NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT

FEDERAL AID JOB PROGRESS REPORTS
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COMINS LAKE
Eastern Region

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL JOB PROGRESS REPORT

Table of Contents

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT

List of Figures

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
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State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Comins Lake*
Period Covered: *January 1, 2013 through December 31, 2013*

SUMMARY

A total of 11 anglers were contacted during 8 creel visits to Comins Lake in 2012. Anglers fished 27.5 hrs and harvested 3 fish, all of which were northern pike. Harvest rates resulted in 0.27 fish per angler and 0.11 fish per hour. There was no largemouth bass checked during creel visits in 2012.

The three northern pike harvested this year averaged 32.3 in (821.33 mm). Two of the pike were 25.5 in and 25.2 in (650 mm and 640 mm, respectively). Therefore, the average for the year is skewed.

A total of 19 northern pike were captured and an additional 9 missed during the electroshocking survey. Average length of the pike captured was 19.1 in (485 mm). Length frequency analysis of the pike captured reveals four age classes currently inhabiting Comins Lake, including cohorts from successful spawns in 2011 and 2012.

A total of four largemouth bass were also captured during the survey. There were also four largemouth bass missed, including one YOY. The average length of the bass collected ranged from 8.0 in (204 mm) to 16.5 in (420 mm), and averaged 10.4 in (264 mm). Although the few remaining largemouth bass in Comins Lake have successfully reproduced, recruitment is prevented by northern pike predation.

As predicted, the northern pike population in Comins Lake appears to be following the same path as it did when pike inhabited the reservoir in the late-1980s. Northern pike have spawned at Comins Lake every year since 2001, and have effectively eliminated both the trout and bass populations through predation. Survey data suggests that the pike population has crashed and is now beginning to stabilize. The Comins Lake fishery cannot and will not be a viable option for Nevada's anglers until northern pike are eliminated.

BACKGROUND

Historically, Comins Lake was a privately owned reservoir used for irrigation of the 3-C Ranch. A public fishery was established in 1972 under an agreement with the landowner, which allowed public access for fishing and boating. Comins Lake maintained itself as a prolific northern pike fishery in the 1970's and 1980's. It was chemically treated in 1989 to remove northern pike and then pumped dry a year later by the landowner for irrigation purposes.

The Nevada Department of Wildlife was successful in the purchase of the 3-C Ranch in the fall of 1999. The property, of which Comins Lake is a part of, was established as the Steptoe Valley Wildlife Management Area (SVWMA) in July of 2000. Implemented in 2002, the Steptoe Valley Wildlife Management Area *Conceptual Management Plan* governs the management of species, habitats, and programs on the area for a ten-year period. An objective identified in this plan is to "Optimize the fishery at Comins Lake." As defined in *NDOW Fisheries Bureau Program and Procedure Fishery Management Concepts*, Comins Lake is to be managed as a quality fishery.

Largemouth bass were reintroduced in Comins Lake during the spring of 2002. A total of 446 were transplanted from the Kirch Wildlife Management Area in an effort to establish a self-propagating population and create a multi-tiered fishery, along with rainbow trout, for anglers.

Angler reports of northern pike inhabiting Comins Lake were initially made to NDOW personnel in the fall of 1999. Their presence in the reservoir was confirmed the following year. Annual monitoring to determine population abundance failed to find any northern pike until the fall of 2002 when 12 were collected in an electroshocking survey. Since then, survey activities have confirmed that northern pike have successfully spawned in the reservoir every year since 2001. Moreover, heavy predation has nearly completely decimated the once popular trout and bass fisheries inhabiting the reservoir. Northern pike were illegally introduced and not authorized by the Department of Wildlife. Based on an NDOW recommendation, the Nevada Board of Wildlife Commissioners declassified northern pike as a game fish in 2005. Due to heavy predation by northern pike, rainbow trout stocking at Comins Lake was terminated in the spring of 2007.

In 2006, all fish species inhabiting Comins Lake were found to have elevated levels of mercury. Because both northern pike and largemouth bass were found to contain levels of mercury greater than one part per million, a health advisory was subsequently enacted by the Nevada Division of Public and Behavioral Health advising against the consumption of these species. Since this discovery was made, the Department of Wildlife has been working in cooperation with the Nevada Division of Environmental Protection (NDEP), the U.S. Environmental Protection Agency (EPA), and their associated contractors in an effort to discern the source of mercury in the reservoir to formulate possible remediation strategies. A comprehensive study of mercury and its interactions within the Comins Lake ecosystem initiated in 2009 by NDEP and EPA was completed in 2010.

OBJECTIVES and APPROACHES

Objective: General Sport Fisheries Management

Approaches:

- Visually monitor seasonal water level fluctuations during the course of other duties.

- Conduct a general fisheries assessment through opportunistic angler contacts.
- Electroshock four established transects during one night in the fall.

