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BENTHIC SAMPLING IN CATHLAMET BAY, OREGON -- 1984

by

Robert L. Emmett
George T. McCabe, Jr.
Travis C. Coley
Robert J. McConnell
and
William D. Muir

Report of Research

Financed by

U. S. Army Corps of Engineers
(Contract DACW57-84-F-0348)

and

Coastal Zone and Estuarine Studies
Northwest and Alaska Fisheries Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
2725 Montlake Boulevard East
Seattle, Washington 98112

October 1986

C35883

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Northwest and Alaska Fisheries Center
Coastal Zone and Estuarine Studies Division
2725 Montlake Boulevard East
Seattle, Washington 98112

October 8, 1986 F/NWC5:GEM

Mr. Kim Larson
Fish and Wildlife Branch
Portland District
U.S. Army Corps of Engineers
P.O. Box 2946
Portland, Oregon 97208

Dear Mr. Larson:

Enclosed are five copies of our report titled "Benthic Sampling in Cathlamet Bay, Oregon--1984" in accordance with Contract DACW57-84-F-0348. If additional copies or information are required, please contact Robert McConnell at 8-503-861-1818.

Sincerely,

Gerald E. Monan
Deputy Division Director

Enclosure

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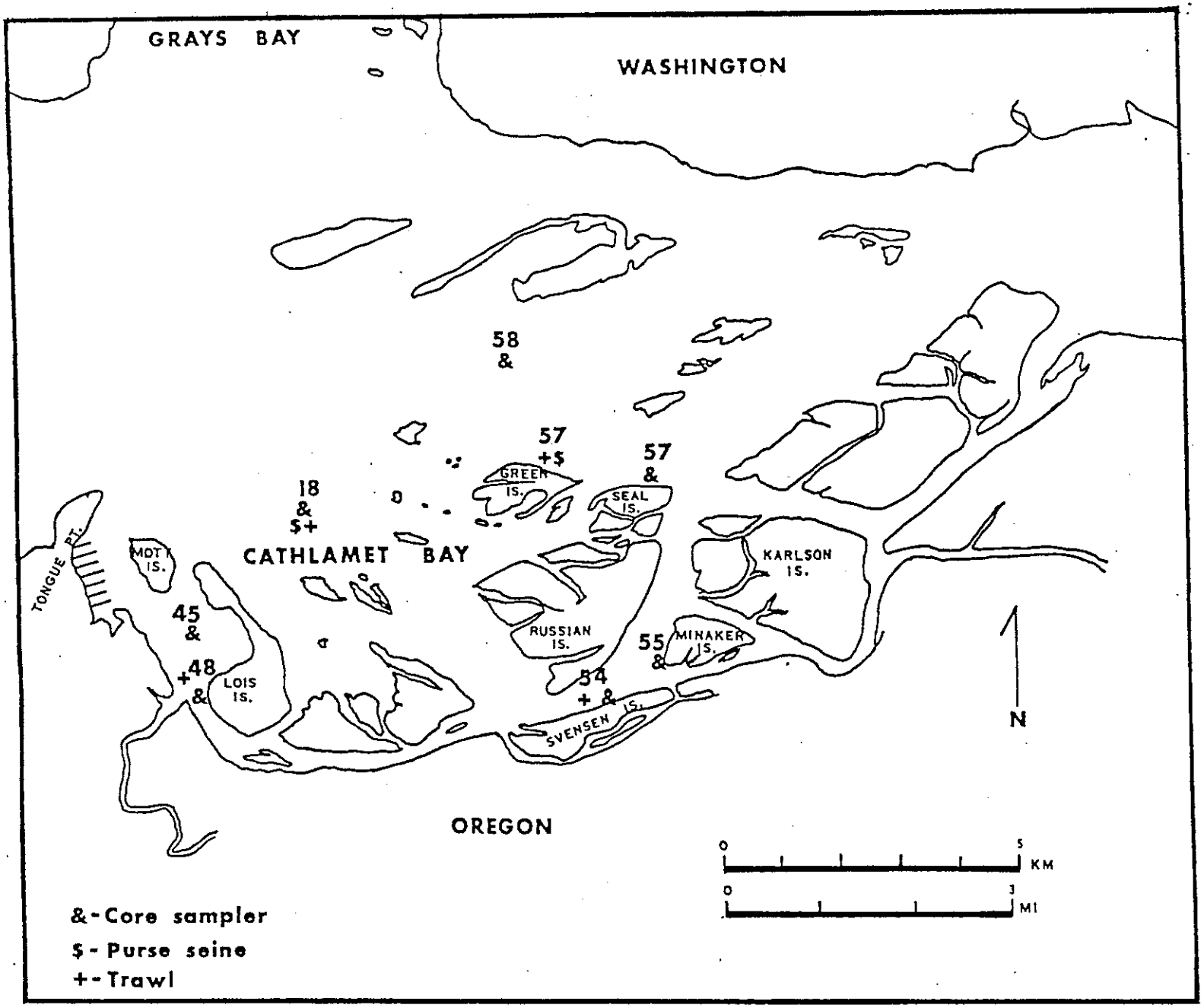

Figure 1.--Locations and station numbers of fish and invertebrate sampling sites in Cathlamet Bay.

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Table 1.--Geographic locations of the benthic sampling stations in Cathlamet Bay.

Station	Geographic location (Latitude and Longitude)		Site Description
18	46 12'34" N	123 42'52" W	Adjacent to Green Dolphin "3" at W end of North Channel
45	46 11'28" N	123 44'14" W	Center of old Maritime Basin; 600 m N of Corps of Engineers dock
48[a/]	46 10'53" N	123 44'09" W	Adjacent to Can "7" off SW end of Lois Island in South Channel
54[a/]	46 10'53 N	123 38'41" W	Adjacent to Svensen Island; piling jetty W of Red Dolphin "12A"
55	46 11'17" N	123 38'00" W	Adjacent to Red Dolphin "14" at SW end of Minaker Island
57[a/]	46 13'00" N	123 38'09" W	50 m N of Seal Island in Woody Island Channel
58	46 13'54" N	123 40'10" W	Adjacent to Can "5" in Woody Island Channel [after can was moved (18 July), approximately 300 m Wof can]

[a/] Stations which were replaced during Survey 3

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stations known to have higher densities --45, 55, and 58, respectively, after Survey 2. Higher benthic invertebrate densities would provide better statistically identifiable relationships between densities and salinity. As a result of the changes in sampling stations, only samples from Station 18 were analyzed for Survey 2 (5 April 1984).

Benthic samples were collected by SCUBA divers using a coring device. The sampler was constructed of 3.85-cm (inside diameter) PVC pipe which penetrated 15 cm into the sediment thereby collecting a ~~92.4~~ 175 cm^3 sediment sample (Fig. 2). The coring device was operated as follows: 1) the sampler was filled with water on the boat to aid in diver descent; 2) on the bottom, the diver removed the bottom cap and pushed the sampler into the sediment until it stopped at the plexiglass plate (15 cm); and 3) the diver placed his thumb on the top opening (forming a suction), removed the coring device from the sediment, and replaced the bottom cap. All samples were taken within the confines of a square meter aluminum frame.

On the boat, samples were washed through a 0.25-mm mesh screen, placed into labeled jars, and fixed and preserved in a 4% formaldehyde solution that contained rose bengal (a protein stain). At the laboratory, samples were washed of the formaldehyde solution and sorted with the aid of a 15X dissecting microscope. Invertebrates were identified to the lowest practical taxon and counted.

Initially 16 benthic cores were taken; 15 to be used for benthic invertebrate analysis and 1 for sediment analysis. Subsequent statistical analysis revealed 10 benthic invertebrate cores were sufficient to adequately describe the benthic communities. So after Survey 4 (1 August 1984) 11 benthic cores were collected per station.

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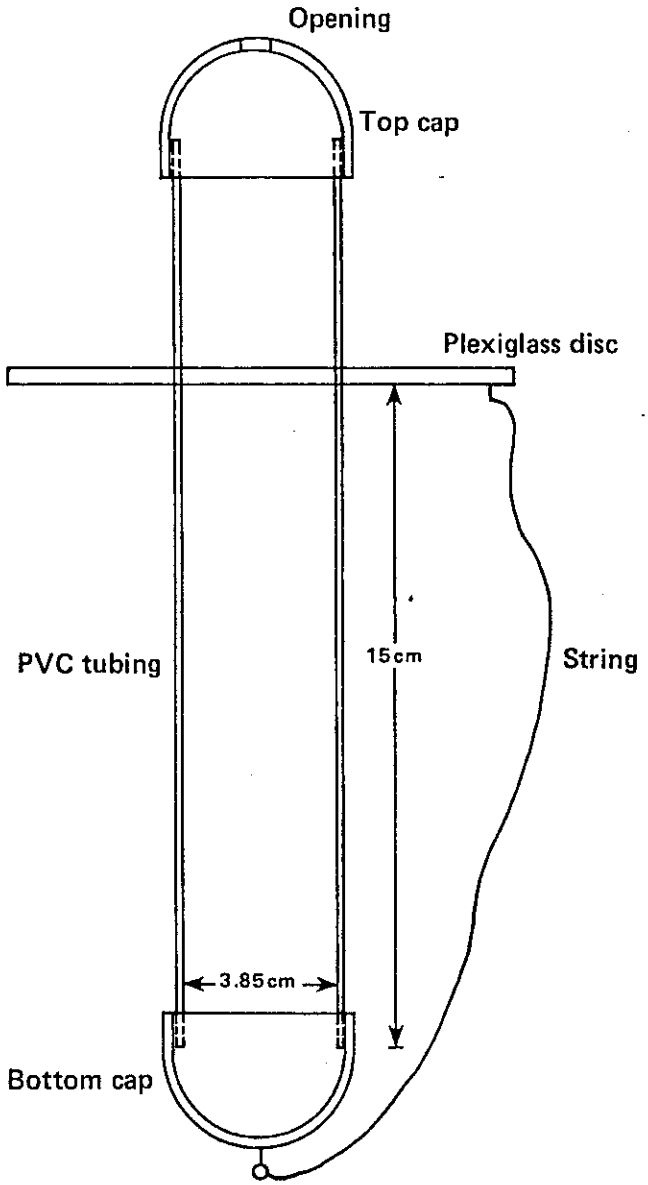

