

## **APPENDIX A**

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### 2002 Benthic Sites with Data Types Available for Each Site

## APPENDIX A - 2002 Benthic Sites with Data Types Available for Each Site

Watershed	Site Code	Site Name	Benthic Data	Land Use Data	Habitat Data	WQ Station Code	WQ Data	Hydrology Station Code	Hydrology Data
Green-Duwamish	09BLA0675	Black 0675	x	x	x				
Green-Duwamish	09BLA0716	Black 0716	x	x	x				
Green-Duwamish	09BLA0722	Black 0722	x	x	x	A326	x		
Green-Duwamish	09BLA0756	Black 0756	x	x	x				
Green-Duwamish	09BLA0768	Black 0768	x	x	x			03B	x
Green-Duwamish	09BLA0768	Black 0768 Replicate	x	x	x			03B	x
Green-Duwamish	09BLA0771	Black 0771	x	x	x				
Green-Duwamish	09BLA0772	Black 0772	x	x	x				
Green-Duwamish	09BLA0813	Black 0813	x	x	x				
Green-Duwamish	09BLA0817	Black 0817	x	x	x				
Green-Duwamish	09BLA0817	Black 0817 Replicate	x	x	x				
Green-Duwamish	09COV1165	Covington Basin 1165	x	x	x				
Green-Duwamish	09COV1418	Covington Basin 1418	x	x	x	C320	x		
Green-Duwamish	09COV1753	Covington Basin 1753	x	x	x				
Green-Duwamish	09COV1798	Covington Basin 1798	x	x	x				
Green-Duwamish	09COV1862	Covington Basin 1862	x	x	x				
Green-Duwamish	09COV1864	Covington Basin 1864	x	x	x				
Green-Duwamish		Covington Basin Soos 03	x	x					
Green-Duwamish	09DEE2163	Deep/Coal Basin 2163	x	x	x				
Green-Duwamish	09DEE2208	Deep/Coal Basin 2208	x	x	x				
Green-Duwamish	09DEE2211	Deep/Coal Basin 2211	x	x	x				
Green-Duwamish	09DEE2266	Deep/Coal Basin 2266	x	x	x				
Green-Duwamish	09DEE2294	Deep/Coal Basin 2294	x	x	x				
Green-Duwamish	09DEE2294	Deep/Coal Basin 2294 Replicate	x	x	x				
Green-Duwamish	09DUW0024	Duwamish 0024	x	x	x				
Green-Duwamish	09DUW0091	Duwamish 0091	x	x	x				
Green-Duwamish	09DUW0144	Duwamish 0144	x	x	x	A307	x	HA5	x
Green-Duwamish	09DUW0225	Duwamish 0225	x	x	x				
Green-Duwamish	09DUW0277	Duwamish 0277	x	x					
Green-Duwamish	09JEN1318	Jenkins 1318	x	x	x				
Green-Duwamish	09JEN1357	Jenkins 1357	x	x	x				
Green-Duwamish	09JEN1358	Jenkins 1358	x	x	x				
Green-Duwamish	09LOW0325	Lower Green (E&W) 0325	x	x	x				
Green-Duwamish	09LOW0406	Lower Green 0406	x	x	x	Mullen1	x		
Green-Duwamish	09LOW0751	Lower Green 0751	x	x	x				
Green-Duwamish	09LOW0753	Lower Green 0753	x	x	x				
Green-Duwamish	09LOW0788	Lower Green 0788	x	x	x	A330	x		
Green-Duwamish	09MID1374	Middle Green 1374	x	x	x				
Green-Duwamish	09MID1495	Middle Green 1495	x	x	x	0321	x	40D	x
Green-Duwamish	09MID1537	Middle Green 1537	x	x	x	F321	x		
Green-Duwamish	09MID1704	Middle Green 1704	x	x	x				
Green-Duwamish	09MID1744	Middle Green 1744	x	x	x				
Green-Duwamish	09MID1744	Middle Green 1744 Replicate	x	x	x				
Green-Duwamish	09MID1817	Middle Green 1817	x	x	x				
Green-Duwamish	09MID1958	Middle Green 1958	x	x	x				
Green-Duwamish	09MID2426	Middle Green 2426	x	x	x				
Green-Duwamish	09MIL0291	Mill Creek 0291	x	x	x				
Green-Duwamish	09MIL0340	Mill Creek 0340	x	x	x				
Green-Duwamish	09MIL0390	Mill Creek 0390	x	x	x			MF1	x
Green-Duwamish	09MIL0390	Mill Creek 0390 Replicate	x	x	x			MF1	x
Green-Duwamish	09MIL0497	Mill Creek 0497	x	x		A315	x		
Green-Duwamish	09NEW1657	Newaukum 1657	x	x	x				
Green-Duwamish	09NEW1875	Newaukum 1875	x	x	x				
Green-Duwamish	09NEW1911	Newaukum 1911	x	x	x				
Green-Duwamish	09NEW2076	Newaukum 2076	x	x	x				
Green-Duwamish	09NEW2078	Newaukum 2078	x	x	x				
Green-Duwamish	09NEW2102	Newaukum 2102	x	x	x	AJ322	x		
Green-Duwamish	09NEW2128	Newaukum 2128	x	x	x	S322	x		
Green-Duwamish	09NEW2151	Newaukum 2151	x	x	x				
Green-Duwamish	09NEW2151	Newaukum 2151 Replicate	x	x	x				

Watershed	Site Code	Site Name	Benthic	Land	Habitat	WQ	WQ	Hydrology	Hydrology
			Data	Use Data	Data	Station Code	Data	Station Code	Data
Green-Duwamish	09SOO0943	Soos 0943	x	x	x	A320	x	54A	x
Green-Duwamish	09SOO1020	Soos 1020	x	x	x				
Green-Duwamish	09SOO1022	Soos 1022	x	x	x			54H	x
Green-Duwamish	09SOO1040	Soos 1040/ Soos 01	x	x	x				
Green-Duwamish	09SOO1106	Soos 1106	x	x	x				
Green-Duwamish	09SOO1130	Soos 1130/ Soos 02	x	x	x				
Green-Duwamish	09SOO1134	Soos 1134	x	x	x	D320	x	26A	x
Green-Duwamish	09SOO1144	Soos 1144	x	x	x				
Green-Duwamish	09SOO1209	Soos 1209	x	x		G320	x	54I	x
Green-Duwamish	09SOO1283	Soos 1283	x	x	x				
Greater Lk. Wash.	08BEA3312	Bear Creek 3312	x	x	x				
Greater Lk. Wash.	08BEA3321	Bear Creek 3321	x	x	x				
Greater Lk. Wash.	08BEA3325	Bear Creek 3325/ Bear 13	x	x	x				
Greater Lk. Wash.	08BEA3478	Bear Creek 3478/ Bear 15	x	x	x	C484	x		
Greater Lk. Wash.	08BEA3571	Bear Creek 3571	x	x	x	N484	x		
Greater Lk. Wash.	08BEA3650	Bear Creek 3650/ Bear 02	x	x	x	J484	x	02E	x
Greater Lk. Wash.	08BEA3737	Bear Creek 3737	x	x	x				
Greater Lk. Wash.	08BEA3737	Bear Creek 3737 Replicate	x	x	x				
Greater Lk. Wash.	08BEA3747	Bear Creek 3747/ Bear 03	x	x	x			02F	x
Greater Lk. Wash.	08BEA3826	Bear Creek 3826	x	x	x				
Greater Lk. Wash.	08BEA3914	Bear Creek 3914	x	x	x				
Greater Lk. Wash.	08CED2518	Cedar 2518/ Cedar 12	x	x	x				
Greater Lk. Wash.	08CED2433	Cedar River 2433/ Cedar 12	x	x	x				
Greater Lk. Wash.	08CED2518	Cedar River 2518/ Cedar 12 Replicate	x	x	x				
Greater Lk. Wash.	08CED2711	Cedar River 2711/ Cedar 10	x	x	x				
Greater Lk. Wash.	08CED2898	Cedar River 2898	x	x	x				
Greater Lk. Wash.	08CED4115	Cedar River 4115/ Cedar 06	x	x	x				
Greater Lk. Wash.	08CED4192	Cedar River 4192/ Cedar 03	x	x	x				
Greater Lk. Wash.	08CED4479	Cedar River 4479/ Cedar 08	x	x	x				
Greater Lk. Wash.	08CED4975	Cedar River 4975	x	x	x				
Greater Lk. Wash.	08CED5032	Cedar River 5032	x	x	x				
Greater Lk. Wash.	08CED5046	Cedar River 5046	x	x	x				
Greater Lk. Wash.	08EAS1536	East Lake Washington 1536	x	x	x			16B	x
Greater Lk. Wash.	08EAS1964	East Lake Washington 1964	x	x	x	0440	x	37A	x
Greater Lk. Wash.	08EAS2058	East Lake Washington 2058	x	x	x				
Greater Lk. Wash.	08EAS2191	East Lake Washington 2191	x	x	x	0456	x		
Greater Lk. Wash.	08EAS2272	East Lake Washington 2272	x	x	x				
Greater Lk. Wash.	08EAS2446	East Lake Washington 2446	x	x	x	0442	x		
Greater Lk. Wash.	08EAS2540	East Lake Washington 2540	x	x	x				
Greater Lk. Wash.	08EAS2546	East Lake Washington 2546	x	x	x				
Greater Lk. Wash.	08EAS2631	East Lake Washington 2631/ May 01	x	x	x			37B	x
Greater Lk. Wash.	08EVA4077	Evans 4077/ Bear 04	x	x	x				
Greater Lk. Wash.	08EVA3474	Evans Creek 3474	x	x	x				
Greater Lk. Wash.	08EVA3555	Evans Creek 3555/ Bear 06	x	x	x			18A	x
Greater Lk. Wash.	08EVA3637	Evans Creek 3637	x	x	x				
Greater Lk. Wash.	08EVA3640	Evans Creek 3640	x	x	x				
Greater Lk. Wash.	08EVA3642	Evans Creek 3642	x	x	x				
Greater Lk. Wash.	08EVA3642	Evans Creek 3642 Replicate	x	x	x				
Greater Lk. Wash.	08EVA3813	Evans Creek 3813	x	x	x				
Greater Lk. Wash.	08EVA3897	Evans Creek 3897/ Bear 08	x	x	x	S484	x	18F	x
Greater Lk. Wash.	08EVA4249	Evans Creek 4249/ Bear 05	x	x	x				
Greater Lk. Wash.	08ISS3958	Issaquah 3958	x	x	x	A631	x		
Greater Lk. Wash.	08ISS4294	Issaquah 4294	x	x	x				
Greater Lk. Wash.	08ISS4373	Issaquah 4373	x	x	x				
Greater Lk. Wash.	08ISS4573	Issaquah 4573	x	x	x				
Greater Lk. Wash.	08ISS4730	Issaquah 4730/ Issaq 09	x	x	x				
Greater Lk. Wash.	08ISS4730	Issaquah 4730/ Issaq 09 Replicate	x	x	x				
Greater Lk. Wash.	08ISS4735	Issaquah 4735	x	x	x				
Greater Lk. Wash.	08ISS4884	Issaquah 4884	x	x	x				

Watershed	Site Code	Site Name	Benthic Data	Land Use Data	Habitat Data	WQ Station Code	WQ Data	Hydrology Station Code	Hydrology Data
Greater Lk. Wash.	08LAK2827	Lake Sammamish Tribs 2827	x	x	x				
Greater Lk. Wash.	08LAK2827	Lake Sammamish Tribs 2827 Replicate	x	x	x				
Greater Lk. Wash.	08LAK3121	Lake Sammamish Tribs 3121	x	x	x	A620	x		
Greater Lk. Wash.	08LAK3121	Lake Sammamish Tribs 3121 Replicate	x	x	x				
Greater Lk. Wash.	08LAK3540	Lake Sammamish Tribs 3540	x	x	x	A680	x	15B	x
Greater Lk. Wash.	08LAK3616	Lake Sammamish Tribs 3616	x	x	x	X630	x		
Greater Lk. Wash.	08LAK3627	Lake Sammamish Tribs 3627	x	x	x	A685	x		
Greater Lk. Wash.	08LAK3699	Lake Sammamish Tribs 3699	x	x					
Greater Lk. Wash.	08LAK3879	Lake Sammamish Tribs 3879	x	x	x			15C	x
Greater Lk. Wash.	08LAK3880	Lake Sammamish Tribs 3880	x	x	x				
Greater Lk. Wash.	08LIT2585	Little Bear 2585	x	x	x				
Greater Lk. Wash.	08LIT2602	Little Bear 2602	x	x	x				
Greater Lk. Wash.	08LIT2603	Little Bear 2603	x	x	x				
Greater Lk. Wash.	08LIT2682	Little Bear 2682	x	x	x				
Greater Lk. Wash.	08LIT2685	Little Bear 2685	x	x	x				
Greater Lk. Wash.	08LIT2692	Little Bear 2692	x	x	x			LB	x
Greater Lk. Wash.	08LIT2781	Little Bear 2781	x	x	x				
Greater Lk. Wash.	08NOR0001	North Swamp Creeks 0001	x	x	x				
Greater Lk. Wash.	08NOR1100	North Swamp Creeks 1100	x	x	x				
Greater Lk. Wash.	08NOR1370	North Swamp Creeks 1370	x	x	x			56B	x
Greater Lk. Wash.	08NOR2028	North Swamp Creeks 2028	x	x	x				
Greater Lk. Wash.	08NOR2115	North Swamp Creeks 2115	x	x	x				
Greater Lk. Wash.	08SAM0000	Samm River Tribs 0000	x	x	x				
Greater Lk. Wash.	08SAM1914	Samm River Tribs 1914	x	x	x				
Greater Lk. Wash.	08SAM2674	Samm River Tribs 2674	x	x	x				
Greater Lk. Wash.	08SAM2855	Samm River Tribs 2855	x	x	x				
Greater Lk. Wash.	08SAM2862	Samm River Tribs 2862	x	x	x				
Greater Lk. Wash.	08SAM2865	Samm River Tribs 2865	x	x	x				
Greater Lk. Wash.	08SAM2946	Samm River Tribs 2946	x	x	x			51N	x
Greater Lk. Wash.	08SAM2951	Samm River Tribs 2951	x	x	x				
Greater Lk. Wash.	08SAM3045	Samm River Tribs 3045	x	x	x				
Greater Lk. Wash.	08SAM3046	Samm River Tribs 3045 Replicate	x	x					
Greater Lk. Wash.	08SAM3046	Samm River Tribs 3047	x	x					
Greater Lk. Wash.	08WES0622	West Lake Washington 0622	x	x	x				
Greater Lk. Wash.	08WES0629	West Lake Washington 0629	x	x	x				
Greater Lk. Wash.	08WES0903	West Lake Washington 0903	x	x	x	A432	x	35C	x
Greater Lk. Wash.	08WES0905	West Lake Washington 0905	x	x	x				
Greater Lk. Wash.	08WES1036	West Lake Washington 1036	x	x	x				
Greater Lk. Wash.	08WES1037	West Lake Washington 1037	x	x	x				
Greater Lk. Wash.	08WES1178	West Lake Washington 1178	x	x	x				
Greater Lk. Wash.	08WES1490	West Lake Washington 1490	x	x	x				
Greater Lk. Wash.	08WES1579	West Lake Washington 1579	x	x	x				
<b>Totals</b>			<b>161</b>	<b>161</b>	<b>154</b>		<b>26</b>		<b>23</b>

## **APPENDIX B**

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### B-IBI Calculation

## APPENDIX B – B-IBI Calculation

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This Appendix provides a more detailed description of the methodology used to calculate B-IBI scores for the 2002 field season. The initial step in our calculation of the B-IBI scores was the compilation of complete and updated sources of benthic attribute information. Benthic attributes are descriptors given to benthic macroinvertebrate taxa that relate to their life histories, feeding guilds, lifespan, etc.. In the B-IBI, these attributes are provided in four categories: “pollution tolerance” (tolerant or intolerant), “clinger” (yes or no), “predator” (yes or no) and “voltinism, or long-livedness” (yes or no). Three sources of benthic attribute information were used to compile the King County Master Taxa List:

- Wisseman (2002) – Appendix B from Portland General Electric 2002. *Characterization of Benthic Invertebrate Communities in the Clackamas River Watershed, Oregon. Portland General Electric, Clackamas Hydroelectric Relicensing Project, Water Quality 3 (WQ3) Studies*;
- Wisseman (1998) – a database compiled by Robert W. Wisseman, Aquatic Biology Associates Inc. (with an additional clinger database compiled by Leska Fore), posted on the SalmonWeb website; and
- Barbour *et al.* (1999) – Appendix B: Regional Tolerance Values, Functional Feeding Groups and Habit/Behavior Assignments for Benthic Macroinvertebrates from: *The Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition* (regional tolerance information derived only from the Northwest column, which originally came from the Idaho Department of Environmental Protection);

We first created a master taxa list of all benthic macroinvertebrate attribute data derived from all three of our references. In the master taxa list, the attribute data assigned to each taxon was further identified by assigning a source identifier: aW02 = Wisseman 2002, bW98 = Wisseman 1998, cB99 = Barbour 1999.

We then compiled the four separate datasets: Green watershed, Greater Lake Washington watershed, five additional sites (09MIL0497, 08LAK3616, 08LAK3540, 08LAK3627, 09SOO1209), and one additional site (08LAK3699), to create a list of all taxa found in King County. Although King County provided the data via four separate source files, samples from all sites were collected under the same program. After all duplicate taxa were removed (duplicates were common, as all four datasets often contained the same taxa), the attribute information for each taxa on the master taxa list was pulled onto the King County list of all organisms found in King County in 2002 using the VLOOKUP function in Excel. Because the attribute data provided from each of the 3 sources in the master taxa list was not equivalent (e.g., some taxa were considered tolerant in one

source, and intolerant in another, etc.), it was necessary to select specific attribute data sources *a priori* for analysis of the King County dataset.

Using the VLOOKUP function in Excel, we sorted the master taxa list into sub-sections based on the source of attribute data (i.e., Wisseman 2002 data first (aW02), then Wisseman 1998 data (bW98), then Barbour et al. data (cB99)) and selected one or two sub-sections to pull attribute data from for use on the King County list. The following sources were used for each attribute:

- **Pollution Tolerance:** Wisseman 2002 employs a new system for assigning pollution tolerance; Robert Wisseman has developed a new index labeled the Community Tolerance Index (CTI), which expands upon the Hilsenhoff Biotic Index (HBI) commonly used. According to Wisseman (2002), the HBI pollution tolerance values were subjectively derived, and primarily based on nutrient enrichment tolerance found by Hilsenhoff in the Midwest area. In addition, because the HBI is based on taxa from the Midwest, the tolerance scaling does not incorporate the full spectrum of habitat types and fauna encompassed in montane western North America. As described in Section 2.3.1.1, we determined the CTI index was more appropriate for the King County program because the original Karr protocol (on the SalmonWeb website) which uses the HBI as compiled by Robert Wisseman in 1998 was written before the CTI was developed, and we particularly wanted to capture tolerance to more urban-related types of pollution, and not just nutrient enrichment. Data on the presence/absence of a particular taxon that is nutrient tolerant will not necessarily provide information on the taxon's tolerance to the pollution types covered by the CTI, which is based on primary and secondary factors including: sensitivity to warm water and low levels of dissolved oxygen; sensitivity to fouling of surfaces with filamentous algae or bacteria; sensitivity to siltation; sensitivity to disturbance (whether physical disturbance of substrates or chemical disturbance from toxins); and sensitivity to nutrient enrichment, (which is auto-correlated with dissolved oxygen and fouling) (Wisseman, 2002). The metrics of “percent tolerant individuals” and “number of intolerant taxa” comprise 2 of 10 metrics and make up 1/5<sup>th</sup> of a site's B-IBI score. This makes the measurement of pollution tolerance important to the overall B-IBI score and underscores the need to accurately reflect the types of pollution encountered.
- **Clingers and Predators:** To remain as consistent as possible with the B-IBI protocol, the clinger database from Wisseman 98 (which was compiled by Ms. Leska Fore) and the Barbour et al. (1999) databases were used. The additional source (Barbour et al.) was used in an effort to create the most comprehensive database possible for the King County project. When both databases contained values, the Wisseman 98 database was given preference.

- Voltinism (Long-Livedness): The Wisseman 02 database was used for assigning long-livedness or voltinism. The system of classifying voltinism in the Wisseman 98 database is not equivalent to the Wisseman 02 system, (the 98 version had separate columns for uni/multi/semi-voltinism, with varying percentages assigned, whereas the 02 version uses values from 1-10). Based on email correspondence with Robert Wisseman, it was determined that the Wisseman 02 system of assigning voltinism was most appropriate for the King County project. Mr. Wisseman cited the lack of correspondence between his two voltinism classification systems, and the lower quality of the 98 coding system (it was a pilot project he never used) as reasons to disregard the older 1998 version of the voltinism coding system (Wisseman, *pers. comm.*, 2003).

Once the King County taxa list was compiled (with all four categories of attributes assigned, i.e., each taxa was classified according to pollution tolerance (CTI), whether or not they are a “clinger”, whether or not they are a “predator”, and their voltinism, or long-livedness), the taxa were sorted phylogenetically (in order of Phylum, Class, Order, Family, Genus and Species) and the counts from each benthic collection station were pulled onto the main King County worksheet from the individual taxonomist count worksheets (using the VLOOKUP function). This was labeled “Table One” (See Figure B-1).

