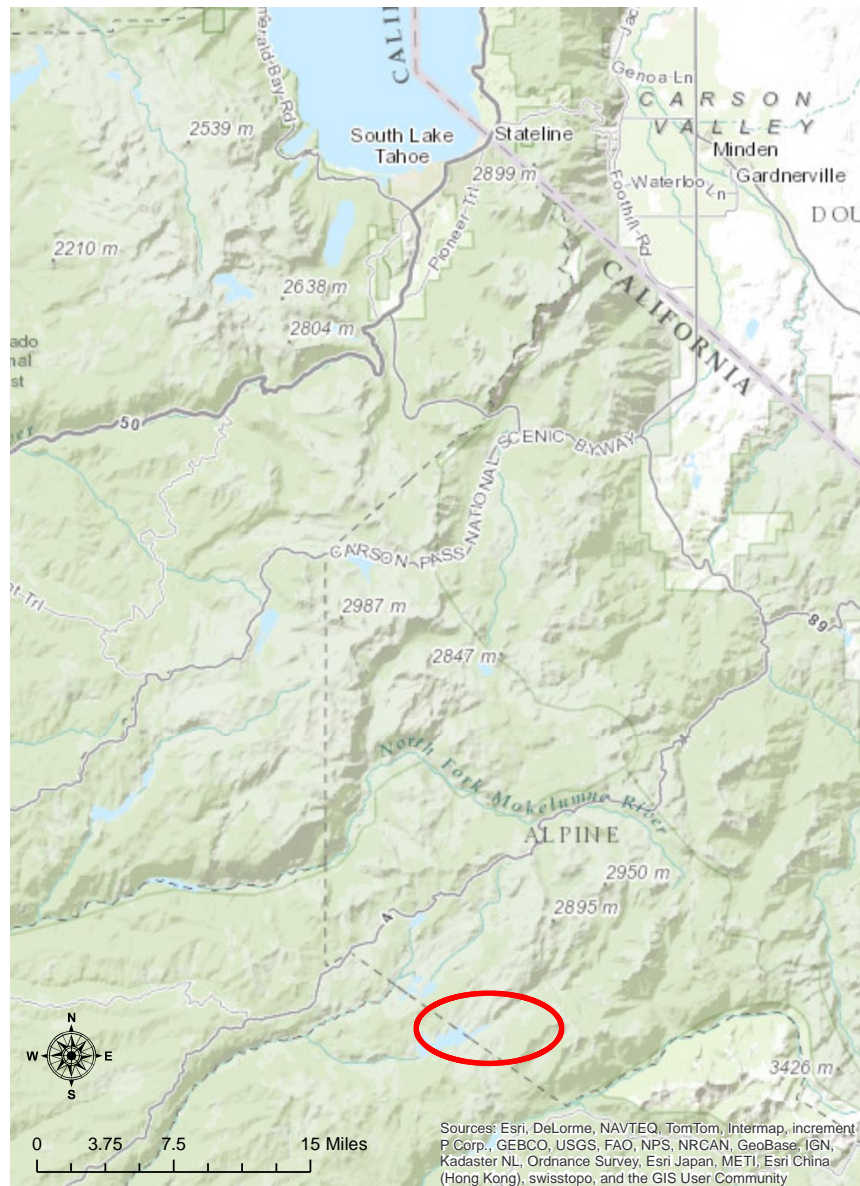


Figure 1. New Spicer Meadow Reservoir (Alpine County, CA)

Spicer is owned by Calaveras County Water District (CCWD), operated by Northern California Power Agency (NCPA) and permitted by the United States Department of Agriculture (USDA) and United States Forest Service (USFS). Spicer is operated under Federal Energy Regulatory Commission (FERC) Project 2409, with water being used for electric power and recreation. Spicer drains into Highland Creek, which flows into the North Fork Stanislaus River watershed.

In 1990, CCWD replaced Pacific Gas and Electric's (PG&E) old dam on Spicer with a new dam that increased lake volume. The new dam increased maximum pool in the lake from 215 surface acres and 4,062 acre-feet to 2,000 surface acres and 189,000 acre-feet of water storage (NCPA 2012). Spicer currently sits at an elevation of approximately 6,614 feet above mean sea level.