Figure 2.--Description of PVC benthic invertebrate sampling device

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Station number, date, depth, bottom salinity and temperature (taken with a Beckman RS5-3 salinometer and probe[1/]), sample size, total numbers, frequency of occurrence, and mean number/m^2 are presented in the Results. Besides the above, H', Shannon-Weaver diversity function (Shannon and Weaver 1963); SD, Simpson diversity value (Simpson 1949); SR, species richness (Margalef 1958); and J, species evenness value (Pielou 1966) were calculated. The following formulas were used:

1) $H' = -\sum_{i=1}^{s} Pi \log_2 Pi$

where Pi= the proportion of individuals belonging to the i'th species

S = number of species

2) $SD = 1 - \sum_{i=1}^{s} Pi^2$

where Pi= the proportion of individuals belonging to the i'th species

3) $SR = (S - 1)/\log_e N$

where S= the number of species at the station

N= the total number of individuals at the station

4) $J = H' / \log_2 S$

where H'= the Shannon-Weaver diversity value

S = the number of species.

Sediments were analyzed by seiving; those particles < 0.0625 mm were considered the silt-clay fraction. Organic content was determined by burning at 550°C for 24 h.

1/ Reference to trade names does not imply endorsement by National Marine Fisheries Service, NOAA.

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RESULTS

Physical and biological data are presented by station in Appendix A. A list of the benthic invertebrate taxa identified during the survey are presented in Table 1. Appendix B presents the sediment analysis.

DISCUSSION

Although the purpose of this study was to obtain base line information prior to modification of the ship navigational channel, caution must be used in interpreting the data. First, the MOBILOIL oil spill on 19 March 1984 may have affected the local benthic invertebrate biota. Oil started to occur in the benthic samples on the third survey (18 April 1984) and continued until the end of the study (14 September 1984). Although some stations had more oil than others, effects on the invertebrates were not obvious. Secondly, year to year variations in benthic invertebrate species and densities occur in the marine environment (Gray and Christie 1983). Whether the benthic infauna in Cathlamet Bay varies cyclically is unknown. The long term stability or cycles need to be determined before changes of the benthic infauna can be attributed to any habitat modification or dredging project.

Salinity is considered to be the most important factor controlling the distribution of estuarine animals (Kinne 1966). Since we performed our data collections primarily at low tide, the given salinity values must be considered low values. Chapman and Brinkhurst (1981) showed that seasonal variations of benthic invertebrates in the Fraser River estuary were correlated with salinity. One common freshwater oligochaete species in their study, *Limnodrilus hoffmeisteri*, also occurs in Cathlamet Bay. Adult *L. hoffmeisteri* can tolerate salinities up to 10 ppt, and immatures 14 to

C35892

Table 1.--List of invertebrate taxa found at benthic invertebrate sites located in Cathlamet Bay, Oregon, March through September 1984.

Coelenterata
- *Hydra* sp.

Turbellaria

Nemertea

Nematoda

Nematomorpha

Oligochaeta
- *Vejdovskyella intermedia*
- *Limnodrilus hoffmeisteri* *
- *Ilydrilus frantzi* *

Polychaeta
- *Neanthes limnicola*
- *Hobsonia florida*
- *Manyunkia speciosa*

Gastropoda
- *Lithoglyphys* (=*Fluminicola*) *virens*

Bivalvia
- *Corbicula manilensis*

Ostracoda
- *Limnocythera* sp. ?

Mysidacea
- *Neomysis mercedis*

Cumacea

Amphipoda
- *Eogammarus* spp.
- *Eogammarus confervicolus*
- *Corophium salmonis*
- *Corophium spinicorne*
- *Pontoporeia hoyi*
- *Eohaustorius estuaris*

Isopoda
- *Saduria entomon*

Harpacticoida
- *Scottolana canadensis*

Insecta
- Diptera adult
- Diptera pupae
- Heleidae larvae
- Chironomidae larvae
- Chironomidae pupae
- Trichoptera larvae
- Hymenoptera
- Collembola

Hydracarina

* Occurrence not quantified

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15 ppt (Chapman and Brinkhurst 1980). This species appears to be a useful salinity indicator and future benthic work should identify and enumerate this species. Due to time and taxonomic expertise requirements, only the oligochaete species Vejdovskyella intermedia was enumerated. Salinity tolerances of this species are unknown.

Since interstitial salinities do not vary dielly as do salinities in the water column (Sanders et. al 1965), interstitial salinities should have been measured. Although many infauna species may be exposed to overlying water because of activity and/or tubes (ex.,Corophium spp.), many benthic invertebrates are dependent on interstitial salinity levels. Measurements of interstitial salinities are necesssary to determine benthic infauna sensitivity to salinity intrusion.

Finally, there appeared to be a large amount of within station variability in the sediment texture, particularly at Stations 55 and 58. The sediment at Station 55 ranged from a very fine sand to almost all clay. The sediment texture variability at Station 58 was a result of the U.S. Coast Guard moving Can "5" to a new location, forcing us to estimate the previous location of our station.

ACKNOWLEDGMENTS

We wish to thank Maurice Laird, Nick Zorich, Larry Davis, Roy Pettit, Edward Koller, and David Miller for their assistance in developing the sampling device and collecting the samples. We express special thanks to Sandy Lipovsky, Thomas Moylan, and Susan Newhouse for helping sort and identify the invertebrates.

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APPENDIX A.--Descriptive summary of benthic invertebrate data collected in Cathlamet Bay, Oregon during March through September 1984.

C35897

STATION: 18
Date: 13 March 1984
Depth: 4.6 m
Salinity (bottom): 1.1 ppt
Temperature (bottom): 6.7 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	2	6.7	114.5	443.4
Nematoda	134	100.0	7670.2	3316.9
Turbellaria	22	66.7	1259.3	1585.4
Neanthes limnicola	31	93.3	1774.4	1468.1
Oligochaeta	486	100.0	27818.6	13877.9
Corbicula manilensis	24	93.3	1373.8	846.2
Ostracoda	39	80.0	2232.4	1771.5
Corophium salmonis	74	86.7	4235.8	3887.0
Pontoporeia hoyi	1	6.7	57.2	221.7
Saduria entomon	1	6.7	57.2	221.7
Harpacticoida	7	33.3	400.7	715.9
Insecta	2	6.7	114.5	443.4
Chironomid larvae	20	66.7	1144.8	1009.0
Collembola	95	86.7	5437.8	8258.8
Hydracarina	1	6.7	57.2	221.7

Mean number of organisms/sample: 62.6 Standard deviation 19.1

Mean number of organisms/m^2 53748.4 Standard deviation 16357.9

H'= 2.37 SD= 0.69 SR= 1.42 J= 0.61

C35898

STATION: 48
Date: 13 March 1984
Depth: 10.7 m
Salinity (bottom): 0.5 ppt
Temperature (bottom): 6.8 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	31	66.7	1774.4	1849.1
Nematoda	38	66.7	2175.1	2268.5
Oligochaeta	4	13.3	229.0	685.9
Corbicula manilensis	31	66.7	1774.4	2964.8
Ostracoda	1	6.7	57.2	221.7
Eogammarus spp.	1	6.7	57.2	221.7
Corophium salmonis	1	6.7	57.2	221.7
Eohaustorius estuaris	4	20.0	229.0	509.7
Harpacticoida	1	6.7	57.2	221.7
Insecta	2	13.3	114.5	302.1
Diptera adult	1	6.7	57.2	221.7
Collembola	24	46.7	1373.8	3092.3

Mean number of organisms/sample: 9.3 Standard deviation 5.9

Mean number of organisms/m^2 7956.4 Standard deviation 5074.0

H'= 2.55 SD= 0.79 SR= 1.55 J= 0.71

C35899

STATION: 54
Date: 14 March 1984
Depth: 17.7 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 6.6 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	47	100.0	2690.3	1409.6
Nematoda	7	26.7	400.7	910.2
Turbellaria	9	33.3	515.2	1114.8
Oligochaeta	11	33.3	629.6	1098.9
Gastropoda	1	6.7	57.2	221.7
Corbicula manilensis	199	100.0	11390.8	9716.5
Ostracoda	3	20.0	171.7	355.5
Corophium salmonis	3	20.0	171.7	355.5
Harpacticoida	1	6.7	57.2	221.7
Heleidae larvae	29	86.7	1660.0	1098.9
Chironomid larvae	2	13.3	114.5	302.1
Collembola	2	6.7	114.5	443.4