At this stage it was necessary to determine the numbers of “distinct” taxa. An artifact of benthic taxonomy known as “phantom taxa” occurs when taxonomists are only able to identify some damaged or immature specimens to a higher level of taxonomy (e.g., to family instead of genus or species). When counting the number of taxa present in a sample, a false or “phantom” taxon will be enumerated if, within a single family, there are counts for specimens identified to family in addition to specimens identified further to genus or species.

A duplicate table was created below the table containing counts of all taxa that determined the numbers of taxa present (instead of numbers of individuals) and also performed counts of uniqueness (i.e., determined the number of distinct taxa) using a series of IF statements. This was labeled “Table Two” (See Figure B-1). For example, if a station in Table One had 6 individuals enumerated in the family Empidae, Table Two would display “1” (as it only displays the number of taxa present, not the number of individuals within each taxon). The IF statement was then further nested to determine “phantom taxa”. For example, for immature or damaged specimens identified to the family-level, we determined if there were genera or species within that family. If genus- or species-level specimens were present in the sample, the family specimen was not included in the count of total number of taxa, and if there were no genus- or species-level specimens present, the family specimen was included in the count and was displayed as “1”.



The formula used to perform counts of the number of taxa present when there were specimens identified to the family-level was:

$$\text{if}(\text{genera} > 0, 0, (\text{if}(\text{family} > 0, 1, 0)))$$

Where: if(specimens within the family are identified to genus, value if TRUE = family specimen not included and is “0”, value if FALSE = if(specimens within the family are identified to family, value if TRUE = family specimen is included and is “1”, value if FALSE = total count for family is “0”)

Once the two tables were completed and counts of the number of taxa present were performed for all stations, the cells for performing B-IBI calculations were added below Table Two using the scoring criteria outlined in Tables B-1 and B-2 (From the SalmonWeb website / Karr’s Protocol):

**Table B 1:** Ten metrics used to calculate the Species/Family Level 10 Metric B-IBI and associated scoring categories.

METRIC	SCORING CATEGORY		
	1	3	5
<b>Taxa Richness and Composition</b>			
Total number of taxa	0 – <15	≥ 15 – ≤ 28	> 28
Number of mayfly (Ephemeroptera) taxa	0 – ≤ 4	> 4 – ≤ 8	> 8
Number of stonefly (Plecoptera) taxa	0 – ≤ 3	> 3 – ≤ 7	> 7
Number of caddisfly (Trichoptera) taxa	0 – < 5	≥ 5 – <10	≥ 10
Number of long-lived taxa	0 – ≤ 2	> 2 – ≤ 4	> 4
<b>Pollution Tolerance</b>			
Number of intolerant taxa (not including Chironomids)	0 – ≤ 2	> 2 – ≤ 3	> 3
Tolerant individuals (not including Chironomids)(%)*	≥ 50	> 19 – < 50	0 – ≥ 19
<b>Feeding Ecology</b>			
Predator individuals (%)*	0 – < 10	≤ 10 – < 20	≥ 20
<b>Population Attributes</b>			
Number of clinger taxa	0 – ≤ 8	> 8 – ≤ 18	> 18
Dominance (3 taxa) %*	≥ 80	≤ 60 – < 80	0 – < 60

\*All percentage metrics must be reported as percentages, not decimals (the number of individuals divided by the total number of individuals multiplied by 100)

**Table B 2:** Interpretation of stream B-IBI scores.

10- METRIC B-IBI SCORE	STREAM CONDITION
46 – 50	Excellent
38 – 44	Good
28 – 36	Fair
18 – 26	Poor
10 – 16	Very poor

To calculate the values of the individual 10 metrics for each sample, a table was created with the following equations (See Table B-3 below):

**Table B 3:** Source of benthic data (i.e., Table One or Two) and the equations used to calculate B-IBI values for each station.

METRIC	EQUATION USED TO DETERMINE STATION'S METRIC VALUE
TOTAL number of taxa	Sum of station's total number of taxa in Table Two (Summed down the entire column of cells containing taxa presence within each station/sample).
Number of mayfly (Ephemeroptera) taxa	Sum of station's number of mayfly taxa present within the Ephemeroptera sub-section of Table Two (which is arranged phylogenetically) (Summed down the column of cells containing Ephemeroptera taxa presence within each station/sample).
Number of stonefly (Plecoptera) taxa	Sum of station's number of stonefly taxa present within the Plecoptera sub-section of Table Two (which is arranged phylogenetically) (Summed down the column of cells containing Plecoptera taxa presence within each station/sample).
Number of caddisfly (Trichoptera) taxa	Sum of station's number of caddisfly taxa present within the Trichoptera sub-section of Table Two (which is arranged phylogenetically) (Summed down the column of cells containing Trichoptera taxa presence within each station/sample).
% Tolerant individuals (as a percentage, not decimal)	Sum of station's number of pollution tolerant individuals (CTI score 7-10) in Table One, divided by the sum of individuals classified for pollution tolerance (CTI scores 1-10), multiplied by 100. (Summed across the cells containing numbers of individuals classified as "tolerant" within a station, then divided by the sum of the cells containing numbers of individuals that had been CTI classified within the same station, multiplied by 100 (repeated for each station)).
% Predators (as a percentage, not decimal)	Sum of station's number of predator individuals in Table One, divided by the total abundance of the sample, multiplied by 100. Summed across the cells containing numbers of individuals classified as "predator", then divided by the entire column of cells containing numbers of individuals present within a station, multiplied by 100 (repeated for each station)).

METRIC	EQUATION USED TO DETERMINE STATION'S METRIC VALUE
Number of clinger taxa	Sum of station's clinger taxa in Table Two. (Summed across the cells containing clinger taxa presence within each station/sample)
% Dominance (top 3 taxa) (as a percentage)	Summed the number of individuals within the 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup> most abundant taxa within a station in Table One, divided by 100, using the formula: ((LARGE(Q4:Q316,1)+LARGE(Q4:Q316,2)+LARGE(Q4:Q316,3))/Q317)*100 where Q4:Q316 = the range of cells containing taxa presence for a single station/sample. Repeated for each station.
Number of long-lived taxa	Sum of station's long-lived taxa in Table Two. (Summed across the cells containing "long-lived" taxa presence within each station/sample).
Number of intolerant/sensitive taxa	Sum of station's intolerant taxa (CTI score 1-4) in Table Two. (Summed across cells containing taxa with CTI scores 1-4 presence for each station/sample).

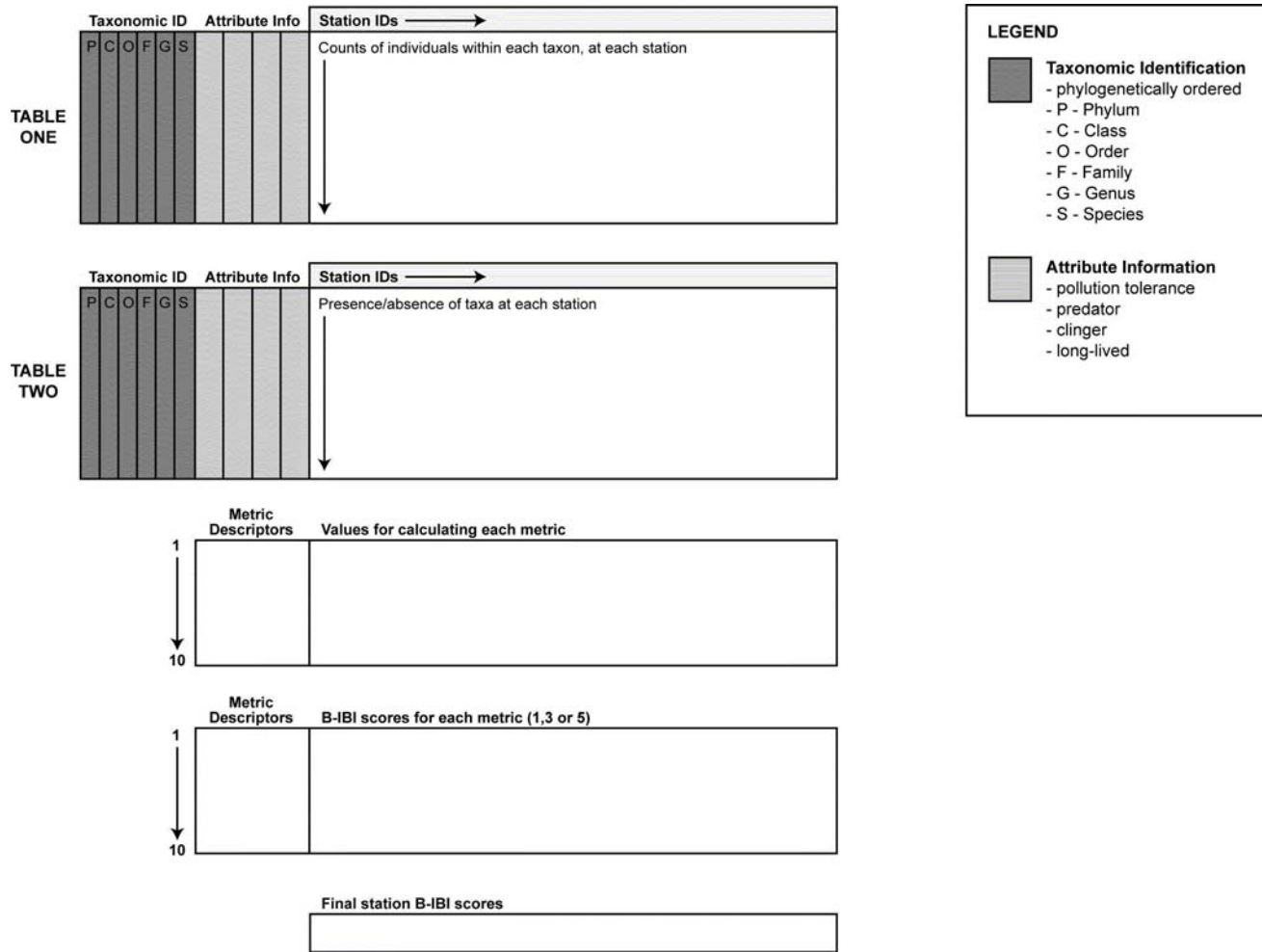
Below the calculations of B-IBI metric values, a second table with equations to calculate B-IBI scores for each metric was created, with bins set up to calculate scores using the Species/Family Level 10-metric scoring system. Bins were created to calculate B-IBI scores of 1, 3 or 5 from the cells containing individual metric value as shown in Table B-4.

**Table B 4:** Scoring bins used to calculate B-IBI scores.

METRIC	B-IBI SCORING BINS
TOTAL number of taxa	=IF(cell value<15,1,IF(cell value<=28,3,IF(cell value>28,5)))
Number of mayfly (Ephemeroptera) taxa	=IF(cell value<=4,1,IF(cell value<=8,3,IF(cell value>8,5)))
Number of stonefly (Plecoptera) taxa	=IF(cell value<=3,1,IF(cell value<=7,3,IF(cell value>7,5)))
Number of caddisfly (Trichoptera) taxa	=IF(cell value<5,1,IF(cell value<10,3,IF(cell value>=10,5)))
% Tolerant individuals (as a percentage)	=IF(cell value>=50,1,IF(cell value>19,3,IF(cell value<=19,5)))
% Predator individuals (as a percentage)	=IF(cell value<10,1,IF(cell value<20,3,IF(cell value>=20,5)))
Number of clinger taxa	=IF(cell value<=8,1,IF(cell value<=18,3,IF(cell value>18,5)))
% Dominance (top 3 taxa) (as a percentage)	=IF(cell value>=80,1,IF(cell value =60,3,IF(cell value<60,5)))
Number of long-lived taxa	=IF(cell value<=2,1,IF(cell value<=4,3,IF(cell value>4,5)))
Number of intolerant taxa	=IF(cell value<=2,1,IF(cell value<=3,3,IF(cell value>3,5)))
<b>TOTAL (Station B-IBI Score)</b>	=SUM(Scoring Bins)

The station B-IBI score was then used in evaluations of the correlation of B-IBI scores with the various WQ, habitat, land use and other parameters of interest. The layout of the master King County B-IBI calculation sheet is shown in Figure B-1.

**Figure B 1:** Layout of the King County Master Taxa List and B-IBI calculation spreadsheet.



## **APPENDIX C**

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### HBI Pollution Tolerance Values

## APPENDIX C - HBI Pollution Tolerance Values

Primary Level	Secondary Level	Tertiary Level (Family)	Quarternary Level	Hilsenhoff Value
Insecta	Coleoptera	Dryopidae		5
Insecta	Coleoptera	Dytiscidae		5
Insecta	Coleoptera	Elmidae		5
Insecta	Coleoptera	Gyrinidae		4
Insecta	Coleoptera	Psephenidae		4
Insecta	Coleoptera	Ptilodactylidae		5
Insecta	Diptera	Athericidae		2
Insecta	Diptera	Chironomidae (red)		10
Insecta	Diptera	Chironomidae(other)		6
Insecta	Diptera	Dixidae		1
Insecta	Diptera	Dolichopodidae		4
Insecta	Diptera	Empididae		6
Insecta	Diptera	Other Diptera		6+
Insecta	Diptera	Psychodidae		10
Insecta	Diptera	Simuliidae		6
Insecta	Diptera	Tabanidae		6
Insecta	Diptera	Tipulidae		4
Insecta	Ephemeroptera	Ameletidae		0
Insecta	Ephemeroptera	Baetidae		6
Insecta	Ephemeroptera	Baetiscidae		3
Insecta	Ephemeroptera	Caenidae		7
Insecta	Ephemeroptera	Ephemerellidae		2
Insecta	Ephemeroptera	Ephemeridae		4
Insecta	Ephemeroptera	Heptageniidae		3
Insecta	Ephemeroptera	Isonychiidae		3
Insecta	Ephemeroptera	Leptophlebiidae		4
Insecta	Ephemeroptera	Neoephemeridae		3
Insecta	Ephemeroptera	Polymitarcyidae		2
Insecta	Ephemeroptera	Potamanthidae		4
Insecta	Ephemeroptera	Siphonuridae		7
Insecta	Ephemeroptera	Tricorythidae		4
Insecta	Lepidoptera	Lepidoptera		5
Insecta	Megaloptera	Corydalidae	Corydalus	4
Insecta	Megaloptera	Corydalidae	Nigronia	2
Insecta	Megaloptera	Corydalidae		3
Insecta	Megaloptera	Sialidae		6
Insecta	Neuroptera	Sisyridae		1
Insecta	Odonata	Aeshnidae		3
Insecta	Odonata	Calopterygidae		5
Insecta	Odonata	Coenagrionidae		8
Insecta	Odonata	Cordulegastridae	Macromiinae	3
Insecta	Odonata	Cordulegastridae		3
Insecta	Odonata	Corduliidae		5
Insecta	Odonata	Gomphidae		4
Insecta	Odonata	Lestidae		9
Insecta	Odonata	Libellulidae		9
Insecta	Plecoptera	Capniidae		3

Primary Level	Secondary Level	Tertiary Level (Family)	Quarternary Level	Hilsenhoff Value
Insecta	Plecoptera	Chloroperlidae		0
Insecta	Plecoptera	Leuctridae		0
Insecta	Plecoptera	Nemouridae		2
Insecta	Plecoptera	Perlodidae		2
Insecta	Plecoptera	Pteronarcyidae		0
Insecta	Plecoptera	Taeniopterygidae		2
Insecta	Trichoptera	Brachycentridae		1
Insecta	Trichoptera	Glossosomatidae		0
Insecta	Trichoptera	Helicopsychidae		3
Insecta	Trichoptera	Hydrophilidae		5
Insecta	Trichoptera	Hydropsychidae		5
Insecta	Trichoptera	Hydroptilidae		4
Insecta	Trichoptera	Lepidostomatidae		1
Insecta	Trichoptera	Leptoceridae		4
Insecta	Trichoptera	Limnephilidae		4
Insecta	Trichoptera	Molannidae		6
Insecta	Trichoptera	Odontoceridae		0
Insecta	Trichoptera	Philopotamidae		3
Insecta	Trichoptera	Phryganeidae		4
Insecta	Trichoptera	Polycentropodidae		6
Insecta	Trichoptera	Psychomyiidae		2
Insecta	Trichoptera	Rhyacophilidae		1
Insecta	Trichoptera	Uenoidae		3
Annelida	Hirudinea			8
Annelida	Other Worms			9
Annelida	Oligochaeta	Tubificidae		10
Annelida	Oligochaeta			9
Annelida	Oligochaeta			10
Bryozoa				4
Crustacea	Amphipoda	Crangonyctidae		4
Crustacea	Amphipoda	Gammaridae		4
Crustacea	Amphipoda	Talitridae		8
Crustacea	Decapoda	Cambaridae		6
Crustacea	Isopoda	Asellidae		8
Hydracarina				7
Mollusca	Bivalvia	Corbiculidae		4
Mollusca	Bivalvia	Sphaeriidae		8
Mollusca	Bivalvia	Unionidae		4
Mollusca	Gastropoda	Ancylidae		7
Mollusca	Gastropoda	Hydrobiidae		8
Mollusca	Gastropoda	Lymnaeidae		7
Mollusca	Gastropoda	Physidae		8
Mollusca	Gastropoda	Planorbidae		6
Mollusca	Gastropoda	Pleuroceridae		7
Mollusca	Gastropoda	Valvatidae		2
Mollusca	Gastropoda	Viviparidae		8
Platyhelminthes	Turbellaria			9

## **APPENDIX D**

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### Benthic Indices for All Sites



