

Table 7. Physical Habitat Quality Data for Benthic Macroinvertebrate Sites on South Fork American River Tributaries, El Dorado Irrigation District, FERC Project 184, Fall 1999.

	Alder Creek				Alder Creek				Carpenter Creek				Carpenter Creek				No-Name Creek			
	AR-B2	AR-B2	AR-B2		AR-B1	AR-B1	AR-B1		CR-B2	CR-B2	CR-B2		CR-B1	CR-B1	CR-B1		NN-B2	NN-B2	NN-B2	
	Riffle sampled				Riffle sampled				Riffle sampled				Riffle sampled				Riffle sampled			
	1	2	3	Mean	1	2	3	Mean	1	2	3	Mean	1	2	3	Mean	1	2	3	Mean
Sampling information																				
Date Sampled				11/2/1999				11/4/1999				10/28/1999				10/28/1999				10/29/1999
Time Sampled				1440				1330				1300				840				840
Latitude	38° 44' 29"	38° 44' 28"	38° 44' 22"		38° 45' 56"	38° 45' 56"	38° 45' 48"		38° 45' 52"	38° 45' 45"	38° 45' 41"		38° 45' 50"	38° 45' 49"	38° 45' 49"		38° 45' 46"	38° 45' 45"	38° 45' 44"	
Longitude	120° 21' 12"	120° 21' 10"	120° 21' 09"		120° 22' 44"	120° 22' 44"	120° 22' 40"		120° 19' 35"	120° 19' 33"	120° 19' 32"		120° 19' 33"	120° 19' 30"	120° 19' 36"		120° 20' 19"	120° 20' 19"	120° 20' 19"	
Site characteristics																				
Canopy cover (%)	3.3	0.0	0.0		30.0	43.3	0.0		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	83.3	38.3	30.0	50.6
Gradient (%)	3.0	3.0	4.0		6.0	3.0	3.0		9.0	9.0	7.5	8.5	5.0	8.0	9.0	7.3	25.0	25.0	23.3	24.4
Transect Location																				
Elevation (Ft)	4800	4800	4700	4766.7	3600	3600	3660	3620.0				3900				3900	3930	3970	4000	
Reach Length (ft)				946.0	900.0			900.0				516.0				500.0				370.0
Physical characteristics																				
Riffle Length (ft)	140.0	218.0	388.0	248.7	95.0	122.0	111.0	109.3	135.0	125.0	136.0	132.0	106.0	195.0	143.0	148.0	39.0	66.0	205.0	103.3
Avg. Riffle Width (ft)	6.0	1.7	2.0	3.2	4.8	3.7	2.3	3.6	2.3	2.0	2.0	2.1	2.7	3.7	7.0	4.4	2.0	1.0	1.3	1.4
Avg. Riffle Depth (ft)	0.4	0.6	0.6	0.5	0.6	0.4	0.6	0.5	0.4	0.3	0.5	0.4	0.5	0.4	0.4	0.4	0.1	0.1	0.1	0.1
Riffle Velocity (ft/s)	0.93	1.50	0.40	0.9	0.83	1.23	1.17	1.1	1.17	1.23	1.60	1.3	1.00	0.73	1.33	1.0	0.43	0.97	1.00	0.8
Substrate Complexity		18	16	17.0	16	18	15	16.4	17	16	17	16.7	16	17	16	16.3	4	6	10	6.7
Embeddedness (%)		20	10	15.0	10	10	10	10.0	10	10	15	11.7	15	10	10	11.7	10	37	40	28.9
Substrate Consolidation	Med	Med	Med	Med	High	Med	Med	Med-High	Med			Med	Med	Med	Med-High	Med	High	High	High	High
Water Quality																				
Specific Conductance (<i>u s</i>)				0.02				0.03				0.10				0.08				0.16
Dissolved Oxygen (mg/l)				10.2				10.8				9.9				10.2				10.8
Water Temp (C°)				9.1				8.1				8.6				8.7				6.8
pH				7.7				7.9				8.1				8				8.4
Physical Habitat Quality Score				171				154				163				159				137
Substrate Composition																				
Fines (<0.1")	3.3	5.0	0.0	2.8	0.0	1.7	5.0	2.2	5.0	3.3	5.0	4.4	3.3	5.0	5.0	4.4	5.0	13.3	23.3	13.9
Gravel (0.1-2")	10.0	23.3	16.7	16.7	0.0	1.7	5.0	2.2	8.3	6.7	1.7	5.6	3.3	10.0	8.3	7.2	5.0	23.3	11.7	13.3
Cobble (2-10")	48.3	15.0	16.7	26.7	13.3	60.0	43.3	38.9	36.7	76.7	58.3	57.2	71.7	45.0	53.3	56.7	30.0	43.3	48.3	40.6
Boulder (>10")	23.3	10.0	36.7	23.3	36.7	23.3	23.3	27.8	26.7	0.0	8.3	11.7	5.0	16.7	0.0	7.2	0.0	0.0	0.0	0.0
Bedrock (solid)	15.0	46.7	30.0	30.6	50.0	13.3	23.3	28.9	23.3	13.3	26.7	21.1	16.7	23.3	33.3	24.4	60.0	20.0	16.7	32.2

