Benthic Invertebrates and Sediments in Vegetated and Nonvegetated Habitats at Three Intertidal Areas of the Columbia River Estuary, 1992

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by George T. McCabe, Jr. and Susan A. Hinton,

August 1993



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George T. McCabe, Jr. and Susan A. Hinton

Report of Research

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INTRODUCTION

The physical characteristics of the Columbia River estuary have been altered considerably by man during the last century. Major changes in the estuary were caused by such activities as jetty and pile-dike construction, diking of swamps and marshes, dam construction and operation, dredging, filling, and island construction (Sherwood et al. 1990). Deepening and maintenance of the navigation channel in the estuary have resulted in the creation of islands, including Miller Sands, Jim Crow Sands, and Rice Island.

Miller Sands, Jim Crow Sands, and Rice Island were created from material dredged from the navigation channel and are located in the same general area of the Columbia River estuary; however, the intertidal areas of these islands have undergone different degrees of wetland development, ranging from well developed (Miller Sands) to no development (Rice Island). Jim Crow Sands has intermediate wetland development. In 1992, the U.S. Army Corps of Engineers (COE) initiated a study to determine why the range in wetland development occurred at the three islands.

The COE proposed five research objectives to study the variations in wetland development at the three islands. The objectives included: 1) determination of topographic elevations, 2) mapping of plant species, 3) comparisons of wetland elevations to fluctuating water levels caused by daily tidal and seasonal river-flow changes, 4) sediment analyses for vegetated and nonvegetated intertidal sites, and 5) descriptions of benthic invertebrate communities at vegetated and nonvegetated intertidal sites. In mid-1992, the National Marine Fisheries Service (NMFS) agreed to cooperate with the COE to complete Objectives 4 and 5 at Miller Sands, Jim Crow Sands, and a remnant intertidal marsh in Grays Bay, which is adjacent to Rice Island.

METHODS

Sampling

Benthic samples were collected at Miller Sands, Jim Crow Sands, and the remnant intertidal marsh in Grays Bay in July and September 1992 (Fig. 1). At each area, two stations in intertidal vegetated habitats and two stations in adjacent nonvegetated habitats were sampled. The geographic locations of all stations were determined using the Global Positioning System (Appendix Table 1). At each station, 11 samples were collected using a PVC coring device (Fig. 2). The coring device had an inside diameter of 3.85 cm, a penetrating depth of 15 cm, and collected a 174.6-cm³ sample. Ten of the samples collected at each station were used to determine species composition and abundance of benthic invertebrates; one sample was used by the COE to characterize the sediment. Each benthic invertebrate sample was preserved in a buffered formaldehyde solution (\geq 4%) containing rose bengal, an organic stain. In the laboratory, samples were washed with water through a 0.5-mm screen. All organisms were sorted from the residue, identified to the lowest practical taxon, counted, and stored in 70% ethanol. The eleventh sample was placed in a labeled plastic bag and refrigerated for later analysis of grain size, percent silt/clay, and percent volatile solids by the COE North Pacific Division Materials Laboratory, Troutdale, Oregon.

Data Analyses

Benthic invertebrate data were analyzed by station to determine species composition and densities (both total and by species). Benthic invertebrate densities were compared between vegetated and nonvegetated habitats, between months, and between areas using three-way analysis of variance (ANOVA) (Minitab Inc. 1991). Two-way ANOVA was used



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Figure 1.--Benthic invertebrate and sediment sampling stations in three wetland areas in the Columbia River estuary, July and September 1992. Odd-numbered stations were vegetated habitats and even-numbered stations were nonvegetated.

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Figure 2.--PVC coring device used to collect benthic invertebrate and sediment samples in three wetland areas in the Columbia River estuary, July and September 1992.

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to compare densities when three-way ANOVA could not be used due to significant interaction between factors. Data were transformed to \log_{10} of (mean number of organisms/m²) prior to running ANOVA. Densities of the amphipod <u>Corophium salmonis</u> were transformed to \log_{10} of [(mean number of organisms + 1)/m²] prior to analysis. One was added to the densities because of some zero values (Sokal and Rohlf 1969). Means of the 10 samples from each station provided the basic data entries for the statistical tests. When ANOVA results were significant (P < 0.05) for area, Fisher's protected least significant difference (FPLSD) (Petersen 1985) was used to identify significant differences between areas.

Median grain size (mm), percent silt/clay, and percent volatile solids were determined for each station. Three-way ANOVA was used to compare each of these sediment characteristics between areas, between months, and between vegetated and nonvegetated habitats. When ANOVA results were significant (P < 0.05) for area, FPLSD was used to identify significant differences between areas. Percent silt/clay values were transformed to log_{10} value prior to running ANOVA.

RESULTS

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Benthic Invertebrates

Similar numbers of taxa or invertebrate categories were identified in samples collected at the three wetlands, with 31 in July and 36 in September (Appendix Table 2). The number of taxa or invertebrate categories collected at individual stations ranged from 6 at Station M1 (Miller Sands, vegetated) in July, to 22 at Station M3 (Miller Sands, vegetated) in September (Fig. 1; Table 1).

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Station ^a	Number of taxa or categories	Number /m ²	Standard deviation	
		JULY		
M1	6	15,290	6,929	
M3	17_	36,335	20,068	
M2	9	55,749	23,985	
M4	12	48,103	26,949	
J9	9	73,014	58,938	
J11	14	75,162	40,674	
J10	9	21,904	6,495	
J12	7	68,290	24,008	
G5	11	35,820	18,601	
G7	8	37,280	20,481	
G6	9	21,389	8,234	
G8	8	19,327	5,497	
		September		
M1	18	53,687	13,098	
M3	22	59,958	10,856	
M2	14	84,353	26,688	
M4	19	45,183	20,117	
J9	14	46,643	24,256	
J11	21	155,993	43,184	
J10	8	38,655	7,244	
J12	16	140,789	38,384	
G5	14	76,364	18,699	
G7	9	44,858	31,770	
G6	10	89,163	15,993	
G8	13	100,845	17,441	

Table 1.--Summary of benthic invertebrate collections at Miller Sands, Jim Crow Sands, and Grays Bay, Columbia River estuary, July and September 1992. Odd-numbered stations were vegetated habitats and even-numbered stations were nonvegetated.

^a The letter in the station name denotes the area: M = Miller Sands, J = Jim Crow Sands, and G = Grays Bay. NOTAL

Major benthic invertebrates collected at Miller Sands included oligochaetes; bivalves, particularly <u>Corbicula fluminea</u> and <u>Pisidium</u> spp.; ostracods; amphipods, particularly <u>Corophium salmonis</u> and <u>Hyalella azteca</u>; chironomid larvae and pupae; and invertebrate eggs (Table 2; Appendix Table 3). Major benthic invertebrates at Jim Crow Sands included the polychaete <u>Neanthes limnicola</u>; oligochaetes; the gastropod <u>Lithoglyphus</u> <u>virens</u>; bivalves, particularly <u>Corbicula fluminea</u> and <u>Pisidium</u> spp.; ostracods; the amphipod <u>Hyalella azteca</u>; chironomid larvae and pupae; and invertebrate eggs. At Grays Bay, the polychaete <u>Neanthes limnicola</u>; oligochaetes; the bivalve <u>Corbicula fluminea</u>; the amphipod <u>Corophium salmonis</u>; harpacticoid copepods; chironomid larvae; and invertebrate eggs were the dominant forms.

At all three wetlands, benthic invertebrate densities at individual stations were high, with all values exceeding 15,000 organisms/m² (Table 1). Benthic invertebrate densities at Stations G8, J11, and J12 in September exceeded 100,000 organisms/m². Benthic invertebrate densities (total) were significantly higher in September than in July (ANOVA, P < 0.05); however, there were no significant differences between the three wetlands or between vegetated and nonvegetated habitats (P > 0.05). Densities of <u>C</u>. <u>salmonis</u> were significantly higher in September than in July and significantly higher in nonvegetated habitats than in vegetated habitats. In addition, <u>C. salmonis</u> densities were significantly higher in the Grays Bay wetland than in either the Miller Sands or Jim Crow Sands wetlands (ANOVA, FPLSD; P < 0.05) (Table 2).

Oligochaete densities were not significantly different between months. Overall statistical comparisons of oligochaete densities by area and habitat type (vegetated vs. nonvegetated) could not be done because of significant interaction (P < 0.05) between these two factors. If habitat type is excluded as a factor in ANOVA (i.e., two-way ANOVA is used), then oligochaete densities at Jim Crow Sands were significantly higher than

Taxon/category	Jul	-У	Septer	mber
	Number/m ^{2a}	SD ^b	Number/m ²	SD
	MILLER SAND	S, vegetated		
Oligochaeta	11,940	6,786	25,813	8,270
<u>Corbicula</u> <u>fluminea</u>	1,160	936	1,288	1,262
Pisidium spp.	86	264	1,117	3,092
Ostracoda	6,271	5,853	5,755	7,499
<u>Hyalella azteca</u>	2,019	3,405	8,289	11,985
Chironomidae larvae	3,006	4,393	8,890	4,582
Invertebrate eggs	0	0	1,976	2,871
Total	25,813	18,167	56,822	12,142
	MILLER SANDS,	nonvegetate	d	
Oligochaeta	31,224	19,483	35,906	28,084
Corbicula fluminea	644	876	2,148	1,166
Pisidium spp.	902	1,838	2,964	3,441
Ostracoda	4,853	4,174	1,976	2,760
<u>Corophium salmonis</u>	215	960	2,104	2,956
Chironomidae larvae	12,112	12,224	16,664	13,646
Chironomidae pupae	258	404	1,246	1,379
Total	51,926	25,137	64,768	30,542
	JIM CROW SAN	DS, vegetated	1	
Oligochaeta	56,307	48,528	60,688	42,794
Lithoglyphus virens	0	0	1,933	1,888
Corbicula fluminea	2,706	2,543	2,233	1,348
Ostracoda	8,461	5,050	1,503	1,948
Hvalella azteca	43	192	10,866	17,706
Chironomidae larvae	4,810	3,965	17,480	18,329
Chironomidae pupae	43	192	1,503	1,908
Total	74,088	49,298	101,318	65,641
	JIM CROW SAND	S, nonvegetat	ed	
Neanthes limnicola	558	936	1,074	1,178
Oligochaeta	34.961	24,476	57.338	46,764
Corbicula fluminea	773	617	2,620	1,816
Pisidium spp.	0	0	2,319	3,482
Ostracoda	2.706	3,069	1.761	2,113
Chironomidae larvae	5.025	4,972	14.946	20,090
Chironomidae pupae	258	62.9	1.203	2,056
Invertebrate eggs	0	0	7,301	8,340
Total	45,097	29.312	89.722	58,888

Table 2.--Densities (mean numbers/m²) of major benthic invertebrate taxa or categories collected in vegetated and nonvegetated habitats at Miller Sands, Jim Crow Sands, and Grays Bay, Columbia River estuary, July and September 1992. Less abundant taxa are included in totals, but are not listed individually.