PROCEDURES

The Eastern Region Coffelt electroshocking barge was used to sample four established transects at Comins Lake on the night of October 15, 2013. The shocking unit was set up with the forward booms as the anode and the hull of the boat as the cathode. Voltage was set at 850 (DC) with an output of 4.5 A. Pulse frequency was set at 60 Hz with a pulse width of 4 ms. Attempts were made to capture all fish stunned during survey activities. During processing, all fish were measured (total length to millimeters) and weighed with spring-type hand scales (grams). Necropsies were performed on all northern pike to ascertain dietary preference. In addition, otoliths were removed from northern pike in order to gather a more accurate age. Largemouth bass were returned to the reservoir after processing.

FINDINGS

Shocking activities began at 1945 hrs and concluded at 2145 hrs. Of that time, there was 2,290 shocking seconds. Survey activities commenced at the boat launch, moved to the west side of "the narrows," and continued down the west shoreline of the south lake to the float-tube launch area. From here, the shocking barge was moved to the opposite shoreline in the vicinity of the Argus Mill site. The survey then continued up the east shoreline past the inflow, through the east side of "the narrows," and continued into the north lake. Shocking resumed in a counterclockwise fashion around the north lake and concluded back at the boat launch.

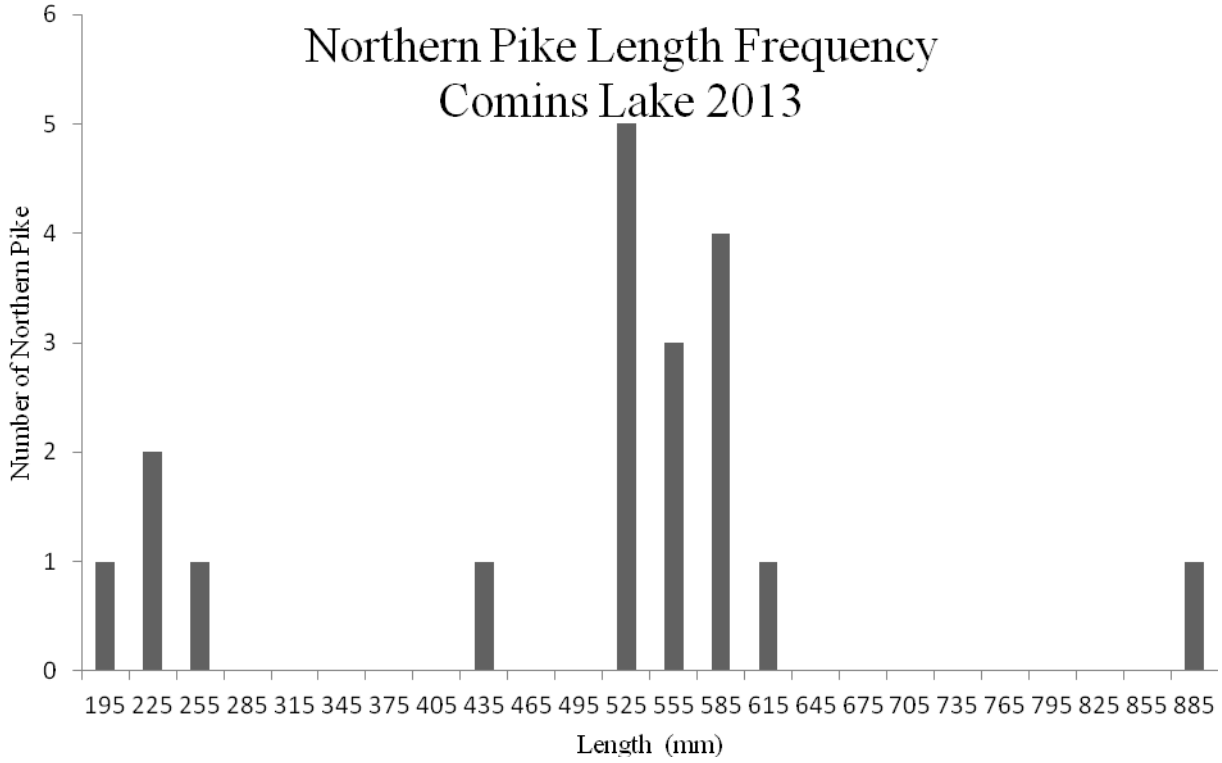
Similar to the 2012 survey, the reservoir was well below capacity, which prevented shocking of a portion of the southernmost transect. Substantial aquatic vegetation was found throughout most of the reservoir, which limited access to some littoral areas. An excessive amount of aquatic vegetation was problematic; however, it did not negatively impact shocking efficiency. Winds were relatively calm and shocking efficiency was judged to be good. Air temperature was 37°F at the beginning of the survey and at the end, the air temperature was 34°F. Water temperature remained consistent at 44°F throughout the electroshocking survey.

