

STREAM INVENTORY REPORT

SOUTH FORK CUNEO CREEK

INTRODUCTION

A stream inventory was conducted during the summer of 1991 on South Fork Cuneo Creek to assess habitat conditions for anadromous salmonids. The inventory was conducted in two parts: habitat inventory and biological inventory. The objective of the habitat inventory was to document the habitat available to anadromous salmonids in South Fork Cuneo Creek. The objective of the biological inventory was to document the salmonid species present and their distribution. After analysis of the information and data gathered, stream restoration and enhancement recommendations are presented.

There is no known record of adult spawning surveys having been conducted on the South Fork Cuneo Creek. The objective of this report is to document the current habitat conditions, and recommend options for the enhancement of habitat for chinook salmon, coho salmon and steelhead trout.

WATERSHED OVERVIEW

South Fork Cuneo Creek is tributary to Cuneo Creek, tributary to Bull Creek, tributary to the South Fork Eel River, tributary to the Eel River, located in Humboldt County, California (Figure 1). The South Fork Cuneo's legal description at the confluence with Cuneo Creek is T1S R1E S35. Its location is 40°20'12" latitude and 124°02'25" longitude. South Fork Cuneo Creek is a first order stream. The total length of blue line stream, according to the USGS Bull Creek 7.5 minute quadrangle is 1.1 miles. South Fork Cuneo Creek drains a watershed of approximately 0.68 square miles. Elevations range from about 400 feet at the mouth of the creek to 2,400 feet in the headwater areas. Hardwood forest dominates the watershed. The watershed is owned by the State of California and is managed as part of Humboldt Redwoods State Park. Vehicle access exists from U.S. Highway 101, via the Bull Creek Road exit to the Mattole Road. This leads to the Cuneo campground and South Fork Cuneo Creek.

METHODS

The habitat inventory conducted in the South Fork Cuneo Creek follows the methodology as presented in the California Salmonid Stream Habitat Restoration Manual (Flosi and Reynolds). The inventory was conducted by a two person team. The California Conservation Corps (CCC), Technical Advisors, Chris Coyle and Jerry Suissa, conducting the inventory were trained in standardized habitat inventory methods by the California Department of Fish and Game (DFG). The South Fork Cuneo Creek

South Fork Cuneo Creek

personnel were trained in May and June, 1991, by Gary Flosi and Scott Downie.

HABITAT INVENTORY COMPONENTS

A standardized habitat inventory form has been developed for use in California stream surveys and can be found in the California Salmonid Stream Habitat Restoration Manual. This form was used in the South Fork Cuneo Creek to record measurements and observations. There are nine components to the inventory form. For specific information on the methods used see the Cuneo Creek report.

BIOLOGICAL INVENTORY

For specific information on biological inventory methods see the Cuneo Creek report.

DATA ANALYSIS

Data from the habitat inventory form are entered into Habitat Runtime, a dBASE 4.1 data entry program developed by the California Department of Fish and Game. This program processes and summarizes the data, and produces the following six tables:

- Riffle, flatwater, and pool habitat types
- Habitat types and measured parameters
- Pool types
- Maximum pool depths by habitat types
- Dominant substrates by habitat types
- Mean percent shelter by habitat types

No graphs were produced for the South Fork Cuneo Creek.

HABITAT INVENTORY RESULTS

* ALL TABLES ARE LOCATED AT THE END OF THE REPORT *

The habitat inventory of July 12, 1991, was conducted by Chris Coyle and Jerry Suissa (CCC). The total length of the stream surveyed was 1,189 feet.

Water temperature during the inventory was 65 degrees fahrenheit.
Air temperature was 83 degrees fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool

South Fork Cuneo Creek

habitat types. By percent **occurrence**, riffles make up 66.7%, and flatwater types make up 33.3% (Graph 1). Riffles make up 94.4% of the total **length**, and flatwater habitats make up 5.6% (Graph 2). There were no pool habitats in the stream reach surveyed.