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Table 2.--Continued.

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Taxon/category	Ju	ly	September		
	Number/m ²	SD	Number/m ²	SD	
	GRAYS BAY	, vegetated		<u> </u>	
Oligochaeta	25,082	18,441	39,830	13,296	
<u>Corophium salmonis</u>	215	472	15,778	15,720	
Harpacticoida	8,332	8,421	136	431	
Chironomidae larvae	773	1,574	1,628	2,141	
Invertebrate eggs	0	0	2,667	2,234	
Total	36,550	19,056	61,440	29,743	
	GRAYS BAY,	nonvegetated			
Neanthes limnicola	4,252	2,323	1,203	705	
Oligochaeta	5,712	3,181	4,510	2,046	
Corbicula fluminea	1,546	1,169	1,117	1,009	
Corophium salmonis	7,516	3,457	79,800	13,599	
Invertebrate eggs	0	0	5,884	4,266	
Total	20,358	6,895	95,004	17,354	

^a For each habitat type (vegetated or nonvegetated) within an area, a mean was calculated by averaging all replicates collected in that habitat.
 ^b Standard deviation.

densities at Grays Bay; however, there were no significant differences in oligochaete densities between Miller Sands and Jim Crow Sands or between Miller Sands and Grays Bay. There were no significant differences in densities of insects (all taxa combined) between months or habitat types. Insect densities (primarily chironomids) were significantly higher at the Miller Sands and Jim Crow Sands wetlands than at the Grays Bay wetland.

Sediments

Median grain size was not significantly different between months or between vegetated and nonvegetated habitats (ANOVA; P > 0.05); however, it was significantly different between areas (ANOVA, FPLSD; P < 0.05) (Table 3). Median grain size was significantly larger at Grays Bay than at Miller Sands and Jim Crow Sands (P < 0.05). In addition, median grain size was significantly larger at Miller Sands than at Jim Crow Sands (P < 0.05). Combining data for July and September, median grain sizes averaged 0.1302 mm at Grays Bay, 0.1099 mm at Miller Sands, and 0.0722 mm at Jim Crow Sands.

Percent silt/clay was not significantly different between July and September (P > 0.05); however, percent silt/clay was significantly higher in vegetated habitats than in nonvegetated habitats (P < 0.05). Percent silt/clay was significantly higher at Jim Crow Sands than at Grays Bay, but there were no significant differences between Miller Sands and Jim Crow Sands or between Miller Sands and Grays Bay. Combining data for July and September, percent silt/clay averaged 24.6% at Jim Crow Sands, 15.5% at Miller Sands, and 10.6% at Grays Bay.

Percent volatile solids were significantly higher in September than in July (P < 0.05). There were no significant differences in percent volatile solids between areas

		JULY			SEPTEME	TEMBER	
Station ^a	Median grain size (mm)	Silt/ clay(%)	Volatile solids(%)	Median grain size (mm)	Silt/ clay(%)	Volatile solids(%)	
M1	0.1088	17.3	1.2	0.1166	15.2	1.1	
MЗ	0.1436	8.5	0.6	0.0883	15.4	1.7	
M2	0.1166	11.1	0.9	0.0947	23.3	1.5	
M4	0.1436	8.2	1.1	0.0670	25.3	1.7	
J9	0.0718	21.7	1.0	0.0670	33.8	2.2	
J11	0.0508	47.4	1.5	0.0583	38.0	1.6	
J10	0.0947	6.1	1.1	0.0883	7.3	1.5	
J12	0.0583	27.5	1.1	0.0883	14.6	1.6	
G5	0.1539	7.0	1.0	0.1166	16.7	1.6	
G7	0.1088	17.7	1.6	0.1166	18.3	1.9	
G6	0.1339	6.6	1.0	0.1250	8.1	1.1	
G8	0.1436	5.2	0.7	0.1436	5.0	1.2	

Table 3.--Sediment characteristics at Miller Sands, Jim Crow Sands, and Grays Bay, Columbia River estuary, July and September 1992. Odd-numbered stations were vegetated habitats and even-numbered stations were nonvegetated.

^a The letter in the station name denotes the area: M = Miller Sands, J = Jim Crow Sands, and G = Grays Bay. or between vegetated and nonvegetated habitats (P > 0.05). Combining data for July and September, percent volatile solids averaged 1.2% at Miller Sands, 1.4% at Jim Crow Sands, and 1.3% at Grays Bay.

DISCUSSION

Results from this study strongly suggest that both vegetated and nonvegetated habitats in wetlands at Miller Sands, Jim Crow Sands, and Grays Bay have high standing crops of benthic invertebrates in July and September. Benthic invertebrate densities at individual stations frequently exceeded 35,000 organisms/m². Benthic invertebrate densities in the three wetlands were much higher than densities in a deeper (8-13 m), higher water-velocity area between Miller Sands and Jim Crow Sands (NMFS unpublished data). In July 1992, mean benthic invertebrate densities at individual stations in the deeper area were less than 5,400 organisms/m². However, in September 1992, mean benthic invertebrate densities at individual stations in the deeper area were less than 36,200 organisms/m², but in all three wetlands were greater than 38,000 organisms/m². Mean benthic invertebrate densities at Miller Sands in both vegetated and nonvegetated wetland habitats were higher in July and September 1992 than those reported for nine nonvegetated intertidal stations sampled at Miller Sands in July and September 1991 (Hinton et al. 1992). Densities in July and September 1991 averaged 20.125 organisms/m² and 23,481 organisms/m², respectively. In the present study, mean benthic invertebrate densities in all sampled habitats at Miller Sands in July and September 1992 were greater than 25,800 organisms/m² (Table 2). At the Grays Bay wetland, mean benthic invertebrate densities were higher than those reported for 25 stations located in nonvegetated intertidal and shallow subtidal areas adjacent to Rice Island (Hinton et al. 1992). In July and September 1991, benthic invertebrate densities

at the 25 stations averaged 12,833 organisms/m² and 35,915 organisms/m², respectively. At the Grays Bay wetland in 1992, benthic invertebrate densities in the nonvegetated habitat averaged 20,358 organisms/m² in July and 95,004 organisms/m² in September.

Significantly higher benthic invertebrate densities in September than in July suggest that recruitment occurred. For example, there was a large increase in <u>C</u>. <u>salmonis</u> numbers between July and September. At Grays Bay, densities of <u>C</u>. <u>salmonis</u> in the nonvegetated habitat increased from 7,516 organisms/m² in July to 79,800 organisms/m² in September. In the vegetated habitat at Grays Bay, <u>C</u>. <u>salmonis</u> densities increased from 215 organisms/m² in July to 15,778 organisms/m² in September. Holton et al. (1984) observed that <u>C</u>. <u>salmonis</u> densities were lowest in Grays Bay at the end of July, with subsequent increases in August and September. They attributed the increases in August and September to the fall generation of juveniles. Holton et al. (1984) reported <u>C</u>. <u>salmonis</u> densities ranging from 4,122 organisms/m² in late July 1981 to 31,754 organisms/m² in February 1981.

Both vegetated and nonvegetated habitats of the wetlands are ecologically important to the estuary. In addition to supporting high densities of benthic invertebrates, vegetated habitats produce "macrodetritus," an important food resource for <u>C. salmonis</u> (Sherwood et al. 1990). Nonvegetated habitats of the estuary have the highest standing crops of <u>C. salmonis</u>, an important prey for fishes in the estuary, including juvenile salmonids (McCabe et al. 1983, 1986). Both of these habitat types are ecologically important and must be protected.

This study represents a temporally and spatially limited description of the vegetated and nonvegetated wetland habitats at Miller Sands, Jim Crow Sands, and Grays Bay. To better describe these habitats at the three areas, additional benchic sampling should be

conducted. The number of sampling stations at each area should be increased and sampling should be done at least quarterly.

This report does not constitute NMFS's formal comments under the Fish and Wildlife Coordination Act or the National Environmental Policy Act.

ACKNOWLEDGMENTS

We thank Geoff Dorsey for assistance in collecting benthic samples, and Sheila Turner for sorting and identifying benthic invertebrates. The COE, Portland District provided the sediment analyses. Also, we thank Benjamin Sandford for his advice regarding statistical analyses of the data.

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Station ^a	Vegetated (V) Nonvegetated (NV)	Latitude	Longitude
M1	V	46°14.789	123°39.545
M3	v	46°15.180	123°39.209
M2	NV	46°14.811	123°39.550
M4	NV	46°15.102	123°39.226
J9	v	46°14.922	123°35.061
J11	v	46°14.918	123°34.874
J10	NV	46°14.885	123°35.096
J12	NV	46°14.874	123°34.807
G5	v	46°16.618	123°41.777
G7	v	46°16.596	123°41.701
G6	NV	46°16.590	123°41.806
G8	NV	46°16.589	123°41.708

Appendix Table 1.--Station locations at Miller Sands, Jim Crow Sands, and Grays Bay, Columbia River estuary, July and September 1992.

