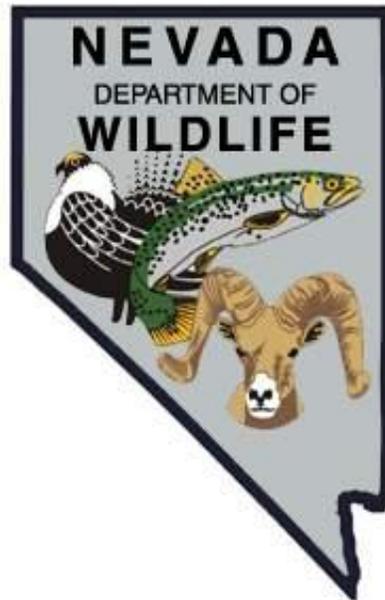


NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-48
2012

CHIMNEY RESERVOIR
WESTERN REGION



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

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**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: *Chimney Reservoir*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

General Management Objective

Chimney Reservoir was accessible to anglers and boaters throughout 2012 though angling opportunities were limited due to the fishery still being young. It reached maximum storage at 13,800 acre-ft on April 2, 2012. Water releases from the reservoir continued until December for livestock watering, but releases for irrigation ended in September. Some anglers reported catching wipers in late summer, but these were never verified. Monitoring results for quagga mussels were negative.

Study Specific Objective-Chimney Reservoir Eradication Project

The rotenone treatment planned in the North Fork Little Humboldt River that flows into the reservoir was not completed. There needs to be a better assessment of what sections occupy carp before continuing with this project.

Study Specific Objective-Chimney Reservoir Restocking and Assessment

Fish restocking began in 2011 and included walleye fry, channel catfish, and largemouth bass. In 2012, walleye fry, wipers, channel catfish, and largemouth bass were stocked. Sacramento blackfish were not stocked since source populations in Rye Patch and Lahontan reservoirs tested positive for quagga mussel veligers, although this is suspect. Sacramento blackfish, however, may have to come from other areas in the Humboldt River.

BACKGROUND

Chimney Reservoir is located on the Little Humboldt River and is fed by the North Fork Little Humboldt River and the South Fork Little Humboldt River. The reservoir was built in 1974 to provide storage for downstream irrigation. When full, Chimney Reservoir covers 2,150 SA and stores 35,000 acre-ft, with an average depth of 16 ft and a maximum depth of 55 ft.

Chimney Reservoir is currently managed as a general warmwater fishery. Walleye, white crappie, channel catfish, largemouth bass, yellow perch, rainbow trout, and Sacramento blackfish are present and commercial fishing operations target the prolific carp population. In the early 1990's, trout were stocked, but a fishery did not

become established. Both forks of the Little Humboldt River support Lahontan cutthroat trout in the headwaters, which may contribute to a very limited trout fishery in Chimney Reservoir. Low water conditions and a large carp population have created very turbid water conditions in the reservoir.

OBJECTIVES AND APPROACHES

General Management Objective

To administer an annual fisheries program that assesses general fish population dynamics, angler use and success, annual stocking programs, habitat conditions, and maintains contact with necessary land management entities.

Approaches:

- Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data.
- Collect stream flow data on the north and south forks of the Little Humboldt River (above the reservoir) and Little Humboldt River (below the reservoir).

Study Specific Objective-Chimney Reservoir Eradication Project

The objective is to increase angler use similar to surrounding waters with similar fisheries by improving the warmwater sport fishery in Chimney Reservoir.

Approaches:

- Conduct post-eradication monitoring of the October 2010 and January 2011 project using visual observation, single pass spot electroshocking for one day on the South and North Fork Little Humboldt River and two net-nights of gillnetting Chimney Reservoir.
- If it is determined that large populations of carp occupy the North Fork Little Humboldt conduct a chemical treatment using rotenone to remove fish from the North Fork Little Humboldt River upstream of Chimney Reservoir. Rotenone will be applied at no greater than 4 ppm and follow state permitting instruction.

Study Specific Objective-Chimney Reservoir Restocking and Assessment

The objective is to increase angler use similar to surrounding waters with similar fisheries by improving the warmwater sport fishery in Chimney Reservoir.

Approaches:

- Develop a sport fishery by restocking with 500,000 - 1 million walleye fry, 1,000 white crappie, 1,000 largemouth bass, 500 yellow perch, 500 channel catfish, and 2,000 pounds of Sacramento blackfish. Fish for

restocking will be obtained utilizing source stock from local and neighboring states fisheries as well as purchasing fish from approved commercial/government suppliers.

