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

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State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Comins Lake*
Period Covered: *January 1, 2012 through December 31, 2012*

SUMMARY

A total of 11 anglers were contacted during 8 creel visits to Comins Lake in 2012. Anglers fished 27.5 hours and harvested 3 fish, all northern pike. The three northern pike harvested averaged 32.3 in (821 mm). Two pike measured 25.5 in and 25.2 in (650 mm and 640 mm) respectively. Harvest rates resulted in 0.27 fish per angler and 0.11 fish per hour. There were no largemouth bass checked in 2012

During the fall electroshocking survey, a total of 14 northern pike were captured and an additional 9 missed. Average length of the pike captured was 21.8 in (554 mm). Length frequency analysis revealed two age classes inhabiting Comins Lake from successful spawns in 2008 and 2009.

There were 10 largemouth bass captured during the survey. There were also four largemouth bass missed, including one young-of-year. Lengths ranged from 11.8 in (300 mm) to 17.1 in (435 mm), TL, and averaged 15.4 in (392 mm), TL. Although the largemouth bass in Comins Lake successfully reproduce, further recruitment was prevented by northern pike predation.

As predicted, the northern pike population in Comins Lake appears to be following the same pattern as when they inhabited the reservoir in the late-1980s. Survey data suggests that the pike population has crashed and has now stabilized at a low abundance. They have spawned in Comins Lake every year since 2001 and have effectively eliminated or greatly reduced trout and bass populations through predation. The expected trout and bass fisheries for Comins Lake cannot be obtained until northern pike are eradicated.

Coordination occurred with other state and federal agencies in matters associated with mercury remediation. EPA and the University of Nevada are examining research regarding the feasibility of remediation.

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 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 ponds to establish a self-supported population and create a multi-tiered fishery, along with stocked rainbow trout, for anglers.

Ten years after eradicating northern pike from the reservoir, anglers began reporting them again in the fall of 1999. This would have been an illegally introduction not authorized by the Department of Wildlife. Their presence was confirmed by NDOW the following year. Annual electroshocking monitoring in 2002 found twelve and since then, survey activities have confirmed that northern pike have successfully spawned every year since 2001. Moreover, heavy predation has nearly decimated the once popular trout and bass fisheries inhabiting the reservoir. Based on NDOW's recommendation, the Nevada Wildlife Commission 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 State Health Division 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.
- Coordinate with state and federal agencies (EPA and NDEP) in matters associated with mercury remediation and the reservoir's future treatment.

PROCEDURES

Visits were made to Comins Lake to collect creel survey data during an expected time that allowed contacting the greatest number of anglers as possible. Information on angler harvest, effort, and origin were recorded. Harvested fish were measured to total length in millimeters and weighed in grams using a spring-type hand scale. During the course of these visits and work on other activities, water level was visually monitored to document seasonal fluctuations at the reservoir.

Electroshocking activities began at 1845 hrs and concluded at 2020 hrs on 23 October 2012.. It took 1hr 35 min of surveying to encompassing 2,290 sec (38 min) of actual shock time. 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. Necropsies were performed on all northern pike to ascertain dietary preference. Largemouth bass and trout were returned to the reservoir after processing.

At the time of the electroshocking survey, the reservoir level was well below capacity, which prevented shocking a portion of the southernmost transect. Substantial aquatic vegetation was found throughout most of the reservoir, which also limited access to some littoral areas ,but not shocking efficiency. Winds were relatively calm and shocking efficiency was judged to be good.

FINDINGS

A total of 11 anglers were contacted during 8 creel visits to Comins Lake in 2012. Anglers fished 27.5 hours and harvested 3 fish all of which were northern pike. Harvest averaged 0.27 fish per angler and the rate averaged 0.11 fish per hour. There were no largemouth bass checked. Although not used for management purposes, there were

catch rates (fish harvested + released) of 0.27 fish per angler and 0.11 fish per hour. Both harvest and catch rates will not be compared to harvest or catch rates to previous year's rates because so few anglers were contacted.

