

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

F-20-49
2013

ELKO COUNTY
SMALL LAKES AND RESERVOIRS
EASTERN REGION



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

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

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Elko County Small Lakes and Reservoirs*
Period Covered: *January 1, 2013 through December 31, 2013*

SUMMARY

For the calendar year 2013, Elko County small lakes and reservoirs received over 17,000 stocked rainbow trout, with an additional 450 channel catfish stocked into Jakes Creek Reservoir.

Angling at most reservoirs was considered fair, with the exception of Jiggs Reservoir, which was dry due to potential work on the dam and reservoir bottom. Dry Creek and Willow Creek reservoirs water levels continued to decline due to drought conditions within the region, with Dry Creek being lowered to minimum pool by August 2013. Willow Creek Reservoir dropped to approximately 10% of capacity by September 2013 and fishing pressure was light. Opportunistic angler contacts were scarce in 2013, with only 32 angler questionnaires being received at Jakes Creek Reservoir and only 3 from Dry Creek Reservoir.

Construction work at Jiggs Reservoir was pushed back due to engineering requirements and funding issues. The engineered plans were completed and have been approved by the state engineer. The project is currently scheduled to begin in mid-April of 2014.

The July population survey on Willow Creek Reservoir consisted of electrofishing, beach seining, and frame net sets to capture and salvage game fish for relocation. The population survey techniques resulted in capturing 1,805 white crappie with an average length of 5.1 in, TL, which were then transplanted to Chimney Creek Reservoir due to low water conditions at Willow Creek Reservoir.

No population work or angler contacts occurred at Dry Creek Reservoir in 2013, periodic visits were made to document deteriorating water levels and angling conditions.

BACKGROUND

Angel Lake

Angel Lake is an alpine lake located at 8,000 feet elevation that was modified to provide irrigation storage. It covers 13 surface acres and has a maximum depth of 35 ft. The lake is located 13 mi southwest of the town of Wells in the East Humboldt Range. The lake contains brook trout, rainbow trout, tiger trout, and speckled dace. The lake is

managed under a Put-and-Take Fisheries Management Concept due to the limited carryover of trout and the immediate harvest of stocked trout.

Boyd Reservoir

Boyd Reservoir is located approximately 12 miles southeast of Elko. This reservoir is used primarily for irrigation, but it has shown to be capable of a limited warm water fishery. There is currently no minimum pool agreement in place. A total loss of fish in the reservoir occurred in 1992 when it was drained down. Largemouth bass have been stocked several times since 1992, but no survey to evaluate these augmentations has occurred.

Carlin Pond

Designated as an urban fishery, Carlin Pond was created by overflow from the Carlin City water system. Biannual stocking provides a put-and-take trout fishery. The unique feature of this water is that it does not freeze over during the winter months. However, when water temperatures begin to rise in the summer months, a buildup of aquatic vegetation complicates the fishing at Carlin Pond.

Dorsey Reservoir

Dorsey Reservoir is located approximately 18 mi north of Elko. The reservoir covers 20 surface acres and has a capacity depth of 24 ft. It is a privately owned irrigation storage and stock water reservoir that experiences seasonal drawdown. Shortly after spring trout stocking, the water level begins to drop and warm as the summer progresses, creating poor trout habitat. Dorsey Reservoir is managed under a Put-and-Take Fisheries Management Concept due to the high level of trout harvest and the low carryover rate.

Dry Creek Reservoir

Dry Creek Reservoir was constructed in 1961 and sits on private property with limited public access. It was first stocked with trout in 1963 and had good fishing for a few years. Nongame fish populations rapidly increased so the reservoir and tributary streams were treated with rotenone in 1970. The reservoir was restocked with rainbow trout and it presently receives annual stockings of catchable length rainbow trout. In 1974, smallmouth bass were introduced into the reservoir as a biological control of the recurrent, expanding nongame fish populations. Currently, a wild smallmouth bass population has become established, controlling nongame (bridgelip sucker and dace) fish populations and providing a warm water sport fishery. Largemouth bass were introduced in 1994 from a bass salvage project at Wilson Sink Reservoir to diversify and increase angler opportunities. A dewatering event occurred in 2009, draining the reservoir down to the minimum pool and limiting existing fish habitat. Management emphasis is to provide a recreational panfish, black bass fishery, and a put-grow-take, "quality" trout fishery.

