

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-54
2018

ONION VALLEY 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: *Onion Valley Reservoir*
Period Covered: *January 1, 2018 through December 31, 2018*

SUMMARY

During the 2018 fishing season, Onion Valley Reservoir was stocked with 9,893 trout. In 2018, eight anglers participated in the drop-box survey and six anglers were contacted during opportunistic angler surveys. Based on the Mail-in, Angler Questionnaire Survey, an estimated 153 anglers fished Onion Valley Reservoir during the 2017-fishing season. The water level was at approximately 60 percent capacity at the start of the 2018-fishing season. The reservoir was then drawn down from irrigation to approximately 10 percent capacity by October.

Onion Valley Reservoir was accessible to anglers for all of the 2018-fishing season. However, access into the reservoir is becoming more difficult, due to deteriorating road conditions. The Bureau of Land Management provided minimal road maintenance in the spring of 2018.

BACKGROUND

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

The reservoir is a popular destination for anglers in Humboldt County as well as 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. 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 managed under the Coldwater Quality Fishery Concept. This management strategy applies to waterbodies that produce fish with significant growth characteristics and contain fish of a size anglers prefer to catch. Anglers should be able to catch trout larger than the 8.0 to 10.0 in stocked size, but smaller than a "Trophy" fish. Management of this resource is directed towards wild fish or stocked fish that grow a significant portion of their size in the wild environment. Fish should not be stocked at a large size to create this fishery. Special management regulations may be appropriate to reduce harvest and allow fish to grow larger. Onion Valley Reservoir is

annually opened to fishing the second Saturday of June, any hour of the day or night, and closes November 15. The limit is five trout.

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 for 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 on the opening weekend of the Onion Valley fishing season in 2018. The angler drop-box was maintained prior to the fishing season opening on June 9, 2018. Aside from providing creel results, the survey additionally asked participants to rate their fishing day on a scale of -2.0 (highly dissatisfied) to +2.0 (highly satisfied) for three categories: "overall experience", "size of fish", and "number of fish", as well as, the size class and species of trout caught. The 2017 mail-in angler questionnaire data was summarized. A questionnaire was randomly mailed to 30,000 anglers buying a 2017 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 2018-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. Coordination continues with the Alder Creek Ranch to prioritize water releases that benefit the Onion Valley fishery.

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 discussions with NDWR, NDOW, BLM, TU, and Alder Creek Ranch continued.

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 8,151 rainbow trout and 1,742 bowcutt trout in 2018 (Table 1). The number stocked is typically based on water conditions throughout the year.

Table 1. Onion Valley Reservoir Stocking Data, 2014-2018.

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2018	Rainbow	Eagle Lake	2,303	700	9.1	9,893	2,800
	Rainbow	Triploid	2,832	600	8.1		
	Bowcutt	--	1,742	575	9.4		
	Rainbow	Triploid	3,016	9.25	9.2		
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		
2016	Rainbow	Triploid	1,584	550	9.5	3,603	1,100
	Rainbow	Tahoe	2,019	550	8.8		
2015	Rainbow	Triploid	1,019	350	9.5	1,019	350
2014	Rainbow	Triploid	1,030	325	9.2	1,030	325

Mail-in, Angler Questionnaire Survey data was received for 2017. Angler Success was 4.92 fish per day and 6.51 fish per angler, which was up significantly from the 1.55 fish per day and 2.96 fish per angler in 2016 and just above the five-year average of 3.38 fish per day and 6.24 fish per angler (Figures 1 and 2).

