



SALMON PROTECTION AND WATERSHED NETWORK

Post Office Box 400 • Forest Knolls, CA 94933
Phone: 415-488-0370 • Fax: 415-488-0372
spawn@spawnusa.org • www.spawnusa.org

Summary of Relocation of Stranded Native Fishes from Isolated Pools in the San Geronimo Creek System in 2004

Prepared by Paola Bouley

March 8th 2005

Summary

In 2004, the sixth year of SPAWN's salmonid rescue and relocation program, a total of 4256 salmonids (1931 coho, 2325 steelhead) in imminent danger of mortality were relocated in the San Geronimo Creek system within the Lagunitas Creek Watershed. Fish were relocated from drying pools in Arroyo Creek, Barranca Creek, El Cerrito Creek, Larsen Creek, Montezuma Creek, North Fork of San Geronimo Creek, and Woodacre Creek. Two injured fish and no mortalities were reported. Additional native species relocated included sculpin.

Since the start of this program began in 1999 under permits from the National Marine Fisheries Service (NMFS) and California Department of Fish and Game (DFG), a total of 14,161 salmonids have been relocated.

Introduction

Coho salmon and steelhead trout (*Oncorhynchus mykiss*) are found in the Lagunitas Creek Watershed, Marin County (LCW). Both species in this region (Central California Evolutionary Significant Unit) are listed as 'threatened' under the Endangered Species Act. The National Marine Fisheries Service (NMFS) is presently considering uplisting the coho to 'endangered' in this unit. Coho are also considered 'endangered' by the State of California. The approximate 500 coho that return to this watershed annually are considered to be one of the more robust and stable populations in the state (Stillwater Sciences 2004). However, their abundance in this watershed are estimated to be a small fraction of historical numbers.

This report is a documentation of relocation efforts for the 2004 season within the San Geronimo Valley. Background and information on the populations and motivation for conducting this effort are described in previous reports (See Walder, R.K. and Steiner T. 2001. Relocation of stranded native fishes from isolated pools in the San Geronimo Creek system - 2001).

Methods

Streams were surveyed to determine presence and absence of salmonids and monitored to determine water flow, depth and temperature in pools. As it became apparent that pools would dry completely and based on current and previous years observations at known sites, relocation efforts were launched. Crews would delay efforts as long as possible in an effort to maximize resident time in their natal stream habitat. All rescue activities occurred under strict supervision of trained and experienced team leaders.

Fish were dip-netted out of pools and placed in insulated coolers equipped with a battery operated aerator. Approximately every 15-45 minutes, captured fish were transported to a perennial flow section downstream on their natal tributary or to San Geronimo Creek at or downstream of the confluence where they would have passed had they not become stranded. The exact release location was dictated by the availability of nearby pool habitat and issues of access on private property. To assure that pools where fish were relocated to were not overstocked, researchers relocated fish to several pools along stretches and made sure to release into pools where connectivity would allow fish to migrate both upstream and downstream.

Upon capture of fish, individuals were identified and lengths measured and stream conditions recorded. In some cases, measurements were done on a random sample of fish, especially if hundreds were caught at a single site. On occasion, particularly when air temperature was 32° C or higher, fish were identified but not measured in order to rapidly relocate them with minimal stress.

To further minimize disturbance and stress to fish, pools were netted for no more than 30 minutes. Netting was done by gently but swiftly sweeping a net through the water. If fish mortalities occurred, individuals were collected and frozen for delivery to NMFS. Notes were made of how each incident occurred and efforts were modified to prevent further mortalities.

Results

Seven tributaries to San Geronimo Creek were surveyed for salmonids and habitat conditions between April and August 2004 (Arroyo, Barranca, El Cerrito, Larsen, Montezuma, North Fork of San Geronimo, and Woodacre Creek. (Figure 1).

A total of 4,256 salmonids (1,931 coho, 2325 steelhead) were successfully relocated in the San Geronimo Creek system within the Lagunitas Creek Watershed. Fish in need of relocation were rescued from drying pools in Arroyo Creek (202 coho, 112 steelhead), Barranca Creek (0 coho, 366 steelhead), El Cerrito (0 coho, 8 steelhead),

Larsen Creek (425 coho, 417 steelhead), North Fork of San Geronimo (1015 coho, 188 steelhead), and Woodacre Creek (287 coho, 1233 steelhead). Additional native species relocated (from Arroyo Creek) included 7 sculpin (*Cottus* sp)

Discussion

In 2004, the majority of juvenile salmonids relocated were steelhead (55 percent), and the remainder were coho (45%). 2078 more individual salmonids were relocated than in 2003, yet this increase really only reflects an increase in effort rather than a reflection of actual population size.

During relocation efforts, salmonids were relocated to several pools rather than depositing all individuals into one pool. This was done to minimize over-stocking pools with too many fish. In addition, effort was made to assure that relocation sites were not near sites near those of other researchers (e.g. UC Davis and MMWD) who are conducting juvenile salmonid population estimate studies. SPAWN will continue to coordinate with these and other researchers in the watershed.

Acknowledgements

We gratefully appreciate the dedicated assistance of many members of the community. In particular we want to thank our volunteer Team Leaders David Ford, Megan Isadore, Dan Baker, and Al Pisciotta for helping to make the program a success.

Figure 1. Map of San Geronimo Creek and it tributaries