Jakes Creek Reservoir

Jakes or Boies Reservoir is located approximately 35 mi north of Wells, six miles off Highway 93. The reservoir covers 62 surface acres and has a maximum depth of 16 ft at full capacity. Jakes Creek Reservoir is managed primarily as a General Coldwater Fishery and secondarily as a General Warmwater Fishery. The reservoir is stocked with rainbow trout yearly, and has a self-reproducing population of largemouth bass. Channel catfish were introduced in 2008 to increase the fishing opportunity and provide biological control for the native bridgelip sucker. As summer progresses, shoreline vegetation increases and reduces the quality of shoreline fishing, but fishing by boat can greatly increase angler success rates. Trout fishing is typically good in spring and fall and somewhat slower in summer, although the increase in water temperature allows largemouth bass fishing to pick up. The reservoir provides a yearlong recreational opportunity, with safe levels of ice occurring in most years to facilitate ice fishing.

Jiggs Reservoir

Jiggs or Zunino Reservoir is located approximately 30 mi south of Elko. The reservoir covers 45 surface acres and has a maximum depth of 10 ft at full capacity. The reservoir is limited by the amount of inflow allotted to the reservoir, which makes it very susceptible to drought events. Low water levels in winter have led to the use of aerators during ice up periods to sustain the fishery.

The reservoir has remained dry the last several years to facilitate the proposed improvement project. This project is intended to deepen the reservoir by 3 to 10 ft and reduce the water loss from seepage by mixing in a bentonite clay layer with the current soil. Repairs to the dam structure will also be done to comply with safety liabilities due to the dilapidated structure. This would help improve the chances of a perennial pool in drought years, which would be a benefit to both fish and wildlife and potentially agricultural use as well.

Willow Creek Reservoir

Willow Creek Reservoir was historically a native Lahontan cutthroat trout and nongame (Tahoe sucker, dace, and redbside shiner) fishery. Recent management emphasis has been directed toward the re-establishment of a diversified recreational fishery through augmentation of white crappie, black bass, and channel catfish.

OBJECTIVES and APPROACHES

Angel Lake

Objective: General Sport Fisheries Management

- Conduct a pre-stocking evaluation of road conditions and water quality/quantity.
- Conduct a general fisheries assessment through opportunistic angler contacts.
- Conduct a visual survey of the shoreline to evaluate over-winter mortality immediately after spring ice breakup.
- Conduct an angling survey to evaluate growth and carryover, one day in late summer, prior to fall stocking.

Boyd Reservoir

Objective: General Sport Fisheries Management

- Conduct a one night electroshocking survey covering approximately 50% of the shoreline in early summer.

Carlin Pond

Objective: General Sport Fisheries Management

- Visually assess water quantity (pond level, inflow/outflow) and quality (clarity) for coordinating trout stocking.

Dorsey Reservoir

Objective: General Sport Fisheries Management

- Conduct a pre-stocking evaluation of road conditions and water quality/quantity.
- Conduct a general fisheries assessment through opportunistic angler contacts.

Dry Creek Reservoir

Objective: General Sport Fisheries Management

- Conduct a general fisheries assessment through opportunistic angler contacts.
- Maintain and check return of voluntary angler drop-box surveys during the course of other duties.
- Prepare and review the 2012 Fisheries Management Prescription.

Jakes Creek Reservoir

Objective: General Sport Fisheries Management

- Conduct a pre-stocking evaluation of road conditions and water quality/quantity.
- Conduct a general fisheries assessment through opportunistic angler contacts.
- Maintain and check for returns of voluntary angler drop-box surveys during the course of other duties.
- Augment the channel catfish population (500) in the spring.
- Conduct a 2 net-night experimental gillnet survey in the spring.
- Conduct an overnight angling survey to assess the channel catfish population in conjunction with other work activities.

Jiggs Reservoir

Objective: To evaluate the water improvements to Jiggs Reservoir and the associated fishery, following a deepening and bentonite-sealing project.