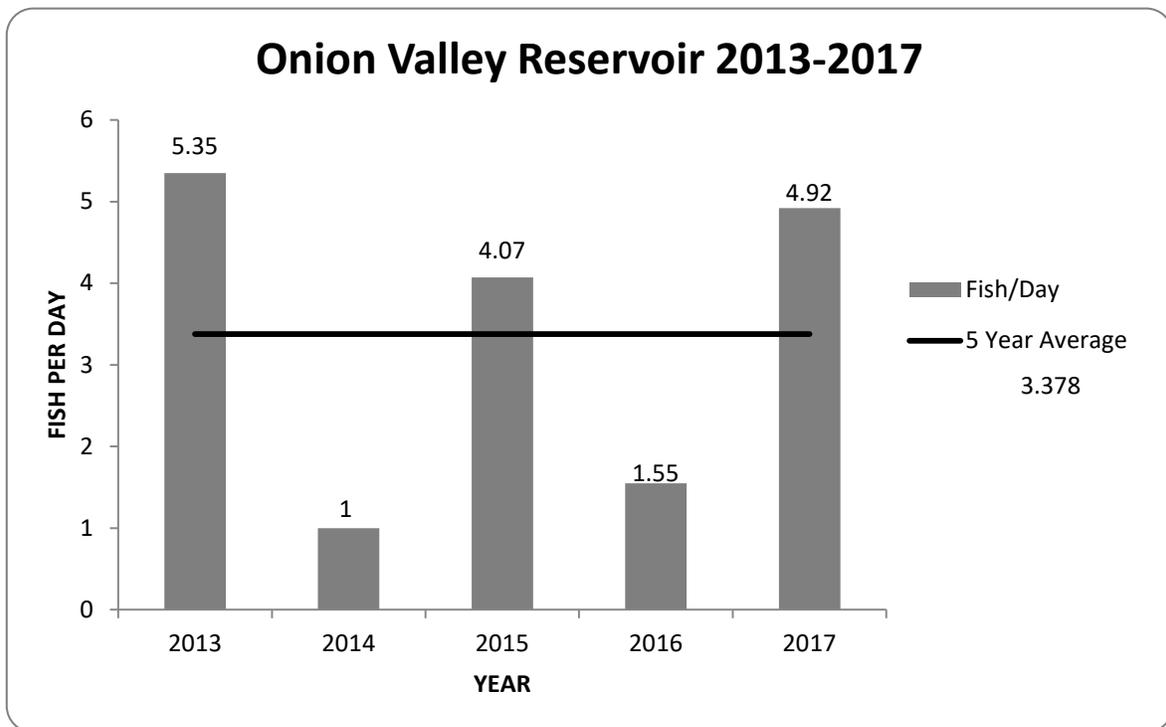


Figure 1. Onion Valley Reservoir Angler Questionnaire fish/day, 2013-2017.