- Examine recruitment of stocked fish during late spring or summer by beach seining 5 transects twice a year.
- Monitor recruitment of fish one night during summer electroshocking of 5 transects.

PROCEDURES

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. Mail-in, angler questionnaire data for 2011 was summarized and angler success data was compared to previous years.

Monitoring adult quagga mussel occurred visually around the dam and boat ramp areas when on-site and veliger plankton surveys occurred on July 22, 2012 and August 27, 2012. Veliger sampling followed guidelines outlined in the Bureau of Reclamation Sample Collection Protocols for Dreissenid Veliger Early Detection Monitoring. A sampling net with a mesh size of 80 μm and an opening of 29.5 cm was hauled vertically through the water column. Locations included four samples from around the dam and boat ramp and preserved samples were mailed to EcoAnalysts.

Collect stream flow data on the north and south forks of the Little Humboldt River (above the reservoir). Nevada Division of Water Resources (NDWR) provided stream gauge data on water delivered to Chimney Reservoir in the South Fork Little Humboldt River and North Fork Little Humboldt River during 2012.

Study Specific Objective-Chimney Reservoir Eradication Project

Conduct post-eradication monitoring of the October 2010 and January 2011 project using visual observation, single pass spot electroshocking for one day on the South and North Fork Little Humboldt River and two net-nights of gillnetting Chimney Reservoir. Post eradication monitoring was postponed at Chimney Reservoir in 2012 since there were higher priority projects emerging at the time monitoring was scheduled.

Coordinate with Nevada First Corporation (landowners) and Bureau of Land Management to complete a second rotenone treatment on North Fork Little Humboldt River. Coordination is ongoing among NDOW, Nevada First Corporation, and BLM regarding rotenone treatment of the North Fork Little Humboldt River. Treatment would occur on private and BLM administered lands. The Winnemucca BLM office completed the NEPA, which will be followed during the treatment. The treatment was not conducted due to a change in personnel.

In 2011, NDOW submitted a chemical treatment proposal to the Winnemucca BLM office planned for late summer/fall 2011 on the North Fork Little Humboldt River. BLM issued a Notice of Proposed Action on August 12, 2011 since portions of the North Fork Little Humboldt River are managed as a Wilderness Study Area.

Study Specific Objective-Chimney Reservoir Restocking and Assessment

Develop a sport fishery by restocking with 1 million walleye fry, 1,000 white crappie, 1,000 largemouth bass, 500 yellow perch, 500 channel catfish, and 2,000 pounds of Sacramento blackfish. Fish for restocking will be obtained utilizing source stock from local fisheries as well as purchasing fish from approved commercial/government suppliers. Walleye fry, wipers, channel catfish, and largemouth bass were stocked.

Examine recruitment of stocked fish during late spring or summer by beach seining 5 transects twice a year. Beach seining was not completed due to changes in personnel and a priority project to monitor the Humboldt River for the presence of northern pike.

Monitor recruitment of fish one night during summer electroshocking of 5 transects. Electroshocking was not completed due to changes in personnel and a priority project monitoring the Humboldt River for the presence of northern pike.

FINDINGS

General Management Objective

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. No anglers were contacted or observed while performing fishery management activities at Chimney Reservoir. No trips were made with the specific purpose of contacting anglers.

At Chimney Reservoir, 137 anglers fished 144 days to catch only 8 fish (Table 1). As expected, angler success was below the 10 year average, which was likely attributed to such a young fishery and the extremely low water conditions persisting over the last several years.

Results from quagga mussel veliger sampling were negative. Additionally, no adult mussels were found when sampling around the boat ramp and dam area.

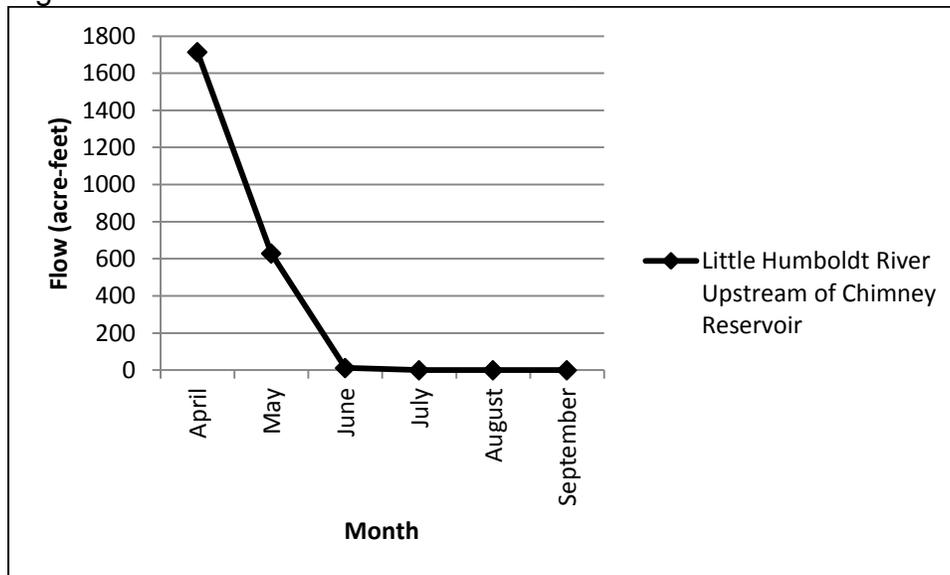
Collect stream flow data on the north and south forks of the Little Humboldt River (above the reservoir) and Little Humboldt River (below the reservoir). Flow data was combined for the South Fork and North Fork Little Humboldt River. After May 5, flow was too low to be measured and was intermittent throughout the summer. Figure 1 displays monthly inflow to Chimney Reservoir during the irrigation season spanning

