

UPPER TRUCKEE RIVER ANGLER SURVEY BOX SUMMARY 2003-2018



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INTRODUCTION

The Upper Truckee River (UTR), Alpine and El Dorado counties, contains a self-sustaining (wild trout) population of Lahontan Cutthroat Trout *Oncorhynchus clarki henshawi* (LCT). LCT are also the native trout to the UTR watershed. Therefore, the California Fish and Game Commission (Commission) designated the UTR upstream from the confluence with Showers Creek, including tributaries, a “wild trout water”. The Commission further designated the UTR as a “heritage trout water” (Figure 1). Heritage waters support populations that best exemplify indigenous strains of native trout within their historic drainages. Natural barriers in the vicinity with the confluence with Showers Creek protect the UTR population of LCT from other salmonids in the lower section UTR watershed.

In addition to a population of wild and native trout, another criterion for a wild and heritage trout designation is that the water is open to public angling. The UTR is open to public angling from July 1 through September 30. Only artificial lures with barbless hooks may be used with a daily bag limit of zero trout. An angler survey box (ASB) was installed at the Carson Pass trailhead to aid in the monitoring and management of the fishery. Maintaining a quality heritage wild trout fishery is the management goal for the UTR.

METHODS

The Department of Fish and Wildlife (CDFW) encouraged each angler to voluntarily fill out an angler survey form for the UTR (Appendix A). This form instructs the angler to use one form per angler per angling day. The form asks anglers the date fished, the number of hours fished, the primary gear used, and the total number of LCT caught.

The primary gear type categories were defined as either lures or flies. The total number of LCT caught were broken down into size classes of less than six inches, six to 7.9 inches, eight to 9.9 inches, 10 to 11.9 inches, 12 to 13.9 inches, 14 to 15.9 inches, and 16 inches and greater. Additionally, the CDFW asked anglers their level of satisfaction with their overall angling experience, size of fish, and number of fish. The satisfaction scale was -2 (least satisfied), -1, 0, +1, +2 (most satisfied). Forms instruct anglers to use the back of the form for additional comments.

RESULTS

Anglers returned 33 forms for the 2018 angling season. Of the 33 responses, 31 were fly anglers while the remaining two were lure anglers (Table 1). Fly anglers fished for a total of 92.9 hours landing 291 LCT while the lure anglers fished for a total of 0.7 hours landing five LCT. The fly anglers reported a lower catch per hour with a higher catch per angler compared to the lure anglers. Fly anglers reported catch rates of 3.1 LCT per hour with 9.4 LCT per angler, with an average 3.0 hours fishing per angler. The two lure anglers reported a catch rate of 7.1 LCT per hour with a catch rate of 2.5 LCT per angler, with an average of 0.3 hours per angler. Overall, the 33 anglers reported

fishing for 93.5 hours landing 296 LCT producing catch rates of 3.2 LCT per hour and 9.0 LCT per angler.

The average number of respondents from the 2003 through 2018 fishing seasons was 31 (range of 14 to 46) reporting an average of 91.8 hours fished (range of 39.3 to 159.8 hours) and landing an average of 217 LCT (range 71 to 383 LCT landed). The overall average catch rates were 7.1 LCT per angler and 2.4 LCT per hour (Table 2). The greatest number of responses (46) were received during the 2011 angling season while the fewest (14) were received during the 2015 angling season (Table 2). However, the greatest number of hours fished of 159.8 hours from 41 respondents occurred during the 2012 angling season. The second greatest number of hours fished of 131.8 hours from 43 anglers occurred over the 2009 angling season. The greatest catch per angler rates were achieved during the 2004 and 2005 angling seasons with rates of 11.3 and 13.5 LCT per angler, respectively. The 2004 and 2005 angling season also produced the greatest catch per hour rates of 3.2 and 5.3 LCT per hour, respectively. The 3.2 LCT per hour catch rate was also achieved during the 2017 and 2018 angling seasons

The overall 2018 LCT catch were in the medium size ranges. The mode of 120 (40.5%) LCT landed were in 6.0 to 7.9 inches size class followed by 72 (24.3%) in the 8.0 to 9.9 inches size class. However, eight (2.7%) LCT landed were in the 12.0 to 13.9 inches size class while one LCT was reported in the greater than and equal to 16.0 inches size class (Table 3 and Figure 2).

