

**NEVADA DEPARTMENT OF WILDLIFE
NATIVE FISH AND AMPHIBIANS
FIELD TRIP REPORT**

DATE(S): 22 & 25 August 2005

LOCATION(S): Pahrump poolfish refuge at Corn Creek, Desert National Wildlife Refuge, Clark County, NV

PURPOSE(S): To estimate the population size of Pahrump poolfish at the refugia at Corn Creek.

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INTRODUCTION

The poolfish refuge at Corn Creek, on the Desert National Wildlife Refuge, Clark County, is one of three extant refuge sites (Spring Mountain State Park and Shoshone Ponds are the other two sites) for the federally endangered Pahrump poolfish (*Empetrichthyes latos latos*). Due to groundwater pumping for agricultural purposes in the Pahrump Valley, there was a complete loss of historic spring habitats for the poolfish by the 1970's. In response, a population was established by biologists in the Corn Creek ponds in 1971 on the Desert National Wildlife Refuge. By 1999, however, the population at the Corn Creek ponds was extirpated as the population of recently introduced red swamp crayfish (*Procambarus clarkii*) expanded. Other invasive species at Corn Creek include: bullfrogs, goldfish, and red-eared slider turtles. A more secure, aquarium-style refuge was built and completed in 2002. One hundred twenty Pahrump poolfish from Spring Mountain Ranch State Park were transplanted to the new refuge in 2003. Since then, a population estimate has been completed annually.

METHODS

On 22 August, 4 Gee Minnow 1/4" mesh traps (standard mesh) and 2 exotic 1/8" mesh traps (small mesh) were set, without bait, in each of the two tanks at Corn Creek. A total of 8 standard mesh and 4 small mesh traps were set. The traps were allowed to fish for 3 hours before they were pulled. All fish greater than 30 millimeters were marked with an oblique clip on the caudal fin, tallied and released. Fish captured in the small mesh traps were also measured.

On 25 August, 6 Gee Minnow 1/4" traps were set, without bait, in each tank, for a total of twelve traps. The traps were allowed to fish for at least 3 hours. Fish were then examined for marks, tallied, and released.

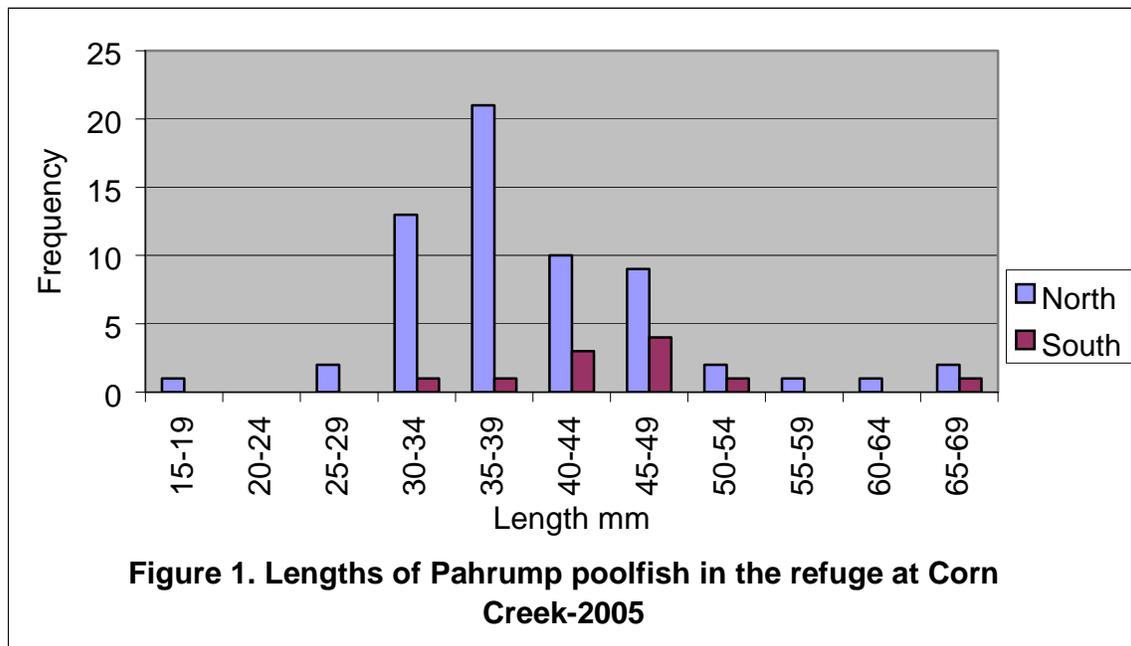
RESULTS

The population estimate for the north tank was 117 (98-168, $p=0.95$). The population estimate for the south tank was 69 (49-102, $p=0.95$).

