

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-53
2017

SPOONER LAKE
WESTERN REGION



**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT**

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**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT**

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Spooner Lake*
Period Covered: *January 1, 2017 through December 31, 2017*

SUMMARY

There were 65 angler questionnaires completed for the drop-box survey in 2017. Anglers fished for 158.3 hrs and caught 146 fish consisting of 95 rainbow trout, 27 tui chub, 7 brown trout, 6 brook trout, and 11 tiger trout. Catch rates combining all fish averaged 2.5 fish per angler and 0.9 fish per hour. The Angler Information Center and drop-box were updated and restocked throughout the year.

The 2016 Spooner Lake, Mail-In Angler Questionnaire Survey estimated use at 429 anglers and 785 angler-days. Total catch was 3,715 fish and the success rate was 4.7 fish per angler day, both of which were higher than 2015 estimates, but lower than the 34-year average.

Spooner Lake was stocked on five occasions, receiving 5,884 catchable trout consisting of 3,965 rainbow trout, 1,501 cuttbow trout, and 418 tiger trout.

BACKGROUND

Spooner Lake is a shallow reservoir at an elevation of 6,980 feet that lies on the east side of the Tahoe Basin within the Lake Tahoe State Park. The reservoir covers approximately 100 surface acres and has a maximum depth of 22 ft. Maximum reservoir capacity is never realized in order to preserve Native American artifacts, which become submerged when the reservoir reaches capacity. The original dam was built in 1927 in Spooner Meadow as a means for storing irrigation water. The reservoir is fed by a number of springs and seeps as well as snowmelt runoff from the surrounding hills. The outflow of the lake drains into North Canyon Creek, which then discharges directly into Lake Tahoe. Because of extensive leakage, a new dam was constructed in 1982.

Lahontan tui chub was presumably the only fish historically occurring in Spooner Lake. Aside from Lahontan tui chub, the fishery is currently comprised of hatchery maintained populations of, rainbow, bowcutt, brown, and tiger trout and a self-sustaining population of brook trout.

From 1982 to 2005, Spooner Lake was managed as a catch-and-release fishery with strict regulations (zero-harvest, single lure or fly with barbless hook) to manage for a trophy trout fishery. However, due to the reservoir's characteristics, there was potential for extensive winterkills of trout and coupled with an expanding tui chub population, a trophy trout fishery was never realized. In 2006, regulation changes were implemented to allow for management under the Coldwater, General Fishery

Management Concept, which established objectives for angler success rates of 0.30 to 1.25 fish per hour and 2.0 to 3.5 fish per angler-day.

Snow pack from the winter of 2016/2017 was the largest in recorded history and left many of the western reservoirs and lakes at max capacity. While this was extremely beneficial, there were reported fish die-offs in some of the reservoirs due to the amount of ice that formed during winter. Spooner Lake suffered a limited die-off of trout in certain areas of the lake that was attributed to the longer than average ice-over period accompanied by a heavy accumulation of snow covering the reservoir.

OBJECTIVES

- Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop-box surveys, and mail-in angler questionnaire data.
- Maintain the angler information center and angler drop-box when on site.

PROCEDURES

Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop-box surveys and mail-in angler questionnaire data. Spooner Lake has one volunteer, angler drop-box located near the dam. Completed surveys were collected periodically and summarized at the end of the year.

Angler use and success at Spooner Lake was assessed through the Department's Mail-In Angler Questionnaire Survey. Angler questionnaire data was derived from a survey mailed to 30,000 fishing license purchasers from the previous year (2016).

In order to investigate reports of a winterkill in Spooner Lake, a gillnet survey was carried out in early summer. Fish captured were identified, measured to fork length, weighed, and released back into the lake.

Maintain the angler information center and angler drop-box when on site. When on site, the drop-box was restocked with survey forms. The display on the angler information center was updated in early spring and repairs were made to the kiosk to improve its appearance.

