

NEVADA DEPARTMENT OF WILDLIFE STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

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2012

BILK CREEK 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: *Bilk Creek Reservoir*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

Bilk Creek Reservoir provided angling opportunities throughout 2012 even with a below average water year. Anglers reported catching rainbow trout and largemouth bass in the spring, summer, and fall months. Rainbow trout were stocked in May and June to meet angling demands. Beavers are still causing issues in the old stream channel but the diversion ditch constructed in winter 2010 appears to be delivering water to the reservoir without flow impeded by beaver dams during the low flow summer and fall months. During the warmer months, opportunistic angler surveys, angler drop-box data, and mail-in angler questionnaire data were collected.

BACKGROUND

Bilk Creek Reservoir is located on Bilk Creek at the base of the western slope of the Bilk Creek Mountains. The reservoir is owned and operated by the Quinn River Crossing Ranch, which uses water from the reservoir for crop irrigation. Bilk Creek Reservoir covers 60 surface acres and stores 670 acre-ft of water when full with an average depth of 10 ft and maximum depth of 17 ft.

The reservoir is a popular destination for local residents of Quinn River Valley, Kings River Valley, and Orovada. It currently supports rainbow trout and largemouth bass fisheries. In June 2005, largemouth bass were stocked and have since become well established. The trout fishery is mostly composed of stocked rainbow trout with occasional bowcutt trout are stocked.

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.
- Concurrent to population monitoring, collect catchable sized game fish and submit to the EPA Laboratory for mercury analysis.
- 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 throughout the year with the final collection on December 20, 2012.

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 about 10 percent of license purchasers from the previous year.

Monitor the rainbow trout and largemouth bass populations during one night of electroshocking. Electroshocking using the Smith Root electroshocking boat was conducted on April 22 and 23, 2012 and May 8, 2012. Largemouth bass were removed and stocked into other suitable waters and rainbow trout were released unharmed back into Bilk Creek Reservoir.

Concurrent to population monitoring, collect catchable sized game fish and submit to the EPA Laboratory for mercury analysis. This objective was not accomplished as it was determined that other waters within the Western Region were of higher priority for mercury analysis.

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

FINDINGS

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data. Tiger trout were planted on April 28, 2012 to augment the fisheries. In May, Bilk Creek Reservoir was stocked with its scheduled allotment of Eagle Lake strain rainbow trout; additionally, due to reports of heavy angling pressure throughout the spring, it received extra triploid rainbow trout, which were surplus trout that became available from the local stream and pond stocking allocation. The stocking data for Bilk Creek Reservoir from 2000 to 2012 is included in Table 1.

Table 1. Bilk Creek Reservoir Stocking Data 2000-Present

Year	Species	Strain	Number of Fish	Pounds of Fish	Average Size (inches)	Annual Total	
						Number	Pounds
2000	Rainbow trout	Tasmanian	2,493	900	10.0	2,493	900
2001	Rainbow trout	Tasmanian	2,494	725	9.0	2,494	725
2002	Rainbow trout	Tasmanian	2,598	899	9.5	2,598	899
2003	Rainbow trout	Tasmanian	2,506	679	8.5	2,506	679
2004	Rainbow trout	Tasmanian	3,028	875	9.0	3,028	875
2005	Largemouth bass	Wild	1,198	49	4.5	6,224	1,807
	Rainbow trout	Eagle Lake	3,040	1,000	9.5		
	Rainbow trout	Tasmanian	1,986	758	9.5		
2006	Rainbow trout	Kamloop	3,003	582	7.8	3,003	582
2007	Rainbow trout	Kamloop	3,005	960	9.3	5,044	1,410
	Rainbow trout	Mt. Shasta	2,039	450	8.2		
2008	Rainbow trout	Kamloop	4,984	780	7.3	9,990	2,400
	Rainbow trout	Bowcutt	5,006	1,620	9.3		
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		

The voluntary, angler drop-box is located at the northwestern access to Bilk Creek Reservoir. In the winter months, this road is inaccessible due to the large pools of standing water that flood the road. Even though this route is shorter, many people opt to use the spillway access route because the road is in better condition; these anglers do not pass by the angler drop-box.

Bilk Creek Reservoir is open year around to fishing and the angler drop-box is maintained throughout the year; however, five anglers only participated from May through September 2012. Table 2 summarizes the monthly angler use and success data compiled from the anglers completing the drop-box survey.

There were 46 fish reported on the angler drop-box survey forms from May to September 2012. During 2012, 43.5 percent of the total number of fish caught was harvested. Table 3 summarizes the length frequency and species composition reported on the angler drop-box forms.

The mail-in angler questionnaire data estimated use at 361 anglers and 669 angler days in 2011. Total catch was 3,469 fish with a success rate of 9.61 fish per angler day. The results of the mail-in angler questionnaire from 2000 through 2011 are included in Table 4.

