

NEVADA DEPARTMENT OF WILDLIFE STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

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2016

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, 2016 through December 31, 2016*

SUMMARY

During the 2016 fishing season, Onion Valley Reservoir was stocked with 3,603 rainbow trout. The water level was at approximately 50 percent capacity at the start of the 2016 fishing season. Water was released for downstream irrigation, but the reservoir was not drained in 2016. Relatively few anglers have used the reservoir in the last three years due to it being drained in late summer during 2013, 2014, and 2015. The reservoir is open to fishing the second Saturday of June each year and closes November 15 of each year.

Anglers participating in the Mail-in, Angler Questionnaire Survey reported fishing Onion Valley Reservoir during the 2015 fishing season. Six anglers participated in the 2016 drop-box survey and drop-boxes at the reservoir were maintained throughout the fishing season and collected after the season closed. No opportunistic angler contact surveys were completed during 2016.

Spring 2016 was characterized by a below average snowpack in the Pine Forest Range, yet water releases from Onion Valley Reservoir occurred throughout the irrigation season. However, Little Onion Reservoir was drained prior to any water being released from Onion Valley Reservoir.

BACKGROUND

Onion Valley Reservoir is located in the Pine Forest Range south of Denio, NV. The reservoir was formed by a dam constructed on Alder Creek in 1955, 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 even above average water years, irrigation demands have drawn the reservoir down to low levels 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 in place to maintain water in the reservoir. Onion Valley Reservoir is currently managed as 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.
- Monitor water released from Little Onion Reservoir and Onion Valley Reservoir.
- Explore alternative solutions with Alder Creek Ranch for maintaining the Onion Valley Reservoir fishery while their meeting agricultural needs.

PROCEDURES

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. No opportunistic angler contacts were made in 2016. The angler drop-box was maintained prior to the fishing season opening on June 11 and through November 15, 2016, 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 2015 mail-in angler questionnaire data was summarized. The voluntary mail-in, angler questionnaire was randomly mailed to 30,000 anglers buying a 2015 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 2016 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. Below average runoff from the 2015/2016 winter resulted in both reservoirs not filling to capacity. Reservoir releases in 2016 started in April and continued through September 2016. Onion Valley Reservoir was not completely drained in 2016 and, therefore, fish were stocked in September.

Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch. Water releases were monitored by stream gauges below the dam at Little Onion Reservoir and Onion Valley Reservoir. These gauges are operated and monitored by Nevada Division of Water Resources (NDWR) during the irrigation season and NDWR provides the data to NDOW.

Explore alternative solutions with Alder Creek Ranch for maintaining the Onion Valley Reservoir fishery while meeting agricultural needs. Ongoing meetings with NDWR, NDOW, BLM, TU and Alder Creek Ranch were held in 2016.

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 twice in 2016 (May and September) with 1,584 triploid rainbow trout (average 9.5 in) and 2,019 Tahoe strain rainbow trout (average 8.8 in). The stocking history from 2012 through 2016 is summarized in Table 1.

Table 1. Onion Valley Reservoir Stocking Data 2012-2016.

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2012	Rainbow	Triploid	1,000	372	9.8	7,397	2,357
	Rainbow	Eagle Lake	5,940	1,800	9.1		
	Tiger Trout		457	185	10.0		
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		

Mail-in, Angler Questionnaire Survey data was received for 2015. The angler success was 4.07 fish per day and 8.42 fish per angler, which was below the 5-year average of 7.23 fish per day and 12.28 fish per angler (Figures 1 and 2).