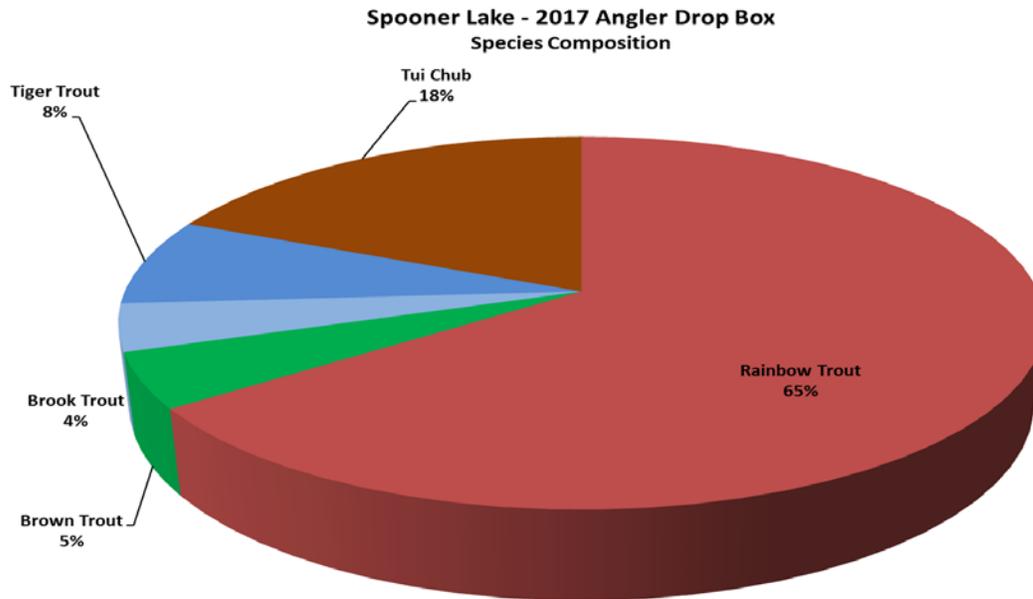
FINDINGS

Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop-box surveys and mail-in angler questionnaire data. No angler contacts were made at Spooner Lake in 2017.

In 2017, 65 drop-box angler surveys were completed. Anglers fished for 158.3 hrs and caught 146 fish consisting of 95 rainbow trout, 27 tui chub, 7 brown trout, 6

brook trout, and 11 tiger trout. Catch rates for all fish averaged 2.5 fish per angler and 0.9 fish per hour. Anglers harvested seven percent of the fish caught and all but one (a tiger trout) was a rainbow trout. The species composition of all fish caught was 65 percent rainbow trout, 18 percent tui chub, 5 percent brown trout, 4 percent brook trout, and 8 percent tiger trout (Figure 1).

Figure 1.



Of the anglers that fished in 2017, 71.2% reported using lures, while 18.6% fly fished and a limited number (10.2%) reported using bait. Angler satisfaction in 2017 was rated on a scale of -2 to +2 with -2 being unsatisfied and +2 representing satisfaction. Average ratings for surveys received from May through October were 0.31 for fishing experience, -0.28 for size of fish, and -0.27 for number of fish. All ratings were lower than the 5-year averages of 0.9, 0.32, and 0.61, respectively. Data showed that 77% of the anglers fished from shore while the remaining 23% fish from a boat or float tube. Later than normal ice-off at Spooner Lake in 2017 showed a negative impact to overall fishing success as anglers were not able to access the water as early as in a normal year. Colder water temperatures may also have played a role and the most productive angling month occurred in October.

The Mail-In Angler Questionnaire Survey estimated use from 429 anglers at 785 angler days in 2016. The total catch was 3,715 fish and anglers showed a success rate of 4.7 fish per angler-day, both of which were higher than estimates in 2015, but lower than the 34-year average for Spooner Lake.

Stocking Program

Spooner Lake was stocked on five occasions, receiving 5,884 catchable trout consisting of 3,965 rainbow trout, 1,501 cuttbow trout, and 418 tiger trout (Table 1). These stocking rates fell within the range of fish stocked annually since 2009 (Table 2).

