STREAM INVENTORY REPORT

Unnamed Tributary of Panther Creek

WATERSHED OVERVIEW

Refer to the map of Panther Creek for the location of the unnamed tributary.

This unnamed creek is a tributary to Panther Creek, tributary to Bull Creek, tributary to the South Fork Eel River, tributary to the Eel River, located in Humboldt County, California. The legal description of this unnamed tributary at the confluence with Panther Creek is T02S R01E S24. Its location is 40°17'20" N. latitude and 124°00'49" W. longitude. The unnamed tributary of Panther Creek has a blueline length of 1.6 miles according to the USGS Bull Creek 7.5 minute quadrangle. The unnamed tributary of Panther Creek drains a watershed of approximately 1.6 square miles. Elevations range from about 925 feet at the mouth of the creek to 2900 feet in the headwater areas. Douglas fir and hardwood forest dominates the watershed. The watershed is owned by the State of California and is managed by Humboldt Redwoods State Parks. Vehicle access exists via the Bull Creek-Mattole Rd, from it Kemp Road provides access to the mouth. The access roads have locked gates controlled by the park.

HABITAT INVENTORY RESULTS AND DISCUSSION

The habitat inventory of October 29, November 15, 18, 20, and 21, 1991, was conducted by Erick Elliot and Brian Humphrey (CCC). The total length of the stream surveyed was 6839 feet, with an additional 218 feet of side channel.

Flows were not measured on this unnamed tributary of Panther Creek.

The unnamed tributary of Panther Creek is an A3 channel type for the entire 6839 feet of stream surveyed. The suitability of A3 channel types for fish habitat improvement structures is described in the main body of this report.

The water temperatures recorded on the survey days of October 29, November 15, 18, 20, and 21, 1991, ranged from 45 to 50 ° Fahrenheit. Air temperatures ranged from 43 to 55 ° Fahrenheit. This is an excellent water temperature range for salmonids. To make any further conclusions, temperatures would need to be monitored throughout the warm summer months, and more extensive biological sampling would need to be conducted.

Flatwater habitat types comprised 32% of the total **length** of this survey, riffles 54%, and pools 14%. The pools are relatively

shallow, with only 14 of the 64 pools having a maximum depth greater than 2 feet. Primary pool criteria are discussed in the main body of this report.

Fifty of the 59 pool tail-outs measured had embeddedness ratings of 3 or 4. None had a 1 rating. Cobble embeddedness measured to be 25% or less, a rating of 1, is considered best for the needs of salmon and steelhead. In this unnamed tributary of Panther 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 56. The shelter rating in the flatwater habitats was slightly lower at 36. A pool shelter rating of approximately 100 is desirable. The relatively small amount of cover that now exists is being provided primarily by boulders in all habitat types. 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 12 low gradient riffles measured 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 55%. This is a relatively low percentage of canopy, since 80 percent is generally considered optimum in these north coast streams.

BIOLOGICAL INVENTORY RESULTS

Two sites were electrofished on July 9, 1992, in this unnamed tributary of Panther Creek. The units were sampled by Shea Monroe and Russ Irvin (CCC).

The first site sampled was a mid-channel pool 187 feet from the confluence with Panther Creek. The site had an area of 180 sq ft, and a volume of 540 cu ft. Fifteen steelhead were sampled. They ranged from 38 to 155mm.

The second site was a step pool and riffle, located approximately 4725 feet above the creek mouth. The site had an area of 425 sq ft, and a volume of 265 cu ft. No fish were found.

RECOMMENDATIONS

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

2) Inventory and map sources of stream bank erosion and prioritize them according to present and potential sediment yield. Identified sites, like the site at 3439', should then be treated to reduce the amount of fine sediments entering the stream.

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) Increase the canopy on Unnamed Tributary of Panther 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.

6) Temperatures in this section of Unnamed Tributary of Panther Creek, as well as upstream, should be monitored to determine if they are having a deleterious effect upon juvenile salmonids. To achieve this, biological sampling is also required.

7) 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

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 Panther Creek. Reach 1 is an A3 channel type.

Unnamed Tributary of Panther Creek

164'Slide on the left bank (LB), 60'H, continues for the next 130'.

384'Riprap on the LB, tarps are holding back fines.

450'LB stabilization project. YOY.

527'Stabilization work on both banks, continues for the next 120'.

1074'Riprap on the LB.

1167'Slide on the LB. Bank protection structures, riprap and logs, are keeping fines out of the stream.

1254'Erosion on the LB, 30'H X 15'L.

1352' Erosion on the right bank (RB), 15'H X 20'L.

1461' A tributary enters from the RB. LB has bank stabilization structures in place.

1560' Log and boulder stabilization structures are in place on the LB confining a 20'H X 30'L slide.

1644' Erosion on the LB. It continues for the next 500'.

1985' Erosion on the RB.

1999' Riprap is in place on both banks.

2541' Boulders and LWD acting as LB protection from an old slide. Slide continues for 150'.

2854' A dry tributary enters from the LB. YOY.

2945' Massive slide on the LB. It continues for the next 350'. Stabilization is in place, but is failing in some spots.

3259' Erosion on the RB.

3439' Slides on both banks. The LB slide is 20'H. The RB has massive erosion. Both slides continue for 200'. Some stabilization is occurring, but work needs to be done here.

3851' A tributary enters from the RB.

Unnamed Tributary of Panther Creek

4073' Riprap on both banks.

4293' Erosion on the LB. Boulder/log structure are in place.

4508' Erosion on the RB, 25'H X 200'L.

4726' Log/boulder protection on the LB.

4903' Erosion on the RB, 20'H X 56'L. Log/boulder protection.

5015' Old erosion site on the LB, 25'H X 30'L.

5114' Sporadic erosion on the LB, continues for the next 170'.

5620' Erosion on the LB, 20'H X 40'L.

5694' Steep gradient, possible barrier.

6105' Erosion on the RB, 25'H X 50'L. Erosion on the LB, 150'H X 80'L.

6547' Massive slide on the LB, 100'H X 100'L.

6713' YOY.

6761' Erosion on the LB, continues to the end of the survey.

6832' End of survey. Surveyors walked upstream 750' no YOYs observed. The gradient becomes steeper, and both banks are even more unstable.