^a The letter in the station name denotes the area: M = Miller Sands, J = Jim Crow Sands, and G = Grays Bay. ٩

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Taxon/category	July	September
<u>Hydra</u> spp.	······································	x
Nemertea	x	x
Nematomorpha	x	
Polychaeta		
Neanthes limnicola	x	x
·		
Oligochaeta	x	x
Hirudinea	x	x
Gastropoda	¥	x
Planorbidae	x	x
Physa spp.		x
Lithoglyphus virens	x	x
Rivalvia		¥
Corbicula fluminea	x	×
Pisidium spp.	x	x
Ostracoda	x	x
Amphipoda		x
Hyalella azteca	· x	x
Corophium salmonis	x	x
Corophium spinicorne		x
<u>Pontoporeia hoyi</u>	x	x
Copepoda		
Harpacticoida	x ·	x
Insecta	· x	x
Corixidae	x	x
Diptera	x	
Diptera larvae	x	
Diptera pupae	x	
Culicidae adult	x	
Chironomidae		
Chironomidae larvae	x	x
Chironomidae pupae	x	X
Chironomidae adult		x
Ceratopogonidae larvae	X	X
Dollchopoglaae larvae	×	X V
Trichoptera larvae	A V	A V
Jaranjes suu IIICHODICETS ISINGE	A	A X
<u>Aurarrea</u> opp.		x
Coleoptera larvae	x	 X
Ephemeroptera larvae		x
Collembola	x	x
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Appendix Table 2.--Invertebrate taxa collected at Miller Sands, Jim Crow Sands, and Grays Bay, Columbia River estuary, July and September 1992.

Taxon/category	July	September	Ċ
Hydracarina Invertebrate eggs	x	x x	
Total number of taxa/categories	31	36	Ċ

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Appendix Table 3.--Summaries of benthic invertebrate surveys (by station) conducted in July and September 1992 in vegetated and nonvegetated habitats at Miller Sands, Jim Crow Sands, and Grays Bay, Columbia River estuary. Odd-numbered stations were vegetated habitats and even-numbered stations were nonvegetated.

Station: Ml	Date:	16	Jul 92		Sample si	.ze: 10
Taxon/category			Total number	Frequency occurrer (१)	y of Mean nce number /m ²	Standard deviation /m ²
Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Chironomidae larvae Chironomidae pupae			2 121 13 34 7 1	10.0 100.0 80.0 80.0 60.0 10.0	171.8 10,393.8 1,116.7 2,920.6 601.3 85.9	543.3 6,200.2 707.2 2,469.8 579.8 271.6
Number of taxa/categor	ies:	6				
Mean number/sample:	17.8		Stan	dard devia	ation/sample	8.1
Mean number/m ² : 15,2	90.0		Stan	dard devia	ation: 6,9	928.9
Station: M2	Date:	16	Jul 92		Sample si	.ze: 10
Taxon/category			Total number	Frequency occurrer (%)	y of Mean nce number /m ²	Standard deviation /m ²
Nematomorpha <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Hyalella azteca</u> Chironomidae larvae Chironomidae pupae Hydracarina			8 16 502 2 36 1 80 3 1	30.0 100.0 20.0 90.0 10.0 100.0 30.0 10.0	687.2 1,374.4 43,121.3 171.8 3,092.4 85.9 6,871.9 257.7 85.9	1,201.2 600.6 20,374.9 362.2 2,722.4 271.6 3,339.2 414.9 271.6
Nematomorpha <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Hyalella azteca</u> Chironomidae larvae Chironomidae pupae Hydracarina Number of taxa/categor	ies:	9	8 16 502 2 36 1 80 3 1	30.0 100.0 20.0 90.0 10.0 100.0 30.0 10.0	687.2 1,374.4 43,121.3 171.8 3,092.4 85.9 6,871.9 257.7 85.9	1,201.2 600.6 20,374.9 362.2 2,722.4 271.6 3,339.2 414.9 271.6
Nematomorpha <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Hyalella azteca</u> Chironomidae larvae Chironomidae pupae Hydracarina Number of taxa/categor Mean number/sample:	ies: 64.9	9	8 16 502 2 36 1 80 3 1 5 tan	30.0 100.0 20.0 90.0 10.0 100.0 30.0 10.0	687.2 1,374.4 43,121.3 171.8 3,092.4 85.9 6,871.9 257.7 85.9	1,201.2 600.6 20,374.9 362.2 2,722.4 271.6 3,339.2 414.9 271.6

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Station: M3	Date: 16	Jul 92		Sample si	ze: 10
Taxon/category		Total number	Frequency c occurrence (%)	of Mean e number /m²	Standard deviation /m ²
Nemertea Oligochaeta Gastropoda Planorbidae <u>Lithoglyphus virens</u> <u>Corbicula fluminea</u> <u>Pisidium</u> spp. Ostracoda <u>Hyalella azteca</u> Corixidae Diptera pupae Diptera larvae Chironomidae larvae Trichoptera Trichoptera larvae Arachnida Hydracarina		6 157 1 7 3 14 2 112 47 2 1 3 63 1 2 1 1	30.0 100.0 10.0 50.0 30.0 70.0 20.0 90.0 80.0 10.0 10.0 10.0 10.0 10.0 10.0 1	515.4 .3,486.1 85.9 601.3 257.7 1,202.6 171.8 9,620.7 4,037.3 171.8 85.9 257.7 5,411.6 85.9 171.8 85.9 171.8 85.9 85.9	923.4 7,311.8 271.6 814.9 414.9 1,159.5 362.2 6,425.5 3,927.0 543.3 271.6 414.9 5,249.3 271.6 543.3 271.6 543.3
Number of taxa/categoria	es: 17				
Mean number/sample:	42.3	Stan	dard deviati	lon/sample	: 23.4
Mean number/m ² : 36,33	5.3	Stan	dard deviat:	ion: 20,0	67.8

Appendix Table 3.--Continued.

Station: M4	Date: 16	Jul 92		Sample si	ze: 10
Taxon/category		Total number	Frequency occurrend (१)	of Mean ce number /m²	Standard deviation /m ²
Oligochaeta Gastropoda Planorbidae <u>Corbicula fluminea</u> <u>Pisidium spp.</u> Ostracoda <u>Hyalella azteca</u> <u>Corophium salmonis</u> Diptera pupae Chironomidae larvae Chironomidae pupae Hydracarina		225 1 2 13 21 77 7 5 1 202 3 3	100.0 10.0 20.0 70.0 80.0 30.0 10.0 10.0 10.0 100.0 30.0 20.0	19,327.3 85.9 171.8 1,116.7 1,803.9 6,614.2 601.3 429.5 85.9 17,351.6 257.7 257.7	8,467.3 271.6 362.2 996.0 2,306.7 4,740.5 1,148.9 1,358.2 271.6 15,598.0 414.9 579.8
Number of taxa/categor:	ies: 12				
Mean number/sample:	56.0	Stan	dard devia	tion/sample	31.4
Mean number/m ² : 48,1	03.4	Stan	dard devia	tion: 26,9	948.5

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Appendix Table 3.--Continued.

Station: G5	Date:	16	Ju	1 92		Sa	ample	e siz	e: 10	
Taxon/category			1	lotal number	Frequency occurren (%)	of ce	Mea numb /m²	an Der (Standard deviation /m ²	L L
Neanthes limnicola Oligochaeta Hirudinea <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Harpacticoida Diptera larvae Chironomidae larvae Trichoptera Collembola				9 285 1 10 5 3 87 1 14 1	50.0 100.0 80.0 40.0 20.0 90.0 10.0 40.0 10.0 10.0	24, 7, 1,	773. 481. 859. 429. 257. 473. 85. 85. 85.	.1 .2 .9 .0 .5 .7 .2 .9 .6 .9	1,309.0 17,721.3 271.6 572.7 607.4 579.8 7,914.8 271.6 2,150.3 271.6 271.6	
Number of taxa/categor	ies:	11								
Mean number/sample:	41.7			Stan	dard devia	tio	n/sar	mple:	21.7	1
Mean number/m ² : 35,8	19.9			Star	dard devia	atio	n: 3	18,60	0.7	
Station: G6	Date:	16	Ju	1 92		S	ample	e siz	e: 10	
Taxon/category			:	Total number	Frequency occurren (%)	of ce	Mea numh /m²	an Der	Standard deviation /m ²	i 1
Nemertea <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Harpacticoida Culicidae adult Chironomidae larvae				1 36 73 18 4 105 10 1 1	10.0 90.0 100.0 80.0 40.0 100.0 60.0 10.0 10.0	3 6 1 9	85 ,092 ,270 ,546 343 ,019 859 85 85	.9 .4 .6 .2 .6 .4 .0 .9 .9	271.6 2,150.3 2,977.0 1,330.7 443.6 3,804.0 1,071.3 271.6 271.6	
Number of taxa/categor	ies:	9								
Mean number/sample:										~
	24.9			Star	ndard devia	tio	n/sa	mple:	9.0	b

Station: G7	Date:	16	Jul 92		Sample si	ze: 10
Taxon/category			Total number	Frequency occurrenc (%)	of Mean e number /m ²	Standard deviation /m ²
Neanthes limnicola Oligochaeta Corbicula fluminea Ostracoda Corophium salmonis Harpacticoida Chironomidae larvae Hydracarina			7 299 8 6 2 107 4 1	50.0100.050.040.020.0100.040.010.0	601.3 25,683.8 687.2 515.4 171.8 9,191.2 343.6 85.9	707.2 20,077.6 887.2 829.9 362.2 9,243.2 443.6 271.6
Number of taxa/categor	ies:	8				
Mean number/sample:	43.4		Stan	dard deviat	ion/sample	23.8
Mean number/m ² : 37,2	80.2		Star	ndard deviat	ion: 20,4	480.9
Station: G8	Date:	16	Jul 92		Sample si	ze: 10
Station: G8 Taxon/category	Date:	16	Jul 92 Total number	Frequency occurrenc (%)	Sample si of Mean e number /m ²	ze: 10 Standard deviation /m ²
Station: G8 Taxon/category Nemertea <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Harpacticoida Chironomidae larvae	Date:	16	Jul 92 Total number 3 63 60 18 1 70 4 6	Frequency occurrenc (%) 30.0 100.0 90.0 10.0 100.0 40.0 50.0	Sample si of Mean e number /m ² 257.7 5,411.6 5,153.9 1,546.2 85.9 6,012.9 343.6 515.4	Lze: 10 Standard deviation /m ² 414.9 1,944.1 3,436.0 1,055.9 271.6 2,395.6 443.6 600.6
Station: G8 Taxon/category Nemertea Neanthes limnicola Oligochaeta Corbicula fluminea Ostracoda Corophium salmonis Harpacticoida Chironomidae larvae Number of taxa/categor	Date:	8	Jul 92 Total number 3 63 60 18 1 70 4 6	Frequency occurrenc (%) 30.0 100.0 90.0 10.0 10.0 100.0 40.0 50.0	Sample si of Mean e number /m ² 257.7 5,411.6 5,153.9 1,546.2 85.9 6,012.9 343.6 515.4	Lze: 10 Standard deviation /m ² 414.9 1,944.1 3,436.0 1,055.9 271.6 2,395.6 443.6 600.6
Station: G8 Taxon/category Nemertea <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Harpacticoida Chironomidae larvae Number of taxa/categor Mean number/sample:	Date: ies: 22.5	8	Jul 92 Total number 3 63 60 18 1 70 4 6 Star	Frequency occurrenc (%) 30.0 100.0 90.0 10.0 100.0 40.0 50.0	Sample si of Mean e number /m ² 257.7 5,411.6 5,153.9 1,546.2 85.9 6,012.9 343.6 515.4 Sion/sample	Lze: 10 Standard deviation /m ² 414.9 1,944.1 3,436.0 1,055.9 271.6 2,395.6 443.6 600.6

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Appendix Table 3.--Continued.