Table 7 (Cont.)

	No-Name Creek				Mill Creek				Mill Creek				Bull Creek				Bull Creek			
	NN-B1	NN-B1	NN-B1	Mean	ML-B2	ML-B2-2	ML-B2	Mean	ML-B1	ML-B1	ML-B1	Mean	BU-B2	BU-B2	BU-B2	Mean	BU-B1	BU-B1	BU-B1	Mean
	Riffle sampled				Riffle sampled				Riffle sampled				Riffle sampled				Riffle sampled			
	1	2	3		1	2	3		1	2	3		1	2	3		1	2	3	
Sampling information																				
Date Sampled				10/29/1999				11/2/1999				11/4/1999				11/3/1999				11/4/1999
Time Sampled				1130				1015				1100				900				830
Latitude	38° 45' 50"	38° 45' 48"	38° 45' 48"		38° 45' 33"	38° 45' 28"	38° 45' 24"		38° 46' 24"	38° 46' 22"	38° 46' 25"		38° 45' 51"	38° 45' 48"	38° 45' 47"		38° 46' 09"	38° 46' 07"	38° 46' 06"	
Longitude	120° 20' 19"	120° 20' 19"	120° 20' 19"		120° 23' 30"	120° 23' 36"	120° 23' 35"		120° 23' 39"	120° 23' 37"	120° 23' 39"		120° 25' 33"	120° 25' 31"	120° 25' 29"		120° 25' 53"	120° 25' 51"	120° 25' 49"	
Site characteristics																				
Canopy cover (%)	100.0	100.0	100.0	100.0	100.0	100.0	80.0	93.3	43.3	0.0	0.0	14.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gradient (%)	12.0	15.0	15.0	14.0	2.5	2.5	2.0	2.3	7.0	9.0		8.0	4.0	7.0	12.0	7.7	13.0	10.0	18.0	13.7
Transect Location																				
Elevation (Ft)	3800	3850	3870					4700	3400	3400	3200		4000	4020	4100		3300			3500'
Reach Length (ft)				171.0				376.0				400.0				140.0				280'
Physical characteristics																				
Riffle Length (ft)	62.0	55.0	54.0	57.0	96.0	168.0	112.0	125.3	120.0	110.0	80.0	103.3	30.0	60.0	50.0	46.7	90.0	50.0	70.0	70.0
Avg. Riffle Width (ft)	1.2	1.3	1.0	1.2	1.8	3.5	3.3	2.9	2.0	1.8	2.3	2.1	2.0	2.3	2.0	2.1	1.8	2.0	1.2	1.7
Avg. Riffle Depth (ft)	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.3	0.3	0.6	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2
Riffle Velocity (ft/s)	1.00	0.80	0.83	0.9	0.40	0.27	0.30	0.3	0.57	1.10	0.90	0.9	0.47	0.70	0.70	0.6	1.10	0.90	0.77	0.9
Substrate Complexity	13	13	8	11.3	16	17	17	16.6	17	16	15	16.1	16	15	16	15.7	15	16	14	15.1
Embeddedness (%)	43	50	60	51.1	10	10	10	10.0	10	10	10	10.0	15	15	15	15.0	25	10	33	22.8
Substrate Consolidation	High	High	Med	High- Med	Med	Med	Med	Med	Med	Med	Med-High	Med	Med	Med	Med	Med	Med	Med	Med	Med
Water Quality																				
Specific Conductance (<i>u s</i>)				0.14				0.03				0.04				0.06				0.07
Dissolved Oxygen (mg/l)				9.9				8.6				12.0				10.4				10.4
Water Temp (C°)				7.9				6.1				6.9				7.4				7.6
pH				8.4				7				7.9				7.7				7.8
Physical Habitat Quality Score				131				145				158				147				152
Substrate Composition																				
Fines (<0.1")	13.3	10.0	23.3	15.6	5.0	5.0	5.0	5.0	3.3	3.3	3.3	3.3	10.0	5.0	1.7	5.6	0.0	5.0	20.0	8.3
Gravel (0.1-2")	6.7	8.3	30.0	15.0	25.0	25.0	20.0	23.3	33.3	21.7	13.3	22.8	30.0	30.0	20.0	26.7	6.7	23.3	26.7	18.9
Cobble (2-10")	56.7	35.0	40.0	43.9	53.3	61.7	75.0	63.3	40.0	26.7	23.3	30.0	60.0	40.0	36.7	45.6	53.3	55.0	40.0	49.4
Boulder (>10")	0.0	6.7	0.0	2.2	3.3	0.0	0.0	1.1	10.0	23.3	20.0	17.8	0.0	1.7	10.0	3.9	10.0	3.3	6.7	6.7
Bedrock (solid)	23.3	40.0	6.7	23.3	13.3	8.3	0.0	7.2	13.3	25.0	40.0	26.1	0.0	23.3	31.7	18.3	30.0	10.0	6.7	15.6

