NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT

FEDERAL AID JOB PROGRESS REPORTS

F-20-53
2017

CATNIP RESERVOIR
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: *Catnip Reservoir*
Period Covered: *January 1, 2017 through December 31, 2017*

SUMMARY

Catnip Reservoir provided angling opportunity during the open fishing season from June 10 to November 15, 2017. The voluntary Angler Drop-Box Survey documented that 10 anglers caught 13 Lahontan cutthroat trout. The Mail-in Angler Questionnaire Survey information for 2016 was received and estimated 50 anglers fished for 123 days and caught 865 fish for a success rate of 7.02 fish per day. Catnip Reservoir was completely full in the spring of 2017 and the water level dropped slightly throughout the summer and fall.

BACKGROUND

Catnip Reservoir is located in northern Washoe County on the Sheldon National Wildlife Refuge, approximately 46 miles west of Denio Junction. It is situated at an elevation of 5,791 feet and the surrounding land is characterized by sagebrush-steppe interspersed with rim rock and mountain mahogany. The reservoir covers 22 surface acres and originally stored 220 acre-feet of water. The capacity of Catnip Reservoir has declined over time due to sediment input from Catnip Creek. Catnip Reservoir was constructed in 1910 primarily to store irrigation water for the IXL Ranch.

Lahontan cutthroat trout (LCT, Independence Lake strain) from Heenan Lake, CA was initially stocked in Catnip Reservoir in 1947. Initially, the fishery was utilized as a broodstock and, for a while, the spawning operation was productive. The first egg take took place in 1959 and continued annually until 2002. Pyramid Lake strain, Walker Lake strain, and Independence Lake strain cutthroat trout were emphasized in the later years of operation.

Over the years, there has been a diminished need for cutthroat trout, so the broodstock was used to produce hybrid trout. Cutthroat trout from Catnip Reservoir were crossed with rainbow trout from Big Springs Reservoir to produce cuttbow trout. Eggs taken were transferred to a state hatchery where they were reared to a catchable-size and stocked in recreational fisheries around northern Nevada. Since 2001, springs feeding Big Springs Reservoir began flowing intermittently and now the reservoir rarely holds enough water for fish. Spawning operations have not occurred since 2002.

A number of LCT strains (including Walker, Pyramid, Independence, and Marlette) have been stocked in Catnip Reservoir due to changing egg sources and stocking programs. There has been no discern for genetic continuity during artificial spawning operations and subsequent stocking, therefore, it is likely a mixed strain of

LCT exists since spawning occurs naturally in Catnip Creek. In 2009, 3,040 Pilot Peak strain LCT (cultured by FWS) were stocked in Catnip Reservoir for sport fisheries management and recovery purposes. The amount of wild trout production from Catnip Creek is unknown.

OBJECTIVES

- Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data.
- Maintain the angler information center and angler drop-box.
- Coordinate fisheries management activities with the USFWS Sheldon NWR during the annual coordination meeting.
- Monitor the population and body condition (relative weight) of LCT by conducting 4 net-nights of gill netting.

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. Angler use, success, and harvest were assessed using volunteer angler drop-boxes, on-site angler contacts, and mail-in angler questionnaire data. A drop-box located near the Angler Information Center collected basic creel information and assessed angler satisfaction. Angler questionnaire data was derived from a 2016 survey mailed to 30,000 anglers purchasing a Nevada fishing license.

Maintain the angler information center and angler drop-box when on site. During each visit, the angler drop-box was assessed for maintenance needs. The Angler Information Center (AIC) was updated in May with current data about fishing at the lake.

Coordinate fisheries management activities with U.S. Fish and Wildlife Service. A meeting was attended in February with USFWS staff to coordinate fisheries management activities for Catnip Reservoir and Catnip Creek.

Monitor the population and body condition (relative weight) of LCT by conducting 4 net-nights of gill netting. Population assessment helps examine if fisheries are attaining management objectives and fish body condition is used to examine individual and the conditions of cohorts. Population monitoring was attempted in November, but no sampling occurred due to poor weather conditions and ice cover on the reservoir.

