

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

DATE(S): 9, 11 & 18 August 2005

LOCATION(S): Spring Mountain Ranch, Clark County, NV

PURPOSE(S): To estimate the population size of Pahrump poolfish

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INTRODUCTION

The irrigation system at Spring Mountain Ranch State Park, Clark County, is one of three existing refuges for the Pahrump poolfish, *Empetrichthys latos latos*. A population of poolfish was established at Corn Creek on the Desert National Wildlife Refuge after a complete loss of historic habitat in Pahrump Valley, due to groundwater pumping for agricultural purposes during the 1970's. In 1983, a portion of the poolfish population at Corn Creek was transferred to Spring Mountain Ranch Pond to provide additional security and aid in the recovery of the species. To accommodate needed reconstruction and work on the irrigation reservoir, the Nevada Division of State Parks developed and implemented a Habitat Conservation Plan for the poolfish and reservoir, with cooperators including NDOW, in 1995. NDOW provides annual monitoring to evaluate the status and population trends of the poolfish at Spring Mountain Ranch Pond as part of the HCP implementation agreement. The population of poolfish at Spring Mountain Ranch Pond has remained the largest and most stable of the three poolfish refuges.

METHODS

On 9 August, 30 Gee Minnow traps (1/4" mesh, 1" funnel openings) and 5 Gee Exotic traps (1/8" mesh, 1" funnel openings) were set, without bait, around the perimeter of the pond at Spring Mountain Ranch. The traps were allowed to fish 4-5 hours before they were pulled. All of the fish in the exotic traps were measured before being marked. Each fish greater than 30 millimeters was marked with an oblique clip on the caudal fin before it was returned to the pond. The results are shown in Table 1.

On 11 August, 34 Gee Minnow traps (1/4" mesh, 1" funnel openings) were set, without bait, around the perimeter of the island, and along the shoreline of the pond. Each trap was allowed to fish for 4-5 hours before being pulled. Each marked fish captured was tallied before it was released. All unmarked fish were marked with an oblique clip on the caudal fin, tallied, and released. Dissolved oxygen, percent saturation and temperature were also sampled at 1600 hours using a YSI Model 55 Dissolved Oxygen Probe.

On 18 August, 39 Gee Minnow traps (1/4" mesh, 1" funnel openings) were set, without bait, along the shorelines of the pond and the island. Traps were allowed to fish for 4 hours before they were pulled. Each fish caught was examined for marks, tallied, and released.

A population estimate was calculated using Peterson's estimator. Approximate 95% confidence intervals were determined using a table appropriate to the Poisson Distribution, after the method described in Ricker (1975).

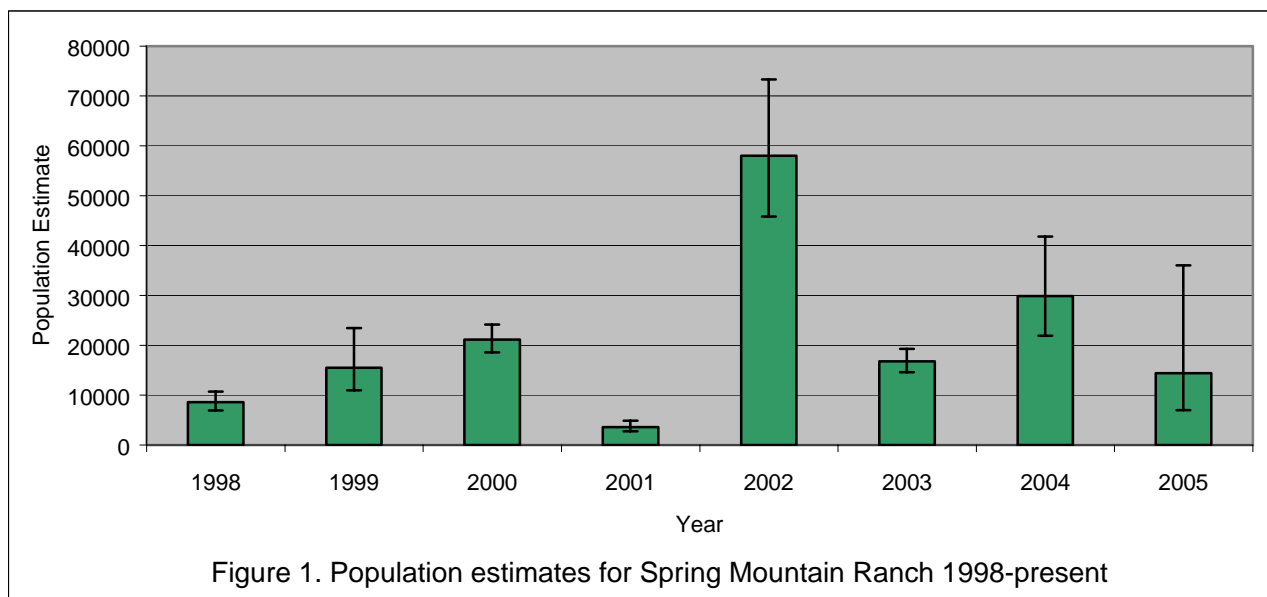
RESULTS

The population of poolfish at Spring Mountain Ranch is estimated to be 14,406 (7,003-36,016, $p=0.95$). This population estimate is lower than the previous estimates for the last three years (Figure 1).