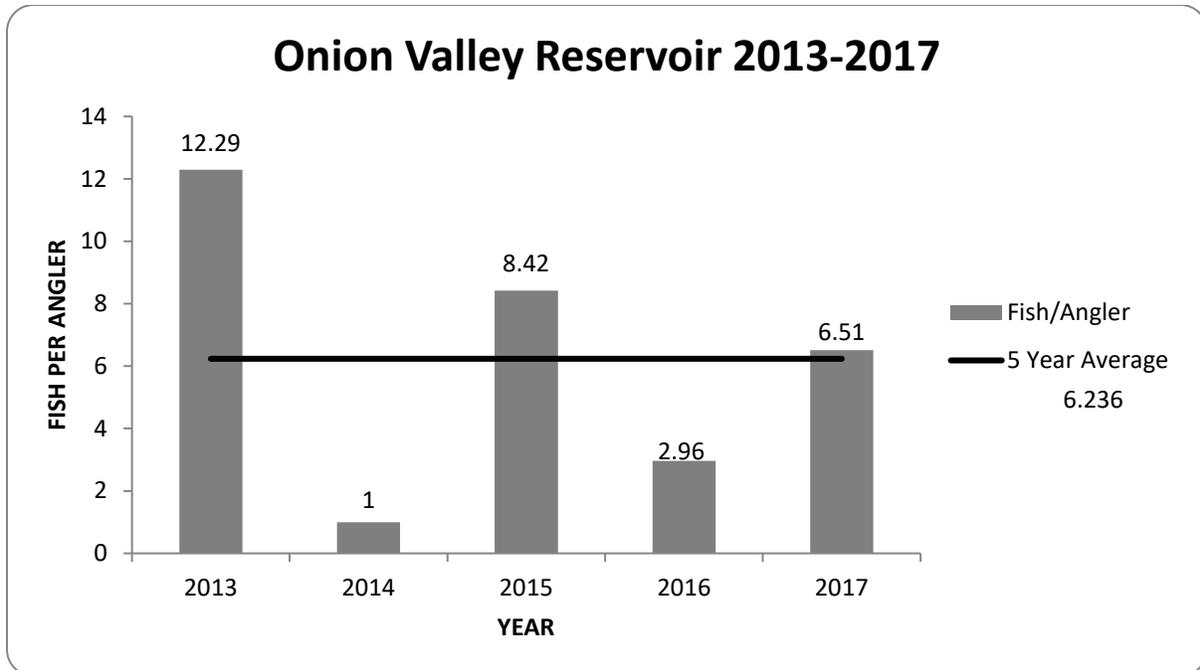


Figure 2. Onion Valley Reservoir Angler Questionnaire fish/angler, 2013-2017.

In 2018, the angler drop-box survey documented that eight anglers caught 87 fish, which was an increase from 2017 when six anglers caught 60 fish. The 2018 satisfaction scores averaged + 1.13 for “overall experience,” +0.63 for “size of fish,” and +1.00 for “number of fish.” Figure 3 summarizes the five-year angler satisfaction ratings.

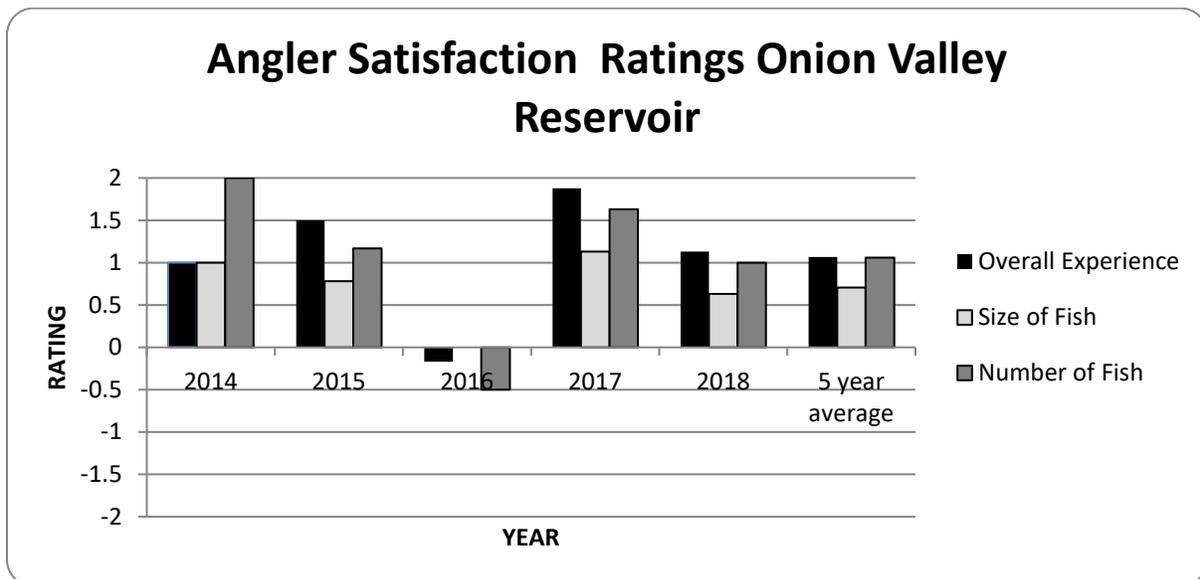


Figure 3. Five-year angler satisfaction ratings (2014-2018) for Onion Valley Reservoir.