Table 7 (Cont.)

	Ogilby Creek				Ogilby Creek				Esmeralda Creek			
	OG-B2	OG-B2	OG-B2		OG-B1	OG-B1	OG-B1		ES-B2	ES-B2-2	ES-B2	
	Riffle sampled				Riffle sampled				Riffle sampled			
	1	2	3	Mean	1	2	3	Mean	1	2	3	Mean
Sampling information												
Date Sampled				11/3/1999				11/3/1999				10/28/1999
Time Sampled				1330				1500				1700
Latitude	38° 45' 47"	38° 45' 45"	38° 45' 40"		38° 45' 59"	38° 45' 54"	38° 45' 51"		38° 45' 35"	38° 45' 35"	38° 45' 34"	
Longitude	120° 28' 08"	120° 28' 02"	120° 27' 55"		120° 28' 46"	120° 28' 45"	120° 28' 42"		120° 29' 13"	120° 29' 13"	120° 29' 13"	
Site characteristics												
Canopy cover (%)	100.0	100.0	100.0	100.0	20.0	50.0	50.0	40.0		100.0	100.0	100.0
Gradient (%)	5.0	6.7	12.0	7.9	12.0	15.0	15.0	14.0	1.5	1.0	1.0	1.2
Transect Location												
Elevation (Ft)				4000	3080	3170	3200	3150.0				3900
Reach Length (ft)				195.0				250.0				210.0
Physical characteristics												
Riffle Length (ft)	95.0	50.0	50.0	65.0	120.0	50.0	80.0	83.3	50.0	40.0	30.0	40.0
Avg. Riffle Width (ft)	0.2	2.3	2.0	1.5	3.5	3.0	3.7	3.4	3.0	3.0	3.0	3.0
Avg. Riffle Depth (ft)	2.5	0.3	0.3	1.0	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2
Riffle Velocity (ft/s)	0.83	0.80	0.87	0.8	0.83	1.17	0.93	1.0	1.07	0.80	1.13	1.0
Substrate Complexity	15	15	14	14.7	16	15	16	15.7	16	16	16	16.0
Embeddedness (%)	15	15	10	13.3	10	15	15	13.3	15	15	13	14.4
Substrate Consolidation	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med	Med
Water Quality												
Specific Conductance (<i>u s</i>)				0.06				0.03				0.03
Dissolved Oxygen (mg/l)				10.0				10.4				9.4
Water Temp (C°)				8.1				8.9				8.9
pH				7.7				7.4				7.2
Physical Habitat Quality Score				146				140				151
Substrate Composition												
Fines (<0.1")	5.0	5.0	1.7	3.9	0.0	0.0	1.7	0.6	20.0	13.3	8.3	13.9
Gravel (0.1-2")	38.3	50.0	11.7	33.3	10.0	8.3	40.0	19.4	10.0	6.7	23.3	13.3
Cobble (2-10")	36.7	28.3	30.0	31.7	60.0	21.7	15.0	32.2	70.0	80.0	68.3	72.8
Boulder (>10")	0.0	3.3	6.7	3.3	16.7	3.3	26.7	15.6	0.0	0.0	0.0	0.0
Bedrock (solid)	20.0	13.3	50.0	27.8	13.3	66.7	16.7	32.2	0.0	0.0	0.0	0.0