

First Report of the Regular Limnological Survey of Lake Biwa (Oct. 1965-Dec. 1966) IV. Beothos

By

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There are several published work on the benthic communities of Lake Biwa (Tsuda 1962, Ogino 1963, Kato 1963, Mori, Hayashi, and Higashi unpublished), but almost all of these did not include the prolonged successive investigation. The importance of role of bottom fauna in biological dynamics of lakes and as the indicator of characteristics of lakes, has long been recognized, so that the studies of quantitative as well as qualitative changes including seasonal variation in benthic communities extending over a long period of time are required in limnology.

Benthic communities in Lake Biwa are chiefly composed of Oligochaeta, Hirudinea, larvae of Chironomidae and Mollusca, if those living in very shallow littoral region are excluded. However, less informations on Oligochaeta and Hirudinea in Lake Biwa are available. Only several species of Oligochaeta have hitherto been identified by Yamaguchi (1964): *Criodrilus bathybates* Stephenson, *Kawamuraia japonica* Stephenson, *Brachiura sowerbyi* Beddard, *Limnodrilus grandisetosus* Nomura, *Limnodrilus* sp., *Tubifex* sp.. Besides these, many other species including new species or endemic species of Oligochaeta will be expected to be found in this lake. Few species of Hirudinea were known, that is, *Mimobdella japonica* Blanchard, *Erpobdella* sp., *Glossiphonia* sp., *Helobdella* sp., and about thirty species of Chironomidae were recognized in Lake Biwa by Kato (1962). Fresh water Mollusca has been investigated rather in detail and about fourty species could be found in this lake.

Our survey points and conditions at these points were sketched in Part 1 "General Remark". The 15 × 15 cm Ekman-Birge sampler was used to obtain bottom sample and repeated thrice at each station. The samples were washed in a screen of about eight meshes per centimeter and all organisms removed

were put into small tubes containing 70% of alcohol solution for fixation and preservation.

Identification of Mollusca was made by Mori and that of *Chironomus* and other animals by Suzuki. We must here express our most grateful thanks to Mr. R. Kitagawa, teacher of Komono High School, Mie prefecture, for his kind initiation for identification of Chironomidae. Identification of Oligochaeta and Hirudinea was not made in this report, because of lack of our present knowledge, especially the former was due to taxonomical difficulty. After identification, all organisms were counted and weighted (in fresh) and some were measured the lengths (in the present paper, lengths measured are not shown). The number and total weights are shown in the following table. The number of individuals of Oligochaeta could not always be counted, because they were often cut into small pieces. Average values of numbers of individuals/m² and fresh weights/m² were generally calculated from three samples (sometimes from two or one samples available). After examining these data the authors consider that the sample size seems to be rather small to estimate exactly the value of standing crop in the area where the samples were collected, however they may be useful for investigating the general trend in variation covering long period. The numbers of pupae of Simuliidae and eggs of some animals could not obtained in average values of individuals/m² and of fresh weight/m², because they were only found attached to the shells of Mollusca.

Discussions on this investigation will be made after accumulating 2 or 3 year's data.

Results of these observations are shown in the following tables.

The"—" mark means no specimens were collected and the "×" means samples were missed at those time.

* : These were adhered to the shell of Mollusca ? : Could not count

Ie-1																
Date	October 18, 1965								November 16, 1965							
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	8	0.15	8	0.14	13	0.22	429	7.55	10	0.41	13	0.17	9	0.18	474	11.3
Hirudinea	-	-	-	-	-	-	-	-	1	0.01	-	-	-	-	15	0.16
Chironomidae larvae																
<i>Phaenopsectra</i> sp.	-	-	-	-	-	-	-	-	1	0.001	-	-	2	0.001	44	0.03
December 15, 1965																
Date	December 15, 1965															
Sampling No.	1		2		3		Average									
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m								
Oligochaeta	14	0.31	7	0.10	13	0.06	503	6.96								
Hirudinea	1	0.02	1	0.01	1	0.01	44	5.77								

1e-1

Not identified species - - - - - - - 2 0.002 - - - - 30 0.03

Date	November 16, 1966								December 15, 1966							
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	4	0.09	6	0.06	7	0.25	252	5.92	1	0.06	1	0.12	?	0.34	44	7.70
Hirudinea	3	0.03	-	-	3	0.01	89	0.59	2	0.01	-	-	1	0.02	44	0.44