California Department of Fish and Wildlife (CDFW) fish files indicate Spicer has been stocked since 1953 by California Department of Fish and Game (CDFG) for recreational fishing. Historically, Spicer was stocked with rainbow trout (*Oncorhynchus mykiss*) (RT) and brook trout (*Salvelinus fontinalis*) (BK). Currently only fingerling- size RT are stocked in Spicer by CDFW and is considered a "put and grow" fishery. Spicer currently has a recreational fishery including BK, Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) (CT-L), brown trout (*Salmo trutta*) (BN) and a combination of hatchery and wild RT (CDFW Fish Files 2013). Historically, Spicer has had a brown bullhead (*Ameiurus nebulosus*) (BBH) fishery (CDFW Fish Files 1991). Spicer is open year-round with a five trout bag limit with 10 in possession regulation.

In order to assess the fishery, CDFW installed an angler survey box (ASB) at the public launch ramp in 2015. Anglers voluntarily fill out a survey sheet after they complete their fishing trip, and deposit it in the box. CDFW uses the data to assess angler satisfaction, species composition, and general angler statistics at Spicer. This report covers the data collected from Spicer's ASB for 2015 - 2016.

Methods

Anglers were asked to complete a voluntary survey form related to their fishing experience. The survey asks anglers for information regarding hours fished, type of gear used, method of fishing used, 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 was reserved for anglers who had any additional comments.

Results

In 2016, 53 anglers responded to the survey compared to only four in 2015 (Ewing 2016) (Table 1). Cumulatively, these anglers landed a total of 161 fish in 2016 compared to 23 fish in 2015. A total of 211.75 angler hours were recorded in 2016 compared to 15 in 2015. Catch per hour in 2016 was 0.76 compared to 1.53 in 2015. The catch per angler was 3.04 in 2016 and 5.75 in 2015.

Table 1. Collection of average effort and catch statistics recorded from the Angler Survey Box at New Spicer Meadow Reservoir in 2015 and 2016.

	Respondents	Hours Fished	Fish Landed	Catch per Angler	Catch per Hour	Hours per Angler
2015	4	15.00	23	5.75	1.53	4.11
2016	53	211.75	161	3.04	0.76	4.00

Anglers used various gear combinations while fishing at Spicer (Table 2). Twelve anglers (~23 %) used multiple gear types while fishing and had a 4.42 catch/angler average in 2016. This method had the highest catch per angler average in 2016. In 2015, the two multiple gear anglers had a 5.5 catch per angler average. Two anglers who did not record their angling method had a 4.0 catch/angler average in 2016. Anglers using lures had a 3.23 catch/angler average in 2016. Bait anglers had a 2.32 catch/angler average in 2016, which decreased from the 6.0 catch per angler average in 2015.

Table 2. The frequency of anglers that used each angling method and their corresponding catch rates in 2015 and 2016.

Angling method	2015		2016	
	Number of Anglers	Catch per Angler	Number of Anglers	Catch per Angler
Bait	2	6.00	25	2.32
Lure	0	0.00	13	3.23
Fly	0	0.00	1	0.00
Multiple	2	5.50	12	4.42
Not Recorded	0	0.00	2	4.00
	4		53	

In 2016, 78.9% of fish landed were RT compared to 69.6% in 2015. In 2016, 16.8% of fish landed were LCT compared to 21.7% in 2015. In 2016, 3.7% of fish landed were BK. In 2016, 0.6% of landed fish were BN compared to 8.7% in 2015, respectively. The reported catch rates do not correspond with stocking records as only RT have been planted in Spicer since 2001 by CDFW and there are no records of BN or LCT stockings.

ASB data showed that 96.9% (156 fish) of landed fish measured less than 16 inches in total length in 2016 compared to 73.9% (17 fish) in 2015 (Figure 2). The greatest number of RT, BK, and BN collected were in the 12.0 – 13.9 in. length class in 2016 (Table 3). The greatest number of LCT collected in 2016 was in the 14.0 – 15.9 in. length class. Like 2016, the greatest number of BN collected in 2015 was in the 12.0 – 13.9 in. length class. The length-frequency class with the greatest overall number of fish was the 12.0 - 13.9 inch size class in both 2015 and 2016.