- Be on site monitoring the progress of construction during pond excavation and sealing.
- Augment the fishery with 3,000 rainbow trout, 500 largemouth bass, and 500 bluegill when the appropriate amount of water refills the reservoir (spring).
- Visually assess water quantity (inflow and reservoir level) and quality (temperature) occasionally throughout the year.

Willow Creek Reservoir

Objective: General Sport Fisheries Management

- Conduct a pre-stocking evaluation of water quality/quantity.
- Conduct a general fisheries assessment through opportunistic angler contacts.
- Stock a minimum of 4,000 channel catfish in the spring.
- Conduct a single nighttime, electroshocking survey in spring, and set experimental gill nets and frame nets for 2 net nights in the summer, depending on water conditions.
- Install a digital recording thermograph from May to October to measure temperature variations associated with fish activity including black bass and crappie spawning.
- Collect a minimum of 5 samples of each sportfish species for mercury analysis in cooperation with NDEP.

PROCEDURES

Coordinating trout stocking with the hatcheries requires a check of the reservoir to evaluate water levels and water temperatures prior to stocking.

Winterkill surveys were done shortly following winter ice breakup. The bank was walked by a one or two person crew, using an ocular survey, to document any observed fish mortalities.

Angler creel was collected by means of personal contact or using angler drop-boxes located at certain reservoirs. Information gathered included number of anglers fishing, hours fished, fish caught, fish released, and fishing method used.

Electroshocking surveys were conducted using the electroshocking barge, with the fixed probes used as the anode and the barge served as the cathode. Captured fish were measured, weighed, and released.

Fish capture, salvage, augmentation, and transplant of fish species was accomplished through the use of electrofishing, beach seining, angling gear, frame nets, and trawling from approved water sources of similar water quality and fish composition.

FINDINGS

Angel Lake

In June and July, 3,810 Shasta strain rainbow trout were stocked; with an additional 1,600 Jumper strain rainbow trout being stocked in the fall. Due to available hatchery numbers, no tiger trout were stocked in 2013.

Combining creel visits with other work duties, six anglers were contacted on a single day. These anglers put forth 14 hrs of angling effort to catch 9 fish, resulting in catch rates of 1.5 fish per angler and 0.6 fish per hour. Eight of the captured fish were harvested, but no length-weight data was collected, as they were recently stocked hatchery trout.

On May 17, the lake was visited to assess ice conditions and conduct a visual assessment of winter mortality. The lake was ice free and the water temperature was 42°F (5.6°C). There were two fish mortalities observed, both near the dam face and presumed fishing mortalities. It was estimated that overwinter fish losses were very low.

On September 17, one angler fished for 2 hrs to assess the carryover and body condition of the trout prior to winter ice. Although several fish were caught, only one carryover rainbow was contacted. This fish measured 12.0 in (304 mm) and weighed 0.5 lbs (240 grams), and had a body condition of poor. This year's survey was the fourth year to collect carryover trout data and the numbers collected were relatively small; however, that data does show that the carryover fish are predominantly in poor to fair body condition prior to the fall stocking and the winter ice period. To help fish survive the winter more easily the fall stocking numbers were dropped by half in 2011. Considering that this water is managed as a put-and-take fishery, the health of the fishery should continue to be monitored through angler creel and measurements taken at the Angel Lake Derby.

Boyd Reservoir

Due to a second year of below average precipitation and the associated drought conditions, the electroshocking survey was not completed. Low water levels and increased aquatic vegetation did not allow for conditions conducive to an electroshocking survey. If weather and water conditions allow, this survey is scheduled to occur in the late spring of 2014.

Carlin Pond

A total of 2,358 rainbow trout were stocked into Carlin Pond in 2012, with 228 of these being stocked just prior to free fishing day for a fishing clinic held at the Pond.

Dorsey Reservoir

Spring trout stocking at the reservoir consisted of 2,160 Shasta strain rainbow trout in April of 2013. No anglers were contacted at Dorsey Reservoir in 2013. Due to a second consecutive poor water year, the water levels reached critically low levels; however, there was no report of fish kill.