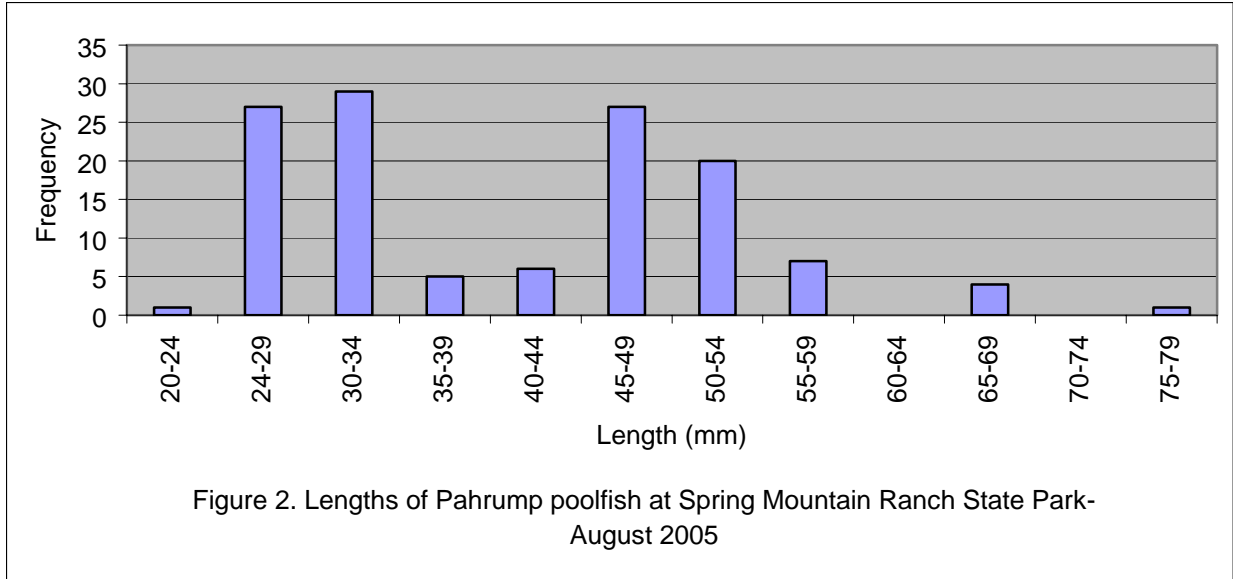
Most of the fish were captured on 11 August and the fewest were captured on 18 August (Table 1). The catch per unit effort (CPUE) was also the highest on 11 August.

A majority of the fish were approximately 24-33 mm in length (Figure 2). This is similar to what was reported in 2003.

The water was the coldest near the inflow, and the warmest at site 5 (Table 2 and Figure 3). The dissolved oxygen and percent saturation was the highest at site 3.



Date	# Fish Marked	# Fish Recaptured	# Fish Unmarked	Total # Fish	# of Trap Hours	Catch per Unit Effort
8/9	615	NA	21	636	164.31	3.87
8/11	868	40	4	912	162.32	5.61
8/18	NA	7	61	68	124.45	0.55



Location	Dissolved Oxygen (mg/L)	% Saturation	Water Temp. (C)
1. Inflow	8.76	92.1	15.5
2. 6' depth	8.01	90.1	23.1
3. 3' depth	9.65	117.2	23.6
4. 2' depth	9.46	114.5	24.1
5. 3' depth	8.65	102.6	23.7

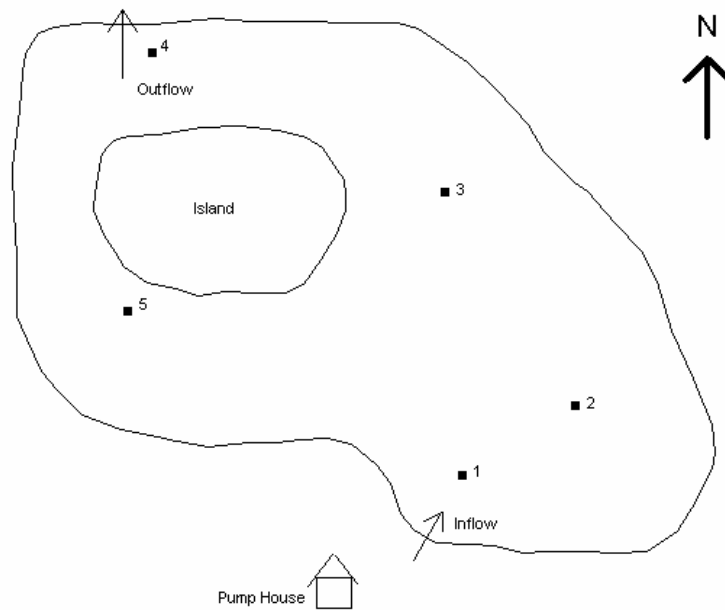


Figure 3. Sites where water chemistry was sampled, Spring Mountain Ranch, 2005.

DISCUSSION

This year's estimate is down 52% from last year's estimate. We never know what to expect each year at Spring Mountain Ranch. The population estimates have been inconsistent for years now. The reason for the variability is difficult to ascertain. This year, a lack of activity during the recapture trapping sessions may be the reason. Another possibility is that the fish are concentrating in certain areas or they are schooling and we are not setting enough traps in the large reservoir to find these schools.

The estimate for this year is still quite high at around 14,000 fish. Again this year, no nonnative species were captured (i.e. crayfish, bass, green sunfish). This population continues to survive and should do so as long as conditions at the reservoir remain as they are now.

We will return next year to conduct another population estimate. If time permits, we will try to trap until we have at least 25% recaptured fish during each recapture session. This may remedy the limitations discussed above and provide us with a more powerful estimate.

LITERATURE CITED

Ricker WE. 1975. *Computation and Interpretation of Biological Statistics of Fish Populations*. Bulletin of the Fisheries Research Board of Canada. 191: 382 pp.