



**OTTER CREEK RESERVOIR  
2022 TREND NET SURVEY**

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**BACKGROUND:** Otter Creek Reservoir is one of southern Utah's most popular fishing destinations and has historically provided a high quality fishery able to sustain a large amount of harvest, as long as water levels remain high enough to maintain the fishery. For many years, the fishery has been maintained with an annual stocking quota of 200,000 sub-catchable rainbow trout (RBT) in the fall. Due to various stocking adjustments, that quota has been raised to 220,000, while an additional quota of 23,000 has been added in the spring (Table 1). An angler survey conducted at the reservoir in 2016 found that the Otter Creek RBT fishery provides a significant draw to anglers from across Utah, as well as southern Nevada (Hadley et al. 2017). The results of the survey prompted increases in stocking as well as the designation of Otter Creek Reservoir as one of Utah's Blue Ribbon Fisheries, based on the high quality of the fishery and its value to Utah anglers. In fact, Otter Creek Reservoir is considered Utah's best RBT sport fishery.

An annual quota of 25,000 Bear Lake cutthroat trout was stocked regularly in Otter Creek Reservoir from the early 1990s through 2017 in an effort to apply predation pressure to Utah chubs. Due to poor returns, this quota was cancelled after 2017 and converted to a quota of 20,000 brown trout (Table 1). Due to the significant level of angler interest, Otter Creek Reservoir is frequently used as a receptacle for excess trout produced by hatcheries.

Competition between stocked trout and Utah chubs has historically been a chronic problem and Otter Creek Reservoir has been treated periodically with rotenone to reduce chub densities, most recently in 1999. There is no conservation pool in the reservoir but at least a small pool is normally maintained through the year by the Sevier River Water Users in order to sustain a fishery. This effort has been instrumental in preserving the sport fishery during frequent drought conditions over the last 15+ years. The Bear Lake cutthroat trout quota was originally added with the intent that they would utilize chubs as forage and add diversity to the sport fishery. By the same reasoning, smallmouth bass were introduced in 2005 and a limited population has maintained through natural recruitment since that time.

Due to limited establishment and return, Bear Lake cutthroat trout and smallmouth bass were never able to exert an appreciable effect on the Utah chub population in Otter Creek Reservoir. Conversely, the introduction of hybrid wipers (white bass x striped bass) to Newcastle and Minersville reservoirs yielded significant reduction of rough fish density and positive responses in survival and condition among stocked trout. Based on these results, the addition of wipers to the Otter Creek Reservoir fishery commenced in 2011 (Table 2). Since that time, return of wipers to netting surveys and anglers has been limited and variable. Those wipers that were observed, however, exhibited exceptional growth and condition. Due to those low returns, stocking requests were increased, while netting surveys were adjusted to account for potential differences in wiper behavior that may have allowed them to avoid spring shoreline net sets. Wiper netting catches have continued a pattern of variability, but a few anglers began to adjust fishing techniques to more effectively target wipers, resulting in catches of large, healthy fish. Despite the inability to consistently evaluate wiper survival through netting surveys, the growth and condition of those few fish observed, coupled with increasing angler success and experience gained from other similar fisheries, prompted managers to continue attempts to establish a wiper fishery in Otter Creek Reservoir. The current requested stocking quota is 20,000 two-inch wipers annually.

The fishery at Otter Creek Reservoir is monitored annually through trend net surveys. Since 2011, a new gill net design recommended by the American Fisheries Society (AFS) has been utilized. The random placement of differing mesh sizes is intended to avoid "leading" fish

into the net and, thus, reduce bias in the net catch – as opposed to nets previously used for decades (“DWR” nets), which comprised of graduating mesh sizes. In most waters, catch rate trends observed since 2011 indicate that the AFS nets catch about 50% fewer trout and chubs than did the DWR nets, though the reduced catches are still sufficient to provide measures of population dynamics. The trout catch rate at Otter Creek Reservoir has followed this pattern, while the chub catch rate has been, on average, about 60% that of the old net style. That higher-than-expected mean in chub catch has been skewed, however, by just two years of extreme high catches (2013 and 2019). When these outliers years are ignored, mean chub catch rate with AFS net has been closer to 30% of the DWR net catch. Attempts to more effectively sample wipers has included the recent addition of a DWR net to the pelagic zone. While that net has yet to consistently catch wipers, it has provided the benefit of a net that does not foul with algae, as many of the shoreline nets have been doing. Although the longer DWR nets tend to catch twice as many fish as the shorter AFS nets when set along the shore, the catch was more similar and comparable when the longer net has been set in the pelagic zone. The lack of a shoreline removed the impetus for the “leading” effect that theoretically skews catch for graduated nets.

**METHODS:** Seven experimental gill nets (four floating and three diving) were set in Otter Creek Reservoir on April 6, 2022, and were allowed to fish overnight. The floating nets and two of the diving nets were of the AFS design, measuring 6 ft x 80 ft, with eight panels of randomly-arranged mesh size (1.5”, 2.25”, 1”, 0.75”, 2.5”, 1.25”, 2”) and were set at shoreline locations that have been generally consistent for more than 30 years of sampling (Figure 1). The additional net (NPD) was of the “DWR” design, measuring 6 ft x 125 ft, with five panels of increasing mesh size (0.75”, 1”, 1.25”, 1.5”, 2”) and was set in pelagic zone in 10 feet of water in the northern portion of the reservoir. Fish caught were removed from nets on the morning of April 7, measured to the nearest millimeter (total length), and weighed to the nearest gram. Trout body condition was measured by the calculation of Fulton’s  $K_{TL}$  (generated from total length [TL]):

$$K_{TL} = (Weight/Length^3) \times 100,000$$

Wiper and smallmouth bass body condition was measured by relative weight ( $W_r$ ), given by:

$$W_r = (W/W_s) \times 100$$

where  $W$  = the weight of an individual fish and  $W_s$  = the standard weight for a fish of similar length.  $W_s$  is computed by the equation:

$$\log_{10}(W_s) = a + b(\log_{10}TL)$$

where  $a$  and  $b$  are constants defined by species-specific length-weight relationships (Anderson and Neumann 1996). Results of the 2022 survey were compared with those from historic trend net surveys.

**RESULTS:** Wind and algae have been common problems for shoreline nets at Otter Creek Reservoir in recent years. WMLD was fouled by algae on April 7, 2022, and its catch was not representative, so it was not used for catch estimates. Those fish were used to calculate mean size and condition. SWF was pulled in by a concerned angler, who thought it was a “poacher’s net”, and delivered to the home of the DWR wildlife biologist in Sevier County. The remaining five nets (3 shoreline floaters, 1 shoreline diver, 1 pelagic diver) caught a total of 189 trout (all RBT), for a catch rate of 38 trout per net-night (Table 3). This rate was lower than that observed in 2021 (Fig. 2), but still much higher than the long-term mean for surveys since employment of AFS

nets began in 2011 (Table 4). RBT made up 84% of the total net catch and 72% of the total biomass collected (Fig. 3).

