

Klein / Sonnevit

DRAFT

REDWOOD NATIONAL PARK

**HABITAT INVENTORY
AND
WOODY DEBRIS INVENTORY
OF
BRIDGE CREEK**

BY

**TRINITY FISHERIES CONSULTING
ARCATA, CALIFORNIA**

1990

PRINCIPAL INVESTIGATORS

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*STEVE, THIS REPORT IS ABOUT 120 PGS.
IF YOU WANT A COPY THE PARK
COULD PROBABLY SUPPLY IT. SAME
GOES FOR THE "BCLD MODIFICATION PROJECT
FINAL REPORT"*

[Signature]

BRIDGE CREEK HABITAT AND WOODY DEBRIS INVENTORY

DRAFT

OBJECTIVES

The objectives of this inventory are: 1) to provide information on the quantity and distribution of fish habitat types within Bridge Creek from the mouth to 5 miles upstream; 2) to determine the quantity and location of woody debris within the study reach; and 3) to explore restoration alternatives for the study reach.

METHODOLOGY

MONUMENT ESTABLISHMENT

Monument establishment and the woody debris inventory were conducted concurrently from July 18th to August 7th 1989. Rebar pins were set 500 feet on the side of the creek which was most accessible or visible from the center of the creek. Pins started with 00+00 feet at the mouth and ended with 273+00 feet. Pins were marked with red paint, orange flagging, and an aluminum tag with the station number and date marked on them. A flag, hung directly above the pins, aids pin location. Distance was measured with a hip chain, walking up the center line of the creek. All the pins were located on air photos with the station numbers marked on the side of the creek side that the pin was set.

Bankfull width measurements were recorded in field books at each station location.

WOODY DEBRIS INVENTORY

On Sub Reach A, woody debris was inventoried which were located at least partially within a zone 100 foot slope distance from the creek center line. An optical range finder was used to measure slope distance. On sub reaches B and C, woody debris was inventoried only within the bankfull margins.

The inventory of woody debris was entered on forms provided by RNP. Woody debris accumulations larger than 25 cubic yards were measured as one unit not separate pieces of debris and sketched on the aerial photos. For each accumulation, the percentage of logs between 18 inch and 36 inches in diameter and the percentage of logs greater than 36 inches in diameter were recorded.

SUMMER AND WINTER HABITAT CLASSIFICATION

Summer fish habitat classification was conducted between October 2nd and October 13th, 1989 with stream flows ranging between 2.5 and 3.5 CFS. Flow measurements were taken at the beginning and end of each field day, using timed floats. Flows ranged from 3.4 CFS to 4 CFS.

Winter fish habitat classification was conducted between March 18th and March 26th, 1990 at a targeted flow of between 80 & 120 CFS. Flow measurements were taken at the beginning and end of each field day, and ranged from 86 CFS to 68 CFS.

From stream mile 3.0 (156+00) to the end of the study reach, sampling difficulties were encountered due to the frequency and size of log jams. Large areas of the stream were underneath the jams and could not be habitat typed. This upper area was also much steeper in gradient with long cascades which marked the end of the anadromous reach. It is recommended that future restoration of this area be limited due to poor access and the large number of log jams accompanied with usage only by resident trout populations.

HABITAT CLASSIFICATION

The habitat classification methodology employed was a Micro habitat typing, with a unit resolution equal to the average wetted channel's base flow width; based on the habitat typing scheme developed by Bisson *et al* (1981), and modified by Decker (1985) and Sullivan (1988). This habitat typing technique is a standardized, replicable methodology that physically describes 100% of the habitat available without extrapolation from stratified index reaches.

Habitat types were classified based upon three components (Decker *et al* 1985):

- 1) The location of the habitat feature within the channel.
- 2) The pattern of water flow through the habitat feature.
- 3) The type of flow-controlling structure.

The following list of habitat types and their classification scheme was originally proposed by Bisson *et al* (1981), and modified by Decker/Overton (1985), and Laird (1987).

HABITAT TYPE DESCRIPTION

RIFFLES	NUMBER
Low Gradient Riffle [LGR]	1
High Gradient Riffle [HGR]	2
Cascade [CAS]	3
Chute [CHU]	23

LOW GRADIENT RIFFLES are shallow (<.7 ft; <20 cm deep) stream reaches with moderate current velocity (.7-1.6 ft/sec; 20-50 cm/sec) and moderate turbulence. Substrate is usually composed of gravel, pebble, and cobble-sized particles (.006 - .8 ft; 2-256 mm). An upper channel gradient limit for this habitat type is set at 4%.