## APPENDIX D – Benthic Indices for All Sites

Watershed	Code	Site Name	Rhitron B-IBI scores				TOTAL ABUNDANCE	TOTAL number of taxa	% dominance (top 3 taxa) (as whole number)	number of EPT Taxa	number of mayfly (Ephemeroptera) taxa	number of stonefly (Plecoptera) taxa	number of caddisfly (Trichoptera) taxa	% tolerant individuals (as whole number)	number of intolerant/sensitive taxa	% predator individuals (as whole number)	number of clinger taxa	number of long-lived taxa
			EVS B-IBI Score	SWDI	HBI													
Green-Duwamish	09BLA0675	BLACK 0675	18	14	2.65	6.55	519	16	73.22	4	2	1	1	85.55	0	0.58	3	1
Green-Duwamish	09BLA0716	BLACK 0716	24	16	1.67	6.28	553	18	90.05	5	1	3	1	92.56	0	3.62	2	2
Green-Duwamish	09Bla0722	BLACK 0722	24	16	2.91	5.69	356	20	66.85	5	2	3	0	46.02	0	2.25	2	1
Green-Duwamish	09Bla0756	BLACK 0756	20	10	1.94	7.43	554	14	87.36	6	1	2	3	94.19	0	1.44	4	1
Green-Duwamish	09Bla0768	BLACK 0768	38	22	2.78	5.46	521	23	71.79	13	5	3	5	75.64	0	14.01	6	1
Green-Duwamish	09Bla0768	BLACK 0768 DUPLICATE	34	22	2.95	4.74	464	24	68.53	10	2	2	6	61.52	0	32.76	4	3
Green-Duwamish	09Bla0771	BLACK 0771	38	24	3.56	3.86	622	25	57.23	12	3	3	6	31.30	0	37.78	5	2
Green-Duwamish	09Bla0772	BLACK 0772	14	14	2.33	5.99	538	18	84.39	4	1	2	1	43.85	0	1.49	1	2
Green-Duwamish	09Bla0813	BLACK 0813	16	12	1.73	8.32	553	16	92.41	4	1	1	2	97.29	0	0.54	2	1
Green-Duwamish	09Bla0817	BLACK 0817	14	12	2.45	7.46	673	11	72.36	2	1	0	1	89.56	1	0.15	0	0
Green-Duwamish	09Bla0817	BLACK 0817 DUPLICATE	12	12	2.50	6.43	550	9	68.91	1	1	0	0	93.97	1	0.18	1	0
		<b>BLACK Mean</b>	<b>22.9</b>	<b>15.8</b>	<b>2.5</b>	<b>6.2</b>	<b>536.6</b>	<b>17.6</b>	<b>75.7</b>	<b>6.0</b>	<b>1.8</b>	<b>1.8</b>	<b>2.4</b>	<b>73.8</b>	<b>0.2</b>	<b>8.6</b>	<b>2.7</b>	<b>1.3</b>
		<b>BLACK Std Dev</b>	<b>9.7</b>	<b>4.8</b>	<b>0.6</b>	<b>1.3</b>	<b>80.8</b>	<b>5.2</b>	<b>11.2</b>	<b>3.9</b>	<b>1.3</b>	<b>1.2</b>	<b>2.3</b>	<b>24.0</b>	<b>0.4</b>	<b>13.8</b>	<b>1.8</b>	<b>0.9</b>
Green-Duwamish	09Cov1165	COVINGTON BASIN 1165	38	30	3.34	5.26	619	29	64.46	16	3	5	8	58.79	3	7.11	5	6
Green-Duwamish	09Cov1418	COVINGTON BASIN 1418	44	34	4.01	4.22	505	33	42.18	22	7	6	9	43.00	2	21.98	8	6
Green-Duwamish	09Cov1753	COVINGTON BASIN 1753	28	24	3.24	4.83	586	22	57.51	10	2	5	3	47.28	0	11.95	1	2
Green-Duwamish	09Cov1798	COVINGTON BASIN 1798	42	32	4.04	4.02	506	34	44.86	19	5	5	9	17.88	0	12.25	5	2
Green-Duwamish	09Cov1862	COVINGTON BASIN 1862	32	22	3.11	6.26	736	22	63.59	12	2	6	4	59.83	2	9.51	0	4
Green-Duwamish	09Cov1864	COVINGTON BASIN 1864	36	26	3.62	3.69	624	26	48.88	13	4	5	4	24.54	0	26.92	1	3
Green-Duwamish	09Cov1864	COVINGTON BASIN SOOS 03	42	30	4.01	4.70	566	28	41.87	17	3	6	8	38.64	1	8.66	6	6
		<b>COVINGTON BASIN Mean</b>	<b>37.4</b>	<b>28.3</b>	<b>3.6</b>	<b>4.7</b>	<b>591.7</b>	<b>27.7</b>	<b>51.9</b>	<b>15.6</b>	<b>3.7</b>	<b>5.4</b>	<b>6.4</b>	<b>41.4</b>	<b>1.1</b>	<b>14.1</b>	<b>3.7</b>	<b>4.1</b>
		<b>COVINGTON BASIN Std Dev</b>	<b>5.9</b>	<b>4.4</b>	<b>0.4</b>	<b>0.9</b>	<b>79.8</b>	<b>4.8</b>	<b>9.8</b>	<b>4.2</b>	<b>1.8</b>	<b>0.5</b>	<b>2.6</b>	<b>15.9</b>	<b>1.2</b>	<b>7.5</b>	<b>3.0</b>	<b>1.9</b>
Green-Duwamish	09Dee2163	DEEP/COAL BASIN 2163	46	34	4.09	3.95	511	33	45.99	18	6	4	8	19.06	2	34.25	6	8
Green-Duwamish	09Dee2208	DEEP/COAL BASIN 2208	40	32	3.09	6.10	602	32	70.93	19	9	2	8	75.66	2	4.32	11	5
Green-Duwamish	09Dee2211	DEEP/COAL BASIN 2211	40	32	3.50	4.95	534	33	55.24	17	6	4	7	32.71	1	16.48	5	4
Green-Duwamish	09Dee2266	DEEP/COAL BASIN 2266	46	30	3.59	4.65	500	38	55.60	22	8	7	7	55.72	2	16.20	8	4
Green-Duwamish	09Dee2294	DEEP/COAL BASIN 2294	50	44	4.20	4.55	523	37	42.83	26	10	6	10	46.56	7	12.62	11	8
Green-Duwamish	09Dee2294	DEEP/COAL BASIN 2294 DUPLICATE	50	40	3.96	3.65	556	34	40.65	24	8	7	9	21.77	7	12.59	9	7
		<b>DEEP/COAL BASIN Mean</b>	<b>45.3</b>	<b>35.3</b>	<b>3.7</b>	<b>4.6</b>	<b>537.7</b>	<b>34.5</b>	<b>51.9</b>	<b>21.0</b>	<b>7.8</b>	<b>5.0</b>	<b>8.2</b>	<b>41.9</b>	<b>3.5</b>	<b>16.1</b>	<b>8.3</b>	<b>6.0</b>
		<b>DEEP/COAL BASIN Std Dev</b>	<b>4.5</b>	<b>5.5</b>	<b>0.4</b>	<b>0.9</b>	<b>37.0</b>	<b>2.4</b>	<b>11.2</b>	<b>3.6</b>	<b>1.6</b>	<b>2.0</b>	<b>1.2</b>	<b>21.7</b>	<b>2.7</b>	<b>9.9</b>	<b>2.5</b>	<b>1.9</b>
Green-Duwamish	09Duw0024	DUWAMISH 0024	12	12	2.12	7.39	551	10	86.75	2	1	1	0	45.69	0	0.36	1	0
Green-Duwamish	09Duw0091	DUWAMISH 0091	24	18	2.52	7.00	512	17	73.05	5	2	1	2	96.14	0	11.33	1	1
Green-Duwamish	09Duw0144	DUWAMISH 0144	14	10	1.73	6.33	500	14	86.40	4	2	2	0	80.18	0	1.60	1	1
Green-Duwamish	09Duw0225	DUWAMISH 0225	20	12	2.40	6.50	538	16	80.30	3	1	2	0	91.71	0	0.56	2	2
Green-Duwamish	09Duw0277	DUWAMISH 0277	32	22	2.91	6.79	439	24	70.84	12	2	4	6	82.64	1	7.52	5	1
		<b>DUWAMISH Mean</b>	<b>20.4</b>	<b>14.8</b>	<b>2.3</b>	<b>6.8</b>	<b>508.0</b>	<b>16.2</b>	<b>79.5</b>	<b>5.2</b>	<b>1.6</b>	<b>2.0</b>	<b>1.6</b>	<b>79.3</b>	<b>0.2</b>	<b>4.3</b>	<b>2.0</b>	<b>1.0</b>
		<b>DUWAMISH Std Dev</b>	<b>8.0</b>	<b>5.0</b>	<b>0.4</b>	<b>0.4</b>	<b>43.6</b>	<b>5.1</b>	<b>7.4</b>	<b>4.0</b>	<b>0.5</b>	<b>1.2</b>	<b>2.6</b>	<b>19.9</b>	<b>0.4</b>	<b>4.9</b>	<b>1.7</b>	<b>0.7</b>
Green-Duwamish	09Jen1318	JENKINS 1318	34	22	2.83	5.73	544	24	70.77	13	3	3	7	78.04	0	11.03	3	3
Green-Duwamish	09Jen1357	JENKINS 1357	44	30	3.77	5.18	511	30	49.51	20	6	6	8	67.94	0	9.00	6	3
Green-Duwamish	09Jen1358	JENKINS 1358	28	20	2.81	6.57	419	27	68.97	12	1	4	7	93.99	0	3.34	4	2
		<b>JENKINS Mean</b>	<b>35.3</b>	<b>24.0</b>	<b>3.1</b>	<b>5.8</b>	<b>491.3</b>	<b>27.0</b>	<b>63.1</b>	<b>15.0</b>	<b>3.3</b>	<b>4.3</b>	<b>7.3</b>	<b>80.0</b>	<b>0.0</b>	<b>7.8</b>	<b>4.3</b>	<b>2.7</b>
		<b>JENKINS Std Dev</b>	<b>8.1</b>	<b>5.3</b>	<b>0.6</b>	<b>0.7</b>	<b>64.8</b>	<b>3.0</b>	<b>11.8</b>	<b>4.4</b>	<b>2.5</b>	<b>1.5</b>	<b>0.6</b>	<b>13.1</b>	<b>0.0</b>	<b>4.0</b>	<b>1.5</b>	<b>0.6</b>
Green-Duwamish	09Low0325	LOWER GREEN (E&W) 0325	12	10	1.43	8.06	513	10	95.32	3	2	0	1	97.93	0	0.19	3	1
Green-Duwamish	09Low0406	LOWER GREEN 0406	16	14	2.51	6.06	607	15	73.15	1	1	0	0	99.15	0	1.48	1	0
Green-Duwamish	09Low0751	LOWER GREEN 0751	40	34	2.94	5.41	666	33	71.32	18	6	5	7	46.37	3	4.80	4	6
Green-Duwamish	09Low0753	LOWER GREEN 0753	32	22	3.17	4.76	520	25	61.54	12	4	6	2	33.98	2	3.65	2	4
Green-Duwamish	09Low0788	LOWER GREEN 0788	22	14	2.36	6.65	133	14	80.45	8	2	1	5	73.08	1	8.27	3	1
		<b>LOWER GREEN Mean</b>	<b>24.4</b>	<b>18.8</b>	<b>2.5</b>	<b>6.2</b>	<b>487.8</b>	<b>19.4</b>	<b>76.4</b>	<b>8.4</b>	<b>3.0</b>	<b>2.4</b>	<b>3.0</b>	<b>70.1</b>	<b>1.2</b>	<b>3.7</b>	<b>2.6</b>	<b>2.4</b>
		<b>LOWER GREEN Std Dev</b>	<b>11.5</b>	<b>9.5</b>	<b>0.7</b>	<b>1.3</b>	<b>208.3</b>	<b>9.4</b>	<b>12.6</b>	<b>6.9</b>	<b>2.0</b>	<b>2.9</b>	<b>2.9</b>	<b>29.6</b>	<b>1.3</b>	<b>3.1</b>	<b>1.1</b>	<b>2.5</b>
Green-Duwamish	09Mid1374	MIDDLE GREEN 1374	38	24	3.20	5.43	500	29	64.00	12	3	4	5	62.50	1	18.80	8	2
Green-Duwamish	09Mid1495	MIDDLE GREEN 1495	28	18	2.88	4.61	578	20	68.51	7	2	3	2	48.19	1	0.35	4	3
Green-Duwamish	09Mid1537	MIDDLE GREEN 1537	40	32	2.71	5.27	500	31	75.20	16	6	5	5	58.22	4	10.00	7	4
Green-Duwamish	09Mid1704	MIDDLE GREEN 1704	16	16	1.87	6.85	567	15	92.24	5	2	1	2	95.33	0	3.53	1	0
Green-Duwamish	09Mid1744	MIDDLE GREEN 1744	48	42	4.14	4.06	490	37	44.69	25	6	9	10	33.13	6	16.94	8	9
Green-Duwamish	09Mid1744	MIDDLE GREEN 1744 DUPLICATE	44	38	3.66	5.00	533	32	55.16	19	5	7	7	45.15	7	19.32	7	9
Green-Duwamish	09Mid1817	MIDDLE GREEN 1817	42	32	3.98	3.68	357	31	45.66	16	3	7	6	15.77	1	19.33	4	4
Green-Duwamish	09Mid1958	MIDDLE GREEN 1958	42	32	3.34	6.01	506	26	63.44	18	7	4	7	57.84	7	11.46	5	5
Green-Duwamish	09Mid2426	MIDDLE GREEN 2426	46	38	3.86	4.09	518	34	47.30	21	5	6	10	22.55	5	7.14	6	4
		<b>MIDDLE GREEN Mean</b>	<b>38.2</b>	<b>30.2</b>	<b>3.3</b>	<b>5.0</b>	<b>505.4</b>	<b>28.3</b>	<b>61.8</b>	<b>15.4</b>	<b>4.3</b>	<b>5.1</b>	<b>6.0</b>	<b>48.7</b>	<b>3.6</b>	<b>11.9</b>	<b>5.6</b>	<b>4.4</b>
		<b>MIDDLE GREEN Std Dev</b>	<b>10.1</b>	<b>9.1</b>	<b>0.7</b>	<b>1.0</b>	<b>63.5</b>	<b>7.0</b>	<b>15.7</b>	<b>6.5</b>	<b>1.9</b>	<b>2.4</b>	<b>2.9</b>	<b>23.9</b>	<b>2.8</b>	<b>7.2</b>	<b>2.3</b>	<b>3.0</b>
Green-Duwamish	09Mil0291	MILL CREEK 0291	32	20	2.78	5.85	519	25	72.25	10	1	3	6	57.60	1	9.83	4	1
Green-Duwamish	09Mil0340	MILL CREEK 0340	28	20	2.16	5.63	634	22	80.91	13	2	6	5	55.05	0	5.36	3	0
Green-Duwamish	09Mil0390	MILL CREEK 0390	42	28	3.23	4.62	550	27	65.45	13	4	5	4	50.25	4	27.09	4	5
Green-Duwamish	09Mil0390	MILL CREEK 0390 DUPLICATE	38	28	3.17	3.61	537	25	60.89	14	4	4	6	26.50	3	29.24	4	3
Green-Duwamish	09MIL0497	MILL CREEK 0497	12	14	2.03	5.08	569	16	83.30	4	1	2	1	98.27	0	2.28	2	0
		<b>MILL CREEK Mean</b>	<b>30.4</b>	<b>22.0</b>	<b>2.7</b>	<b>5.0</b>	<b>561.8</b>	<b>23.0</b>	<b>72.6</b>	<b>10.8</b>	<b>2.4</b>	<b>4.0</b>	<b>4.4</b>	<b>57.5</b>	<b>1.6</b>	<b>14.8</b>	<b>3.4</b>	<b>1.8</b>
		<b>MILL CREEK Std Dev</b>	<b>11.6</b>	<b>6.0</b>	<b>0.6</b>	<b>0.9</b>	<b>44.3</b>	<b>4.3</b>	<b>9.6</b>	<b>4.1</b>	<b>1.5</b>	<b>1.6</b>	<b>2.1</b>	<b>25.9</b>	<b>1.8</b>	<b>12.5</b>	<b>0.9</b>	<b>2.2</b>

Watershed	Code	Site Name	Rhithron B-IBI scores	EVS B-IBI Score	SWDI	HBI	TOTAL ABUNDANCE	TOTAL number of taxa	% dominance (top 3 taxa) (as whole number)	number of EPT Taxa	number of mayfly (Ephemeroptera) taxa	number of stonefly (Plecoptera) taxa	number of caddisfly (Trichoptera) taxa	% tolerant individuals (as whole number)	number of intolerant/sensitive taxa	% predator individuals (as whole number)	number of clinger taxa	number of long-lived taxa
Green-Duwamish	09New1657	NEWAUKUM 1657	40	24	3.67	5.38	573	28	50.61	13	5	3	5	60.62	1	4.36	6	1
Green-Duwamish	09New1875	NEWAUKUM 1875	36	22	3.99	5.11	504	32	37.30	12	4	2	6	64.52	1	1.39	5	3
Green-Duwamish	09New1911	NEWAUKUM 1911	32	22	3.12	5.59	501	26	65.47	15	6	4	5	63.04	1	2.00	4	2
Green-Duwamish	09New2076	NEWAUKUM 2076	46	36	3.76	4.37	528	31	53.03	20	9	4	7	25.15	2	19.89	7	5
Green-Duwamish	09New2078	NEWAUKUM 2078	24	20	1.48	5.18	574	19	90.42	8	0	2	6	32.65	1	2.96	3	3
Green-Duwamish	09New2102	NEWAUKUM 2102	46	36	3.58	4.39	557	32	59.07	18	10	5	3	43.15	3	15.08	7	5
Green-Duwamish	09New2128	NEWAUKUM 2128	44	34	3.16	4.69	547	35	64.53	22	10	7	5	23.89	2	8.04	9	3
Green-Duwamish	09New2151	NEWAUKUM 2151	44	40	3.59	4.09	550	38	62.00	21	7	9	5	14.24	6	16.55	7	10
Green-Duwamish	09New2151	NEWAUKUM 2151 DUPLICATE	46	40	3.81	3.88	545	40	56.15	22	7	9	6	24.19	7	26.06	7	9
		<b>NEWAUKUM Mean</b>	<b>39.8</b>	<b>30.4</b>	<b>3.3</b>	<b>4.7</b>	<b>542.1</b>	<b>31.2</b>	<b>59.8</b>	<b>16.8</b>	<b>6.4</b>	<b>5.0</b>	<b>5.3</b>	<b>39.1</b>	<b>2.7</b>	<b>10.7</b>	<b>6.1</b>	<b>4.6</b>
		<b>NEWAUKUM Std Dev</b>	<b>7.7</b>	<b>8.3</b>	<b>0.8</b>	<b>0.6</b>	<b>26.5</b>	<b>6.4</b>	<b>14.3</b>	<b>5.0</b>	<b>3.2</b>	<b>2.7</b>	<b>1.1</b>	<b>19.4</b>	<b>2.3</b>	<b>9.0</b>	<b>1.8</b>	<b>3.1</b>
Green-Duwamish	09Soo0943	SOOS 0943	36	30	3.02	5.80	547	29	70.20	16	7	4	5	70.82	2	3.66	5	6
Green-Duwamish	09Soo1020	SOOS 1020	26	24	2.90	4.10	527	21	68.88	12	3	5	4	25.11	1	8.92	2	4
Green-Duwamish	09Soo1022	SOOS 1022	44	26	3.66	4.36	503	26	47.91	16	4	7	5	48.17	0	27.24	3	2
Green-Duwamish	09Soo1040	SOOS 1040/ SOOS 01	24	14	2.58	5.65	540	16	81.11	7	2	2	3	57.79	0	2.96	1	1
Green-Duwamish	09Soo1106	SOOS 1106	16	12	1.95	6.17	591	17	83.76	5	2	0	3	96.10	0	1.18	3	1
Green-Duwamish	09Soo1130	SOOS 1130/ SOOS 02	40	36	3.49	3.77	548	32	58.39	20	6	6	8	13.36	2	6.39	4	7
Green-Duwamish	09Soo1134	SOOS 1134	48	38	3.58	3.57	547	34	54.66	21	6	7	8	25.40	5	11.15	8	10
Green-Duwamish	09Soo1144	SOOS 1144	32	24	3.34	4.96	534	26	60.49	13	3	5	5	49.55	0	23.97	4	2
Green-Duwamish	09Soo1209	SOOS 1283	34	32	3.30	4.13	551	26	57.71	16	6	4	6	42.05	1	28.31	5	5
Green-Duwamish	09Soo1209	SOOS 1209	32	30	3.90	5.03	575	31	45.39	21	6	7	8	44.82	0	4.70	3	2
		<b>SOOS Mean</b>	<b>33.2</b>	<b>26.6</b>	<b>3.2</b>	<b>4.8</b>	<b>546.3</b>	<b>25.8</b>	<b>62.9</b>	<b>14.7</b>	<b>4.5</b>	<b>4.7</b>	<b>5.5</b>	<b>47.3</b>	<b>1.1</b>	<b>11.8</b>	<b>3.8</b>	<b>4.0</b>
		<b>SOOS Std Dev</b>	<b>9.6</b>	<b>8.5</b>	<b>0.6</b>	<b>0.9</b>	<b>24.2</b>	<b>6.1</b>	<b>12.9</b>	<b>5.5</b>	<b>1.9</b>	<b>2.3</b>	<b>2.0</b>	<b>24.1</b>	<b>1.6</b>	<b>10.6</b>	<b>1.9</b>	<b>3.0</b>
G. Lk. Washington	08Bea3312	BEAR CREEK 3312	46	34	3.98	3.85	562	35	46.98	20	5	6	9	6.34	1	18.15	5	4
G. Lk. Washington	08Bea3321	BEAR CREEK 3321	36	26	3.89	4.41	214	25	45.33	13	3	4	6	50.30	1	16.82	5	4
G. Lk. Washington	08Bea3325	BEAR CREEK 3325/ BEAR 13	28	20	3.43	5.80	554	28	59.93	10	3	3	4	67.22	0	12.82	4	2
G. Lk. Washington	08Bea3478	BEAR CREEK 3478/ BEAR 15	32	24	3.36	5.36	298	24	61.74	12	4	4	4	68.42	1	15.10	2	5
G. Lk. Washington	08Bea3571	BEAR CREEK 3571	34	30	3.40	4.91	624	29	59.13	16	5	5	6	36.83	0	3.85	8	1
G. Lk. Washington	08Bea3650	BEAR CREEK 3650/ BEAR 02	36	30	4.02	4.39	570	30	45.09	14	4	3	7	40.76	1	4.04	6	5
G. Lk. Washington	08Bea3737	BEAR CREEK 3737	36	28	3.46	4.23	506	25	47.23	14	3	4	7	31.93	0	12.06	4	3
G. Lk. Washington	08Bea3737	BEAR CREEK 3737 DUPLICATE	40	30	3.70	4.21	556	25	43.35	14	4	4	6	32.75	1	16.37	2	5
G. Lk. Washington	08Bea3747	BEAR CREEK 3747/ BEAR 03	38	26	3.67	4.99	507	31	52.07	16	4	4	8	53.91	0	8.48	6	2
G. Lk. Washington	08Bea3826	BEAR CREEK 3826	42	34	3.12	4.73	491	35	64.15	21	6	8	7	28.57	1	23.01	6	6
G. Lk. Washington	08Bea3914	BEAR CREEK 3914	42	32	4.28	4.50	223	30	37.67	17	4	6	7	45.65	2	14.35	6	5
		<b>BEAR CREEK Mean</b>	<b>37.3</b>	<b>28.5</b>	<b>3.7</b>	<b>4.7</b>	<b>464.1</b>	<b>28.8</b>	<b>51.2</b>	<b>15.2</b>	<b>4.1</b>	<b>4.6</b>	<b>6.5</b>	<b>42.1</b>	<b>1.6</b>	<b>13.2</b>	<b>4.9</b>	<b>3.8</b>
		<b>BEAR CREEK Std Dev</b>	<b>5.1</b>	<b>4.3</b>	<b>0.3</b>	<b>0.6</b>	<b>146.8</b>	<b>3.9</b>	<b>8.8</b>	<b>3.3</b>	<b>0.9</b>	<b>1.5</b>	<b>1.5</b>	<b>18.0</b>	<b>0.5</b>	<b>5.9</b>	<b>1.8</b>	<b>1.6</b>
G. Lk. Washington		CEDAR 2518/ CEDAR 12	24	16	2.56	7.25	272	14	74.26	7	2	3	2	84.23	0	8.09	1	2
G. Lk. Washington		CEDAR RIVER 2433/ CEDAR 12	32	24	2.60	6.92	397	22	78.34	12	3	4	5	92.31	2	6.05	4	3
G. Lk. Washington	08Ced2518	CEDAR RIVER 2518/ CEDAR 12 DUPLICATE	24	20	2.51	5.74	331	15	75.23	7	1	4	2	82.25	0	10.57	0	2
G. Lk. Washington	08Ced2711	CEDAR RIVER 2711/ CEDAR 10	12	12	2.32	7.11	131	9	79.39	2	1	1	0	96.52	0	1.53	0	1
G. Lk. Washington	08Ced2898	CEDAR RIVER 2898	22	18	2.66	7.16	250	21	80.40	8	2	4	2	87.71	1	4.80	1	3
G. Lk. Washington	08Ced4115	CEDAR RIVER 4115/ CEDAR 06	38	30	2.95	5.41	577	30	65.86	17	4	6	7	35.07	1	5.89	5	5
G. Lk. Washington	08Ced4192	CEDAR RIVER 4192/ CEDAR 03	42	40	3.56	4.56	563	37	58.65	23	6	7	10	25.14	4	8.12	8	6
G. Lk. Washington	08Ced4479	CEDAR RIVER 4479/ CEDAR 08	44	36	4.41	4.77	572	38	34.62	23	7	10	6	44.97	2	12.76	7	10
G. Lk. Washington	08Ced4975	CEDAR RIVER 4975	40	32	2.96	5.49	522	32	71.46	17	6	6	5	47.53	3	14.94	5	4
G. Lk. Washington	08Ced5032	CEDAR RIVER 5032	44	40	3.44	2.34	500	38	60.80	25	9	7	9	19.22	5	6.20	11	6
G. Lk. Washington	08Ced5046	CEDAR RIVER 5046	46	40	4.48	3.97	257	32	32.68	20	7	6	7	17.28	6	9.73	6	7
		<b>CEDAR RIVER Mean</b>	<b>33.5</b>	<b>28.0</b>	<b>3.1</b>	<b>5.5</b>	<b>405.6</b>	<b>26.2</b>	<b>64.7</b>	<b>14.6</b>	<b>4.4</b>	<b>5.3</b>	<b>5.0</b>	<b>57.5</b>	<b>2.2</b>	<b>8.1</b>	<b>4.4</b>	<b>4.5</b>
		<b>CEDAR RIVER Std Dev</b>	<b>11.4</b>	<b>10.5</b>	<b>0.8</b>	<b>1.6</b>	<b>169.1</b>	<b>10.4</b>	<b>17.0</b>	<b>7.8</b>	<b>2.8</b>	<b>2.4</b>	<b>3.2</b>	<b>31.4</b>	<b>2.1</b>	<b>3.8</b>	<b>3.6</b>	<b>2.7</b>
G. Lk. Washington	08Eas1536	EAST LAKE WASHINGTON 1536	32	26	3.22	5.41	362	21	58.29	8	1	4	3	50.23	1	19.61	1	5
G. Lk. Washington	08Eas1964	EAST LAKE WASHINGTON 1964	40	30	3.55	4.56	221	25	52.94	14	6	5	3	16.42	1	25.34	2	3
G. Lk. Washington	08Eas2058	EAST LAKE WASHINGTON 2058	34	22	3.08	5.35	500	25	69.60	12	4	5	3	62.90	1	14.00	2	4
G. Lk. Washington	08Eas2191	EAST LAKE WASHINGTON 2191	16	14	2.82	6.68	544	16	63.05	3	1	0	2	87.31	0	1.29	2	1
G. Lk. Washington	08Eas2272	EAST LAKE WASHINGTON 2272	10	10	1.62	6.28	576	13	86.46	2	1	0	1	98.33	0	0.00	1	0
G. Lk. Washington	08Eas2446	EAST LAKE WASHINGTON 2446	28	24	3.28	6.14	522	23	57.66	9	2	4	3	56.02	1	5.56	1	4
G. Lk. Washington	08Eas2540	EAST LAKE WASHINGTON 2540	28	22	3.10	3.97	132	15	59.85	5	1	3	1	36.44	0	35.61	0	2
G. Lk. Washington	08Eas2546	EAST LAKE WASHINGTON 2546	16	14	1.23	5.89	475	16	92.42	2	0	0	2	85.00	0	2.11	3	2
G. Lk. Washington	08Eas2631	EAST LAKE WASHINGTON 2631/ MAY 01	27.3	20.3	3.58	4.58	564	28	58.51	17	4	6	7	38.57	1	15.07	5	6
		<b>EAST LAKE WASHINGTON Mean</b>	<b>27.3</b>	<b>21.3</b>	<b>2.8</b>	<b>5.4</b>	<b>432.9</b>	<b>20.2</b>	<b>66.5</b>	<b>8.0</b>	<b>2.2</b>	<b>3.0</b>	<b>2.8</b>	<b>59.0</b>	<b>0.6</b>	<b>13.2</b>	<b>1.9</b>	<b>3.0</b>
		<b>EAST LAKE WASHINGTON Std Dev</b>	<b>11.2</b>	<b>7.2</b>	<b>0.8</b>	<b>0.9</b>	<b>160.0</b>	<b>5.4</b>	<b>13.8</b>	<b>5.5</b>	<b>2.0</b>	<b>2.4</b>	<b>1.8</b>	<b>27.1</b>	<b>0.5</b>	<b>12.2</b>	<b>1.5</b>	<b>1.9</b>
G. Lk. Washington	08Eva4077	EVANS 4077/ BEAR 04	40	30	3.04	5.10	553	30	69.08	17	4	7	6	44.30	1	26.94	6	6
G. Lk. Washington	08Eva3474	EVANS CREEK 3474	24	16	3.19	6.09	508	20	59.65	5	1	1	3	90.56	0	1.77	1	2
G. Lk. Washington	08Eva3555	EVANS CREEK 3555/ BEAR 06	40	32	4.25	5.67	604	33	33.11	18	6	5	7	48.73	1	6.95	4	4
G. Lk. Washington	08Eva3637	EVANS CREEK 3637	38	28	2.56	6.51	560	29	78.04	15	5	3	7	81.38	1	10.18	4	5
G. Lk. Washington	08Eva3640	EVANS CREEK 3640	32	28	2.82	5.72	546	29	76.01	17	3	6	8	39.33	0	3.11	4	5
G. Lk. Washington	08Eva3642	EVANS CREEK 3642	30	22	3.24	4.11	257	23	60.70	11	3	3	5	51.20	1	13.62	3	3
G. Lk. Washington	08Eva3642	EVANS CREEK 3642 DUPLICATE	30	26	3.73	4.83	238	25	42.86	10	2	4	4	48.63	0	13.87	3	3
G. Lk. Washington	08Eva3813	EVANS CREEK 3813	38	28	3.55	5.97	546	35	60.44	17	3	6	8	71.49	1	13.00	6	5
G. Lk. Washington	08Eva3897	EVANS CREEK 3897/ BEAR 08	32	24	2.86	5.89	508	24	76.18	15	3	6	6	80.15	0	9.25	3	3
G. Lk. Washington	08Eva4249	EVANS CREEK 4249/ BEAR 05	38	32	2.59	4.67	380	25	72.37	15	3	8	4	14.91	3	20.00	2	7
		<b>EVANS CREEK Mean</b>	<b>34.2</b>	<b>26.6</b>	<b>3.2</b>													

