

NEVADA DEPARTMENT OF WILDLIFE STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-52
2016

BILK CREEK RESERVOIR
WESTERN REGION



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

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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: *Bilk Creek Reservoir*
Period Covered: *January 1, 2016 through December 31, 2016*

SUMMARY

Bilk Creek Reservoir provided angling opportunities throughout 2016 despite a below average water year. Anglers reported catching rainbow trout, tiger trout, bluegill, and largemouth bass. Rainbow trout and tiger trout were stocked in the reservoir in 2016 to meet angling demands. Additionally, bluegill were stocked in Bilk Creek Reservoir to provide a forage base for largemouth bass, as well as provide increased angling opportunity.

BACKGROUND

Bilk Creek Reservoir is located on Bilk Creek at the base of the southern end of the Bilk Creek Mountains. The reservoir is almost entirely on private land that is owned and operated by the Quinn River Crossing Ranch, which uses water from the reservoir for irrigation. The reservoir covers 60 surface acres and stores 670 acre-feet of water with an average depth of 10 feet and maximum depth of 17 feet when full.

The reservoir is a popular destination for local residents of Quinn River Valley, Kings River Valley, Orovada, Denio, and Winnemucca. It currently supports rainbow trout, tiger trout, bluegill, and largemouth bass fisheries. In June 2005, and again in 2008, largemouth bass were stocked and have since become well established. In 2015 and 2016, bluegill were stocked in the reservoir. The trout fishery is composed of stocked rainbow trout and tiger trout. Bilk Creek Reservoir is managed as general coldwater and warmwater fisheries.

OBJECTIVES

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Monitor rainbow trout and largemouth bass populations during one night of electroshocking.
- Monitor Bilk Creek flow upstream of the reservoir during summer to ensure flow is reaching the reservoir.
- Introduce 500 bluegill sunfish into Bilk Creek Reservoir utilizing stock source from Hinkson Slough.

PROCEDURES

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data. Angler use, success, and harvest were assessed through angler contacts, angler drop-box surveys, and the Mail-in Angler Questionnaire Survey. Angler drop-box surveys collect basic creel information and assess angler use, success and satisfaction. The survey asks participants to rate three aspects of their fishing day on a scale of -2.0 (highly dissatisfied) to +2.0 (highly satisfied). The drop-box was maintained and forms were replenished throughout the year.

Angler use and success at Bilk Creek Reservoir was also assessed through the Mail-in Angler Questionnaire Survey. Angler questionnaire data was derived from a survey mailed to 30,000 license purchasers from the previous year.

Monitor the rainbow trout and largemouth bass populations during one night of electroshocking. Electroshocking was not conducted in 2016.

Monitor Bilk Creek flow upstream of the reservoir during summer to ensure flow is reaching the reservoir. While on-site, visual observations were made regarding flow in Bilk Creek as well as the diversion ditch from the creek to the reservoir.

Introduce 500 bluegill into Bilk Creek Reservoir utilizing stock source from another nearby water. Bluegill were netted from Andorno Pond and stocked into Bilk Creek Reservoir in 2016.

FINDINGS

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data. Rainbow trout, tiger trout, and bluegill were stocked in Bilk Creek Reservoir in 2016. Stocking data for 2016 is included in Table 1 and a five-year stocking history (2012 - 2016) is shown in Table 2.

Table 1. 2016 Stocking Summary for Bilk Creek Reservoir

Date	Species	Number	Size (in)	Strain
3/16/2016	Rainbow	4,018	9.6	Eagle Lake
5/18/2016	Tiger Trout	499	9.3	-
6/23/2016	Bluegill	510	4.25	-
10/11/2016	Rainbow	2,006	9.3	Triploid
Total:		7,033		