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. Catnip Reservoir was stocked with 2,001 Pyramid Lake strain LCT on April 5, 2017. The water temperature was 49°F and the reservoir was at 100% capacity. Road access for stocking was good. A five-year stocking history is provided in Table 1.

Table 1. Catnip Reservoir Five-Year Stocking History - 2012-2016.

Year	Species	Strain	Number Stocked	Pounds Stocked	Average Size (inches)	Annual Total Stocked	
						Number	Pounds
2013	LCT	Marlette	3,263	450	7.0	3,263	450
2014*	-----	-----	------	------	------	-----	-----
2015	LCT	Pyramid	2,509	325	7.4	2,509	325
2016	LCT	Pyramid	1,493	295	7.9	1,493	295
2017	LCT	Pyramid	2,001	192	6.2	2,001	192

*-----No fish were stocked

Opportunistic angler surveys were conducted during each site visit to Catnip Reservoir. Only two anglers were contacted in 2017 at this remote fishery and information is summarized in Table 2. The angler drop-box survey documented 10 anglers that caught 13 LCT, which was significantly lower than in 2016 when 14 anglers caught 190 LCT. Table 3 summarizes monthly angler catch and Figure 1 portrays LCT length frequency. The survey asked participants to rate their fishing day on a scale of -2.0 (highly dissatisfied) to +2.0 (highly satisfied). Scores averaged +0.36 for "overall experience," -0.04 for "size of trout," and -0.75 for "number of trout caught." Anglers were more satisfied in 2016 showing scores that averaged +1.62 for "overall experience," +1.85 for "size of trout," and +1.23 for "number of trout caught."

Table 2. Catnip Reservoir Opportunistic Angler Creel Surveys.

Month	Survey Days	Anglers	Angler Hours	LCT	LCT/Angler	LCT/Hour
June	1	1	4	4	4	1
July	1	0				
September	1	1	12	2	2	0.17
November	1	0				
Summary	4	2	16	6	3	0.59

The mail in, angler questionnaire for 2016 estimated 50 anglers fished for 123 days and caught 865 fish for a success rate of 7.02 fish per day. Angler success was just below the 5-year average. Table 3 and Figures 2 and 3 summarize the angler questionnaire data from 2012 - 2016.

Table 3. Catnip Reservoir Monthly Angler Use and Success Data: Drop-Box Data.

Month	# of Anglers	# of Angler Hours	Angler Satisfaction			LCT Caught	LCT Harvested	LCT/ Angler	LCT/ Hour
			Angling Experience	Size	No.				
June	7	29.5	-0.57	-0.14	-1.00	6	0	0.86	0.20
July	1	2	-1.00	-2.00	-2.00	0	0	0	0
September	1	12	1	0	-2	2	0	2	0.17
October	1	10	2	2	2	5	0	5	0.50
Summary	10	53.5	0.36	-0.04	-0.75	13	0	1.57	0.17