Table 1. Spooner Lake Stocking Summary, 2017.

Date	Species	Number	Size (in.)	Strain
6/22/2017	Rainbow	2,238	8.8	Erwin/Arlee
5/26/2017	Rainbow	652	9.5	McConaughy
6/22/2017	Rainbow	1,075	8.3	Tahoe
Rainbow Total		3,965		
9/25/2017	Cuttbow	1,501	9.2	Cuttbow
Cuttbow Total		1,501		
5/26/2017	Tiger	418	11.4	Tiger
Tiger Total		418		
Total (All Fish)		5,884		

Table 2. Spooner Lake Stocking History, 2009 – 2016.

Year	Species	Number	Size Range (in.)
2009	Rainbow	999	10.1
	Tiger	527	7.1
2009 Total		1,526	
2010	Rainbow	999	10.2
	Tiger	1,522	11.4
2010 Total		2,521	
2011	N/A	0	N/A
2011 Total		0	
2012	Rainbow	1,097	10.2 – 10.3
	Tiger	1,050	11.3
2012 Total		2,147	
2013	Rainbow	9,815	10.2
	Tiger	8,038	10.1
	Bowcutt	2,000	7.1
2013 Total		19,853	
2014	Rainbow	9,274	9.7 - 9.8
	Tiger	1,074	10.3
2014 Total		10,348	
2015	Rainbow	5,144	7.8 - 8.5
	Tiger	1,001	9.3
	Cuttbow	2,018	9.5
2015 Total		8,163	
2016	Rainbow	5,546	8.1 - 9.6
	Tiger	1,004	10
	Cuttbow	2,019	9.2
2016 Total		8,569	
Total		53,127	

After reports of a winterkill, a gill net survey was conducted the night of May 25 in order to gather data on surviving fish in Spooner Lake. Two nets soaked for approximately 18 hours each. A total of 63 fish were captured and consisted of 1 rainbow trout, 1 cuttbow/bowcutt trout, and 61 tui chub for a total catch rate of 1.76 fish per net-hr.

The only rainbow trout captured was a 300 mm FL, weighed 290 grams, and had a fair to poor body condition (K-factor of 1.07). The bowcutt trout captured was 263 mm FL, had a weight of 190 grams, and had a condition factor of 1.04. While only two gamefish were captured during the survey, it was a positive indicator that the winterkill event did not affect the entire trout fishery. The average fork length of the captured tui chub was 136 mm.

Maintain the angler information center and angler drop-box when on site.

When on site, both the angler drop-box and angler information center were checked. The drop-box was restocked with survey forms while information at the angler information center was updated with current year information in May.

MANAGEMENT REVIEW

Angler success rates documented from both the angler drop-box survey and Mail-in Angler Questionnaire Survey met or exceeded the guidelines prescribed in the Coldwater, General Fishery Management Concept. The Spooner Lake fishery is generally popular with anglers for producing elevated catch rates and an opportunity to fish in a picturesque setting. The size of trout is generally small due to very limited carryover from one year to the next, however, certain species appear to grow and survive better than others. Fishing opportunities remain good in the early spring and late fall when water temperatures are cooler and aquatic vegetation is less abundant. Continued stocking of both tiger and cuttbow trout is recommended as they both have shown respectable growth rates in the lake. The piscivorous nature of tiger trout also functions to control the large tui chub population in the lake.

The spring gill net survey documented a large amount of tui chub in the lake, that is, 97 percent of the total catch. It appears to be the majority of biomass in the lake. Anglers are encouraged to remove any tui chub they catch, which are not part of their gamefish limit. Biological controls such as tiger trout may only have a limited impact on their population. Gill net surveys will occur again in the fall of 2018 to help further understand the interactions and dynamics between gamefish and nongame fish in Spooner Lake.

RECOMMENDATIONS

- Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, return of angler drop-box surveys and mail-in, angler questionnaire data.

- Maintain the angler information center and angler drop-box when on site.
- Conduct a gill net survey for two net-nights in the fall.

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