Watershed	Code	Site Name	Rhithron B-IBI scores	EVS B-IBI Score	SWDI	HBI	TOTAL ABUNDANCE	TOTAL number of taxa	% dominance (top 3 taxa) (as whole number)	number of EPT Taxa	number of mayfly (Ephemeroptera) taxa	number of stonefly (Plecoptera) taxa	number of caddisfly (Trichoptera) taxa	% tolerant individuals (as whole number)	number of intolerant/sensitive taxa	% predator individuals (as whole number)	number of clinger taxa	number of long-lived taxa
G. Lk. Washington	08lss3958	ISSAQUAH 3958	46	42	3.96	4.88	495	36	49.70	22	5	7	10	17.60	6	25.25	3	8
G. Lk. Washington	08lss4294	ISSAQUAH 4294	40	38	3.51	4.66	570	36	60.88	26	10	8	8	38.24	3	8.07	7	7
G. Lk. Washington	08lss4373	ISSAQUAH 4373	26	24	3.15	5.55	122	18	59.84	10	2	6	2	42.05	3	4.10	1	3
G. Lk. Washington	08lss4573	ISSAQUAH 4573	42	40	3.96	4.36	536	29	44.40	19	9	4	6	37.05	4	10.45	7	7
G. Lk. Washington	08lss4730	ISSAQUAH 4730/ ISSAQ 09	44	38	3.43	3.05	555	27	51.89	20	8	6	6	18.60	5	9.19	6	6
G. Lk. Washington	08lss4730	ISSAQUAH 4730/ ISSAQ 09 DUPLICATE	44	38	3.38	2.41	511	33	61.06	22	7	10	5	7.91	3	9.39	5	7
G. Lk. Washington	08lss4735	ISSAQUAH 4735	46	40	4.03	3.40	261	30	47.13	19	7	7	5	9.26	4	18.01	5	6
G. Lk. Washington	08lss4884	ISSAQUAH 4884	46	42	3.81	2.87	513	38	55.17	25	8	7	10	10.79	7	12.87	6	8
		<b>ISSAQUAH Mean</b>	<b>41.8</b>	<b>37.8</b>	<b>3.7</b>	<b>3.9</b>	<b>445.4</b>	<b>30.9</b>	<b>53.8</b>	<b>20.4</b>	<b>7.0</b>	<b>6.9</b>	<b>6.5</b>	<b>22.7</b>	<b>4.4</b>	<b>12.2</b>	<b>5.0</b>	<b>6.5</b>
		<b>ISSAQUAH Std Dev</b>	<b>6.7</b>	<b>5.8</b>	<b>0.3</b>	<b>1.1</b>	<b>162.9</b>	<b>6.5</b>	<b>6.5</b>	<b>4.9</b>	<b>2.5</b>	<b>1.7</b>	<b>2.7</b>	<b>14.2</b>	<b>1.5</b>	<b>6.6</b>	<b>2.1</b>	<b>1.6</b>
G. Lk. Washington	08Lak2827	LAKE SAMMAMISH TRIBS 2827	22	18	2.01	7.76	562	19	86.83	7	2	4	1	92.08	0	4.80	3	1
G. Lk. Washington	08Lak2827	LAKE SAMMAMISH TRIBS 2827 DUPLICATE	26	20	2.85	6.91	570	19	68.42	8	3	4	1	78.18	0	11.58	2	2
G. Lk. Washington	08Lak3121	LAKE SAMMAMISH TRIBS 3121	14	10	2.23	6.89	203	14	80.30	3	1	1	1	93.10	0	0.49	1	2
G. Lk. Washington	08Lak3121	LAKE SAMMAMISH TRIBS 3121 DUPLICATE	14	14	2.23	7.20	510	15	78.04	3	1	1	1	95.24	0	0.39	2	1
G. Lk. Washington	08Lak3879	LAKE SAMMAMISH TRIBS 3879	30	26	3.35	6.53	551	25	57.71	10	2	4	4	45.62	0	17.42	2	3
G. Lk. Washington	08Lak3880	LAKE SAMMAMISH TRIBS 3880	34	22	3.54	7.33	277	22	52.35	11	3	2	6	61.88	0	27.80	4	2
G. Lk. Washington	08Lak3540	LAKE SAMMAMISH TRIBS 3540	24	22	3.19	5.71	538	24	60.22	10	2	3	5	72.15	0	4.28	3	3
G. Lk. Washington	08Lak3616	LAKE SAMMAMISH TRIBS 3616	18	18	2.68	5.30	518	21	76.83	5	2	3	0	77.54	1	3.28	0	3
G. Lk. Washington	08Lak3627	LAKE SAMMAMISH TRIBS 3627	28	26	3.04	4.63	560	29	71.61	17	3	6	8	72.97	2	10.89	7	4
G. Lk. Washington	08Lak3699	LAKE SAMMAMISH TRIBS 3699	40	38	4.22	5.20	505	35	38.22	19	7	5	7	39.24	4	19.60	6	7
		<b>LAKE SAMMAMISH TRIBS Mean</b>	<b>25.0</b>	<b>21.4</b>	<b>2.9</b>	<b>6.3</b>	<b>479.4</b>	<b>22.3</b>	<b>67.1</b>	<b>9.3</b>	<b>2.6</b>	<b>3.3</b>	<b>3.4</b>	<b>72.8</b>	<b>0.7</b>	<b>10.1</b>	<b>3.0</b>	<b>2.8</b>
		<b>LAKE SAMMAMISH TRIBS Std Dev</b>	<b>8.4</b>	<b>7.7</b>	<b>0.7</b>	<b>1.1</b>	<b>129.3</b>	<b>6.3</b>	<b>14.9</b>	<b>5.4</b>	<b>1.7</b>	<b>1.6</b>	<b>3.0</b>	<b>19.2</b>	<b>1.3</b>	<b>9.2</b>	<b>2.2</b>	<b>1.8</b>
G. Lk. Washington	08Lit2585	LITTLE BEAR 2585	30	26	3.34	5.63	508	23	59.84	12	5	2	5	72.19	1	3.94	3	3
G. Lk. Washington	08Lit2602	LITTLE BEAR 2602	36	26	3.82	5.65	559	27	40.61	12	4	2	6	49.01	1	8.94	2	3
G. Lk. Washington	08Lit2603	LITTLE BEAR 2603	26	22	2.80	6.18	559	22	73.52	9	1	2	6	83.67	0	7.69	2	3
G. Lk. Washington	08Lit2682	LITTLE BEAR 2682	38	26	3.54	5.52	544	27	51.10	14	4	4	6	68.60	1	5.70	4	3
G. Lk. Washington	08Lit2685	LITTLE BEAR 2685	30	24	3.66	5.14	570	26	48.07	14	6	4	4	58.92	2	3.33	7	4
G. Lk. Washington	08Lit2692	LITTLE BEAR 2692	42	28	3.62	4.40	581	27	44.92	18	4	6	8	40.14	2	16.52	5	3
G. Lk. Washington	08Lit2781	LITTLE BEAR 2781	46	32	4.13	4.26	568	32	36.97	20	8	5	7	28.95	1	11.09	5	3
		<b>LITTLE BEAR Mean</b>	<b>35.4</b>	<b>26.3</b>	<b>3.6</b>	<b>5.3</b>	<b>555.6</b>	<b>26.3</b>	<b>50.7</b>	<b>14.1</b>	<b>4.6</b>	<b>3.6</b>	<b>6.0</b>	<b>57.4</b>	<b>1.1</b>	<b>8.2</b>	<b>4.0</b>	<b>3.1</b>
		<b>LITTLE BEAR Std Dev</b>	<b>7.2</b>	<b>3.1</b>	<b>0.4</b>	<b>0.7</b>	<b>23.9</b>	<b>3.3</b>	<b>12.5</b>	<b>3.8</b>	<b>2.1</b>	<b>1.6</b>	<b>1.3</b>	<b>19.2</b>	<b>0.7</b>	<b>4.6</b>	<b>1.8</b>	<b>0.4</b>
G. Lk. Washington	08Nor1370	NORTH SWAMP BASIN 1370	34	28	3.44	5.68	554	27	59.93	15	5	4	6	52.03	2	3.43	2	5
G. Lk. Washington	08Nor0001	NORTH SWAMP CREEK 0001	26	20	3.33	5.59	286	19	56.64	7	2	3	2	76.00	0	10.49	3	1
G. Lk. Washington	08Nor1100	NORTH SWAMP CREEKS 1100	12	10	1.99	7.38	580	14	89.83	1	1	0	0	98.88	0	2.93	1	1
G. Lk. Washington	08Nor2028	NORTH SWAMP CREEKS 2028	10	12	1.42	8.21	504	9	90.87	0	0	0	0	99.75	0	0.20	0	3
G. Lk. Washington	08Nor2115	NORTH SWAMP CREEKS 2115	24	16	2.87	6.50	561	18	65.06	9	1	3	5	85.77	0	1.43	2	1
		<b>NORTH SWAMP CREEK Mean</b>	<b>21.2</b>	<b>17.2</b>	<b>2.6</b>	<b>6.7</b>	<b>497.0</b>	<b>17.4</b>	<b>72.5</b>	<b>6.4</b>	<b>1.8</b>	<b>2.0</b>	<b>2.6</b>	<b>82.5</b>	<b>0.4</b>	<b>3.7</b>	<b>1.6</b>	<b>2.2</b>
		<b>NORTH SWAMP CREEK Std Dev</b>	<b>10.1</b>	<b>7.2</b>	<b>0.9</b>	<b>1.1</b>	<b>121.2</b>	<b>6.7</b>	<b>16.6</b>	<b>6.1</b>	<b>1.9</b>	<b>1.9</b>	<b>2.8</b>	<b>19.7</b>	<b>0.9</b>	<b>4.0</b>	<b>1.1</b>	<b>1.8</b>
G. Lk. Washington	08Sam0000	SAMMAMISH RIVER TRIBS 0000	12	10	1.63	7.45	574	11	90.42	2	1	0	1	97.05	0	0.00	2	1
G. Lk. Washington	08Sam1914	SAMMAMISH RIVER TRIBS 1914	22	22	3.32	6.60	263	20	55.51	3	1	2	0	76.65	0	7.98	1	4
G. Lk. Washington	08Sam2674	SAMMAMISH RIVER TRIBS 2674	26	18	2.42	6.54	501	24	82.83	9	1	2	6	92.06	1	2.99	5	3
G. Lk. Washington	08Sam2855	SAMMAMISH RIVER TRIBS 2855	10	10	1.57	7.60	564	9	91.13	3	1	0	2	99.38	0	0.00	0	0
G. Lk. Washington	08Sam2862	SAMMAMISH RIVER TRIBS 2862	40	36	3.77	4.64	406	29	45.57	15	2	7	6	30.25	4	20.69	5	6
G. Lk. Washington	08Sam2865	SAMMAMISH RIVER TRIBS 2865	20	14	3.04	6.91	74	13	58.11	6	1	2	3	66.13	0	5.41	2	2
G. Lk. Washington	08Sam2946	SAMMAMISH RIVER TRIBS 2946	24	22	3.30	6.55	546	18	55.13	5	1	1	3	79.92	1	3.85	2	3
G. Lk. Washington	08Sam2951	SAMMAMISH RIVER TRIBS 2951	20	12	2.13	8.12	556	15	80.22	3	1	1	1	86.06	1	0.36	2	2
G. Lk. Washington	08Sam3045	SAMMAMISH RIVER TRIBS 3045	30	24	2.48	6.07	353	20	77.62	11	3	3	5	80.07	2	11.90	4	5
G. Lk. Washington	08Sam3046	SAMMAMISH RIVER TRIBS 3045 DUPLICATE	12	10	2.03	6.43	509	9	88.21	1	1	0	0	97.84	0	0.20	1	0
G. Lk. Washington	08Sam3046	SAMMAMISH RIVER TRIBS 3047	24	16	3.09	6.91	224	21	66.52	7	2	1	4	92.36	1	3.13	3	4
		<b>SAMMAMISH RIVER TRIBS Mean</b>	<b>21.8</b>	<b>17.6</b>	<b>2.6</b>	<b>6.7</b>	<b>415.5</b>	<b>17.2</b>	<b>71.9</b>	<b>5.9</b>	<b>1.4</b>	<b>1.7</b>	<b>2.8</b>	<b>81.6</b>	<b>0.9</b>	<b>5.1</b>	<b>2.5</b>	<b>2.7</b>
		<b>SAMMAMISH RIVER TRIBS Std Dev</b>	<b>8.7</b>	<b>8.0</b>	<b>0.7</b>	<b>0.9</b>	<b>167.5</b>	<b>6.4</b>	<b>16.3</b>	<b>4.3</b>	<b>0.7</b>	<b>2.0</b>	<b>2.2</b>	<b>19.9</b>	<b>1.2</b>	<b>6.4</b>	<b>1.6</b>	<b>2.0</b>
G. Lk. Washington	08Wes0622	WEST LAKE WASHINGTON 0622	18	16	2.42	5.68	535	18	73.08	5	2	2	1	79.96	0	2.62	4	0
G. Lk. Washington	08Wes0629	WEST LAKE WASHINGTON 0629	38	22	2.31	6.63	573	27	77.84	15	4	4	7	82.89	1	10.82	7	2
G. Lk. Washington	08Wes0903	WEST LAKE WASHINGTON 0903	26	22	3.41	5.33	347	22	56.77	10	2	4	4	55.12	0	7.49	4	1
G. Lk. Washington	08Wes0905	WEST LAKE WASHINGTON 0905	26	18	2.71	5.03	519	17	71.48	9	3	3	3	32.37	0	3.47	2	2
G. Lk. Washington	08Wes1036	WEST LAKE WASHINGTON 1036	30	18	2.83	5.94	595	24	73.78	9	2	3	4	81.46	1	6.39	3	1
G. Lk. Washington	08Wes1037	WEST LAKE WASHINGTON 1037	28	16	2.58	6.92	572	23	73.78	9	3	3	3	80.74	0	3.15	5	1
G. Lk. Washington	08Wes1178	WEST LAKE WASHINGTON 1178	16	12	2.39	6.05	426	12	77.93	2	1	1	0	84.06	0	0.23	1	2
G. Lk. Washington	08Wes1490	WEST LAKE WASHINGTON 1490	14	10	1.99	7.82	491	12	82.89	2	1	0	1	91.36	0	0.81	1	1
G. Lk. Washington	08Wes1579	WEST LAKE WASHINGTON 1579	14	10	1.97	8.02	138	7	92.03	1	1	0	0	60.29	0	0.00	1	0
		<b>WEST LAKE WASHINGTON Mean</b>	<b>23.3</b>	<b>16.0</b>	<b>2.5</b>	<b>6.4</b>	<b>466.2</b>	<b>18.0</b>	<b>75.5</b>	<b>6.9</b>	<b>2.1</b>	<b>2.2</b>	<b>2.6</b>	<b>72.0</b>	<b>0.2</b>	<b>3.9</b>	<b>3.1</b>	<b>1.1</b>
		<b>WEST LAKE WASHINGTON Std Dev</b>	<b>8.3</b>	<b>4.6</b>	<b>0.4</b>	<b>1.1</b>	<b>146.1</b>	<b>6.6</b>	<b>9.5</b>	<b>4.7</b>	<b>1.1</b>	<b>1.6</b>	<b>2.3</b>	<b>18.9</b>	<b>0.4</b>	<b>3.7</b>	<b>2.1</b>	<b>0.8</b>