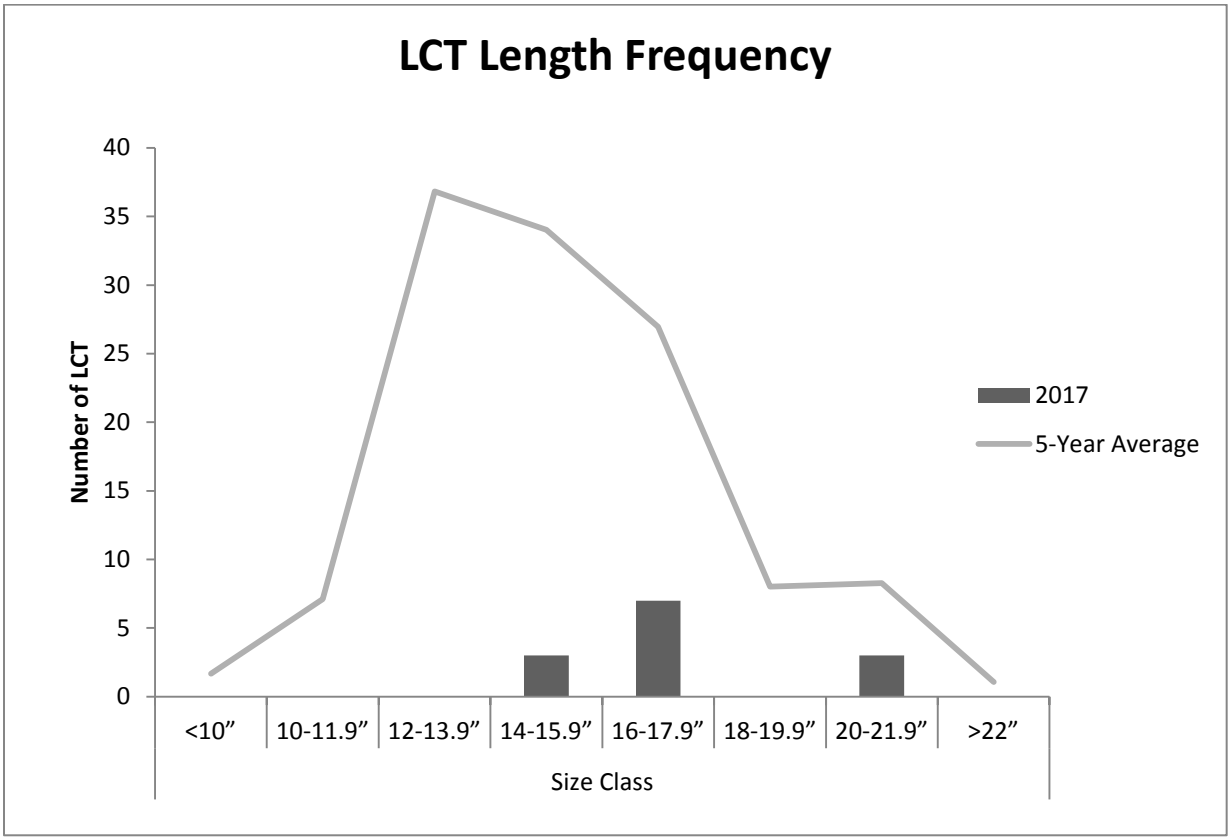

Figure 1. Catnip Reservoir LCT Length Frequency: Drop-Box Data 2017.

Table 3. Catnip Reservoir Five-Year Mail-in Angler Questionnaire Data 2012–2016.

Year	Anglers	Days	LCT Caught	LCT/Day	LCT/Angler	Days/Angler
2012	49	100	668	6.68	13.63	2.17
2013	45	150	874	5.83	19.3	3.01
2014	11	28	368	13.3	32.06	1.93
2015	161	538	2,777	5.16	17.22	1.9
2016	50	123	865	7.02	17.14	2.3
5 Year Average	63.2	187.8	1,110	7.60	19.87	2.26