from April to September. A total of 2,356 acre-ft of water was discharged to Chimney Reservoir.

Table 1. Chimney Reservoir Angler Questionnaire Results 2000-2011

Year	Anglers	Days	Fish	Fish/Day	Fish/Angler	Days/Angler
2000	453	1,252	1,897	1.52	4.19	2.76
2001	362	667	222	0.33	0.61	1.84
2002	224	1,023	132	0.13	0.59	4.57
2003	204	744	1,064	1.43	5.22	3.65
2004	306	759	486	0.64	1.59	2.48
2005	345	686	1,750	2.55	5.07	1.99
2006	148	209	31	0.15	0.21	1.41
2007	302	943	368	0.39	1.22	3.12
2008	38	113	12	0.11	0.32	2.97
2009	134	901	1,209	1.34	9.02	6.72
2010	151	312	203	0.65	1.34	2.07
2011	137	144	8	0.06	0.06	1.05
Average	234	646	615	0.78	2.45	2.89

Figure 1. Little Humboldt River Flows 2012



Flows on the South Fork and North Fork Little Humboldt Rivers during 2012 were some of the lowest in recent years. Figure 2 displays a history of annual water discharged to Chimney Reservoir from the South Fork and North Fork Little Humboldt Rivers during the irrigation season.

During 2012, water storage was measured once a month in the reservoir from March 5 to September 10 by NDWR (Figure 3). The maximum water stored was measured on April 2 at 13,800 acre-ft. However, on September 10 storage was 4,920 acre-ft.

