STREAM INVENTORY REPORT

UNNAMED JULIAS CREEK TRIBUTARY

WATERSHED OVERVIEW

Unnamed Julias Creek Tributary is tributary to Julias Creek, tributary to South Fork Usal Creek, located in Mendocino County, California (Figure 1). Unnamed Julias Creek Tributary's legal description at the confluence with Julias Creek is T23N R18W. Its location is 39°50'57" north latitude and 123°48'04" west longitude. Unnamed Julias Creek Tributary is an ephemeral stream according to the USGS Hales Grove 7.5 minute quadrangle. Unnamed Julias Creek Tributary drains a watershed of approximately 1.0 square miles. Summer base runoff is approximately 0.5 cubic feet per second (cfs) at the mouth. Elevations range from about 355 feet at the mouth of the creek to 1800 feet in the headwater areas. Redwood and Douglas fir forest dominates the watershed. The watershed is privately owned and is managed for timber production. Vehicle access exists via private road.

HABITAT INVENTORY RESULTS AND DISCUSSION

The habitat inventory of July 19 and 20, 1995, was conducted by Heidi Hickethier (WSP/AmeriCorps) and Don Hickethier (CCC). The total length of the stream surveyed was 3,629 feet with an additional 109 feet of side channel.

Flow was measured at the bottom of the survey reach with a Marsh-McBirney Model 2000 flowmeter at 0.46 cfs on August 1, 1995.

Unnamed Julias Creek Tributary is a B4 channel type for the entire 3,629 feet of stream surveyed. The suitability of B4 channel types for fish habitat improvement structures is as follows: excellent for low-stage plunge weirs, boulder clusters, bank-placed boulders, single and opposing wing deflectors, and log cover; and good for medium-stage plunge weirs.

The water temperature recorded on the survey days July 19 and 20, 1995, was 58 degrees Fahrenheit. Air temperatures ranged from 64 to 68 degrees Fahrenheit. This is a good water temperature for salmonids, but water temperature data for the warm summer months are lacking. For a more complete and accurate water temperature profile, 24-hour temperatures would need to be monitored throughout the warm summer months.

Based on the total **length** of this survey, Level II habitat units consisted of 35% riffle units, 34% flatwater units, and 31% pool units. The pools are relatively shallow, with only 13 of the 72 pools having a maximum depth greater than 2 feet.

Twenty-one of the 59 pool tail-outs measured had embeddedness ratings of 3 or 4. Fourteen had a 1 rating. Cobble embeddedness of 25% or less, a rating of 1, is considered to indicate good quality spawning substrate for salmon and steelhead. In Unnamed Julias Creek Tributary, sediment sources should be mapped and rated according to their potential sediment yields, and control measures should be taken.

The mean shelter rating for pools was moderate with a rating of 46. The shelter rating in the flatwater

habitats was 26. A pool shelter rating of approximately 100 is desirable. Log and root wad cover structures in the pool and flatwater habitats are needed to improve both summer and winter salmonid habitat.

All of the three low-gradient riffles measured had gravel as the dominant substrate. This is generally considered good for spawning salmonids.

The mean percent canopy density for the stream was 96%. This is a relatively high percentage of canopy. In general, revegetation projects are considered when canopy density is less than 80%.

The percentage of right and left bank covered with vegetation was high at 81% and 80%, respectively. In areas of stream bank erosion or where bank vegetation is not at acceptable levels, planting endemic species of coniferous and deciduous trees, in conjunction with bank stabilization, is recommended.

Young-of-the-year salmonids were observed through habitat unit 116, approximately 2,633 feet above the confluence with Julias Creek.

BIOLOGICAL INVENTORY RESULTS

One site was electrofished on August 1, 1995, in Unnamed Julias Creek Tributary. The unit was sampled by Craig Mesman (CCC) and Kyle Young (WSP/AmeriCorps).

The site sampled included habitat units 16-23, a series of pools, runs, and riffles 337 feet from the confluence with Julias Creek. This site had an approximate length of 154 feet. The site yielded seventeen 0+ steelhead, nine 1+ steelhead, and two Pacific giant salamanders.

RECOMMENDATIONS

1) Unnamed Julias Creek Tributary should be managed as an anadromous, natural production stream.

2) The limited water temperature available suggest that the maximum temperatures are within the acceptable range for juvenile salmonids. To establish more complete and meaningful temperature regime information, 24-hour monitoring during the July and August temperature extreme period should be performed for 3 to 5 years.

3) Where feasible, design and engineer pool enhancement structures to increase the number of pools. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion.

4) Increase woody cover in the pools and flatwater habitat units. Adding high quality complexity with woody cover is desirable and in some areas the material is at hand.

5) Inventory and map sources of stream bank erosion and prioritize them according to present and potential sediment yield. Identified sites, like the site at 1,950', should then be treated to reduce the amount of fine sediments entering the stream.

6) Active and potential sediment sources related to the road system need to be identified, mapped, and treated according to their potential for sediment yield to the stream and its tributaries.
7) There are several log debris accumulations present on Unnamed Julias Creek Tributary that are retaining large quantities of fine sediment. The modification of these debris accumulations is desirable, but must be done carefully, over time, to avoid excessive sediment loading in downstream reaches.

PROBLEM SITES AND LANDMARKS

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

0' Begin survey at confluence with Julias Creek. Channel type is B4.

491' LDA 14' high x 40' wide x 15' long retaining sediment 6' deep at base. Passable.

680' Plunge over 3' diameter embedded log.

786' LDA 5' high x 10' wide x 15' long. No sediment retention.

897' Right bank tributary. Estimated flow <0.3 cfs. Accessible to fish.

1554' LDA 10' high x 40' wide x 20' long retaining sediment 4' deep at base. Not a barrier.

1812' LDA 7' high x 8' wide x 10' long retaining sediment 6' deep at base.

1821' LDA 10' high x 30' wide x 50' long causing series of step runs and pools.

1950' Right bank failure 40' high x 70' long contributing gravel and debris.

2110' LDA 12' high x 30' wide x 100' long retaining gravel.

3192' LDA 6' high x 20' wide x 5' long retaining sediment 3' deep at base.

3328' LDA 70' high x 10' wide x 250' long. Stream steps through accumulation.

3447' Boulder roughs with steps 4' to 7' high.

3629' End of survey due to continued increased gradient.

LEVEL III and LEVEL IV HABITAT TYPE KEY

HABITAT TYPE	LETTER	NUMBER
RIFFLE		
Low Gradient Riffle	[LGR]	1.1
High Gradient Riffle	[HGR]	1.2
CASCADE		
Cascade	[CAS]	2.1
Bedrock Sheet	[BRS]	2.2
FLATWATER		
Pocket Water	[POW]	3.1
Glide	[GLD]	3.2
Run	[RUN]	3.3
Step Run	[SRN]	3.4
Edgewater	[EDW]	3.5
MAIN CHANNEL POOLS		
Trench Pool	[TRP]	4.1
Mid-Channel Pool	[MCP]	4.2
Channel Confluence Pool	[CCP]	4.3
Step Pool	[STP]	4.4
SCOUR POOLS		
Corner Pool	[CRP]	5.1
Lateral Scour Pool - Log Enhanced	[LSL]	5.2
Lateral Scour Pool - Root Wad Enhanced	[LSR]	5.3
Lateral Scour Pool - Bedrock Formed	[LSBk]	5.4
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
Backwater Pool - Root Wad Formed	[BPR]	6.3
Backwater Pool - Log Formed	[BPL]	6.4
Dammed Pool	[DPL]	6.5