Mean number of organisms/sample: 20.9 Standard deviation 10.3

Mean number of organisms/m^2 17973.4 Standard deviation 8824.7

H'= 1.86 SD= 0.56 SR= 1.33 J= 0.52

C35900

STATION: 57
Date: 13 March 1984
Depth: 9.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 6.3 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	27	66.7	1545.5	1345.9
Nematoda	8	40.0	457.9	638.1
Turbellaria	4	20.0	229.0	509.7
Oligochaeta	8	40.0	457.9	638.1
Corbicula manilensis	1	6.7	57.2	221.7
Ostracoda	1	6.7	57.2	221.7
Eogammarus spp.	1	6.7	57.2	221.7
Corophium salmonis	2	13.3	114.5	302.1
Harpacticoida	1	6.7	57.2	221.7
Insecta	3	6.7	171.7	665.1
Chironomid larvae	1	6.7	57.2	221.7
Collembola	37	40.0	2117.9	6570.0
Hydracarina	1	6.7	57.2	221.7

Mean number of organisms/sample: 6.3 Standard deviation 8.2

Mean number of organisms/m^2 5437.8 Standard deviation 7002.9

H'= 2.53 SD= 0.75 SR= 1.83 J= 0.68

C35901

STATION: 18
Date: 5 April 1984
Depth: 3.0 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 9.0 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2)	
			$\bar{x}$	S.D.
Nemertea	11	60.0	629.6	604.2
Nematomorpha	2	13.3	114.5	302.1
Nematoda	119	100.0	6811.6	5094.7
Turbellaria	20	60.0	1144.8	1364.0
Neanthes limnicola	33	100.0	1888.9	1036.4
Oligochaeta	481	100.0	27532.4	14232.6
Corbicula manilensis	23	60.0	1316.5	1371.7
Ostracoda	33	93.3	1888.9	1086.1
Corophium salmonis	38	93.3	2175.1	1332.8
Harpacticoida	7	13.3	400.7	1332.8
Chironomid larvae	16	66.7	915.8	886.8
Collembola	1	6.7	57.2	221.7

Mean number of organisms/sample: 52.3 Standard deviation 22.7

Mean number of organisms/m^2 44876.2 Standard deviation 19450.8

H'= 2.02 SD= 0.59 SR= 1.14 J= 0.56

C35902

STATION: 45
Date: 18 April 1984
Depth: 6.4 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 9.5 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	171	100.0	9788.0	8227.7
Hydra sp.	1	6.7	57.2	221.7
Turbellaria	29	60.0	1660.0	2350.6
Neanthes limnicola	9	40.0	515.2	781.5
Hobsonia florida	41	100.0	2346.8	1356.3
Oligochaeta	367	100.0	21007.1	10054.2
Corbicula manilensis	42	80.0	2404.1	1925.4
Ostracoda	100	100.0	5724.0	4313.4
Corophium salmonis	37	93.3	2117.9	1888.5
Harpacticoida	2049	100.0	117284.8	61661.2
Heleidae larvae	1	6.7	57.2	221.7
Chironomid larvae	3	20.0	171.7	355.5
Collembola	1	6.7	57.2	221.7
Insect parts	1	6.7	57.2	221.7

Mean number of organisms/sample: 190.1 Standard deviation 86.4

Mean number of organisms/m^2 163248.5 Standard deviation 74193.1

H'= 1.52 SD= 0.46 SR= 1.13 J= 0.40

C35903

STATION: 18
Date: 18 April 1984
Depth: 2.7 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 9.5 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	13	53.3	744.1	966.3
Nematomorpha	3	20.0	171.7	355.5
Nematoda	195	100.0	11161.8	6367.5
Turbellaria	9	46.7	515.2	632.6
Neanthes limnicola	30	86.7	1717.2	1298.1
Oligochaeta	580	100.0	33199.2	10888.0
Corbicula manilensis	28	100.0	1602.7	1117.9
Ostracoda	18	66.7	1030.3	1036.4
Corophium salmonis	105	100.0	6010.2	2555.3
Saduria entomon	1	6.7	57.2	221.7
Harpacticoida	17	40.0	973.1	1997.0
Chironomid larvae	16	66.7	915.8	886.8

Mean number of organisms/sample: 67.7 Standard deviation 19.9

Mean number of organisms/m^2 58098.6 Standard deviation 17109.5

H'= 2.02 SD= 0.62 SR= 1.10 J= 0.56

C35904

STATION: 58
Date: 18 April 1984
Depth: 6.7 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 9.7 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	62	93.3	3548.9	2633.8
Nematoda	224	100.0	12821.8	4990.3
Turbellaria	9	60.0	515.2	435.4
Neanthes limnicola	1	6.7	57.2	221.7
Oligochaeta	79	100.0	4522.0	2350.6
Lithoglyphys virens	2	6.7	114.5	443.4
Corbicula manilensis	10	53.3	572.4	621.4
Ostracoda	19	60.0	1087.6	1098.9
Corophium salmonis	30	86.7	1717.2	1214.2
Harpacticoida	2	13.3	114.5	302.1
Heleidae larvae	6	33.3	343.4	543.0
Chironomid larvae	9	40.0	515.2	781.5
Chironomid pupae	2	13.3	114.5	302.1

Mean number of organisms/sample: 30.3 Standard deviation 9.4

Mean number of organisms/m^2 26044.2 Standard deviation 8104.3

H'= 2.33 SD= 0.70 SR= 1.36 J= 0.63

C35905

STATION: 55
Date: 18 April 1984
Depth: 3.0 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 9.3 C
No. of samples: 15

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	16	46.7	915.8	1098.9
Nematoda	266	100.0	15225.8	5454.1
Turbellaria	23	60.0	1316.5	1551.8
Manyunkia speciosa	2	13.3	114.5	302.1
Oligochaeta	181	100.0	10360.4	5653.2
Lithoglyphys virens	3	20.0	171.7	355.5
Corbicula manilensis	59	100.0	3377.2	2305.4
Ostracoda	15	73.3	858.6	725.6
Corophium salmonis	466	100.0	26673.8	7509.4
Corophium spinicorne	3	20.0	171.7	355.5
Pontoporeia hoyi	1	6.7	57.2	221.7
Harpacticoida	30	40.0	1717.2	4040.2
Chironomid larvae	10	53.3	572.4	621.4

Mean number of organisms/sample: 71.7 Standard deviation 14.3

Mean number of organisms/m^2 61533.0 Standard deviation 12253.2

H'= 2.26 SD= 0.72 SR= 1.19 J= 0.61

C35906

STATION: 45
Date: 4 May 1984
Depth: 6.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 10.3 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	269	100.0	23096.3	16729.6
Turbellaria	1	10.0	85.9	271.5
Manyunkia speciosa	1	10.0	85.9	271.5
Neanthes limnicola	2	10.0	171.7	543.0
Hobsonia florida	28	80.0	2404.1	1932.6
Oligochaeta	169	100.0	14510.3	7435.1
Veidovskyella intermedia	32	80.0	2747.5	2246.3
Corbicula manilensis	4	40.0	343.4	443.4
Ostracoda	5	40.0	429.3	607.1
Limnocythera sp. ??	25	90.0	2146.5	1527.9
Corophium salmonis	2	20.0	171.7	362.0
Scottolana canadensis	578	100.0	49627.1	29382.0
Chironomid larvae	2	20.0	171.7	362.0

Mean number of organisms/sample: 111.8 Standard deviation 52.2

Mean number of organisms/m^2 95991.5 Standard deviation 44784.2

H'= 1.93 SD= 0.65 SR= 1.18 J= 0.52

STATION: 18
Date: 4 May 1984
Depth: 3.4 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 10.4 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	10	60.0	858.6	1070.9
Nematoda	153	100.0	13136.6	4789.9
Turbellaria	8	60.0	686.9	677.3
Neanthes limnicola	11	70.0	944.5	944.9
Oligochaeta	147	100.0	12621.4	6231.7
Veidovskyella intermedia	86	90.0	7384.0	6154.3
Corbicula manilensis	4	30.0	343.4	600.3
Ostracoda	1	10.0	85.9	271.5
Limnocythera sp. ??	3	30.0	257.6	414.7
Corophium salmonis	57	90.0	4894.0	2181.5
Diptera adult	3	30.0	257.6	414.7
Chironomid larvae	4	30.0	343.4	600.3
Chironomid pupae	1	10.0	85.9	271.5

