

**Field Trip Report
Nevada Division of Wildlife**

Date: 18 August and 25 August, 2004

Location: Spring Mountain Ranch State Park

Purpose: Determine population size of Pahrump poolfish

Personnel: Shawn Goodchild (USFWS-LV), Mark Beckstrand, Heather Clove, Brian Hobbs

METHODS

On 18 August 2004, we set 35 standard, unbaited, ¼” mesh minnow traps in the reservoir at Spring Mountain Ranch State Park. When the traps were pulled, the poolfish were tallied, marked, and then released back into the pond. The fish were marked by making an oblique clip of the caudal fin with surgical scissors. Only fish captured in the five traps that were 1/8” mesh were measured. Fish less than 30 millimeters (mm) were not marked.

On 25 August, 35 traps were again set in the reservoir. When the traps were pulled, poolfish were examined for marks. Marked and unmarked fish were tallied and released. Population estimates for fish greater than 30 mm in length were calculated using the standard Peterson mark and recapture estimator: $M \cdot C / R$. Approximate 95% confidence intervals were calculated using a table appropriate to the Poisson distribution, after the method described in Ricker (1975).

RESULTS

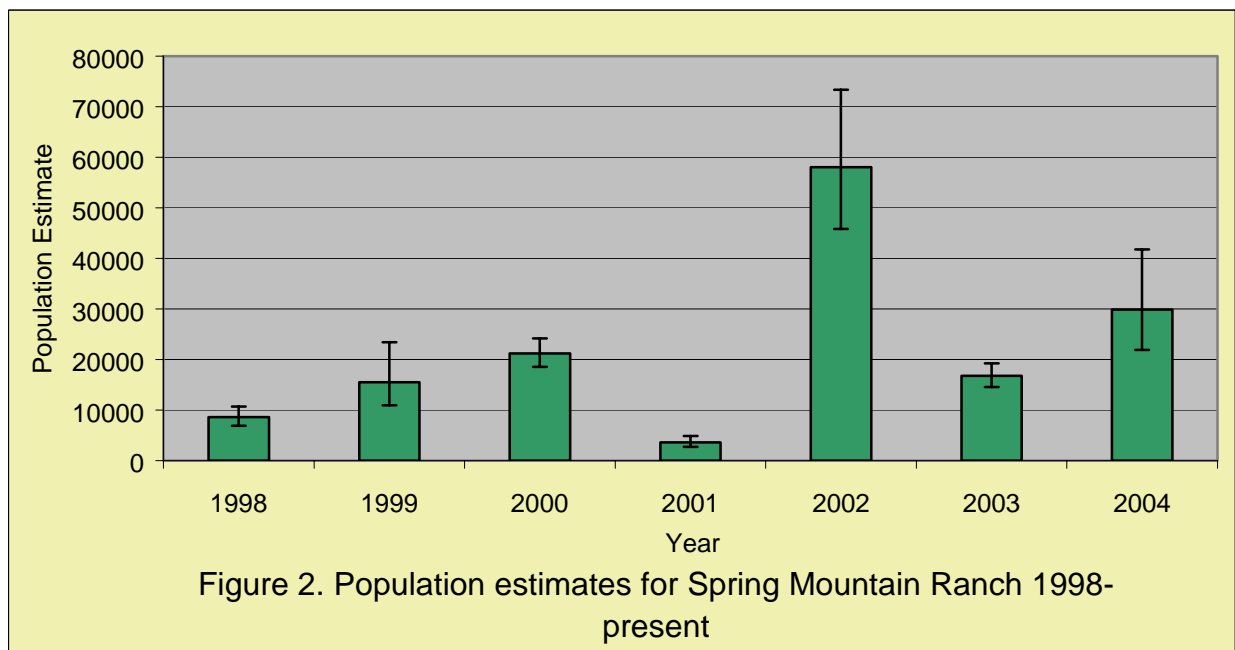
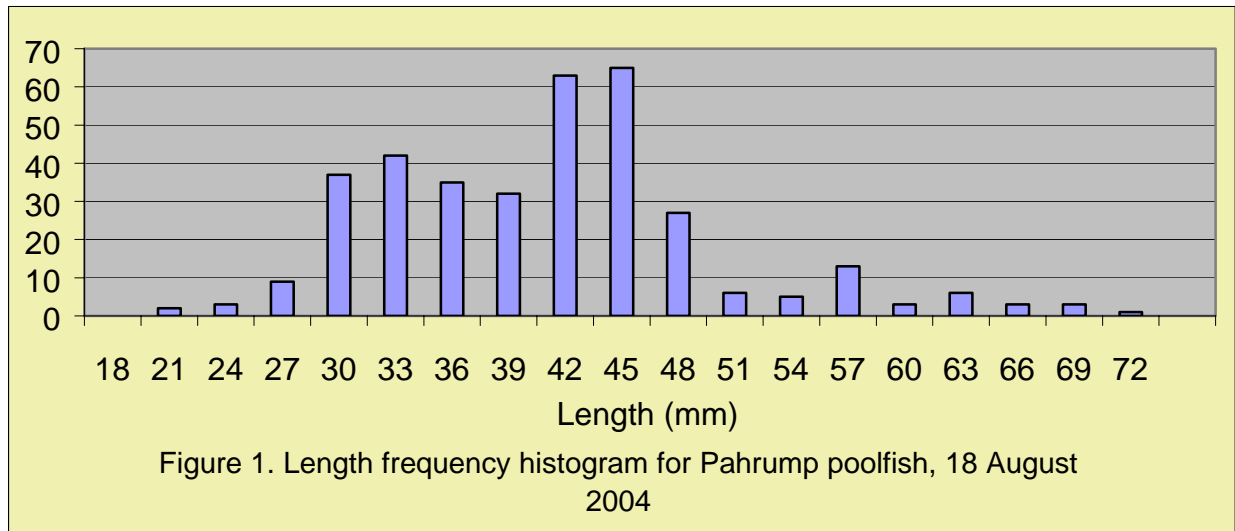
A population estimate of 29,876 was calculated for the population using the data presented in Table 1. Four hundred fifty-four (454) fish were measured for a length frequency graph shown in Figure 1. A YSI 85 dissolved oxygen probe was used to