Nb 2 (Tsudae)

Date	October 1, 1965								October 15, 1965							
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	-	-	1	0.001	1	0.001	30	0.03	-	-	-	-	-	-	-	-
Mollusca																
Gastropoda																
<i>Semisulcospira decipiens</i> (Westerland)	-	-	2	1.75	2	1.37	59	46.2	-	-	1	0.30	1	0.90	30	1.78
Pelecypoda																
<i>Corbicula sandai</i> Reinhardt	4	3.49	1	0.35	1	0.50	89	64.2	10	9.50	15	13.40	4	3.80	429	395
<i>Unio biwae</i> Kobelt	-	-	-	-	-	-	-	-	-	-	1	0.40	-	-	15	0.59

Date	November 2, 1965								November 15, 1965							
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Hirudinea	-	-	-	-	-	-	-	-	-	-	1	0.001	-	-	15	0.01
Mollusca																
Gastropoda																
<i>Semisulcospira decipiens</i> (Westerland)	1	0.40	-	-	-	-	15	5.90	-	-	-	-	-	-	-	-
Pelecypoda																
<i>Corbicula sandai</i> Reinhardt	4	7.30	-	-	-	-	59	108	1	1.50	5	7.55	1	1.15	104	151
<i>Unio biwae</i> Kobelt	-	-	-	-	-	-	-	-	-	1	2.80	-	-	-	15	41.4

Date	December 2, 1965								December 13, 1965							
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	-	-	-	-	2	0.21	30	13.3	-	-	-	-	3	0.11	44	1.63
Mollusca																
Gastropoda																

Nb 2

Chironomidae larvae																		
<i>Pentaneura</i> sp.	-	-	-	-	1	0.01	15	0.15	-	-	-	-	-	-	-	-	-	-
<i>Spaniotma</i> sp.	-	-	-	-	-	-	-	-	8	0.13	8	0.14	9	0.17	370	651		
Mollusca																		
Gastropoda																		
<i>Semisulcospira</i> <i>decepiens</i> (Westerland)	-	-	-	-	-	-	-	-	-	2	1.07	1	1.00	44	30.6			
Pelecypoda																		
<i>Unio birwae</i> Kobelt	2	3.45	3	2.95	3	2.02	118	125	1	3.85	-	-	-	-	15	57.0		
Pupae of Si- muliidae*	-	-	2	0.002	-	-	(-)	(-)	-	-	5	0.005	-	-	(-)	(-)		

Date	March 31, 1966								April 12, 1966									
	1		2		3		Average		1		2		3		Average			
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²		
Oligochaeta	3	0.01	1	0.001	-	-	59	0.16	-	-	-	-	×	-	-			
Hirudinea	-	-	-	-	-	-	-	-	-	1	0.01	×	22	0.22				
Mollusca																		
Chironomidae larvae																		
<i>Spaniotoma</i> sp.	-	-	-	-	-	-	-	-	-	1	0.38	×	22	8.44				
Gastropoda																		
<i>Semisulcospira</i> <i>decepiens</i> (Westerland)	-	-	1	0.35	-	-	15	5.18	-	-	-	-	×	-	-			
Pelecypoda																		
<i>Corbicula san- dai</i> Reinhardt	6	4.38	13	8.96	1	1.01	296	2.12	2	2.74	8	10.4	×	222	291			
Pupae of Si- muliidae*	3	0.003	-	-	-	-	(-)	(-)	-	-	5	0.02	×	(-)	(-)			

Date	April 30, 1966								May 16, 1966									
	1		2		3		Average		1		2		3		Average			
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²		
Oligochaeta	-	-	-	-	1	0.01	15	0.15	-	-	1	0.01	-	-	15	0.15		
Hirudinea	-	-	1	0.005	-	-	15	0.07	-	-	-	-	-	-	-	-		
Mollusca																		
Gastropoda																		
<i>Semisulcospira</i> <i>decepiens</i> (Westerland)	-	-	-	-	-	-	-	-	1	0.52	-	-	-	-	15	7.70		
Pelecypoda																		
<i>Corbicula san- dai</i> Reinhardt	6	6.71	7	7.07	1	1.04	207	219	7	7.25	2	2.16	2	1.90	163	167		

Nb 2

Pupae of Simuliidae* 7 0.007 12 0.01 - - (-) (-) 4 0.004 2 0.002 2 0.002 (-) (-)