Table 2. 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				
May	1	2	2	2	2	5	4	5	2.5
June	1	2	1	1	1	3	1	3	1.5
July	1	4	1	0	2	7	7	7	1.75
August	1	4	2	1	2	26	4	26	13
September	1	2	2	1	2	5	5	5	2.5
Annual Summary	5	14	1.6	1	1.8	46	20	9.2	4.25

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"
Largemouth bass	23	16	7	0	0	0	0	0	0
Rainbow trout	23	2	1	10	6	3	0	1	0

Table 4. Bilk Creek Reservoir Angler Questionnaire Data 2000-Present

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2000	671	1,918	7,517	3.92	11.20	2.86
2001	519	1,493	6,457	4.32	12.44	2.88
2002	336	884	5,597	6.33	16.66	2.63
2003	—	—	—	—	—	—
2004	330	574	2,630	4.58	7.97	1.74
2005	406	777	4,416	5.68	10.88	1.91
2006	466	1,476	5,584	3.78	11.98	3.17
2007	337	714	5,203	7.29	15.44	2.12
2008	107	218	3,096	14.20	28.93	2.04
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
Average	344	767	4,308	6.56	14.02	2.19

The establishment of largemouth bass likely influenced the increase in angler success over recent years. Angler reports during the summer months indicate catching large numbers of small bass (less than 13 inches) in the summer evenings.

Opportunistic angler surveys were conducted in March, April, July, and August of 2012. Angler were only contacted in April and August and results are summarized in Table 5.

As a matter of protocol, fish that anglers harvest are measured while completing opportunistic angler contacts; however, no fish were measured during the 2012 fishing season. Length estimates and species composition, as provided by the angler, are included in Table 6. Largemouth bass harvested in Bilk Creek Reservoir were all wild

and the average size of the tiger and rainbow trout stocked in 2012 ranged from 9.8 to 10 inches.

Table 5. Bilk Creek Reservoir Opportunistic Angler Surveys

Month	Survey Days	Anglers	Angler Hours	Fish	Fish/Angler	Fish/Hour
March	1	0	0	0	0	0
April	1	5	9	0	0	0
July	1	0	0	0	0	0
August	1	2	8	85	42.5	10.6
Summary	4	7	17	85	12.1	5

Table 6. 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	77	70	5	2	0	0	0	0	0
Rainbow trout	8	0	6	2	0	0	0	0	0

Monitor the rainbow trout and largemouth bass populations during one night of electroshocking. Electroshocking on May 8, 2012 produced 587 largemouth bass and 13 holdover rainbow trout. The largemouth bass ranged in total length from 110 to 430 mm (4.3 to 16.9 in) and averaged 224 mm (8.8 in). The rainbow trout ranged in total length from 230 to 388 mm (9.1 to 15.3 in) and averaged 324 mm (12.8 in). The 587 captured largemouth bass were stocked into Chimney Reservoir (200), Bass Pond on the Mason Valley Wildlife Management Area (201), and Mitch Park Pond (186). On April 23, a total of 337 largemouth bass were captured using the same technique. The total lengths of 14 bass were measured ranging in size from 105 to 305 mm (4.1 to 12.0 in) averaging 207 mm (8.1 in). These fish were intended to be stocked into Bass Pond and Mitch Park Pond but all fish died during transportation. On April 22, a total of 162 largemouth bass were captured using the electroshocking boat; these fish were all stocked into Chimney Reservoir.

Concurrent to population monitoring, collect catchable sized game fish and submit to the EPA Laboratory for mercury analysis. This objective was not accomplished as it was determined that other waters within the Western Region were of higher priority for mercury analysis.

Monitor Bilk Creek flow upstream of the reservoir during summer to ensure flow is reaching the reservoir. The diversion ditch going around the existing Bilk Creek channel was used again in 2012. It is effective in delivering water to Bilk Creek Reservoir during lower flows in summer months. Beaver activity is still confined to the actual creek channel. Large quantities of sediment continue to be carried into Bilk Creek Reservoir forming new point bars, limiting reservoir storage, and reducing deep-water habitat. The Quinn River Crossing Ranch released enough water to prevent Bilk Creek Reservoir from spilling during the high spring runoff, which could have threatened the structural integrity of the earthen dam.

Evidence of beaver activity remains common throughout Bilk Creek upstream and downstream of Bilk Creek Reservoir. Beavers are widespread through the Quinn River system. This year, no beaver activity was observed in Bilk Creek Reservoir, though fresh beaver activity was present upstream, and no beavers were removed last year.

MANAGEMENT REVIEW

Angler success summarized by angler drop-box forms, opportunistic angler contacts, and mail-in questionnaires indicates that Bilk Creek Reservoir is exceeding the fishery standards of a general coldwater fishery concept.

Ensuring water from Bilk Creek is delivered into the reservoir throughout the summer and fall months remain an issue. Beavers are present and continue to impede water flow in the Bilk Creek channel. The storage capacity in Bilk Creek Reservoir is decreasing due to large amounts of fine sediments being deposited.

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.
- Explore the possibility of netting and electroshocking in late winter/early spring before aquatic vegetation and low water levels become an issue.
- Coordinate with the Quinn River Crossing Ranch to meet irrigation needs and sustain the coldwater and warmwater fishery in Bilk Creek Reservoir.
- Monitor Bilk Creek upstream of the reservoir to ensure adequate flows reach the reservoir throughout the summer months.

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