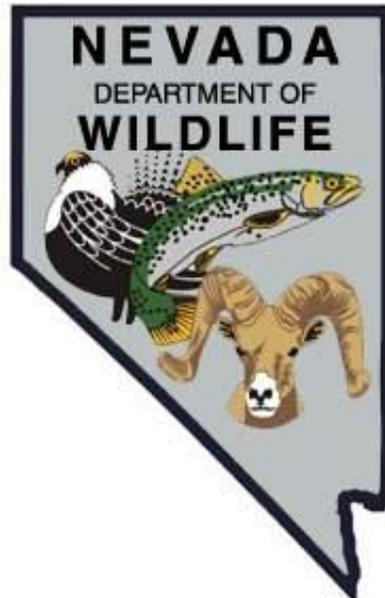


NEVADA DEPARTMENT OF WILDLIFE STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-50
2014

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, 2014 through December 31, 2014*

SUMMARY

Bilk Creek Reservoir provided angling opportunities throughout 2014 despite a below average water year. Anglers reported catching rainbow trout, bowcutt trout, tiger trout and largemouth bass. Rainbow trout and tiger trout were stocked in the reservoir in 2014 to meet angling demands. Beavers continued to cause blockage in the main stream channel, but the diversion ditch constructed in winter 2010 delivered water to the reservoir without impeded flow.

BACKGROUND

Bilk Creek Reservoir is located on Bilk Creek at the base of the southern end of the Bilk Creek Mountains. The reservoir 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-ft of water with an average depth of 10 ft and maximum depth of 17 ft 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, bowcutt trout, tiger trout, and largemouth bass fisheries. In June 2005, largemouth bass were stocked and have since become well established. The trout fishery is composed of stocked rainbow trout, bowcutt trout, and tiger trout.

OBJECTIVES

General Management Objectives:

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data.
- Monitor the 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.

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 collected basic creel information and assessed angler satisfaction. The angler drop-box surveys asked participants to rate three aspects of their fishing day on a scale of -2.0 (highly dissatisfied) to +2.0 (highly satisfied). The angler drop-box was maintained and drop-box forms were replenished throughout the year.

Angler use and success at Bilk Creek Reservoir was also assessed through the Department's Mail-in Angler Questionnaire Survey. Angler questionnaire data is derived from a survey that is mailed to 10 percent of license purchasers from the previous year.

Monitor the rainbow trout and largemouth bass populations during one night of electroshocking. Electroshocking was conducted with a Smith Root electroshocking boat on November 6, 2014. The perimeter of the reservoir was electroshocked three times during the survey. Data included species of fish, length of fish, number of fish, electroshocker settings, sampling time, and general health of fish caught.

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.

FINDINGS

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data. Triploid rainbow trout and tiger trout were stocked on May 14, 2014 and Tahoe strain rainbow trout were stocked on November 20, 2014 to augment the trout fishery. Stocking data is included in Table 1 and a five-year stocking history 2010-2014 is included in Table 2.

Table 1. 2014 Stocking Summary for Bilk Creek Reservoir

Date	Species	Number	Size (in)	Strain
5/14/2014	Rainbow	3,170	9.2	Triploid
5/14/2014	Tiger Trout	1,115	10.4	
11/20/2014	Rainbow	3,740	9.0	Tahoe
Total:		8,025		

Table 2. Bilk Creek Reservoir Five-Year Stocking History 2009-2013

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2009	Rainbow trout	-	2,001	702	9.6	5,001	1,813
	Rainbow trout	Tasmanian	3,000	1,111	9.7		
2010	Rainbow trout	Eagle Lake	3,001	984	9.4	3,001	984
2011	Rainbow trout	Eagle Lake	3,004	1,216	10.0	4,925	1,788
	Rainbow trout	Triploid	1,921	572	8.8		
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		
	Tiger trout	-	1,115	500	10.4		
	Rainbow trout	Tahoe	3,740	1,040	9		

Bilk Creek Reservoir is open year round to fishing and the angler drop-boxes are located at each end of the reservoir at main access locations. A total of 31 anglers participated by completing surveys and Table 3 summarizes monthly use and success. Anglers caught 379 fish and 29.6% was harvested, as compared to 22% in 2013. Overall angler satisfaction was positive for all categories. Table 4 summarizes the length frequency showing that most species caught were less than 14 in.

Table 3. 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				
January	1	2	0.00	1.00	1.00	1	1	1.0	0.5
April	4	21	1.50	1.50	0.75	36	4	9.0	1.7
May	3	11	1.33	1.00	1.33	22	14	7.3	2.0
June	14	81	1.50	0.86	1.42	201	70	14.5	2.5
July	3	17	1.00	-0.66	1.00	65	2	21.7	3.8
September	2	9.5	1.00	0.50	0.50	23	5	11.5	2.4
October	3	8	1.66	0.66	1.66	30	16	10.0	3.8
November	1	6	0.00	1.00	-2	1	0	1.0	0.2
Annual Summary	31	155.5	1.00	0.73	0.71	379	112	8.4	1.9

Mail-in angler questionnaire data for 2013 estimated 171 anglers fished for 531 days, which was slightly less than the five-year average (Table 5). Total catch was estimated at 3,981 fish with a success rate of 23.3 fish per angler day. This success rate was over 1.5 times that of the five-year average.

