

APPENDIX 8A

TABLES OF MACROINVERTEBRATE TAXA AND METRICS RESULTS

Table 8A-4 (Sheet 1 of 2). Long-lived (>1 year life cycle) macroinvertebrate taxa encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

Benthic invertebrate taxa	Life Cycle Duration Category	Fall Creek					Klamath River mainstem															Varial Zone														
		Version 2 long-lived taxa-ABA	FCB1, 10-8-2002	FCB2, 10-8-2002	FCB3, 10-9-2002	FCF1, 10-9-2002	FCF2, 10-9-2002	BB1, 9-12-2002	BB2, 9-10-2002	BB3, 9-9-2002	BF1, 9-11-2002	BF1-V, 9-10-2002	CD1, 9-12-2002	CB2, 9-12-2002	KDB, 9-11-2002	KR1, 9-10-2002	KR2, 9-11-2002	KR3, 9-12-2002	KR4, 9-9-2002	KR5, 9-9-2002	KR6, 9-9-2002	LEKR, 9-10-2002	LDB, 9-10-2002	LF, 9-9-2002	BF2, 9-11, 2002	BF2-V, 9-11-2002	BF3, 9-11-2002	BF3-V, 9-10-2002	BF4, 9-10-2002	BF4-V, 9-10-2002	BF5, 9-11-2002	BF5-V, 9-10-2002	BF6, 9-11-2002	BF6-V, 9-12-2002		
Porifera	9 Y																																			
*Hirudinea	9 Y	0.1				0.29	0.18		0.05			0.18	0.13				0.06				2.72	1.71	3.99						0.15	0.62	0.77		0.11			
<i>Helobdella stagnalis</i>	?? Y		2.7									0.06									1.56	0.66	1.05													
Hydrobiidae	9 Y	48.6	33.07	31.42	40.13	15.47	27.3	0.04	0.1			1.96	0.4					0.24																0.11		
<i>Colligyrus</i>	9 Y																																			
Lymnaeidae	7 Y																								3.06		20.83								71.05	
<i>Fossaria</i>	7 Y																																			
<i>Lanx</i>	7 Y																																			
<i>Radix auricularia</i>	7 Y																																			
<i>Physella/Physa</i>	6 Y						0.11	0.11			0.13	0.32	0.18	0.51	0.21	0.65	0.24				0.15														0.11	
<i>Juga</i>	9 Y	6.1	11.56	3.63	19.87	7.66	10.86		1.3	0.32			0.05																							
<i>Valvata</i>	7 Y																																			
<i>Pacifasticus</i>	7 Y							0.1	0.11											0.17																
Aeshnidae	7 Y																																			
<i>Octogomphus</i>	7 Y	0.2	0.05	0.13	1.38	0.17			0.11																											
<i>Octogomphus specularis</i>	7 Y																																			
<i>Ophiogomphus</i>	7 Y												0.63	0.89	0.25	2.44	2.13	0.69																		
Libellulidae	7 Y																																			
Coenagrionidae	6 Y																																			
<i>Argia</i>	6 Y			0.22			0.4	0.1			0.13	0.31	0.73		0.69	0.05	0.17	0.21	0.1	0.05															0.03	
<i>Drunella</i>	7 Y																																			
<i>Drunella doddsi</i>	7 Y				0.1																															
<i>Drunella spinifera</i>	7 Y	0.15				0.11																														
<i>Calineuria californica</i>	9 Y	0.45	0.97		0.29	0.98	0.48																													
<i>Hesperoperla</i>	9 Y																																			
<i>Hesperoperla pacifica</i>	9 Y	0.24			0.1	0.2	0.17	0.3	0.95	0.52	0.58	0.45	0.39	0.27	0.62	0.17	0.77	1.61						0.29	0.61		1.17		0.46					1.3		
<i>Yoraperla</i>	9 Y																																			
<i>Yoraperla brevis</i>	9 Y	2.03	1.77			0.3																														
<i>Pteronarcys</i>	9 Y																																			
<i>Pteronarcys californica</i>	9 Y						0.1	0.42	1.01		0.32	0.21	1.05	1.4	0.28	0.31	0.51	0.26						0.3												

Table 8A-4 (Sheet 2 of 2). Long-lived (>1 year life cycle) macroinvertebrate taxa encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

