

STREAM INVENTORY REPORT

DOLORES CREEK

INTRODUCTION

A stream inventory was conducted during the summer of 1992 on Dolores Creek to assess habitat conditions for anadromous salmonids. Stream inventories are 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 Dolores 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 Dolores Creek. The objective of this report is to document the current habitat conditions, and recommend options for the potential enhancement of habitat for chinook salmon, coho salmon and steelhead trout.

WATERSHED OVERVIEW

Dolores Creek is tributary to the Little Van Duzen River, tributary to the Van Duzen River, tributary to the Eel River, located in Humboldt County, California. Dolores Creek's legal description at the confluence with the Little Van Duzen River is T1S R5E S22. Its location is 40°22'08" N. latitude and 123°35'41" W. longitude. Dolores Creek is a first order stream and has approximately 0.7 miles of blue line stream, according to the USGS Black Lassic 7.5 minute quadrangle. Dolores Creek drains a watershed of approximately 3.5 square miles. Elevations range from about 2,800 feet at the mouth of the creek to 4,000 feet in the headwater areas. Grass, oak and Douglas fir forest dominate the watershed. Dolores Creek and approximately 80% of the watershed are in private ownership and are managed primarily for rangeland and timber production. Approximately 20% of the upper watershed is federally owned by Six Rivers National Forest, Mad River Ranger District, and is managed for multiple use. Vehicle access exists from State Highway 36, approximately 33 miles east from Alton and Highway 101 to the Little Van Duzen River bridge, and then via a private road controlled by the Cottrell Ranch.

METHODS

The habitat inventory conducted in Dolores Creek follows the methodology presented in the California Salmonid Stream Habitat Restoration Manual (Flosi and Reynolds, 1991). The California Conservation Corps (CCC) Technical Advisors that conducted the inventory were trained in standardized habitat inventory methods by the California Department of Fish and Game (DFG). Dolores Creek personnel were trained in May, 1992, by Gary Flosi and Scott Downie. This inventory was conducted by a two person team.

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 Dolores Creek to record measurements and observations. There are nine components to the inventory form. For specific information on the methods used, see the Little Van Duzen River report.

BIOLOGICAL INVENTORY

Biological sampling during stream inventory is used to determine fish species and their distribution in the stream. Biological inventory is conducted using one or more of three basic methods: 1) stream bank observation, 2) underwater observation, 3) electrofishing. These sampling techniques are discussed in the California Salmonid Stream Habitat Restoration Manual.

Biological inventory was not conducted in Dolores Creek.

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 (DFG). This program also processes and summarizes the data.

The Habitat Runtime program produces the following tables:

- Riffle, flatwater, and pool habitat types

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

Graphics are produced from the tables using Lotus 1,2,3.
Graphics were not developed for Dolores Creek.

HABITAT INVENTORY RESULTS

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

The habitat inventory of September 1, 1992, was conducted by Shea Monroe and Russ Irvin (CCC). The total length of the stream surveyed was 226 feet.

Flows were not measured on Dolores Creek.

Dolores Creek is an A2 channel type for the entire 226 feet of stream reach surveyed. A2 channels are steep (4-10% gradient), very well confined streams, with stable stream banks.

Water temperature was 54 degrees Fahrenheit. Air temperature was 58 degrees Fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. By percent **occurrence**, riffles made up 66%, and pools 33%. Riffle habitat types made up 93% of the total survey **length**, pools 7%.

Two Level IV habitat types were identified. The data are summarized in Table 2. The habitat types by percent **occurrence** included two high gradient riffles, 66%; and a step-pool, 33%.

Only one step-pool was included in the survey; therefore, the pool data is not pertinent for analysis.

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

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Table 6 summarizes the dominant substrate by habitat type. Small cobble was the dominant substrate observed in the high gradient riffles. Boulder was the next most frequently observed dominant substrate type, and occurred in all of the high gradient riffles.

Ten percent of the survey reach lacked shade canopy. Of the 90% of the stream covered with canopy, 52% was composed of deciduous trees, and 48% was composed of coniferous trees.

Table 2 summarizes the mean percentage of the right and left stream banks covered with vegetation by habitat type. For the stream reach surveyed, the mean percent right bank vegetated was 47%. The mean percent left bank vegetated was 23%. The dominant elements composing the structure of the stream banks consisted of 50% boulder, and 50% brush.

BIOLOGICAL INVENTORY RESULTS

Electrofishing was not conducted in Dolores Creek. No fish were observed during the survey.

GRAVEL SAMPLING RESULTS

No gravel samples were taken on Dolores Creek.

DISCUSSION

Flows at the mouth of Dolores Creek were intermittent. However, a very low flow existed in the 226' reach surveyed. At the top of this reach, the flow was sub-surface and did not reappear above the survey reach. This lack of late summer flow and the high gradient of the stream indicate that Dolores Creek is not a significant stream to salmonids. To confirm this assumption, another inspection during spring or early summer is needed.

The A2 channel type is generally not suitable for fish habitat improvement structures. A2 channels are found in high energy, steep gradient stream reaches. They have channels dominated by boulders, do not retain gravels very well, but do have stable stream banks.

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The water temperature recorded on the survey day Sept. 1, 1992 was 54° F. Air temperature was 58° F. This is a very good water temperature for salmonids. To make any further conclusions, temperatures would need to be monitored throughout the warm summer months, and more extensive biological sampling conducted.

Because of the low flow at the time of our survey, and the few habitat units surveyed, most analysis of the stream habitat has not been conducted on Dolores Creek data. Therefore, conclusions and recommendations cannot be made without additional survey during periods of higher flow in Dolores Creek.

RECOMMENDATIONS

- 1) Dolores Creek should be managed as an anadromous, natural production stream.
- 2) Dolores Creek should be surveyed during periods of higher flow in a more typical water year to determine the stream's significance to salmonids.

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.

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|------|--|
| 0' | Begin survey at confluence with Little Van Duzen River. High gradient A2 channel at mouth. Intermittent flow. |
| 226' | No fish or YOY observed during the survey. Gradient is 12%, and the stream is dewatered at this point. End of survey. |