Figure 2. Annual Total Little Humboldt River Discharge

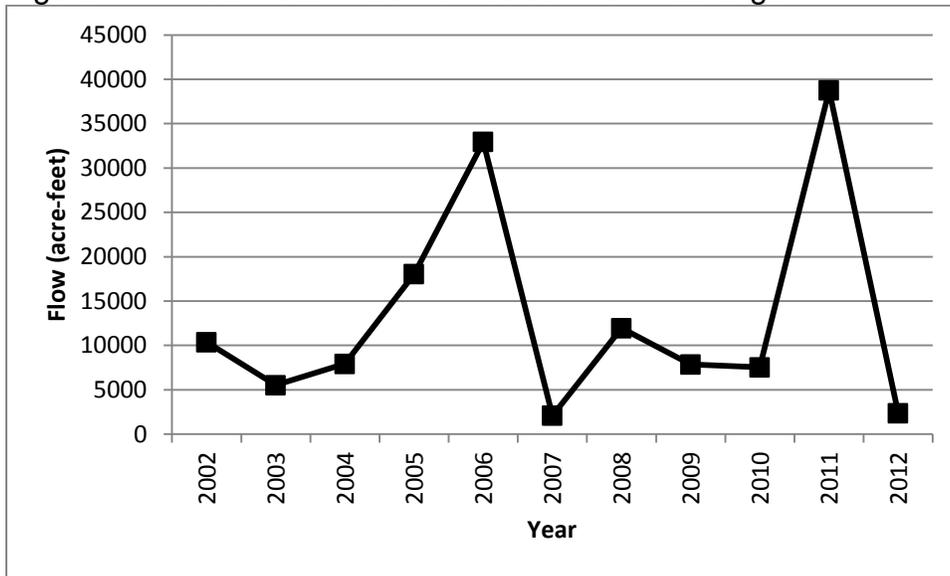
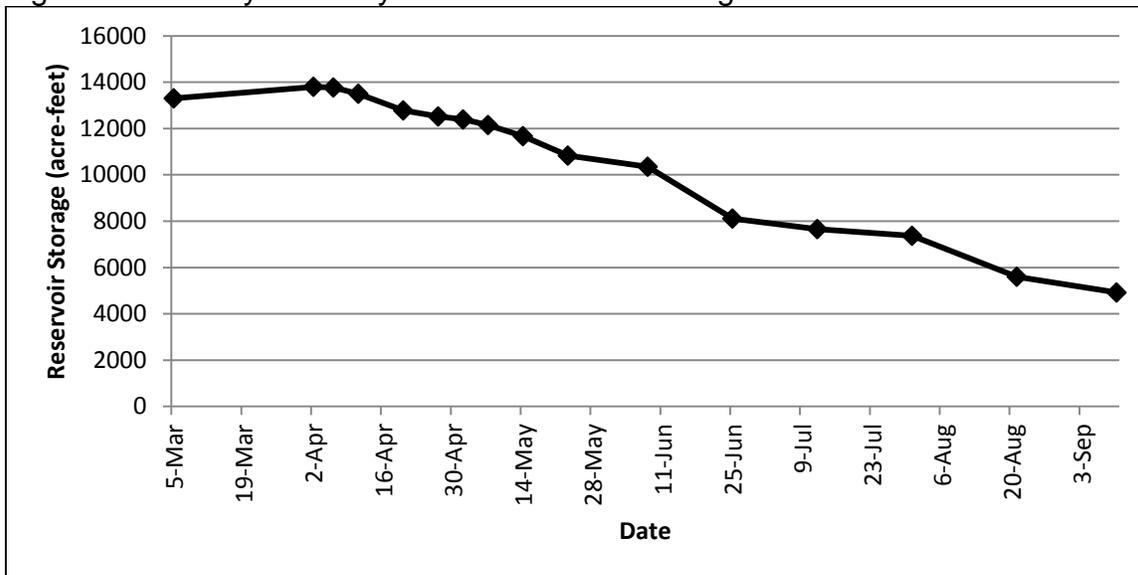


Figure 3. Monthly Chimney Reservoir Water Storage



Study Specific Objective-Chimney Reservoir Eradication Project

Conduct post-eradication monitoring of the October 2010 and January 2011 project using visual observation, single pass spot electroshocking for one day on the South and North Fork Little Humboldt River and two net-nights of gillnetting Chimney Reservoir. Monitoring was postponed due to a change in personnel and a priority project monitoring for the presence of northern pike in the Humboldt River.

Coordinate with Nevada First Corporation (landowners) and Bureau of Land Management to complete a second rotenone treatment on North Fork Little Humboldt River. Coordination occurred between Nevada First Corporation and NDOW to allow access on the South Fork Little Humboldt River and North Fork Little

Humboldt River. BLM completed the NEPA process and issued a Notice of Proposed Action to rotenone these streams within Wilderness Study Area boundaries.

Conduct a chemical treatment using rotenone to remove fish North Fork Little Humboldt River upstream of Chimney Reservoir. Rotenone will be applied at no greater than 4 ppm and follow state permitting instruction. Rotenone treatment of the North Fork Little Humboldt River was not completed due to a change in personnel and work on higher priority projects. Electroshocking surveys are needed, however, prior to conducting a treatment.

Study Specific Objective-Chimney Reservoir Restocking and Assessment

Develop a sport fishery by restocking with 1 million walleye fry, 1,000 white crappie, 1,000 largemouth bass, 500 yellow perch, 500 channel catfish, and 2,000 pounds of Sacramento blackfish. Fish for restocking will be obtained utilizing source stock from local fisheries as well as purchasing fish from approved commercial/government suppliers. During 2012 walleye fry, wipers, channel catfish and were restocked into Chimney Reservoir. On April 18 and 25, 600,000 walleye fry obtained from Gavins Point National Fish Hatchery were stocked. There were 2,200 wipers (sterile white bass x striped bass hybrids) stocked on May 17. The piscivorous nature of wipers is expected to act as a biological control of juvenile carp. On June 7, 900 channel catfish were stocked. Wipers and channel catfish were purchased from Colorado Catch in Colorado. On May 9, 363 largemouth bass were stocked in Chimney Reservoir and came from Bilk Creek Reservoir. Fish stocking history for Chimney Reservoir is summarized in Table 2.

