

# STREAM INVENTORY REPORT

## Unnamed Berry Gulch Tributary

### WATERSHED OVERVIEW

Unnamed Berry Gulch tributary is tributary to Berry Gulch, tributary to Little North Fork Big River, tributary to Big River located in Mendocino County, California (Map 1). Unnamed Berry Gulch tributary's legal description at the confluence with Berry Gulch is T17N R16W S7. Its location is 39°21'15" north latitude and 123°40'54" west longitude. Unnamed Berry Gulch tributary is an intermittent stream according to the USGS Mathison Peak 7.5 minute quadrangle. Unnamed Berry Gulch tributary drains a watershed of approximately 0.85 square miles. Elevations range from about 280 feet at the mouth of the creek to 800 feet in the headwater areas. Mixed conifer forest dominates the watershed. The watershed is entirely within the Jackson Demonstration State Forest and is managed for timber production. Vehicle access exists Highway 20.

### HABITAT INVENTORY, RESULTS AND DISCUSSION

The habitat inventory of June 13 through 19, 1997, was conducted by Craig Mesman and Tara Cooper (CCC). The total length of the stream surveyed was 5,844 feet, with an additional 79 feet of side channel.

Flow was measured at the bottom of the survey reach with a Marsh-McBirney Model 2000 flowmeter at 0.5 cfs on June 13, 1997.

Unnamed Berry Gulch tributary is an F4 channel type for the entire 5,844 feet of stream surveyed. The suitability of F4 channel types for fish habitat improvement structures is described in the main body of this report.

The water temperatures recorded on the survey days June 13 through 19, 1997, ranged from 52 to 57 degrees Fahrenheit. Air temperatures ranged from 50 to 69 degrees Fahrenheit. This is a good water temperature range for salmonids. 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 26% riffle units, 41% flatwater units, and 31% pool units. The pools are relatively shallow, with only 18 of the 87 (20.7%) pools having a maximum depth greater than 2 feet.

Twenty-eight of the 87 pool tail-outs measured had embeddedness ratings of 3 or 4. Seven had a 1 rating. Cobble embeddedness of 25% or less, a rating of 1, is considered best for the needs of salmon and steelhead. In Unnamed Berry Gulch 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 low with a rating of 47. The shelter rating in the flatwater habitats was 19. 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.

Seventy-eight of the 87 (89.7%) pool tail-outs 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 92%. This is a relatively high 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 high at 92.3% and 93.5%, 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.

## BIOLOGICAL INVENTORY RESULTS

One site was electrofished on September 12, 1997, in Unnamed Berry Gulch tributary. The units were sampled by Craig Mesman and Tara Cooper.

The sample site was habitat unit #10, a plunge pool 234 feet from the confluence with Berry Gulch. The site yielded one coho and one steelhead.

## RECOMMENDATIONS

- 1) Unnamed Berry Gulch tributary should be managed as an anadromous, natural production stream.
- 2) Increase woody cover in the pools and flatwater habitat units. Adding high quality complexity with woody cover is desirable.
- 3) 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.
- 4) 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.

## COMMENTS 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 Berry Gulch, 4,028 feet from the confluence of Berry Gulch and Little North Fork Big River. Culvert 6' high x 8' wide, without baffles, substrate present, passable to anadromous fish. Channel type is an F4. |
| 130'   | Flow taken June 13, 1997, 0.5 cfs.   |
| 1,150' | Log debris accumulation (LDA), 6' long x 14' wide x 4' high, retaining 3' of gravel, not a barrier but diverts water into right bank causing erosion 12' long x 10' high.  |
| 1,384' | Woody debris clogging channel. Right bank failure 60' long x 12' high.   |
| 1,492' | Channel extremely entrenched due to a slide and woody debris.  |
| 1,617' | Large pond formed by left bank slide.  |
| 3,525' | Left bank tributary, flow estimated 0.1 cfs.   |
| 3,541' | Six foot high jump over 4 logs, possible barrier to fish passage.  |
| 3,833' | End of road on left bank.  |
| 3,950' | No salmonids seen since six foot high jump noted at 3,541'.  |
| 4,258' | Dry left bank tributary.   |
| 4,875' | Left bank tributary, less than 0.1 cfs with a 4% gradient and a narrow channel.  |
| 5,149' | Small, steep, right bank tributary less than 0.05 cfs.   |
| 5,637' | Three foot high jump, retaining 3' of gravel.  |
| 5,758' | Four foot high jump.   |
| 5,777' | Logs within the channel, covered with earth and vegetation, possible old road crossing. Probable barrier.  |
| 5,844' | End of survey. Survey ended at fork in creek. Flow is equal from both forks. Right bank fork has old, non-functioning culvert, probably a barrier.   |