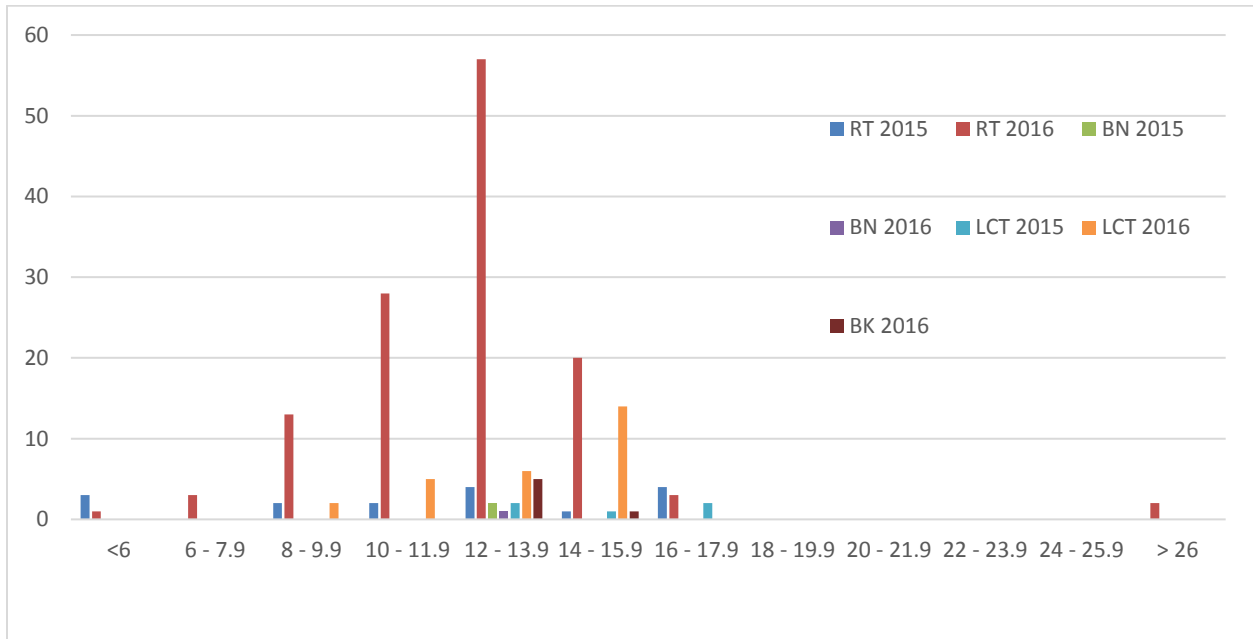


Figure 1. Frequency of fish in each size class that anglers reported landing at New Spicer Meadow Reservoir in 2015 and 2016.

Table 3. Data on kept and released fish and the corresponding modal size class at New Spicer Meadow Reservoir in 2015 and 2016.

2015						
Species	Kept	Released	Total Caught	Percent of Total Catch	Percent Released	Modal Size Class
RT	10	6	16	69.6	38.0	12.0" - 13.9" and 16.0" - 17.9"
BN	1	1	2	8.7	50.0	12.0" - 13.9"
LCT	4	1	5	21.7	20.0	12.0" - 13.9" and 16.0" - 17.9"
Totals	15	8	23	100.0		
2016						
Species	Kept	Released	Total Caught	Percent of Total Catch	Percent Released	Modal Size Class
RT	92	35	127	78.9	27.6	12.0" - 13.9"
BN	1	0	1	0.6	0.0	12.0" - 13.9"
LCT	25	2	27	16.8	7.4	14.0" - 15.9"
BK	6	0	6	3.7	0.0	12.0" - 13.9"
Totals	124	37	161	100.0		

A total of 11 anglers (20.8%) reported fishing from boat, which resulted in the best success in terms of catch per angler (3.45 fish/angler) in 2016 (Table 4). A total of 40 anglers (75.5%) did not report their fishing method, which resulted in the second best success in terms of catch per angler (3.08 fish/angler) in 2016. The least used method in 2016 was both float tube/kayak and shore/wading fishing (0.00 catch per angler), which also had the lowest catch per angler average.

Table 4. The number of anglers and catch per angler based on angling method at New Spicer Meadow Reservoir.