## **APPENDIX E**

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### Benthic Macroinvertebrate Raw Data

## APPENDIX E – Benthic Macroinvertebrate Raw Data

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Dytiscidae (early instar, pupa or damaged)	BEAR CREEK 3312	11/09/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Agabus	BEAR CREEK 3321	11/09/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Hydroporus	BEAR CREEK 3325/ BEAR 13	07/08/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Liodessus	BEAR CREEK 3475/ BEAR 15	15/08/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Oreodytes	BEAR CREEK 3571	11/09/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Elmidae (early instar, pupa or damaged)	BEAR CREEK 3650/ BEAR 02	08/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Ampumixis dispar	BEAR CREEK 3737	29/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Cleptelmis	BEAR CREEK 3737 REPLICATE	29/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Heterlimnius	BEAR CREEK 3747/ BEAR 03	15/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Lara avara	BEAR CREEK 3826	08/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Narpus	BEAR CREEK 3914	08/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Optioservus	BLACK 0675	08/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Zaitzevia	BLACK 0716	08/08/2002
Arthropoda	Coleoptera	Hydraenidae	Hydraenidae	Hydraena	BLACK 0722	08/08/2002
Arthropoda	Coleoptera	Halplidae	Halplidae	Halplus	BLACK 0756	19/08/2002
Arthropoda	Coleoptera	Halplidae	Halplidae	Brychius	BLACK 0768	19/09/2002
Arthropoda	Coleoptera	Hydrophilidae	Hydrophilidae	Hydrophilidae (early instar, pupa or damaged)	BLACK 0768 DUPLICATE	19/09/2002
Arthropoda	Coleoptera	Limnichidae	Limnichidae	Limnichidae	BLACK 0771	08/08/2002
Arthropoda	Diptera	Blephariceridae	Blephariceridae	Blephariceridae (early instar, pupa or damaged)	BLACK 0772	19/09/2002
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Ceratopogoninae	BLACK 0813	27/08/2002
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Forcipomyiinae	BLACK 0817	27/08/2002
Arthropoda	Diptera	Chironomidae	Chironomidae	Chironomidae	BLACK 0817 DUPLICATE	30/09/2002
Arthropoda	Diptera	Culicidae	Culicidae	Culicidae	CEDAR 2518/ CEDAR 12	20/08/2002
Arthropoda	Diptera	Dixidae	Dixidae	Dixa	CEDAR RIVER 2433/ CEDAR 12	02/08/2002
Arthropoda	Diptera	Dixidae	Dixidae	Dixella	CEDAR RIVER 2519/ CEDAR 12 REPLICATE	20/08/2002
Arthropoda	Diptera	Dolichopodidae	Dolichopodidae	Dolichopodidae	CEDAR RIVER 2711/ CEDAR 10	22/08/2002
Arthropoda	Diptera	Empididae	Empididae	Empididae (early instar, pupa or damaged)	CEDAR RIVER 2898	21/08/2002
Arthropoda	Diptera	Empididae	Empididae	Chelifera	CEDAR RIVER 4115/ CEDAR 06	04/09/2002
Arthropoda	Diptera	Empididae	Empididae	Clinocera	CEDAR RIVER 4192/ CEDAR 03	21/08/2002
Arthropoda	Diptera	Empididae	Empididae	Hemerodromia		
Arthropoda	Diptera	Empididae	Empididae	Oreogeton		
Arthropoda	Diptera	Ephydriidae	Ephydriidae	Ephydriidae		
Arthropoda	Diptera	Pelecorhynchidae	Pelecorhynchidae	Glutops		
Arthropoda	Diptera	Psychodidae	Psychodidae	Maruina		
Arthropoda	Diptera	Psychodidae	Psychodidae	Pericoma		
Arthropoda	Diptera	Ptychopteridae	Ptychopteridae	Ptychoptera		
Arthropoda	Diptera	Simuliidae	Simuliidae	Simulium		
Arthropoda	Diptera	Stratiomyidae	Stratiomyidae	Nemotelus		
Arthropoda	Diptera	Thaumaleidae	Thaumaleidae	Thaumalea		
Arthropoda	Diptera	Tipulidae	Tipulidae	Antocha		
Arthropoda	Diptera	Tipulidae	Tipulidae	Dicranota		
Arthropoda	Diptera	Tipulidae	Tipulidae	Hexatoma		
Arthropoda	Diptera	Tipulidae	Tipulidae	Limnophila		
Arthropoda	Diptera	Tipulidae	Tipulidae	Limonia		
Arthropoda	Diptera	Tipulidae	Tipulidae	Pedicia		
Arthropoda	Diptera	Tipulidae	Tipulidae	Pilaria		
Arthropoda	Diptera	Tipulidae	Tipulidae	Rhabdomastix		
Arthropoda	Diptera	Tipulidae	Tipulidae	Tipula		
Arthropoda	Diptera	Tipulidae	Tipulidae	Molophilus		
Arthropoda	Ephemeroptera	Ameletidae	Ameletidae	Ameletus		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Acentrella		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Baetis tricaudatus		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Centroptilium		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Dipheter hageni		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Pseudocloeon		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerellidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella delantala		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella coloradensis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella doddsi		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella grandis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella spinifera		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella inermis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Serratella tibialis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Timpanoga hecuba		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Heptageniidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygma		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygmula		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus albertae		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus grandis		

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus longimanus		BEAR CREEK 3312	11/09/2002
Arthropoda	Ephemeroptera	Heptageniidae	Ironodes		BEAR CREEK 3321	11/09/2002
Arthropoda	Ephemeroptera	Heptageniidae	Rhithrogena		BEAR CREEK 3325/ BEAR 13	07/08/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia		BEAR CREEK 3478/ BEAR 15	15/08/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia bicornuta		BEAR CREEK 3571	11/09/2002
Arthropoda	Megaloptera	Sialidae	Sialis		BEAR CREEK 3650/ BEAR 02	08/08/2002
Arthropoda	Odonata	Gomphidae	Gomphidae (early instar, pupa or damaged)		BEAR CREEK 3737	29/08/2002
Arthropoda	Plecoptera	Capniidae	Capniidae (early instar, pupa or damaged)		BEAR CREEK 3737 REPLICATE	29/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Chloroperlidae (early instar, pupa or damaged)		BEAR CREEK 3747/ BEAR 03	15/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Suwallia		BEAR CREEK 3826	08/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Kathroperla		BEAR CREEK 3914	08/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Paraperla		BLACK 0675	08/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Sweltsa		BLACK 0716	08/08/2002
Arthropoda	Plecoptera	Leuctridae	Leuctridae (early instar, pupa or damaged)		BLACK 0722	08/08/2002
Arthropoda	Plecoptera	Leuctridae	Despaxia augusta		BLACK 0756	19/08/2002
Arthropoda	Plecoptera	Leuctridae	Moselia infuscata		BLACK 0768	19/09/2002
Arthropoda	Plecoptera	Nemouridae	Nemouridae (early instar, pupa or damaged)		BLACK 0768 DUPLICATE	19/09/2002
Arthropoda	Plecoptera	Nemouridae	Malenka		BLACK 0771	08/08/2002
Arthropoda	Plecoptera	Nemouridae	Soyedina		BLACK 0772	19/09/2002
Arthropoda	Plecoptera	Nemouridae	Visoka cataractae		BLACK 0813	27/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada (early instar, pupa or damaged)		BLACK 0817	27/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada cinctipes		BLACK 0817 DUPLICATE	30/09/2002
Arthropoda	Plecoptera	Nemouridae	Zapada columbiana		CEDAR 2518/ CEDAR 12	20/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada frigida		CEDAR RIVER 2433/ CEDAR 12	02/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada Oregonensis Gr.		CEDAR RIVER 2518/ CEDAR 12 REPLICATE	20/08/2002
Arthropoda	Peltoperlidae	Yoraperla	Yoraperla		CEDAR RIVER 2711/ CEDAR 10	22/08/2002
Arthropoda	Perlidae	Perlidae (early instar, pupa or damaged)			CEDAR RIVER 2888	21/08/2002
Arthropoda	Perlidae	Calineuria californica			CEDAR RIVER 4115/ CEDAR 06	04/09/2002
Arthropoda	Perlidae	Doroneuria			CEDAR RIVER 4192/ CEDAR 03	21/08/2002
Arthropoda	Perlidae	Hesperoperla pacifica				
Arthropoda	Perlodidae	Perlodidae (early instar, pupa or damaged)				
Arthropoda	Perlodidae	Isoperla				
Arthropoda	Perlodidae	Kogotus				
Arthropoda	Perlodidae	Megarcys				
Arthropoda	Perlodidae	Skwala				
Arthropoda	Pteronarcyidae	Pteronarcella (early instar, pupa or damaged)				
Arthropoda	Pteronarcyidae	Pteronarcella badia				
Arthropoda	Pteronarcyidae	Pteronarcys (early instar, pupa or damaged)				
Arthropoda	Pteronarcyidae	Pteronarcys californica				
Arthropoda	Pteronarcyidae	Pteronarcys princeps				
Arthropoda	Apataniidae	Apatania				
Arthropoda	Brachycentridae	Brachycentrus americanus				
Arthropoda	Brachycentridae	Micrasema				
Arthropoda	Glossosomatidae	Glossosomatidae (early instar, pupa or damaged)				
Arthropoda	Glossosomatidae	Agapetus				
Arthropoda	Glossosomatidae	Anagapetus				
Arthropoda	Glossosomatidae	Glossosoma				
Arthropoda	Goeridae	Goera archaon				
Arthropoda	Hydropsychidae	Hydropsychidae (early instar, pupa or damaged)				
Arthropoda	Hydropsychidae	Arctopsyche grandis				
Arthropoda	Hydropsychidae	Cheumatopsyche				
Arthropoda	Hydropsychidae	Hydropsyche				
Arthropoda	Hydropsychidae	Parapsyche (early instar, pupa or damaged)				
Arthropoda	Hydropsychidae	Parapsyche almota				
Arthropoda	Hydropsychidae	Parapsyche elsis				
Arthropoda	Hydroptilidae	Hydroptila				
Arthropoda	Lepidostomatidae	Lepidostoma				
Arthropoda	Limnephilidae	Limnephilidae (early instar, pupa or damaged)				
Arthropoda	Limnephilidae	Cryptochia				
Arthropoda	Limnephilidae	Dicosmoecus gilvipes				
Arthropoda	Limnephilidae	Ecclisomyia				
Arthropoda	Limnephilidae	Hydatophylax				
Arthropoda	Limnephilidae	Onocosmoecus				
Arthropoda	Limnephilidae	Onocosmoecus unicolor				
Arthropoda	Limnephilidae	Psychoglypha				
Arthropoda	Limnephilidae	Ecclisocosmoecus				
Arthropoda	Philopotamidae	Wormaldia				
Arthropoda	Polycentropodidae	Polycentropus				
Arthropoda	Rhyacophilidae	Rhyacophila (early instar, pupa or damaged)				
Arthropoda	Rhyacophilidae	Rhyacophila Angelita Gr.				
Arthropoda	Rhyacophilidae	Rhyacophila arnaldi				
Arthropoda	Rhyacophilidae	Rhyacophila Betteni Gr.				
Arthropoda	Rhyacophilidae	Rhyacophila blarina				

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date																											
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Brunnea Gr.	BEAR CREEK 3312	11/09/2002																											
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Grandis Gr.	BEAR CREEK 3321	11/09/2002																											
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Hyalinata Gr.	BEAR CREEK 3325/ BEAR 13	07/08/2002																											
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila malkini	BEAR CREEK 3478/ BEAR 15	15/08/2002																											
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila narvae	BEAR CREEK 3571	11/09/2002																											
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila valuma	BEAR CREEK 3650/ BEAR 02	08/08/2002																											
Arthropoda		Trichoptera	Uenoidae	Neophylax (early instar, pupa or damaged)	BEAR CREEK 3737	29/08/2002																											
Arthropoda		Trichoptera	Uenoidae	Neophylax rickeri	BEAR CREEK 3737 REPLICATE	29/08/2002																											
Arthropoda		Trichoptera	Uenoidae	Neophylax splendens	BEAR CREEK 3747/ BEAR 03	15/08/2002																											
Arthropoda		Trichoptera	Uenoidae	Neothremma	BEAR CREEK 3826	08/08/2002																											
Arthropoda		Trichoptera	Uenoidae	Oligophlebodes	BEAR CREEK 3914	08/08/2002																											
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella	BLACK 0675	08/08/2002																											
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Erpobdella	BLACK 0716	08/08/2002																											
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	BLACK 0722	08/08/2002																											
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata	BLACK 0756	19/08/2002																											
Annelida	Hirudinea	Rhynchobdellida	Piscicolidae	Piscicola salmositica	BLACK 0768	19/09/2002																											
Annelida	Oligochaeta		Oligochaeta		BLACK 0768 DUPLICATE	19/09/2002																											
Arthropoda	Arachnida	Acariformes	Acari		BLACK 0771	08/08/2002																											
Arthropoda	Branchiopoda	Cladocera	Cladocera		BLACK 0772	19/09/2002																											
Arthropoda	Crustacea	Amphipoda	Crangonyctidae	Crangonyx	BLACK 0813	27/08/2002																											
Arthropoda	Crustacea	Amphipoda	Gammaridae	Gammarus	BLACK 0817	27/08/2002																											
Arthropoda	Crustacea	Copepoda	Copepoda		BLACK 0817 DUPLICATE	30/09/2002																											
Arthropoda	Crustacea	Decapoda	Pacifastacus		BLACK 0817 DUPLICATE	30/09/2002																											
Arthropoda	Crustacea	Isopoda	Asellidae	Caecidotea	BLACK 0817 DUPLICATE	30/09/2002																											
Arthropoda	Crustacea	Ostracoda	Ostracoda		BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Ancylidae	Ferrissia	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Lymnaeidae	Fossaria	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Planorbidae	Gyraulus	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Pleuroceridae	Juga	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Physidae	Physidae	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Physidae	Physa	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda		Pisidiidae	Pisidiidae	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Gastropoda	Mesogastropoda	Hydrobiidae	Potamopyrgus antipodarum	BLACK 0817 DUPLICATE	30/09/2002																											
Mollusca	Pelecypoda		Margaritiferidae	Margaritifera falcata	BLACK 0817 DUPLICATE	30/09/2002																											
Nematoda				Nematoda	BLACK 0817 DUPLICATE	30/09/2002																											
Nemertea				Prostoma	BLACK 0817 DUPLICATE	30/09/2002																											
Platyhelminthes				Turbellaria	BLACK 0817 DUPLICATE	30/09/2002																											
Coelenterata	Hydroida	Hydridae	Hydra		BLACK 0817 DUPLICATE	30/09/2002																											
<b>SITE TOTAL ABUNDANCE</b>					562	214	554	298	624	570	506	556	507	491	223	519	553	356	554	521	464	622	538	553	673	550	272	397	331	131	250	577	653

Phylum	Class	Order	Family	Final Identification	sample date	SITE NAME
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Dytiscidae (early instar, pupa or damaged)	22/08/2002	CEDAR RIVER 4479/ CEDAR 06
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Agabus	05/09/2002	CEDAR RIVER 4975
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Hydroporus	10/09/2002	CEDAR RIVER 5032
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Liodesus	05/09/2002	CEDAR RIVER 5046
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Oreodytes	29/08/2002	COVINGTON BASIN 1165
Arthropoda	Coleoptera	Elmidae	Elmidae	Elmidae (early instar, pupa or damaged)	22/08/2002	COVINGTON BASIN 1418
Arthropoda	Coleoptera	Elmidae	Elmidae	Ampumixis dispar	13/08/2002	COVINGTON BASIN 1753
Arthropoda	Coleoptera	Elmidae	Elmidae	Cleptelmis	13/08/2002	COVINGTON BASIN 1798
Arthropoda	Coleoptera	Elmidae	Elmidae	Heterlimnius	15/08/2002	COVINGTON BASIN 1862
Arthropoda	Coleoptera	Elmidae	Elmidae	Lara avara	15/08/2002	COVINGTON BASIN 1884
Arthropoda	Coleoptera	Elmidae	Elmidae	Narpus	30/09/2002	COVINGTON BASIN
Arthropoda	Coleoptera	Elmidae	Elmidae	Optioservus	09/09/2002	SOOS 03
Arthropoda	Coleoptera	Elmidae	Elmidae	Zaitzevia	09/09/2002	DEEP/COAL BASIN 2163
Arthropoda	Coleoptera	Hydraenidae	Hydraena	Hydraena	14/08/2002	DEEP/COAL BASIN 2208
Arthropoda	Coleoptera	Halplidae	Halplidae	Halplius	09/09/2002	DEEP/COAL BASIN 2211
Arthropoda	Coleoptera	Halplidae	Halplidae	Brychius	14/08/2002	DEEP/COAL BASIN 2266
Arthropoda	Coleoptera	Hydrophilidae	Hydrophilidae	Hydrophilidae (early instar, pupa or damaged)	14/08/2002	DEEP/COAL BASIN 2294
Arthropoda	Coleoptera	Limnichidae	Limnichidae	Limnichidae	26/09/2002	DEEP/COAL BASIN 2294 DUPLICATE
Arthropoda	Diptera	Blephariceridae	Blephariceridae	Blephariceridae (early instar, pupa or damaged)	14/08/2002	DUWAMISH 0024
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Ceratopogonidae	14/08/2002	DUWAMISH 0091
Arthropoda	Diptera	Ceratopogonidae	Forcipomyiinae	Forcipomyiinae	30/09/2002	DUWAMISH 0144
Arthropoda	Diptera	Chironomidae	Chironomidae	Chironomidae	14/08/2002	DUWAMISH 0225
Arthropoda	Diptera	Culicidae	Culicidae	Culicidae	14/08/2002	DUWAMISH 0277
Arthropoda	Diptera	Dixidae	Dixidae	Dixidae	12/08/2002	EAST LAKE WASHINGTON 1536
Arthropoda	Diptera	Dolichopodidae	Dolichopodidae	Dolichopodidae	12/08/2002	EAST LAKE WASHINGTON 1964
Arthropoda	Diptera	Empididae	Empididae	Empididae (early instar, pupa or damaged)		
Arthropoda	Diptera	Empididae	Chelifera	Chelifera		
Arthropoda	Diptera	Empididae	Clinocera	Clinocera		
Arthropoda	Diptera	Empididae	Hemerodromia	Hemerodromia		
Arthropoda	Diptera	Empididae	Oreogeton	Oreogeton		
Arthropoda	Diptera	Ephydriidae	Ephydriidae	Ephydriidae		
Arthropoda	Diptera	Pelecorynchidae	Glutops	Glutops		
Arthropoda	Diptera	Psychodidae	Marina	Marina		
Arthropoda	Diptera	Psychodidae	Pericoma	Pericoma		
Arthropoda	Diptera	Ptychopteridae	Ptychoptera	Ptychoptera		
Arthropoda	Diptera	Simuliidae	Simulium	Simulium		
Arthropoda	Diptera	Stratiomyidae	Nemotelus	Nemotelus		
Arthropoda	Diptera	Thaumaleidae	Thaumalea	Thaumalea		
Arthropoda	Diptera	Tipulidae	Antocha	Antocha		
Arthropoda	Diptera	Tipulidae	Dicranota	Dicranota		
Arthropoda	Diptera	Tipulidae	Hexatoma	Hexatoma		
Arthropoda	Diptera	Tipulidae	Limnophila	Limnophila		
Arthropoda	Diptera	Tipulidae	Limonia	Limonia		
Arthropoda	Diptera	Tipulidae	Pedicia	Pedicia		
Arthropoda	Diptera	Tipulidae	Pilaria	Pilaria		
Arthropoda	Diptera	Tipulidae	Rhabdomastix	Rhabdomastix		
Arthropoda	Diptera	Tipulidae	Tipula	Tipula		
Arthropoda	Diptera	Tipulidae	Molophilus	Molophilus		
Arthropoda	Ephemeroptera	Ameletidae	Ameletus	Ameletus		
Arthropoda	Ephemeroptera	Baetidae	Acentrella	Acentrella		
Arthropoda	Ephemeroptera	Baetidae	Baetis tricaudatus	Baetis tricaudatus		
Arthropoda	Ephemeroptera	Baetidae	Centropilum	Centropilum		
Arthropoda	Ephemeroptera	Baetidae	Dipheter hageni	Dipheter hageni		
Arthropoda	Ephemeroptera	Baetidae	Pseudocloeon	Pseudocloeon		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae (early instar, pupa or damaged)	Ephemerellidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Attenella	Attenella		
Arthropoda	Ephemeroptera	Ephemerellidae	Attenella delantala	Attenella delantala		
Arthropoda	Ephemeroptera	Ephemerellidae	Drunella	Drunella		
Arthropoda	Ephemeroptera	Ephemerellidae	Drunella coloradensis	Drunella coloradensis		
Arthropoda	Ephemeroptera	Ephemerellidae	Drunella doddsi	Drunella doddsi		
Arthropoda	Ephemeroptera	Ephemerellidae	Drunella grandis	Drunella grandis		
Arthropoda	Ephemeroptera	Ephemerellidae	Drunella spinifera	Drunella spinifera		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerella	Ephemerella		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerella inermis	Ephemerella inermis		
Arthropoda	Ephemeroptera	Ephemerellidae	Serratella tibialis	Serratella tibialis		
Arthropoda	Ephemeroptera	Ephemerellidae	Timpanoga hecuba	Timpanoga hecuba		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae (early instar, pupa or damaged)	Heptageniidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Cinygma	Cinygma		
Arthropoda	Ephemeroptera	Heptageniidae	Cinygmula	Cinygmula		
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus	Epeorus		
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus albertae	Epeorus albertae		
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus grandis	Epeorus grandis		



Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus longimanus	3	CEDAR RIVER 4479/ CEDAR 06	22/08/2002
Arthropoda	Ephemeroptera	Heptageniidae	Ironodes	3	CEDAR RIVER 4975	05/09/2002
Arthropoda	Ephemeroptera	Heptageniidae	Rhithrogena	38	CEDAR RIVER 5032	10/09/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia	1	CEDAR RIVER 5046	05/09/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia bicornuta	1	COVINGTON BASIN 1165	29/08/2002
Arthropoda	Megaloptera	Sialidae	Sialis	2	COVINGTON BASIN 1418	22/08/2002
Arthropoda	Odonata	Gomphidae	Gomphidae (early instar, pupa or damaged)	1	COVINGTON BASIN 1753	13/08/2002
Arthropoda	Plecoptera	Capniidae	Capniidae (early instar, pupa or damaged)	2	COVINGTON BASIN 1798	13/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Chloroperlidae (early instar, pupa or damaged)	1	COVINGTON BASIN 1662	15/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Suwallia	1	COVINGTON BASIN 1684	15/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Kathroperla	1	COVINGTON BASIN	30/09/2002
Arthropoda	Plecoptera	Chloroperlidae	Paraperla	1	SOOS 03	30/09/2002
Arthropoda	Plecoptera	Chloroperlidae	Swellsa	12	DEEP/COAL BASIN 2163	09/09/2002
Arthropoda	Plecoptera	Leuctridae	Leuctridae (early instar, pupa or damaged)	64	DEEP/COAL BASIN 2208	14/08/2002
Arthropoda	Plecoptera	Leuctridae	Despaxia augusta	5	DEEP/COAL BASIN 2211	09/09/2002
Arthropoda	Plecoptera	Leuctridae	Moselia infuscata	9	DEEP/COAL BASIN 2266	14/08/2002
Arthropoda	Plecoptera	Leuctridae	Moselia infuscata	8	DEEP/COAL BASIN 2294	14/08/2002
Arthropoda	Plecoptera	Nemouridae	Nemouridae (early instar, pupa or damaged)	1	DEEP/COAL BASIN 2294 DUPLICATE	26/09/2002
Arthropoda	Plecoptera	Nemouridae	Malenka	2	DUWAMISH 0024	14/08/2002
Arthropoda	Plecoptera	Nemouridae	Soyedina	2	DUWAMISH 0091	14/08/2002
Arthropoda	Plecoptera	Nemouridae	Visoka cataractae	2	DUWAMISH 0144	30/09/2002
Arthropoda	Plecoptera	Nemouridae	Zapada (early instar, pupa or damaged)	2	DUWAMISH 0225	14/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada cinctipes	17	DUWAMISH 0277	14/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada columbiana	1	EAST LAKE WASHINGTON 1536	12/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada frigida	3	EAST LAKE WASHINGTON 1964	12/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada Oregonensis Gr.	1		
Arthropoda	Plecoptera	Peltoperlidae	Yoraperla	1		
Arthropoda	Plecoptera	Perlidae	Perlidae (early instar, pupa or damaged)	3		
Arthropoda	Plecoptera	Perlidae	Calineuria californica	1		
Arthropoda	Plecoptera	Perlidae	Doroneuria	1		
Arthropoda	Plecoptera	Perlidae	Hesperoperla pacifica	1		
Arthropoda	Plecoptera	Perlidae	Perlidae (early instar, pupa or damaged)	14		
Arthropoda	Plecoptera	Perlidae	Isoperla	3		
Arthropoda	Plecoptera	Perlidae	Kogotus	3		
Arthropoda	Plecoptera	Perlidae	Megaracys	1		
Arthropoda	Plecoptera	Perlidae	Skwala	12		
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcella (early instar, pupa or damaged)	3		
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcella badia	3		
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys (early instar, pupa or damaged)	3		
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys californica	4		
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys princeps	4		
Arthropoda	Trichoptera	Apataniidae	Apatania	4		
Arthropoda	Trichoptera	Brachycentridae	Brachycentrus americanus	11		
Arthropoda	Trichoptera	Brachycentridae	Micrasema	9		
Arthropoda	Trichoptera	Glossosomatidae	Glossosomatidae (early instar, pupa or damaged)	3		
Arthropoda	Trichoptera	Glossosomatidae	Agapetus	1		
Arthropoda	Trichoptera	Glossosomatidae	Anagapetus	1		
Arthropoda	Trichoptera	Glossosomatidae	Glossosoma	21		
Arthropoda	Trichoptera	Goeridae	Goera archaon	1		
Arthropoda	Trichoptera	Hydropsychidae	Hydropsychidae (early instar, pupa or damaged)	1		
Arthropoda	Trichoptera	Hydropsychidae	Arctopsyche grandis	3		
Arthropoda	Trichoptera	Hydropsychidae	Cheumatopsyche	1		
Arthropoda	Trichoptera	Hydropsychidae	Hydropsyche	62		
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche (early instar, pupa or damaged)	1		
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche almota	19		
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche elsis	8		
Arthropoda	Trichoptera	Hydroptilidae	Hydroptila	2		
Arthropoda	Trichoptera	Lepidostomatidae	Lepidostoma	3		
Arthropoda	Trichoptera	Limnephilidae	Limnephilidae (early instar, pupa or damaged)	4		
Arthropoda	Trichoptera	Limnephilidae	Cryptochia	4		
Arthropoda	Trichoptera	Limnephilidae	Dicosmoecus gilvipes	4		
Arthropoda	Trichoptera	Limnephilidae	Ecclisomyia	4		
Arthropoda	Trichoptera	Limnephilidae	Hydatophylax	4		
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus	4		
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus unicolor	4		
Arthropoda	Trichoptera	Limnephilidae	Psychoglypha	4		
Arthropoda	Trichoptera	Limnephilidae	Ecclisocosmoecus	4		
Arthropoda	Trichoptera	Philopotamidae	Wormaldia	9		
Arthropoda	Trichoptera	Polycentropodidae	Polycentropus	6		
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila (early instar, pupa or damaged)	2		
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila Angelita Gr.	2		
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila arnaudi	2		
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila Betteni Gr.	2		
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila blarina	2		

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date																						
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila	Brunnea Gr.	1	22/08/2002																						
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila	Grandis Gr.	1	05/09/2002																						
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila	Hyalinata Gr.	5	10/09/2002																						
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila	malkini	8	05/09/2002																						
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila	narvae	14	05/09/2002																						
Arthropoda	Trichoptera	Rhyacophiliidae	Rhyacophila	valuma	1	29/08/2002																						
Arthropoda	Trichoptera	Uenoidae	Neophylax	(early instar, pupa or damaged)	3	22/08/2002																						
Arthropoda	Trichoptera	Uenoidae	Neophylax	occidentis	1	13/08/2002																						
Arthropoda	Trichoptera	Uenoidae	Neophylax	rickeri	1	13/08/2002																						
Arthropoda	Trichoptera	Uenoidae	Neophylax	splendens	1	13/08/2002																						
Arthropoda	Trichoptera	Uenoidae	Neothremma		1	15/08/2002																						
Arthropoda	Trichoptera	Uenoidae	Oligophlebodes		1	15/08/2002																						
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella	3	30/09/2002																						
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Erpobdella	3	09/09/2002																						
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	1	14/08/2002																						
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata	1	09/09/2002																						
Annelida	Hirudinea	Rhynchobdellida	Piscicolidae	Piscicola salmositica	1	14/08/2002																						
Annelida	Oligochaeta		Oligochaeta		1	14/08/2002																						
Arthropoda	Arachnida	Acariformes	Acari		43	26/09/2002																						
Arthropoda	Branchiopoda	Cladocera	Cladocera		5	14/08/2002																						
Arthropoda	Crustacea	Amphipoda	Crangonyctidae	Crangonyx	2	14/08/2002																						
Arthropoda	Crustacea	Amphipoda	Gammaridae	Gammarus	3	14/08/2002																						
Arthropoda	Crustacea	Copepoda	Copepoda		1	14/08/2002																						
Arthropoda	Crustacea	Decapoda	Pacifastacus		2	14/08/2002																						
Arthropoda	Crustacea	Isopoda	Asellidae	Caecidotea	3	14/08/2002																						
Arthropoda	Crustacea	Ostracoda	Ostracoda		3	14/08/2002																						
Mollusca	Gastropoda	Ancylidae	Ferrissia		5	14/08/2002																						
Mollusca	Gastropoda	Lymnaeidae	Fossaria		1	14/08/2002																						
Mollusca	Gastropoda	Planorbidae	Gyraulus		1	14/08/2002																						
Mollusca	Gastropoda	Pleuroceridae	Juga		29	14/08/2002																						
Mollusca	Gastropoda	Physidae	Physidae		2	14/08/2002																						
Mollusca	Gastropoda	Physidae	Physa		44	14/08/2002																						
Mollusca	Gastropoda	Pisidiidae	Pisidiidae		1	14/08/2002																						
Mollusca	Gastropoda	Mesogastropoda	Hydrobiidae	Potamopyrgus antipodarum	2	14/08/2002																						
Mollusca	Pelecypoda	Margaritiferidae	Margaritifera	falcata	3	14/08/2002																						
Nematoda			Nematoda		3	14/08/2002																						
Nemertea			Prostoma		4	14/08/2002																						
Platyhelminthes			Turbellaria		4	14/08/2002																						
Coelenterata	Hydroida	Hydridae	Hydra		4	14/08/2002																						
<b>SITE TOTAL ABUNDANCE</b>					572	522	500	257	619	505	586	506	736	624	566	511	602	534	500	523	556	551	512	500	538	439	362	221

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Dytiscidae (early instar, pupa or damaged)	EAST LAKE WASHINGTON 2068	12/09/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Agabus		
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Hydroporus		
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Liodes		
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Oreodytes		
Arthropoda	Coleoptera	Elmidae	Elmidae	Elmidae (early instar, pupa or damaged)		
Arthropoda	Coleoptera	Elmidae	Elmidae	Ampumixis dispar		
Arthropoda	Coleoptera	Elmidae	Elmidae	Cleptelmis		
Arthropoda	Coleoptera	Elmidae	Elmidae	Heterlimnius		
Arthropoda	Coleoptera	Elmidae	Elmidae	Lara avara		
Arthropoda	Coleoptera	Elmidae	Elmidae	Narpus		
Arthropoda	Coleoptera	Elmidae	Elmidae	Optioservus		
Arthropoda	Coleoptera	Elmidae	Elmidae	Zaitzevia		
Arthropoda	Coleoptera	Hydraenidae	Hydraenidae	Hydraena		
Arthropoda	Coleoptera	Halplidae	Halplidae	Halplus		
Arthropoda	Coleoptera	Halplidae	Halplidae	Brychius		
Arthropoda	Coleoptera	Hydrophilidae	Hydrophilidae	Hydrophilidae (early instar, pupa or damaged)		
Arthropoda	Coleoptera	Limnichidae	Limnichidae	Limnichidae		
Arthropoda	Diptera	Blephariceridae	Blephariceridae	Blephariceridae (early instar, pupa or damaged)		
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Ceratopogoninae		
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Forcipomyiinae		
Arthropoda	Diptera	Chironomidae	Chironomidae	Chironomidae		
Arthropoda	Diptera	Culicidae	Culicidae	Culicidae		
Arthropoda	Diptera	Dixidae	Dixidae	Dixa		
Arthropoda	Diptera	Dixidae	Dixidae	Dixella		
Arthropoda	Diptera	Dolichopodidae	Dolichopodidae	Dolichopodidae		
Arthropoda	Diptera	Empididae	Empididae	Empididae (early instar, pupa or damaged)		
Arthropoda	Diptera	Empididae	Empididae	Chelifera		
Arthropoda	Diptera	Empididae	Empididae	Clinocera		
Arthropoda	Diptera	Empididae	Empididae	Hemerodromia		
Arthropoda	Diptera	Empididae	Empididae	Oreogeton		
Arthropoda	Diptera	Ephydriidae	Ephydriidae	Ephydriidae		
Arthropoda	Diptera	Pelecorhynchidae	Pelecorhynchidae	Glutops		
Arthropoda	Diptera	Psychodidae	Psychodidae	Maruina		
Arthropoda	Diptera	Psychodidae	Psychodidae	Pericoma		
Arthropoda	Diptera	Ptychopteridae	Ptychopteridae	Ptychoptera		
Arthropoda	Diptera	Simuliidae	Simuliidae	Simulium		
Arthropoda	Diptera	Stratiomyidae	Stratiomyidae	Nemotelus		
Arthropoda	Diptera	Thaumaleidae	Thaumaleidae	Thaumalea		
Arthropoda	Diptera	Tipulidae	Tipulidae	Antocha		
Arthropoda	Diptera	Tipulidae	Tipulidae	Dicranota		
Arthropoda	Diptera	Tipulidae	Tipulidae	Hexatoma		
Arthropoda	Diptera	Tipulidae	Tipulidae	Limnophila		
Arthropoda	Diptera	Tipulidae	Tipulidae	Limonia		
Arthropoda	Diptera	Tipulidae	Tipulidae	Pedicia		
Arthropoda	Diptera	Tipulidae	Tipulidae	Pilaria		
Arthropoda	Diptera	Tipulidae	Tipulidae	Rhabdomastix		
Arthropoda	Diptera	Tipulidae	Tipulidae	Tipula		
Arthropoda	Diptera	Tipulidae	Tipulidae	Molophilus		
Arthropoda	Ephemeroptera	Ameletidae	Ameletidae	Ameletus		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Acentrella		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Baetis tricaudatus		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Centroptilium		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Dipheter hageni		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Pseudocloeon		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerellidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella delantala		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella coloradensis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella doddsi		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella grandis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella spinifera		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella inermis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Serratella tibialis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Timpanoga hecuba		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Heptageniidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygma		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygmula		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus albertae		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus grandis		

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus longimanus		EAST LAKE WASHINGTON 2058	12/08/2002
Arthropoda	Ephemeroptera	Heptageniidae	Ironodes		EAST LAKE WASHINGTON 2191	12/08/2002
Arthropoda	Ephemeroptera	Heptageniidae	Rhithrogena		EAST LAKE WASHINGTON 2272	12/09/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia		EAST LAKE WASHINGTON 2446	30/07/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia bicornuta		EAST LAKE WASHINGTON 2540	12/09/2002
Arthropoda	Megaloptera	Sialidae	Sialis		EAST LAKE WASHINGTON 2546	12/09/2002
Arthropoda	Odonata	Gomphidae	Gomphidae (early instar, pupa or damaged)		EAST LAKE WASHINGTON 2631/MAY 01	29/08/2002
Arthropoda	Plecoptera	Capniidae	Capniidae (early instar, pupa or damaged)		EVANS 4077/ BEAR 04	06/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Chloroperlidae (early instar, pupa or damaged)		EVANS CREEK 3474	03/09/2002
Arthropoda	Plecoptera	Chloroperlidae	Suwallia		EVANS CREEK 3555/ BEAR 06	15/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Kathroperla		EVANS CREEK 3637	15/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Paraperla		EVANS CREEK 3640	25/09/2002
Arthropoda	Plecoptera	Chloroperlidae	Sweltsa		EVANS CREEK 3642	25/09/2002
Arthropoda	Plecoptera	Leuctridae	Leuctridae (early instar, pupa or damaged)		EVANS CREEK 3642 REPLICATE	25/09/2002
Arthropoda	Plecoptera	Leuctridae	Despaxia augusta		EVANS CREEK 3813	15/08/2002
Arthropoda	Plecoptera	Leuctridae	Moselia infuscata		EVANS CREEK 3897/ BEAR 08	15/08/2002
Arthropoda	Plecoptera	Nemouridae	Nemouridae (early instar, pupa or damaged)		EVANS CREEK 4249/ BEAR 05	06/08/2002
Arthropoda	Plecoptera	Nemouridae	Malenka		ISSAQUAH 3958	27/08/2002
Arthropoda	Plecoptera	Nemouridae	Soyedina		ISSAQUAH 4294	18/09/2002
Arthropoda	Plecoptera	Nemouridae	Visoka cataractae		ISSAQUAH 4373	20/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada (early instar, pupa or damaged)		ISSAQUAH 4573	18/09/2002
Arthropoda	Plecoptera	Nemouridae	Zapada cinctipes		ISSAQUAH 4730/ ISSAQB	20/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada columbiana			
Arthropoda	Plecoptera	Nemouridae	Zapada frigida			
Arthropoda	Plecoptera	Nemouridae	Zapada Oregonensis Gr.			
Arthropoda	Plecoptera	Peltoperlidae	Yoraperla			
Arthropoda	Plecoptera	Perlidae	Perlidae (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Perlidae	Calineuria californica			
Arthropoda	Plecoptera	Perlidae	Doroneuria			
Arthropoda	Plecoptera	Perlidae	Hesperoperla pacifica			
Arthropoda	Plecoptera	Perlodidae	Perlodidae (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Perlodidae	Isoperla			
Arthropoda	Plecoptera	Perlodidae	Kogotus			
Arthropoda	Plecoptera	Perlodidae	Megarcys			
Arthropoda	Plecoptera	Perlodidae	Skwala			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcella (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcella badia			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys californica			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys princeps			
Arthropoda	Trichoptera	Apataniidae	Apatania			
Arthropoda	Trichoptera	Brachycentridae	Brachycentrus americanus			
Arthropoda	Trichoptera	Brachycentridae	Micrasema			
Arthropoda	Trichoptera	Glossosomatidae	Glossosomatidae (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Glossosomatidae	Agapetus			
Arthropoda	Trichoptera	Glossosomatidae	Anagapetus			
Arthropoda	Trichoptera	Glossosomatidae	Glossosoma			
Arthropoda	Trichoptera	Goeridae	Goera archaon			
Arthropoda	Trichoptera	Hydropsychidae	Hydropsychidae (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Hydropsychidae	Arctopsyche grandis			
Arthropoda	Trichoptera	Hydropsychidae	Cheumatopsyche			
Arthropoda	Trichoptera	Hydropsychidae	Hydropsyche			
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche aimota			
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche elsis			
Arthropoda	Trichoptera	Hydroptilidae	Hydroptila			
Arthropoda	Trichoptera	Lepidostomatidae	Lepidostoma			
Arthropoda	Trichoptera	Limnephilidae	Limnephilidae (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Limnephilidae	Cryptochia			
Arthropoda	Trichoptera	Limnephilidae	Dicosmoecus gilvipes			
Arthropoda	Trichoptera	Limnephilidae	Ecclisomyia			
Arthropoda	Trichoptera	Limnephilidae	Hydatophylax			
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus			
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus unicolor			
Arthropoda	Trichoptera	Limnephilidae	Psychoglypha			
Arthropoda	Trichoptera	Limnephilidae	Ecclisocosmoecus			
Arthropoda	Trichoptera	Philopotamidae	Wormaldia			
Arthropoda	Trichoptera	Polycentropodidae	Polycentropus			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila Angelita Gr.			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila arnaudi			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila Betteni Gr.			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila blarina			