Mean number of organisms/sample: 48.8 Standard deviation 16.0

Mean number of organisms/m^2 41899.7 Standard deviation 13772.1

H'= 2.43 SD= 0.76 SR= 1.34 J= 0.66

C35908

STATION: 5B
Date: 4 May 1984
Depth: 6.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 11.0 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	41	100.0	3520.3	2120.6
Nematoda	211	100.0	18116.5	5330.5
Turbellaria	4	20.0	343.4	724.0
Oligochaeta	89	100.0	7641.5	3224.0
Vejdovskyella intermedia	4	40.0	343.4	443.4
Lithoglyphys virens	3	20.0	257.6	579.5
Corbicula manilensis	20	80.0	1717.2	1982.9
Ostracoda	1	10.0	85.9	271.5
Limnocythera sp. ??	5	40.0	429.3	607.1
Corophium salmonis	32	90.0	2747.5	1801.0
Scottolana canadensis	1	10.0	85.9	271.5
Heleidae larvae	1	10.0	85.9	271.5
Chironomid larvae	7	40.0	601.0	909.6

Mean number of organisms/sample: 41.9 Standard deviation 9.3

Mean number of organisms/m^2 35975.3 Standard deviation 7987.5

H'= 2.21 SD= 0.68 SR= 1.38 J= 0.60

STATION: 55
Date: 4 May 1984
Depth: 2.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 10.7 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	23	90.0	1974.8	1517.1
Nematomorpha	1	10.0	85.9	271.5
Nematoda	269	100.0	23096.3	6992.3
Turbellaria	10	60.0	858.6	991.4
Manyunkia speciosa	4	30.0	343.4	600.3
Neanthes limnicola	1	10.0	85.9	271.5
Oligochaeta	79	100.0	6782.9	4036.3
Vejdovskyella intermedia	11	80.0	944.5	633.5
Lithoglyphys virens	3	30.0	257.6	414.7
Bivalvia	1	10.0	85.9	271.5
Corbicula manilensis	18	70.0	1545.5	1390.4
Limnocythera sp. ??	2	20.0	171.7	362.0
Corophium salmonis	158	100.0	13565.9	5427.2
Harpacticoida	1	10.0	85.9	271.5
Chironomid larvae	2	20.0	171.7	362.0
Trichoptera larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 58.4 Standard deviation 14.7

Mean number of organisms/m^2 50142.2 Standard deviation 12652.5

H'= 2.19 SD= 0.69 SR= 1.63 J= 0.55

C35910

STATION: 45
Date: 17 May 1984
Depth: 6.1 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 12.1 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	1	10.0	85.9	271.5
Nematoda	163	100.0	13995.2	12799.6
Polychaeta	1	10.0	85.9	271.5
Neanthes limnicola	2	20.0	171.7	362.0
Hobsonia florida	6	60.0	515.2	443.4
Oligochaeta	329	100.0	28247.9	13291.8
Vejdovskyella intermedia	57	90.0	4894.0	3314.2
Corbicula manilensis	6	50.0	515.2	600.3
Ostracoda	5	20.0	429.3	1089.8
Limnocythera sp. ??	13	60.0	1116.2	1217.6
Corophium salmonis	2	20.0	171.7	362.0
Harpacticoida	2	10.0	171.7	543.0
Scottolana canadensis	296	100.0	25414.6	17263.3
Diptera adult	1	10.0	85.9	271.5

Mean number of organisms/sample: 88.4 Standard deviation 32.6

Mean number of organisms/m^2 75900.2 Standard deviation 28013.1

H'= 2.09 SD= 0.71 SR= 1.33 J= 0.55

STATION: 18
Date: 17 May 1984
Depth: 3.0 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 12.2 C
No. of samples: 12

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	50	83.3	3577.5	2281.5
Neanthes limnicola	3	25.0	214.7	388.3
Oligochaeta	97	83.3	6940.4	4849.5
Veidovskyella intermedia	27	66.7	1931.9	1906.8
Corbicula manilensis	5	33.3	357.8	574.0
Ostracoda	1	8.3	71.6	247.9
Limnocythera sp. ??	5	33.3	357.8	574.0
Corophium salmonis	84	83.3	6010.2	4378.0
Corophium spinicorne	3	25.0	214.7	388.3
Pontoporeia hoyi	1	8.3	71.6	247.9
Scottolana canadensis	2	16.7	143.1	334.2
Chironomid larvae	4	25.0	286.2	559.2

Mean number of organisms/sample: 23.5 Standard deviation 11.6

Mean number of organisms/m^2 20177.1 Standard deviation 9922.1

H'= 2.36 SD= 0.75 SR= 1.35 J= 0.66

C35912

STATION: 58
Date: 17 May 1984
Depth: 6.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 12.3 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	2	10.0	171.7	543.0
Nematoda	75	100.0	6439.5	3440.4
Neanthes limnicola	2	20.0	171.7	362.0
Oligochaeta	60	100.0	5151.6	3337.6
Vejdovskyella intermedia	2	20.0	171.7	362.0
Lithoglyphys virens	3	20.0	257.6	579.5
Corbicula manilensis	6	50.0	515.2	600.3
Ostracoda	6	40.0	515.2	829.5
Limnocythera sp. ??	2	20.0	171.7	362.0
Corophium salmonis	34	100.0	2919.2	1292.7
Scottolana canadensis	1	10.0	85.9	271.5
Chironomid larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 19.4 Standard deviation 6.6

Mean number of organisms/m^2 16656.8 Standard deviation 5625.9

H'= 2.25 SD= 0.72 SR= 1.45 J= 0.63

C35913

STATION: 55
Date: 17 May 1984
Depth: 2.4 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 12.6 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematomorpha	2	20.0	171.7	362.0
Nematoda	63	100.0	5409.2	3529.7
Oligochaeta	94	100.0	8070.8	4400.4
Veidovskyella intermedia	10	60.0	858.6	905.0
Lithoglyphys virens	9	80.0	772.7	487.4
Corbicula manilensis	4	30.0	343.4	600.3
Ostracoda	2	10.0	171.7	543.0
Limnocythera sp. ??	6	60.0	515.2	443.4
Corophium salmonis	142	100.0	12192.1	5068.2
Corophium spinicorne	3	20.0	257.6	579.5
Chironomid larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 33.6 Standard deviation 6.2

Mean number of organisms/m^2 28849.0 Standard deviation 5342.1

H'= 2.14 SD= 0.71 SR= 1.19 J= 0.62

STATION: 45
Date: 1 June 1984
Depth: 6.1 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 13.9 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	174	90.0	14939.6	13234.7
Turbellaria	5	20.0	429.3	1089.8
Neanthes limnicola	5	40.0	429.3	607.1
Hobsonia florida	20	90.0	1717.2	809.5
Oligochaeta	190	100.0	16313.4	9256.3
Vejdovskyella intermedia	103	90.0	8843.6	5152.4
Corbicula manilensis	12	60.0	1030.3	1130.4
Ostracoda	5	40.0	429.3	607.1
Limnocythera sp. ??	33	90.0	2833.4	1719.6
Neomysis mercedis	1	10.0	85.9	271.5
Corophium salmonis	10	70.0	858.6	701.0
Scottolana canadensis	375	100.0	32197.5	17920.1
Chironomid larvae	2	20.0	171.7	362.0

Mean number of organisms/sample: 93.5 Standard deviation 25.4

Mean number of organisms/m^2 80279.1 Standard deviation 21842.3

H'= 2.39 SD= 0.75 SR= 1.22 J= 0.65

STATION: 18
Date: 1 June 1984
Depth: 3.0 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 13.4 C
No. of samples: 11

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Turbellaria	14	63.6	1092.8	1157.7
Neanthes limnicola	10	72.7	780.5	601.6
Oligochaeta	178	100.0	13893.7	6791.3
Vejdovskyella intermedia	122	63.6	9522.7	9361.9
Corbicula manilensis	7	45.5	546.4	694.6
Ostracoda	1	9.1	78.1	258.9
Limnocythera sp. ??	16	81.8	1248.9	1042.0
Corophium salmonis	139	100.0	10849.6	7093.4
Corophium spinicorne	1	9.1	78.1	258.9
Scottolana canadesis	2	18.2	156.1	347.3
Diptera pupae	1	9.1	78.1	258.9
Chironomid larvae	2	18.2	156.1	347.3

Mean number of organisms/sample: 71.4 Standard deviation 28.4

Mean number of organisms/m^2 61272.8 Standard deviation 24424.9

H'= 2.32 SD= 0.75 SR= 1.25 J= 0.63

C35916

STATION: 58
Date: 1 June 1984
Depth: 6.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 13.8 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	173	100.0	14853.8	4738.3
Turbellaria	3	30.0	257.6	414.7
Oligochaeta	53	100.0	4550.6	3213.9
Vejdovskyella intermedia	26	60.0	2232.4	3391.2
Lithoglyphys virens	1	10.0	85.9	271.5
Corbicula manilensis	10	50.0	858.6	1342.4
Limnocythera sp. ??	4	20.0	343.4	829.5
Eogammarus confervicolus	1	10.0	85.9	271.5
Corophium salmonis	46	100.0	3949.6	2224.3
Chironomid larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 31.8 Standard deviation 10.3

