STREAM INVENTORY REPORT
Unnamed Tributary to East Fork Mill Creek 2006

WATERSHED OVERVIEW

Refer to the map of East Fork Mill Creek for the location of Unnamed Tributary LLID #1240747417257.

Unnamed Tributary to East Fork Mill Creek is tributary to East Fork Mill Creek, which is tributary to Mill Creek, tributary to Smith River tributary to the Pacific Ocean, located in Del Norte County, California. Unnamed tributary's legal description at the confluence with East Fork Mill Creek is T15N R01E S04. Its location is 41°43'33" north latitude and 124°04'29" west longitude, LLID number 1240747417257. Unnamed tributary is an ephemeral stream according to the USGS Childs Hill 7.5 minute quadrangle. Unnamed tributary drains a watershed of approximately 1.7 square miles. Summer base runoff is approximately 0.49 cubic feet per second (cfs) at the mouth. Elevations range from about 300 feet at the mouth of the creek to 950 feet in the headwater areas. Redwood forest dominates the watershed. The entire watershed is owned by California State Parks. Vehicle access exists via Highway 101 to Hamilton Road to private access road.

HABITAT INVENTORY RESULTS AND DISCUSSION

The habitat inventory of 7/11/2006 to 7/12/2006 was conducted by Hilary Sgalitzer and Erin Degenstein, (WSP/AmeriCorps). The total length of the stream surveyed was 8,451 feet.

Stream flow was measured near the bottom of the survey reach with a Marsh-McBirney Model 2000 flowmeter at 0.49 cfs on 7/13/06.

Unnamed tributary is an F3 channel type for 6,050 feet of the stream surveyed (Reach 1) and a B3 channel type for 2,401 feet of the stream surveyed (Reach 2). The suitability of F3 and B3 channel types for fish habitat improvement structures is described in the main body of this report.

The water temperatures recorded on the survey days 7/11/2006 to 7/12/2006, ranged from 52° to 54° degrees Fahrenheit. Air temperatures ranged from 54° to 58° degrees Fahrenheit. 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 59% riffle units, 27% flatwater units, 13% pool units and 1% culvert units. The pools are relatively shallow, with only 13 of the 41 pools having a maximum residual depth greater than 2 feet.

Thirty-five of the 41 pool tail-outs measured had embeddedness ratings of 1 or 2. Six of the pool tail-outs had embeddedness ratings of 3 or 4. Cobble embeddedness of 25% or less, a rating of 1, is considered best for the needs of salmon and steelhead.

The mean shelter rating for pools was 50. The shelter rating in the flatwater habitats was 33. A pool shelter rating of approximately 100 is desirable.

All 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 density for the stream was 96%. The percentage of right and left bank covered with vegetation was 96% and 96%, respectively.

BIOLOGICAL INVENTORY RESULTS

Fish were observed from the stream banks. The observations are noted in the comments.

RECOMMENDATIONS

1) Unnamed tributary should be managed as an anadromous, natural production stream.

2) The limited water temperature available suggests 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) 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.

4) There are two stream crossings at 4866’ and 6171’ that are potential fish passage barriers. These stream crossings should be surveyed and evaluated utilizing FishXing software. If they are determined to be fish passage barriers, explore options to replace the existing crossings with structures that meet NOAA Fisheries and DFG criteria for fish passage.

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.

Position (ft.)	Habitat Unit #	Comments:
0	0001.00	Start of survey
337	0004.00	Bridge
588	0008.00	Log debris accumulation (LDA), 15' long x 22' wide x 5' high; composed of 2 pieces of large woody debris (LWD) and 4 pieces of small woody debris (SWD); water flows through with visible gaps; retaining sediment (gravel to small cobble) 5’ wide x 3.5’ long x 0.7' deep
743	0013.00	Right bank drainage pipe
882	0015.00	Small wood spanning channel with 1' plunge height; retaining some sediment
1029	0019.00	80’ long side channel
1510	0032.00	Tributary #001 enters from the right bank; appears to be accessible to fish, no fish were observed, channel slope was approximately 2%
1567	0034.00	LDA, 15' long x 22' wide x 5' high; composed of 2 pieces of LWD and 4 pieces of SWD; water flows through with visible gaps; retaining sediment (gravel to small cobble) 5' wide x 3.5' long x 0.7' deep; fish were observed upstream
1867	0040.00	LDA, 15' long x 28' wide x 30' high; composed of 7 pieces of LWD; water flows through visible gaps; no sediment retention; fish observed upstream
2586	0049.00	Tributary #002; flowing; accessible to fish but no fish observed; water temperature was 52^{o}F, channel slope was approximately 10%

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Position (ft.)	Habitat Unit #	Comments:
2721	0051.00	Log spans channel 4’ high; retaining some sediment; water flows under log
2883	0055.00	Log spans channel
3644	0072.00	LDA spanning pool
4866	0093.00	Two culverts side by side 7’ diameter x 32’ length with a 0.9’ plunge at outlet
5245	0105.00	Tributary #003; flowing; accessible to fish at higher flows; water temperature was 52^{o}F; channel slope was approximately 1% for first 20’; no fish observed
5660	0112.00	LDA, 9' long x 20' wide x 5.5’ high; composed of 8 pieces of LWD; water flows through visible gaps; no sediment retention; fish were observed upstream
6050	0121.00	Tributary #004 enters from left bank; 40' from start of habitat unit; flowing, channel slope was approximately 2%; no fish were observed
6171	0123.00	Culvert, 6' diameter x 44' long with a 3.5' plunge at outlet; no baffles or weirs; possible fish passage barrier, good condition;
6930	0138.00	One foot plunge height
7107	0143.00	LDA, 5’ long x 30' wide x 6' high; composed of 1 piece of LWD; water does not flow through, no visible gaps, retaining a sediment wedge 30’ long x 20’ wide x 5’ high, composed of sand and gravel; fish observed upstream
7339	0149.00	LDA retaining sediment
7456	0153.00	LDA
7934	0158.00	Gradient increases to 8%
8153	0162.00	Gradient increases to 10%

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Position (ft.)	Habitat Unit #	Comments:
8153	0162.00	Tributary # 005; flowing, water temperature was 53^{o}F; 150' upstream appears to be accessible to fish; channel gradient approximately 4%; no fish were observed
8153	0162.00	LDA, 10' long x 20' wide x 6' high; composed of 4 pieces of LWD; water flows through visible gaps, retaining a sediment wedge 30’ long x 20’ wide x 5' high composed of gravel to small cobble; fish observed upstream
8311	0165.00	LDA, 11' long x 17' wide x 7’ high composed of 4 pieces of LWD; little flow through small visible gaps; retaining a sediment wedge 25’ long x 5’ wide x 2' high, composed of cobble to gravel; fish observed upstream
8388	0166.00	LDA, 30' long x 40' wide x 10' high, composed of 8 pieces of LWD; water flows through visible gaps; retaining a sediment wedge 15’ long x 10’ wide x 2' high composed of gravel to small cobble; fish observed upstream
8431	0167.00	LDA, 10' long x 10' wide x 6' high; no visible gaps; retaining a sediment wedge 20’long x 10’ wide x 5' high, composed of gravel to small cobble; no fish observed upstream; possible barrier
8451	0167.00	End of survey: possible end of anadromy