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date																				
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Brunnea Gr.	EAST LAKE WASHINGTON 2058	12/09/2002																				
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Grandis Gr.	EAST LAKE WASHINGTON 2191	12/09/2002																				
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila malkini	EAST LAKE WASHINGTON 2272	12/09/2002																				
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila narvae	EAST LAKE WASHINGTON 2446	30/07/2002																				
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila valuma	EAST LAKE WASHINGTON 2540	12/09/2002																				
Arthropoda		Trichoptera	Uenoidae	Neophylax (early instar, pupa or damaged)	EAST LAKE WASHINGTON 2546	12/09/2002																				
Arthropoda		Trichoptera	Uenoidae	Neophylax occidentis	EAST LAKE WASHINGTON 2631/MAY 01	29/09/2002																				
Arthropoda		Trichoptera	Uenoidae	Neophylax rickeri	EVANS 4077/ BEAR 04	06/08/2002																				
Arthropoda		Trichoptera	Uenoidae	Neophylax splendens	EVANS CREEK 3474	03/09/2002																				
Arthropoda		Trichoptera	Uenoidae	Neothremma	EVANS CREEK 3555/ BEAR 06	15/08/2002																				
Arthropoda		Trichoptera	Uenoidae	Oligophlebodes	EVANS CREEK 3637	15/08/2002																				
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Moorebdella	EVANS CREEK 3640	25/09/2002																				
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Erpobdella	EVANS CREEK 3642	25/09/2002																				
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	EVANS CREEK 3642 REPLICATE	25/09/2002																				
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata	EVANS CREEK 3813	15/08/2002																				
Annelida	Hirudinea	Rhynchobdellida	Piscicolidae	Piscicola salmositica	EVANS CREEK 3897/ BEAR 08	15/08/2002																				
Annelida	Oligochaeta			Oligochaeta	EVANS CREEK 4249/ BEAR 05	06/08/2002																				
Arthropoda	Arachnida	Acariformes		Acari	ISSAQUAH 3858	27/08/2002																				
Arthropoda	Branchiopoda	Cladocera		Cladocera	ISSAQUAH 4294	18/09/2002																				
Arthropoda	Crustacea	Amphipoda	Crangonyctidae	Crangonyx	ISSAQUAH 4373	20/08/2002																				
Arthropoda	Crustacea	Amphipoda	Gammaridae	Gammarus	ISSAQUAH 4673	18/09/2002																				
Arthropoda	Crustacea	Copepoda		Copepoda	ISSAQUAH 4673	18/09/2002																				
Arthropoda	Crustacea	Decapoda		Pacifastacus	ISSAQUAH 4673	18/09/2002																				
Arthropoda	Crustacea	Isopoda	Asellidae	Caecidotea	ISSAQUAH 4673	18/09/2002																				
Arthropoda	Crustacea	Ostracoda		Ostracoda	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Ancylidae	Ferrissia	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Lymnaeidae	Fossaria	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Planorbidae	Gyraulus	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Pleuroceridae	Juga	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Physidae	Physidae	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Physidae	Physsa	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda		Pisidiidae	Pisidiidae	ISSAQUAH 4673	18/09/2002																				
Mollusca	Gastropoda	Mesogastropoda	Hydrobiidae	Potamopyrgus antipodarum	ISSAQUAH 4673	18/09/2002																				
Mollusca	Pelecypoda		Margaritiferidae	Margaritifera falcata	ISSAQUAH 4673	18/09/2002																				
Nematoda				Nematoda	ISSAQUAH 4673	18/09/2002																				
Nemertea				Prostoma	ISSAQUAH 4673	18/09/2002																				
Platyhelminthes				Turbellaria	ISSAQUAH 4673	18/09/2002																				
Coelenterata	Hydroida	Hydridae		Hydra	ISSAQUAH 4673	18/09/2002																				
<b>SITE TOTAL ABUNDANCE</b>					500	544	576	522	132	475	564	553	508	604	560	546	257	238	546	508	380	495	570	122	536	555

Phylum	Class	Order	Family	Final Identification	ISSAQUAH #730/ISSAQUAH REPLICATE	ISSAQUAH #735	ISSAQUAH #684	JENKINS 1318	JENKINS 1357	JENKINS 1388	LAKE SAMMAMISH TRIBS 3699	LAKE SAMMAMISH TRIBS 2827	LAKE SAMMAMISH TRIBS 2827 REPLICATE	LAKE SAMMAMISH TRIBS 3121	LAKE SAMMAMISH TRIBS 3121 REPLICATE	LAKE SAMMAMISH TRIBS 3540	LAKE SAMMAMISH TRIBS 3616	LAKE SAMMAMISH TRIBS 3679	LAKE SAMMAMISH TRIBS 3880	LAKE SAMMAMISH TRIBS LAK3627	LITTLE BEAR 2685	LITTLE BEAR 2602	LITTLE BEAR 2603	LITTLE BEAR 2682	LITTLE BEAR 2685	LITTLE BEAR 2692	LITTLE BEAR 2781			
				sample date																										
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Dytiscidae (early instar, pupa or damaged)																										
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Agabus																										
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Hydroporus																										
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Liodes																										
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Oreodytes						1	4									1										
Arthropoda	Coleoptera	Elmidae	Elmidae	Elmidae (early instar, pupa or damaged)			6	4	9		50						2	3	12			5	38					22		
Arthropoda	Coleoptera	Elmidae	Elmidae	Ampumixis dispar																										
Arthropoda	Coleoptera	Elmidae	Elmidae	Cleptelmis				2	66	1		1								1										
Arthropoda	Coleoptera	Elmidae	Elmidae	Heterlimnius	21	3	2				41																			
Arthropoda	Coleoptera	Elmidae	Elmidae	Lara avara																										
Arthropoda	Coleoptera	Elmidae	Elmidae	Narpus	5	2	1				11			2	2															
Arthropoda	Coleoptera	Elmidae	Elmidae	Optioservus				69	18	55	7	17	32																	
Arthropoda	Coleoptera	Elmidae	Elmidae	Zaitzevia			5				7								9											
Arthropoda	Coleoptera	Hydraenidae	Hydraenidae	Hydraena																										
Arthropoda	Coleoptera	Halplidae	Halplidae	Halplius						1																				
Arthropoda	Coleoptera	Halplidae	Halplidae	Brychius																										
Arthropoda	Coleoptera	Hydrophilidae	Hydrophilidae	Hydrophilidae (early instar, pupa or damaged)																										
Arthropoda	Coleoptera	Limnichidae	Limnichidae	Limnichidae																										
Arthropoda	Diptera	Blephariceridae	Blephariceridae	Blephariceridae (early instar, pupa or damaged)																										
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Ceratopogoninae	1	3	2	1		2	8	2	4						2	16			2							
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Forcipomyiinae	1															4										
Arthropoda	Diptera	Chironomidae	Chironomidae	Chironomidae	54	77	93	7	15	10	94	82	48	28	79	60	158	65	54	212	128	68	146	98	52	62	75			
Arthropoda	Diptera	Culicidae	Culicidae	Culicidae													2													
Arthropoda	Diptera	Dixidae	Dixidae	Dixia		2	5				1		1	2	1				1											
Arthropoda	Diptera	Dolichopodidae	Dolichopodidae	Dolichopodidae																										
Arthropoda	Diptera	Empididae	Empididae	Empididae (early instar, pupa or damaged)																										
Arthropoda	Diptera	Empididae	Empididae	Chelifera	1				2	1	30	3					9	7	3		21	1	12	4	3	3	1			
Arthropoda	Diptera	Empididae	Empididae	Clinocera																										
Arthropoda	Diptera	Empididae	Empididae	Hemerodromia																										
Arthropoda	Diptera	Empididae	Empididae	Oreogeton																	5									
Arthropoda	Diptera	Ephydriidae	Ephydriidae	Ephydriidae		1																								
Arthropoda	Diptera	Pelecornychidae	Pelecornychidae	Glutops	4		1				11																	2		
Arthropoda	Diptera	Psychodidae	Psychodidae	Maruina																										
Arthropoda	Diptera	Psychodidae	Psychodidae	Pericoma													1		1											
Arthropoda	Diptera	Ptychopteridae	Ptychopteridae	Ptychopteridae																										
Arthropoda	Diptera	Simuliidae	Simuliidae	Simulium	3	1	13	8	31	36	7	1		113	279	115	32	2	43	55	16	24	166			33	6			
Arthropoda	Diptera	Stratiomyidae	Stratiomyidae	Nemotelus																										
Arthropoda	Diptera	Thaumaleidae	Thaumaleidae	Thaumalea																										
Arthropoda	Diptera	Tipulidae	Tipulidae	Antocha	2																									
Arthropoda	Diptera	Tipulidae	Tipulidae	Dicranota	1	4	2		1	1	3	2	7			2				14		6	3	1		5	2			
Arthropoda	Diptera	Tipulidae	Tipulidae	Hexatoma		9																								
Arthropoda	Diptera	Tipulidae	Tipulidae	Limnophila																2			1							
Arthropoda	Diptera	Tipulidae	Tipulidae	Limonia																										
Arthropoda	Diptera	Tipulidae	Tipulidae	Pedicia																										
Arthropoda	Diptera	Tipulidae	Tipulidae	Pilaria																										
Arthropoda	Diptera	Tipulidae	Tipulidae	Rhabdomastix																										
Arthropoda	Diptera	Tipulidae	Tipulidae	Tipula										2	2	2	2				1									
Arthropoda	Diptera	Tipulidae	Tipulidae	Molophilus																										
Arthropoda	Ephemeroptera	Ameletidae	Ameletidae	Ameletus		7	1																							
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Acentrella																										
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Baetis tricaudatus	20	5	6		15	6	11	60	82	15	39	77	1	123	48	134	128	92	99	108	119	78	22			
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Centropilum																										
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Dipheter hageni	1	1		2	4		17		2					1	8			5			3	5	21			
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Pseudocloeon																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerellidae (early instar, pupa or damaged)																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella (early instar, pupa or damaged)			2																							
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella delantala																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella (early instar, pupa or damaged)																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella coloradensis																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella doddsi	68	7	47				1																1			
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella grandis																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella spinifera			12																							
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella (early instar, pupa or damaged)					2		1														10	23				
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella inermis																										
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Serratella tibialis	3			1	1													26	2				8	9		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Timpanoga hecuba							1										3			1				1		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Heptageniidae (early instar, pupa or damaged)	6		3		3		30									4		3								
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygma								2								2		3								
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygmula	1	9	27																							
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus (early instar, pupa or damaged)	6																14						1	1		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus albertae																										
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus grandis																										











Phylum	Class	Order	Family	Final Identification	sample date	SITE NAME	LOWER GREEN (E&W) 0325	LOWER GREEN 0406	LOWER GREEN 0751	LOWER GREEN 0753	LOWER GREEN 0788	MIDDLE GREEN 1374	MIDDLE GREEN 1495	MIDDLE GREEN 1537	MIDDLE GREEN 1704	MIDDLE GREEN 1744	MIDDLE GREEN 1744 DUPLICATE	MIDDLE GREEN 1817	MIDDLE GREEN 1958	MIDDLE GREEN 2426	MILL CREEK 0291	MILL CREEK 0340	MILL CREEK 0390	MILL CREEK 0390 DUPLICATE	MILL CREEK 0487	NEWAUKUM 1657	NEWAUKUM 1875	NEWAUKUM 1911	NEWAUKUM 2076	NEWAUKUM 2078	NEWAUKUM 2102	NEWAUKUM 2128	NEWAUKUM 2151	NEWAUKUM 2151 DUPLICATE	NORTH SWAMP BASIN 1370			
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Brunnea Gr.				1																														
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Grandis Gr.												1																						
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Hyalinata Gr.																																		
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila malkini																																		
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila narvae							2							7		19	1										1			2	1			
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila valuma						1	1																							1				
Arthropoda		Trichoptera	Uenoidae	Neophylax (early instar, pupa or damaged)										2		1																						
Arthropoda		Trichoptera	Uenoidae	Neophylax occidentis																																		
Arthropoda		Trichoptera	Uenoidae	Neophylax rickeri																																		
Arthropoda		Trichoptera	Uenoidae	Neophylax splendens										1					1																			
Arthropoda		Trichoptera	Uenoidae	Neothremma																16																		
Arthropoda		Trichoptera	Uenoidae	Oligophlebodes												2	2																					
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella			1																															
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Erpobdella																																		
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis			1																															
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata			1																															
Annelida	Hirudinea	Rhynchobdellida	Piscicolidae	Piscicola salmositica																																		
Annelida	Oligochaeta			Oligochaeta		123	74	22	3	44	50	77	15	121	41	93	15	152	17	57	58	47	20	2	14	6	4	19		9	7	13	13	30				
Arthropoda	Arachnida	Acariformes		Acari		1	18	3	8	8	1	4	16	3	7																							
Arthropoda	Branchiopoda	Cladocera		Cladocera																																		
Arthropoda	Crustacea	Amphipoda	Crangonyctidae	Crangonyx		3	225		32			6						4			3	1	1													25		
Arthropoda	Crustacea	Amphipoda	Gammaridae	Gammarus																																		
Arthropoda	Crustacea	Copepoda		Copepoda																																		
Arthropoda	Crustacea	Decapoda		Pacifastacus																																		
Arthropoda	Crustacea	Isopoda	Asellidae	Caecidotea			43		2									1																				
Arthropoda	Crustacea	Ostracoda		Ostracoda								1																										
Mollusca	Gastropoda		Ancylidae	Ferrissia		2																																
Mollusca	Gastropoda		Lymnaeidae	Fossaria					1																													
Mollusca	Gastropoda		Planorbidae	Gyraulus			11		12		2	100	2								2					2	5						1					
Mollusca	Gastropoda		Pleuroceridae	Juga																																		
Mollusca	Gastropoda		Physidae	Physidae					6						1							3																
Mollusca	Gastropoda		Physidae	Physa																																		
Mollusca	Gastropoda		Pisidiidae	Pisidiidae			3				4	49	2	8		3	23		1	7	1	3	1	3	6	50		432	3	2			1					
Mollusca	Gastropoda	Mesogastropoda	Hydrobiidae	Potamopyrgus antipodarum																																		
Mollusca	Pelecypoda		Margaritiferidae	Margaritifera falcata																																		
Nematoda				Nematoda		10		3		7	1	8	8	4	7		1	72	8	4	7		2	2	4	2	7		10		5	5	3	3				
Nemertea				Prostoma																																		
Platyhelminthes				Turbellaria								1	3	5		9	14		29	14	17	12				2							2	9	2			
Coelenterata	Hydroida	Hydridae		Hydra									1														1	1										
<b>SITE TOTAL ABUNDANCE</b>						513	607	666	520	133	500	578	500	567	490	533	357	506	518	519	634	550	537	569	573	504	501	528	574	557	547	550	545	554				

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Dytiscidae (early instar, pupa or damaged)	NORTH SWAMP CREEK 0001	16/09/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Agabus	NORTH SWAMP CREEKS 1100	16/08/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Hydroporus	NORTH SWAMP CREEKS 2028	06/08/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Liodessus	NORTH SWAMP CREEKS 2116	14/08/2002
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Oreodytes	SAMM RIVER TRIBES 0000	28/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Elmidae (early instar, pupa or damaged)	SAMM RIVER TRIBES 1914	05/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Ampumixis dispar	SAMM RIVER TRIBES 2674	05/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Cleptelmis	SAMM RIVER TRIBES 2855	05/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Heterlimnius	SAMM RIVER TRIBES 2862	28/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Lara avara	SAMM RIVER TRIBES 2865	28/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Narpus	SAMM RIVER TRIBES 2946	29/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Optioservus	SAMM RIVER TRIBES 2951	28/08/2002
Arthropoda	Coleoptera	Elmidae	Elmidae	Zaitzevia	SAMM RIVER TRIBES 3045	24/09/2002
Arthropoda	Coleoptera	Hydraenidae	Hydraena	Hydraena	REPLICATE	
Arthropoda	Coleoptera	Halplidae	Halplidae	Halplius	SAMM RIVER TRIBES 3047	05/08/2002
Arthropoda	Coleoptera	Halplidae	Halplidae	Brychius	SOOS 0943	06/08/2002
Arthropoda	Coleoptera	Hydrophilidae	Hydrophilidae	Hydrophilidae (early instar, pupa or damaged)	SOOS 1020	28/08/2002
Arthropoda	Coleoptera	Limnichidae	Limnichidae	Limnichidae	SOOS 1022	01/08/2002
Arthropoda	Diptera	Blephariceridae	Blephariceridae	Blephariceridae (early instar, pupa or damaged)	SOOS 1040/ SOOS 01	01/08/2002
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Ceratopogoninae	SOOS 1106	01/08/2002
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Forcipomyiinae	SOOS 1130/ SOOS 02	30/09/2002
Arthropoda	Diptera	Chironomidae	Chironomidae	Chironomidae	SOOS 1134	08/08/2002
Arthropoda	Diptera	Culicidae	Culicidae	Culicidae	SOOS 1144	02/08/2002
Arthropoda	Diptera	Dixidae	Dixidae	Dixa	SOOS 1209	28/08/2002
Arthropoda	Diptera	Dixidae	Dixidae	Dixella	SOOS 1283	08/08/2002
Arthropoda	Diptera	Dolichopodidae	Dolichopodidae	Dolichopodidae	WEST LAKE WASHINGTON 0622	07/08/2002
Arthropoda	Diptera	Empididae	Empididae	Empididae (early instar, pupa or damaged)		
Arthropoda	Diptera	Empididae	Empididae	Chellifera		
Arthropoda	Diptera	Empididae	Empididae	Clinocera		
Arthropoda	Diptera	Empididae	Empididae	Hemerodromia		
Arthropoda	Diptera	Empididae	Empididae	Oreogeton		
Arthropoda	Diptera	Ephydriidae	Ephydriidae	Ephydriidae		
Arthropoda	Diptera	Pelecorhynchidae	Pelecorhynchidae	Glutops		
Arthropoda	Diptera	Psychodidae	Psychodidae	Maruina		
Arthropoda	Diptera	Psychodidae	Psychodidae	Pericoma		
Arthropoda	Diptera	Ptychopteridae	Ptychopteridae	Ptychoptera		
Arthropoda	Diptera	Simuliidae	Simuliidae	Simulium		
Arthropoda	Diptera	Stratiomyidae	Stratiomyidae	Nemotelus		
Arthropoda	Diptera	Thaumaleidae	Thaumaleidae	Thaumalea		
Arthropoda	Diptera	Tipulidae	Tipulidae	Antocha		
Arthropoda	Diptera	Tipulidae	Tipulidae	Dicranota		
Arthropoda	Diptera	Tipulidae	Tipulidae	Hexatoma		
Arthropoda	Diptera	Tipulidae	Tipulidae	Limnophila		
Arthropoda	Diptera	Tipulidae	Tipulidae	Limonia		
Arthropoda	Diptera	Tipulidae	Tipulidae	Pedicia		
Arthropoda	Diptera	Tipulidae	Tipulidae	Pilaria		
Arthropoda	Diptera	Tipulidae	Tipulidae	Rhabdomastix		
Arthropoda	Diptera	Tipulidae	Tipulidae	Tipula		
Arthropoda	Diptera	Tipulidae	Tipulidae	Molophilus		
Arthropoda	Ephemeroptera	Ameletidae	Ameletidae	Ameletus		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Acentrella		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Baetis tricaudatus		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Centroptilium		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Dipheter hageni		
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Pseudocloeon		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerellidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella delantala		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella coloradensis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella doddsi		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella grandis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella spinifera		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella inermis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Serratella tibialis		
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Timpanoga hecuba		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Heptageniidae (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygma		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygmula		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus (early instar, pupa or damaged)		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus albertae		
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus grandis		

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus longimanus		NORTH SWAMP CREEK 0001	16/09/2002
Arthropoda	Ephemeroptera	Heptageniidae	Ironodes		NORTH SWAMP CREEKS 1100	16/08/2002
Arthropoda	Ephemeroptera	Heptageniidae	Rhithrogena		NORTH SWAMP CREEKS 2028	06/08/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia		NORTH SWAMP CREEKS 2116	14/08/2002
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia bicornuta		SAMM RIVER TRIBES 0000	28/08/2002
Arthropoda	Megaloptera	Sialidae	Sialis		SAMM RIVER TRIBES 1914	05/08/2002
Arthropoda	Odonata	Gomphidae	Gomphidae (early instar, pupa or damaged)		SAMM RIVER TRIBES 2674	05/08/2002
Arthropoda	Plecoptera	Capniidae	Capniidae (early instar, pupa or damaged)		SAMM RIVER TRIBES 2855	05/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Chloroperlidae (early instar, pupa or damaged)		SAMM RIVER TRIBES 2862	28/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Suwallia		SAMM RIVER TRIBES 2865	28/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Kathroperla		SAMM RIVER TRIBES 2946	29/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Paraperla		SAMM RIVER TRIBES 2951	28/08/2002
Arthropoda	Plecoptera	Chloroperlidae	Sweltsa		SAMM RIVER TRIBES 3045	24/09/2002
Arthropoda	Plecoptera	Leuctridae	Leuctridae (early instar, pupa or damaged)		SAMM RIVER TRIBES 3045	24/09/2002
Arthropoda	Plecoptera	Leuctridae	Despaxia augusta		SOOS 0943	06/08/2002
Arthropoda	Plecoptera	Leuctridae	Moselia infuscata		SOOS 1020	28/08/2002
Arthropoda	Plecoptera	Nemouridae	Nemouridae (early instar, pupa or damaged)		SOOS 1022	01/08/2002
Arthropoda	Plecoptera	Nemouridae	Malenka		SOOS 1040/ SOOS 01	01/08/2002
Arthropoda	Plecoptera	Nemouridae	Soyedina		SOOS 1106	01/08/2002
Arthropoda	Plecoptera	Nemouridae	Visoka cataractae		SOOS 1130/ SOOS 02	30/09/2002
Arthropoda	Plecoptera	Nemouridae	Zapada (early instar, pupa or damaged)		SOOS 1134	08/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada cinctipes		SOOS 1144	02/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada columbiana		SOOS 1209	28/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada frigida		SOOS 1283	08/08/2002
Arthropoda	Plecoptera	Nemouridae	Zapada Oregonensis Gr.		WEST LAKE WASHINGTON 0622	07/08/2002
Arthropoda	Plecoptera	Peltoperlidae	Yoraperla			
Arthropoda	Plecoptera	Perlidae	Perlidae (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Perlidae	Calineuria californica			
Arthropoda	Plecoptera	Perlidae	Doroneuria			
Arthropoda	Plecoptera	Perlidae	Hesperoperla pacifica			
Arthropoda	Plecoptera	Perlidae	Perlidae (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Perlidae	Isoperla			
Arthropoda	Plecoptera	Perlidae	Kogotus			
Arthropoda	Plecoptera	Perlidae	Megarcys			
Arthropoda	Plecoptera	Perlidae	Skwala			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcyella (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcyella badia			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys (early instar, pupa or damaged)			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys californica			
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys princeps			
Arthropoda	Trichoptera	Apataniidae	Apatania			
Arthropoda	Trichoptera	Brachycentridae	Brachycentrus americanus			
Arthropoda	Trichoptera	Brachycentridae	Micrasema			
Arthropoda	Trichoptera	Glossosomatidae	Glossosomatidae (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Glossosomatidae	Agapetus			
Arthropoda	Trichoptera	Glossosomatidae	Anagapetus			
Arthropoda	Trichoptera	Glossosomatidae	Glossosoma			
Arthropoda	Trichoptera	Goeridae	Goera archaon			
Arthropoda	Trichoptera	Hydropsychidae	Hydropsychidae (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Hydropsychidae	Arctopsyche grandis			
Arthropoda	Trichoptera	Hydropsychidae	Cheumatopsyche			
Arthropoda	Trichoptera	Hydropsychidae	Hydropsyche			
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche almota			
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche eisis			
Arthropoda	Trichoptera	Hydroptilidae	Hydroptila			
Arthropoda	Trichoptera	Lepidostomatidae	Lepidostoma			
Arthropoda	Trichoptera	Limnephilidae	Limnephilidae (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Limnephilidae	Cryptochia			
Arthropoda	Trichoptera	Limnephilidae	Dicosmoecus gilvipes			
Arthropoda	Trichoptera	Limnephilidae	Ecclisomyia			
Arthropoda	Trichoptera	Limnephilidae	Hydatophylax			
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus			
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus unicolor			
Arthropoda	Trichoptera	Limnephilidae	Psychoglypha			
Arthropoda	Trichoptera	Limnephilidae	Ecclisocmoecus			
Arthropoda	Trichoptera	Philopotamidae	Wormaldia			
Arthropoda	Trichoptera	Polycentropodidae	Polycentropus			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila (early instar, pupa or damaged)			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila Angelita Gr.			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila arnaudi			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila Betteni Gr.			
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila blarina			