Catch rates from the 2018 angler drop-box survey came to 2.68 fish per hour and 10.9 fish per angler. The 2018 angler success is summarized by month in Table 2 and length frequency is summarized in Table 3 and Figure 4.

Table 2. Onion Valley Reservoir Monthly Angler Use and Success Data, Drop-Box 2018.

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	2	2	1	2	4	3	4	2
July	3	14	2	0.67	1.67	50	7	16.67	1.71
August	2	10	-1.5	-1	-1.5	7	7	3.5	0.7
October	1	0.5	2	2	2	6	1	6	12
November	1	6	2	2	2	20	9	20	3.33
Annual Summary	8	32.5	1.13	0.63	1.00	87	27	10.9	2.68

Table 3. Length Frequency and Species Composition Data, Drop-Box 2018.

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	84	5	19	33	9	12	6	0	0
Bowcutt	1	1	0	0	0	0	0	0	0
Tiger trout	2	0	1	1	0	0	0	0	0

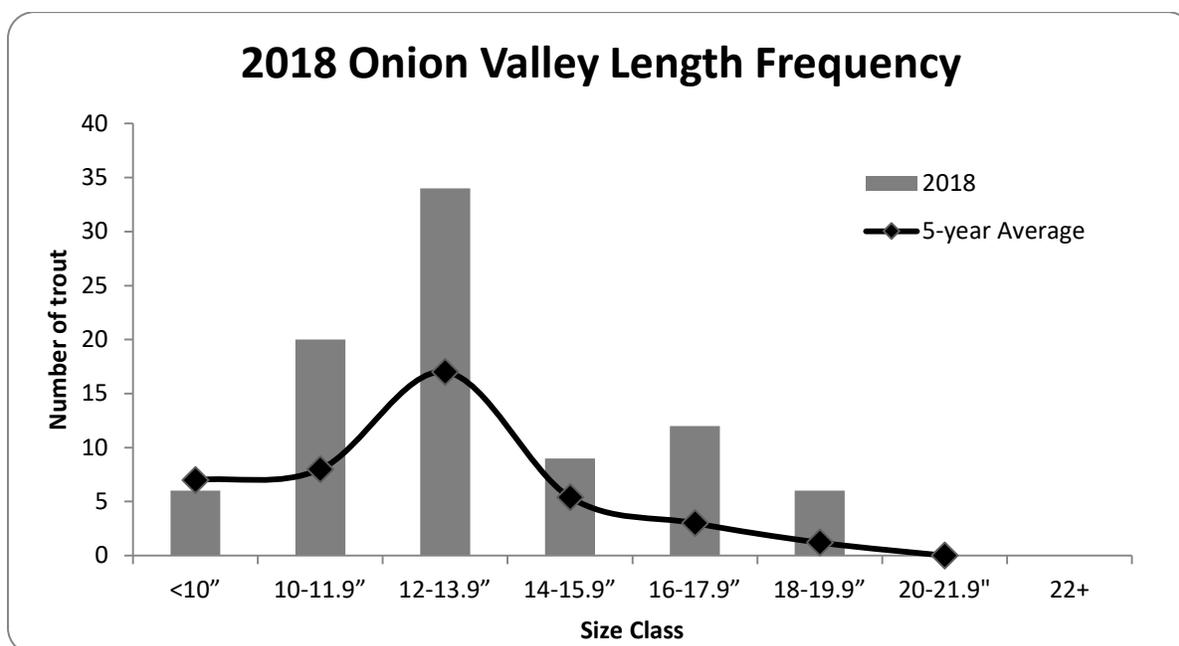


Figure 4. Length frequency of all trout species combined Onion Valley Reservoir 2018.

Angler surveys were conducted during each site visit to Onion Valley Reservoir. Six anglers were contacted in 2018 that resulted in a 1.02 fish per hour and 3.83 fish per angler success rate. Opportunistic angler surveys are summarized in Table 4.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Onion Valley Reservoir started the fishing season at approximately 60 percent capacity and dropped to 10 percent by October. 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. Road conditions were considered fair to poor throughout the year.