Over the past 16 years, the mode of LCT landed was generally in the 6.0 to 7.9 inches size class with an average of 37.2 percent (range 22.0 to 53.6 %). Exceptions occurred in 2004 (31.4 %), 2005 (37.1 %) and in 2012 (22.0 %) when the modes were in the 8.0 to 9.9 inches size class. In 2015 (46.5 %), 2016 (37.2 %) and 2017 (39.0%), the modes were in the less than six inches size class (Figure 3 and Table 4). Furthermore, anglers reported a total 27.4 % (2009) and 24.6 % (2012) of the catch in the size classes equal to and greater than 12 inches. In 2011, anglers reported 7.0 % of the catch in the equal to and greater than 16 inches size class (Table 4).

Anglers fishing Showers Lake also use the Carson Pass Trailhead; consequently, the Upper Truckee River ASB received forms from anglers who reported fishing at Showers Lake. A total of 12 anglers used Upper Truckee River forms for reporting fishing Showers Lake with seven respondents in 2012, two respondents 2015, one respondent 2016, and two respondents 2018. These 12 anglers reported fishing for 43.9 hours and landing 51 LCT. Of the 51 LCT, one (2.0%) was reported in the less than 6.0 inches size class, 18 (35.3%) in the 8.0 to 9.9 inches size class, 14 (27.5%) in the 10.0 to 11.9 inches size class, eight (15.7%) in the 12.0 to 13.9 inches size class; two (3.9 %) in the 14.0 to 15.9 inches size class; and eight (15.7 %) in the equal to and greater than 16 inches size class (Figure 4).

The anglers were generally satisfied with the 2018 UTR fishery with an average response of greater than one to each satisfaction questions. Anglers were most satisfied with their overall angling experience (+1.7 average response) with 87.9% of their answers in the positive range (1 or 2) (Table 5). Anglers were also satisfied with the numbers of LCT landed (+1.6 average response) with 78.8 % of the responses in the positive range. However, anglers were less satisfied with the sizes of LCT landed (+1.4 average response) with 78.8% of the responses in the positive range.

Beginning in 2003 and continuing through the 2018 fishing season, angler satisfaction with their overall angling experience was equal to and greater than one with the exception occurring in 2006 when the average response was +0.9 (Table 6). The 2006 anglers reported relatively low satisfactions with both sizes (+0.5) and numbers (+0.5). Anglers were most satisfied with the sizes (+1.4 average response) of LCT landed during the 2016 angling season, while they were least satisfied (+0.2 average response) during the 2003 angling season. Anglers were most satisfied (+1.6) with the numbers of LCT landed during the 2017 and 2018 fishing seasons while least satisfied (+0.5) with the numbers during the 2006 angling season.

DISCUSSION

Objectives for a quality fishery for the UTR include:

1. Maintaining the wild LCT population within the UTR
2. Maintaining an average catch rate of 2.0 LCT per hour
3. Maintaining an average satisfaction greater than one for experience and numbers of LCT landed.

Catch rates, catch per hour and catch per angler, in the Upper Truckee River has remained consistent over the past 16 years. The lowest catch rates occurred in 2014 and have increased since with 2016, 2017, and 2018 reporting above average catch rates. Drought conditions and beaver activity may have contributed to the decrease in catch rates by decreasing the amount of available habitat for the LCT and decreasing access to the stream by anglers. Angler Survey Boxes and population surveys should continue to be used to monitor this important LCT fishery.

The anglers were satisfied with the UTR fishery. The satisfaction averages for experience and numbers during the past 15 years were greater than one and slightly less than one for satisfaction with sizes of LCT landed. Maintaining satisfaction averages greater than one for overall angling experience and numbers should be the management goal. However, maintaining an average greater than one for sizes of LCT may be difficult considering the Upper Truckee River does not produce LCT greater than 12 inches.