Table 4. 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"
Largemouth bass	193	131	43	16	3	0	0	0	0
Rainbow trout	133	81	24	26	1	0	1	0	0
Bowcutt	21	6	5	7	0	2	0	1	0
Tiger Trout	32	22	4	6	0	0	0	0	0

Table 5. Five-Year Bilk Creek Reservoir Angler Questionnaire Data 2009-13

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2009	391	769	4,642	6.04	11.87	1.97
2010	351	953	5,425	5.69	15.46	2.72
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	23.3	3.11
Average	292.2	658.4	4,046.4	6.35	14.95	2.33

An angler survey was conducted on June 26, 2014 (Table 6). Six anglers fished for 11 hrs to catch 22 fish for a catch rate of 2.0 fish per hour. Fish size is provided in Table 7 showing the largest fish caught were rainbow trout. Largemouth bass and tiger trout were under 12 in.

Table 6. Bilk Creek Reservoir Opportunistic Angler Surveys

Month	Survey Days	Anglers	Angler Hours	Fish	Fish/Angler	Fish/Hour
June	1	6	11	22	3.66	2.0
Summary	1	6	11	22	3.66	2.0

Table 7. Length Frequency and Species Composition Data – Opportunistic Surveys

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	4	2	1	0	0	0	0	0	0
Rainbow trout	17	2	9	7	1	0	0	0	0
Tiger Trout	1	0	1	0	0	0	0	0	0

Monitor rainbow trout and largemouth bass populations during one night of electroshocking. Electroshocking occurred on November 6, 2014 producing 213 largemouth bass, 55 rainbow trout, and 27 tiger trout. A subset of 100 largemouth bass was measured and ranged from 147 to 295 mm TL (5.8 – 11.6 in) and averaged 241mm TL (9.5 in) (Figure 1). All rainbow trout were measured and ranged from 230 to 382 mm TL (9.1 – 15.0 in) and averaged 275 mm TL (10.8 in). Tiger trout ranged from 208 to 351 mm TL (8.2 – 13.8 in) and averaged 279 mm TL (11.0 in).

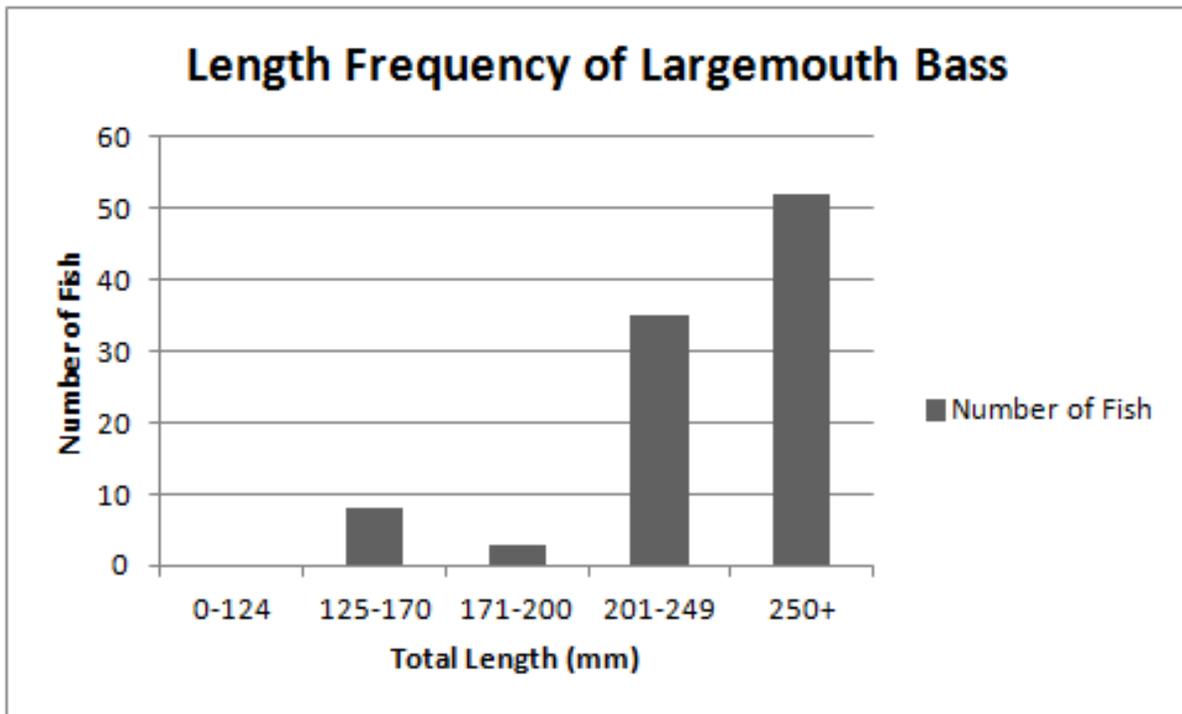


Figure 1. Bilk Creek Reservoir Largemouth bass length frequency - 2014

Monitor Bilk Creek flow upstream of the reservoir during summer to ensure flow is reaching the reservoir. The ditch that is diverted around Bilk Creek was constructed in 2010 and delivers water to the reservoir when flows are low in summer. Beaver activity continues to be a problem in the main creek channel and some beaver activity did occur in the diversion channel this year. However, beaver activity did not impede flow in the diversion channel. Large quantities of sediment continue 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 was washed into the reservoir.

MANAGEMENT REVIEW

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

Drop-box surveys, opportunistic angler surveys, and electroshocking survey data 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 in 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 show a dominance in midge larvae. Introducing bluegill would improve forage conditions for largemouth bass as well as providing additional angling opportunity.

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

General Management Objectives:

- 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 a coldwater and warmwater fishery in the reservoir.
- Monitor Bilk Creek to ensure adequate flows reach the reservoir throughout the summer.
- Monitor sedimentation in the reservoir and possibly propose dredging to deepen the reservoir for improving fish habitat.
- Introduce bluegill as a forage species for largemouth bass and for adding angling opportunity.

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