RBT stocked in fall 2021 made up 75% of the trout catch (Fig. 4) and averaged 272 mm (10.7 in) in total length (TL), 242 g (0.5 lb) in weight, with a mean condition ( $K_{TL}$ ) of 1.18. All values were nearly equal to those observed in 2021, as well as to long-term means for RBT stocked the previous year (Table 4, Fig. 5). These fish grew an average of 0.55 mm/day since stocking, which was higher than the long-term mean and the highest observed since 2018. Older RBT (stocked prior to fall 2021) made up the remainder of the trout catch; though they made up just 21% of the total net catch by count, older RBT represented 43% of the total biomass sampled (Table 3). Age 2+ RBT averaged 446 mm (17.6 in), 1,030 g (2.3 lb), with a mean  $K_{TL}$  of 1.15. All values were higher than long-term means (Table 4). RBT ranged in size up to 575 mm (22.6 in) and 2,059 g (4.5 lb) (Fig. 6). No other trout species were caught during the survey.

Six wipers were caught in the netting survey, for a catch rate of 1.2 fish per net-night (Table 3). This was similar to the long-term mean catch (Table 4), though the rate has been relatively low and highly variable throughout the sampling period (Fig. 7). Despite the low catch, large average size meant that wipers made up 19% of the total biomass sampled. Wipers spanned at least four size classes (Fig. 8) and averaged 570 mm (22.4 in), 3,602 g (7.9 lb), with a mean  $W_r$  of 119. Mean length and weight were the highest observed at Otter Creek Reservoir, while relative weight was among the highest (Fig. 9). High mean size was, in part, a result of a lack in catch of “smaller” wipers (300-380 mm, 12-15 in), which were most abundant in the 2021 catch. Wipers ranged in size up to 710 mm (28.0 in) and 7,120 g (15.7 lb), larger than the Utah state angling record at the time of the survey (Fig. 10).

Thirty-one Utah chubs were collected in the 2022 survey, for a catch rate of 6 fish per net-night. This was among the lowest chub catches observed since 2011 (Fig. 11). In 2022, the chub catch spanned at least four cohorts (140-330 mm) (Fig. 12).

**DISCUSSION:** The Otter Creek Reservoir fishery experienced unique conditions, challenges, and benefits in recent years, including both extreme drought and high snowpack, overstocking, and fluctuating Utah chub density. 2021 and 2022 marked the worst years in the current drought cycle, with the reservoir dropping to about 10% capacity in late summer. Emergency increases were made to harvest limits each year to allow anglers to utilize fish that could potentially be lost to poor summer conditions and, hopefully, to decrease the likelihood of large fish kills. In addition, stocking quotas were reduced to further avoid overloading low water volume. Despite these conditions, the 2021 and 2022 trend net surveys yielded the highest trout catches of the last decade due to exceptional survival and catch of RBT stocked during the previous fall (Fig. 2). Catch of older RBT, although reduced when compared to catches of the late 2010s, indicated that summer losses that were often common during extreme drought years in the past were mostly avoided recently. The Otter Creek Reservoir trout fishery fared impressively well through the extremely low water levels experienced in recent years. Recent experience has shown that the reservoir often benefits from excess trout stocking, though this should be avoided during drought years. The high snowpack of 2022-23 will support conditions for excess trout stocking, if fish are available and if the 2023 trend net survey shows a need for more fish.

Utah chub density has likely played a significant role in the performance of the Otter Creek Reservoir trout fishery through the drought. Chub catch has historically varied in response to water level fluctuations and chemical treatments in Otter Creek Reservoir. During the last ten years, however, chub catch has experienced less variation, outside of two high catches in 2013 and 2019 (Fig. 11). When these two outliers are excluded, chub catch varied from 2 to 25 fish



per net-night, and averaged 13 fish per net-night. This mean rate is just 30% of that observed during the 35-year sampling period when DWR nets were used (Table 4). Experience in multiple reservoirs over the last decade has found that the AFS nets typically catch around half the number of Utah chubs that the older nets did. A decline to 30% of historic catch would indicate that, outside of two years of high density, chubs in Otter Creek Reservoir have, overall, been less abundant in the reservoir over the last 10 years. Each of those outlier years can be specifically attributed to known events. A high snowpack and elevated water level in 2011 may have boosted chub spawning success, which was manifested in an increase in netting catch when those fish became susceptible to nets two years later in 2013. The elevated catch in 2019 was attributed to the draining of Koosharem Reservoir in fall 2018. Regardless of the reason for the increase in chub density, each high catch was directly followed by a precipitous drop the following year, suggesting that such high chub density was not only unsustainable, but may actually have been detrimental to the population in the short term. Following the crash in chub density in 2014, the population appeared to steadily increase over the next four years until being artificially enhanced in 2019. That year was unique in that the reservoir experienced high water level that could have boosted chub recruitment like what may have occurred in 2011, but the unnaturally high density also yielded a population crash. RBT abundance has been favorable and relatively consistent over the last decade, indicating that the chub density has remained low enough to exert minimal impact to trout, with spikes in chub numbers short-lived. The trout fishery has maintained its high quality and provided anglers with exceptional fishing opportunities.

Assessing the wiper fishery at Otter Creek Reservoir has been hampered by low and inconsistent catch rates during spring trend net surveys. Metrics other than abundance, however, have indirectly signaled success in the wiper fishery: wiper size and condition; trout abundance, size, condition, and growth; Utah chub abundance. Catch-per-unit-effort (CPUE) is often the most useful metric for directly assessing survival and, therefore, stocking quotas. If it is deemed that this metric is vital in justifying requested wiper stocking at Otter Creek Reservoir, then adjustments to sampling effort or timing will likely be necessary.

Following more than a decade of wiper stocking in the Southern Region, it is becoming clearer that sampling effort is likely playing a role in wiper CPUE results. Schooling behavior means that wipers are not evenly distributed throughout the reservoir and that passive sampling gear like gill nets may be subject to a greater variability in encounter rate. Newcastle Reservoir (151 acres) has produced the highest and most consistent wiper catches with four net sets, with Minersville Reservoir (1,000 ac) also yielding sufficient catch with six nets, though results are less consistent than at Newcastle. Sampling at Otter Creek Reservoir (2,500 ac) has experienced low wiper catch and higher variability with six or seven nets. Relative size of these reservoirs indicates that sampling effort at Otter Creek Reservoir may need to increase to unrealistic levels (2-10 times as many nets as current sampling) just to reach the sampling power being achieved at Newcastle and Minersville reservoirs. For many years, six nets usually proved efficient at sampling trout and chubs, so it is difficult to justify such increases in sampling effort just for greater wiper CPUE. While the seventh net added in recent years may have only marginally improved wiper catch (Fig. 7), it did provide an additional benefit in mitigating loss of catch data to fouling by wind and algae, or to public interference. These complications have increased in frequency in recent years, so setting seven or even eight nets is justified to maintain minimum sampling power.

Another adjustment to sampling strategy that could improve wiper CPUE at Otter Creek Reservoir would be altering timing of the netting survey. Southeast Region personnel have

experienced higher and more consistent wiper catches in fall netting surveys at Huntington North and Scofield reservoirs. Fall netting surveys have always been problematic at Southern Region waters, however, due to the increased likelihood that low water levels and/or algae blooms would make sampling ineffective or impossible. Like increased sampling effort, a shift in trend net survey timing is not justified just for improving wiper CPUE at Otter Creek Reservoir. However, expected higher water level in 2023 presents an opportunity for a limited fall netting effort that may help supplement the spring netting data. If successful in improving wiper collection, supplemental fall surveys could be conducted in the future only during years when conditions allow for effective sampling.