Benthic invertebrate taxa	Life Cycle Duration Category	Fall Creek						Klamath River mainstem														Varial Zone																
		Version 2 long-lived taxa-ABA	FCM1, 10-8-2002	FCB1, 10-8-2002	FCB2, 10-8-2002	FCB3, 10-9-2002	FCF1, 10-9-2002	FCF2, 10-9-2002	BB1, 9-12-2002	BB2, 9-10-2002	BB3, 9-9-2002	BF1, 9-11-2002	BF1-V, 9-10-2002	CB1, 9-12-2002	CB2, 9-12-2002	KOB, 9-11-2002	KR1, 9-10-2002	KR2, 9-11-2002	KR3, 9-12-2002	KR4, 9-9-2002	KR5, 9-9-2002	KR6, 9-9-2002	LEKR, 9-10-2002	LBB, 9-10-2002	LR1, 9-9-2002	BF2, 9-11-2002	BF2-V, 9-11-2002	BF3, 9-11-2002	BF3-V, 9-10-2002	BF4, 9-10-2002	BF4-V, 9-10-2002	BF5, 9-11-2002	BF5-V, 9-10-2002	BF6, 9-11-2002	BF6-V, 9-12-2002			
<i>Pteronarcys princeps</i>	9 Y					0.3	0.3																															
<i>Orohermes crepusculus</i>	9 Y					0.2	1.11																															
<i>Stialis</i>	7 Y		0.2	1.11																																		
<i>Heteroplectron californicum</i>	9 Y		0.05	0.05	0.17	0.09																																
<i>Arctopsyche</i>	7 Y																																					
<i>Arctopsyche grandis</i>	7 Y					0.19	0.44	0.4																														
<i>Ceraclea</i>	6 Y									0.46					0.31					0.11		0.1			0.08	0.27										0.11		
<i>Dicosmoecus</i>	7 Y																																					
<i>Dicosmoecus gilvipes</i>	7 Y																																					
<i>Himalopsyche phryganea</i>	9 Y							0.13																														
<i>Rhyacophila grandis</i>	7 Y			0.05																																		
<i>Gumaga</i>	7 Y	1.46	0.76	0.39	0.09	0.22	0.18																															
<i>Petrophila</i>	6 Y								2.54	0.1		0.55	0.21	1.47	4.41	1.42	2	1.26	3.48	4.32	4.46	0.45	1.83	4.08	4.94	11.79		6.48		3.8					0.26			
<i>Ampumixis dispar</i>	7 Y	10.08	0.16	3.56	0.41	3.66	7.51																															
<i>Cleptelmis addenda</i>	7 Y		0.16	1.22	0.1	0.08				4.5	0.25	0.95	3.23						0.06																			
<i>Heterolimnius</i>	7 Y	10.51	7.11	0.51	2.12	3.44	3.32																															
<i>Lara</i>	9 Y																																					
<i>Lara avara</i>	9 Y					0.24	0.16																															
<i>Microcylloepus</i>	7 Y										0.14		0.06	0.08					0.08		0.23																	
<i>Optiosevus</i>	7 Y		0.05					0.83	11	14.64	5.21	0.29	0.06	0.11	0.11		0.17	0.48	0.22	0.17			0.03	4.53	8.16	2.12	5.22	1.24	5.41		2.27	2.63						
<i>Zaitzevia</i>	7 Y		0.05		0.18					0.03		0.19	4.37	7.73	12.71	13.9	21.92	29.55	29.22					0.24	1.84	13.57	2.48	5.41		6.02	7.89							
<i>Haliplus</i>	7 Y																																					
<i>Hydrophilidae</i>	7 Y																																					
<i>Eubrianax edwardsi</i>	7 Y				0.81									0.05																								
<i>Psephenus</i>	7 Y																			0.02																		
<i>Psephenus falli</i>	7 Y																																					
<i>Atherix</i>	7 Y							0.19	0.2	0.11	0.33			0.08										0.45								0.04						
<i>Atherix pachypus</i>	7 Y																																					
<i>Tipula</i>	7 Y																																					
Long-lived taxa (%) -Version 2 ABA		80.2	59.6	41.3	66.4	33.9	50.8	4.3	18.3	17.1	9.2	3.2	3.8	7.9	5.7	11.7	18.5	17.0	30.1	38.1	36.9	5.1	4.3	9.2	10.8	11.2	16.6	20.8	26.8	4.3	15.9	0.0	10.3	81.6				
Long-lived taxa richness V2 ABA		13	15	9	16	16	11	7	10	10	9	1	8	11	6	10	7	11	12	9	9	7	4	5	7	2	5	1	6	3	7	0	8	3				

