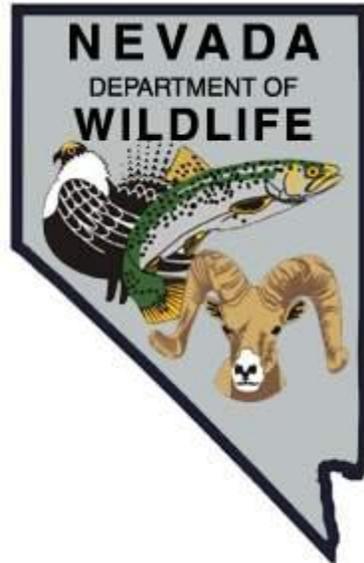


NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE SPORT FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORT

F-20-48
2012

RUBY MOUNTAIN & EAST HUMBOLDT
HIGH MOUNTAIN LAKES



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

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NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL JOB PROGRESS REPORT

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Ruby Mountain and East Humboldt High Mountain Lakes*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

During 2012, high mountain Lakes in the Ruby Mountains and East Humboldt Range were not aerially stocked with Lahontan cutthroat trout fry due to eggs being unavailable. General fisheries assessments were collected from the Lamoille kiosk drop-box and Soldier Trail drop-box, with no additional anglers being contacted. Upon USFS approval, the Soldier Creek drop-box was moved to a safer location below the wilderness boundary. Hidden Lake's brook trout fishery was assessed in October, but Robinson Lake was not surveyed.

BACKGROUND

Currently, the Eastern Region of the Nevada Department of Wildlife manages 19 of the 25 named lakes in the Ruby Mountains and East Humboldt Range as high mountain lake fisheries. These lakes generally lie between 8,550 and 10,000 feet in elevation and range from less than 2 acres to 29 acres. Eleven lakes have established, self-sustaining fish populations, while another eight lakes have established populations that need periodic augmentation. Self-sustaining fisheries are primarily comprised of brook trout, which are managed under a Wild Fisheries Management Concept. Augmented populations are generally comprised of hatchery-reared Lahontan cutthroat trout and are managed under a "unique or quality" concept.

Stocking mountain lakes can be dated from 1895, when horseback stocking was used, to the present when helicopters are used for stocking. Species planted in the past have included brook trout, golden trout, rainbow trout, tiger trout, Arctic grayling, and lake trout. Stocking rates have been variable and dependent upon survey results. Stocking cycles, although, have been generally maintained at three-year intervals. Biological surveys of these lakes were completed from the 1930s to the 1950s and resulted in baseline information for water quality, species presence, substrate types, and crude mapping. Since that time, biological monitoring has focused on fish reproduction and growth rates, angling pressure, water quality, and over-winter survival of trout. Past management activities included mysis shrimp introductions in the 1950s and 1970s, eradication and re-introduction of golden trout (1963), outlet dam construction projects, and the introduction of different predators to control brook trout (such as Lahontan cutthroat trout, rainbow trout, and lake trout).

In general, these lakes are limited by overwinter survival, low productivity (low pH, short growing season), and limited natural reproduction. Issues related to mountain lakes

include limited access (through private to Forest Service lands), native trout recovery waters downstream, and endemic aquatic species. These lakes have demonstrated their potential in providing angler recreation and there is a need to collect data periodically to properly manage these high mountain lakes. Fish population status, potential of natural reproduction, stocking level requirements, and chemical analysis are some of the identified factors associated with the management of high mountain lakes.

OBJECTIVES and APPROACHES

Ruby Mountain High Lakes

Objective: General Sport Fisheries Management

Approaches:

- Conduct general fisheries assessment through opportunistic angler contacts.
- Maintain the angler drop-boxes at Soldier Creek and Lamoille Creek trailheads
- Stock cutthroat trout fry in Verdi (1,300) Lake.
- Conduct a hook and line survey to evaluate the fisheries health of Robinson and Hidden Lakes.
- Conduct water quality/quantity analysis of Robinson and Hidden Lakes.

East Humboldt High Mountain Lakes

Objective: General Sport Fisheries Management

Approaches:

- Conduct general fisheries assessment through opportunistic angler contacts.
- Stock cutthroat trout fry in Smith (1,300) and Greys (1,30033) Lakes.

PROCEDURES

Angler Drop Box Installation

Access to several of the Ruby Mountain High Lakes is gained from the Soldier Creek Trail. Upon gaining permission from the USFS, an angler drop box was relocated from the Soldier Creek crossing to just below the wilderness boundary on the Soldier Creek Trail.

Fishery Assessments

Angler Questionnaires from the Soldier Creek and Lamoille drop boxes were collected throughout the summer and fall.

High Lake Fisheries Health and Water Quality

A digital reader measured pH and water temperature. Evaluating fish directly was done through a hook-and-line sampling. Captured fish were measured and released.

Stocking

No fish were stocked due to a lack of cutthroat trout eggs.

FINDINGS

Angler Drop Box Installation

Permission to install an angler drop-box on USFS property was attained. The existing angler drop-box was removed and relocated just below the wilderness boundary. The box was installed 25-30" deep, cemented into place, and painted. The questionnaire box will be an important tool for assessing the high lakes fisheries.