The catch per unit effort was higher in the north tank than in the south tank (table 1).

| Table 1. Summary of CPUE at Corn Creek, Clark County, 2005. | | | | | | |
|---|------------|------------------|--------------------|----------------------|-----------------|------|
| Date | Location | # of Fish Marked | # of Fish Censused | # of Fish Recaptured | # of Trap Hours | CPUE |
| | North Tank | 96 | 101 | NA | 15.83 | 6.38 |
| 8/22/05 | South Tank | 58 | 58 | NA | 20.17 | 2.88 |
| 8/25/05 | North Tank | NA | 77 | 63 | 18.5 | 4.16 |
| | South Tank | NA | 37 | 31 | 19.0 | 1.95 |

Most of the fish measured were in the north tank. A majority of the fish in the north tank measured from 35-39 millimeters (figure 1). The largest fish (67 mm) was in the south tank and the smallest fish (18 mm) was in the north tank.

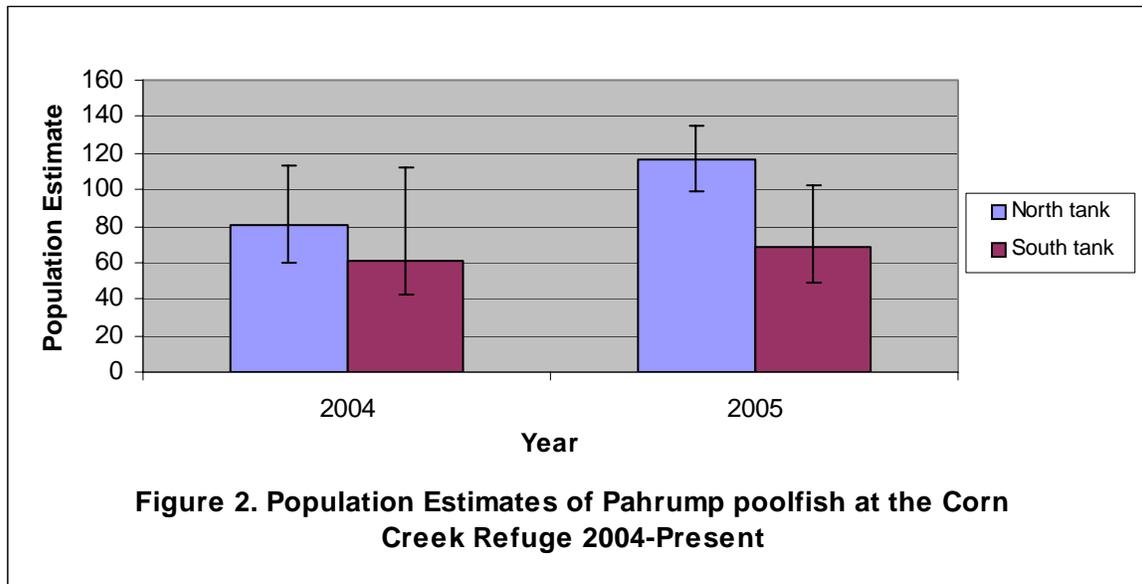


DISCUSSION

It was observed that the south tank has more algae than the north tank (most likely due to its southern exposure) and that in each of the last two years (Figure 2), population estimates in the south tank have been lower than in the north tank. It is unclear whether the algae is affecting the fish numbers. A more likely cause of the discrepancy between the two tanks is that initially, USFWS and NDOW put invertebrates such as spring snails and amphipods in the north tank, but not in

the south tank. However, the added complexity of the habitat in the south tank may also be the reason that fewer fish are captured in the south tank.

It is recommended that invertebrates also be stocked in the south tank to see if the addition will translate into higher poolfish population estimates. Also, population estimates using minnow traps should continue, as this method seems to be working well with little effort on the part of the surveyors.



LITERATURE CITED

Ricker, W.E. 1975. Computation and Interpretation of Biological Statistics of Fish Populations. Bulletin of the Fisheries Research Board of Canada. 191:382 p.