Extreme drought conditions continued in 2022, with Otter Creek Reservoir dropping to less than 10% capacity in late summer and early fall. Like in 2021, harvest limits were increased during the summer to allow anglers to remove fish from the reservoir before being lost. Also as in the previous year, no evidence of significant mortality was observed during these low water conditions. Rather, angler reports through fall and winter months indicated that trout survived summer 2022 quite well. If the trend observed in the 2021 and 2022 netting surveys continues (Fig. 2), RBT stocked in fall 2022 should survive well and experience improved conditions for further growth and survival, thanks to the higher-than-average 2023 snowpack. The 2023 spring trend net survey will provide a more definitive assessment of the fishery through the low water level of 2022. However, the monitoring results through spring 2022 have already shown that the Otter Creek Reservoir RBT fishery has weathered the current severe drought cycle better than during similar conditions in the past. Utah chub abundance has remained relatively low since the introduction of wipers. Even increases in chub density have been short-lived, indicating wiper predation has sufficiently contributed to controlling Utah chubs in the long-term. It is the determination of this monitoring and analysis that the addition of wipers to Otter Creek Reservoir has helped to mitigate the impacts of Utah chubs on the highly valuable RBT fishery.

#### **RECOMMENDATIONS:**

1. Maintain current stocking quotas of rainbow trout, brown trout, and wipers at Otter Creek Reservoir. Continue stocking of excess RBT and wipers when available and when water levels are favorable to sustain extra fish.
2. Conduct trend net surveys annually in the spring to monitor trout, wipers, and Utah chubs. Set eight nets (4 floating and 4 diving) to ensure minimum sampling power. Conduct a limited fall netting survey in 2023, if conditions are favorable, to assess the potential for supplementing wiper CPUE.
3. Analyze scales or dorsal spines from both wipers and smallmouth bass for age and growth.
4. Develop outreach efforts to promote wiper fishing at Otter Creek Reservoir.

#### **LITERATURE CITED**

- Anderson, R. O., and R. M. Neumann. 1996. Length, weight, and associated structural indices. Pages 447-482 in B. R. Murphy and D. W. Willis, editors. *Fisheries techniques: second edition*. American Fisheries Society, Bethesda, Maryland.
- Hadley, M. J., N. R. Braithwaite, and R. D. Hepworth. 2017. 2016 angler survey at Otter Creek Reservoir, Utah. Publication Number 17-02. Utah Department of Natural Resources, Division of Wildlife Resources, Salt Lake City. 26 pp.

# Otter Creek Reservoir

Sampling Locations

F=Floating Gill Net

D=Diving Gill Net

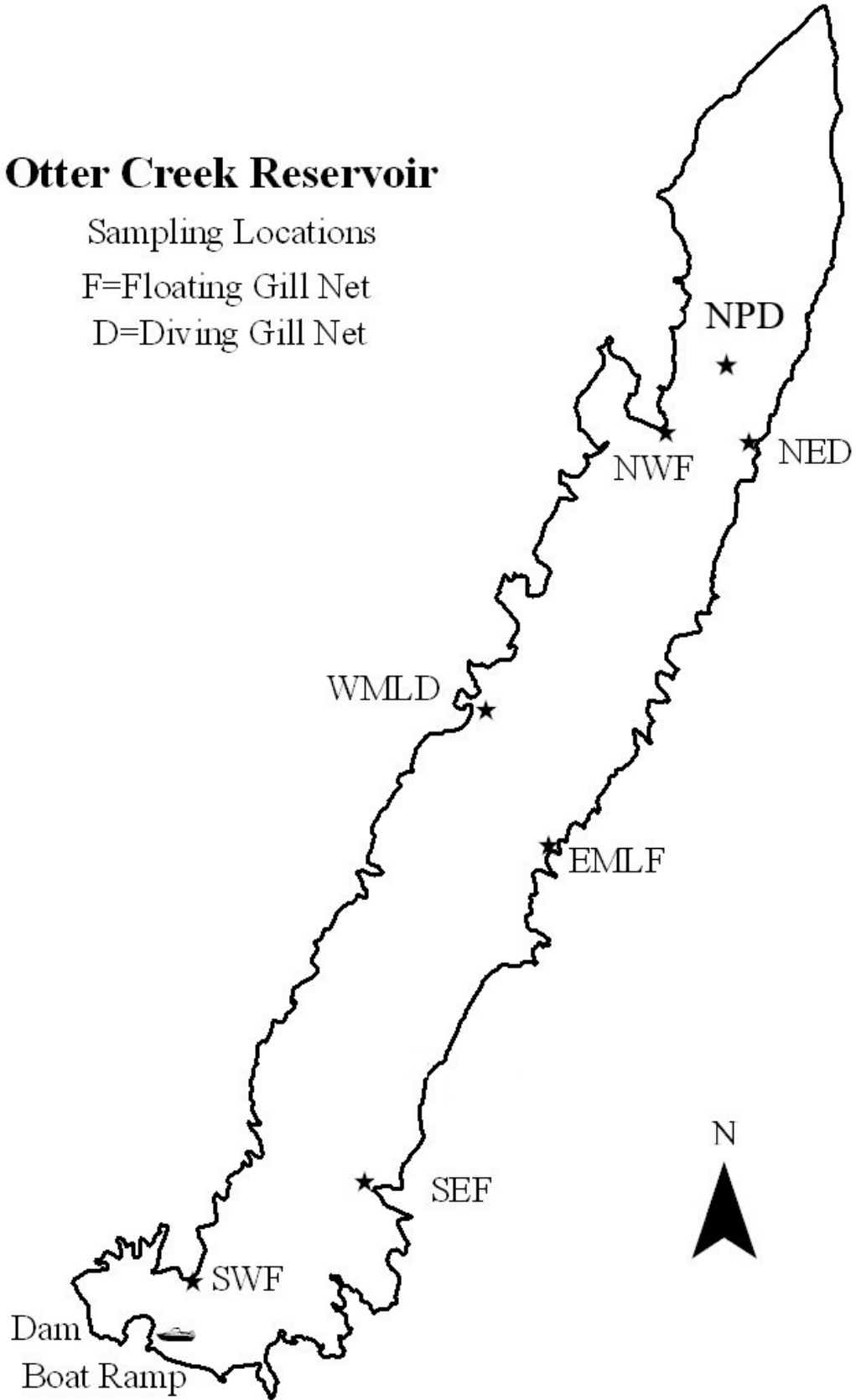


Figure 1. Locations of gill nets set at Otter Creek Reservoir during the 2022 trend net survey.