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date																								
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Brunnea Gr.	NORTH SWAMP CREEK 0001	16/09/2002																								
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Grandis Gr.	NORTH SWAMP CREEKS 1100	16/08/2002																								
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila Hyalinata Gr.	NORTH SWAMP CREEKS 2028	06/08/2002																								
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila malkini	NORTH SWAMP CREEKS 2116	14/08/2002																								
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila narvae	SAMM RIVER TRIBS 0000	28/08/2002																								
Arthropoda		Trichoptera	Rhyacophilidae	Rhyacophila valuma	SAMM RIVER TRIBS 1914	05/08/2002																								
Arthropoda		Trichoptera	Uenoidae	Neophylax (early instar, pupa or damaged)	SAMM RIVER TRIBS 2674	05/08/2002																								
Arthropoda		Trichoptera	Uenoidae	Neophylax occidentis	SAMM RIVER TRIBS 2855	05/08/2002																								
Arthropoda		Trichoptera	Uenoidae	Neophylax rickeri	SAMM RIVER TRIBS 2862	28/08/2002																								
Arthropoda		Trichoptera	Uenoidae	Neophylax splendens	SAMM RIVER TRIBS 2865	28/08/2002																								
Arthropoda		Trichoptera	Uenoidae	Neothremma	SAMM RIVER TRIBS 2946	29/08/2002																								
Arthropoda		Trichoptera	Uenoidae	Oligophlebodes	SAMM RIVER TRIBS 2951	28/08/2002																								
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella	SAMM RIVER TRIBS 3045	24/09/2002																								
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Erpobdella	SAMM RIVER TRIBS 3045	24/09/2002																								
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	REPLICATE																									
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata	SAMM RIVER TRIBS 3047	05/08/2002																								
Annelida	Hirudinea	Rhynchobdellida	Piscicolidae	Piscicola salmositica	SOOS 0943	06/08/2002																								
Annelida	Oligochaeta			Oligochaeta	SOOS 1020	28/08/2002																								
Arthropoda	Arachnida	Acariformes		Acari	SOOS 1022	01/08/2002																								
Arthropoda	Branchiopoda	Cladocera		Cladocera	SOOS 1040/ SOOS 01	01/08/2002																								
Arthropoda	Crustacea	Amphipoda	Crangonyctidae	Crangonyx	SOOS 1106	01/08/2002																								
Arthropoda	Crustacea	Amphipoda	Gammaridae	Gammarus	SOOS 1130/ SOOS 02	30/09/2002																								
Arthropoda	Crustacea	Copepoda		Copepoda	SOOS 1134	08/08/2002																								
Arthropoda	Crustacea	Decapoda		Pacifastacus	SOOS 1144	02/08/2002																								
Arthropoda	Crustacea	Isopoda	Asellidae	Caecidotea	SOOS 1209	28/08/2002																								
Arthropoda	Crustacea	Ostracoda		Ostracoda	SOOS 1283	08/08/2002																								
Mollusca	Gastropoda		Ancylidae	Ferrissia	WEST LAKE WASHINGTON 0622	07/08/2002																								
Mollusca	Gastropoda		Lymnaeidae	Fossaria																										
Mollusca	Gastropoda		Planorbidae	Gyraulus																										
Mollusca	Gastropoda		Pleuroceridae	Juga																										
Mollusca	Gastropoda		Physidae	Physidae																										
Mollusca	Gastropoda		Physidae	Physa																										
Mollusca	Gastropoda		Pisidiidae	Pisidiidae																										
Mollusca	Gastropoda	Mesogastropoda	Hydrobiidae	Potamopyrgus antipodarum																										
Mollusca	Pelecypoda		Margaritiferidae	Margaritifera falcata																										
Nematoda				Nematoda																										
Nemertea				Prostoma																										
Platyhelminthes				Turbellaria																										
Coelenterata	Hydroida	Hydridae		Hydra																										
<b>SITE TOTAL ABUNDANCE</b>					286	580	504	561	574	263	501	564	406	74	546	556	353	509	224	547	527	503	540	591	548	547	534	575	551	535

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date								TAXA TOTAL ABUNDANCE	
						WEST LAKE WASHINGTON 0629	WEST LAKE WASHINGTON 0903	WEST LAKE WASHINGTON 0905	WEST LAKE WASHINGTON 1036	WEST LAKE WASHINGTON 1037	WEST LAKE WASHINGTON 1178	WEST LAKE WASHINGTON 1480	WEST LAKE WASHINGTON 1579		
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Dytiscidae (early instar, pupa or damaged)											9
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Agabus											2
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Hydroporus											3
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Liodessus											1
Arthropoda	Coleoptera	Dytiscidae	Dytiscidae	Oreodytes											16
Arthropoda	Coleoptera	Elmidae	Elmidae	Elmidae (early instar, pupa or damaged)											561
Arthropoda	Coleoptera	Elmidae	Elmidae	Ampumixis dispar											1
Arthropoda	Coleoptera	Elmidae	Elmidae	Cleptelmis						48					268
Arthropoda	Coleoptera	Elmidae	Elmidae	Heterlimnius											1179
Arthropoda	Coleoptera	Elmidae	Elmidae	Lara avara	12		3	1	2		2				169
Arthropoda	Coleoptera	Elmidae	Elmidae	Narpus		15	7				7				442
Arthropoda	Coleoptera	Elmidae	Elmidae	Optioservus											2291
Arthropoda	Coleoptera	Elmidae	Elmidae	Zaitzevia											99
Arthropoda	Coleoptera	Hydraenidae	Hydraenidae	Hydraena											9
Arthropoda	Coleoptera	Halipidae	Halipidae	Halipius											1
Arthropoda	Coleoptera	Halipidae	Halipidae	Brychius											9
Arthropoda	Coleoptera	Hydrophilidae	Hydrophilidae	Hydrophilidae (early instar, pupa or damaged)											4
Arthropoda	Coleoptera	Limnichidae	Limnichidae	Limnichidae											1
Arthropoda	Diptera	Blephariceridae	Blephariceridae	Blephariceridae (early instar, pupa or damaged)											27
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Ceratopogoninae	2	1									199
Arthropoda	Diptera	Ceratopogonidae	Ceratopogonidae	Forcipomyiinae											29
Arthropoda	Diptera	Chironomidae	Chironomidae	Chironomidae	51	83	52	49	51	10	81				14567
Arthropoda	Diptera	Culicidae	Culicidae	Culicidae											2
Arthropoda	Diptera	Dixidae	Dixidae	Dixa	4			3	2						148
Arthropoda	Diptera	Dixidae	Dixidae	Dixella											1
Arthropoda	Diptera	Dolichopodidae	Dolichopodidae	Dolichopodidae											1
Arthropoda	Diptera	Empididae	Empididae	Empididae (early instar, pupa or damaged)			1				1				15
Arthropoda	Diptera	Empididae	Empididae	Cheilifera					1		1				448
Arthropoda	Diptera	Empididae	Empididae	Clinocera											11
Arthropoda	Diptera	Empididae	Empididae	Hemerodromia											27
Arthropoda	Diptera	Empididae	Empididae	Oreogeton											2
Arthropoda	Diptera	Ephydriidae	Ephydriidae	Ephydriidae											25
Arthropoda	Diptera	Pelecorhynchidae	Pelecorhynchidae	Glutops				4							58
Arthropoda	Diptera	Psychodidae	Psychodidae	Maruina											2
Arthropoda	Diptera	Psychodidae	Psychodidae	Pericoma				2							139
Arthropoda	Diptera	Ptychopteridae	Ptychopteridae	Ptychoptera											19
Arthropoda	Diptera	Simuliidae	Simuliidae	Simulium	361	4	12	251	323	35	12				8141
Arthropoda	Diptera	Stratiomyidae	Stratiomyidae	Nemotelus											1
Arthropoda	Diptera	Thaumaleidae	Thaumaleidae	Thaumalea											4
Arthropoda	Diptera	Tipulidae	Tipulidae	Antocha		5									78
Arthropoda	Diptera	Tipulidae	Tipulidae	Dicranota	3	7		9	4		3				435
Arthropoda	Diptera	Tipulidae	Tipulidae	Hexatoma											24
Arthropoda	Diptera	Tipulidae	Tipulidae	Limnophila											18
Arthropoda	Diptera	Tipulidae	Tipulidae	Limonia										1	23
Arthropoda	Diptera	Tipulidae	Tipulidae	Pedicia											1
Arthropoda	Diptera	Tipulidae	Tipulidae	Pilaria											1
Arthropoda	Diptera	Tipulidae	Tipulidae	Rhabdomastix	1										4
Arthropoda	Diptera	Tipulidae	Tipulidae	Tipula											52
Arthropoda	Diptera	Tipulidae	Tipulidae	Molophilus											12
Arthropoda	Ephemeroptera	Ameletidae	Ameletidae	Ameletus											9
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Acentrella											190
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Baetis tricaudatus	34	79	36	5	13	159	41	39			9723
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Centropilum											1
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Dipheter hageni											481
Arthropoda	Ephemeroptera	Baetidae	Baetidae	Pseudocloeon											2
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerellidae (early instar, pupa or damaged)											9
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella (early instar, pupa or damaged)											80
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Attenella delantala											26
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella (early instar, pupa or damaged)											1
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella coloradensis											9
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella doddsi											416
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella grandis											34
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Drunella spinifera											17
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella (early instar, pupa or damaged)											105
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Ephemerella inermis											45
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Serratella tibialis		5	1								234
Arthropoda	Ephemeroptera	Ephemerellidae	Ephemerellidae	Timpanoga hecuba											10
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Heptageniidae (early instar, pupa or damaged)											172
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygma	5			7	9						195
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Cinygmula	2										558
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus (early instar, pupa or damaged)											9
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus albertae											32
Arthropoda	Ephemeroptera	Heptageniidae	Heptageniidae	Epeorus grandis											108

Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date								TAXA TOTAL ABUNDANCE	
						WEST LAKE WASHINGTON 0629	WEST LAKE WASHINGTON 0903	WEST LAKE WASHINGTON 0905	WEST LAKE WASHINGTON 1036	WEST LAKE WASHINGTON 1037	WEST LAKE WASHINGTON 1178	WEST LAKE WASHINGTON 1480	WEST LAKE WASHINGTON 1579		
Arthropoda	Ephemeroptera	Heptageniidae	Epeorus	longimanus											48
Arthropoda	Ephemeroptera	Heptageniidae	Ironodes		5										75
Arthropoda	Ephemeroptera	Heptageniidae	Rhithrogena												930
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia					20		14					1052
Arthropoda	Ephemeroptera	Leptophlebiidae	Paraleptophlebia	bicornuta											5
Arthropoda	Megaloptera	Sialidae	Sialis										1		9
Arthropoda	Odonata	Gomphidae	Gomphidae	(early instar, pupa or damaged)											4
Arthropoda	Plecoptera	Capniidae	Capniidae	(early instar, pupa or damaged)											1
Arthropoda	Plecoptera	Chloroperlidae	Chloroperlidae	(early instar, pupa or damaged)											2
Arthropoda	Plecoptera	Chloroperlidae	Suwallia												80
Arthropoda	Plecoptera	Chloroperlidae	Kathroperla												53
Arthropoda	Plecoptera	Chloroperlidae	Paraperla												14
Arthropoda	Plecoptera	Chloroperlidae	Sweltsa		31	6	1	8	8						3551
Arthropoda	Plecoptera	Leuctridae	Leuctridae	(early instar, pupa or damaged)											13
Arthropoda	Plecoptera	Leuctridae	Despaxia	augusta											63
Arthropoda	Plecoptera	Leuctridae	Moselia	infuscata											23
Arthropoda	Plecoptera	Nemouridae	Nemouridae	(early instar, pupa or damaged)											1
Arthropoda	Plecoptera	Nemouridae	Malenka			1		10	4						821
Arthropoda	Plecoptera	Nemouridae	Soyedina												1
Arthropoda	Plecoptera	Nemouridae	Visoka	cataractae											5
Arthropoda	Plecoptera	Nemouridae	Zapada	(early instar, pupa or damaged)											2
Arthropoda	Plecoptera	Nemouridae	Zapada	cinctipes	1	8	20	30	8	1					1655
Arthropoda	Plecoptera	Nemouridae	Zapada	columbiana											1
Arthropoda	Plecoptera	Nemouridae	Zapada	frigida											4
Arthropoda	Plecoptera	Nemouridae	Zapada	Oregonensis Gr.	3										81
Arthropoda	Plecoptera	Peltoperlidae	Yoraperla												160
Arthropoda	Plecoptera	Perlidae	Perlidae	(early instar, pupa or damaged)											74
Arthropoda	Plecoptera	Perlidae	Calineuria	californica											102
Arthropoda	Plecoptera	Perlidae	Doroneuria												74
Arthropoda	Plecoptera	Perlidae	Hesperoperla	pacifica											182
Arthropoda	Plecoptera	Perlidae	Perlidae	(early instar, pupa or damaged)		3	9								146
Arthropoda	Plecoptera	Perlidae	Isoperla												57
Arthropoda	Plecoptera	Perlidae	Kogotus												7
Arthropoda	Plecoptera	Perlidae	Megarocys												2
Arthropoda	Plecoptera	Perlidae	Skwala			9	14								547
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcella	(early instar, pupa or damaged)											41
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcella	badia											4
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys	(early instar, pupa or damaged)											5
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys	californica	3										37
Arthropoda	Plecoptera	Pteronarcyidae	Pteronarcys	princeps											12
Arthropoda	Trichoptera	Apataniidae	Apatania												7
Arthropoda	Trichoptera	Brachycentridae	Brachycentrus	americanus											178
Arthropoda	Trichoptera	Brachycentridae	Micrasema												295
Arthropoda	Trichoptera	Glossosomatidae	Glossosomatidae	(early instar, pupa or damaged)											20
Arthropoda	Trichoptera	Glossosomatidae	Agapetus												15
Arthropoda	Trichoptera	Glossosomatidae	Anagapetus												30
Arthropoda	Trichoptera	Glossosomatidae	Glossosoma		5	21	1	2							2398
Arthropoda	Trichoptera	Goeridae	Goera	archaon											1
Arthropoda	Trichoptera	Hydropsychidae	Hydropsychidae	(early instar, pupa or damaged)											171
Arthropoda	Trichoptera	Hydropsychidae	Arctopsyche	grandis											41
Arthropoda	Trichoptera	Hydropsychidae	Cheumatopsyche												46
Arthropoda	Trichoptera	Hydropsychidae	Hydropsyche			35	238								3554
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche	(early instar, pupa or damaged)											11
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche	almota	18	1		15	1						246
Arthropoda	Trichoptera	Hydropsychidae	Parapsyche	eisis											119
Arthropoda	Trichoptera	Hydroptilidae	Hydroptila												153
Arthropoda	Trichoptera	Lepidostomatidae	Lepidostoma												75
Arthropoda	Trichoptera	Limnephilidae	Limnephilidae	(early instar, pupa or damaged)											28
Arthropoda	Trichoptera	Limnephilidae	Cryptochia												3
Arthropoda	Trichoptera	Limnephilidae	Dicosmoecus	gilvipes											21
Arthropoda	Trichoptera	Limnephilidae	Ecclisomyia												6
Arthropoda	Trichoptera	Limnephilidae	Hydatophylax												3
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus												4
Arthropoda	Trichoptera	Limnephilidae	Onocosmoecus	unicolor											4
Arthropoda	Trichoptera	Limnephilidae	Psychoglypha												2
Arthropoda	Trichoptera	Limnephilidae	Ecclisocosoecus		1										1
Arthropoda	Trichoptera	Philopotamidae	Wormaldia					3	3						267
Arthropoda	Trichoptera	Polycentropodidae	Polycentropus												1
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila	(early instar, pupa or damaged)	2										93
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila	Angelita Gr.											8
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila	arnaudi											37
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila	Betteni Gr.	6			1	4						372
Arthropoda	Trichoptera	Rhyacophilidae	Rhyacophila	blarina											252



Phylum	Class	Order	Family	Final Identification	SITE NAME	sample date								TAXA TOTAL ABUNDANCE		
						WEST LAKE WASHINGTON 0629	WEST LAKE WASHINGTON 0903	WEST LAKE WASHINGTON 0905	WEST LAKE WASHINGTON 1036	WEST LAKE WASHINGTON 1037	WEST LAKE WASHINGTON 1178	WEST LAKE WASHINGTON 1480	WEST LAKE WASHINGTON 1579			
Arthropoda		Trichoptera	Rhyacophiliidae	Rhyacophila Brunnea Gr.		2										243
Arthropoda		Trichoptera	Rhyacophiliidae	Rhyacophila Grandis Gr.		1								1		8
Arthropoda		Trichoptera	Rhyacophiliidae	Rhyacophila Hyalinata Gr.												20
Arthropoda		Trichoptera	Rhyacophiliidae	Rhyacophila malkini												3
Arthropoda		Trichoptera	Rhyacophiliidae	Rhyacophila narvae												209
Arthropoda		Trichoptera	Rhyacophiliidae	Rhyacophila valuma												34
Arthropoda		Trichoptera	Uenoidae	Neophylax (early instar, pupa or damaged)		1										22
Arthropoda		Trichoptera	Uenoidae	Neophylax occidentis												1
Arthropoda		Trichoptera	Uenoidae	Neophylax rickeri												57
Arthropoda		Trichoptera	Uenoidae	Neophylax splendens												34
Arthropoda		Trichoptera	Uenoidae	Neothremma												25
Arthropoda		Trichoptera	Uenoidae	Oligophlebodes												114
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella												8
Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Erpobdella												21
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis					1							13
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata												5
Annelida	Hirudinea	Rhynchobdellida	Piscicolidae	Piscicola salmositica												6
Annelida	Oligochaeta			Oligochaeta		4	35	17	6	13	26	285	41			9379
Arthropoda	Arachnida	Acariformes		Acari			3	3	16	7	1					1007
Arthropoda	Branchiopoda	Cladocera		Cladocera												27
Arthropoda	Crustacea	Amphipoda	Crangonyctidae	Crangonyx			15	81	139	9	127	32	1			1577
Arthropoda	Crustacea	Amphipoda	Gammaridae	Gammarus												821
Arthropoda	Crustacea	Copepoda		Copepoda												13
Arthropoda	Crustacea	Decapoda		Pacifastacus												9
Arthropoda	Crustacea	Isopoda	Asellidae	Caecidotea					2							260
Arthropoda	Crustacea	Ostracoda		Ostracoda												26
Mollusca	Gastropoda		Ancylidae	Ferrissia												32
Mollusca	Gastropoda		Lymnaeidae	Fossaria												19
Mollusca	Gastropoda		Planorbidae	Gyraulus		1	1			11						236
Mollusca	Gastropoda		Pleuroceridae	Juga												666
Mollusca	Gastropoda		Physidae	Physidae												326
Mollusca	Gastropoda		Physidae	Physa												1
Mollusca	Gastropoda		Pisidiidae	Pisidiidae		3	1		6	3	1		2			1504
Mollusca	Gastropoda	Mesogastropoda	Hydrobiidae	Potamopyrgus antipodarum										2		76
Mollusca	Pelecypoda		Margaritiferidae	Margaritifera falcata												2
Nematoda				Nematoda		1	7		15	1	12	1	7			1151
Nemertea				Prostoma												51
Platyhelminthes				Turbellaria		10				33	46	29	47			597
Coelenterata	Hydroida	Hydridae		Hydra					10							30
<b>SITE TOTAL ABUNDANCE</b>						573	347	519	595	572	426	491	138			79084