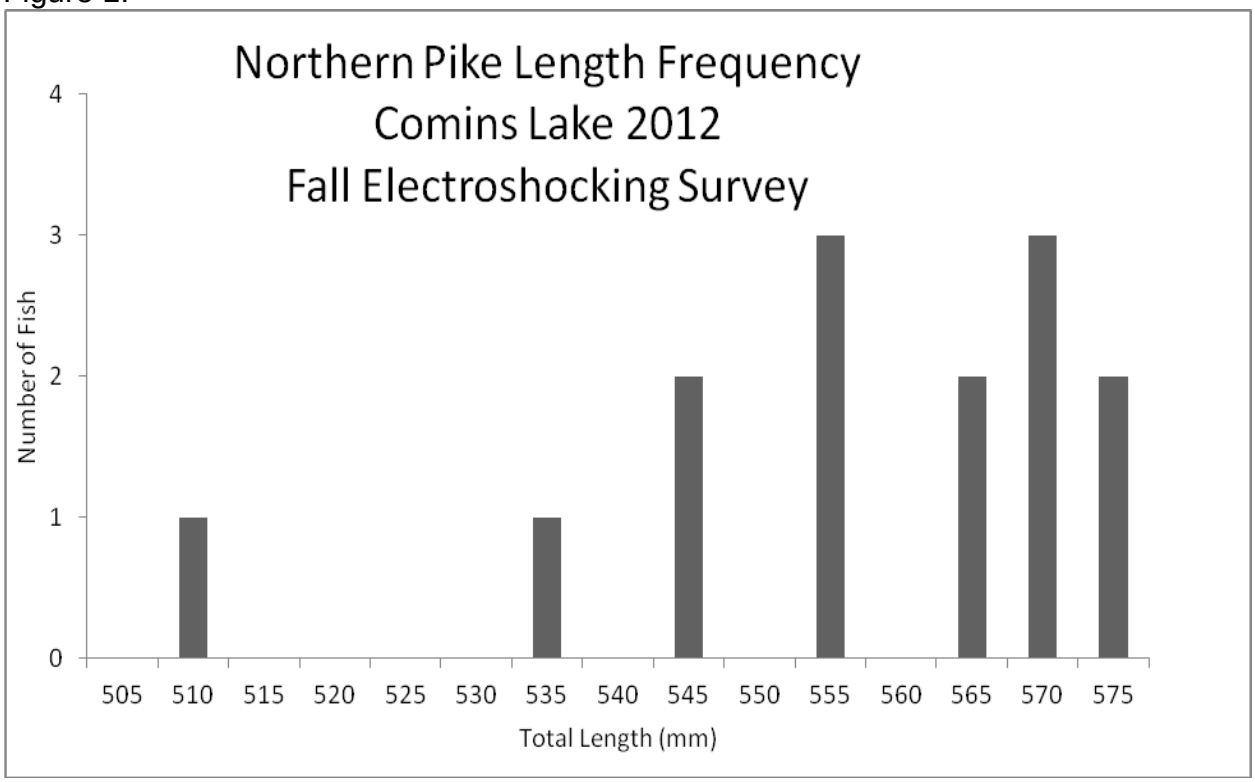
Due to a continued decline in angler use, and vacancy of the primary biologist, there was minimal creel effort made in 2012. Creel was only completed during six months and none after July. Because so few anglers were contacted, the effort was abandoned in late-summer. Although increased effort would improve accuracy of harvest rates, justification to continue creel survey activities with such a poor return could not be made this year. Future creel activities should be scaled back or eliminated until northern pike are removed from the reservoir.

As reported in previous years, an overwhelming majority of anglers contacted are opposed to northern pike inhabiting the reservoir and are heavily in favor of eradication. Evidence to support this notion can be observed in angler use patterns. The Mail-in Angler Questionnaire survey estimated just 1,717 angler use days at Comins Lake in 2011. This marks the fewest number of angler use days since before the chemical eradication of northern pike in 1989. Most anglers contacted during creel visits have neither the desire nor knowledge to fish for northern pike and preferred largemouth bass and rainbow trout.