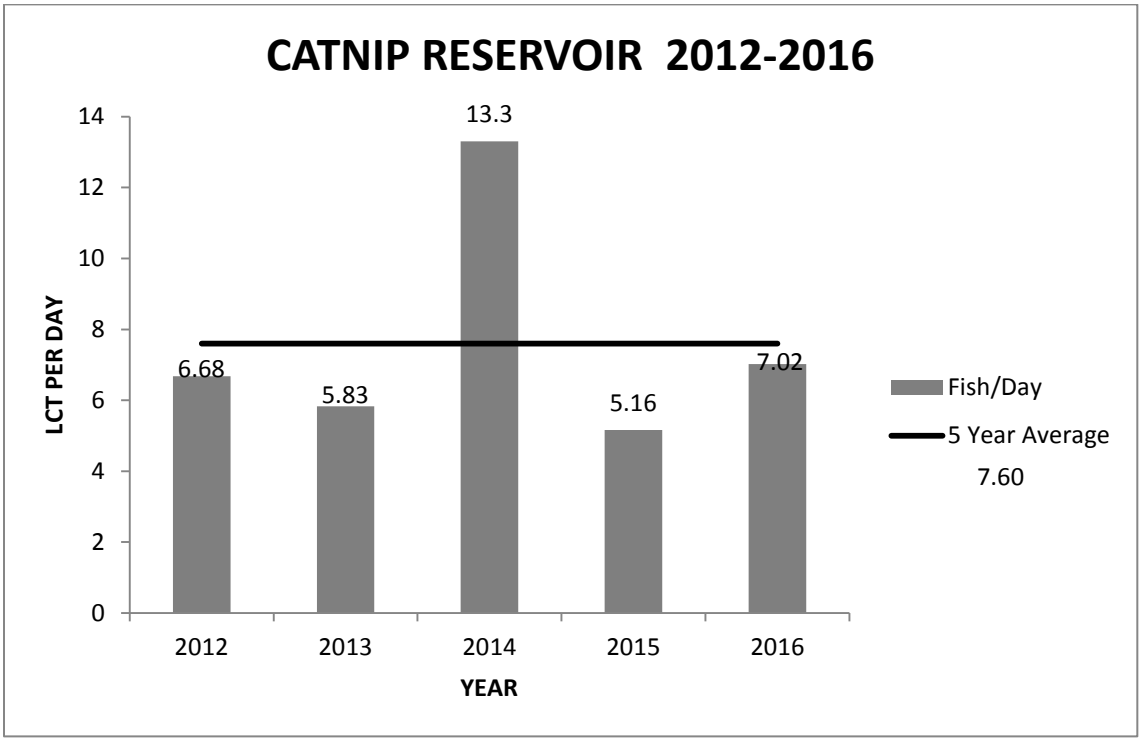

Figure 2. The 5-year average catch rate from the Mail-in Angler Questionnaire Survey.

