

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-53
2017

ONION VALLEY RESERVOIR
WESTERN REGION



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

Table of Contents

<u>Contents</u>	<u>Page</u>
SUMMARY	1
BACKGROUND	1
OBJECTIVES	2
PROCEDURES	2
FINDINGS	2
GENERAL MANAGEMENT REVIEW	6
RECOMMENDATIONS	6

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

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Onion Valley Reservoir*
Period Covered: *January 1, 2017 through December 31, 2017*

SUMMARY

During the 2017 fishing season, Onion Valley Reservoir was stocked with 12,711 trout. The water level was at approximately 60 percent capacity at the start of the 2017 fishing season. Water was released for downstream irrigation, but unfortunately, the reservoir was drained in October due to issues with the outlet structure. The reservoir is open to fishing the second Saturday of June each year and closes November 15 of each year.

Based on the Mail-in, Angler Questionnaire Survey, an estimated 102 anglers fished Onion Valley Reservoir during the 2016-fishing season. In 2017, six anglers participated in the drop-box survey and three anglers were contacted during opportunistic angler surveys.

The spring of 2017 was characterized by an above average snowpack in the Pine Forest Range. Water releases from both Little Onion Reservoir and Onion Valley Reservoir occurred throughout the irrigation season.

BACKGROUND

Onion Valley Reservoir is located in the Pine Forest Range south of Denio, NV. The reservoir was formed along Alder Creek in 1955 and impounding 101 surface acres capable of storing 1,630 acre-feet and having a maximum depth of 42 feet.

The reservoir is a popular destination for anglers in Humboldt County and across northern Nevada. The dam and reservoir are owned and administered by the Bureau of Land Management. Onion Valley Reservoir serves as an irrigation and livestock watering impoundment for the Alder Creek Ranch, which owns the water rights. On average and at times during above average water years, irrigation demands have drawn the reservoir down substantially by the end of each season. On below average water years, the reservoir is usually drained completely to meet irrigation demands.

Currently, there is no minimum pool agreement to maintain water in the reservoir. Onion Valley Reservoir is currently managed as a put-and-take fishery due to the low water levels limiting the number of fish that carryover.

OBJECTIVES

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Conduct a general habitat assessment through visual observations of water quantity (lake level), water quality (clarity), and aquatic vegetation when on site.
- Coordinate with Alder Creek Ranch to use water irrigation from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir.
- In coordination with Trout Unlimited and other NGO's, explore alternative solutions for maintaining the Onion Valley Reservoir fishery while meeting agricultural irrigation needs with Alder Creek Ranch.

PROCEDURES

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Opportunistic angler contacts were made in 2017. The angler drop-box was maintained prior to the fishing season opening on June 10 and through November 15, 2017, the end of the fishing season. Participating anglers rated their satisfaction for angling experience, size of fish, and number of fish caught on a scale of -2 (worst) to +2 (best). The 2016 mail-in angler questionnaire data was summarized. A questionnaire was randomly mailed to 30,000 anglers buying a 2016 Nevada fishing license and was used to estimate angler use and success.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Onion Valley Reservoir was visited throughout the 2017 fishing season to monitor lake level, water clarity, and aquatic vegetation.

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir. Above average runoff from the 2016/2017 winter resulted in both reservoirs filling to approximately 60 percent of capacity. Reservoir releases started in April and continued through October 2017.

In coordination with Trout Unlimited and other NGO's, explore alternative solutions for maintaining the Onion Valley Reservoir fishery while meeting agricultural irrigation needs with Alder Creek Ranch. Ongoing meetings with NDWR, NDOW, BLM, TU and Alder Creek Ranch were held in 2017.

FINDINGS

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Onion Valley Reservoir was stocked with 8,009 rainbow trout, 4,201 cuttbow trout, and 501 tiger trout in 2017. The stocking history from 2013 through 2017 is summarized in Table 1.

Table 1. Onion Valley Reservoir Stocking Data, 2013-2017.