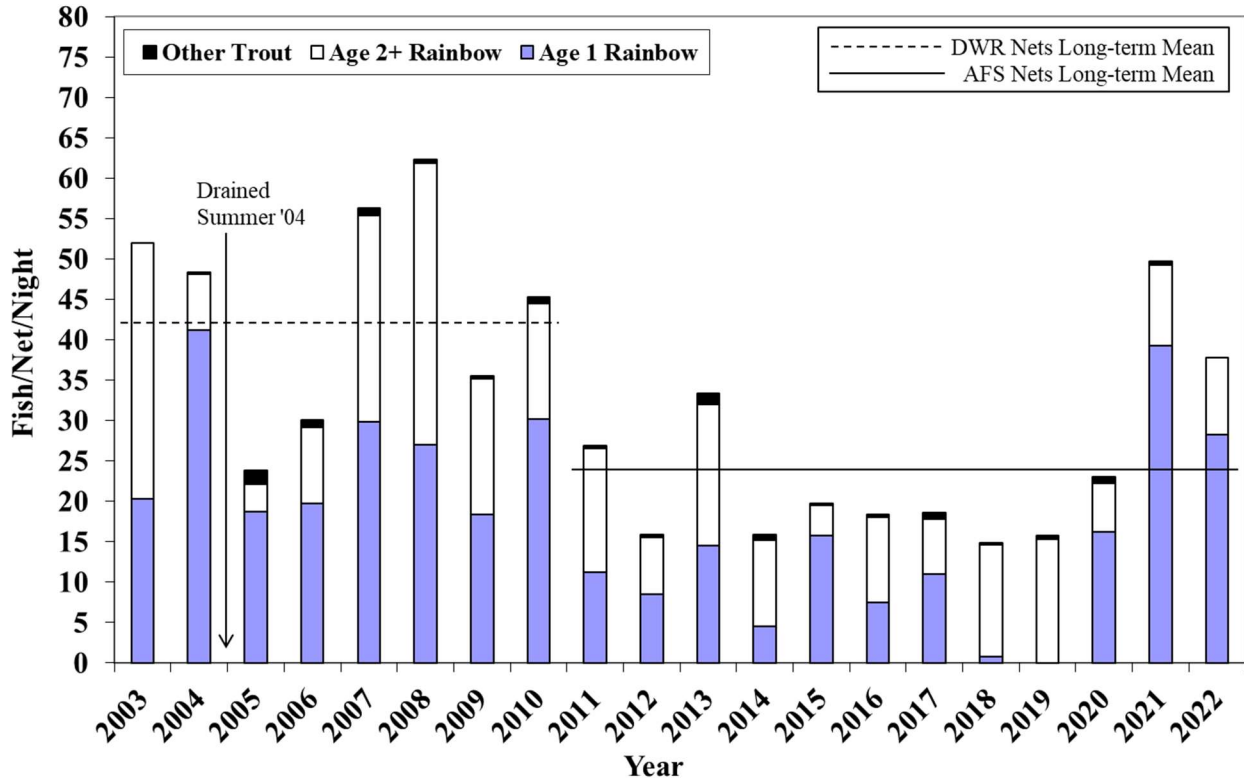


Figure 2. Trout catch rate during trend net surveys at Otter Creek Reservoir, 2003-2022.

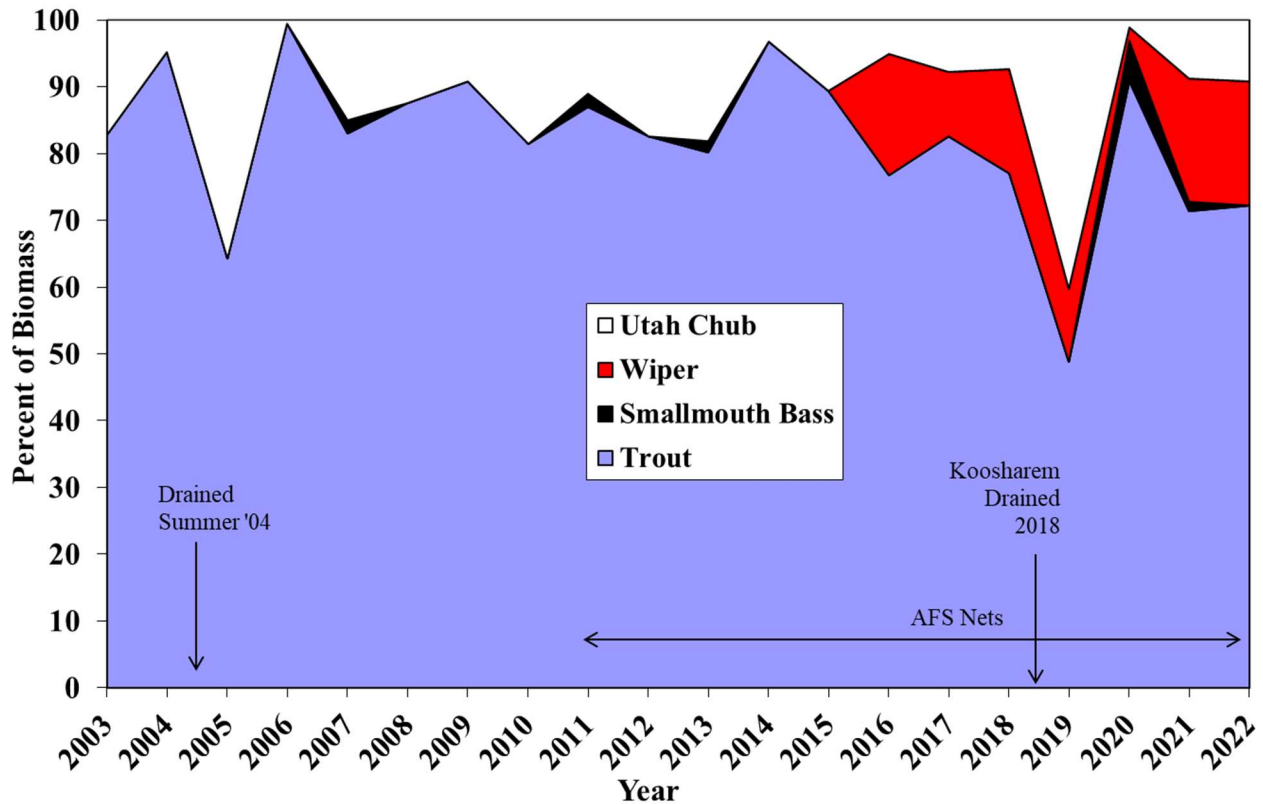


Figure 3. Relative biomass of fish species collected during trend net surveys at Otter Creek Reservoir, 2003-2022.