Table 8A-6 (Sheet 2 of 2). Intolerant macroinvertebrate taxa (using CAMLnet criteria, January 2003 version) encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

Benthic invertebrate taxa	CAMLnet distinct taxa	CAMLnet tolerance value (0-10)	CAMLnet intolerant taxa (0-2)	Fall Creek						Klamath River mainstem														Varial Zone													
				FCA1, 10-8-2002	FCB1, 10-8-2002	FCB2, 10-8-2002	FCB3, 10-9-2002	FCF1, 10-9-2002	FCF2, 10-9-2002	BB1, 9-12-2002	BB2, 9-10-2002	BB3, 9-9-2002	BF1, 9-11-2002	BF1-V, 9-10-2002	CB1, 9-12-2002	CB2, 9-12-2002	KDB, 9-11-2002	KR1, 9-10-2002	KR2, 9-11-2002	KR3, 9-12-2002	KR4, 9-9-2002	KR5, 9-9-2002	KR6, 9-9-2002	LEKR, 9-10-2002	LRB, 9-10-2002	LRF, 9-9-2002	BF2, 9-11, 2002	BF2-V, 9-11-2002	BF3, 9-11-2002	BF3-V, 9-10-2002	BF4, 9-10-2002	BF4-V, 9-10-2002	BF5, 9-11-2002	BF5-V, 9-10-2002	BF6, 9-11-2002	BF6-V, 9-12-2002	
<i>Arctopsyche grandis</i>	1	Y				0.19	0.44	0.4																													
<i>Lepidostoma</i>	1	Y																																			
<i>Lepidostoma-panel case</i>	1	Y											0.03																								
<i>Lepidostoma-turret case</i>	1	Y		0.1									0.48																								
<i>Dicosmoecus</i>	1	1	Y																																		
<i>Dicosmoecus gilvipes</i>	2	Y																0.18						0.04													
<i>Psychomyia</i>	2	Y																																			
<i>Himalopsyche phryganea</i>	1	0	Y					0.13																													
<i>Rhyacophila</i>	0	Y																																			
<i>Rhyacophila Betteni Group</i>	1	Y		0.05	0.56	0.22	0.52	0.56	0.48																												
<i>Rhyacophila Brunnea Group</i>	1	Y		0.39	0.5	0.78	0.19	1.57	0.65																												
<i>Rhyacophila grandis</i>	none	Y			0.05																																
<i>Rhyacophila narvae</i>	1	Y			0.23																																
<i>Rhyacophila vagrita</i>	0	Y			0.21																																
<i>Rhyacophila valuma</i>	0	Y		0.05				0.13	1.11																												
<i>Athenix pachypus</i>	1	2	Y							0.19	0.21	0.11	0.33		0.08																						
*Elephariceridae	1	0	Y								1.25	0.16				0.41	1.47	1.64	0.08	2.19	2.88																
<i>Deuterophlebia</i>	1	0	Y										0.11																								
<i>Dixa</i>	2	Y			0.29	0.17	0.09																														
<i>Hexatoma</i>	2	Y		0.2									0.2	0.09																							
<i>Diamesa</i>	1	0	Y												0.08																						
<i>Heterotrissocladius</i>	1	0	Y				0.13																														
<i>Potthastia</i>	2	Y																																			
<i>Potthastia Gaeidii Group</i>	2	Y																																			
<i>Potthastia Longimana Group</i>	2	Y											0.07																								
<i>Synorthocladius</i>	2	Y											0.03					0.11		0.17	0.59	0.34													0.11		
*Xenochironomus	0	Y													0.08																						
% INTOLERANT TAXA				11.96	11.64	7.95	6.23	18.78	15.17	0.19	3.2	4.98	2.24	0	0.93	0.69	1.11	5.5	4.48	3.8	1.54	5.67	6.94	8.66	0	0.04	1.2	0	1.03	0	3.32	0	1.55	6.67	5.3	0	
INTOLERANT TAXA RICHNESS				13	16	11	17	24	20	1	10	10	4	0	3	3	5	6	5	5	7	8	7	2	0	1	5	0	5	0	6	0	6	1	6	0	
SENSITIVE EPT RICHNESS				12	15	9	16	23	19	0	7	7	3	0	2	3	2	5	3	4	6	6	5	2	0	1	4	0	5	0	6	0	5	1	6	0	

