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S e a d fa ic habi a i a i f j e i e b a d c h a i a i de e ea , Idah

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Table 1. Summary of microhabitat variables for bull trout and cutthroat trout in Tenmile Creek during the summer. Total depth (TD), focal point elevation (FE), focal point velocity (FV), distance to nearest cover (DC)

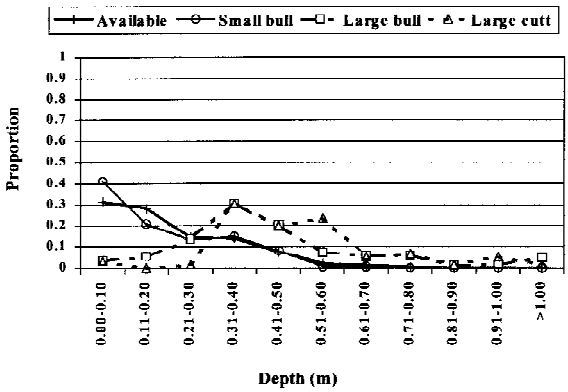
Variable	Statistic	Habitat availability =703	Small bull trout =72	Large bull trout =249	Large cutthroat trout =67
TD (m)	Mean	0.25	0.05	0.30	0.39
	Range	0.00–1.04	0.03–0.27	0.03–0.82	0.03–0.70
	St. Error	0.01	0.01	0.01	0.02
FE (m)	Mean	n/a	0.02	0.06	0.07
	Range	n/a	0.01–0.08	0.00–0.52	0.00–0.61
	St. Error	n/a	0.00	0.00	0.01
FV (m/s)	Mean	0.15	0.03	0.02	0.05
	Range	0.00–1.50	0.00–0.23	0.00–0.19	0.00–0.21
	St. Error	0.01	0.01	0.00	0.01
DC (m)	Mean	n/a	0.19	0.38	0.33
	Range	n/a	0.00–1.70	0.00–2.00	0.00–2.00
	St. Error	n/a	0.04	0.03	0.04

Table 2. Summary of microhabitat variables for bull trout and cutthroat trout in Tenmile Creek during the fall. Total depth (TD), focal point elevation (FE), focal point velocity (FV), distance to nearest cover (DC)

Variable	Statistic	Habitat availability =667	Small bull trout =114	Large bull trout =170	Large cutthroat trout =59
TD (m)	Mean	0.20	0.19	0.44	0.49
	Range	0.00–0.82	0.03–0.61	0.03–1.26	0.03–0.98
	St. Error	0.01	0.01	0.02	0.02
FE (m)	Mean	n/a	0.00	0.00	0.04
	Range	n/a	0.00	0.00–0.01	0.00–0.70
	St. Error	n/a	0.00	0.00	0.10
FV (m/s)	Mean	0.08	0.08	0.01	0.01
	Range	0.00–0.69	0.00–0.05	0.00–0.08	0.00–0.09
	St. Error	0.00	0.00	0.00	0.00
DC (m)	Mean	n/a	0.09	0.21	0.23
	Range	n/a	0.00–2.00	0.00–2.00	0.00–1.50
	St. Error	n/a	0.02	0.03	0.04

3. Pearson correlation coefficients for microhabitat variables used by bull trout and cutthroat trout during the summer and the fall. Fall values indicated by (). Total depth (TD), focal point elevation (FE), focal point velocity (FV), and distance to nearest cover (DC)

Fish Group	Variable	TD	FE	FV	DC
Small bull trout	TD	1.00 (1.00)			
	FE	1.00 (0.00)	1.00 (1.00)		
	FV	0.27 (−0.06)	0.27 (0.00)	1.00 (1.00)	
	DC	0.68 (0.09)	0.68 (0.00)	0.39 (0.35)	1.00 (1.00)
Large bull trout	TD	1.00 (1.00)			
	FE	0.25 (0.00)	1.00 (1.00)		
	FV	−0.12 (−0.03)	0.04 (−0.04)	1.00 (1.00)	
	DC	0.20 (0.41)	0.19 (−0.04)	0.28 (−0.02)	1.00 (1.00)
Large cutthroat trout	TD	1.00 (1.00)			
	FE	−0.18 (−0.06)	1.00 (1.00)		
	FV	0.03 (−0.06)	0.03 (0.01)	1.00 (1.00)	
	DC	−0.11 (0.34)	0.15 (−0.13)	0.27 (−0.05)	1.00 (1.00)



2. Available and used depths (m) by bull trout and cutthroat trout in Tenmile Creek during the fall.

water. When comparisons were made between each fish group, utilized depths were significantly different among all three groups (<0.05).

Small bull trout utilized water significantly shallower (mean, 0.19 m) than expected based on availability (mean, 0.25; <0.05), selected water between 0.01 and 0.50 m and avoided the deepest areas (see Fig. 2, Table 4). Large bull trout (mean, 0.44 m) and large cutthroat trout (mean, 0.49 m) utilized water significantly deeper than expected based on availability (mean, 0.20 m; <0.05). Large fish selected depths over 0.30 m, and strongly selected for depths over 0.40 m.

As in summer, when comparisons were made between each fish group, utilized depths were significantly different among all three groups (<0.05).

All three groups of fish utilized significantly deeper water in the fall than in the summer (<0.05). This

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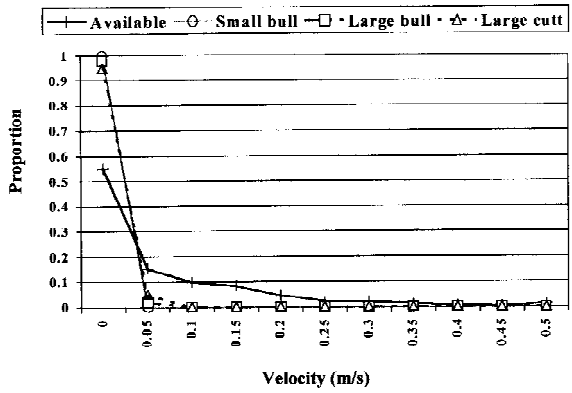

4. Available and used velocities (m/s) by bull trout and cutthroat trout in Tenmile Creek during the fall.

During the fall, all three fish groups utilized focal point velocities near zero. Small bull trout (mean, 0.00 m/s), large bull trout (mean, 0.01 m/s), and large

Table 6. Selection by substrate category for bull trout and cutthroat trout in the summer and fall. (−− strongly avoided, − avoided, 0 no preference, + selected, ++ strongly selected). Bedrock (BD), boulder, (BO), large cobble (LC), small cobble (SC), large gravel (LG), small gravel (SG), sand (SA), silt (SI), organics (OR)

Fish group	Season	Substrate type								
		BD	BO	LC	SC	LG	SG	SA	SI	OR
Small bull trout	summer	−−	−−	−−	−−	++	++	−−	−−	−−
	fall	−−	−−	+	−	++	++	−−	−−	0
Large bull trout	summer	−	−	+	+	+	+	−	−	++
	fall	+	−	++	+	++	+	−	−−	++
Large cutthroat trout	summer	++	−	−	−	+	+	−	−−	0
	fall	−−	−−	−−	−−	+	−	+	+	0

bull trout in spring-fed tributaries of the Metolius River, Oregon. Moore & Gregory (1988) reported the