STREAM INVENTORY REPORT

LAST CHANCE CREEK

WATERSHED OVERVIEW

Refer to the map of East Branch Waddell Creek for the location of Last Chance Creek.

Last Chance Creek is a tributary to East Branch Waddell Creek, a tributary to Waddell Creek, located in Santa Cruz County, California. Last Chance Creek's legal description at the confluence with East Branch Waddell Creek is T09S R04W S24. Its location is 37°08'18" north latitude and 122°15'29" west longitude. Last Chance Creek is a first order stream with 1.5 miles of blue line stream according to the USGS Big Basin 7.5 minute quadrangle. Last Chance Creek drains a watershed of approximately 0.83 square miles. Elevations range from about 120 feet at the mouth of the creek to 2,000 feet in the headwater areas. Redwood/Douglas fir mixed coniferous forest dominates the watershed. The watershed is primarily state park and is managed for recreation. Foot access is available approximately 0.75 miles upstream from the mouth of East Branch Waddell Creek.

HABITAT INVENTORY RESULTS AND DISCUSSION

The habitat inventory of June 19, 1997, was conducted by Kevin McKernan and Gina Capser (AmeriCorps WSP). The total length of the stream surveyed was 345 feet.

Flow was estimated to be 0.1 cfs during the survey period.

Last Chance Creek is an A2 channel type for the entire 345 feet of stream surveyed. A2 channel types are generally considered unsuitable for fish habitat improvement structures.

The water temperature recorded on the survey day June 19, 1997 was 56 degrees Fahrenheit and the air temperature was 60 degrees Fahrenheit. This is an acceptable water temperature range for salmonids, but water temperature data during 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 45% pool units, 30% riffle units, and 25% flatwater units. The pools are relatively shallow, with only one of the nine pools having a maximum depth greater than 2 feet.

Three of the nine pool tail-outs measured had an embeddedness rating of 2, two had a rating of 3, and two had a rating of 5.

Two pool tail-outs had a 1 rating. Cobble embeddedness of 25% or less, a rating of 1, is considered best for the spawning needs of salmon and steelhead. In Last Chance Creek, 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 low with a rating of 19. The shelter rating in the flatwater habitats was worse at 10. 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.

Six of the nine pool tail-outs measured had gravel or small cobble as the dominant substrate. This is generally considered good for spawning salmonids. Three of the nine pool tail-outs had large cobble or boulders as the dominant substrate. This is generally considered unsuitable for spawning salmonids.
The mean percent canopy density for the stream was 89%. This is a relatively moderate percentage of canopy, since 80 percent is generally considered optimum in north coast streams.

The percentage of right and left bank covered with vegetation was moderate at 89.4% and 86.1%, 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.

The high gradient and log debris accumulations in Last Chance Creek limit the possibilities for Coho and Steelhead migration.

BIOLOGICAL INVENTORY RESULTS

Young of the year steelhead were observed from the banks in Last Chance Creek up to the bedrock sheet and log debris accumulation noted at 150’. No electrofishing was conducted on Last Chance Creek.

RECOMMENDATIONS

1) Last Chance Creek should be managed as an anadromous, natural production stream.

2) The limited water temperature available suggest that the maximum temperatures are within/above 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. Most of the existing cover is from boulders. 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.

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) Increase the canopy on Last Chance Creek by planting willow, alder, redwood, and Douglas fir along the stream where shade canopy is not at acceptable levels. The reaches above this survey section should be inventoried and treated as well, since the water flowing here is effected from upstream. In many cases, planting will need to be coordinated to follow bank stabilization or upslope erosion control projects.

8) Spawning gravel on Last Chance Creek are limited to relatively few reaches. Crowding and/or superimposition of redds have been observed during winter surveys. Projects should be designed at suitable sites to trap and sort spawning gravel in order to expand redd site distribution in the stream.

9) There are several log debris accumulations present on Last Chance Creek 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.

10) Due to the high gradient of the stream, access for migrating salmonids is an ongoing potential problem. Good water temperature and flow regimes exist in the stream and it offers good conditions for rearing fish. Fish passage should be monitored and improved where possible.

PROBLEM SITES AND LANDMARKS

Last Chance Creek

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 East Branch Waddell Creek, habitat unit #042. Channel type is an A2.

150’ Two foot jump at the top of bedrock sheet with woody debris blocking passage.

345’ End of survey at pinched bedrock chute, no clear jump, no fish seen above.