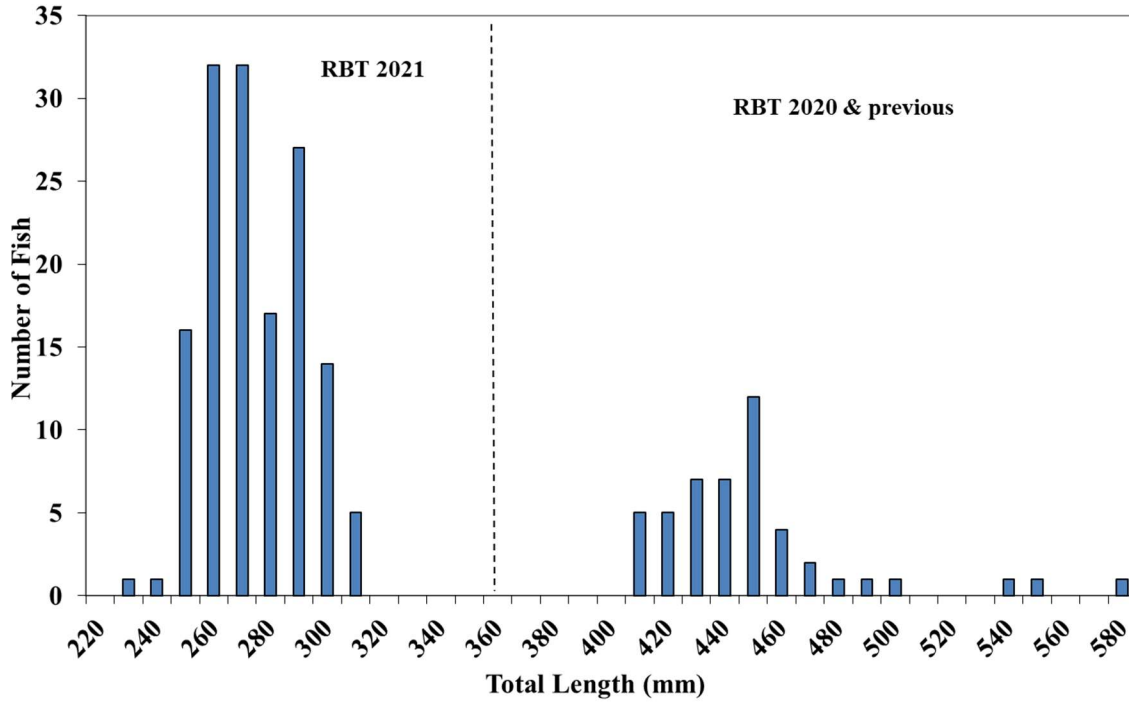


Figure 4. Length distribution of rainbow trout collected at Otter Creek Reservoir on April 7, 2022, with stocking cohorts assigned.

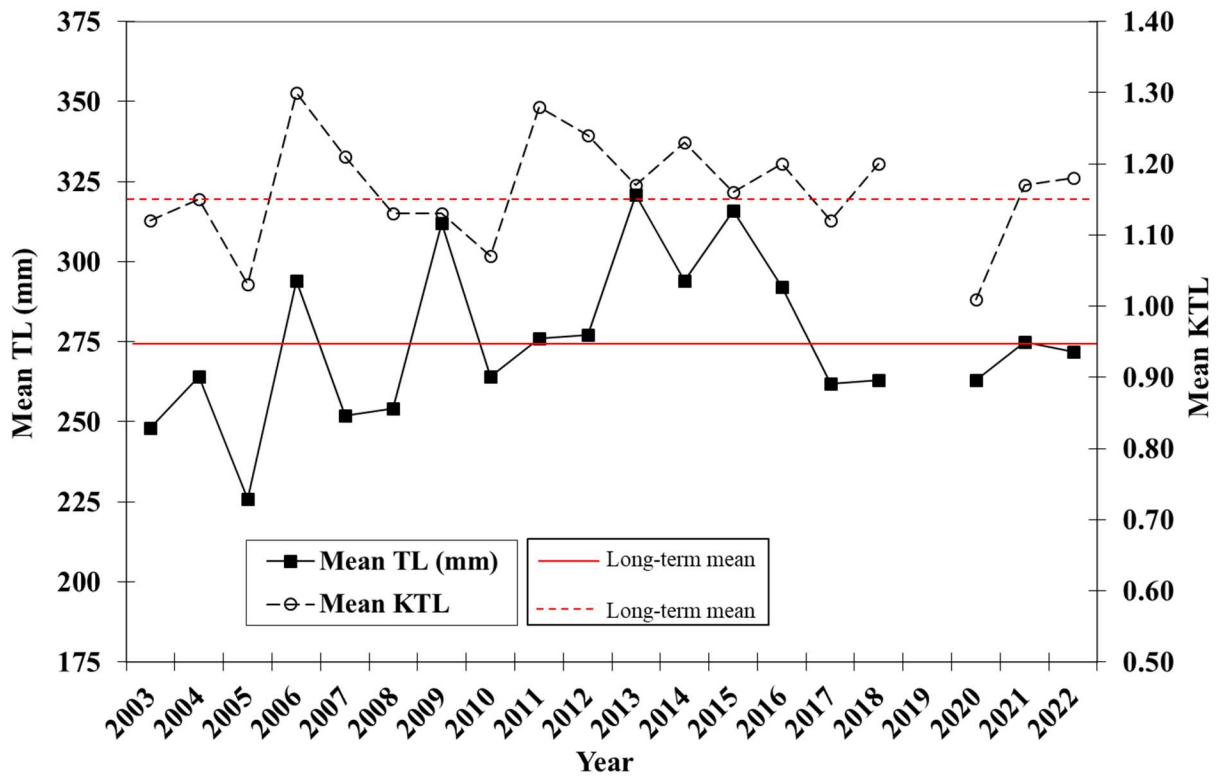


Figure 5. Mean total length (mm) and condition ( $K_{TL}$ ) of rainbow trout stocked the previous year and collected during trend nets surveys at Otter Creek Reservoir, 2003-2022.



Figure 6. Two size classes of rainbow trout collected at Otter Creek Reservoir on April 7, 2022.

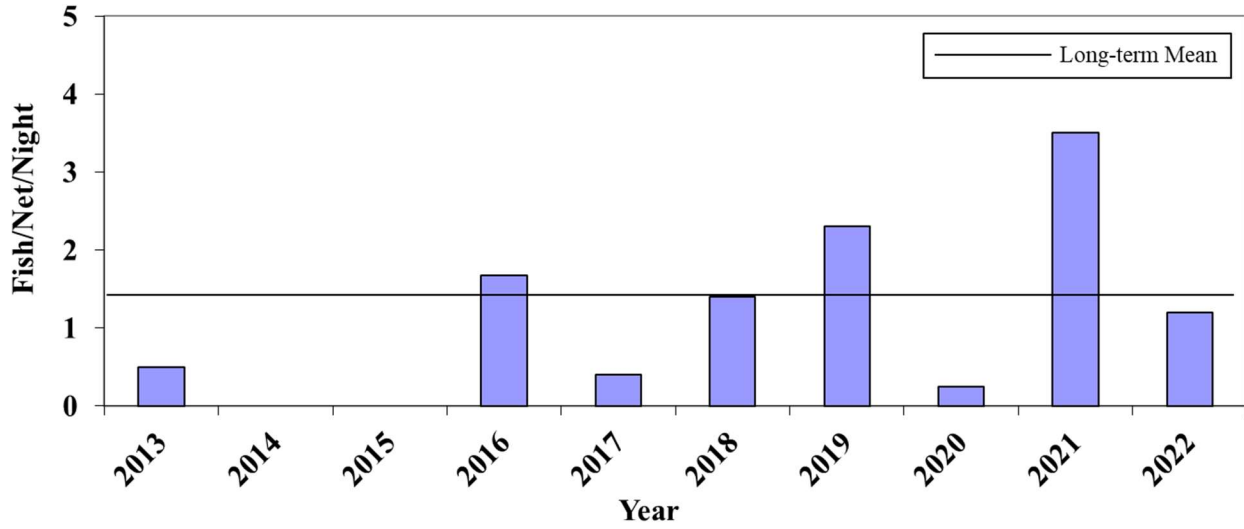


Figure 7. Wiper catch rate during trend net surveys at Otter Creek Reservoir, 2013-2022.