There were 14 northern pike captured during electroshocking and 9 additional pike that were missed, for a total of 23 northern pike. All fish that were missed were of a similar size to those that were captured. Average length of the pike captured was 21.8 in (554 mm) and ranged from 20.1 in (510 mm) to 22.6 in (573 mm). Average length of pike captured was 0.2 in (49 mm) longer than that found in the 2011 survey. This increase in average length is minute due to all fish sampled varying less than three inches in length. Weight of the pike captured ranged from 1.8 lb (800 g) to 2.4 lbs (1,100 g), and averaged 2.1 lbs (954 g). All northern pike captured during the survey were in poor body condition and a length frequency analysis revealed there were two age classes of northern pike existing in Comins Lake. Length breaks at 20 in to 21.8 in (510 mm to 555) mm and 22 in to 22.6 in (565 mm to 575 mm) shows distinct age classes (Figure 1). Similar to 2011, there were no young-of-year northern pike contacted during the 2012 electroshocking survey.

The 2012 fall electroshocking survey supports similar findings as the 2011 survey where the average size of northern pike has begun to stabilize. The 2012 survey showed that the northern pike size range varied less than three inches. This small length variation most likely represents actual population conditions in Comins Lake. In order observe age class distribution, otoliths were removed from four northern pike, polished, and examined under a dissecting microscope. However, only two were effectively aged since the other two were broken during preparation. These pike were aged to be 3 years old at 555 mm and 554 mm. Additionally, the weight of all pike caught varied less than a pound, suggesting again that the population had stabilized.

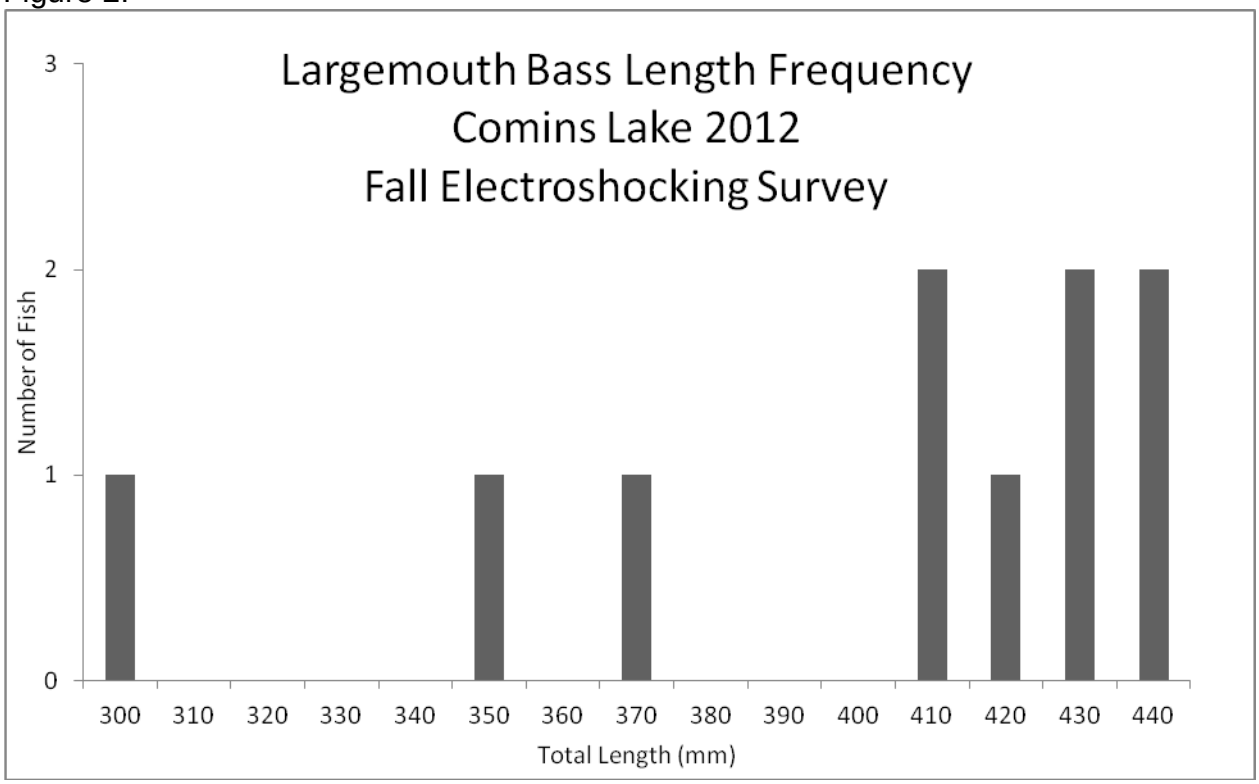
Figure 1.