Table 8A-7 (Sheet 1 of 3). Macroinvertebrate metrics by sampling reach during fall 2002 sampling in the Klamath River mainstem, Boyle full flow (or peaking) reach varial zone, and Fall Creek.

Sample ID	Location	Total Invertebrate Abundance	Total Taxa Richness	EPT Taxa Richness	EPT Index (% of tot. abund.)	Sensitive EPT Index (tolerance values 0-3)(% of tot. abund.)	Shannon Diversity log e	Total Ephemeroptera Taxa
Mainstem Klamath River								
LRF	Link River Full Flow Reach	9193.3	21	6	37.07	0.00000	2.26	3
LRB	Link River Bypass	9961.7	24	6	52.35	0.00000	1.98	3
LEKR	Klamath River below Keno Dam	11849.9	38	9	58.01	0.00000	2.35	4
KDB	Klamath River to Boyle Res	21366.7	42	12	31.64	0.00000	2.54	6
BB1	Boyle bypass	11719.5	43	8	15.98	0.00000	2.08	3
BB2	Boyle bypass	4928	52	16	31.18	0.13190	2.91	7
BB3	Boyle bypass	8504	47	16	42.94	0.05644	2.94	7
BF1	Boyle fullflow	6560.9	48	14	42.10	0.00000	3.03	6
BF2	Boyle fullflow	5632	37	16	70.92	0.00000	2.31	6
BF3	Boyle fullflow	6570.7	43	17	65.62	0.00000	2.44	9
BF4	Boyle fullflow	3636.2	36	16	52.84	0.00000	2.77	9
BF5	Boyle fullflow	4630.2	37	15	66.04	0.00000	2.65	8
BF6	Boyle fullflow	4133.8	45	19	75.06	0.00000	2.46	9
CB1	Copco bypass	2252.7	42	12	46.56	0.00000	2.72	4
CB2	Copco bypass	7992.6	50	15	44.08	0.00000	2.63	6
KR1	Near hatchery	8823.6	51	16	44.69	0.00000	2.66	8
KR2	Near construction site	3702.9	47	14	28.70	0.00000	2.84	6
KR3	Klamath Country Estates campground	4847.5	47	14	19.19	0.00000	2.44	7
KR4	Along I-5; north of I-5 bridge	2699.7	59	20	36.54	0.00000	2.97	9
KR5	At rest stop	4409.7	50	18	39.02	0.00000	2.72	8
KR6	By Rte 96 Bridge, south of rest stop	5318.5	46	15	43.87	0.00000	2.65	7

Fall Creek

FCA1	Above diversion	8192.8	38	19	18.97	2.18	2.04	9
FCB1	Fall Creek Bypass	3397.4	50	21	25.78	2.67	2.59	7
FCB2	Small creek, below diversion dam	6788.0	46	17	44.93	25.16	2.45	8
FCB3	Small creek, above bypass	6588.2	42	21	28.20	0.58	2.18	9
FCF1	Full creek below hatchery	4436.2	59	29	55.27	3.68	2.83	11
FCF2	Full creek below hatchery	3391.0	40	22	41.08	3.55	2.51	7

Boyle Fullflow Reach, Varial Zones

BF1-V	Boyle varial	55.5	6	0	0.00	0.00	1.4	0
BF2-V	Boyle varial	175.4	10	0	0.00	0.00	0.89	0
BF3-V	Boyle varial	43	5	1	4.19	0.00	1.09	1
BF4-V	Boyle varial	721.2	12	0	0.00	0.00	0.74	0
BF5-V	Boyle varial	26.8	10	2	13.43	6.72	1.99	0
BF6-V	Boyle varial	68	5	0	0.00	0.00	0.93	0

Table 8A-7 (Sheet 2 of 3). Macroinvertebrate metrics by sampling reach during fall 2002 sampling in the Klamath River mainstem, Boyle full flow (or peaking) reach varial zone, and Fall Creek.

