

STREAM INVENTORY REPORT

LA DOO CREEK

INTRODUCTION

A stream inventory was conducted during the summer of 1992 on La Doo 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 La Doo 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 La Doo 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

La Doo Creek is tributary to the West Fork Sproul Creek, tributary to Sproul Creek, tributary to the South Fork Eel River, tributary to the Eel River, located in Humboldt County, California. La Doo Creek's legal description at the confluence with West Fork Sproul Creek is T5S R2E (sections were unsurveyed). Its location is 40N02'19" N. latitude and 123N54'27" W. longitude. La Doo Creek is a first order stream and has approximately 1.8 miles of blue line stream, according to the USGS Briceland 7.5 minute quadrangle. La Doo Creek drains a watershed of approximately 1.5 square miles. Elevations range from about 680 feet at the mouth of the creek to 1,600 feet in the headwater areas. Redwood-Douglas fir forest and grass-oak woodland dominate the watershed. The watershed is owned by Barnum Timber and Wagner Corporation and is managed for timber production and rangeland. Vehicle access exists from U.S. Highway 101 at Garberville, via Sproul Creek Road, to a private road. This private road is approximately four miles west of U.S. Highway 101.

METHODS

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

La Doo Creek

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 La Doo Creek to record measurements and observations. There are nine components to the inventory form. For specific information on the methods used see the Sproul Creek 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 conducted in La Doo Creek to document the fish species composition and distribution. One site was electrofished in La Doo Creek using one Smith Root Model 12 electrofisher. The site was end-blocked with nets to contain the fish within the sample reach. Fish from the site were counted by species, measured, and returned to the stream.

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

Graphics were not developed for La Doo Creek.

La Doo Creek

HABITAT INVENTORY RESULTS

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

The habitat inventory of October 15, 1992, was conducted by Warren Mitchell and Russ Irvin (contract seasonals). The total length of the stream surveyed was 963 feet.

Flows were not measured on La Doo Creek.

La Doo Creek is an B4 channel type for the entire 963 feet of stream reach surveyed. B4 channels are moderate gradient, well confined streams, with unstable stream banks.

Water temperatures ranged from 51 to 52 degrees fahrenheit. Air temperature was 59 degrees fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. By percent **occurrence**, riffles made up 40.0%, flatwater types 40.0%, and pools 15.0%. Flatwater habitat types made up 39.5% of the total survey **length**, riffles 53.0%, and pools 5.2%.

Six Level IV habitat types were identified. The data are summarized in Table 2. The most frequent habitat types by percent **occurrence** were low gradient riffles, 40.0%; and step runs, 25.0%. By percent total **length**, low gradient riffles made up 53.0%, and step runs 27.9%.

Three pools were identified. The maximum depths of these pools was between one and three feet (Table 4).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 3 pool tail-outs measured, one had a value of 1 and two had a value of 2. On this scale, a value of one is the best for fisheries.

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. Pool habitat types had the highest shelter rating at 43.3. Flatwater habitats followed with a rating of 37.5 (Table 1).

Table 5 summarizes mean percent cover by habitat type. Large and small woody debris are the dominant cover types in La Doo Creek.

Table 6 summarizes the dominant substrate by habitat type. Gravel was the dominant substrate observed in 6 of the 8 low gradient riffles (75%). Small cobble was the next

La Doo Creek

most frequently observed dominant substrate type, and occurred in 25% of the low gradient riffles.

Twenty-one percent of the survey reach lacked shade canopy. Of the 79% of the stream covered with canopy, 87% was composed of deciduous trees, and 13% 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 21.3%. The mean percent left bank vegetated was 17.5%. The dominant elements composing the structure of the stream banks consisted of 22.5% bedrock, 17.5% cobble/gravel, 40.0% bare soil, and 20.0% brush.

BIOLOGICAL INVENTORY RESULTS

One site was electrofished on October 15, 1992 in La Doo Creek by Warren Mitchell and Russ Irvin (contract seasonals). The site sampled was a pool below the culverts at the road crossing. No fish were found, and no fish were observed throughout the habitat inventory survey.

DISCUSSION

B4 channel types are found in moderate gradient stream reaches. They are generally unsuitable for fish habitat improvement structures due to their unstable stream banks.

The water temperatures recorded on the survey day October 15, 1992 ranged from 51N F to 52N F. Air temperature was 59NF. This is a very good water temperature regime for salmonids. However, to make any further conclusions, temperatures would need to be monitored throughout the warm summer months, and more extensive biological sampling conducted.

Riffle habitat types comprised 53.0% of the total **length** of this survey, flatwater 39.5%, and pools 5.2%. The maximum depth of the three pools in the survey reach was 1-3 feet. In coastal coho and steelhead streams, it is generally desirable to have primary pools comprise approximately 50% of total habitat.

All of the 8 low gradient riffles had gravel or small cobble as the dominant substrate. This is generally considered good for spawning salmonids.

The mean percent canopy for the stream was 79%. This is a relatively high percentage of canopy, since 80 percent is generally considered optimum in these north coast

La Doo Creek

streams.

RECOMMENDATIONS

- 1) La Doo Creek should be managed as an anadromous, natural production stream.
- 2) Due to the waterfall at 53' and the culverts at the road crossing, access for migrating salmonids is an ongoing problem. Fish passage should be monitored, and improved where possible.

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' Begin survey at confluence with West Fork Sproul Creek. Channel type is B4.
- 53' Waterfall 14' high; probable fish barrier. No young-of-the-year salmonids (YOY) observed.
- 135' Log debris accumulation (LDA) 30' long x 5' wide x 4' high retaining gravel.
- 508' LDA 90' long x 50' wide x 28' high, retaining gravel 90' long x 20' high; probable fish barrier.
- 963' End of survey due to lack of fish observed and downstream barriers. Survey crew continued walking upstream and encountered two culverts at the road crossing, with another LDA 200' upstream from the culverts. The stream flow became intermittent and dried up at the base of a left bank slide. Pools comprised approximately 10% of this reach.

La Doo Creek

Lateral Scour Pool - Boulder Formed	[LSBo]	5.5
Plunge Pool	[PLP]	5.6

BACKWATER POOLS

Secondary Channel Pool	[SCP]	6.1
Backwater Pool - Boulder Formed	[BPB]	6.2