TABLE 1. Results from the survey efforts at Spring Mountain State Park.					
Date	Traps Set	Fish Marked	Fish Examined	Recaptures	Estimate (95% Confidence Interval)
8-18-2004	35	2464	-		29876
8-25-2004	35	-	485	40	(21927-41785)

determine dissolved oxygen, temperature, salinity, and conductivity at four locations around the pond (Table 2).

Table 2. Water chemistry data for Spring Mt. Ranch pond.					
Location	Dissolved O ₂	% Saturation	Temperature	Conductivity	Salinity
Inflow	8.35 mg/L	86.3 %	17.5 °C	413.0 μS	0.2 ppt
NW corner	8.30 mg/L	101.8 %	24.4 °C	460.2 μS	0.2 ppt
Dam	8.83 mg/L	106.6 %	24.4 °C	454.5 μS	0.2 ppt
SE corner	9.01 mg/L	108.0 %	24.0 °C	449.4 μS	0.2 ppt

Figure 1. Population estimates for Spring Mountain Ranch from 1998 to present.



DISCUSSION / RECOMMENDED ACTIONS

Population estimates from 1998 to the present are shown in the graph (Figure 1). This year's estimate is down about 70% from last year's record high. However, it seems that the time of year that the surveys are done affects the estimated number of fish in the reservoir. In 2001, surveys were done in June and less than 5000 fish were estimated, even though over 20 000 fish were estimated in late July/August 2000 and nearly 60 000 fish were estimated in late July/August 2002. In the future, surveys should be done no earlier than July 15.

It should also be noted that the reservoir was much lower this year than in the past. The reservoir has a small leak which surfaces about 25 meters from the earthen dam. There was also a problem with roots in the inflow pipe further up the canyon. Personnel at Spring Mountain Ranch are aware of the leak but have yet to find a way to fix it. The inflow pipe has been cleaned out and more water now flows into the reservoir.

Also of note, a total of 120 poolfish were removed from the Spring Mountain reservoir and taken to stock the Corn Creek refuge this summer.