Dry Creek Reservoir

Dry Creek Reservoir was stocked with 2,014 catchable size (8.7 in, FL) rainbow trout on May 31, 2013. The voluntary angler drop-box survey was in use for the entire year, with only three surveys received. Anglers reported catching no trout and one bass. The 2013 volunteer surveys results are not consistent with the 2005-2012 long term average catch rates and are reflective of the low water and documented loss of angler visitation during the 2013 fishing season.



Photograph 1. View of low water conditions near minimum pool at Dry Creek Reservoir August 6, 2013. View is looking northwest with NDOW truck in background near the spillway elevation.

Because of the low water conditions, no population surveys were conducted during 2013. A Fishery Management Prescription for Dry Creek Reservoir is still being revised and rewritten and should be completed soon.

Jakes Creek Reservoir

In March, 3,120 Shasta strain rainbow trout were stocked, with another 2,160 Tahoe strain rainbow trout being stocked in October. For the sixth consecutive year, 450 channel catfish, ranging in size from 6 to 8 in, were stocked into the reservoir.

In five visits to the reservoir, 13 anglers were contacted. These anglers put forth 21 hrs of effort to capture 35 fish, resulting in success rates of 2.7 fish per angler and 1.7 fish per hour. Six of these anglers were contacted in December and were doing quite well ice fishing.

A total of 54 angler questionnaires were received between January and October, with no questionnaires being rejected. A total of 60 anglers put forth 215.9 hrs of angling effort to capture 672 fish, resulting in success rates of 11.2 fish per angler and 3.1 fish per hour. In July, eleven channel catfish were reported being caught, all under 12 in. With 450 catfish being stocked on June 27, it is presumed that these fish were recently stocked. Catfish have been stocked in the reservoir for several years and they are rarely contacted during creel, electroshocking, or gill netting surveys. Because most anglers are targeting specific species (either trout or bass) based on fishing styles, it is felt that catfish are not directly targeted and are captured incidentally. A catfish specific survey is needed to assess the channel catfish population in the reservoir.

On April 24, two experimental gillnets were allowed to soak overnight for 15.5 hrs. The first net, fished near the inlet, produced 24 rainbow trout, 22 suckers, and 2 largemouth bass. The second net, fished off the dam, produced 25 trout and 4 suckers.

Overall, 78 fish were contacted, with 26 (33.8%) of these being bridgelip suckers. These measured suckers were compared with all records that could be pulled from previous surveys and evaluated based on length frequencies of 20 mm, with range of size and average size also being compared (Table 1). The only data missing is the length data from 2000 and 2004, although the summarized data was available.

Based on past reports, all of these surveys are conducted with similar protocols; two gill nets set allowed to soak overnight, one perpendicular to the dam and one near the shallow inlet side. This protocol was changed only in 1987 when shallow water allowed for only one net to be set in deeper water. This sample year also provided the largest sample size of suckers, which has been relatively similar in most other sample years. Although this is the first year of a three-year survey, the data appears to show a reduction in suckers smaller than 8.7 in (220 mm) and an average sucker size that has slowly been increasing since 2004. Although it appears that the stocked catfish may be having an impact on the sucker population, more surveys are needed to fully assess this hypothesis.

Table 1. Jakes Creek Survey Summaries.

mm	inches	1982	1987	1992	2000	2004	~375 channel catfish stocked in September of 2008	2008	2011	2013
140	5.5	1	0	1				0	0	0
160	6.3	1	1	1				0	0	0
180	7.1	0	12	4				0	0	0
200	7.9	1	23	1				0	0	0
220	8.7	0	23	5				2	0	0
240	9.4	2	27	2				0	1	0
260	10.2	3	22	1				3	2	2
280	11.0	1	5	1				4	7	0
300	11.8	4	5	6				5	7	5
320	12.6	4	0	2				4	2	6
340	13.4	8	0	7				4	4	4
360	14.2	7	1	0				1	0	5
380	15.0	1	2	0				0	2	3
400	15.7			0				0	1	0
	N =	33	121	31	20	43		23	26	25
Range	Low	152.4	170.2	139.7	176	203	231	246	273	
	High	381	386.1	355.6	342	355	362	400	390	
	Average	314.9	243.8	271	257	297	306.8	316.7	338.5	

To help evaluate the success of channel catfish in this small reservoir, a trotline was placed in conjunction with the gill nets. Eight hooks were baited with hotdog and the trotline soaked for 15.5 hrs. This resulted in the capture of one 21.5 in (545 mm) catfish. The fish appeared to be healthy and was released unharmed. Catfish are not regularly targeted or captured by anglers, which makes it difficult to determine their success in the reservoir. Because larger catfish have been documented in creel and reservoir surveys it appears that there are a number of catfish surviving in the reservoir.