Necropsies were performed on all northern pike captured and macroinvertebrates were the predominant food item found. Organisms included dragonfly and damselfly nymphs (Odonata). One male northern pike had a single class I largemouth bass in its stomach. The lack of and/or decrease in recruitment, coupled with dominance of macroinvertebrate consumption and poor body condition continues to provide support that northern pike have effectively, through predation, caused their own population to collapse.

A total of 10 largemouth bass was captured during the electroshocking survey. There were also four largemouth bass missed, including one young-of-year. Their total length ranged from 11.8 in (300 mm) to 17.1 in (435 mm), and averaged 15.4 in (392 mm) (Figure 2). This average was two inches longer than the average from 2011. However, it is important to note that no YOY were caught in 2012, but were caught in 2011 to lower the average. The weight of the nine largemouth bass ranged from 1.0 lb (450 g) to 2.5 lbs (1150 g), with an average of 1.9 lbs (870 g). The range and average weight of the largemouth bass collected in 2012 are less than that of the bass collected in the 2011 electroshocking survey. Largemouth bass collected in 2012 appeared to be as healthy as those collected in 2011.

Figure 2.



It was previously thought that only two largemouth bass ages classes were present, but pike predation generally eliminated YOYs early in the season. The 2012 survey showed there were at least three age classes, not including YOY (Figure 2). Using size breaks at 300mm, 370mm, and grouping all individuals greater than 400mm, there were three discernible age classes. If YOY and the class I largemouth bass found in the pike's stomach were included to the population size distribution, then there were five age classes of largemouth bass found in 2012. Younger age classes observed demonstrates that adult largemouth bass are reproducing; however, YOY are succumbing to predation from northern pike. Larger, older age class largemouth bass are more apt to escape predation than younger ones.

Body condition factor (K-Factor) was assessed for the 10 largemouth bass captured during the survey. Six were in good condition and 2 were considered to be in excellent body condition. There was one bass rated as fair and one as poor body condition. Comins Lake fishery has been known to be productive and, in 2012, most largemouth bass had a respectable body condition.

Measuring 29.5 in (750 mm) and weighing 10 lb 2 oz. (4,600 g), a single brown trout of trophy proportions was captured during the 2012 electroshocking survey. From 1997 to 2003, nearly 3,760 brown trout were stocked in Comins Lake on four occasions. The longevity of brown trout in Comins Lake has been notably documented in the past. Since brown trout were last stocked in April of 2003, the 2012 trout would be aged at a minimum of 9.5 years.

No work occurred regarding mercury remediation, but aide will come from White Pine County Water Advisory Board, NDEP, EPA, and U.S. Army Corps of Engineers. An assessment of the Comins Lake food web was prepared for EPA by Ecology and Environment, Inc. As a result, Dr. Mae Gustin at the University of Nevada-Reno was contracted by NDOW to review this study. Her findings concerning assessment of remediation may help to direct future efforts. Dr. Gustin agreed with the authors of the assessment that removal of mercury from the watershed is impossible. Additional research does not seem to be necessary; rather the State's mercury consumption advisory should be maintained.

MANAGEMENT REVIEW

Due to the position vacancy for the majority of the field season in 2012, management options and approaches for mercury remediation were not explored. All other approaches for Comins Lake were completed in 2012.

RECOMMENDATIONS

- Electroshock 4 established transects one night in the fall of 2013.
- 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.
- To conduct a general fisheries assessment through opportunistic angler contacts in 2013.

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