

State of California

Resources Agency

Memorandum

To : Phil Baker, Associate Fishery Biologist

Date: May 2, 1973

From : Department of Fish and Game - Weldon Jones

Subject: : Fish Enumeration, Soda Creek Fish Kill, Mendocino County

A native population of rainbow trout was killed in Soda Creek on or about March 7, 1972 by copper sulfate. The fish kill was investigated by Warden Ken Bain, charges were brought against the responsible party, and a judgment was obtained. Mr. Soyster, the responsible party, paid \$800 in fines for his negligence. In addition, he was ordered by the court to purchase an equal number of trout at his expense and have them planted according to Department recommendations and satisfaction.

The purpose of this report is to provide an estimate of the number of fish killed and recommendations for their replacement. Soda Creek is about 6 1/2 miles long and drains an area of 6.4 square miles within the southeastern portion of the Navarro River Drainage. From this origin it courses through a "V" shaped canyon in a meandering southwesterly direction, generally along the Boonville-Ukiah road, to enter Anderson Creek about 1 mile southeast of Boonville. Two falls are located on the stream. One, of about 60 feet in height is located in the canyon about 2 1/2 miles above the mouth. The second, of about 15 feet in height, occurs about 1.3 miles upstream from the first.

Annual streamflows generally range from about 50 cubic feet per second during the winter to an intermittent condition during the summers of the drier years. During September of the dry 1972 year, the stream area above the larger falls was intermittent. However, wetted area within this intermittent stream section averaged 19 pools per mile, with a surface area of about 2,181 square feet per mile.

Soda Creek supports populations of resident rainbow trout, anadromous steelhead, and a small population of nongame fish. The resident rainbow trout reside in a 2.1 mile section of the stream located above the 60-foot falls. The steelhead occupy the lower 2.5 miles of stream, as do the nongame fish. In addition, the resident rainbow trout support a small fishery during the spring and summer months.

The fish kill investigation report filed by Warden Bain revealed the kill was extensive. "Sixty-four adult rainbow trout were picked up and more were observed beyond reach in the deeper pools." At the time, Warden Bain believed all the juvenile resident trout occupying the 2.1 miles of stream located above the larger falls had been killed.

In September 1972 a survey was conducted on the stream to assess the fish loss. In general, results indicated no trout present in the upper 0.8 mile of stream. Results obtained with the aid of an electro-sampling device in the lower 1.3 mile area found trout present.

In the process of enumerating the fish population remaining, a total of 5 stations covering 956 square feet of stream were sampled. Analysis of the data collected revealed the density of the trout population to be 0.2 fish per square foot of stream. Thus, assuming the density of trout remained constant within the occupied area, a total of 567 rainbow trout was calculated to have survived the copper sulfate kill.

These data were expanded to estimate the population occupying the entire 2.1 miles prior to the kill. The calculation was made with the assumption that pre-kill densities of fish were similar in both the 0.8 mile area of total kill and the lower area. From these calculations it was determined that the pre-kill trout population amounted to 916 fish.

Thus a total of 349 (916 minus 567) rainbow trout were estimated to have been killed by the copper sulfate.

The basic data from which the foregoing enumeration was calculated, was obtained from a portion of the stream influenced by copper sulfate. Therefore, the total number of fish calculated to have been killed is biased and should be considered to represent only a minimum figure.

Eighty-two percent of the rainbow trout caught during the electro-sampling ranged in size from 1.8 to 4 inches and were juveniles (fish of the year) produced during the 1972 year. Fourteen percent of the fish measured ranged in size from 6.2 to 8.0 inches and were believed to be one year old fish. The remaining four percent ranged in size from 8.6 to 10.7 inches and were considered older than 2 years of age.

Recommendations:

1. Mr. Soyster should be required to reimburse the Department for the cost of planting 350 "wild" strain rainbow trout in Soda Creek.
2. The trout should be planted during the spring of 1973.
3. The wild trout to be planted should be composed of 287 (82 percent) fish of the year, 49 (14 percent) yearling and 14 (4 percent) two-year-old and older fish, if possible.
4. The trout should be distributed throughout the area of fish loss.

Weldon Jones
Assistant Fishery Biologist
Region 3

cc: Captain Rhien
Warden Ken Bain
Jack Alien

Post Office Box 47 Yountville,
California 94599

May 2, 1973

The Honorable Homer W. Mannix
Anderson Justice Court
Mannix Building, 14261 Highway 128
Boonville, California 95415

Re: case No. 2439 - C

Dear Judge Mannix:

This letter is to inform you we have completed our investigation and have restocked the 150 rainbow trout determined to have been killed by Mr. Soyster's release of copper sulfate into Soda Creek. A copy of the investigation report is attached.

The restocking was conducted on April 24, 1973. Composition of the rainbow trout planted was 300 fingerlings and 50 yearling.

The cost of restocking \$112.04, for which we understand Mr. Soyster will reimburse us. Reimbursement should be by check made out to California Department of Fish and sent to the Region 3 office, P.O. Box 47, Yountville, California 94399.

The cost of restocking was based on the Department's average production costs for 1970-71, the most recent year of available data. An itemization of planting costs is also enclosed.

Sincerely,

J. C. Fraser
Regional Manager
Region 3
WJ:rw

Enclosures (2)

cc: Mr. Huntley Soyster
Mendocino County District Attorney's Office

bcc: Captain Rhien
Warden Ken Bain
Jack Allan Northern
District Fishery Office