Sample ID	Location	Total Plecoptera Taxa	Total Tricoptera Taxa	Tolerant Taxa richness	Long-lived taxa (%)	Long-lived taxa richness	% Tolerant Taxa (tolerant taxa/total taxa)	% Intolerant Taxa (intolerant taxa/tot. taxa)	% Hydropsychidae	% Baetidae	% Dominant Taxa
Mainstem Klamath River											
LRF	Link River Full Flow Reach	0	3	4	9.2	5	11.1	0.0	16.13	15.57	20.25
LRB	Link River Bypass	0	3	3	4.3	4	20.6	0.0	41.15	0.00	41.15
LEKR	Klamath River below Keno Dam	0	5	6	5.1	7	16.6	0.0	32.38	15.26	32.38
KDB	Klamath River to Boyle Res	0	6	4	5.7	6	4.0	0.2	17.29	7.51	24.43
BB1	Boyle bypass	0	5	8	4.3	7	4.3	0.0	6.60	0.96	49.42
BB2	Boyle bypass	3	6	4	18.3	10	9.4	2.6	0.88	8.34	13.70
BB3	Boyle bypass	2	7	4	17.1	10	2.9	0.6	1.90	10.86	15.00
BF1	Boyle fullflow	2	6	6	9.2	9	11.6	0.0	19.37	10.34	19.37
BF2	Boyle fullflow	2	8	2	10.8	7	1.5	0.0	37.62	9.03	37.62
BF3	Boyle fullflow	1	7	4	16.6	5	1.1	0.0	32.13	4.49	32.13
BF4	Boyle fullflow	2	5	4	26.8	6	1.8	0.0	13.67	12.64	13.67
BF5	Boyle fullflow	1	6	3	15.9	7	46.0	0.0	24.51	10.03	24.51
BF6	Boyle fullflow	2	8	7	10.3	8	3.8	0.0	39.97	9.22	39.97
CB1	Copco bypass	2	6	7	3.8	8	9.8	0.0	31.47	4.64	31.47
CB2	Copco bypass	2	7	8	7.9	11	33.1	0.0	21.24	2.99	21.24
KR1	Near hatchery	2	6	6	11.7	10	23.0	0.5	27.37	2.08	27.37
KR2	Near construction site	2	6	8	18.5	7	22.3	1.5	17.56	0.96	17.56
KR3	Klamath Country Estates campground	2	5	5	17	11	0.5	1.6	4.30	1.55	33.52
KR4	Along I-5; north of I-5 bridge	2	9	8	30.1	12	7.8	0.1	6.64	0.25	21.92
KR5	At rest stop	2	8	5	38.1	9	1.4	2.2	15.60	0.51	29.55
KR6	By Rte 96 Bridge, south of rest stop	2	6	2	36.9	9	0.4	2.9	14.95	0.31	29.22
Fall Creek											
FCA1	Above diversion	4	6	4	80.2	13	49.5	67.4	0.49	2.40	48.60
FCB1	Fall Creek Bypass	6	8	2	59.6	15	35.7	54.4	0.48	2.43	33.07
FCB2	Small creek, below diversion dam	3	6	3	41.3	9	35.0	36.2	5.53	1.40	31.42
FCB3	Small creek, above bypass	5	7	3	66.4	16	42.5	62.7	9.68	4.37	40.13
FCF1	Full creek below hatchery	10	8	4	33.9	16	16.7	30.4	4.07	27.72	27.72
FCF2	Full creek below hatchery	8	7	4	50.8	11	28.6	45.0	2.96	19.47	27.30
Boyle Fullflow Reach, Varial Zones											
BF1-V	Boyle varial	0	0	0	3.2	1	0.0	0.0	0.00	0.00	41.94
BF2-V	Boyle varial	0	0	1	11.2	2	1.0	0.0	0.00	0.00	79.59
BF3-V	Boyle varial	0	0	0	20.8	1	0.0	0.0	0.00	4.17	62.50
BF4-V	Boyle varial	0	0	3	4.3	3	2.5	0.6	0.00	0.00	85.71
BF5-V	Boyle varial	1	1	1	0	0	6.7	0.0	0.00	0.00	40.00
BF6-V	Boyle varial	0	0	0	81.6	3	0.0	0.0	0.00	0.00	71.05

Table 8A-8 (Sheet 1 of 2). Invertebrate taxa encountered as drift during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project. Drift samples taken September 12, 2002. Data not adjusted to standard time interval or flow.