Table 2. Bilk Creek Reservoir Five-Year Stocking History 2012-2016

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2012	Rainbow trout	Eagle Lake	4,001	1,527	9.8	5,296	2,022
	Rainbow trout	Triploid	900	335	9.8		
	Tiger trout	-	395	160	10		
2013	Rainbow trout	Eagle Lake	3,999	1,550	9.9	6,308	2,262
	Rainbow trout	Triploid	666	187	8.4		
	Rainbow trout	Eagle Lake	1,643	525	9.3		
2014	Rainbow trout	Triploid	3,170	1,000	9.2	8,025	2,540
	Tiger trout	-	1,115	500	10.4		
	Rainbow trout	Tahoe	3,740	1,040	9.0		
2015	Cuttbow trout	Cuttbow	4,041	1,082	8.6	8,424	2,632
	Rainbow trout	Triploid	4,031	1,450	9.7		
	Tiger Trout	-	314	100	9.3		
	Bluegill	-	38	-	5.3		
2016	Rainbow trout	Eagle Lake	4,018	1,400	9.6	7,033	2,207
	Tiger trout	-	499	160	9.3		
	Bluegill	-	510	-	4.25		
	Rainbow trout	-	2,006	647	9.3		

Bilk Creek Reservoir is open year round to fishing and drop-boxes are located at each end of the reservoir at main access locations. A total of 54 anglers participated in 2016 by completing survey forms. Table 3 summarizes monthly use and success. Anglers caught 817 fish and 14.9% were harvested as compared to 31.1% harvest in 2015. Overall, angler satisfaction was positive for all categories. Table 4 summarizes length frequency of fish caught and shows that most species were less than 14 inches.

Table 3. Monthly Angler Use and Success Data – Drop Box 2016

Month	# of Anglers	# of Angler Hours	Angler Satisfaction			# Caught	# of Fish Harvested	Fish/Angler	Fish/Hour
			Angling Experience	Size of Fish	# of Fish				
January	3	2.5	2	1.67	2	24	15	8.0	9.6
February	1	6	-2	-2	-2	0	0	0.0	0.0
April	6	18.5	2	1.5	1.5	32	4	5.3	1.7
May	17	55	1.47	0.94	1.18	154	26	9.1	2.8
June	12	62	1.58	0.92	1.67	393	61	32.8	6.3
July	4	14	1.25	0.75	1.5	88	7	22.0	6.3
August	1	5	2	1	2	43	0	43.0	8.6
September	1	3	2	1	2	21	0	21.0	7.0
October	3	6	2	1.67	2	46	1	15.3	7.7
November	1	3	2	0	2	11	6	11.0	3.7
December	5	8	2	1	1	5	2	1.0	0.6
Annual Summary	54	183	1.48	0.77	1.35	817	122	14.04	4.53

Table 4. Length Frequency and Species Composition Data – Drop-Box 2016

Species	# Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-22"	>22"
Largemouth bass	494	319	150	25	0	0	0	0	0
Rainbow trout	307	88	112	96	9	2	0	0	0
Tiger trout	15	1	12	2	0	0	0	0	0
Bluegill	1	1	0	0	0	0	0	0	0

Mail-in angler questionnaire data for 2015 estimated 346 anglers fished for 1,975 days, which was above the five-year average (Table 5). The total catch was estimated at 5,988 fish with a success rate of 26.1 fish per angler. This success rate was just above the five-year average of 17.4 fish per angler.

Table 5. Five-Year Bilk Creek Reservoir Angler Questionnaire Data 2011-2015

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2011	361	669	3,469	5.19	9.61	1.85
2012	187	370	2,715	7.34	14.52	1.98
2013	171	531	3,981	7.50	23.30	3.11
2014	346	1,975	4,702	2.38	13.59	5.71
2015	230	650	5,988	9.21	26.07	2.83
Average	259	839	4,171	6.32	17.42	3.10

Opportunistic angler contacts were made in June, November, and December 2016 (Table 6). Eight anglers fished for 17 hours to catch 98 fish for a catch rate of 18.29 fish per hour. Length frequency is provided in Table 7.

