

# STREAM INVENTORY REPORT

## Booth Gulch

### WATERSHED OVERVIEW

Booth Gulch is a tributary to Middle Fork Ten Mile River. Elevations range from 400 feet at the mouth of the creek to 1,400 feet in the headwater areas. Booth Gulch's confluence with Middle Fork Ten Mile River is located at T19N R16W S01, 39° 32'20" N. latitude, 123°35'54" W. longitude according to the USGS Sherwood Peak 7.5 minute quadrangle.

### HABITAT INVENTORY RESULTS

The habitat inventory of July 17 through July 18, 1995, was conducted by Diana Hines and David Lundby. The total length of surveyed stream in Booth Gulch was 10,538 feet (2.1 miles) (Table 1). There were no side channels in this creek.

Flow measured at the mouth of Booth Gulch on July 18, 1995 was 0.04 cubic feet per second (cfs).

Booth Gulch is comprised of two reaches; F3 for 8,669 feet and B2 for 1,869 feet.

Table 1 summarizes the Level II habitat types. Of the Level II habitat types, riffles comprised 31%, flatwater 36% and pools 32% (Graph 1). Of the total survey length, riffles comprised 22%, flatwater 49% and pools 13% (Graph 2).

Twelve Level IV habitat types were identified (Table 2). Of the Level IV habitat types, the most frequently occurring were low gradient riffles, 26%, step runs, 20%, and mid-channel pools, 19% (Graph 3). Of the total survey length, step runs comprised 38%, low gradient riffles and dry units 16% each, and runs 11% (Table 2).

Table 3 summarizes main channel, scour and backwater pools which are Level III pool habitat types. Main channel pools were most often encountered at 60% occurrence and comprised 58% of the total length of pools.

Table 4 is a summary of maximum pool depths by Level IV pool habitat types. Pools with depths of two feet or greater are considered optimal for fish habitat. In Booth Gulch, 75 of the 164 pools (46%) had a depth of two feet or greater (Graph 4).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 164 pool tail-outs measured, 0% had a value of 1, 4% had a value of 2, 24% had a value of 3 and 72% had a value of 4 (Graph 5).

Of the Level II habitat types, riffles had the highest mean shelter rating at 62 (Table 1). Of the Level III pool habitat types, scour pools had the highest mean shelter rating at 48 (Table 3).

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Of the 164 pools, 1% were formed by large woody debris: 0% by logs and 1% by root wads (calculated from Table 5).

Table 6 summarizes dominant substrate by Level IV habitat types. Of the low gradient riffles fully measured, 75% had gravel as the dominant substrate type (Graph 6).

Mean percent closed canopy was 91%: 54% coniferous trees and 37% deciduous trees. Mean percent open canopy was 9% (Graph 7, calculated from Table 7).

Mean percent right bank vegetated was 59% while mean percent left bank vegetated was 65%. Grass occurred most often as bank vegetation at a mean percent of 41 (of units fully measured). Cobble/gravel occurred most often as bank substrate with a mean percent of 58 (of units fully measured) (Table 7).

### 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.

Position (ft):	Comments:
821	HOBO temperature monitor site.
849	HOBO temperature monitor site.
967	Log jam measures 10' wide x 3' high x 20' long.
1384	Log jam measures 3' high x 12' wide x 4' long.
1546	Log jam measures 4' high x 11' wide x 15' long.
2149	Log jam measures 7' high x 8' wide x 6' long.
3020	Channel type begins to change.
4379	Left bank failure contributing gravel and cobble.
4555	Tributary enters on left bank.
5168	3' diameter redwood log with channel cut in creating plunge.
5930	Notch log with 3' high plunge.

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- 6171 Notched log at head of pool creating plunge.
- 6611 Three logs at head of pool creating plunge.
- 6929 Right bank failure along approx 300' long contributing cobble, sand and gravel to the channel.
- 8233 Log jam. Old road crossing. Tributary.
- 9095 Channel type measured.
- 10172 Tributary enters on right bank.
- 10538 Tributary enters on right bank.
- 10538 End of survey. Stream highly embedded, approaching A2 channel type, slope approx 25%. Class III stream approx. 350 feet upstream, lack of suitable spawning habitat. No fish observed for last five or six pages.

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