A LCT greater than 11 inches is very rare in the Upper Truckee River (Personal Observations); however, anglers reported landing LCT in the 12 to 13.9 inches, 14 to

15.9 inches and equal to or greater than 16 inches size classes (larger size classes). One possible reason for LCT in the 12 to 13.9 inches size class was some anglers overestimating some 10 to 11.9 inches LCT as 12 to 13.9 inches LCT. Another possible reason for the larger LCT was Showers Lake. DFW did receive forms in which the anglers indicated fishing in Showers Lake and Round Lake, another nearby lake. Some anglers fishing Showers Lake use the same ASB as those fishing the UTR and when filling out the UTR form may not indicate or change the form to Showers Lake. From ASB forms known to be from Showers Lake, anglers have reported landing LCT in the 14 to 15.9 and equal to or greater than 16 inches size classes. However, the current forms do not provide a method for determining the water fished if anglers report landing LCT in any of the size classes less than the 14 to 15.9 inches size class.

The percentage of LCT landed in each of the size classes was highly variable across years. This variability could be caused by natural changes in the population size class structure, beaver activity, drought conditions and angler error in the size of LCT landed. It is interesting to note that the modes occurred in the less than 6.0 inches (small) size class in the draught years of 2015 and 2016 and in 2017. Monitoring LCT catch via ASB responses can be used to evaluate changes in LCT size class structure during extended drought conditions.

Recommendation

Updating the ASB form to give the anglers a choice of water fished could:

4. Identify the anglers fishing Upper Truckee from those fishing Showers and Round lakes,
5. The source of the 14.0 to 15.9 and equal to or Greater than 16 size classes of LCT landed, and
6. Evaluate the Showers and Round lakes fisheries.

However, anglers may not indicate which body of water or indicate all bodies of water when filling out the form.