Method	2016	
	Number of Anglers (%)	Catch per Angler
Boat	11(20.8%)	3.45
Float tube/kayak	1 (1.9%)	0.00
Shore/Wading	1 (1.9%)	0.00
Not recorded	40 (75.5%)	3.08
	53 (100%)	

Anglers had a positive response with their overall fishing experience for a second consecutive year (2016 = 0.57; 2015 = 2.00) as well as the number of fish caught (2016 = 0.26; 2015 = 2.00), respectively. Anglers were also satisfied with the size of the fish caught for a second consecutive year (2016 = 0.75; 2015 = 1.33).

Discussion

The data gathered from the Spicer ASB shows anglers to have caught over three fish on average per angler in 2016 and almost six fish on average per angler in 2015, which is very successful. The number of respondents in the 2016 survey was 53, compared to only four in 2015. This increase in respondents may have provided CDFW with a more accurate assessment of the recreational fishery. CDFW staff should continue to notify anglers when possible, of the presence and location of the ASB at Spicer, and how helpful angler participation in the survey is, especially since many anglers might not be aware of the ASB and its recent installation at Spicer.

Catch per angler for anglers using multiple gear types was higher than any other form of gear used in 2016 while bait was the gear that had the highest catch per angler average in 2015. With only two bait anglers in 2015, this may have not been an accurate representation for the angling population. The ASB survey showed the majority of fish caught by anglers were RT, which is consistent with the stocking records. To ensure anglers are properly identifying their catch, CDFW should install a species identification sign listing all of the fish possibly present in Spicer. The sign could include a few words explaining how Spicer is a diverse recreational fishery.

Approximately 97% of fish caught in 2016 and 74% of fish caught in 2015 measured less than 16 inches in total length. This corresponds with stocking data, as 100% of fish stocked by CDFW have been less than 16 inches in recent years (Appendix 1). Due to the drought conditions in 2015, no RT were stocked in 2016. It is unknown as to why there have been so few trophy-size fish being caught. Nonetheless, anglers were satisfied with the size and number of fish they were catching, as well as their overall fishing experience for a second consecutive year. Spicer not only has a “put and grow” hatchery supplemented fishery, but it also has a wild trout component. Spicer has numerous tributaries where species like BN, LCT, and BK may be able to create a self-sustaining population in the reservoir. Anglers fishing Spicer have the opportunity to catch a variety of catchable-size salmonids that are in great physical shape and often fight with greater force than a “put and take” hatchery trout. Future ASB data with the same number or greater respondents than in 2016 could provide CDFW with information necessary for continuing to manage the fishery to satisfy the needs of anglers.

Recommendations

- CDFW should continue to encourage anglers to fill out the ASB forms in future trips, when possible.

- CDFW staff should install a species identification board on or near the ASB at Silver Lake, in order to minimize species misidentification by anglers.
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References:

California Department of Fish and Wildlife Fish Files. 1991. Spicer Meadows Reservoir Management Plan. Unpublished. Page 3.

Ewing, B. 2016. 2015 New Spicer Meadow Reservoir Angler Survey Box Analysis. California Department of Fish and Wildlife Fish Files. Unpublished.

Northern California Power Agency. 2012. Northern California Power Agency Hydroelectric Project. Unpublished.

Appendix 1. Stocking history at New Spicer Meadow Reservoir since 2001. (ELT = Eagle Lake rainbow trout, RT = Rainbow trout).

Date	Species	Number	Weight (lbs.)	Size-Class
6/18/2001	ELT	51,000	150	Fingerling
7/9/2002	RT	39,872	89	Fingerling
7/9/2002	RT	34,668	107	Fingerling
7/29/2003	ELT	50,224	584	Fingerling
6/21/2004	RT	51,900	300	Fingerling
6/23/2005	RT	50,000	93.3	Fingerling
8/8/2006	RT	21,090	38	Fingerling
8/8/2006	RT	28,959	49	Fingerling
8/13/2007	RT	50,050	715	Fingerling
7/21/2008	RT	50,000	133	Fingerling
6/17/2009	RT	50,018	70.3	Fingerling
6/30/2010	RT	50,336	121	Fingerling
7/8/2011	RT	50,050	455	Fingerling
7/13/2012	RT	41,646	631	Fingerling
6/4/2013	RT	25,000	40.9	Fingerling
6/3/2014	RT	25,000	250	Fingerling
7/6/2015	RT	21,060	450	Fingerling