Mean number of organisms/m^2 27303.5 Standard deviation 8884.2

H'= 1.99 SD= 0.65 SR= 1.08 J= 0.60

STATION: 55
Date: 1 June 1984
Depth: 2.7 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 14.0 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	157	100.0	13480.0	6952.4
Turbellaria	9	40.0	772.7	1369.6
Manyunkia speciosa	1	10.0	85.9	271.5
Oligochaeta	49	100.0	4207.1	3274.5
Veidovskyella intermedia	10	40.0	858.6	1279.9
Lithoglyphys virens	1	10.0	85.9	271.5
Corbicula manilensis	4	40.0	343.4	443.4
Limnocythera sp. ??	7	50.0	601.0	706.9
Corophium salmonis	134	100.0	11505.2	4474.2
Harpacticoida	1	10.0	85.9	271.5
Scottolana canadensis	1	10.0	85.9	271.5
Chironomid larvae	1	10.0	85.9	271.5
Hydracarina	1	10.0	85.9	271.5

Mean number of organisms/sample: 37.6 Standard deviation 13.2

Mean number of organisms/m^2 32283.4 Standard deviation 11312.7

H'= 2.02 SD= 0.68 SR= 1.40 J= 0.55

C35918

STATION: 45
Date: 18 June 1984
Depth: 6.7 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 14.9 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	109	100.0	9358.7	3891.7
Turbellaria	3	20.0	257.6	579.5
Neathes limnicola	3	20.0	257.6	579.5
Hobsonia florida	2	20.0	171.7	362.0
Oligochaeta	194	100.0	16656.8	11836.4
Veidovskyella intermedia	44	100.0	3777.8	3602.0
Corbicula manilensis	7	20.0	601.0	1283.1
Ostracoda	3	20.0	257.6	579.5
Limnocythera sp. ??	68	90.0	5838.5	9762.7
Corophium salmonis	1	10.0	85.9	271.5
Harpacticoida	1	10.0	85.9	271.5
Scottolana canadensis	113	100.0	9702.2	7397.6
Chironomid larvae	2	20.0	171.7	362.0

Mean number of organisms/sample: 55.0 Standard deviation 37.1

Mean number of organisms/m^2 47223.0 Standard deviation 31851.9

H'= 2.42 SD= 0.77 SR= 1.32 J= 0.65

C35919

STATION: 18
Date: 18 June 1984
Depth: 3.4 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 15.5 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	291	100.0	24985.3	13882.6
Turbellaria	1	10.0	85.9	271.5
Manyunkia speciosa	1	10.0	85.9	271.5
Neanthes limnicola	3	30.0	257.6	414.7
Oligochaeta	123	100.0	10560.8	4824.0
Veidovskyella intermedia	67	100.0	5752.6	4048.5
Corbicula manilensis	6	50.0	515.2	600.3
Limnocythera sp. ??	5	40.0	429.3	607.1
Corophium salmonis	80	100.0	6868.8	4127.6
Harpacticoida	2	20.0	171.7	362.0
Scottolana canadensis	2	20.0	171.7	362.0
Chironomid larvae	4	30.0	343.4	600.3

Mean number of organisms/sample: 58.5 Standard deviation 19.4

Mean number of organisms/m^2 50228.1 Standard deviation 16694.3

H'= 2.03 SD= 0.68 SR= 1.20 J= 0.57

C35920

STATION: 5B
Date: 18 June 1984
Depth: 5.8 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 15.7 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	2	10.0	171.7	543.0
Nematoda	160	100.0	13737.6	6361.1
Turbellaria	4	40.0	343.4	443.4
Oligochaeta	36	100.0	3091.0	1470.5
Veidovskyella intermedia	4	30.0	343.4	600.3
Lithoglyphys virens	3	30.0	257.6	414.7
Corbicula manilensis	1	10.0	85.9	271.5
Limnocythera sp. ??	3	30.0	257.6	414.7
Corophium salmonis	61	100.0	5237.5	1428.1
Chironomid larvae	1	10.0	85.9	271.5
Chironomid pupae	1	10.0	85.9	271.5

Mean number of organisms/sample: 27.6 Standard deviation 7.2

Mean number of organisms/m^2 23697.4 Standard deviation 6141.0

H'= 1.78 SD= 0.60 SR= 1.23 J= 0.51

C35921

STATION: 55
Date: 18 June 1984
Depth: 1.8 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 15.7 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	160	100.0	13737.6	4396.7
Turbellaria	1	10.0	85.9	271.5
Oligochaeta	61	100.0	5237.5	3198.5
Veidovskyella intermedia	3	30.0	257.6	414.7
Corbicula manilensis	3	30.0	257.6	414.7
Limnocythera sp. ??	3	30.0	257.6	414.7
Corophium salmonis	85	100.0	7298.1	3416.5
Chironomid larvae	6	60.0	515.2	443.4

Mean number of organisms/sample: 32.2 Standard deviation 7.5

Mean number of organisms/m^2 27646.9 Standard deviation 6409.9

H'= 1.78 SD= 0.65 SR= 0.84 J= 0.59

C35922

STATION: 45
Date: 2 July 1984
Depth: 6.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 17.2 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	104	100.0	8929.4	4740.9
Turbellaria	1	10.0	85.9	271.5
Neanthes limnicola	2	10.0	171.7	543.0
Hobsonia florida	1	10.0	85.9	271.5
Oligochaeta	297	100.0	25500.4	14627.3
Vejdovskyella intermedia	24	60.0	2060.6	2721.2
Corbicula manilensis	4	30.0	343.4	600.3
Ostracoda	2	20.0	171.7	362.0
Limnocythera sp. ??	157	90.0	13480.0	7319.7
Neomysis mercedis	1	10.0	85.9	271.5
Corophium salmonis	1	10.0	85.9	271.5
Harpacticoida	1	10.0	85.9	271.5
Scottolana canadensis	113	90.0	9702.2	6165.6

Mean number of organisms/sample: 70.8 Standard deviation 33.9

Mean number of organisms/m^2 60788.9 Standard deviation 29082.2

H'= 2.16 SD= 0.73 SR= 1.27 J= 0.58

C35923

STATION: 18
Date: 2 July 1984
Depth: 2.4 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 17.2 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	202	100.0	17343.7	11353.2
Neanthes limnicola	4	40.0	343.4	443.4
Oligochaeta	102	100.0	8757.7	5487.3
Veidovskyella intermedia	115	90.0	9873.9	10072.0
Corbicula manilensis	4	30.0	343.4	600.3
Limnocythera sp. ??	15	80.0	1287.9	927.4
Corophium salmonis	55	90.0	4722.3	4052.5
Harpacticoida	1	10.0	85.9	271.5
Scottolana canadensis	2	20.0	171.7	362.0
Chironomid larvae	6	40.0	515.2	724.0
Hymenoptera	1	10.0	85.9	271.5
Hydracarina	1	10.0	85.9	271.5

Mean number of organisms/sample: 50.8 Standard deviation 25.3

Mean number of organisms/m^2 43616.9 Standard deviation 21758.0

H'= 2.25 SD= 0.74 SR= 1.22 J= 0.63

C35924

STATION: 58
Date: 2 July 1984
Depth: 5.8 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 18.0 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	151	100.0	12964.9	4272.9
Turbellaria	1	10.0	85.9	271.5
Oligochaeta	41	100.0	3520.3	2269.8
Veidovskyella intermedia	3	20.0	257.6	579.5
Lithoglyphys virens	1	10.0	85.9	271.5
Corbicula manilensis	4	30.0	343.4	600.3
Limnocythera sp. ??	2	20.0	171.7	362.0
Corophium salmonis	68	100.0	5838.5	1557.1
Chironomid larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 27.2 Standard deviation 7.3

Mean number of organisms/m^2 23353.9 Standard deviation 6254.6

H'= 1.69 SD= 0.61 SR= 0.99 J= 0.53

STATION: 55
Date: 2 July 1984
Depth: 1.5 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 18.2 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	184	100.0	15798.2	5264.8
Turbellaria	1	10.0	85.9	271.5
Oligochaeta	91	100.0	7813.3	2605.8
Veidovskyella intermedia	2	20.0	171.7	362.0
Lithoglyphys virens	1	10.0	85.9	271.5
Corbicula manilensis	8	50.0	686.9	789.0
Limnocythera sp. ??	2	20.0	171.7	362.0
Corophium salmonis	96	100.0	8242.6	2598.0
Harpacticoida	2	20.0	171.7	362.0
Chironomid larvae	5	40.0	429.3	607.1
Chironomid pupae	1	10.0	85.9	271.5

Mean number of organisms/sample: 39.3 Standard deviation 5.3

Mean number of organisms/m^2 33743.0 Standard deviation 4508.0

H'= 1.87 SD= 0.67 SR= 1.16 J= 0.54

C35926

STATION: 45
Date: 17 July 1984
Depth: 5.8 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 20.4 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	215	100.0	18459.9	4583.7
Neanthes limnicola	3	30.0	257.6	414.7
Hobsonia florida	1	10.0	85.9	271.5
Oligochaeta	305	100.0	26187.3	14795.5
Veidovskyella intermedia	17	50.0	1459.6	2255.4
Corbicula manilensis	1	10.0	85.9	271.5
Ostracoda	2	20.0	171.7	362.0
Limnocythera sp. ??	176	100.0	15111.4	5712.5
Corophium salmonis	1	10.0	85.9	271.5
Harpacticoida	4	30.0	343.4	600.3
Scottolana canadensis	91	100.0	7813.3	6131.0
Chironomid larvae	5	40.0	429.3	607.1