Table 2. Chimney Reservoir Stocking History 2000-2011

Year	Species	Source	Number of Fish	Pounds of Fish	Average Size (inches)
2000	—	—	—	—	—
2001	—	—	—	—	—
2002	Walleye	Garrison Dam NFH, ND	150,000	5.70	0.5
2003	Walleye	Gavins Point NFH, SD	200,000	2.00	0.5
2004	—	—	—	—	—
2005	Walleye	Garrison Dam NFH, ND	256,000	6.40	0.5
2006	Walleye	Gavins Point NFH, SD	100,000	—	0.5
2007	Walleye	Gavins Point NFH, SD	100,000	7.20	0.62
2008	—	—	—	—	—
2009	—	—	—	—	—
2010	—	—	—	—	—
2011	Walleye	Gavins Point NFH, SD	200,000	—	—
	Wiper	Colorado Catch	3,250	813	7-9
	Channel catfish	Colorado Catch	500	50	5
2012	Walleye	Gavins Point NFH, SD	600,000	—	—
	Largemouth Bass	Bilk Creek Reservoir	363	96	9.6
	Wiper	Colorado Catch	2200	550	7.9
	Channel catfish	Colorado Catch	900	200	8.0

Sacramento blackfish and white crappie were not captured at Rye Patch Reservoir for stocking into Chimney Reservoir because genetic presence (from PCR tests) of quagga mussels was detected from Rye Patch Reservoir. White crappie will be available from Willow Creek Reservoir and white crappie and yellow perch may be available from Owyhee Reservoir in Oregon.

Examine recruitment of stocked fish during late spring or summer by beach seining 5 transects twice a year. No beach seining occurred to monitor juvenile recruitment due to a change in personnel and higher priority projects.

Monitor recruitment of fish one night during summer electroshocking of 5 transects. No monitoring of fish recruitment was completed due to a change in personnel and higher priority projects.

GENERAL MANAGEMENT REVIEW

The angler utilization and success at Chimney Reservoir was below average during 2012, which was due to NDOW informing anglers about reduced angling opportunities due the eradication project. The reservoir has only been restocked within the past two years. Water levels were low in 2012. Monitoring results for aquatic invasive species were negative. Ongoing monitoring and boater education should help prevent establishment of aquatic invasive species into Chimney Reservoir and the irrigation systems downstream in Paradise Valley.

STUDY REVIEW

Chimney Reservoir Eradication Project

Carp are still present in the North Fork Little Humboldt River system, and extensive electroshocking survey will be conducted on the North Fork Little Humboldt River to determine the extent of carp in the stream.

Chimney Reservoir Restocking and Assessment

Restocking efforts were successful walleye fry, channel catfish, wipers and largemouth bass into Chimney Reservoir. With the potential discovery of quagga mussels in Rye Patch and Lahontan reservoirs, sources for adult walleye and Sacramento blackfish are no longer available. Sacramento blackfish may be collected from the Humboldt River pending results of AIS surveys. Restocking efforts should continue in 2013 with a focus on adult largemouth bass, walleye, wipers, white crappie, and yellow perch. Tiger muskies (muskellunge x northern pike sterile hybrid) should be explored as a biological control for juvenile carp as well as provide angling opportunities.

RECOMMENDATIONS

General Management Objective

To assess general fish population dynamics, angler use and success, annual stocking programs, habitat conditions, and maintain contact with necessary land management entities.

Approaches:

- Monitor angler use, success, and satisfaction through opportunistic angler surveys and mail-in, angler questionnaire data to maintain a general warmwater fishery.
- Conduct a general habitat assessment through monitoring water quantity (reservoir storage), water quality (clarity), aquatic vegetation, and presence of aquatic invasive species.

Study Objective-Chimney Reservoir Eradication Project

The objective is to increase angler use similar to surrounding waters with similar fisheries by improving the warmwater sport fishery in Chimney Reservoir.

Approaches:

- Conduct post-treatment monitoring using frame nets and gill nets in Chimney Reservoir.
- Coordinate with Nevada First Corporation and Bureau of Land Management to complete a rotenone treatment on the South Fork Little Humboldt River and North Fork Little Humboldt River depending on water conditions.
- Conduct post-treatment monitoring on the South Fork Little Humboldt River and North Fork Little Humboldt River if a rotenone treatment is completed.

Study Objective-Chimney Reservoir Restocking and Assessment

The objective is to increase angler use similar to surrounding waters with similar fisheries by improving the warmwater sport fishery in Chimney Reservoir.

Approaches:

- Restock Chimney Reservoir with adult largemouth bass.
- Document the barriers on the South Fork and North Fork Little Humboldt Rivers upstream of Chimney Reservoir.
- Augment the population of walleye with fry.
- Continue to stock wipers.
- Explore an alternate fish species for stocking to act as a forage fish.
- Explore stocking tiger musky.

- Monitor the shoreline areas with beach seines or electroshocking for recruitment of juvenile sport fish.

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