Table 4. Onion Valley Reservoir Opportunistic Angler Surveys.

Month	Survey Days	Anglers	Angler Hours	Fish	Fish/Angler	Fish/Hour
June	2	6	22.5	23	11.5	1.91
July	1	0				
September	1	0				
October	2	0				
Summary	6	6	22.5	23	3.83	1.02

During each site visit to the reservoir, a general habitat assessment was conducted that included measuring water temperature, water level, water clarity, road conditions and number of anglers contacted. Table 5 summarizes the assessments that occurred throughout 2018.

Table 5. General habitat assessments at Onion Reservoir, 2018.

Date	Water Temperature (°F)	Water Level	Water Clarity	Road Conditions	Number of Anglers	Comments
5/8/2018	60	60%	Clear	Poor	0/Closed	
5/23/2018	57	60%	Clear	Poor	0/Closed	
6/9/2018	63	60%	Clear	Fair/Poor	6	
6/19/2018	62	60 %	Clear	Fair/Poor	0	
7/3/2018	69	40%	Clear	Fair/Poor	0	
10/9/2018	64	20%	Clear	Fair/Poor	0	
11/29/2018	34	10%	Clear	Poor	0	70 % iced over

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir. After the winter of 2017/2018, Onion Valley Reservoir filled to approximately 60% capacity and Little Onion Reservoir filled to 100% capacity. Water for irrigation was released from Little Onion Reservoir until it was drained, and then water was released from Onion Valley Reservoir until October when the reservoir was left at approximately 10% capacity.

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. No formal meetings occurred between NDOW, BLM, Alder Creek Range, Trout Unlimited, and other NGOs. Several phone calls and discussions took place with BLM and Alder Creek Ranch about how to proceed and facilitate a land exchange between BLM and the ranch

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

Creek land for land adjacent to the ranch. If Alder Creek and BLM completed this exchange, NDOW would assist Alder Creek Ranch with habitat and range improvements on adjacent land. The owner of the ranch has verbally indicated that if NDOW made this agreement, they would be willing to transfer a small water right in order to sustain fish life in Onion Valley Reservoir.

MANAGEMENT REVIEW

Onion Valley Reservoir maintained sufficient water in 2018 and trout survived into the 2019-fishing season. The limiting factor in managing the reservoir's fishery is in maintaining sufficient water throughout the year to sustain fish life. Alder Creek Ranch owns the entire water right to Onion Valley and Little Onion reservoirs. When the Pine Forest Range Wilderness legislation was signed, there was optimism that a deal could be reached for obtaining a water right to maintain the reservoir fisheries. Over the last four years, ongoing talks between BLM and Alder Creek Ranch have dwindle. Alder Creek Ranch has been interested in a land exchange with BLM, but there has been misperception and BLM has failed to proceed. However, Alder Creek Ranch is disinterested in NDOW or an NGO purchasing a portion of their water rights in order to maintain sufficient water for trout survival. Therefore, the agency will continue working with Alder Creek Ranch on solutions and opportunities, other than a federal land exchange, to maintain water in the reservoir.

The 2018 angler contact survey and drop-box results indicated the fishery did meet the guidelines for a Coldwater Quality Fishery 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 1.02 fish per hour and 3.83 fish per angler during contact surveys and 2.68 fish per hour and 10.9 fish per angler in the drop-box survey.

Angler satisfaction ratings from the drop-box results for 2018 were all positive and near the five-year average for all categories. Satisfaction results in 2018 were lower, however, than in 2017. Angler satisfaction survey for Onion Valley Reservoir can be highly variable from year to year depending on if the reservoir maintained sufficient water for fish to survive to the next fishing season or if the reservoir was drained and the fishery was being rebuilt through stocking efforts.

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.

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