Mean number of organisms/sample: 82.1 Standard deviation 27.5

Mean number of organisms/m^2 70491.1 Standard deviation 23636.9

H'= 2.15 SD= 0.73 SR= 1.14 J= 0.60

STATION: 18
Date: 17 July 1984
Depth: 2.7 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 20.3 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	339	100.0	29106.5	11914.0
Turbellaria	3	20.0	257.6	579.5
Neanthes limnicola	4	30.0	343.4	600.3
Oligochaeta	188	100.0	16141.7	8939.3
Veidovskyella intermedia	34	80.0	2919.2	2296.7
Limnocythera sp. ??	16	70.0	1373.8	1525.2
Corophium salmonis	52	100.0	4464.7	2521.2
Harpacticoida	3	20.0	257.6	579.5
Scottolana canadensis	18	70.0	1545.5	1390.4
Chironomid larvae	10	70.0	858.6	701.0

Mean number of organisms/sample: 66.7 Standard deviation 18.8

Mean number of organisms/m^2 57268.6 Standard deviation 16175.0

H'= 1.99 SD= 0.65 SR= 0.96 J= 0.60

C35928

STATION: 58
Date: 17 July 1984
Depth: 5.5 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 19.7 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	173	100.0	14853.8	6639.0
Turbellaria	1	10.0	85.9	271.5
Neanthes limnicola	1	10.0	85.9	271.5
Oligochaeta	46	100.0	3949.6	2629.3
Vejdovskyella intermedia	6	40.0	515.2	829.5
Lithoglyphys virens	2	20.0	171.7	362.0
Bivalvia	1	10.0	85.9	271.5
Corbicula manilensis	2	20.0	171.7	362.0
Ostracoda	1	10.0	85.9	271.5
Limnocythera sp. ??	1	10.0	85.9	271.5
Corophium salmonis	94	100.0	8070.8	3533.2
Diptera pupae	1	10.0	85.9	271.5
Heleidae larvae	5	50.0	429.3	452.5
Chironomid larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 33.5 Standard deviation 11.3

Mean number of organisms/m^2 28763.1 Standard deviation 9741.3

H'= 1.86 SD= 0.64 SR= 1.55 J= 0.49

C35929

STATION: 55
Date: 17 July 1984
Depth: 1.8 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 19.9 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	61	100.0	5237.5	3397.2
Turbellaria	1	10.0	85.9	271.5
Oligochaeta	24	90.0	2060.6	1159.0
Vejdovskyella intermedia	3	20.0	257.6	579.5
Limnocythera sp. ??	1	10.0	85.9	271.5
Corophium salmonis	38	100.0	3262.7	1932.6
Chironomid larvae	3	30.0	257.6	414.7

Mean number of organisms/sample: 13.1 Standard deviation 5.4

Mean number of organisms/m^2 11247.7 Standard deviation 4675.7

H'= 1.84 SD= 0.66 SR= 0.85 J= 0.65

C35930

STATION: 45
Date: 1 August 1984
Depth: 5.8 m
Salinity (bottom): 0.3 ppt
Temperature (bottom): 20.3 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	145	100.0	12449.7	5234.4
Turbellaria	1	10.0	85.9	271.5
Neanthes limnicola	5	50.0	429.3	452.5
Hobsonia florida	3	30.0	257.6	414.7
Oligochaeta	196	100.0	16828.6	9106.4
Veidovskyella intermedia	2	10.0	171.7	543.0
Ostracoda	3	30.0	257.6	414.7
Limnocythera sp. ??	240	100.0	20606.4	7352.6
Corophium salmonis	6	60.0	515.2	443.4
Scottolana canadensis	1862	100.0	159871.3	96613.4
Heleidae larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 246.4 Standard deviation 115.6

Mean number of organisms/m^2 211559.0 Standard deviation 99251.8

H'= 1.24 SD= 0.41 SR= 0.89 J= 0.36

C35931

STATION: 18
Date: 1 August 1984
Depth: 2.4 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 19.8 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	1	10.0	85.9	271.5
Nematomorpha	1	10.0	85.9	271.5
Nematoda	248	100.0	21293.3	10828.8
Turbellaria	4	40.0	343.4	443.4
Neanthes limnicola	4	40.0	343.4	443.4
Oligochaeta	206	100.0	17687.2	7530.9
Veidovskyella intermedia	10	50.0	858.6	1070.9
Corbicula manilensis	1	10.0	85.9	271.5
Limnocythera sp. ??	20	80.0	1717.2	1402.1
Corophium salmonis	205	100.0	17601.3	4810.4
Eohaustorius estuaris	1	10.0	85.9	271.5
Scottolana canadensis	574	100.0	49283.6	15053.1
Chironomid larvae	9	40.0	772.7	1369.6

Mean number of organisms/sample: 128.4 Standard deviation 29.0

Mean number of organisms/m^2 110244.2 Standard deviation 24888.5

H'= 2.11 SD= 0.71 SR= 1.16 J= 0.57

C35932

STATION: 58
Date: 1 August 1984
Depth: 5.5 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 20.2 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	1	10.0	85.9	271.5
Nematoda	22	90.0	1888.9	1503.6
Turbellaria	1	10.0	85.9	271.5
Oligochaeta	19	70.0	1631.3	1738.5
Lithoglyphys virens	2	20.0	171.7	362.0
Corbicula manilensis	4	30.0	343.4	600.3
Corophium salmonis	164	100.0	14081.0	10304.8
Heleidae larvae	8	50.0	686.9	886.8

Mean number of organisms/sample: 22.1 Standard deviation 11.1

Mean number of organisms/m^2 18975.1 Standard deviation 9539.1

H'= 1.37 SD= 0.43 SR= 0.90 J= 0.46

C35933

STATION: 55
Date: 1 August 1984
Depth: 1.5 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 20.4 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	1	10.0	85.9	271.5
Nematoda	122	100.0	10474.9	7394.8
Turbellaria	4	30.0	343.4	600.3
Manyunkia speciosa	1	10.0	85.9	271.5
Oligochaeta	118	100.0	10131.5	6122.3
Veidovskyella intermedia	3	20.0	257.6	579.5
Lithoglyphys virens	1	10.0	85.9	271.5
Corbicula manilensis	5	50.0	429.3	452.5
Limnocythera sp. ??	1	10.0	85.9	271.5
Corophium salmonis	42	80.0	3606.1	2134.1
Scottolana canadensis	2	20.0	171.7	362.0
Heleidae larvae	2	10.0	171.7	543.0
Chironomid larvae	4	40.0	343.4	443.4

Mean number of organisms/sample: 30.6 Standard deviation 16.9

Mean number of organisms/m^2 26273.2 Standard deviation 14510.1

H'= 1.98 SD= 0.67 SR= 1.45 J= 0.54

C35934

STATION: 45
Date: 17 August 1984
Depth: 6.1 m
Salinity (bottom): 1.0 ppt
Temperature (bottom): 21.0 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	240	100.0	20606.4	13021.3
Neanthes limnicola	31	40.0	2661.7	7522.8
Hobsonia florida	2	10.0	171.7	543.0
Oligochaeta	245	100.0	21035.7	12137.4
Lithoglyphys virens	1	10.0	85.9	271.5
Ostracoda	1	10.0	85.9	271.5
Limnocythera sp. ??	333	100.0	28591.4	10655.3
Neomysis mercedis	2	20.0	171.7	362.0
Corophium salmonis	143	100.0	12278.0	10686.0
Scottolana canadensis	1738	100.0	149224.7	68441.7

Mean number of organisms/sample: 273.6 Standard deviation 94.4

Mean number of organisms/m^2 234913.0 Standard deviation 81060.0

H'= 1.72 SD= 0.56 SR= 0.79 J= 0.52

C35935

STATION: 18
Date: 17 August 1984
Depth: 2.7 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 21.4 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	186	100.0	15970.0	6246.8
Hydra sp.	2	10.0	171.7	543.0
Turbellaria	8	40.0	686.9	886.8
Neanthes limnicola	12	70.0	1030.3	1130.4
Oligochaeta	283	100.0	24298.4	9050.9
Veidovskyella intermedia	4	40.0	343.4	443.4
Bivalvia	1	10.0	85.9	271.5
Corbicula manilensis	1	10.0	85.9	271.5
Limnocythera sp. ??	17	90.0	1459.6	1074.7
Corophium salmonis	286	100.0	24556.0	8346.1
Scottolana canadensis	526	100.0	45162.4	17961.0
Chironomid larvae	4	30.0	343.4	600.3