Station: J9	Date:	16	Jul 92		Sample si	ze: 10
Taxon/category			Total number	Frequency occurrenc (%)	of Mean ce number /m ²	Standard deviation /m ²
Nemertea Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Diptera larvae Chironomidae larvae Dolichopodidae larvae Hydracarina			1 638 53 105 21 29 1 1	10.0 10.0 100.0 100.0 100.0 80.0 80.0 10.0 1	85.9 85.9 54,803.6 4,552.6 9,019.4 1,803.9 2,491.1 85.9 85.9	271.6 271.6 57,344.4 2,219.8 5,466.6 1,485.1 2,042.8 271.6 271.6
Number of taxa/categori	es:	9				
Mean number/sample:	85.0		Stan	dard deviat	ion/sample	: 68.6
Mean number/m ² : 73,01	4.1		Star	dard devia	tion: 58,9	38.1
Station: J10	Date:	16	Jul 92		Sample si	ze: 10
Taxon/category			Total number	Frequency occurrenc (%)	of Mean ce number /m ²	Standard deviation /m ²
Neanthes limnicola Oligochaeta Corbicula fluminea Ostracoda Corophium salmonis Pontoporeia hoyi Chironomidae larvae Coleoptera larvae Arachnida			Total number 13 189 12 8 13 2 16 1 1	Frequency occurrence (%) 70.0 100.0 90.0 50.0 60.0 20.0 70.0 10.0 10.0	of Mean number /m ² 1,116.7 16,234.9 1,030.8 687.2 1,116.7 171.8 1,374.4 85.9 85.9	Standard deviation /m ² 1,075.2 5,775.8 543.3 1,055.9 1,405.6 362.2 1,228.2 271.6 271.6
Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> <u>Pontoporeia hoyi</u> Chironomidae larvae Coleoptera larvae Arachnida Number of taxa/categori	.es:	9	Total number 13 189 12 8 13 2 16 1 1	Frequency occurrence (%) 70.0 100.0 90.0 50.0 60.0 20.0 70.0 10.0 10.0	of Mean number /m ² 1,116.7 16,234.9 1,030.8 687.2 1,116.7 171.8 1,374.4 85.9 85.9	Standard deviation /m ² 1,075.2 5,775.8 543.3 1,055.9 1,405.6 362.2 1,228.2 271.6 271.6
Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> <u>Pontoporeia hoyi</u> Chironomidae larvae Coleoptera larvae Arachnida Number of taxa/categori Mean number/sample:	.es: 25.5	9	Total number 13 189 12 8 13 2 16 1 1 1 Star	Frequency occurrence (%) 70.0 100.0 90.0 50.0 60.0 20.0 70.0 10.0 10.0	of Mean number /m ² 1,116.7 16,234.9 1,030.8 687.2 1,116.7 171.8 1,374.4 85.9 85.9	Standard deviation /m ² 1,075.2 5,775.8 543.3 1,055.9 1,405.6 362.2 1,228.2 271.6 271.6 271.6