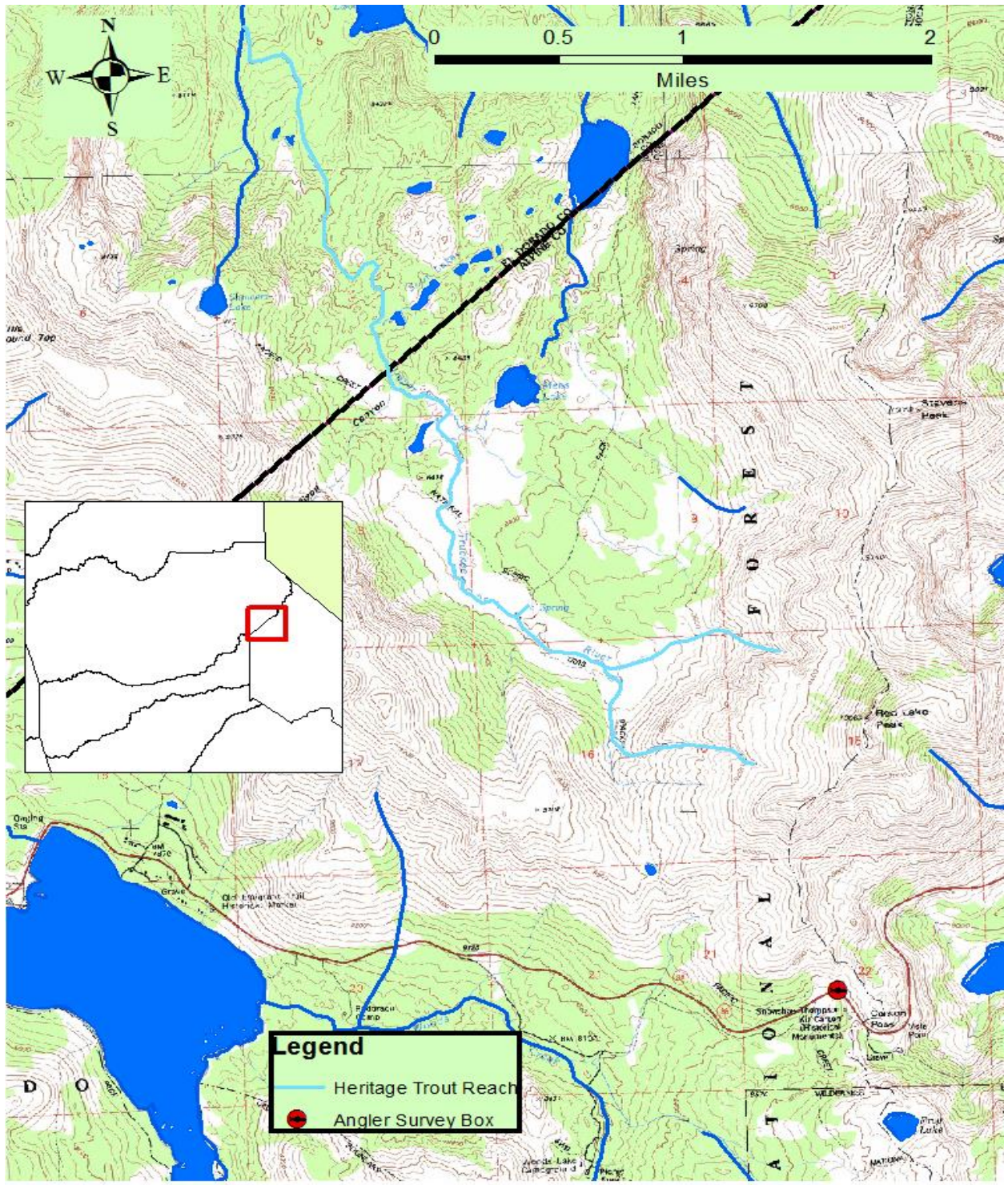


Figure 1. Map depicting the Upper Truckee River Heritage and Wild Trout reach, Alpine and El Dorado counties.

Table 1. Anger Survey Box statistics for the Upper Truckee River, Alpine and El Dorado counties. The catch statistics are for the 2018 fishing season.

Gear	Number of Responses	Hours Fished	Total Landed	Catch/Angler	Catch/Hour	Hours/Angler
Fly	31	92.9	291	9.4	3.1	3.0
Lure	2	0.7	5	2.5	7.1	0.3
Total	33	93.5	296	9.0	3.2	2.8

Table 2. Angler Survey Box statistics for the Upper Truckee River, Alpine and El Dorado counties. The statistics are for the 2003 through the 2018 angling seasons.

Year	Number of Responses	Total Hours Fished	Total Fish Landed	Catch Per Angler	Catch Per Hour	Hours Fished Per Angler
2003	23	50.3	138	6.0	2.7	2.2
2004	30	106.0	338	11.3	3.2	3.5
2005	21	53.5	283	13.5	5.3	2.5
2006	24	72.8	151	6.3	2.1	3.0
2007	29	70.5	208	7.2	3.0	2.4
2008	32	87.0	143	4.5	1.6	2.7
2009	43	131.8	383	8.9	2.9	3.1
2010	31	94.0	161	5.2	1.7	3.0
2011	46	120.3	201	4.4	1.7	2.6
2012	41	159.8	227	5.5	1.4	3.9
2013	23	64.0	108	4.7	1.7	2.8
2014	24	92.3	94	3.9	1.0	3.8
2015	14	39.3	71	5.1	1.8	2.8
2016	36	130.0	333	9.3	2.6	3.6
2017	38	103.5	333	8.8	3.2	2.7
2018	33	93.5	296	9.0	3.2	2.8
Average	31	91.8	217	7.1	2.4	3.0

Table 3. The length frequency percentages for Lahontan cutthroat trout landed in the Upper Truckee River, Alpine and El Dorado counties. The statistics are for the 2018 fishing season.

Gear	<6"	6"-7.9"	8"-9.9"	10"-11.9"	12"-13.9"	14"-15.9"	>16"	Total
Fly	19	40	24	11	3	0	0	291
Lure	1	0	0	0	0	0	0	5
Total	21	41	24	11	3	0	0	296

Table 4. The length frequency percentages for Lahontan cutthroat trout landed in the Upper Truckee River, Alpine and El Dorado counties. The statistics are for the 2003 through 2018 fishing seasons.