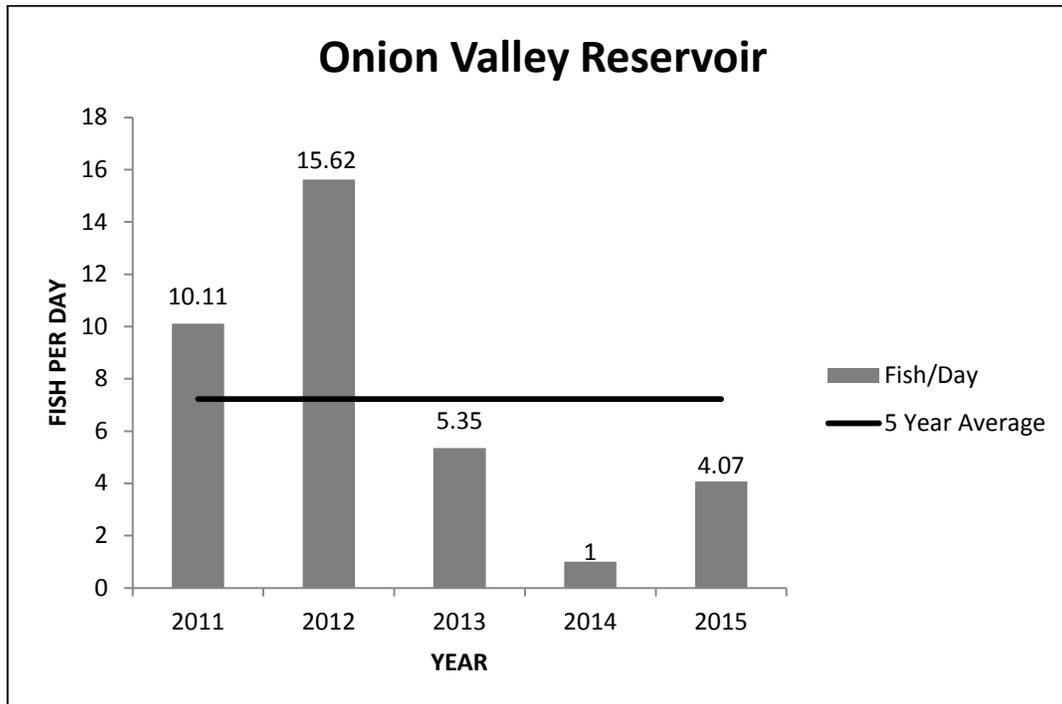


Figure 1. Onion Valley Reservoir Angler Questionnaire fish/day 2011-2015.

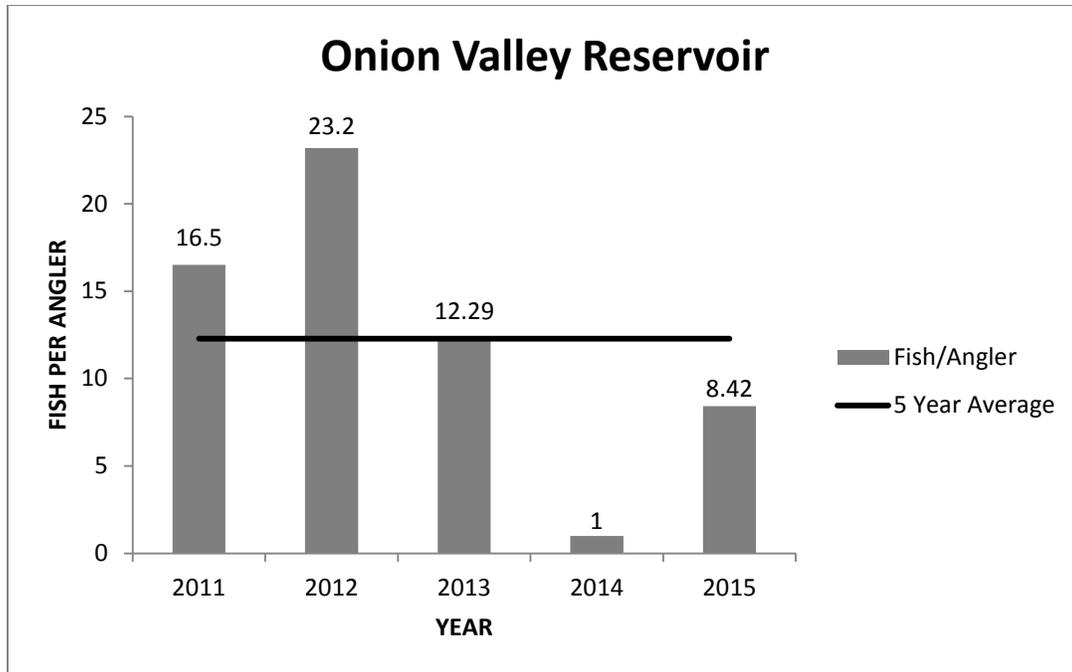


Figure 2. Onion Valley Reservoir Angler Questionnaire fish/angler 2011-2015.

Six anglers completed angler drop-box forms throughout the 2016 fishing season. Angler satisfaction was rated negative for angling experience (-0.17), size of fish (0.00), and number of fish caught (-0.5). Anglers reported catching fish that were up to 17 inches in 2016. The average size of trout stocked in 2016 was 9.15 inches. Angler drop-box data is summarized in Tables 2 and 3.

