

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-50
2014

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, 2014 through December 31, 2014*

SUMMARY

During the 2014 fishing season, Onion Valley Reservoir was stocked with 1,030 triploid rainbow trout. The water level was low during the fishing season and the reservoir was drained in September for irrigation use downstream. Very few anglers fished in 2014 because the reservoir had been drained the previous two years. Each year, the fishing season opens the second Saturday of June and closes November 15.

Anglers participating in the Mail-in, Angler Questionnaire Survey reported information on fishing Onion Valley Reservoir during the 2013 season. However, only one angler participated in the lakeside drop-box survey. Opportunistic angler contacts were completed throughout the fishing season.

Spring 2014 was characterized by a below average snowpack for the Pine Forest Range. Water releases throughout the irrigation season drained Onion Valley Reservoir in September of 2014. Water was utilized from Little Onion Reservoir prior to water releases 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-ft and having a maximum depth of 42 ft.

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 and serves as an irrigation and livestock watering impoundment for the Alder Creek Ranch, which owns the water rights. In late 2005, the reservoir was drawn down to repair the outlet on the dam. Since that time, irrigation demands have continued to draw the reservoir down to low levels by the end of each irrigation season. Currently, there is no minimum pool agreement to maintain water in the reservoir. The fishery is currently managed as a put-and-take fishery due to low water levels limiting the number of fish that carryover. However, in years prior to routinely having low levels, Onion Valley Reservoir was managed under the Quality Fishery Management Concept.

OBJECTIVES

General Management 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 the Alder Creek Ranch on up to 4 occasions prior to and throughout the irrigation season to encourage water management practices that will maintain the fishery.

Study Specific Objectives - Onion Valley Reservoir Water Rights Investigation

- In coordination with Trout Unlimited and other NGO's, explore alternative solutions for maintaining the fishery while meeting agricultural irrigation needs with Alder Creek Ranch.

PROCEDURES

General Management Objectives

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Opportunistic angler contacts were made June and August 2014 by contacting anglers that were fishing or camped around Onion Valley Reservoir. The angler drop-box was maintained prior to the fishing season opening on June 14, 2014 through November 15, 2014, which was the end of the 2014-fishing season. Participating anglers rated their satisfaction in angling experience, size of fish, and number of fish caught on a scale of -2 (worst) to +2 (best). The 2013 mail-in angler questionnaire data was summarized. The voluntary angler questionnaire is randomly mailed to 10% of the fishing license holders for the year 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 monthly from May through November to monitor lake level, water clarity, and aquatic vegetation.

Coordinate with the Alder Creek Ranch on up to 4 occasions prior to and throughout the irrigation season to encourage water management practices that will maintain the fishery. The below average runoff from the 2013/2014 winter resulted in both reservoirs not filling. In 2014, irrigation water was first released from Little Onion Valley Reservoir and then from Onion Valley Reservoir.

Study Specific Objectives - Onion Valley Reservoir Water Rights Investigation

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 Nevada Division of Water Resources, Bureau of Land Management, Trout Unlimited, and Alder Creek Ranch were held in 2014.

FINDINGS

General Management Objectives

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and Mail-in Angler Questionnaire Survey. Onion Valley Reservoir was stocked only once on May 14, 2014 due to very low water levels. A total of 1,030 triploid rainbows were stocked that averaged 9.2 in. Stocking history from 2010 through 2014 is summarized in Table 1.

Table 1. Onion Valley Reservoir Stocking Summary - 2010-2014.

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2010	Tiger Trout		1,999	1,020	10.8	26,193	4,411
	Bowcutt		15,096	691	4.5		
	Rainbow	Tasmanian	5,274	1,825	9.5		
	Rainbow	Bel Air	3,824	875	8.3		
2011	Rainbow	Tahoe	6,528	1,850	9.2	11,507	3,400
	Bowcutt		4,979	1,550	9.2		
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

Anglers participating in the Mail-in, Angler Questionnaire Survey reported success of 5.35 fish per day and 12.29 fish per angler in 2013. These decreased from the 2012 survey and were below the 5-year averages (Table 2).

Table 2. Onion Valley Reservoir Angler Questionnaire Data - 2009-2013.

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2009	722	1,094	3,654	3.34	5.06	1.52
2010	566	1,163	4,214	3.62	7.45	2.05
2011	670	1,095	11,065	10.11	16.51	1.63
2012	529	786	12,275	15.62	23.20	1.49
2013	170	390	2,090	5.35	12.29	2.30
Average	531.4	905.6	6,659.6	7.61	12.9	1.80

Only one angler completed an angler drop-box form on June 20, 2014. The angler was satisfied with fishing for an angling experience of 1.0, size of fish of 1.0, and

number of fish caught of 2.0. The only size class of fish the angler reported was less than 10 in, which was the average size of stocked trout in 2014.