Year	<6"	6"-7.9"	8"-9.9"	10"-11.9"	12"-13.9"	14"-15.9"	>16"	Total
2003	15.9	53.6	18.1	6.5	5.1	0.7	0.0	138
2004	17.8	30.5	31.4	8.6	5.6	1.5	4.7	338
2005	14.1	36.4	37.1	11.7	0.7	0.0	0.0	283
2006	12.6	51.0	30.5	5.3	0.7	0.0	0.0	151
2007	15.9	38.0	30.3	13.0	2.4	0.5	0.0	208
2008	30.8	37.1	21.7	8.4	0.7	0.0	1.4	143
2009	21.9	30.3	18.5	1.8	19.3	8.1	0.0	383
2010	22.4	36.0	19.9	8.7	7.5	4.3	1.2	161
2011	20.4	32.8	22.9	10.4	3.0	3.5	7.0	201
2012	18.5	22.0	22.0	12.8	8.8	10.1	5.7	227
2013	20.4	49.1	14.8	6.5	8.3	0.9	0.0	108
2014	24.5	36.2	21.3	8.5	4.3	1.1	4.3	94
2015	46.5	39.4	9.9	1.4	0.0	1.4	1.4	71
2016	37.2	27.3	16.5	15.0	3.0	0.9	0.0	333
2017	39.0	34.2	18.9	6.3	1.5	0.0	0.0	333
2018	20.6	40.5	24.3	11.5	2.7	0.0	0.3	296
Average	23.7	37.2	22.4	8.5	4.6	2.1	1.6	217

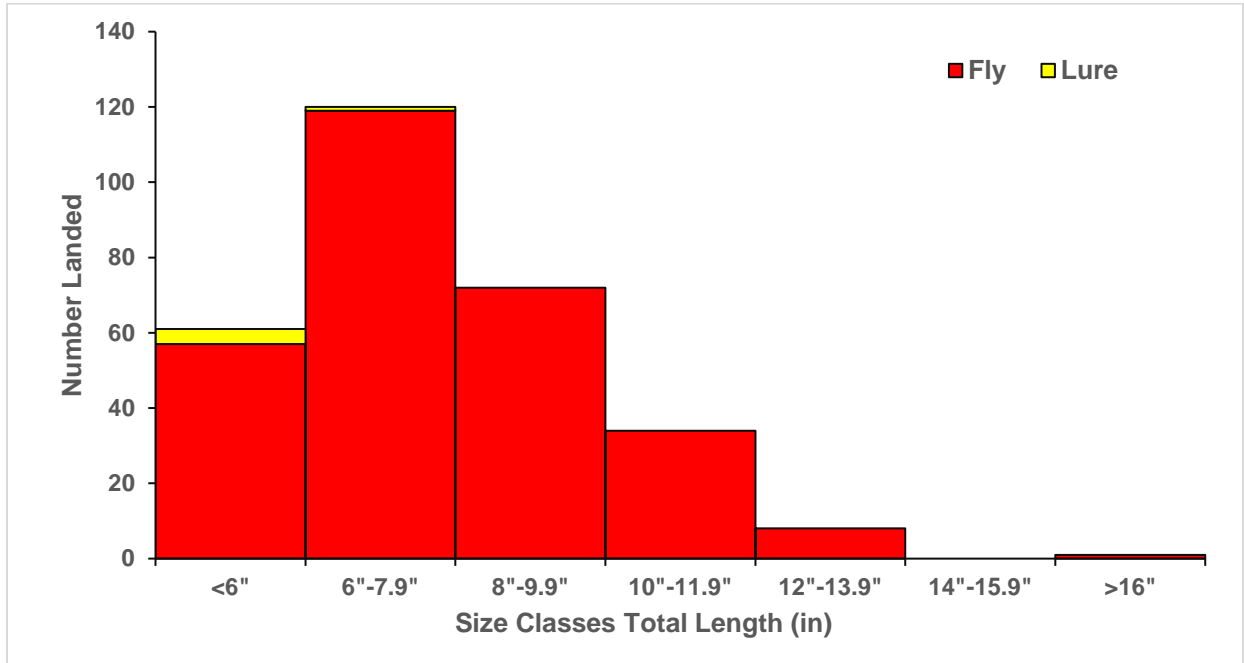


Figure 2. Length frequency histogram for Lahontan Cutthroat Trout landed in the Upper Truckee River, Alpine and El Dorado counties. These statistics were from the 2018 angling season.