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Taxon/category Total number Frequency of courrence (%) Mean number Stands deviati (%) Nemertea Oligochaeta 1 10.0 85.9 271. Nemertea Oligochaeta 673 100.0 57,810.0 40,966. Planorbidae 1 10.0 85.9 271. Corbicula fluminea 1 00.0 85.9 271. Ostracoda 92 100.0 7,902.7 4,821. Hyalella azteca 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae pupae 1 10.0 85.9 271. Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation/sample: 47 Mean number/sample:					•	sampie si	.ze: 10
Nemertea 1 10.0 85.9 271. Oligochaeta 673 100.0 57,810.0 40,966. Planorbidae 1 10.0 85.9 271. Corbicula fluminea 10 50.0 85.9 271. Corbicula fluminea 10 50.0 85.9 271. Chronoula fluminea 10 50.0 85.9 271. Insecta 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 30.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5	Taxon/category			Total number	Frequency of occurrence (%)	f Mean number /m ²	Standard deviation /m ²
Oligochaeta 673 100.0 57,810.0 40,966. Planorbidae 1 10.0 85.9 271. Corbicula fluminea 1 10.0 85.9 271. Number caracta 92 100.0 7,902.7 4,821. Hyalella arteca 1 10.0 85.9 271. Insecta 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 30.0 7,129.6 4,130. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standa Number deviati (%) /m ² /m ² Nematomorpha 1 10.0 85.9 2	Nemertea			1	10.0	85.9	271.6
Planozbidae 1 10.0 85.9 271. Corbicula fluminea 10 50.0 859.0 1,071. Ostracoda 92 100.0 7,902.7 4,821. Hyalella azteca 1 10.0 85.9 271. Insecta 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera larvae 2 20.0 17.1.8 362. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 10.0 53,686.9 21,262.	Oligochaeta			673	100.0 5	7,810.0	40,966.3
Corbicula fluminea 10 50.0 859.0 1,071. Ostracoda 92 100.0 7,902.7 4,821. Insecta 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 40.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standar 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9	Planorbidae			1	10.0	85.9	271.6
Ostracoda 92 100.0 7,902.7 4,821 Hyalella azteca 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Chironomidae pupae 2 20.0 171.8 362. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 30.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 47.5 Standard deviation: 40,673.5 Taxon/category Total Frequency of Mean Standard deviation: 40,673.5 Nematomorpha <t< td=""><td><u>Corbicula fluminea</u></td><td></td><td></td><td>10</td><td>50.0</td><td>859.0</td><td>1,071.3</td></t<>	<u>Corbicula fluminea</u>			10	50.0	859.0	1,071.3
Hyalella azteca 1 10.0 85.9 271. Insecta 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Chironomidae pupae 1 10.0 85.9 271. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 40.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standa number deviation (%) /m ² /m ² Nematomorpha 1 10.0 85.9 271. Oligochaeta 65 90.0 4,724.4 3,166 <td>Ostracoda</td> <td></td> <td></td> <td>92</td> <td>100.0</td> <td>7,902.7</td> <td>4,821.9</td>	Ostracoda			92	100.0	7,902.7	4,821.9
Insecta 1 10.0 85.9 271. Diptera 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae larvae 83 90.0 7,129.6 4,130. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 40.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: Jl2 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standa number deviati (%) /m ² /m ² /m ² /m ² Nematomorpha 1 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9 21,262. Obstracoda 55 90.0 4,724.4 3,116. Diptera larvae <td< td=""><td><u>Hyalella azteca</u></td><td></td><td></td><td>1</td><td>10.0</td><td>85.9</td><td>271.6</td></td<>	<u>Hyalella azteca</u>			1	10.0	85.9	271.6
Diptera 1 10.0 85.9 271. Diptera pupae 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae pupae 1 10.0 85.9 271. Chironomidae pupae 1 10.0 85.9 271. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 40.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standa number Standard deviation: 40,673.5 Nematomorpha 1 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9 21,262. Corbicula fluminea 6	Insecta			1	10.0	85.9	271.6
Diptera pupae 1 10.0 85.9 271. Diptera larvae 2 20.0 171.8 362. Chironomidae larvae 83 90.0 7,129.6 4,130. Ceratopogonidae larvae 4 40.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standard deviation: (%) /m ² Nematomorpha 1 10.0 85.9 271. (%) /m ² Nematomorpha 1 10.0 85.9 271. (%) /m ² /m ² Number 0 10.0 85.9 271. (%) /m ² /m ² Number 10.0 85.9 271. (%) /m ² /m ²	Diptera			1	10.0	85.9	271.6
Diptera larvae 2 20.0 171.8 362. Chironomidae larvae 83 90.0 7,129.6 4,130. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 40.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m2: 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standa number occurrence number deviati (%) /m² /m² /m² Nematomorpha 1 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9 21,262. Corbicula fluminea 6 50.0 515.4 600. Ostracoda 55 90.0 4,724.4 3,116. Diptera larvae 101 100.0 8,675.8 4,593. Chironomidae l	Diptera pupae			1	10.0	85.9	271.6
Chironomidae larvae 83 90.0 7,129.6 4,130. Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m2: 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standard deviation: (%) /m² /m² Nematomorpha 1 10.0 85.9 271. 01 000 53,686.9 21,262. Corbicula fluminea 6 50.0 515.4 600. 00 0515.4 600. Ostracoda 55 90.0 4,724.4 3,116. 01 100.0 8.675.8 4,589. Chironomidae larvae 101 100.0 8,675.8 4,589. 271. Chironomidae pupae 6 40.0 515.4 829. Num	Diptera larvae			2	20.0	171.8	362.2
Chironomidae pupae 1 10.0 85.9 271. Ceratopogonidae larvae 4 40.0 343.6 443. Dolichopodidae larvae 4 30.0 343.6 600. Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m2: 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standar Number deviation: (%) /m2 /m2 Nematomorpha 1 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9 21,262. Corbicula fluminea 6 50.0 515.4 600. Ostracoda 55 90.0 4,724.4 3,116. Diptera larvae 101 100.0 8,675.8 4,589. Chironomidae larvae 101 100.0 8,675.8 4,589. Chironomidae pupae 6 40.0 515.4 829.	Chironomidae larvae			83	90.0	7,129.6	4,130.5
Ceratopogonidae larvae440.0343.6443.Dolichopodidae larvae430.0343.6600.Number of taxa/categories:14Mean number/sample:87.5Standard deviation/sample:47Mean number/m ² :75,161.6Standard deviation:40,673.5Station:J12Date:16Jul 92Sample size:10Taxon/categoryTotal (%)Frequency of Mean (%)Standard (%)Standard (%)Nematomorpha110.085.9271.Oligochaeta625100.053,686.921,262.Ostracoda5590.04,724.43,116.Diptera larvae110.085.9271.Chironomidae larvae101100.08,675.84,589.Chironomidae pupae640.0515.4829.Number of taxa/categories:7777Mean number/sample:79.5Standard deviation/sample:27	Chironomidae pupae			1	10.0	85.9	271.6
Dolichopodidae larvae430.0343.6600.Number of taxa/categories:14Mean number/sample:87.5Standard deviation/sample:47Mean number/m²:75,161.6Standard deviation:40,673.5Station: J12Date:16Jul 92Sample size:10Taxon/categoryTotal Frequency of Mean Standar number occurrence number deviati (%)Nematomorpha110.085.9271.Oligochaeta625100.053,686.921,262.Corbicula fluminea650.0515.4600.Diptera larvae110.085.9271.Chironomidae larvae101100.08,675.84,589.Chironomidae pupae640.0515.4829.Number of taxa/categories:77Mean number/sample:79.5Standard deviation/sample:27	Ceratopogonidae larva	ae		4	40.0	343.6	443.6
Number of taxa/categories: 14 Mean number/sample: 87.5 Standard deviation/sample: 47 Mean number/m ² : 75,161.6 Standard deviation: 40,673.5 Station: J12 Date: 16 Jul 92 Sample size: 10 Taxon/category Total Frequency of Mean Standa number occurrence number deviati (%) /m ² /m ² Nematomorpha 1 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9 21,262. Corbicula fluminea 625 100.0 53,686.9 21,262. Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Dolichopodidae larva	e		4	30.0	343.6	600.6
Station: J12Date: 16 Jul 92Sample size: 10Taxon/categoryTotal Frequency of Mean standa number occurrence number deviati (%) /m²Standa deviati (%) /m²Nematomorpha110.085.9271.Oligochaeta625100.053,686.921,262.Corbicula fluminea650.0515.4600.Ostracoda5590.04,724.43,116.Diptera larvae110.085.9271.Chironomidae larvae101100.08,675.84,589.Chironomidae pupae640.0515.4829.Number of taxa/categories:7Mean number/sample:79.5Standard deviation/sample:27							
Taxon/categoryTotal numberFrequency of occurrence (%)Mean /m2Standa deviati /m2Nematomorpha110.085.9271.Oligochaeta625100.053,686.921,262.Corbicula fluminea650.0515.4600.Ostracoda5590.04,724.43,116.Diptera larvae110.085.9271.Chironomidae larvae101100.08,675.84,589.Chironomidae pupae640.0515.4829.Number of taxa/categories:775Standard deviation/sample:27							
Nematomorpha 1 10.0 85.9 271. Oligochaeta 625 100.0 53,686.9 21,262. <u>Corbicula fluminea</u> 6 50.0 515.4 600. Ostracoda 55 90.0 4,724.4 3,116. Diptera larvae 1 10.0 85.9 271. Chironomidae larvae 101 100.0 8,675.8 4,589. Chironomidae pupae 6 40.0 515.4 829. Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12	Date:	16	Jul 92		Sample si	ze: 10
Oligochaeta 625 100.0 53,686.9 21,262. <u>Corbicula fluminea</u> 6 50.0 515.4 600. Ostracoda 55 90.0 4,724.4 3,116. Diptera larvae 1 10.0 85.9 271. Chironomidae larvae 101 100.0 8,675.8 4,589. Chironomidae pupae 6 40.0 515.4 829. Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12 Taxon/category	Date:	16	Jul 92 Total number	Frequency of occurrence (%)	Sample si f Mean number /m ²	ze: 10 Standard deviation /m ²
Corbicula fluminea 6 50.0 515.4 600. Ostracoda 55 90.0 4,724.4 3,116. Diptera larvae 1 10.0 85.9 271. Chironomidae larvae 101 100.0 8,675.8 4,589. Chironomidae pupae 6 40.0 515.4 829. Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12 Taxon/category Nematomorpha	Date:	16	Jul 92 Total number 1	Frequency of occurrence (%)	Sample si f Mean number /m ² 85.9	ze: 10 Standard deviation /m ² 271.6
Ostracoda 55 90.0 4,724.4 3,116. Diptera larvae 1 10.0 85.9 271. Chironomidae larvae 101 100.0 8,675.8 4,589. Chironomidae pupae 6 40.0 515.4 829. Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12 Taxon/category Nematomorpha Oligochaeta	Date:	16	Jul 92 Total number 1 625	Frequency of occurrence (%) 10.0 100.0 55	Sample si f Mean number /m ² 85.9 3,686.9	ze: 10 Standard deviation /m ² 271.6 21,262.8
Diptera larvae110.085.9271.Chironomidae larvae101100.08,675.84,589.Chironomidae pupae640.0515.4829.Number of taxa/categories:7Mean number/sample:79.5Standard deviation/sample:27	Station: J12 Taxon/category Nematomorpha Oligochaeta Corbicula fluminea	Date:	16	Jul 92 Total number 1 625 6	Frequency of occurrence (%) 10.0 100.0 5 50.0	Sample si f Mean number /m ² 85.9 3,686.9 515.4	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6
Chironomidae larvae101100.08,675.84,589.Chironomidae pupae640.0515.4829.Number of taxa/categories:7Mean number/sample:79.5Standard deviation/sample:27	Station: J12 Taxon/category Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda	Date:	16	Jul 92 Total number 1 625 6 55	Frequency of occurrence (%) 10.0 100.0 5 50.0 90.0	Sample si f Mean number /m ² 85.9 3,686.9 515.4 4,724.4	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6 3,116.9
Chironomidae pupae 6 40.0 515.4 829. Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12 Taxon/category Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Diptera larvae	Date:	16	Jul 92 Total number 1 625 6 55 1	Frequency of occurrence (%) 10.0 100.0 5 50.0 90.0 10.0	Sample si f Mean number /m ² 85.9 3,686.9 515.4 4,724.4 85.9	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6 3,116.9 271.6
Number of taxa/categories: 7 Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12 Taxon/category Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Diptera larvae Chironomidae larvae	Date:	16	Jul 92 Total number 1 625 6 55 1 101	Frequency of occurrence (%) 10.0 100.0 50.0 90.0 10.0 100.0	Sample si f Mean number /m ² 85.9 3,686.9 515.4 4,724.4 85.9 8,675.8	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6 3,116.9 271.6 4,589.3
Mean number/sample: 79.5 Standard deviation/sample: 27	Station: J12 Taxon/category Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Diptera larvae Chironomidae larvae Chironomidae pupae	Date:	16	Jul 92 Total number 1 625 6 55 1 101 6	Frequency of occurrence (%) 10.0 100.0 50.0 90.0 10.0 100.0 40.0	Sample si f Mean number /m ² 85.9 3,686.9 515.4 4,724.4 85.9 8,675.8 515.4	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6 3,116.9 271.6 4,589.3 829.9
	Station: J12 Taxon/category Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Diptera larvae Chironomidae larvae Chironomidae pupae Number of taxa/catego:	Date:	16	Jul 92 Total number 1 625 6 55 1 101 6	Frequency of occurrence (%) 10.0 100.0 50.0 90.0 10.0 100.0 40.0	Sample si f Mean number /m ² 3,686.9 515.4 4,724.4 85.9 8,675.8 515.4	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6 3,116.9 271.6 4,589.3 829.9
Mean number/m ² : 68,289.7 Standard deviation: 24,008.2	Station: J12 Taxon/category Nematomorpha Oligochaeta <u>Corbicula fluminea</u> Ostracoda Diptera larvae Chironomidae larvae Chironomidae pupae Number of taxa/catego: Mean number/sample:	Date: ries: 79.5	16	Jul 92 Total number 1 625 6 55 1 101 6 Stan	Frequency of occurrence (%) 10.0 100.0 50.0 90.0 10.0 100.0 40.0	Sample si f Mean number /m ² 85.9 3,686.9 515.4 4,724.4 85.9 8,675.8 515.4 515.4	ze: 10 Standard deviation /m ² 271.6 21,262.8 600.6 3,116.9 271.6 4,589.3 829.9

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Station: M1 Da	ate: 14	Sep 92		Sample si	ze: 10
Taxon/category		Total number	Frequency of occurrence (%)	f Mean number /m ²	Standard deviation /m ²
Nemertea Oligochaeta <u>Lithoqlyphus virens</u> Bivalvia <u>Corbicula fluminea</u> <u>Pisidium spp.</u> Ostracoda <u>Corophium salmonis</u> <u>Pontoporeia hoyi</u> Corixidae Chironomidae adult Chironomidae larvae Chironomidae pupae Ceratopogonidae larvae Trichoptera larvae Coleoptera Invertebrate eggs Hydracarina		3 295 1 19 16 132 6 1 3 88 7 3 1 46 1	20.0 100.0 2 10.0 80.0 10.0 90.0 1 10.0 10.0 10.0 30.0 100.0 40.0 20.0 10.0	257.7 5,340.2 85.9 1,632.1 1,374.4 1,338.7 515.4 85.9 257.7 7,559.1 601.3 257.7 85.9 85.9 3,951.4 85.9	579.8 9,227.2 271.6 271.6 1,539.3 4,346.2 7,023.0 1,629.8 271.6 271.6 414.9 4,872.7 910.0 579.8 271.6 271.6 271.6 2,953.5 271.6
Number of taxa/categories	: 18				
Mean number/sample: 6	2.5	Stan	dard deviati	on/sample	: 15.2
Mean number/ m^2 : 53,686.	9	Stan	dard deviati	on: 13,0	97.8

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Appendix Table 3.--Continued.