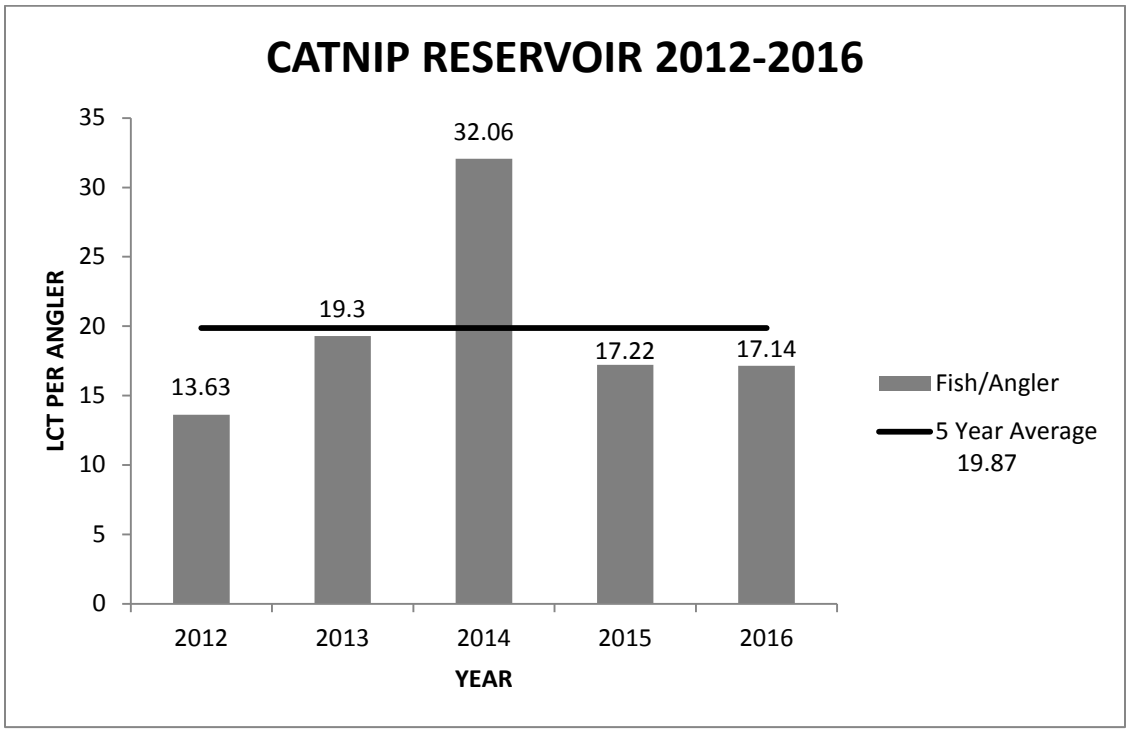

FIGURE 3. The 5-year average catch rate from the Mail-in Angler Questionnaire Survey.

During each site visit to Catnip Reservoir a general habitat assessment was conducted at the reservoir that includes water temperature, water level, water clarity, and road conditions. Table 4 summarizes the assessments that occurred in 2017.

Table 4. General Habitat Assessments at Catnip Reservoir - 2017

Date	Water Temperature (°F)	Water Level	Water Clarity	Road Conditions	Comments
4/5/2017	49	100 %	Clear	Good	
6/10/2017	54	100 %	Clear	Good	
7/17/2017	70	95 %	Cloudy/Green	Good	Algae Bloom Occurring
10/10/2017	63	90 %	Clear	Good	
11/8/2017	32	95 %	Clear	Good	

The water level remained good at Catnip Reservoir throughout the year with the lowest level occurring in October. Catnip Reservoir is not used for irrigation and the water level remains consistent throughout the year, even during drought years. A small blue-green algae bloom occurred in July, but no fish mortalities were observed or reported. The road conditions were good throughout the fishing season providing good angler access.

Coordinate fisheries management activities with the USFWS Sheldon NWR during the annual coordination meeting. A meeting was attended in February with USFWS to coordinate fisheries management activities for Catnip Reservoir and Catnip Creek. Special Use Permits were obtained to complete management activities.

Monitor the population and body condition (relative weight) of LCT by conducting 4 net-nights of gill netting. A trip to monitor the LCT population occurred on November 8, 2017, however, the reservoir was 90% covered with ice. No survey was completed.

MANAGEMENT REVIEW

The 2017 contact angler surveys and drop-box results clearly indicated the fishery did not meet the guidelines of a Quality Fishery Management Concept, which suggests, “Success rates should be between 0.30 and 1.25 fish per hour and 2.0 to 3.5 fish per angler day with the opportunity to catch fish larger than average size for the species.” Anglers reported catching 0.17 fish per hour and 1.57 fish per angler.

An explanation for the decrease in angler catch rates can partially be explained by LCT being unavailable to anglers since they probably migrated up Catnip Creek to spawn during spring of 2017. This was the first time in several years there was adequate flow in the stream. During 2014, 2015, and 2016 very little flow occurred in Catnip Creek, and most LCT in the reservoir did not attempt to migrate to spawn. During spring and early summer, LCT were visually observed in the creek and swimming in the pools above the reservoir. Flow in Catnip Creek dropped off sometime

in June of 2017. The USFWS refuge manager observed turkey vultures along Catnip Creek throughout the summer of 2017 suggesting fish had died. A site visit to Catnip Creek in September revealed several fish carcasses and skeletons along the steam bank. Several pools were seen to have larger dead LCT present. It is speculated that LCT migrated into Catnip Creek to spawn, and then became trapped in pools when the flow receded.

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.
- Coordinate fisheries management activities with the USFWS.
- Monitor the population and body condition (relative weight) of LCT by conducting 4 net-nights of gill netting.

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Date: December 26, 2017