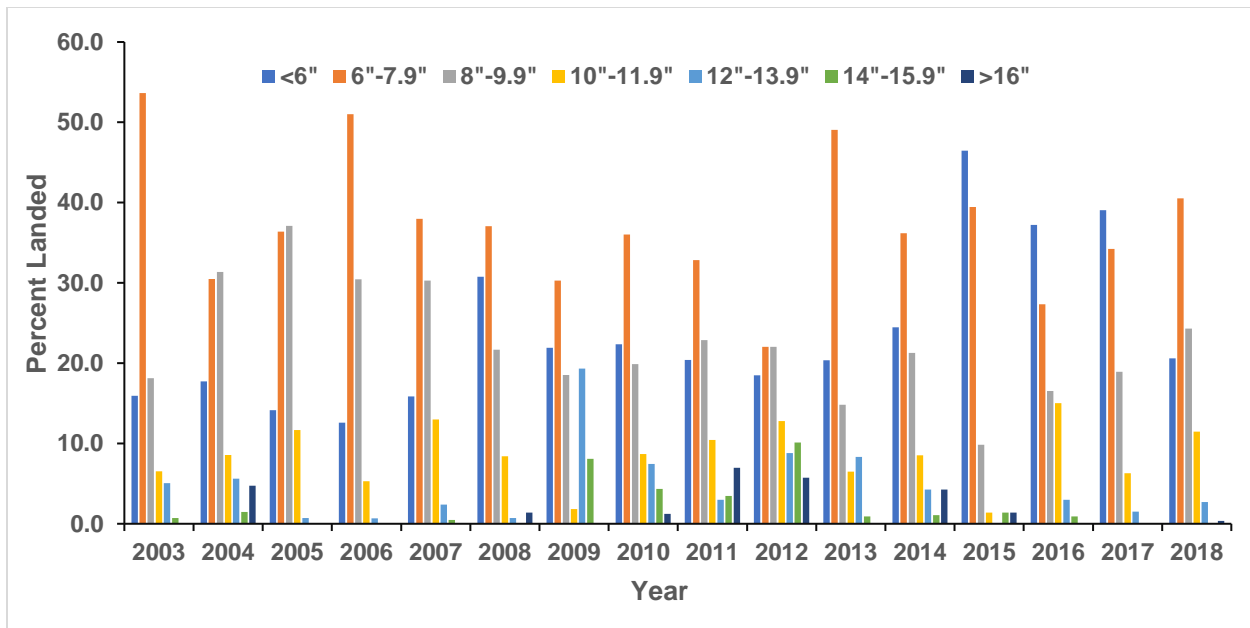


Figure 3. Length frequency histogram for the percentages of Lahontan Cutthroat Trout landed in each size class in the Upper Truckee River, Alpine and El Dorado counties. These statistics were from the 2003 through 2018 angling seasons.

