

# **STREAM INVENTORY REPORT**

## **Middle Fork Ten Mile River aka Clark Fork Ten Mile River**

### WATERSHED OVERVIEW

Middle Fork Ten Mile River is a tributary to Ten Mile River. Elevations range from 140 feet at the mouth to 3,000 feet in the headwater areas. Middle Fork Ten Mile River's confluence location is T20N R17W S25, 39° 33'53" N. latitude, 123°42'30" W. longitude on the USGS Dutchmans Knoll 7.5 minute quadrangle.

### HABITAT INVENTORY RESULTS

The habitat inventory of October 5, 1994 through July 7, 1995, was conducted by Diana Hines, David Lundby and Warren Mitchell. The total length of stream surveyed was 90,413 feet (17.1 miles) (Table 1). Side channels comprised 1,131 feet of this total. A 30 foot waterfall in upper Middle Fork Ten Mile is a barrier to anadromous fish migration resulting in 77,247 feet (14.6 miles) of anadromous fish habitat. The remaining 13,166 feet (2.5 miles) were surveyed as fish bearing habitat due to fish stocking upstream of this waterfall.

Middle Fork Ten Mile River is comprised of five reaches: B4 for 64,177 feet, B2 for 9,116 feet, F2 for 3,305 feet, B2 for 8,032 feet and F2 for 4,652 feet.

Table 1 summarizes the Level II habitat types. Of the Level II habitat types, riffles comprised 26%, flatwater 30% and pools 44% (Graph 1). Of the total survey length, riffles comprised 16%, flatwater 40% and pools 44% (Graph 2).

Twenty-two Level IV habitat types were identified (Table 2). Of the Level IV habitat types, the most frequently occurring were low gradient riffles, 19%, mid-channel pools, 17%, and step runs, 16% (Graph 3). Of the total survey length, step runs comprised 29%, mid-channel pools 17% and lateral scour bedrock rools 13% (Table 2).

Table 3 summarizes main channel, scour and backwater pools which are Level III pool habitat types. Scour pools were most often encountered at 58% 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 three feet or greater are considered optimal for fish habitat. In Middle Fork Ten Mile River, 244 of the 472 pools (52%) had a depth of three feet or greater (Graph 4).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 472 pool tail-outs measured in Middle Fork Ten Mile River, 2% had a value of 1, 12% had a value of 2, 31% had a value of 3 and 55% had a value of 4 (Graph 5).

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Of the Level II habitat types, riffles had the highest mean shelter rating at 47 (Table 1). Of the Level III pool habitat types, scour pools had the highest mean shelter rating at 50 (Table 3).

Of the 472 pools, 15% were formed by large woody debris (LWD): 8% by logs and 7% by root wads (calculated from Table 5).

Table 6 summarizes dominant substrate by Level IV habitat types. Of the low gradient riffles fully measured, 38% had gravel as the dominant substrate type (Graph 6).

Mean percent closed canopy was 76%: 25% coniferous trees, 51% deciduous trees. Mean percent open canopy was 24% (Graph 7, calculated from Table 7).

Mean percent right bank vegetated was 51% while mean percent left bank vegetated was 56%. Deciduous trees occurred most often as bank vegetation at a mean percent of 62 (of units fully measured). Sand/silt/clay occurred most often as bank substrate with a mean percent of 51 (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:
1589	RBA site.
1669	Hobo temperature monitor site.
10006	Small woody debris (SWD) accumulation.
10306	SWD accumulation retaining gravel.
10559	SWD accumulation.
16972	Large debris accumulation (LDA) measures 28' wide x 3' high, retaining SWD.
18072	Confluence with Bear Haven Creek.
37303	RBA site.
37841	Confluence with Little Bear Haven Creek.
43932	LDA measures 30' wide x 8' long x 8' high.

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54505	Confluence with Booth Gulch.
62853	Confluence with Fox Gulch.
64556	End of survey season 1994.
67444	RBA site.
67481	HOBO temperature monitor in pool.
67899	Right bank failure measures 20' high x 20' wide, contributing fine sediment to channel.
68065	Three redds observed.
68559	Four redds observed.
68890	Two redds observed.
69044	One redd observed.
70424	Eight redds observed.
70475	8' of undercut rootwad.
70515	6' of undercut rootwad.
71529	Wet crossing.
72165	Two redds observed.
72419	Two redds observed.
76116	Middle Fork Ten Mile River falls. 10' cascade then a 20' freefall- 30' total. End of anadromous fish, but survey continues due to upstream fish stocking.
76598	Gulch 27 enters on right bank.
77416	Left bank failure measures 60' long x 40' high.
78010	LDA measures 80' long x 20' high x 45' wide.
80480	LDA measures 20' long x 50' wide x 6' high.
80587	Left bank failure measures 50' wide x 15' high.

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- 81219 HOBO temperature monitor site.
- 81377 RBA site.
- 81926 LDA measures 10' long x 15' wide x 5' high.
- 82011 Right bank failure measures 75' long x 30' high, contrib. fine sediment to channel.
- 82535 LDA.
- 82643 Left bank failure measures 75' long x 25' high.
- 83198 Left bank failure measures 50' long x 40' high, contributing fine sediment and LWD to the channel.
- 84211 Right bank failure measures 50' long x 80' high.
- 89282 End of survey. Next unit is a 140' cascade with a slope of approx. 40% with no suitable jump or landing pools. Substrate is bedrock, angular boulders and cobble.