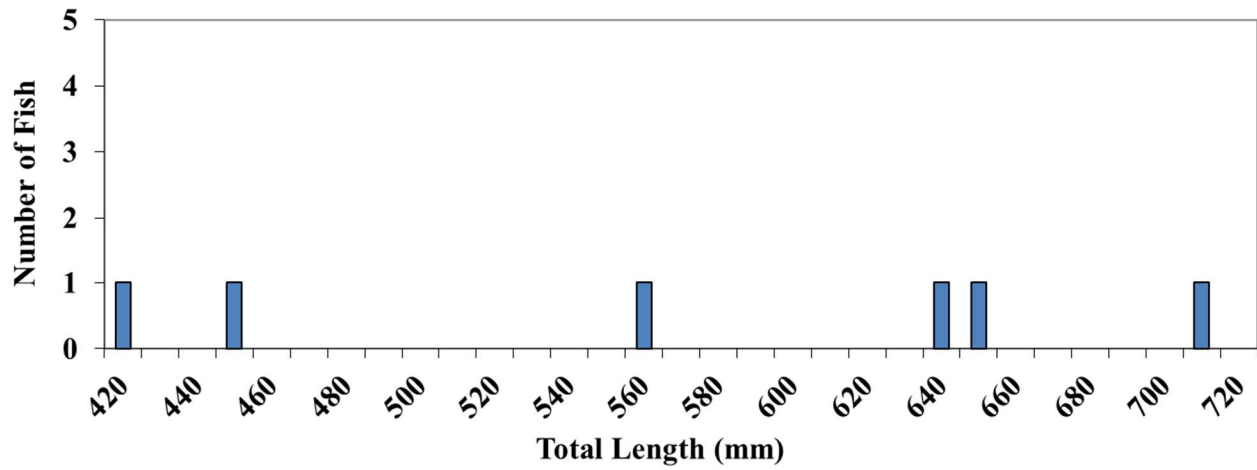


Figure 8. Length distribution of wipers collected at Otter Creek Reservoir on April 7, 2022.



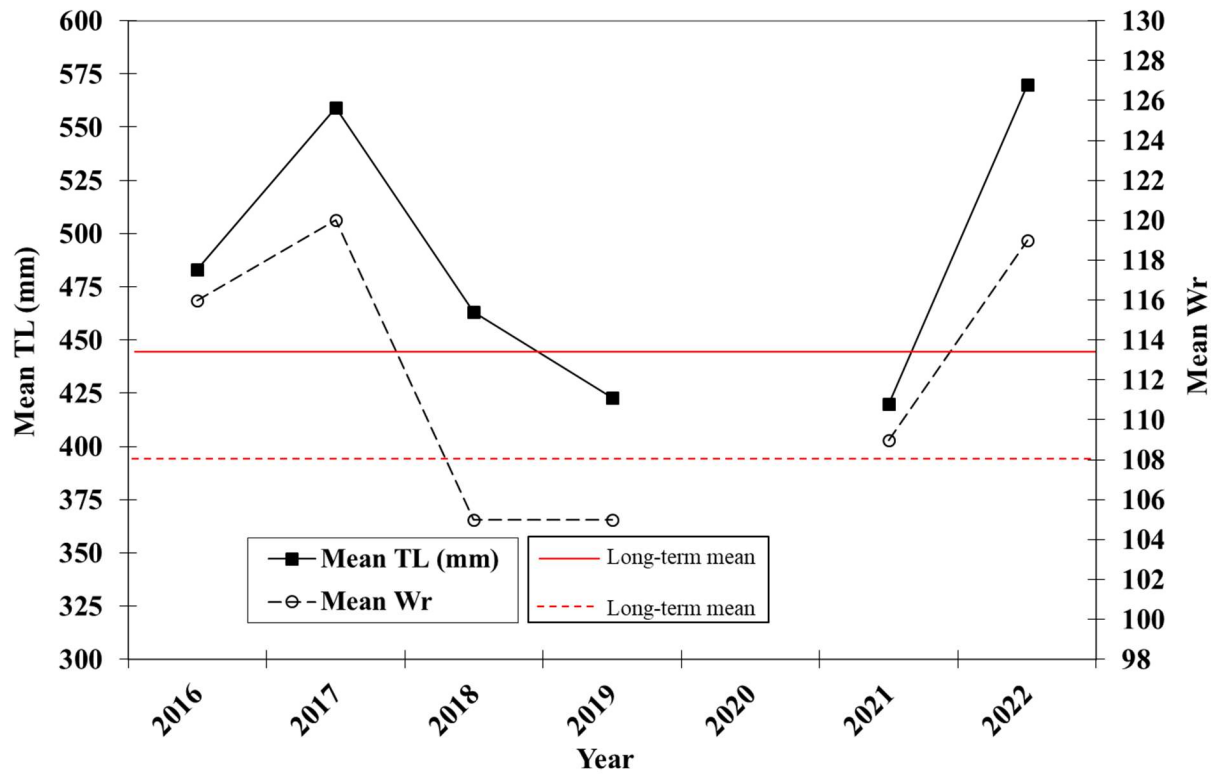


Figure 9. Mean total length (mm) and relative weight ( $W_r$ ) of wipers collected during trend nets surveys at Otter Creek Reservoir, 2016-2022.



Figure 10. 15.7-lb wiper caught and released at Otter Creek Reservoir on April 7, 2022.