Mean number of organisms/sample: 133.0 Standard deviation 16.2

Mean number of organisms/m^2 114193.8 Standard deviation 13938.9

H'= 2.14 SD= 0.73 SR= 1.06 J= 0.60

C35936

STATION: 58
Date: 17 August 1984
Depth: 5.5 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 22.0 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	68	100.0	5838.5	2768.9
Turbellaria	4	20.0	343.4	829.5
Oligochaeta	19	80.0	1631.3	1308.4
Vejdovskyella intermedia	3	30.0	257.6	414.7
Lithoglyphys virens	3	30.0	257.6	414.7
Bivalvia	4	30.0	343.4	600.3
Corbicula manilensis	1	10.0	85.9	271.5
Limnocythera sp. ??	2	10.0	171.7	543.0
Corophium salmonis	338	100.0	29020.7	5663.6
Scottolana canadensis	6	40.0	515.2	724.0

Mean number of organisms/sample: 44.8 Standard deviation 7.2

Mean number of organisms/m^2 38465.3 Standard deviation 6188.8

H'= 1.27 SD= 0.41 SR= 1.02 J= 0.38

C35937

STATION: 55
Date: 17 August 1984
Depth: 1.8 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 22.3 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	291	100.0	24985.3	11810.4
Turbellaria	1	10.0	85.9	271.5
Neanthes limnicola	1	10.0	85.9	271.5
Oligochaeta	47	100.0	4035.4	2834.7
Vejdovskyella intermedia	25	90.0	2146.5	1231.0
Lithoglyphys virens	12	50.0	1030.3	1845.9
Bivalvia	6	40.0	515.2	724.0
Corbicula manilensis	11	40.0	944.5	1244.2
Ostracoda	8	60.0	686.9	677.3
Limnocythera sp. ??	52	100.0	4464.7	1974.6
Corophium salmonis	43	100.0	3692.0	2143.6
Scottolana canadensis	5	40.0	429.3	607.1
Chironomid larvae	15	80.0	1287.9	834.4

Mean number of organisms/sample: 51.7 Standard deviation 17.4

Mean number of organisms/m^2 44389.6 Standard deviation 14943.1

H'= 2.28 SD= 0.65 SR= 1.33 J= 0.62

C35938

STATION: 45
Date: 29 August 1984
Depth: 5.5 m
Salinity (bottom): 0.7 ppt
Temperature (bottom): 19.9 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	192	100.0	16485.1	9838.0
Neanthes limnicola	2	20.0	171.7	362.0
Oligochaeta	198	100.0	17000.3	6733.9
Corbicula manilensis	1	10.0	85.9	271.5
Ostracoda	4	40.0	343.4	443.4
Limnocythera sp. ??	164	100.0	14081.0	3928.3
Corophium salmonis	87	100.0	7469.8	3946.0
Scottolana canadensis	2468	100.0	211902.5	84089.0

Mean number of organisms/sample: 311.6 Standard deviation 101.1

Mean number of organisms/m^2 267539.8 Standard deviation 86828.8

H'= 1.16 SD= 0.36 SR= 0.60 J= 0.39

C35939

STATION: 18
Date: 29 August 1984
Depth: 3.0 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 20.2 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	150	100.0	12879.0	2890.5
Turbellaria	7	40.0	601.0	909.6
Neanthes limnicola	8	60.0	686.9	677.3
Oligochaeta	145	100.0	12449.7	8473.2
Veidovskyella intermedia	1	10.0	85.9	271.5
Lithoglyphys virens	1	10.0	85.9	271.5
Bivalvia	2	20.0	171.7	362.0
Corbicula manilensis	7	50.0	601.0	814.5
Limnocythera sp. ??	7	30.0	601.0	1074.7
Corophium salmonis	265	100.0	22752.9	13946.2
Harpacticoida	1	10.0	85.9	271.5
Scottolana canadensis	2471	100.0	212160.1	106311.2
Chironomid larvae	2	20.0	171.7	362.0

Mean number of organisms/sample: 306.7 Standard deviation 121.9

Mean number of organisms/m^2 263332.6 Standard deviation 104671.8

H'= 1.09 SD= 0.34 SR= 1.04 J= 0.29

C35940

STATION: 58
Date: 29 August 1984
Depth: 5.5 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 20.8 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	4	40.0	343.4	443.4
Nematoda	64	100.0	5495.0	2501.6
Turbellaria	9	40.0	772.7	1104.7
Neanthes limnicola	1	10.0	85.9	271.5
Oligochaeta	37	100.0	3176.8	1900.6
Vejdovskyella intermedia	4	20.0	343.4	829.5
Lithoglyphys virens	4	30.0	343.4	600.3
Bivalvia	20	40.0	1717.2	2654.1
Corbicula manilensis	26	70.0	2232.4	2566.2
Limnocythera sp. ??	1	10.0	85.9	271.5
Corophium salmonis	418	100.0	35889.5	12944.3
Scottolana canadensis	20	80.0	1717.2	1279.9
Heleidae larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 60.9 Standard deviation 17.5

Mean number of organisms/m^2 52288.7 Standard deviation 15016.4

H'= 1.76 SD= 0.51 SR= 1.30 J= 0.47

STATION: 55
Date: 29 August 1984
Depth: 2.1 m
Salinity (bottom): 0.0 ppt
Temperature (bottom): 20.8 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	150	100.0	12879.0	3796.9
Turbellaria	1	10.0	85.9	271.5
Oligochaeta	48	100.0	4121.3	1608.8
Veidovskyella intermedia	10	60.0	858.6	905.0
Lithoglyphys virens	14	60.0	1202.0	1413.7
Bivalvia	4	20.0	343.4	724.0
Corbicula manilensis	15	70.0	1287.9	1580.6
Ostracoda	7	50.0	601.0	706.9
Limnocythera sp. ??	14	80.0	1202.0	829.5
Corophium salmonis	184	100.0	15798.2	3556.3
Scottolana canadensis	25	90.0	2146.5	1681.0
Chironomid larvae	9	70.0	772.7	633.5

Mean number of organisms/sample: 48.1 Standard deviation 8.6

Mean number of organisms/m^2 41298.7 Standard deviation 7413.1

H'= 2.45 SD= 0.74 SR= 1.23 J= 0.68

C35942

STATION: 45
Date: 14 September 1984
Depth: 6.1 m
Salinity (bottom): 0.3 ppt
Temperature (bottom): 18.4 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	189	100.0	16227.5	8523.3
Hydra sp.	2	20.0	171.7	362.0
Turbellaria	2	10.0	171.7	543.0
Neanthes limnicola	5	40.0	429.3	607.1
Hobsonia florida	19	80.0	1631.3	1244.2
Oligochaeta	142	100.0	12192.1	3050.4
Corbicula manilensis	19	80.0	1631.3	1308.4
Limnocythera sp. ??	184	100.0	15798.2	6954.1
Cumacea	2	20.0	171.7	362.0
Corophium salmonis	118	100.0	10131.5	4336.7
Harpacticoida	1	10.0	85.9	271.5
Scottolana canadensis	1780	100.0	152830.8	67358.6
Chironomid larvae	1	10.0	85.9	271.5

Mean number of organisms/sample: 246.4 Standard deviation 87.4

Mean number of organisms/m^2 211559.0 Standard deviation 75030.5

H'= 1.51 SD= 0.46 SR= 1.07 J= 0.41

C35943

STATION: 18
Date: 14 September 1984
Depth: 2.1 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 18.2 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	Density (no./m^2) S.D.
Nemertea	1	10.0	85.9	271.5
Nematoda	186	100.0	15970.0	4492.5
Turbellaria	16	40.0	1373.8	2071.7
Neanthes limnicola	13	70.0	1116.2	909.6
Oligochaeta	55	90.0	4722.3	3008.5
Corbicula manilensis	17	90.0	1459.6	706.9
Limnocythera sp. ??	6	50.0	515.2	600.3
Corophium salmonis	562	100.0	48253.3	13676.6
Harpacticoida	2	20.0	171.7	362.0
Scottolana canadensis	791	100.0	67915.3	32429.0

Mean number of organisms/sample: 164.9 Standard deviation 44.7

Mean number of organisms/m^2 141583.1 Standard deviation 38413.6

H'= 1.79 SD= 0.64 SR= 0.84 J= 0.54

C35944

STATION: 58
Date: 14 September 1984
Depth: 5.8 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 19.1 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nemertea	1	10.0	85.9	271.5
Nematoda	55	100.0	4722.3	1865.8
Turbellaria	10	50.0	858.6	1144.8
Neanthes limnicola	1	10.0	85.9	271.5
Oligochaeta	41	100.0	3520.3	1785.0
Veidovskyella intermedia	4	10.0	343.4	1086.1
Corbicula manilensis	10	50.0	858.6	1144.8
Limnocythera sp. ??	2	20.0	171.7	362.0
Corophium salmonis	277	100.0	23783.2	5056.1
Scottolana canadensis	23	70.0	1974.8	2105.1
Chironomid larvae	4	30.0	343.4	600.3

Mean number of organisms/sample: 42.8 Standard deviation 5.1

Mean number of organisms/m^2 36748.1 Standard deviation 4374.3

H'= 1.79 SD= 0.55 SR= 1.14 J= 0.52

C35945

STATION: 55
Date: 14 September 1984
Depth: 2.1 m
Salinity (bottom): 0.1 ppt
Temperature (bottom): 19.0 C
No. of samples: 10

Taxa	Total number	Frequency occurrence (%)	Density (no./m^2) $\bar{X}$	S.D.
Nematoda	102	100.0	8757.7	3920.0
Oligochaeta	34	70.0	2919.2	3114.2
Veidovskyella intermedia	36	100.0	3091.0	1578.0
Lithoglyphys virens	18	60.0	1545.5	2095.3
Corbicula manilensis	16	80.0	1373.8	1007.8
Limnocythera sp. ??	17	70.0	1459.6	1462.1
Corophium salmonis	100	100.0	8586.0	3212.6
Scottolana canadensis	16	80.0	1373.8	1086.1
Chironomid larvae	3	30.0	257.6	414.7

Mean number of organisms/sample: 34.2 Standard deviation 9.7

Mean number of organisms/m^2 29364.1 Standard deviation 8361.7

H'= 2.62 SD= 0.79 SR= 0.95 J= 0.83

C35946

Appendix B.--Sediment particle size and organic content of the Cathlamet Bay benthic invertebrate sites; 13 March through 14 September, 1984.