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2013	Rainbow	Mt. Shasta	5,434	1,900	9.6	5,434	1,900
2014	Rainbow	Triploid	1,030	325	9.2	1,030	325
2015	Rainbow	Triploid	1,019	350	9.5	1,019	350
2016	Rainbow	Triploid	1,584	550	9.5	3,603	1,100
	Rainbow	Tahoe	2,019	550	8.8		
2017	Cuttbow		4,201	1,000	8.4	12,711	3,635
	Rainbow	Erwin/Arlee	1,809	485	8.8		
	Rainbow	McConaughy	1,172	400	9.5		
	Rainbow	McConaughy	2,018	750	9.8		
	Rainbow	Tahoe	3,010	700	8.3		
	Tiger		501	300	11.4		

Mail-in, Angler Questionnaire Survey data was received for 2016. Angler success was 1.55 fish per day and 2.96 fish per angler, which was below the 5-year average of 5.52 fish per day and 9.57 fish per angler (Figures 1 and 2).

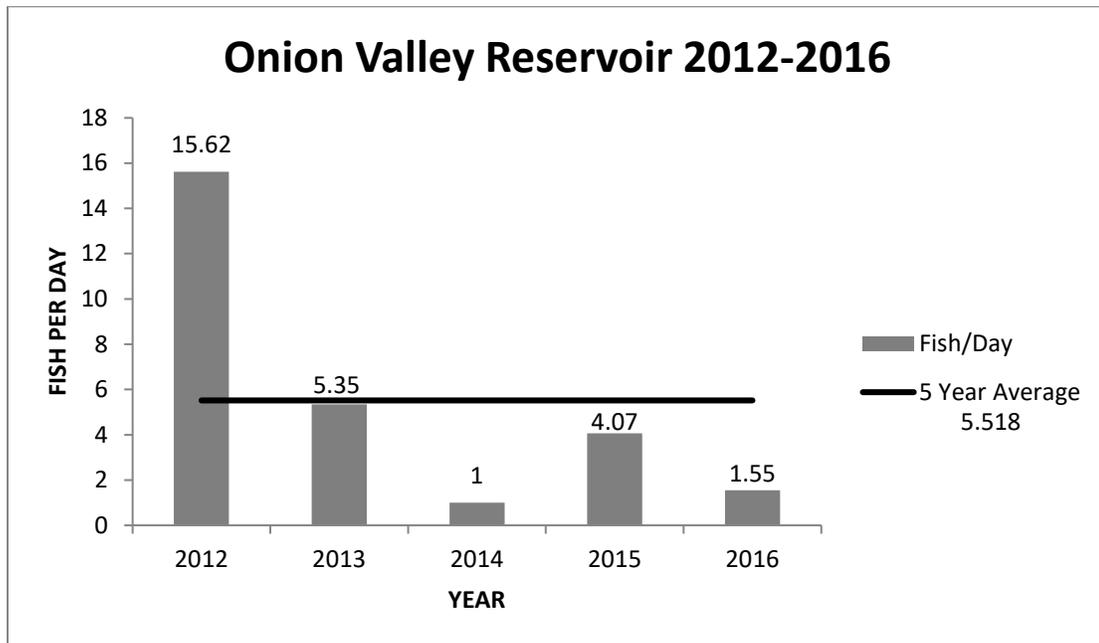


Figure 1. Onion Valley Reservoir Angler Questionnaire fish/day, 2012-2016.

Six anglers completed angler drop-box forms for the 2017-fishing season. Angler satisfaction ratings were all positive for angling experience (1.88), size of fish (1.13), and number of fish caught (1.63). Anglers reported catching 57 rainbow trout and 3 tiger trout and success was 1.61 fish per hour and 10.7 fish per angler. Angler drop-box data is summarized in Tables 2 and 3.

Opportunistic angler surveys were conducted during each site visit to Onion Valley Reservoir. Only three anglers were contacted in 2017. Opportunistic angler surveys are summarized in table 4.