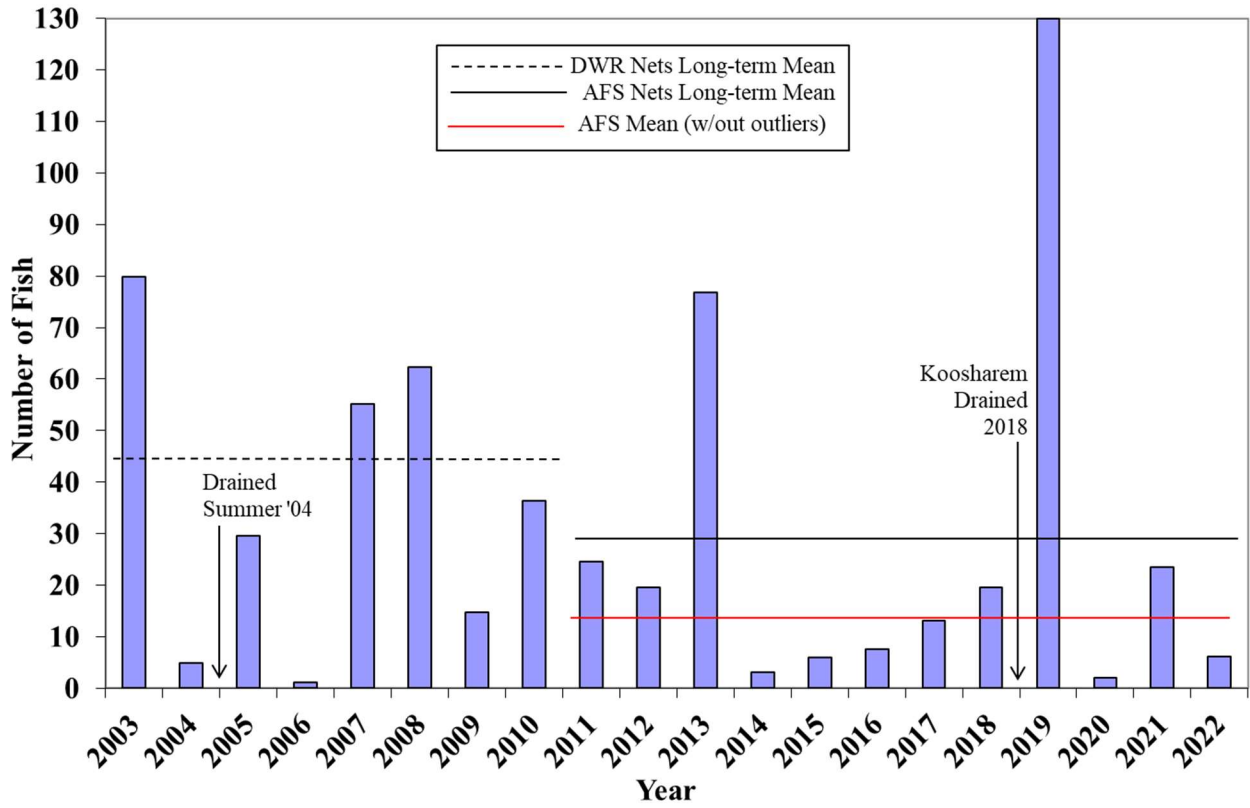


Figure 11. Utah chub catch rate during trend net surveys at Otter Creek Reservoir, 2003-2022.

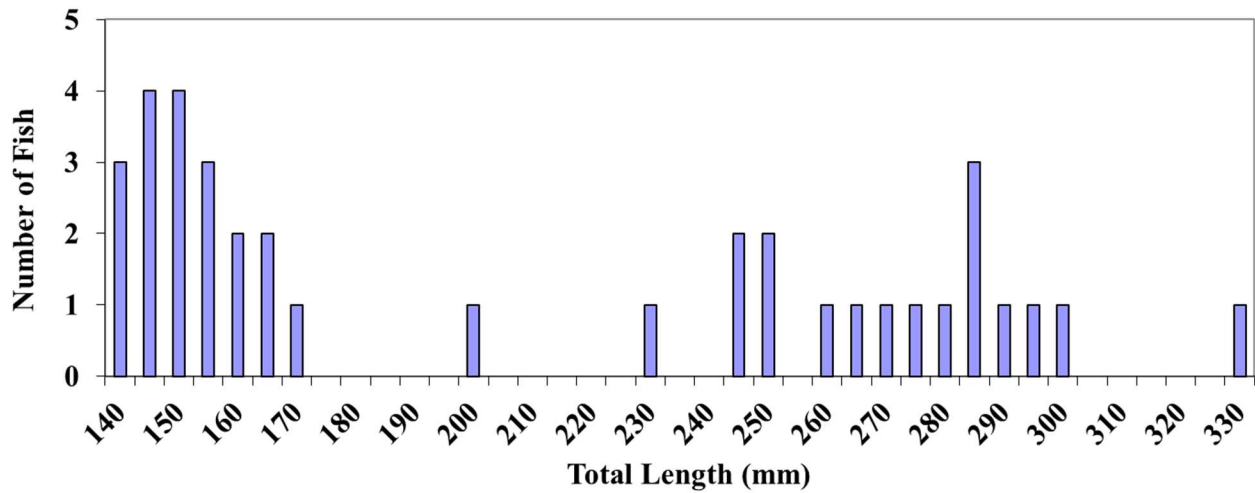


Figure 12. Length distribution of Utah chubs collected at Otter Creek Reservoir on April 7, 2022.

Table 1. Record of trout stocking in Otter Creek Reservoir for the five years prior to the 2022 trend net survey. Bold text identifies the regularly scheduled annual quota.

Year	Rainbow Trout			Cutthroat Trout		Brown Trout		Total Excess			
	Number	Size (in)	Timing	Number	Size (in)	Number	Size (in)	Rainbow	Cutthroat	Brown	Tiger
2017	891	15-21	Spring								
	<b>59,709</b>	7.5	Summer			133	15.3				
	<b>9,100</b>	9.6	Summer	<b>25,090</b>	7.6	<b>5,288</b>	3.3	891	---	5,668	---
	<b>30,659</b>	6.1	Fall			5,535	4.6				
	<b>19,795</b>	7.4	Fall								
<b>21,221</b>	10.0	Fall									
2018	8,157	10.8	Spring			<b>4,998</b>	3.8				
	<b>24,878</b>	6.6	Spring			28,200	2.1				
	137,779	3-4	Summer	---	---	13,778	4.3	196,623	---	46,678	---
	50,667	7.0	Fall			5,000	6.0				
	<b>198,275</b>	6.8	Fall								
2019	15,035	9.0	Spring	31,021 <sup>a</sup>	2.8	<b>20,808</b>	3.1	15,035	31,021	---	23,040
	<b>19,415</b>	7.2	Spring								
	<b>204,417</b>	7.4	Fall								
2020	<b>23,167</b>	8.2	Spring	---	---	<b>20,368</b>	3.3	20,000	---	---	---
	<b>240,861</b>	7.3	Fall								
2021	<b>192,077<sup>b</sup></b>	7.4	Fall	---	---	<b>20,325</b>	3.2	---	---	---	---
2022	23,000	7.0	Spring	---	---	20,000	3.0	---	---	---	---
Quota	220,000	7.0	Fall	---	---	20,000	3.0	---	---	---	---

<sup>a</sup> – Excess Bear Lake cutthroat trout.

<sup>b</sup> – Extreme drought conditions in 2021 prompted cancellation of the spring RBT quota and reduction of the fall quota.



Table 2. Record of wiper stocking in Otter Creek Reservoir.

<b>Year</b>	<b>Number Stocked</b>	<b>Size (in)</b>	<b>Fish/acre</b>
2011	150,000	0.4	60
2012	50,000	0.4	22
	4,998	1.9	
2013	2,000	4.6	0.8
2014	44,843	1.3	18
2015	29,835	2.0	12
2016	23,469	1.5	9
2017	26,999	2.1	11
2018	6,970	1.5	2.8
	21,549	1.1-2.2	
2019	22,906	3.8	18
	4,548	7.7	
2020	4,548	7.7	1.8
2021	25,245	3.7	10
<i>2022</i>	<i>20,000</i>	<i>2.0</i>	<i>8.0</i>
<i>Quota</i>			

Table 3. Summary of the results from the 2022 trend net survey at Otter Creek Reservoir.