Date	May 30, 1966							June 13, 1966								
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	-	-	-	-	1	0.01	15	0.15	1	0.02	-	-	×	22	0.44	
Hirudinea	-	-	-	-	-	-	-	-	-	1	0.001	-	×	22	0.02	
Mollusca																
Gastropoda																
<i>Semisulcospira decipiens</i> (Westerland)	1	0.83	-	-	1	0.34	30	26.0	-	-	-	-	×	-	-	
<i>Corbicula sandai</i> Reinhardt	2	1.94	1	0.96	1	0.72	60	53.6	1	0.85	1	0.91	×	44	39.1	
<i>Unio biwae</i> Kobelt	-	-	-	-	-	-	-	-	-	1	0.78	-	-	22	17.3	

Date	July 16, 1966							August 18, 1966								
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	1	0.01	1	0.01	-	-	30	0.30	-	-	-	-	-	-	-	-
Hirudinea	1	0.005	-	-	-	-	15	0.07	-	-	-	-	-	-	-	-
Chironomidae larvae																
Not identified species	-	-	-	-	-	-	-	-	1	0.002	-	-	1	0.002	30	0.06
Mollusca																
Gastropoda																
<i>Semisulcospira decipiens</i> (Westerland)	-	-	1	0.03	-	-	15	0.44	-	-	-	-	-	-	-	-
Pelecypoda																
<i>Corbicula sandai</i> Reinhardt	2	1.49	-	-	1	0.50	44	29.5	1	2.32	1	1.68	1	1.40	44	79.9
<i>Unio biwae</i> Kobelt	-	-	1	0.10	-	-	15	0.15	1	0.41	-	-	-	-	15	6.07

Date	September 16, 1966							October 15, 1966								
	1		2		3		Average		1		2		3		Average	
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	-	-	-	-	1	0.03	51	0.44	-	-	-	-	-	-	-	-
Chironomidae larvae																
Not identified species	1	0.002	-	-	-	-	15	0.04	-	-	-	-	-	-	-	-
Mollusca																
Gastropoda																

Nb 5

Mollusca															
Gastropoda															
<i>Semisulcospira</i>															
<i>deci piens</i>															
(Westerland) - - 1 0.30 - - 15 4.44 - - - - - - - -															
Date															
December 2, 1965															
December 13, 1965															
Sampling No.															
1 2 3 Average 1 2 3 Average															
Items measured															
No. Wt. No. Wt. No. Wt. Ind./m ² g/m ² No. Wt. No. Wt. No. Wt. Ind./m ² g/m ²															
Oligochaeta 5 0.09 1 0.01 9 0.11 222 3.11 9 0.38 4 0.01 10 0.08 340 6.96															
Chironomidae larvae															
<i>Pentaneura</i> sp. - - - - 1 0.001 15 0.02 - - - - - - - -															
<i>Spaniotoma</i> sp. 2 0.02 - - 1 0.01 44 0.44 1 0.01 4 0.05 2 0.02 104 1.18															
<i>Tendipes plumosus</i> (Meigen) - - - - 1 0.04 15 0.59 - - - - - - - -															
Mollusca															
Gastropoda															
<i>Semisulcospira</i>															
<i>deci piens</i>															
(Westerland) 1 0.80 - - - - 15 11.8 1 1.90 - - - - 15 28.1															
Date															
January 5, 1966															
January 17, 1966															
Sampling No.															
1 2 3 Average 1 2 3 Average															
Items measured															
No. Wt. No. Wt. No. Wt. Ind./m ² g/m ² No. Wt. No. Wt. No. Wt. Ind./m ² g/m ²															
Oligochaeta 4 0.24 - - × 89 5.33 9 0.17 9 0.30 5 0.14 340 9.03															
Chironomidae larvae															
<i>Pentaneura</i> sp. - - - - - - - - - 1 0.005 15 0.07															
<i>Spaniotoma</i> sp. 1 0.03 - - × 22 0.67 3 0.06 4 0.09 1 0.02 118 2.60															
Mollusca															
Gastropoda															
<i>Semisulcospira</i>															
<i>deci piens</i>															
(Westerland) - - 1 2.10 × 22 46.6 - - 1 0.02 - - 15 0.30															
Pelecypoda															
<i>Corbicula sandai</i> Reinhardt 1 2.67 - - × 22 59.5 - - - - - - - -															
<i>Anodonta calipygos</i> Kobelt - - - - - - - - 1 2.19 - - 15 32.4															
Date															
February 1, 1966															
February 17, 1966															
Sampling No.															
1 2 3 Average 1 2 3 Average															
Items measured															
No. Wt. No. Wt. No. Wt. Ind./m ² g/m ² No. Wt. No. Wt. No. Wt. Ind./m ² g/m ²															
Oligochaeta 4 0.03 4 0.13 2 0.19 148 5.18 8 0.20 18 0.24 19 0.15 666 8.73															
Chironomidae larvae															