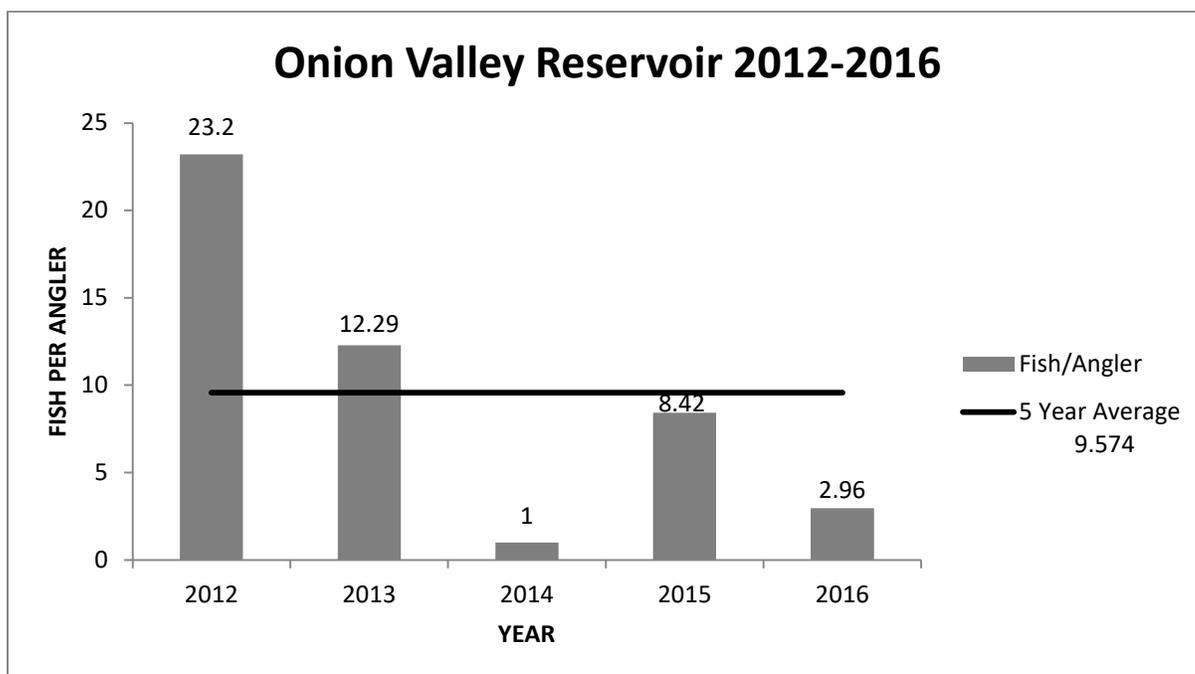


Figure 2. Onion Valley Reservoir Angler Questionnaire fish/angler, 2012-2016.

Table 2. Onion Valley Reservoir Monthly Angler Use and Success Data, Drop-Box.

Month	# of Anglers	# of Angler Hours	Angler Satisfaction			# of Fish Caught	# of Fish Harvested	Fish/Angler	Fish/Hour
			Angling Experience	Size of Fish	# of Fish				
June	1	12	2	1	2	23	1	23	1.92
July	2	3.5	2	1.5	1	6	2	3	1.71
August	1	8	2	1	2	24	17	24	3
October	2	5	1.5	1	1.5	7	7	3.5	1.4
Annual Summary	6	28.5	1.88	1.13	1.63	60	27	10.7	1.61

Table 3. Length Frequency and Species Composition Data, Drop-Box.

Species	# Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-22"	>22"
Rainbow trout	57	13	10	29	4	1	0	0	0
Tiger tout	3	0	2	1	0	0	0	0	0

Table 4. Catnip Reservoir Opportunistic Angler Surveys.