Jiggs Reservoir

Due to complications concerning the dam repairs and the scope of work required to repair the dam to State standards, minimal work was done on the Jiggs Reservoir project in 2013. The engineered plans for the project were completed by Dyer Engineering and have been submitted and approved by the State Dam Engineer. At the time of this writing, the project has been put out to bid and is expected to begin construction in mid-April.

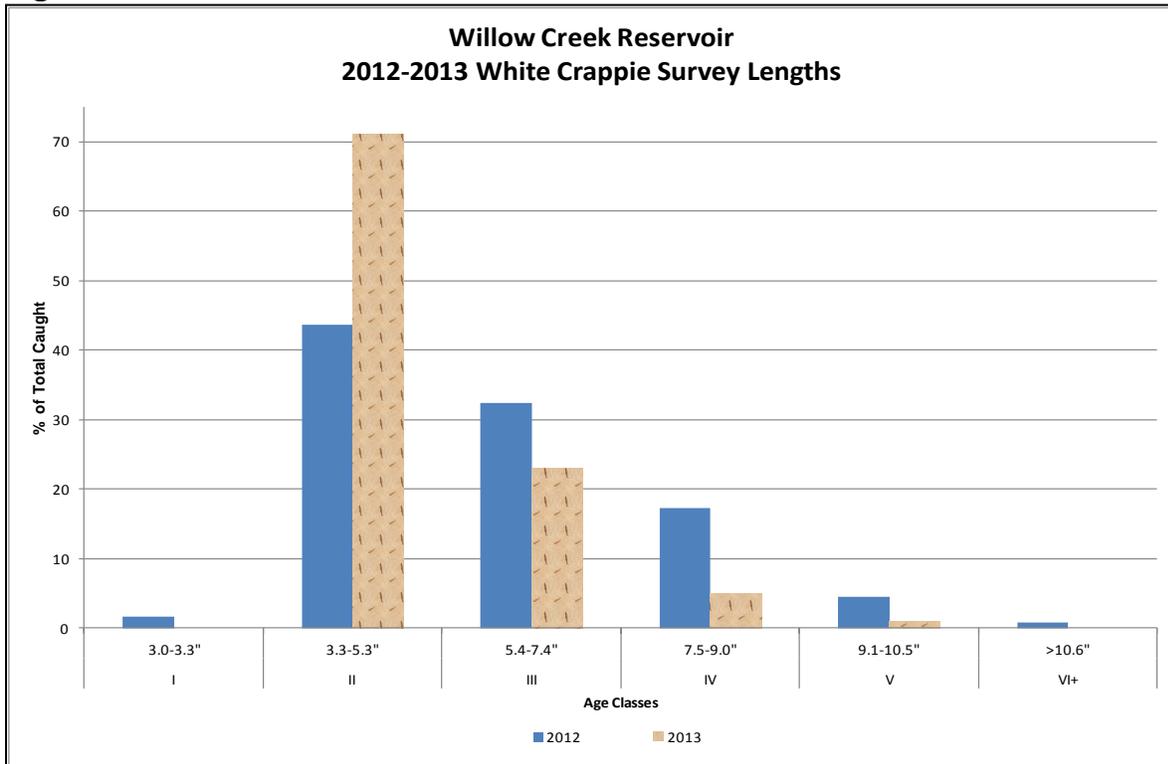
Willow Creek Reservoir

Visitation to the reservoir occurred in May, June, and July and resulted in only eight angler contacts in June, with other recent angler presence noted (litter, fishing line, etc.). Anglers reported catching and releasing 8 white crappie in 18 hrs of effort. Willow Creek Reservoir was not stocked in 2013 due to low water levels and fear of a loss of habitat and expected reservoir draw down.