C35947

Station	18[a/]	45	55	58
Survey	3	3	3	3
Month	April	April	April	April
Day	18	18	18	18

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	--	0.00	0.00	0.00
2.0- 4.0	-1	--	0.00	0.00	0.00
1.0- 2.0	0	--	0.05	0.09	0.04
0.5- 1.0	1	--	0.10	0.27	0.13
0.25- 0.50	2	--	0.15	0.95	2.25
0.125- 0.25	3	--	0.97	5.36	61.11
0.0625-0.125	4	--	4.53	28.21	22.05
<.0625	(5-12)	--	94.20	65.11	14.42
Organic Content		--	3.1	4.2	1.4

a/ Sample being saved for hydrocarbon and petroleum testing in relation to the MOBILOIL oil spill, 19 March 1984.

C35948

Station	18[a]	45	55	58
Survey	4	4	4	4
Month	May	May	May	May
Day	4	4	4	4

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	--	0.00	0.00	0.00
2.0- 4.0	-1	--	0.00	0.00	0.00
1.0- 2.0	0	--	0.00	0.08	0.21
0.5- 1.0	1	--	0.00	0.65	0.63
0.25- 0.50	2	--	0.12	3.70	2.30
0.125- 0.25	3	--	0.91	40.99	46.96
0.0625-0.125	4	--	3.22	36.50	30.52
<.0625	(5-12)	--	95.75	18.10	19.39
Organic Content		--	3.30	1.80	1.60

[a] Sample being saved for hydrocarbon and petroleum testing in relation to the MOBILOIL oil spill, 19 March 1984.

C35949

Station	18	45	55	58
Survey	5	5	5	5
Month	May	May	May	May
Day	17	17	17	17

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	0.00	0.00	0.00	0.00
2.0- 4.0	-1	0.00	0.00	0.00	0.00
1.0- 2.0	0	0.05	0.00	0.05	0.08
0.5- 1.0	1	0.16	0.10	1.13	0.31
0.25- 0.50	2	2.17	0.20	3.25	2.74
0.125- 0.25	3	58.62	0.79	19.03	56.13
0.0625-0.125	4	27.29	3.97	27.84	24.01
<.0625	(5-12)	11.70	94.94	48.70	16.72
Organic Content		1.00	3.90	2.40	1.10

Station	18a/	45	55	58
Survey	6	6	6	6
Month	June	June	June	June
Day	6	6	6	6

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	--	0.00	0.00	0.00
2.0- 4.0	-1	--	0.00	0.00	0.00
1.0- 2.0	0	--	0.00	0.08	0.20
0.5- 1.0	1	--	0.05	0.51	0.27
0.25- 0.50	2	--	0.05	3.01	1.79
0.125- 0.25	3	--	0.74	31.89	54.04
0.0625-0.125	4	--	5.99	41.18	28.85
<.0625	(5-12)	--	93.17	23.32	14.85
Organic Content		--	3.40	2.40	1.50

a/ Sample being saved for hydrocarbon and petroleum testing in relation to the MOBILOIL oil spill, 19 March 1984.

C35951

Station	18	45	55	58
Survey	7	7	7	7
Month	June	June	June	June
Day	18	18	18	18

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	0.00	0.00	0.00	0.00
2.0- 4.0	-1	0.00	0.00	0.00	0.00
1.0- 2.0	0	0.05	0.00	0.00	0.07
0.5- 1.0	1	0.29	0.10	0.11	0.22
0.25- 0.50	2	1.38	0.20	0.57	1.90
0.125- 0.25	3	39.17	0.80	9.57	52.86
0.0625-0.125	4	41.43	4.27	30.23	26.42
<.0625	(5-12)	17.68	94.64	59.57	18.53
Organic Content		1.80	3.10	1.70	1.10

C35952

Station	18a/	45	55	58
Survey	8	8	8	8
Month	July	July	July	July
Day	2	2	2	2

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	--	0.00	0.00	0.00
2.0- 4.0	-1	--	0.00	0.00	0.00
1.0- 2.0	0	--	0.06	0.02	0.06
0.5- 1.0	1	--	0.06	0.13	0.23
0.25- 0.50	2	--	0.17	0.88	1.71
0.125- 0.25	3	--	0.74	27.12	53.65
0.0625-0.125	4	--	5.52	38.92	30.81
<.0625	(5-12)	--	93.45	32.94	13.54
Organic Content		--	4.10	2.10	1.60

a/ Sample being saved for hydrocarbon and petroleum testing in relation to the MOBILOIL oil spill, 19 March 1984.

C35953

Station	18	45	55	58
Survey	9	9	9	9
Month	July	July	July	July
Day	17	17	17	17

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	0.00	0.00	0.00	0.00
2.0- 4.0	-1	0.00	0.00	0.00	0.00
1.0- 2.0	0	0.03	0.00	0.19	0.04
0.5- 1.0	1	0.13	0.06	0.48	0.22
0.25- 0.50	2	1.30	0.12	0.91	1.58
0.125- 0.25	3	42.94	0.51	6.28	50.17
0.0625-0.125	4	44.34	0.46	36.16	31.48
<.0625	(5-12)	11.27	98.85	55.97	16.50
Organic Content		1.30	2.90	0.30	1.40

C35954

Station	18a/	45	55	58
Survey	10	10	10	10
Month	August	August	August	August
Day	1	1	1	1

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	--	0.00	0.00	0.00
2.0- 4.0	-1	--	0.00	0.04	0.05
1.0- 2.0	0	--	0.01	0.04	0.45
0.5- 1.0	1	--	0.09	0.18	7.63
0.25- 0.50	2	--	0.18	0.88	36.04
0.125- 0.25	3	--	0.98	3.06	44.95
0.0625-0.125	4	--	0.49	25.10	9.32
<.0625	(5-12)	--	98.24	70.70	1.56
Organic Content		--	1.00	1.90	0.60

a/ Sample being saved for hydrocarbon and petroleum testing in relation to the MOBILOIL oil spill, 19 March 1984.

Station	18	45	55	58
Survey	11	11	11	11
Month	August	August	August	August
Day	17	17	17	17

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	0.00	0.00	0.00	0.00
2.0- 4.0	-1	0.05	0.00	0.00	0.00
1.0- 2.0	0	0.21	0.03	0.00	2.10
0.5- 1.0	1	0.64	0.09	0.00	1.59
0.25- 0.50	2	2.26	0.27	0.45	26.56
0.125- 0.25	3	32.59	1.31	7.12	37.19
0.0625-0.125	4	43.27	1.95	17.37	11.59
<.0625	(5-12)	20.98	96.35	75.06	20.97
Organic Content		2.10	3.00	1.60	1.00

C35956

Station	18	45	55	58
Survey	12	12	12	12
Month	August	August	August	August
Day	29	29	29	29

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	0.00	0.00	0.00	0.00
2.0- 4.0	-1	0.00	0.00	0.00	0.00
1.0- 2.0	0	0.12	0.02	0.03	0.11
0.5- 1.0	1	0.46	0.09	0.11	0.28
0.25- 0.50	2	1.86	0.26	0.55	10.13
0.125- 0.25	3	34.65	1.18	8.59	50.33
0.0625-0.125	4	44.98	1.89	15.96	18.27
<.0625	(5-12)	17.93	96.56	74.76	20.89
Organic Content		2.41	5.40	1.70	1.20

Station	18[a/]	45	55	58
Survey	13	13	13	13
Month	September	September	September	September
Day	14	14	14	14

Particle size (mm)	Phi	Percent by weight			
> 4.0	-2	--	0.00	0.00	0.00
2.0- 4.0	-1	--	0.00	0.03	0.00
1.0- 2.0	0	--	0.04	0.04	0.03
0.5- 1.0	1	--	0.07	0.18	0.10
0.25- 0.50	2	--	0.24	0.57	0.93
0.125- 0.25	3	--	1.09	7.36	48.44
0.0625-0.125	4	--	4.94	23.26	32.50
<.0625	(5-12)	--	93.62	68.57	18.00
Organic Content		--	4.90	1.90	2.70

a/ Sample being saved for hydrocarbon and petroleum testing in relation to the MOBILOIL oil spill, 19 March 1984.

C35958