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	2	20	-0.5	-0.5	-0.5	0	0	0	0
July	2	15	-1	-1	-1	0	0	0	0
August	2	16	1	1.5	0	11	6	5.5	0.69
Annual Summary	6	51	-0.17	0.0	-0.5	11	6	1.83	0.23

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	11	0	0	7	3	1	0	0	0

Opportunistic contact angler surveys were not conducted during 2016 due to expected low angler use because the reservoir had been drained over the last several years.

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Below average spring runoff occurred when the 2016 fishing season opened. In 2016, Onion Valley Reservoir started off the fishing season at approximately 50 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.

Coordinate with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir. The below average runoff from the 2015/2016 winter resulted in both reservoirs not filling to capacity. Water releases started from Little Onion Reservoir on April 22, 2016 and continued through July 25, 2016 when Little Onion Reservoir was completely drained. Water was released from Onion Valley Reservoir starting on July 24, 2016 and continued until September 30, 2016. When irrigation stopped, Onion Valley Reservoir was approximately at 25 percent capacity.

Monitor water released from Little Onion Reservoir and Onion Valley Reservoir used by Alder Creek Ranch. Stream gauges below the dam at Little Onion Reservoir and Onion Valley Reservoir are operated by Nevada Division of Water Resources (NDWR) during the irrigation season and record all water releases. A total of 413 AF of water was released from Little Onion Reservoir and 757 AF of water was released from Onion Valley Reservoir. The total water released from both reservoirs was 1,170 acre feet. Alder Creek ranch is permitted to use 1,620 acre-feet from Onion Reservoir and 725 acre-feet from Little Onion Reservoir.

Explore alternative solutions with Alder Creek Ranch for maintaining the Onion Valley Reservoir fishery while meeting agricultural needs. Meetings with NDOW, BLM, TU, and Alder Creek Ranch were held on several occasions in 2016. The purpose of meetings between NDOW and the Alder Creek Ranch was to discuss the possibility of assisting Alder Creek Ranch on constructing a new reservoir lower in the Alder Creek drainage to capture water not stored in Onion Valley Reservoir. An additional reservoir for the ranch to draw water would allow water to be available in Onion Valley Reservoir for maintaining the sport fishery. The construction of an additional reservoir is contingent upon a land exchange between Alder Creek Range and the BLM outlined in the Pine Forest Range Wilderness legislation. The BLM and Alder Creek Ranch have begun to identify lands for exchange and the appraisal process has been started. The NEPA process for the proposed uses has been started.

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 area that is along Big Creek in the Pine Forest Range. Big Creek is designated a Lahontan cutthroat trout (LCT) recovery water. Alder Creek Ranch has expressed interested in a land trade with the BLM to obtain BLM identified disposable land that is adjacent to the ranch.

MANAGEMENT REVIEW

Onion Valley Reservoir maintained sufficient water for trout survival throughout the fishing season and fish were stocked in the fall. The below average snowpack over the last four years in the Pine Forest Range has been detrimental to Onion Valley Reservoir from being drained for irrigation use in 2013, 2014, and 2015.

The angler success reported in the angler drop-box was negative for angling experience and number for fish caught and had satisfaction rating of zero for the size of fish caught. This is a direct reflection of the impacts of drought on the reservoir. The mail-in angler questionnaire data from 2015 indicates that fishing success was consistent with the standards of a Put-and-Take Fishery Management Concept, but the drop-box survey from 2016 indicates that the reservoir is not meeting this standard.

Water releases began in July and continued through September 30, with the reservoir drawn down to approximately 25 percent capacity. The ranch is permitted to use 2,345 AF from the reservoirs, but used only 1,170 AF for irrigation in 2016.

The recent legislation creating the Pine Forest Range Wilderness is a positive step in the direction for obtaining a minimum pool of water for Onion Valley Reservoir. The legislation allows for land trades to occur between private land owners and the BLM. The Alder Creek Ranch has expressed interest in a land trade that would allow them to obtain BLM land adjacent to the ranch for the construction of a lower reservoir. The appraisal and NEPA process has begun on the lands that are being looked at for exchange. A lower reservoir near the ranch would be capable of capturing water that flows through the ranch in the late fall, winter, and early spring. The Alder Creek Ranch would be able to use this water for irrigation during the irrigation season thereby postponing water releases from Onion Valley Reservoir. Alder Creek Ranch owns private property along Big Creek in the Pine Forest Range, which is an LCT recovery stream. A land exchange would not only benefit the sport fishery in Onion Valley Reservoir, but would also facilitate recovery efforts of LCT in Big Creek.

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.

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