Nb 5

Chironomidae larvae																
<i>Pentaneura</i> sp.	-	-	2	0.01	-	-	30	0.14	1	0.005	2	0.005	1	0.005	59	0.22
Mollusca																
Pelecypoda																
<i>Corbicula sandai</i> Reinhardt	-	-	-	-	-	-	-	-	1	1.43	-	-	1	9.34	30	159
Pupae of Simuliidae*																
	-	-	-	-	-	-	-	-	2	0.002	-	-	-	-	(-)	(-)
Eggs of some animals*																
	-	-	-	-	-	-	-	-	2	-	-	-	-	-	(-)	(-)
Date																
May 30, 1966							June 13, 1966									
Sampling No.	1	2	3	Average			1	2	3	Average						
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	3	0.04	5	0.04	3	0.10	163	2.66	2	0.02	3	0.07	7	0.08	178	2.52
Chironomidae larvae																
<i>Pentaneura</i> sp.	1	0.008	-	-	-	-	15	0.12	-	-	1	0.01	1	0.01	30	0.30
Mollusca																
Gastropoda																
<i>Valvata (Cincinna) japonica</i> v. Martens																
	-	-	2	0.05	-	-	30	0.74	-	-	-	-	-	-	-	-
Date																
July 16, 1966							August 18, 1966									
Sampling No.	1	2	3	Average			1	2	3	Average						
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	1	0.04	1	0.07	1	0.03	44	2.07	-	-	-	-	-	-	-	-
Chironomidae larvae																
<i>Pentaneura</i> sp.	-	-	-	-	-	-	-	-	1	0.008	-	-	-	-	15	0.12
<i>Tendipes plumosus</i> (Meigen)																
	1	0.018	-	-	-	-	15	0.27	1	0.018	-	-	-	-	15	0.27
Mollusca																
Gastropoda																
<i>Semisulcospira decipiens</i> (Westerland)																
	-	-	1	2.15	-	-	15	31.8	-	-	-	-	-	-	-	-
<i>Valvata (Cincinna) japonica</i> v. Martens																
	-	-	1	0.01	-	-	15	0.15	-	-	-	-	-	-	-	-
Date																
September 16, 1966							October 15, 1966									
Sampling No.	1	2	3	Average			1	2	3	Average						
Items measured	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta	?	0.04	4	0.04	3	0.04	155	1.78	6	0.09	2	0.08	1	0.03	133	2.96

														Na 2															
														February 1, 1966		February 17, 1966													
														1		2		3		Average		1		2		3		Average	
														No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
<i>Unio biwae</i>														1	6.51	×	×	44	289	-	-	-	-	×	-	-	-	-	-
Pupae of Si- muliidae*														-	-					-	-	29	0.04	-	-	×	(-)	(-)	
Date														February 1, 1966				February 17, 1966											
Sampling No.														1		2		3		Average		1		2		3		Average	
Items measured														No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta														9	0.09	6	0.03	5	0.09	296	3.11	-	-	-	-	-	-	-	-
Hirudinea														-	-	-	-	1	0.10	15	1.48	-	-	-	-	-	-	-	-
Chironomidae larvae																													
<i>Spaniotoma</i> sp.														13	0.26	7	0.16	3	0.06	340	7.10	(13)**	(16)**	(11)**	(592)**				
<i>Pentaneura</i> sp.														-	-	1	0.001	1	0.001	30	0.03	-	-	-	-	-	-	-	-
Mollusca																													
Gastropoda																													
<i>Semisulcospira</i> <i>deci piens</i> (Westerland)														1	0.51	1	1.44	-	-	30	14.1	1	0.73	-	-	-	-	15	10.8
Pupae of Si- muliidae*														3	0.003	5	0.005	-	-	(-)	(-)	12	0.02	-	-	-	-	(-)	(-)