Table 6. Bilk Creek Reservoir - Angler Contacts 2016

Month	Survey Days	Anglers	Angler Hours	Fish	Fish/Angler	Fish/Hour
June	1	2	6	80	40	13.33
November	1	1	3	13	13	4.33
December	1	5	8	5	1	0.63
Summary	3	8	17	98	18	18.29

Table 7. Length Frequency and Species Composition Data – Angler Contacts

Species	# Caught	Size Class							
		<10"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-24.9"	>25"
Largemouth bass	93	80	9	4	0	0	0	0	0
Rainbow trout	5	2	1	1	1	0	0	0	0

Monitor rainbow trout and largemouth bass populations during one night of electroshocking. Electroshocking did not occur in 2016 due to mechanical issues with the electroshocking boat.

Monitor Bilk Creek flow upstream of the reservoir during summer to ensure flow is reaching the reservoir. The ditch that diverts around Bilk Creek was constructed in 2010 and delivers water to the reservoir during low summer flows.

Beaver activity, which has been an on again and off again problem was starting to become problematic for water delivery to the reservoir in the fall and winter of 2016. Sediment continues to be transported to Bilk Creek Reservoir creating new point bars, limiting reservoir storage and reducing deep-water habitat. The majority of the Bilk Creek watershed was burned in the 2011 Holloway Fire and a significant amount of sediment has been washed into the reservoir.

Introduce bluegill into Bilk Creek Reservoir utilizing stock source from Hinkson Slough. Since the introduction of largemouth bass in 2005, angler catch rate, harvest, and monitoring data show that the largemouth bass population is thriving, but the majority of fish are less than 12 inches. Bluegill are being introduced not only to provide a prey base for largemouth bass, but also to provide additional angling opportunity. A total of 510 bluegill sunfish were captured from Andorno Pond and introduced into Bilk Creek Reservoir June 23, 2016.

MANAGEMENT REVIEW

Angler success summarized from the drop-box survey, on-site angler survey, and mail-in questionnaire survey indicates that Bilk Creek Reservoir is exceeding the standards of general coldwater and warmwater fisheries. In addition, angler satisfaction ratings were positive.

Drop-box surveys and opportunistic angler contacts indicated that largemouth bass was the most abundant species in Bilk Creek Reservoir. Since the introduction of largemouth bass in 2005 and augmentation in 2008, largemouth bass appear to be thriving. However, dominance of largemouth bass less than 12 inches indicates the population may be stunted. Aquatic invertebrates are the most abundant forage for largemouth bass. There can be speckled dace that are entrained into the reservoir from Bilk Creek, but this is relatively rare. Occasional stomach samples are observed from angler-harvested largemouth bass and the majority shows a dominance of midge larvae. The introduction of bluegill into the reservoir in 2015 and 2016 should improve forage conditions for largemouth bass as well as providing additional angling opportunity. Stomach samples will be obtained from largemouth bass in the upcoming years to monitor the utilization of bluegill as a forage species.

Ensuring that inflowing creek water enters the reservoir during summer and fall continues to be an issue. Beavers are present and continue to impede water flow in the main creek channel, even though the majority of water is delivered through the diversion ditch. The storage capacity in Bilk Creek Reservoir is decreasing due to large deposits of fine sediments after the Holloway fire in 2011.

RECOMMENDATIONS

- To 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.
- Monitor the population of largemouth bass in Bilk Creek Reservoir by electroshocking to determine its suitability as a source stock of largemouth bass for other waters in the Western Region.
- Coordinate with the Quinn River Crossing Ranch to meet irrigation needs and for sustaining coldwater and warmwater fisheries in the reservoir.
- Monitor Bilk Creek to ensure adequate flow reaches the reservoir throughout the summer.
- Monitor sedimentation in the reservoir and possibly propose dredging to deepen the reservoir for improving fish habitat.
- Collect stomach samples from largemouth bass to monitor the utilization of bluegill as a forage species.

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