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3 687 5 26	20.0 100.0 10.0	2: 59,03	57.7	579 21,242
687 5 26	100.0 10.0	59,03 42	12.6	21,242
5 26	10.0	4:		
26	100 0		29.5	1,358
	100.0	2,23	33.4	1,228
66	90.0	5,6	69.3	2,897
22	70.0	1,8	89.8	3,131
1	10.0	1	85.9	271
45	70.0	3,8	65.5	3,345
4	30.0	34	43.6	600
103	100.0	8,8	47.6	5,567
8	60.0	6	37.2	789
1	10.0		85.9	271
2	20.0	1	71.8	362
9	40.0	7.	73.1	1,591
	1 45 4 103 8 1 2 9	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1 10.0 85.9 45 70.0 3,865.5 4 30.0 343.6 103 100.0 8,847.6 8 60.0 687.2 1 10.0 85.9 2 20.0 171.8 9 40.0 773.1

Station: M3 I	Date: 14	Sep 92		Sample si	ze: 10
Taxon/category		Total number	Frequency occurren (%)	of Mean ce number /m ²	Standard deviation /m ²
Nemertea		1	10.0	85.9	271.6
Oligochaeta		306	100.0	26,285.1	7,663.8
Hirudinea		8	40.0	687.2	975.2
Planorbidae		3	30.0	257.7	414.9
<u>Physa</u> spp.		5	40.0	429.5	607.4
<u>Lithoglyphus</u> <u>virens</u>		4	40.0	343.6	443.6
<u>Corbicula</u> <u>fluminea</u>		11	70.0	944.9	854.2
<u>Pisidium</u> spp.		10	50.0	859.0	1,071.3
Ostracoda		2	20.0	171.8	362.2
Hyalella azteca		193	100.0	16,578.5	12,269.2
Corophium salmonis		7	20.0	601.3	1,622.3
Pontoporeia noyi		2	20.0	171.8	362.2
		1	10.0	85.9	2/1.6
Corixidae Chimanamidaa adult		1	10.0	85.9	2/1.6
Chironomidae adult		110	20.0	1/1.8	302.2
Chironomidae pupae		119	100.0	10,222.0	4,070.0
Dolichopodidae larvae		6	40.0	515 4	724 4
Trichoptera larvae		5	30.0	429 5	723.3
		3	20 0	257 7	579.8
Collembola		ĩ	10.0	85.9	271 6
Hydracarina		ī	10.0	85.9	271.6
Number of taxa/categories	s: 22	_			
Mean number/sample:	69.8	Stan	dard devia	tion/sample	: 12.6
Mean number/m ² : 59,957	.5	Star	dard devia	tion: 10,8	356.4

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Station: M4	Date: 14	Sep 92		Sample si	.ze: 10
Taxon/category		Total number	Frequency occurrenc (%)	of Mean ce number /m²	Standard deviation /m ²
Hydra spp.		1	10.0	85.9	271.6
Oligochaeta		149	100.0	12,799.0	5,224.2
Hirudinea		1	10.0	85.9	271.6
<u>Lithoglyphus virens</u>		1	10.0	85.9	271.6
<u>Corbicula</u> <u>fluminea</u>		24	90.0	2,061.6	1,159.5
<u>Pisidium</u> spp.		3	20.0	257.7	579.8
Ostracoda		24	80.0	2,061.6	2,502.7
Gammaridae Amphipoda		1	10.0	85.9	271.6
<u>Hyalella azteca</u>		1	10.0	85.9	271.6
<u>Corophium salmonis</u>		4	30.0	343.6	600.6
Insecta		1	10.0	85.9	271.6
Corixidae		1	10.0	85.9	271.6
Chironomidae adult		2	20.0	171.8	362.2
Chironomidae larvae		285	100.0	24,481.2	15,043.9
Chironomidae pupae		21	90.0	1,803.9	1,642.3
Trichoptera larvae		4	30.0	343.6	600.6
<u>Agraylea</u> spp.		1	10.0	85.9	271.6
Ephemeroptera larvae		1	10.0	85.9	271.6
Hydracarina	a.	1	10.0	85.9	271.6
Number of taxa/categorie	s: 19				
Mean number/sample:	52.6	Stan	dard deviat	ion/sample	23.4
Mean number/m ² : 45,182	.9	Stan	dard devia	tion: 20,1	117.4

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Station: G5	Date: 14 S	ep 92		Sample si	ze: 10
Taxon/category		Total number	Frequency (occurrence (%)	of Mean e number /m ²	Standard deviation /m ²
Nemertea <u>Neanthes limnicola</u> Oligochaeta		5 3 465	30.0 30.0 100.0	429.5 257.7 39,943.0	834.8 414.9 11,368.8
<u>Corbicula fluminea</u> Ostracoda <u>Hyalella azteca</u>		2 1 1	20.0 10.0 10.0	171.8 85.9 85.9	362.2 271.6 271.6
<u>Corophium salmonis</u> <u>Corophium spinicorne</u> Harpacticoida		333 4 1	100.0 20.0 10.0	28,604.4 343.6 85.9	9,919.2 724.4 271.6
Chironomidae adult Chironomidae larvae Chironomidae pupae		1 36 1	10.0 90.0 10.0	85.9 3,092.4 85.9	271.6 2,032.7 271.6
Dolichopodidae larvae Invertebrate eggs		2 34	80.0	2,920.6	362.2 2,840.3
Number of taxa/categorie	es: 14				
Mean number/sample:	88.9	Stan	dard deviat	ion/sample	: 21.8
Mean number/m ² : 76,364	4.2	Stan	dard deviat	ion: 18,6	599.1

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Station: G6	Date:	14	Sep 92	S	ample si	ze: 10
Taxon/category			Total number	Frequency of occurrence (%)	Mean number /m ²	Standard deviation /m ²
Nemertea			9	40.0	773.1	1,177.1
Neanthes limnicola			14	80.0 1	,202.6	829.9
Oligochaeta			35	90.0 3	,006.5	1,681.8
<u>Corbicula fluminea</u>			12	70.0 1	,030.8	975.2
Ostracoda			3	30.0	257.7	414.9
<u>Corophium salmonis</u>			869	100.0 74	,646.2	11,704.2
<u>Corophium spinicorne</u>			1	10.0	85.9	271.6
Harpacticoida			8	50.0	687.2	887.2
Chironomidae adult			1	10.0	85.9	271.6
Invertebrate eggs			86	90.0 /	,38/.3	4,879.4
Number of taxa/categor:	ies:	10				
Mean number/sample:	103.8		Stan	dard deviatio	n/sample	: 18.6
Mean number/ m^2 : 89,1	63.2		Stan	dard deviatio	on: 15,9	92.5
Station: G7	Date:	14	Sep 92	S	ample si	.ze: 9
Station: G7 Taxon/category	Date:	14	Sep 92 Total number	S Frequency of occurrence (%)	ample si Mean number /m ²	.ze: 9 Standard deviation /m ²
Station: G7 Taxon/category	Date:	14	Sep 92 Total number	S Frequency of occurrence (%)	ample si Mean number /m ²	ze: 9 Standard deviation /m ²
Station: G7 Taxon/category <u>Neanthes limnicola</u>	Date:	14	Sep 92 Total number	S Frequency of occurrence (%)	Mean number /m ² 95.4	ze: 9 Standard deviation /m ² 286.3
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda	Date:	14	Sep 92 Total number 1 416	S Frequency of occurrence (%) 11.1 111.1 39	ample si Mean number /m ² 95.4 ,704.4 95.4	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda Corbicula fluminea	Date:	14	Sep 92 Total number 1 416 1 7	S Frequency of occurrence (%) 11.1 111.1 39 11.1 55 6	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda	Date:	14	Sep 92 Total number	S Frequency of occurrence (%) 11.1 111.1 39 11.1 55.6 11.1	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1 95.4	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda Corophium salmonis	Date:	14	Sep 92 Total number 1 416 1 7 1 16	S Frequency of occurrence (%) 11.1 111.1 39 11.1 55.6 11.1 44.4	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1 95.4 .527.1	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3 3,348.3
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda <u>Corophium salmonis</u> Harpacticoida	Date:	14	Sep 92 Total number 1 416 1 7 1 16 2	S Frequency of occurrence (%) 11.1 111.1 39 11.1 55.6 11.1 44.4 1 11.1	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1 95.4 ,527.1 190.9	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3 3,348.3 572.7
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda <u>Corophium salmonis</u> Harpacticoida Dolichopodidae larvae	Date:	14	Sep 92 Total number 1 416 1 7 1 16 2 1	S Frequency of occurrence (%) 11.1 11.1 39 11.1 55.6 11.1 44.4 1 11.1 11.1	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1 95.4 ,527.1 190.9 95.4	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3 3,348.3 572.7 286.3
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda <u>Corophium salmonis</u> Harpacticoida Dolichopodidae larvae Invertebrate eggs	Date:	14	Sep 92 Total number 1 416 1 7 1 16 2 1 25	S Frequency of occurrence (%) 11.1 11.1 55.6 11.1 44.4 11.1 11.1 100.0 2	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1 95.4 ,527.1 190.9 95.4 ,386.1	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3 3,348.3 572.7 286.3 1,410.0
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda <u>Corophium salmonis</u> Harpacticoida Dolichopodidae larvae Invertebrate eggs Number of taxa/categor:	Date:	14	Sep 92 Total number 1 416 1 7 1 16 2 1 25	S Frequency of occurrence (%) 11.1 111.1 39 11.1 55.6 11.1 44.4 1 11.1 11.1 100.0 2	ample si Mean number /m ² 95.4 95.4 95.4 668.1 95.4 527.1 190.9 95.4 386.1	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3 3,348.3 572.7 286.3 1,410.0
Station: G7 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Gammaridae Amphipoda <u>Corophium salmonis</u> Harpacticoida Dolichopodidae larvae Invertebrate eggs Number of taxa/categor: Mean number/sample:	Date: ies: 52.2	9	Sep 92 Total number 1 416 1 7 1 16 2 1 25 Stan	S Frequency of occurrence (%) 11.1 11.1 39 11.1 55.6 11.1 44.4 1 11.1 11.1 100.0 2 dard deviatio	ample si Mean number /m ² 95.4 ,704.4 95.4 668.1 95.4 ,527.1 190.9 95.4 386.1	ze: 9 Standard deviation /m ² 286.3 15,884.2 286.3 715.8 286.3 3,348.3 572.7 286.3 1,410.0 :: 37.0