<b>Water:</b>	Otter Creek Reservoir						<b>Catalog #:</b>	VI 403								
<b>Date Set:</b>	4/6/2022	<b>Time:</b>	14:00			<b>Weather:</b>										
<b>Date Pulled:</b>	4/7/2022	<b>Time:</b>	10:00			<b>Water Temp:</b>	48 F									
<b># Nets: *</b>	AFS - 4 Floaters, 2 Divers						<b>Collectors:</b>	M. Hadley, M. Roundy, T. Whitesell, R. Larsen, B. Griffin, Snow College								
	DWR - 1 Diver															
<b>Summary for Trout</b>																
Species	N	Total Weight (kg)	fish per net/night	Total Length (mm)			Weight (g)			Condition (Ktl)			% total catch	% total biomass	% total trout	% trout biomass
				Mean	SE	Range	Mean	SE	Range	Mean	SE	Range				
Rainbow Trout	189	84.19	37.80	319	5.72	223-575	456	27.0	112-2059	1.17	0.01	0.89-1.51	83.63	72.24	100.00	100.00
RBT 2021	141	34.07	28.20	272	1.43	223-310	242	4.72	112-403	1.18	0.01	0.89-1.51	62.39	29.24	74.60	40.47
RBT 2020 & prev	48	50.12	9.60	446	4.51	405-575	1030	36.2	704-2059	1.15	0.01	0.94-1.47	21.24	43.00	25.40	59.53
<b>Summary for Warmwater Sportfish</b>																
Species	N	Total Weight (kg)	fish per net/night	Total Length (mm)			Weight (g)			Relative wt. (Wr)			% total catch	% total biomass		
				Mean	SE	Range	Mean	SE	Range	Mean	SE	Range				
Wiper	6	21.61	1.20	570	47.0	420-710	3602	863	1591-7120	119	8.36	94-147	2.65	18.54		
<b>Summary for Non-Sport Fish</b>																
Species	N	Total Weight (kg)	fish per net/night	% total catch	% total biomass	TL (mm)										
						Range										
Utah Chub	31	10.75	6.20	13.72	9.22	140-330										
<b>Comment:</b>	* - Only 5 nets used for catch estimates: WMLD fouled by algae. SWF pulled in by angler believing it was a "poacher's net".															

Table 4. Trend net survey results at Otter Creek Reservoir, 1974-2010.

Date	Nets Set		Total Trout	Trout per net-night	Rainbow trout stocked 2 yrs. or more			Rainbow trout stocked previous year			Growth (mm/day)	Wiper per Net-Night	Wiper all ages			Total Nongame per net-night	Comments
	Flo	Div			Mean TL (mm)	Mean W (g)	Ktl	Mean TL (mm)	Mean W (g)	Ktl			Mean TL (mm)	Mean W (g)	Wr		
8-May-74	0	1	124	124											0	TREATED 1971	
1-May-75	1	1	107	54											4.5		
21-Apr-76	1	1	35	18											6.5		
29-Apr-77	1	1	25	13											24	TREATED 1977	
10-Apr-79	1	2	80	27											0		
6-May-80	2	1	69	23											0		
24-Apr-81	2	1	46	15											1.33		
22-Apr-82	2	1	23	8											5		
12-May-83	6	1	175	25											65		
5-Apr-84	6	0	312	52	392	722	1.20	303	351						47		
10-Apr-85	6	0	299	50	424	966	1.26	245	183	1.20	0.48				93		
10-Apr-86	6	0	370	62	496	1300	1.06	322	463	1.30	0.69				115		
23-Apr-87	5	0	395	79	448	1010	1.13	302	348	1.22	0.77				244		
21-Apr-88	3	0	303	101	448	993	1.10	284	275	1.20	0.60				70		
19-Apr-89	4	0	57	14	471	1148	1.08	257	213	1.22	0.47				188	TREATED 1989	
12-Apr-90	4	0	32	8				272	221	1.07	0.61				0		
15-Apr-91	3	0	116	39	409	878	1.22	244	163	1.10	0.35				1.33		
16-Apr-92	4	0	50	13	423	880	1.15	260	221	1.25	0.60				0.5		
15-Apr-93	6	0	336	56	397	802	1.26	275	250	1.18					12		
18-Apr-94	6	0	211	35	468	1343	1.30	298	359	1.30	0.65				65		
3-Apr-95	5	0	319	64	410	725	1.04	241	140	0.98	0.34				195		
26-Mar-96	6	0	321	54	390	654	1.09	272	241	1.18	0.56				6.7		
3-Mar-97	6	0	345	58	347	380	0.89	207	86	0.95	0.23				31	Earlier netting	
26-Mar-98	4	0	51	13	406	766	1.13	271	184	0.90	0.52				45	4 nets instead of 6	
23-Mar-00	4	0	35	9				259	188	1.02	0.43				0	TREATED 1999	
27-Mar-01	6	0	280	47	408	848	1.24	252	202	1.24	0.46				6		
2-Apr-02	6	0	388	65	417	890	1.21	275	239	1.13	0.57				40		
8-Apr-03	6	0	312	52	388	652	1.12	248	175	1.12	0.34				80		
6-Apr-04	6	0	290	48	416	816	1.12	264	215	1.15	0.43				4.8	Drained Fall 04	
6-Apr-05	6	0	143	24				226	121	1.03	0.30				30		
13-Apr-06	6	0	180	30	390	775	1.26	294	337	1.30					1.2		
4-Apr-07	5	1	338	56	415	832	1.19	252	200	1.21	0.50				55		
11-Apr-08	5	1	374	62	386	609	1.08	254	190	1.13	0.47				62		
8-Apr-09	4	2	213	36	416	855	1.18	312	346	1.13	0.73				15		
7-Apr-10	4	2	272	45	449	977	1.07	264	204	1.07	0.47				36		

Table 4 (contd.). Trend net survey results at Otter Creek Reservoir, 2011-2022.

Date	Nets Set		Total Trout	Trout per net-night	Rainbow trout stocked 2 yrs. or more			Rainbow trout stocked previous year				Wiper per Net-Night	Wiper all ages			Total Nongame per net-night	Comments
	Flo	Div			Mean TL (mm)	Mean W (g)	Mean Ktl	Mean TL (mm)	Mean W (g)	Mean Ktl	Growth (mm/day)		Mean TL (mm)	Mean W (g)	Mean Wr		
5-Apr-11	4	2	161	27	423	935	1.22	276	286	1.28	0.55					25	start AFS nets
10-Apr-12	3	3	95	16	426	925	1.19	277	269	1.24	0.51					20	
11-Apr-13	4	2	200	33	416	823	1.13	321	391	1.17	0.62	0.50	190	91	73	77	
8-Apr-14	4	2	95	16	452	1077	1.15	294	325	1.23	0.48					3	
31-Mar-15	2	2	79	20	450	1131	1.21	316	371	1.16	0.61					6	
5-Apr-16	4	2	110	18	448	1058	1.17	292	308	1.20	0.53	1.67	483	1954	116	8	
5-Apr-17	4	2	93	19	463	1158	1.16	262	210	1.12	0.39	0.40	559	3208	120	13	
27-Mar-18	3	2	74	15	391	740	1.18	263	221	1.20	0.59	1.40	463	1573	105	20	
2-Apr-19	4	3	110	16	432	888	1.07					2.30	423	1376	105	130	Koosharem drained 2018
8-Apr-20	2	2	92	23	445	1005	1.13	263	191	1.01	0.48	0.25				2	
6-Apr-21	2	2	199	50	445	992	1.09	275	247	1.17	0.36	3.50	420	1536	109	24	
7-Apr-22	3	2	189	38	446	1030	1.15	272	242	1.18	0.55	1.20	570	3602	119	6	
Long-term mean				38	407	800	1.12	274	255	1.15	0.47	1.40	445	1752	108	40	
AFS nets (since 2011)				24									AFS nets (since 2011)			28	
DWR nets (pre-2011)				42									DWR nets (pre-2011)			44	
												AFS nets (since 2011) w/out 2013, 2019			13		