** : Cast-off skin

														Na 3															
														March 2, 1966				March 18, 1966											
														1		2		3		Average		1		2		3		Average	
														No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta														?	0.08	?	0.10	?	0.07	?	3.70	-	-	3	0.02	-	-	44	0.30
Chironomidae larvae																													
<i>Spaniotoma</i> sp.														8	0.17	7	0.13	13	0.32	414	9.18	-	-	-	-	-	-	-	-
<i>Pentaneura</i> sp.														1	0.01	1	0.01	-	-	30	0.30	-	-	1	0.01	-	-	15	0.15
Mollusca																													
Gastropoda																													
<i>Semisulcospira</i> <i>deci piens</i> (Westerland)														-	-	-	-	1	1.27	15	18.8	-	-	-	-	-	-	-	-
Pelecypoda																													
<i>Corbicula san- dai</i> Reinhardt														-	-	-	-	-	-	-	-	-	1	1.05	3	2.76	59	56.4	
<i>Lanceolaria</i> <i>oxyrhyncha</i> (v. Martens)														-	-	1	31.7	-	-	15	469	-	-	-	-	-	-	-	-
Pupae of Si- muliidae*														-	-	63	0.07	18	0.02	(-)	(-)	-	-	-	-	-	-	-	-
Date														March 31, 1966				April 12, 1966											
Sampling No.														1		2		3		Average		1		2		3		Average	
Items measured														No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta														-	-	?	0.10	?	0.07	?	2.52	?	0.01	1	0.05	2	0.02	67	1.18

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Mollusca																	
Gastropoda																	
<i>Semisulcospira</i>																	
<i>deci piens</i>																	
(Westerland)		-	-	1	1.23	-	-	15	18.2	1	1.09	-	-	1	1.58	30	39.5
Pupae of Simuliidae *		-	-	-	-	-	-	-	-	5	0.005	-	-	-	-	-	-
Date		July 16, 1966								August 18, 1966							
Sampling No.		1		2		3		Average		1		2		3		Average	
Items measured		No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta		3	0.01	1	0.01	2	0.02	89	0.59			3	0.01	1	0.06	59	1.04
Hirudinea		-	-	-	-	1	0.01	15	0.15	1	0.07	2	0.03	-	-	44	1.48
Chironomidae larvae																	
<i>Phaenopsectra</i> sp.		-	-	-	-	-	-	-	-	-	-	-	-	2	0.01	30	0.17
Mollusca																	
Gastropoda																	
<i>Semisulcospira</i>																	
<i>deci piens</i>																	
(Westerland)		1	0.55	-	-	-	-	15	8.14	1	0.05	1	3.55	-	-	30	53.3
Pupae of Simuliidae *		-	-	-	-	-	-	-	-	-	-	3	0.003	-	-	(-)	(-)
Date		September 16, 1966								October 15, 1966							
Sampling No.		1		2		3		Average		1		2		3		Average	
Items measured		No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta		5	0.002	7	0.06	?	0.06	266	1.81	1	0.02	3	0.03	1	0.05	74	1.48
Hirudinea		-	-	-	-	-	-	-	-	-	1	0.05	-	-	15	0.74	
Mollusca																	
Gastropoda																	
<i>Semisulcospira</i>																	
<i>deci piens</i>																	
(Westerland)		2	2.18	-	-	-	-	30	0.32	1	0.49	-	-	-	-	15	7.25
Date		November 19, 1966								December 19, 1966							
Sampling No.		1		2		3		Average		1		2		3		Average	
Items measured		No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²	No.	Wt.	No.	Wt.	No.	Wt.	Ind./m ²	g/m ²
Oligochaeta		9	0.07	4	0.03	?	0.10	289	2.96	18	0.02	8	0.02	6	0.15	474	2.81
Chironomidae larvae																	
<i>Spaniotoma</i> sp.		4	0.06	4	0.06	8	0.13	237	3.70	3	0.04	4	0.05	2	0.03	133	1.78
<i>Tendipes plumosus</i> (Meigen)		-	-	-	-	-	-	-	-	-	1	0.01	-	-	15	0.15	
<i>Pentaneura</i> sp.		2	0.002	-	-	-	-	30	0.03	1	0.01	1	0.05	-	-	30	0.89
Mollusca																	
Gastropoda																	