Month	Survey Days	Anglers	Angler Hours	Fish	Fish/Angler	Fish/Hour
June	2	2	12	23	11.5	1.91
July	1	0				
September	1	0				
October	3	1	1	4	4	4
Summary	7	3	16	27	7.75	2.96

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Above average spring runoff occurred when the 2017 fishing season opened. Onion Valley Reservoir started the fishing season at approximately 60 percent capacity. Water clarity remained good, greater than three feet, throughout the fishing season. As water temperatures increased, aquatic vegetation increased, but did not limited access for shoreline anglers.

During each site visit to the reservoir, a general habitat assessment was conducted that included measuring water temperature, water level, water clarity, and monitoring road conditions. Table 4 summarizes the assessments that occurred.

Table 5. General habitat assessments at Onion Reservoir, 2017.

Date	Water Temperature (°F)	Water Level	Water Clarity	Road Conditions	Comments
6/10/2017	62	60%	Clear	Fair/Poor	
6/20/2017	66	60 %	Clear	Fair/Poor	
7/17/2017	67	40%	Clear	Fair/Poor	
10/10/2017	61	30 %	Clear	Fair/Poor	
10/18/2017		0 %		Fair/Poor	Reservoir empty
11/2/2017	48	20%	Clear	Fair/Poor	

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir. The above average runoff from the 2016/2017 winter resulted in both reservoirs not filling after prolonged drought occurring from 2014 to 2016. Water for irrigation was first released from Little Onion Reservoir until it was drained, then it was released from Onion Valley Reservoir. When the Onion Valley Reservoir outlet structure was opened for the first time in 2017, it was very difficult to open. The Alder Creek Ranch was concerned there was debris inhibiting the structure from opening properly. Throughout the irrigation season, Alder Creek Ranch observed that the outlet structure was not functioning normally and the decision was made to drain the reservoir in October to inspect the outlet structure. Several rocks and woody debris were removed from the base of the outlet structure when it was drained, resolving the issue.

In coordination with Trout Unlimited and other NGO's, explore alternative solutions for maintaining the Onion Valley Reservoir fishery while meeting agricultural irrigation needs with Alder Creek Ranch. Meetings with NDOW, BLM, and Alder Creek Ranch were held on several occasions in 2017. The purpose of meetings between NDOW and the Alder Creek Ranch was to discuss the possibility of assisting Alder Creek Ranch with the facilitation of a land exchange with the BLM.

On December 12, 2014 the Pine Forest Range Wilderness was designated by congress as Nevada's newest wilderness area. There is language in this legislation that allows for land trades with the BLM within the next five years. The Alder Creek Ranch owns land that is now surrounded by wilderness that is along Big Creek in the Pine Forest Range. Big Creek is designated a Lahontan cutthroat trout (LCT) recovery

stream. Alder Creek Ranch has expressed interested in a land exchange with the BLM to obtain BLM identified disposable land that is adjacent to the ranch. There has been considerable confusion between the Alder Creek Ranch and the BLM on how to proceed with the land exchange process. Continued turnover of BLM personnel at the Winnemucca BLM office has jeopardized this process and the process has mostly stalled.

MANAGEMENT REVIEW

Onion Valley Reservoir did not maintain sufficient water during repair of the outlet structure for trout to survive the 2017-fishing season. After the reservoir began filling, fish were stocked in the fall. The below average snowpack from 2014 to 2016 had detrimental effects to Onion Valley Reservoir, and draining of the reservoir to inspect the outlet structure in 2017 further delayed the recovery of the fishery. In spite of this, the 2017 angler drop-box surveys and 2016 mail-in angler questionnaire surveys indicate that Onion Valley Reservoir is meeting angling objectives of a Put-and-Take Fishery Management Concept.

RECOMMENDATIONS

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data.
- Conduct a general habitat assessment through visual observations of water quantity (lake level), water quality (clarity), and aquatic vegetation when on site.
- Coordinate up to 4 days with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir.
- In coordination with Trout Unlimited and other NGO's, explore alternative solutions for maintaining the Onion Valley Reservoir fishery while meeting agricultural irrigation needs with Alder Creek Ranch.

Prepared by: Brad Bauman
Fisheries Biologist
Western Region

Date: January 3, 2018