Station: G8	Date:	14	Sep 92		Sample si	ze: 10
Taxon/category			Total number	Frequency occurrenc (%)	of Mean e number /m ²	Standard deviation /m ²
Nemertea <u>Neanthes limnicola</u> Oligochaeta Gastropoda <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Harpacticoida Ceratopogonidae larvae Trichoptera Trichoptera larvae Invertebrate eggs Arachnida			11 14 70 2 14 2 989 15 1 1 3 51 1	60.0 90.0 110.0 20.0 70.0 20.0 100.0 90.0 10.0 10.0 90.0 10.0 10.0	944.9 1,202.6 6,012.9 171.8 1,202.6 171.8 84,954.1 1,288.5 85.9 85.9 257.7 4,380.8 85.9	1,028.4 600.6 991.9 362.2 1,086.5 362.2 13,941.9 834.8 271.6 271.6 814.9 3,095.8 271.6
Number of taxa/categorie	es: 1	.3				
Mean number/sample:	117.4		Stan	dard deviat	ion/sample	20.3
Mean number/m ² : 100,84	5.4		Stan	dard deviat	ion: 17,4	441.2

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Taxon/category Total number Frequency of Mean courrence number deviat (%) Stand over the standard deviat (%) Nemertea 2 20.0 171.8 362 Oligochaeta 402 100.0 34,531.4 22,537.7 Planorbidae 3 30.0 257.7 414 Physa spp. 2 10.0 171.8 362 Corbicula fluminea 32 100.0 2,748.8 1,391 Ostracoda 2 20.0 171.8 362 Harpacticoida 5 10.0 429.5 1,358 Chironomidae larvae 6 50.0 51.4 600 Dolichopodidae larvae 12 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,551 Number of taxa/categories: 14 Mean number/medviation: 24,255.5 Invertebrate 24 100.0 16,382.4 5,077 Corbicula flumine	Station: J9	Date:	14	Sep 92		Sample si	ze: 10
Nemertea 2 20.0 171.8 362 Oligochaeta 402 100.0 34,531.4 22,530 Planorbidae 3 30.0 257.7 414 Physa spp. 2 100.1 171.8 543 Lithoglyphus virens 36 90.0 3,092.4 1,950 Corbicula fluminea 32 100.0 2,748.8 1,351 Ostracoda 2 20.0 171.8 543 Chironomidae larvae 2 20.0 171.8 362 Chironomidae larvae 2 20.0 171.8 362 Corbopdidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Immetebrate 11 50.0 261.6 829	Taxon/category			Total number	Frequency of occurrence (%)	of Mean e number /m ²	Standard deviation /m ²
Oligochaeta 402 100.0 34,531.4 22,530 Phanorbidae 3 30.0 257.7 414 Physa spp. 2 100 171.8 543 Lithoglyphus virens 36 90.0 3,092.4 1,950 Corbicula fluminea 32 100.0 2,748.8 1,391 Ostracoda 2 20.0 171.8 362 Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 12 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/ma ² : 46,643.2 Standard deviation: 24,255.5 Image: Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Stand number (%) /m ² /m ² /m ² Number of taxa/categories: 12 100.0	Nemertea			2	20.0	171.8	362.2
Planorbidae 3 30.0 257.7 414 Physa spp. 2 10.0 171.8 543 Octpicula fluminea 32 100.0 2,748.8 1,950 Octpicula fluminea 32 100.0 2,748.8 1,950 Ostracoda 2 20.0 171.8 362 Harpacticoida 5 10.0 429.5 1,358 Chironomidae larvae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5	Oligochaeta			402	100.0 3	34,531.4	22,530.4
Physa spp. 2 10.0 171.8 543 Lithoglyphus virens 36 90.0 3,092.4 1,950 Corbicula fluminea 32 100.0 2,748.8 1,391 Ostracoda 2 20.0 171.8 543 Harpacticoida 5 10.0 429.5 1,358 Chironomidae larvae 27 70.0 2,319.3 2,327 Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Stand number deviation: (%) /m ² /m ² Neanthes limnicola 24 100	Planorbidae			3	30.0	257.7	414.9
Lithoglyphus virens. 36 90.0 3,092.4 1,950 Corbicula fluminea 32 100.0 2,748.8 1,391 Ostracoda 2 20.0 171.8 362 Harpacticoida 5 10.0 429.5 1,358 Chironomidae larvae 27 70.0 2,319.3 2,327 Chironomidae larvae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 1 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean number deviat (%) /m² /m² /m² Oligochaeta 214 100.0 18,382.4 <	Physa spp.			2	10.0	171.8	543.3
Corbicula fluminea Ostracoda 32 100.0 2,748.8 1,391 Ostracoda 2 20.0 171.8 362 Harpacticoida 5 10.0 429.5 1,358 Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 1 0.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Stand number deviat (%) /m² /m² /m² Neanthes limnicola 24 100.0 2061.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5	Lithoglyphus virens			36	90.0	3,092.4	1,950.4
Ostracoda 2 20.0 171.8 362 Harpacticoida 5 10.0 429.5 1,358 Chironomidae larvae 27 70.0 2,319.3 2,327 Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 1 80.0 1,030.8 975 Colcoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean stand number occurrence number (%) /m² /m² Neanthes limnicola 24 100.0 261.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5 30.0 429.5 </td <td>Corbicula fluminea</td> <td></td> <td></td> <td>32</td> <td>100.0</td> <td>2,748.8</td> <td>1,391.0</td>	Corbicula fluminea			32	100.0	2,748.8	1,391.0
Harpacticoida 5 10.0 429.5 1,358 Chironomidae larvae 27 70.0 2,319.3 2,327 Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 1 20.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean occurrence number deviat (%) /m² /m² 1,391 Oligochaeta 214 100.0 18,382.4 5,077 Orbicula fluminea 12 50.0 1,536.2 1,391 Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae larvae 14	Ostracoda			2	20.0	171.8	362.2
Chironomidae larvae 27 70.0 2,319.3 2,327 Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 12 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/m2: 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Standard deviation: 24,255.5 Number of taxa/category Total Frequency of Mean Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Standard deviation: (%) /m² /m² Neanthes limnicola 24 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,330	Harpacticoida			5	10.0	429.5	1,358.2
Chironomidae pupae 2 20.0 171.8 362 Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 12 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total requency of Mean occurrence number deviat (%) /m ² /m ² /m ² /m ² Neanthes limnicola (%) /m ² 24 100.0 2061.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,330 Otironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae larvae 14 70.0 1,202.6 1,086 Chi	Chironomidae larvae			27	70.0	2,319.3	2,327.9
Ceratopogonidae larvae 6 50.0 515.4 600 Dolichopodidae larvae 12 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean occurrence number deviat (%) /m ² /m ² /m ² /m ² Neanthes limnicola 24 100.0 2061.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,330 Chironomidae larvae 14 70.0 1,030.8 1,330 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae larvae 14 70.0 13,915.6 6,940 Numbe	Chironomidae pupae			2	20.0	171.8	362.2
Dolichopodidae larvae 12 80.0 1,030.8 975 Coleoptera larvae 1 10.0 85.9 271 Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Stand number Standard deviation: 4,382.4 5,077 Neanthes limnicola 214 100.0 16,382.4 5,077 Oligochaeta 214 100.0 16,382.4 5,077 Octophium salmonis 12 50.0 1,030.8 1,330 Chironomidae pupae 14 70.0 1,202.6 1,086 Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940	Ceratopogonidae larv	7ae		6	50.0	515.4	600.6
Coleoptera larvae110.085.9271Invertebrate eggs1150.0944.91,591Number of taxa/categories:14Mean number/sample:54.3Standard deviation/sample:2Mean number/m²:46,643.2Standard deviation:24,255.5Station: J10Date:14 Sep 92Sample size:10Taxon/categoryTotal numberFrequency of Mean occurrenceStand deviat (%)/m²Neantheslimnicola (%)24100.02061.6829Oligochaeta Obsicula fluminea Chironomidae24100.018,382.45,077Invertebrate eggs1250.01,030.81,330Chironomidae larvae Invertebrate eggs162100.013,915.66,940Number of taxa/categories:8Standard deviation/sample:45.0Standard deviation/sample:	Dolichopodidae larva	ae		12	80.0	1,030.8	975.2
Invertebrate eggs 11 50.0 944.9 1,591 Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Stand number occurrence number deviat (%) /m ² /m ² Neanthes limnicola 24 100.0 2061.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940 Number of taxa/categories: 8 Mean number/sample: 45.0 Standard deviation/sample:	Coleoptera larvae			1	10.0	85.9	271.6
Number of taxa/categories: 14 Mean number/sample: 54.3 Standard deviation/sample: 2 Mean number/m ² : 46,643.2 Standard deviation: 24,255.5 Station: J10 Date: 14 Sep 92 Sample size: 10 Taxon/category Total Frequency of Mean Standard deviation: (%) /m ² /m ² Neanthes limnicola 24 100.0 2061.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae 14 70.0 1,202.6 1,040 Number of taxa/categories: 8 8 8 Mean number (sample: 45.0 5 5 6,940	Invertebrate eggs			11	50.0	944.9	1,591.6
Station: J10Date: 14 Sep 92Sample size: 10Taxon/categoryTotal numberFrequency of Mean occurrence (%)Stand deviat (%)Neanthes limnicola Oligochaeta24100.02061.6829Oligochaeta Ostracoda214100.018,382.45,077Corbicula fluminea Ostracoda1870.01,546.21,391Ostracoda Chironomidae larvae1250.01,030.81,330Chironomidae pupae110.085.9271Invertebrate eggs162100.013,915.66,940Number of taxa/categories:8	Mean Innocer/Sample:	54 3		Stan	dard deviat	ion/sample	- / / /
Taxon/categoryTotal numberFrequency of occurrence numberStand deviat (%)Neanthes limnicola Oligochaeta24100.02061.6829Neanthes limnicola Oligochaeta214100.018,382.45,077Corbicula fluminea Ostracoda1870.01,546.21,391Ostracoda530.0429.5834Corophium salmonis Chironomidae larvae1250.01,030.81,330Chironomidae pupae110.085.9271Invertebrate eggs162100.013,915.66,940Number of taxa/categories:8	Mean number/m ² : 46	54.3 ,643.2		Stan Star	dard deviat:	ion: 24,2	20.2
Neanthes limnicola24100.02061.6829Oligochaeta214100.018,382.45,077Corbicula fluminea1870.01,546.21,391Ostracoda530.0429.5834Corophium salmonis1250.01,030.81,330Chironomidae larvae1470.01,202.61,086Chironomidae pupae110.085.9271Invertebrate eggs162100.013,915.66,940	Mean number/m ² : 46, 	54.3 ,643.2 Date:	14	Stan Star Star	dard deviat:	ion: 24,2 Sample si	255.5 ze: 10
Neanthes limnicola 24 100.0 2061.6 829 Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940	Mean number/m ² : 46 Station: J10	54.3 ,643.2 Date:	14	Stan Star Sep 92	dard deviat:	Sample si	ze: 10
Oligochaeta 214 100.0 18,382.4 5,077 Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940	Mean number/m ² : 46 Station: J10 Taxon/category	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number	Frequency of occurrence (%)	ion: 24,2 Sample si of Mean e number /m ²	ze: 10 Standard deviation /m ²
Corbicula fluminea 18 70.0 1,546.2 1,391 Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940 Number of taxa/categories: 8 Mean number/sample: 45.0 Standard deviation/sample:	Mean number/m ² : 46, Station: J10 Taxon/category	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24	Frequency of occurrence (%)	Sample si of Mean e number /m ²	ze: 10 Standard deviation /m ² 829.9
Ostracoda 5 30.0 429.5 834 Corophium salmonis 12 50.0 1,030.8 1,330 Chironomidae larvae 14 70.0 1,202.6 1,086 Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940	Mean number/m ² : 46, Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24 214	Frequency of occurrence (%)	Sample si Sample si of Mean e number /m ² 2061.6	20.2 255.5 ze: 10 Standard deviation /m ² 829.9 5.077.0
Corophium salmonis1250.01,030.81,330Chironomidae larvae1470.01,202.61,086Chironomidae pupae110.085.9271Invertebrate eggs162100.013,915.66,940Number of taxa/categories:8	Mean number/m ² : 46, Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta Corbicula fluminea	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24 214 18	Frequency of occurrence (%)	ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1.546.2	ze: 10 Standard deviation /m ² 829.9 5,077.0 1.391.0
Chironomidae larvae1470.01,202.61,086Chironomidae pupae110.085.9271Invertebrate eggs162100.013,915.66,940Number of taxa/categories:8Mean number/sample:45.0Standard deviation/sample:	Mean number/sample: Mean number/m ² : 46, Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24 214 18 5	Frequency of occurrence (%)	ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1,546.2 429.5	ze: 10 Standard deviation /m ² 829.9 5,077.0 1,391.0 834.8
Chironomidae pupae 1 10.0 85.9 271 Invertebrate eggs 162 100.0 13,915.6 6,940 Number of taxa/categories: 8 Mean number/sample: 45.0 Standard deviation/sample:	Mean number/sample: Mean number/m ² : 46, Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda Corophium salmonis	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24 214 18 5 12	Frequency of occurrence (%)	ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1,546.2 429.5 1,030.8	ze: 10 Standard deviation /m ² 829.9 5,077.0 1,391.0 834.8 1,330.7
Invertebrate eggs 162 100.0 13,915.6 6,940 Number of taxa/categories: 8 Mean number/sample: 45.0 Standard deviation/sample:	Mean number/sample: Mean number/m ² : 46, Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Chironomidae larvae	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24 214 18 5 12 14	frequency of occurrence (%)	ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1,546.2 429.5 1,030.8 1,202.6	ze: 10 Standard deviation /m ² 829.9 5,077.0 1,391.0 834.8 1,330.7 1,086.5
Number of taxa/categories: 8	Mean number/sample: Mean number/m ² : 46, Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Chironomidae larvae Chironomidae pupae	54.3 ,643.2 Date:	14	Stan Star Sep 92 Total number 24 214 18 5 12 14 1	frequency of occurrence (%)	ion: 24,2 ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1,546.2 429.5 1,030.8 1,202.6 85.9	ze: 10 Standard deviation /m ² 829.9 5,077.0 1,391.0 834.8 1,330.7 1,086.5 271.6
Mean number/sample: 45.0 Standard deviation/sample:	Mean number/sample: Mean number/m ² : 46, Station: J10 Taxon/category Neanthes limnicola Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Chironomidae larvae Chironomidae pupae Invertebrate eggs	54.3 ,643.2 Date:	14	Stan Stan Star Sep 92 Total number 24 214 18 5 12 14 1 162	frequency of occurrence (%) 100.0 100.0 100.0 100.0 100.0 100.0 10.0 10.0 10.0 10.0 10.0	ion: 24,2 ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1,546.2 429.5 1,030.8 1,202.6 85.9 13,915.6	20.2 255.5 ze: 10 Standard deviation /m ² 829.9 5,077.0 1,391.0 834.8 1,330.7 1,086.5 271.6 6,940.8
Mean number/ Sample. 45.0 Scandala deviation/ Sample.	Mean number/sample: Mean number/m ² : 46, Station: J10 Taxon/category Neanthes limnicola Oligochaeta Corbicula fluminea Ostracoda Corophium salmonis Chironomidae larvae Chironomidae pupae Invertebrate eggs Number of taxa/catego	54.3 ,643.2 Date:	14	Stan Stan Star Sep 92 Total number 24 214 18 5 12 14 1 162	frequency of occurrence (%) 100.0 100.0 100.0 100.0 100.0 100.0 10.0 10.0 10.0 10.0 10.0 10.0	ion: 24,2 ion: 24,2 Sample si of Mean number /m ² 2061.6 18,382.4 1,546.2 429.5 1,030.8 1,202.6 85.9 13,915.6	20.2 255.5 ze: 10 Standard deviation /m ² 829.9 5,077.0 1,391.0 834.8 1,330.7 1,086.5 271.6 6,940.8
Mean number/m ² : 38,654.6 Standard deviation: 7,243.6	Mean number/sample: Mean number/m ² : 46 Station: J10 Taxon/category <u>Neanthes limnicola</u> Oligochaeta <u>Corbicula fluminea</u> Ostracoda <u>Corophium salmonis</u> Chironomidae larvae Chironomidae pupae Invertebrate eggs Number of taxa/catego Mean number/sample:	54.3 ,643.2 Date: Date: 45.0	14	Stan Stan Star Sep 92 Total number 24 214 18 5 12 14 1 162 Stan	Frequency of occurrence (%) 100.0 100.0 100.0 100.0 100.0 100.0 100.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	ion: 24,2 ion: 24,2 Sample si of Mean e number /m ² 2061.6 18,382.4 1,546.2 429.5 1,030.8 1,202.6 85.9 13,915.6	<pre>20.2 255.5 ze: 10 Standard deviation /m² 829.9 5,077.0 1,391.0 834.8 1,330.7 1,086.5 271.6 6,940.8 : 8.4</pre>