	Station 1						Station 2						Station 3		Total for taxa	
	Time in	9:00	12:15	1:30	2:55	4:15	7:05	8:45	10:15	11:30	1:10	2:30	3:55	6:55		6:50
Time out	10:25	12:25	1:40	3:10	4:40	8:50	10:00	11:15	11:45	1:25	2:45	4:10	8:30	8:10	9:30	
Non insects																
Turbellaria			1						1		1					3
Oligochaeta	2	2	2	1			4	1	5	2	3	6	3		1	32
Hirudinea		1							1							2
<i>Manayunkia speciosa</i>					1	3										4
<i>Ferrissia</i>	1															1
<i>Fluminicola</i>													1			1
Lymnaeidae									1		1					2
<i>Lanx</i>										1						1
<i>Physella/Physa</i>	2			2												4
<i>Vorticifex</i>	1	1	1	1	1	1			3	1			1		1	12
<i>Pisidium</i>								1								1
<i>Crangonyx</i>										1		1				2
<i>Caecidotea</i>		5	2						1	1	1				1	11
Acarina	5	10	2					9	3	1			2		4	36
Ephemeroptera																
<i>Acentrella-larvae</i>	1		2				3	1	4	4				2	7	24
<i>Baetis tricaudatus-larvae</i>		1	3	1				3	6	1	1				3	19
<i>Ephemerella inermis-larvae</i>						1										1
<i>Heptagenia/Nixe-larvae</i>			2											2	1	5
<i>Rhithrogena-larvae</i>													1			1
<i>Tricorythodes minutus-larvae</i>	2							1								3
Trichoptera																
<i>Amiocentrus aspilus-larvae</i>	1	2	1				1		2		1		1		1	10
<i>Cheumatopsyche-larvae</i>	7	3	1	1		2	1	4	8	3	3	1			5	39
<i>Hydropsyche-larvae</i>	5	3	3			1	5	8	11	7	4	1	1	4	9	62
<i>Hydroptila-larvae</i>	4	2	2	1			2	1	1		1				3	17
<i>Hydroptila-pupae</i>	16	2	4	1		1	1	8	9	6	5		1			54
<i>Leucotrichia-larvae</i>										1	1				2	4
<i>Leucotrichia-pupae</i>							1		1							2
<i>Ceraclea-larvae</i>								1								1
<i>Polycentropus-larvae</i>									1							1

Table 8A-8 (Sheet 2 of 2). Invertebrate taxa encountered as drift during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project. Drift samples taken September 12, 2002. Data not adjusted to standard time interval or flow.

Time in Time out	Station 1						Station 2						Station 3		Total for taxa	
	9:00 10:25	12:15 12:25	1:30 1:40	2:55 3:10	4:15 4:40	7:05 8:50	8:45 10:00	10:15 11:15	11:30 11:45	1:10 1:25	2:30 2:45	3:55 4:10	6:55 8:30	6:50 8:10		8:30 9:30
Lepidoptera																
<i>Petrophila-larvae</i>	26	1	3	1	1	4	6	10	11	3	3	1	2	2	11	85
Coleoptera																
<i>Optioservus-larvae</i>	9	3	1	2			1	4	3	1	1				4	29
<i>Zaitzevia-larvae</i>	1									1						2
Diptera																
<i>Wiedemannia-larvae</i>			1													1
<i>Simulium-larvae</i>		2					1			1				1		5
<i>Simulium-pupae</i>							1									1
<i>Antocha-larvae</i>	2	4	2				1	5	7	1	2			1	3	28
<i>Antocha-pupae</i>	1	1	3					2		3						10
<i>Erioptera-larvae</i>										1						1
Chironomidae-larvae	66	55	44	8	1	6	28	58	62	31	26	3	7	18	80	493
Chironomidae-pupae	45	16	9	4	1	3	22	27	24	14	11			4	38	218
Total aquatic invertebrates	197	114	89	23	5	22	78	144	165	85	65	13	20	34	174	1228
Terrestrial invertebrates & spent aquatic adults																
Pseudoscorpion	1															1
Arachnidea (spiders)										1						1
Collembola (springtails)										1						1
Baetidae-adults (mayfly)	11	2	2	1		1	4	1	3					2	13	40
Heptageniidae-adults (mayfly)															2	2
Tricorythodes minutus-adults (mayfly)	1								1							2
Aphidae-adults (aphids)	1		2													3
Staphylinidae-adults (beetles)			1													1
Formicidae-adults (ants)	8		2				2	8	5	6					3	34
Hymenoptera-adults (parasitic wasps)			1						2	1	1					5
Brachycera-adults (true flies)										2					3	5
Tipulidae-adults (crane flies)	3								2	1			1	1	3	11
Total terrestrial and spent aquatics	25	2	8	1	0	1	6	12	13	10	0	0	1	3	24	106
Grand Total	222	116	97	24	5	23	84	156	178	95	65	13	21	37	198	1334
Settled volume of detritus and sloughed algae in sample (ml)	175	125	150	25	5	5	100	250	150	150	100	5	5	50	125	