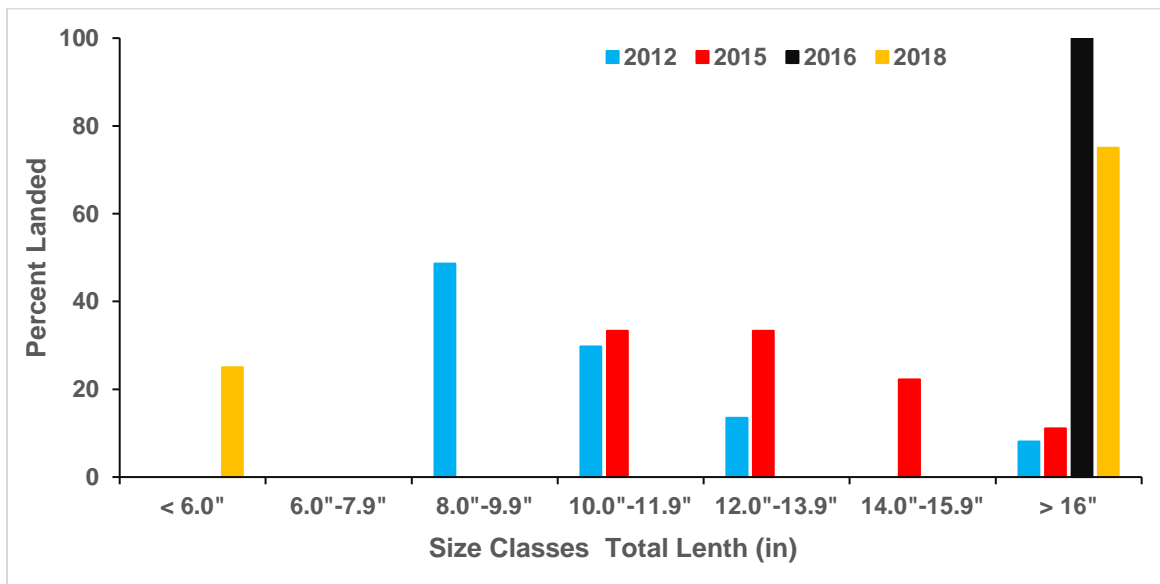


Figure 4. Percent length frequency histogram for Lahontan Cutthroat Trout landed in Showers Lake, El Dorado County. These statistics were from the 2012, 2015, 2016, and 2018 angling seasons.

Table 5. The percentage, average, and number of each response to questions regarding the angler satisfaction with their angling experience, sizes, and number of Lahontan cutthroat trout landed in the Upper Truckee River, Alpine and El Dorado counties. These responses were from the 2018 fishing season. DNA means did not respond.

	-2	-1	0	1	2	DNR	Total	Average
Experience	0.0	3.0	6.1	9.1	78.8	3.0	33	1.7
Size	0.0	0.0	12.1	30.3	45.5	12.1	33	1.4
Number	0.0	3.0	6.1	12.1	66.7	12.1	33	1.6

Table 6. The average and number of responses of the angler satisfaction with their angling experience, sizes, and numbers of Lahontan Cutthroat Trout landed in the Upper Truckee River, Alpine and El Dorado counties. Responses were from the 2003 through 2018 angling seasons.

Year	Average Response			Number of Responses
	Experience	Size	Numbers	
2003	1.21	0.21	1.00	23
2004	1.10	0.73	0.88	30
2005	1.30	0.84	1.26	21
2006	0.91	0.50	0.52	24
2007	1.41	0.93	1.41	29
2008	1.43	0.97	1.27	32
2009	1.17	0.84	0.88	43
2010	1.48	1.29	1.00	31
2011	1.48	1.23	1.07	46
2012	1.03	1.00	0.76	41
2013	1.42	0.63	1.11	23
2014	1.55	1.14	1.41	24
2015	1.15	0.75	0.77	14
2016	1.56	1.38	1.52	36
2017	1.79	1.20	1.64	38
2018	1.69	1.38	1.62	33
Average	1.30	0.91	1.10	30

Appendix A. Upper Truckee River Angler Survey Box Form

Upper Truckee River

The California Department of Fish and Wildlife is conducting an evaluation of the wild trout fishery on the Upper Truckee River. We request your help in this evaluation by providing the following information in this survey. Please use this form for **one** day's fishing on the Upper Truckee River by **one** angler only.

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

Primary gear type used (check one):
 Lure Fly

Total # of cutthroat trout caught: _____

Enter the total number of cutthroat trout caught by size class:

Size	Released
Less than 6"	
6"-7.9"	
8"-9.9"	
10"-11.9"	
12"-13.9"	
14"-15.9"	
16" 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.