There were 19 northern pike captured and an additional 6 that were missed. All fish that were missed were of similar size to those that were captured. Average length of the pike captured was 19.1 in (485 mm), and ranged from 7.6 in (192 mm) to 33.8 in (860 mm). Average length of pike captured was a full 2.5 in shorter than what was found in the 2012 survey. The decrease in average length is significant, unfortunately, as it is due to capturing multiple northern pike coming from the 2012 spawning season. If the outliers are taken out of the data, the average length for 2013 is only a half-inch shorter than the 2012 survey. Weight of the pike captured ranged from 0.08 lbs (40 g) to 8.6 lbs (3900 g) and averaged 1.9 lbs (894.7 g). All of the northern pike captured

during the survey were noted as being in poor body condition. Even though there was one 8.6 lb northern pike caught, when a necropsy was performed, the gut was empty.

A length frequency analysis reveals that there are at least four age classes of northern pike currently existing in Comins Lake. Length breaks at 255mm, 435mm, 615mm, and 885mm shows distinct age classes (Figure 1). In the previous two surveys there was not any YOY or class 1 northern pike contacted in Comins Lake. Even though YOY were not contacted in previous surveys, it is apparent with smaller northern pike that they are spawning and successfully recruiting those young into their population.

Figure 1.



Necropsies were performed on all northern pike captured. Macroinvertebrates were the predominant food item found. Identified species included dragonfly nymphs (Odonata) and damselfly nymphs (Odonata). One male northern pike had an age class 1 northern pike in its gut.

A total of four largemouth bass was captured during the survey. There were also four largemouth bass missed, including two YOY. The total length of the bass collected ranged from 8.0 in (204 mm) to 16.5 in (420 mm), and averaged 10.4 in (264 mm). Since there were only four largemouth bass captured, there was no length frequency computed for sample.

The weight of the nine largemouth bass ranged from 0.26 lbs (120g) to 1.3 lbs (250g) with an average of 0.55 lbs (250g). The body conditions (C-Factor) were

determined for the four largemouth bass captured during the survey. Two of the largemouth bass were determined by their K-Factor rating to be in good condition. One largemouth bass was in fair body condition, and the single remaining largemouth bass was in poor body condition.

There were also largemouth bass YOY observed but missed during the survey, so it is clear that largemouth bass are still successfully spawning in Comins Lake. However, a small fraction of juveniles is successfully recruited into the population due to heavy depredation by the remaining northern pike.

Even though captured largemouth bass showed decreased body conditions from previous years, there is still no doubt that Comins Lake is a highly productive fishery. The potential for Comins Lake to produce trophy trout and largemouth bass is high, however, with the extremely piscivorous northern pike inhabiting the lake it is impossible for that to happen. Once again, this fall's electroshocking survey only emphasizes the negative impacts northern pike has had on the fishery. Since stocking of all trout has been stopped since 2007, there were no expectations to find trout in the lake during fall.

The 2013 fall electroshocking survey supports the findings from the previous electroshocking surveys that the average size of northern pike has begun to stabilize. This year's survey shows that there is still successful spawning and recruitment of northern pike in Comins Lake. In order to more accurately identify the age classes present in Comins Lake, the cleithra were removed from 13 northern pike and otoliths from ten northern pike. The cleithra and otoliths have yet to be processed; however, they will be reported in the 2014 field trip report and job progress report for Comins Lake.

Even though there is obvious spawning and recruitment of northern pike, the fact their diet has changed from a highly piscivorous diet to one that is sustained by consuming invertebrate species shows that they are going to continue in a downward spiral. The eradication of the nuisance northern pike and the subsequent stocking of largemouth bass and trout are the only way in which the once prolific fishery at Comins Lake will be restored.

Once again, the potential for mercury remediation will come from the aide of the White Pine County Water Advisory Board, NDEP, EPA, and U.S. Army Corps of Engineers. Ecology and Environment, Inc prepared an assessment of the Comins Lake food web for the U.S. EPA. As a result, Mae Sexauer Gustin, a professor in the Department of Natural Resources and Environmental Science at the University of Nevada-Reno was contracted by the Nevada Department of Wildlife to review the study. Gustin's findings concerning the assessment of remedial measures may direct future remediation efforts. Gustin agreed with the authors of the Assessment that removal of mercury from the watershed is impossible. Gustin also states that additional research does not seem to be necessary, rather the mercury advisory should be continued.

MANAGEMENT REVIEW

All three approaches for Comins Lake were completed in 2013.

RECOMMENDATIONS

- Electroshock 4 established transects one night in the fall of 2014.
- Prepare a treatment proposal for Comins and Bassett Lakes.
- That the public awareness campaign continues in an effort to inform the public of future management plans for the reservoir.
- Conduct a general fisheries assessment through opportunistic angler contacts in 2014.

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