Station: J11 Da	te: 14	Sep 92	Sample size: 10			
Taxon/category		Total number	Frequency occurrenc (%)	of Mean ce number /m²	Standard deviation /m ²	
Nemertea		8	40.0	687.2	1,130.9	
Oligochaeta		1,011	100.0	86,843.9	42,873.9	
Gastropoda		. 1	10.0	85.9	271.6	
Planorbidae		20	80.0	1,718.0	1,460.0	
Physa spp.		14	50.0	1,202.6	1,679.4	
Lithoglyphus virens		9	60.0	773.1	854.2	
Corbicula fluminea		20	80.0	1,718.0	1,145.3	
Ostracoda		33	100.0	2,834.7	1,985.8	
Gammaridae Amphipoda		3	10.0	257.7	814.9	
<u>Hyalella</u> <u>azteca</u>		253	90.0	21,732.4	19,986.0	
<u>Pontoporeia hoyi</u>		1	10.0	85.9	271.6	
Insecta		2	20.0	171.8	362.2	
Chironomidae adult		1	10.0	85.9	271.6	
Chironomidae larvae		380	100.0	32,641.6	13,892.2	
Chironomidae pupae		33	90.0	2,834.7	1,901.5	
Ceratopogonidae larvae		9	60.0	773.1	854.2	
Dolichopodidae larvae		3	20.0	257.7	579.8	
Trichoptera larvae		8	40.0	687.2	975.2	
Invertebrate eggs		3	10.0	257.7	814.9	
Arachnida		I	10.0	85.9	2/1.6	
Hydracarina		3	20.0	257.7	5/9.8	
Number of taxa/categories	: 21					
Mean number/sample: 183	1.6	Stan	dard deviat	tion/sample	e: 50.3	
Mean number/m ² : 155,992.	6	Star	ndard devia	tion: 43,	184.0	

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Appendix Table 3.--Continued.

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Station: J12	Date: 14	Sep 92	Sample size: 10			
Taxon/category		Total number	Frequency occurren (%)	y of Mean ace number /m²	Standard deviation /m ²	
Neanthes limnicola		1	10.0	85.9	271.6	
Oligochaeta		1,121	100.0	96,292.8	34,909.8	
Planorbidae		1	10.0	85.9	271.6	
Lithoglyphus virens		1	10.0	85.9	271.6	
Bivalvia		1	10.0	85.9	271.6	
<u>Corbicula</u> <u>fluminea</u>		43	100.0	3,693.7	1,570.9	
<u>Pisidium</u> spp.		54	80.0	4,638.5	3,693.5	
Ostracoda		36	80.0	3,092.4	2,188.1	
Harpacticoida		2	20.0	171.8	362.2	
Chironomidae adult		6	10.0	515.4	1,629.8	
Chironomidae larvae		334	100.0	28,690.3	20,763.2	
Chironomidae pupae		27	90.0	2,319.3	2,464.8	
Ceratopogonidae larvae		1	10.0	85.9	271.6	
Dolichopodidae larvae		2	20.0	171.8	362.2	
Trichoptera larvae		1	10.0	85.9	271.6	
Invertebrate eggs		8	30.0	687.2	1,201.2	

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