Four Level IV habitat types were identified. The data are summarized in Table 2. High gradient riffles were most often encountered at 50.0% and comprised 89.2% of the total survey length (Graph 3).

A shelter rating was calculated for each habitat unit and expressed as a mean value for each habitat type within the survey using a scale of 0-300. Riffle types had a mean shelter rating of 35.0 and flatwater types had a shelter rating of 30.0 (Table 1).

Table 5 summarizes mean percent cover by habitat type. Boulders are the dominant cover type in the South Fork Cuneo Creek.

Table 6 (Graph 8) describes the dominant substrate by habitat type. Sand was the dominant substrate observed in 50% of the six habitat units surveyed. Large cobble was the next most frequently observed dominant substrate type.

The mean percent canopy in the South Fork Cuneo Creek was 68.3%. This canopy was composed of deciduous trees. Graph 9 describes the canopy in the South Fork Cuneo Creek.

Table 2 summarizes the mean percent of the right and left stream banks covered with vegetation by habitat unit type. For the stream reach surveyed, the mean percent right bank vegetated was 61.7%. The mean percent left bank vegetated was 58.3%. The dominant elements composing the structure of the stream banks consisted of 66.7% deciduous trees, and 33.3% cobble/gravel (Graph 10).

BIOLOGICAL INVENTORY RESULTS

One electrofishing site was sampled on the South Fork Cuneo Creek. The unit was sampled on July 26, 1991 by Craig Mesman and Chris Coyle (CCC). The unit was a high gradient riffle, located approximately 154 feet from the confluence with Cuneo Creek. Approximately 40 feet of unit 004 was sampled; it had an area of 144.0 sq ft, and a volume of 57.6 cubic feet. No fish were found.

South Fork Cuneo Creek

DISCUSSION

The water temperature recorded on the day of the survey was 65°F.

The air temperature was 83° F. Sixty-five degrees, if sustained, is near the threshold stress level for salmonids. To make any further conclusions, temperatures would need to be monitored throughout the warm summer months, and more extensive biological sampling conducted.

Riffles comprised 94.4% of the total **length** of this survey, and riffles 5.6%. There were no pools in the stream reach surveyed. In coastal coho and steelhead streams, it is generally desirable to have primary pools comprise approximately 50% of total habitat. Therefore, installing structures that will create pool habitat is recommended for locations where their installation will not be threatened by high stream energy.

The mean shelter rating in the flatwater habitats was low with a rating of 30.0. A shelter rating of approximately 100 is desirable. The relatively small amount of cover that now exists is being provided primarily by boulders in all habitat types. Log and root wad cover structures are needed to improve both summer and winter salmonid habitat. Log cover structure provides rearing fry with protection from predation, rest from water velocity, and also divides territorial units to reduce density related competition.

There was one low gradient riffle in the survey reach. It had sand as the dominant substrate. This is on the low end of the substrate size considered acceptable for spawning salmonids.

The mean percent canopy for the stream was 68.3%. This is a relatively high percentage of canopy, since 80 percent is generally considered optimum in these north coast streams.

RECOMMENDATIONS

- 1) The South Fork Cuneo Creek should be managed as an anadromous, natural production stream.
- 2) Where feasible, design and engineer pool enhancement structures to create pools. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion.
- 3) Increase woody cover in the pools and flatwater habitat units.

South Fork Cuneo Creek

Most of the existing cover is from boulders. Adding high quality complexity with woody cover is desirable.

PROBLEM SITES AND LANDMARKS

The following landmarks and possible problem sites were noted. All the distances are approximate and taken from the beginning of the survey reach.

0' Survey begins at the confluence with Cuneo Creek.

92' Overflow from the main fork of Cuneo Creek enters the channel.

1189' Three foot high plunge over log barrier, retaining gravel 3' high. No fish have been observed for the last 1035'. End of survey.