Fishery Assessments

Favre Lake

Eleven volunteer angler surveys from the drop-box were received from Favre Lake in 2012. During months when surveys were received, eleven anglers fished for 56.5 hrs and caught 256 fish. Catch rates (brook trout) were 23.3 fish per angler and 4.5 fish per hour. The size of trout reported was dominated by the <10.9 in size bracket at 93%. The remaining 7% of fish reported were comprised of the 11-12.9 inch size bracket. Angler satisfaction in 2012 was rated on a scale of 0 to 4 with 0 being unsatisfied and 4 representing satisfaction. Average ratings were 3.6 for total fishing experience, 2.4 for size of fish, and 3.7 for number of fish.

Island Lake

Eight volunteer angler surveys from the drop-box were received from Island Lake in 2012. During months when surveys were received, eight anglers had fished for 15.5 hrs and caught 38 fish. Catch rates (brook trout) were 4.8 fish per angler and 2.5 fish per hour. The size of trout reported was dominated by the <10.9 in size bracket at 87%. The remaining 13% were comprised of the 11-12.9 in size bracket. Angler satisfaction in 2012 was rated on a scale of 0 to 4 with 0 being unsatisfied and 4

representing satisfaction. Average ratings were 2.8 for total fishing experience, 1.9 for size of fish, and 2.9 for number of fish.

Lamoille Lake

Fifteen volunteer angler surveys from the drop-box were received from Lamoille Lake in 2012. During months when surveys were received, fifteen anglers had fished for 42 hrs and caught 48 fish. Catch rates (brook trout) were 3.2 fish per angler and 1.1 fish per hour. All fish reported were in the <10.9 in size bracket. Angler satisfaction in 2012 was rated on a scale of 0 to 4 with 0 being unsatisfied and 4 representing satisfaction. Average ratings were 2.6 for total fishing experience, 1.5 for size of fish, and 2.4 for number of fish.

Hidden Lake

Five volunteer angler surveys from the drop-box were received from Hidden Lake in 2012. During months when surveys were received, five anglers had fished for 20 hrs and caught 41 fish. Resulting catch rates (cutthroat trout) were 8.2 fish per angler and 2.1 fish per hour. The size of trout reported was dominated by the 11-12.9 in size bracket at 75%. Ten percent of fish reported were comprised of the <10.9 size bracket, 5% comprised the 13-14.9 in size bracket, and 10% comprised of the 15+ in size bracket. Angler satisfaction in 2012 was rated on a scale of 0 to 4 with 0 being unsatisfied and 4 representing satisfaction. Average ratings were 3.0 for total fishing experience, 3.0 for size of fish, and 2.6 for number of fish.

Liberty Lake

Thirteen volunteer angler surveys from the drop-box were received from Liberty Lake in 2012. During months when surveys were received, thirteen anglers had fished for 34.8 hrs and caught 27 fish. Catch rates (brook and lake trout) were 2.1 fish per angler and 0.8 fish per hour. The size of trout reported was dominated by the <10.9 in size bracket at 76%, with 20% being in the 11-12.9 in size bracket, and the remaining 4% of fish reported being in the +15 in size bracket. Angler satisfaction in 2012 was rated on a scale of 0 to 4 with 0 being unsatisfied and 4 representing satisfaction. Average ratings were 2.4 for total fishing experience, 1.5 for size of fish, and 1.8 for number of fish.

High Lake Fisheries Health and Water Quality

Hidden Lake was evaluated on October 16, 2012, with water levels one foot below full capacity. The water temperature was 59°F (15°C) and pH at the outlet was 8.3. No anglers were contacted, but one angler was able to capture three Lahontan Cutthroat Trout in two hours of angling effort, yielding a catch rate of 1.5 fish/hr. The total length of the LCT captured ranged from 4.0 to 4.1 in (10.1 to 10.3 cm), and averaged 4.0 in (10.2 cm). All fish captured were planted into the lake the year before, and represent overwinter survival.

Robinson Lake was not evaluated in 2012 due to time being spent on treatment projects and other work objectives. This lake will be evaluated in 2013.

Stocking

No fish were stocked due to a lack of cutthroat trout eggs.

MANAGEMENT REVIEW

All objectives were completed with the exception of stocking the high lakes, and the fisheries assessment of Robinson Lake. Robinson will be scheduled for survey next year. If eggs become available in 2013 the high lakes will be stocked.

RECOMMENDATIONS

Ruby Mountain High Lakes

- A more concerted effort should be made to document angling use on the Ruby Mountain high lakes during the 2013 field season. It may be necessary to dedicate seasonal creel clerk time during peak use periods.
- Continue to stock the alpine lakes on a three year rotation, depending on population sampling efforts and fishery analysis.
- Stock fish that are no longer than 2.0-in in total length in late July or early August.
- Sampling should occur on selected lakes, preferably sampling a minimum of two lakes per year. Continue to monitor the body condition of trout during population sampling as well as water chemistry analysis and invertebrate observations.
- The drop-boxes should be checked periodically during the summer and fall.

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