Table 8A-9 (Sheet 1 of 1). Benthic freshwater invertebrate taxa percent contribution in Klamath River reservoirs during fall 2002 sampling, PacifiCorp Hydroelectric Project.

Metric	Lake Ewauna EW001 dredge in shallow littoral	Lake Ewauna EW002 dredge in deep littoral	Keno Reservoir KN004 dredge	Keno Reservoir KN003 dip-net	J.C. Boyle Reservoir JCB005 dredge	J.C. Boyle Reservoir JCB006 dip-net	Copco Reservoir CR008 dredge	Copco Reservoir CR007 dip-net	Irongate Reservoir IG009 dredge	Irongate Reservoir IG010 dip-net
Date (2002)	9-30	9-30	10-1	10-1	10-1	10-1	10-2	10-2	10-2	10-2
Area sampled (square meters)	0.12	0.12	0.12	7.44	0.12	7.71	0.12	8.09	0.12	7.06
Community measures										
Total abundance (m2)	21320	7791	722	648	1170	900	783	298	396	461
Total taxa richness	8	8	11	21	17	17	19	28	9	26
Community tolerance index (0-10)	5.8	5.3	6.1	5.9	7.1	7.8	7.4	7.4	6.9	7.0
Tolerant taxa										
% Tolerant taxa	22.5	7.6	27.4	26.5	53.0	89.3	67.1	76.3	52.2	60.5
% Hydropsychidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Baetidae	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.5	0.0	0.6
% Chironomidae	8.7	1.3	2.4	8.4	3.7	3.0	4.4	3.0	4.4	15.8
Intolerant taxa										
% Intolerant taxa	0	0	0	0	0	0	0	0	0	0
EPT taxa richness	0	0	0	1	0	1	0	3	0	4
Ephemeroptera taxa richness	0	0	0	1	0	0	0	2	0	1
Plecoptera taxa richness	0	0	0	0	0	0	0	0	0	0
Trichoptera taxa richness	0	0	0	0	0	1	0	1	0	3
% EPT taxa	0.0	0.0	0.0	1.6	0.0	0.3	0.0	2.5	0.0	2.4
Sensitive EPT taxa	0	0	0	0	0	0	0	0	0	0
Community dominance measures										
% Dominant taxa	76.8	90.7	48.8	61.1	39.0	69.0	23.1	48.6	21.7	39.5
Shannon diversity (loge)	0.84	0.46	1.60	1.58	1.91	1.29	2.45	1.88	2.04	2.20
Feeding groups										
% Collector-gatherers	98.3	95.4	72.6	89.1	19.9	17.3	24.2	68.0	43.5	72.3
% Collector-filterers	0.0	0.0	0.0	0.6	0.7	1.3	2.2	2.0	0.0	2.4
% Scrapers	0.0	0.3	1.2	4.4	31.6	74.0	45.1	22.4	30.4	17.3
% Predators	1.0	0.7	4.8	4.7	43.4	6.7	19.8	1.3	8.7	0.6
% Parasite	0.7	3.6	21.4	0.9	4.4	0.3	8.8	5.5	17.4	3.7
% Shredders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0