

NEVADA DEPARTMENT OF WILDLIFE STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-48
2012

BIG SPRINGS RESERVOIR WESTERN REGION



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

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

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Big Springs Reservoir*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

Water conditions improved throughout 2012 creating the potential to reestablish the fishery at Big Springs Reservoir. Stocking has been suspended since 2007 due to inadequate water levels. Anglers participating in the 2011 Mail-In, Angler Questionnaire Survey did not report fishing at Big Springs Reservoir. The angler drop-box has not been maintained since 2001 due to the loss of the fishery and minimal angler use. The U.S. Fish and Wildlife Service (USFWS) is finalizing their Comprehensive Conservation Plan (CCP), which will guide management actions on the Sheldon National Wildlife Refuge for the next 15 years. The management action that includes Big Springs Reservoir suggests that the Big Springs fishery be managed as a native trout fishery by stocking Lahontan cutthroat trout (LCT) or redband trout.

BACKGROUND

Big Springs Reservoir is located near the northern boundary of the Sheldon National Wildlife Refuge approximately 130 mi northwest of Winnemucca, NV. The reservoir covers 212 acres with an average depth of 7 ft and maximum depth of 10 ft. The reservoir was originally constructed as an irrigation impoundment for Lower Virgin Valley and Dufurrena Ponds. The water rights and administrative authority are held by the USFWS. In recent years, the fishery has been lost due to extremely low water levels. Water is supplied to Big Springs Reservoir through several natural springs along the southern shoreline. Until 2001, female rainbow trout from Big Springs Reservoir were spawned with male Lahontan cutthroat trout from Catnip Reservoir to produce hybrid cuttbows for hatchery production. This operation was stopped in 2002 due to low water levels. Prior to a fish kill in 2004 due to low water levels, the robust fishery at Big Springs Reservoir was managed under a Quality, Coldwater Fishery Concept.

OBJECTIVES

General Management Objectives:

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Monitor reservoir level and water quality conditions to determine if reservoir conditions are suitable to sustain trout.
- Coordinate fisheries management activities with the USFWS to reestablish a coldwater trout fishery if sufficient water is available.

PROCEDURES

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data. No angler contacts were made during 2012 at Big Springs Reservoir. Anglers, however, participate in the Mail-in, Angler Questionnaire Survey.

Monitor reservoir level and water quality conditions to determine if reservoir conditions are suitable to sustain trout. Water level in the reservoir was monitored through visual observation. No water quality measurements were collected at Big Springs Reservoir.

Coordinate fisheries management activities with the USFWS to reestablish a coldwater trout fishery if sufficient water is available. Coordination in matters related to fisheries management at Big Springs Reservoir was accomplished with the USFWS as needs arose.

FINDINGS

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data. Low water conditions existed throughout 2011, which eliminated the possibility of reestablishing a fishery for 2012. No angler use data was collected at Big Springs Reservoir, though some anglers did report visiting the reservoir in the Mail-in, Angler Questionnaire Survey. A total fish kill occurred in 2004 due to the low water conditions; since that time, there have only been two stocking events which occurred in 2007. The stocking history since 2000 is included in Table 1.

The angler drop-box has not been maintained since 2001 due to the lack of angling resulting from low water levels. Anglers participating in the annual Mail-in, Angler Questionnaire Survey did not report fishing at Big Springs Reservoir in 2011. The results of the angler questionnaire since 2000 are included in Table 2. The angler questionnaire results since 2004 are questionable because it is believed that a total fish kill occurred. The increase in angling success in 2007 was likely attributable to the two stocking events that occurred in May 2007. Since 2007, Big Springs Reservoir has been completely dry several times with no fish surviving.

Monitor reservoir level and water quality conditions to determine if reservoir conditions are suitable to sustain trout. The water level in Big Springs Reservoir improved throughout 2012. The system of springs started flowing in January of 2012 resulting in a rising water level. A site visit on March 23, 2012 found the water level in the reservoir had increase significantly from the past years and the water was approaching the bottom of the gauge near the dam. At that time, the water was no

longer turbid as observed in 2011, and was very clear. No water quality parameters were measured during 2012.

Table 1. Big Springs Reservoir Stocking Data - 2000-Present

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2000	Rainbow	Tasmanian	4,998	1,700	9.5	4,998	1,700
2001	Rainbow	Tasmanian	5,003	1,530	9.0	5,003	1,530
2002	Rainbow	Tasmanian	1,500	519	9.5	1,500	519
2003	Rainbow	Tasmanian	2,498	677	8.5	2,498	677
2004	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–
2007	Rainbow	Kamloop (Triploid)	5,008	1,600	9.3	6,198	2,100
	Tiger Trout		1,190	500	10.2		
2008	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–

– Due to low water levels no fish stocking occurred this year

Table 2. Big Springs Reservoir Angler Questionnaire Data - 2000-Present

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2000	2,126	7,041	52,478	7.45	24.68	3.31
2001	1,888	8,102	18,224	2.25	9.65	4.29
2002	249	399	108	0.27	0.43	1.60
2003	76	76	263	3.46	3.46	1.00
2004	52	82	337	4.11	6.48	1.58
2005	18	25	41	1.64	2.28	1.39
2006	84	91	0	0.00	0.00	1.08
2007	89	127	122	0.96	1.37	1.43
2008	7	13	7	0.54	1.00	1.86
2009	31	43	84	1.95	2.71	1.39
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
Average	420	1,333	6,515	2.06	4.73	1.72

Coordinate fisheries management activities with the USFWS to reestablish a coldwater trout fishery if sufficient water is available. In March, staff attended and provided input at a coordination meeting between NDOW and USFWS refuge staff to discuss the progress and development of the Sheldon Comprehensive Conservation Plan (CCP).

MANAGEMENT REVIEW

No fishery management activities occurred at Big Springs Reservoir during 2012. Even though the reservoir has sufficient water to stock fish, no fish were stocked due to

the nearly completed Sheldon CCP which states only LCT or redband should be used for recreational fishing in Big Springs Reservoir. Neither species were available for stocking in 2012.

Stocking has been suspended in recent years due to low water levels resulting in the collapse of the reservoir as a quality, coldwater fishery. The reservoir will continue to be monitored to determine if conditions become suitable for trout stocking, at which time efforts will be made to resume stocking of the reservoir utilizing the appropriate species of fish as directed by the CCP.

RECOMMENDATIONS

General Management Objectives:

- 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 if enough water is available in the reservoir to support a fishery.
- Monitor the reservoir suitability to support a trout fishery by collecting water quality parameters, monitoring reservoir level, annual spring runoff, and flow from shoreline springs.
- Coordinate with the Sheldon National Wildlife Refuge to determine the appropriate species of fish to stock Big Springs with, in order to be consistent with the Comprehensive Conservation Plan (CCP).
- Examine the ditch from Gooch Table to Big Springs Reservoir to determine if the ditch is breached.

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Date: January 23, 2013