A total of 1,805 white crappie were captured during the electrofishing, frame netting, and beach seining survey and salvaging effort on July 16-17, 2013, significantly higher than previous sampling efforts. Size of crappie ranged from 3.5 to 9.4 in (TL)

and had an average sample length of 5.1 in, TL. Approximately 94% of crappie sampled were Class II and Class III (3.3 – 7.4 in, TL, Figure 1). The 2013 survey indicated successful spawns, recruitment, and retention from the 2008-2010 reintroduction efforts of this game fish. Captured crappie were successfully transplanted back to Chimney Creek Reservoir.

Figure 1



The good results of the population sampling and salvaging effort on capturing 1,805 fish in 2013 confirmed that Willow Creek Reservoir was successful in the recovery and fishery rebuilding process after experiencing a severe winterkill/desiccation and loss of game fish during the period of 2002-2007. Unfortunately, consecutive years of drought have reduced the reservoir’s suitable habitat to near the minimum pool, a product of both regional climatic conditions and downstream irrigation demands that have once again jeopardized the future of the Willow Creek Reservoir fishery.

MANAGEMENT REVIEW

Angel Lake

All approaches were met in 2013, with Angel Lake continuing to be a productive put-and-take fishery.

Boyd Reservoir

Water levels were checked in 2013, but the electroshocking survey was not completed due to low water levels.

Carlin Pond

The approach was completed in 2013.

Dorsey Reservoir

The approaches were completed in 2013.

Dry Creek Reservoir

The approaches were not completed in 2013 due to drought conditions.

Jakes Creek Reservoir

All approaches were completed in 2013. The reservoir continues to be a successful “general” multispecies fishery. It is too early to measure the benefits of the introduced channel catfish, which were stocked over the last six years. Future creel, gill netting, and electroshocking surveys will provide data to evaluate this species contribution to the fishery.

Jiggs Reservoir

While the approaches were not completed in 2013, there was considerable time spent completing the engineered plans for the project. This project is expected to be initiated in mid-April and should be completed by October of 2014.

Willow Creek Reservoir

Adaptive management approaches were implemented due to regional drought conditions at the reservoir. Game fish were salvaged and relocated to proximal fisheries. Public awareness on fishing conditions and drought effects on the fishery were updated periodically throughout 2013.

RECOMMENDATIONS

Angle Lake

- Continue to evaluate water conditions prior to hatchery trout stocking.
- Continue to conduct ocular winterkill surveys after spring ice breakup.
- Collect available fish data during the annual Angel Lake fishing derby in July.

Boyd Reservoir

- Continue to monitor water conditions as it relates to the largemouth bass fishery.
- Conduct a one night electroshocking survey to assess the species composition in the reservoir and evaluate the potential to use largemouth bass and bluegill sunfish as a donor source for Jiggs Reservoir.

Carlin Pond

- Continue to evaluate water conditions prior to hatchery trout stocking.

Dorsey Reservoir

- Continue to evaluate water conditions prior to hatchery trout stocking.

Dry Creek

- Monitor reservoir water levels and drought conditions and adjust management as necessary.
- Submit the Dry Creek Reservoir Fisheries Management Prescription for review and approval.
- Continue to maintain the volunteer angler drop-box.

Jakes Creek Reservoir

- Continue to evaluate water conditions prior to hatchery trout stocking.
- Continue to collect angler creel throughout the fishing season.
- Conduct a gill net survey to assess species composition of the reservoir fishery and assess the bridgelip sucker age class distribution.

Jiggs Reservoir

- Continue to facilitate the improvement work at the reservoir in an attempt to reduce seepage problems and repair the dam.

Willow Creek Reservoir

- Closely monitor reservoir water levels and drought conditions during the spring and summer and adjust fisheries management as necessary.
- Augment game fish (white crappie and channel catfish) when necessary and conditions allow and perform population surveys in spring/summer to document fishery composition and sport fish populations.
- Publicize and promote the rebuilding of this popular fishery and diversify angling opportunities.

- Collect a minimum of 5 samples of each sport fish species for mercury analysis in cooperation with NDEP.

Prepared by: Jeff Petersen
Biologist III, Eastern Region
Chris Drake
Biologist III, Eastern Region

Date: February 2014