During one day in June and one day in August, 10 anglers were contacted. Angler success was 1.79 fish per angler and 0.63 fish per hour. No larger holdover trout were measured because the reservoir was drained in 2012 and 2013. Opportunistic angler contacts results are summarized in Tables 4 and 5.

Table 4. Onion Valley Reservoir Opportunistic Angler Surveys.

Month	Survey Days	Anglers	Angler Hours	Fish	Fish/Angler	Fish/Hour
June	1	4	15	8	2	0.53
August	1	7	15	11	1.57	0.73
Summary	2	11	30	19	1.79	0.63

Table 5. Onion Valley Reservoir Length Frequency and Species Composition Data.

Species	# of Fish Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Rainbow trout	19	8	5	6	0	0	0	0	0

Conduct a general habitat assessment through visual observations of water quantity (lake level) and water quality (clarity) when on site. Very little spring runoff occurred when the fishing season opened and the reservoir was approximately 30% of capacity. Water clarity remained clear, greater than three feet, throughout the fishing year. As water temperatures increased, aquatic vegetation also increased, but did not limited access for shoreline anglers. The reservoir was completely drained by September, resulting in a loss of all fish in the reservoir.

Coordinate with the Alder Creek Ranch on up to 4 occasions prior to and throughout the irrigation season to encourage water management practices that will maintain the fishery. Monthly visits to the Alder Creek Ranch were made between May and September to discuss storage and water management strategies with the rancher. The intent is to prolong the amount of time water is stored in Big Onion Reservoir in order to maintain the fishery for as long as possible.

The below average runoff resulting from minimal snowpack during the 2013/2014 winter resulted in both reservoirs not filling. Irrigation water releases started with Little Onion Valley Reservoir on April 17 through May 17 when it was completely drained. Water was released from Onion Valley Reservoir on May 30 and continued until September 17, when it was completely drained.

Gauges installed below the dam at Little Onion Reservoir and Onion Valley Reservoir where operated by Nevada Division of Water Resources (NDWR) during the irrigation season to record all water releases. A total of 102.96 acre-ft was released from Little Onion Reservoir and 628.02 acre-ft of water was released from Onion Valley Reservoir. Total water released from both was 730.98 acre-ft.

Study Specific Objectives - Onion Valley Reservoir Water Rights Investigation

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 NDWR, NDOW, BLM, TU, and Alder Creek Ranch were held to discuss possibilities of assisting Alder Creek Ranch with constructing a new reservoir lower in the Alder Creek drainage to capture water not stored in Onion Valley Reservoir. An additional reservoir would allow the ranch to use an alternate water source and allowing Onion Valley Reservoir to maintain water throughout the year to protect the sport fishery.

On December 12, 2014, the Pine Forest Range Wilderness was designated by congress as Nevada's newest wilderness area. Language in this legislation allows for land trades with BLM within the next five years. Consequently, the Alder Creek Ranch owns land now surrounded by wilderness, which they have expressed interested in trading to obtain BLM identified disposable land adjacent to the ranch.

GENERAL MANAGEMENT REVIEW

Onion Valley Reservoir did not maintain sufficient water for trout to survive throughout the 2014-fishing season. The below average snowpack over the last three years in the Pine Forest Range has been detrimental to Onion Valley Reservoir.

Angler success reported from the angler drop-survey mail-in angler questionnaire survey, and angler contact surveys was consistent with the standards of a Put-and-Take Fishery Management Concept. Angler satisfaction ratings also were positive. Angler success also exceeded the standards of a Put-and-Take Fishery Management Concept.

STUDY REVIEW

Water releases from the reservoirs began during May and continued through the irrigation season with Onion Valley Reservoir completely drained in September. A total of 730.98 acre-ft of water was released to Alder Creek Ranch for irrigating crops.

The recent legislation creating the Pine Forest Range Wilderness is a positive step for obtaining a minimum pool for Onion Valley Reservoir. The legislation allows land trades to occur between private landowners and the BLM. Alder Creek Ranch has expressed interest in swapping land adjacent to the ranch so they can construct another, lower reservoir in the Alder Creek basin. A reservoir near the ranch would capturing water in late fall, winter, and early spring during the non-irrigation season. The Alder Creek Ranch would be able to store water for the irrigation season.

RECOMMENDATIONS

General Management 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 up to four days with Alder Creek Ranch to use water from Little Onion Reservoir prior to using water stored in Onion Valley Reservoir.

Study Specific Objectives:

- 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.

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