Canadian Data Report of

Fisheries and Aquatic Sciences 880

1993

LAKE VARIATION AND CLIMATE CHANGE STUDY: VII. CRUSTACEAN PLANKTON OF A LAKE FLUSHING RATE SERIES IN THE EXPERIMENTAL LAKES AREA, NORTHWESTERN ONTARIO, 1987-1990

by

A.G. Salki

Central and Arctic Region

Department of Fisheries and Oceans

Winnipeg, Manitoba R3T 2N6

This is the 75th Data Report

from the Central and Arctic Region, Winnipeg

Cat. no. 97-13/880E ISSN 0706-6465

Correct citation for this publication is:

Salki, A.G. 1993. Lake variation and climate change study: VII. Crustacean plankton of a lake flushing rate series in the Experimental Lakes Area, Northwestern Ontario, 1987-1990. Can. Data Rep. Fish. Aquat. Sci. 880: v + 74 p.

TABLE OF CONTENTS

	Page
ABSTRACT/RÉSUMÉ	v
INTRODUCTION	1
METHODS	1
DATA SUMMARY	2
ACKNOWLEDGMENTS	3
REFERENCES	3

LIST OF TABLES

Table		Page
1	Some limnological characteristics of the study lakes in the Experimental Lakes Area	4
2	Species composition and mean abundance of zooplankton life stages in the seven study lakes during the open water period of 1988 to 1990	5

LIST OF FIGURES

Figure		Page
	Zooplankton sampling stations on:	
1	Lake 149, (a) 1987, (b) 1988-1990	7
2	Lake 164, (a) 1987, (b) 1988-1990	8
3	Lake 165, (a) 1987, (b) 1988-1990	9
4	Lake 373, (a) 1987, (b) 1988-1990	10
5	Lake 377, (a) 1987, (b) 1988-1990	11
6	Lake 442, (a) 1987, (b) 1988-1990	12
7	Lake 938, (a) 1987, (b) 1988-1990	13
	Annual mean crustacean abundance in the seven study lakes during the open water periods of 1988, 1989 and 1990:	
8a	per litre	14
8b	per square centimetre	14
	Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in:	
9	the littoral and pelagic regions of Lake 149	15
10	the littoral, pelagic regions and the outflow of Lake 164	16
11	the East inflow, littoral and pelagic regions of Lake 165	17
12	the littoral, upper pelagic and lower pelagic regions of Lake 373	18
13	the littoral, upper pelagic and lower pelagic regions of Lake 377	19
14	the West inflow and outflow of Lake 377	20
15	the littoral, upper pelagic and lower pelagic regions of Lake 442	21
16	the littoral and pelagic regions of Lake 938	22
17	the Northwest inflow and the outflow of Lake 938	23

LIST OF APPENDICES

Appendix		Page
	Mean abundance of zooplankton species life stages in:	
1.1	the pelagic and littoral regions of Lake 149 during:	
	a 1988	24
	b 1989	25
	c 1990	26
1.2	the pelagic and littoral regions of Lake 164 during:	
	a 1988	27
	b 1989	28
	c 1990	29
1.3	the outflow from Lake 164 during the open water seasons of:	
	a 1988 and 1989	30
	b 1990	31

Appendix			Page
	Mean abundance of zooplankton species life stages in:		
1.4	the pelagic and littoral regions of Lake 165 during:		
	a	1988	32
	b	1989	33
	c	1990	34
1.5	the East inflow to Lake 165 during the open water seasons of:		
	a	1988 and 1989	35
	b	1990	36
1.6	the upper (0-5 m) and lower (5-20 m) pelagic regions of Lake 373 during:		
	a	1988	37
	b	1989	38
	c	1990	39
1.7	the littoral region of Lake 373 during:		
	a	1988 and 1989	40
	b	1990	41
1.8	the upper (0-5 m) and lower (5-18 m) pelagic regions of Lake 377 during:		
	a	1988	42
	b	1989	43
	c	1990	44
1.9	the littoral region of Lake 377 during:		
	a	1988 and 1989	45
	b	1990	46
1.10	the West inflow and outflow of Lake 377 during:		
	a	1988	47
	b	1989	48
	c	1990	49
1.11	the upper (0-5 m) and lower (5-17.8 m) pelagic regions of Lake 442 during:		
	a	1988	50
	b	1989	51
	c	1990	52
1.12	the littoral region of Lake 442 during:		
	a	1988	53
	b	1989	54
	c	1990	55
1.13	the littoral and pelagic regions of Lake 938 during:		
	a	1988	56
	b	1989	57
	c	1990	58
1.14	the Northwest inflow and outflow of Lake 938 during:		
	a	1988	59
	b	1989	60
	c	1990	61

Appendix		Page
	Abundance of zooplankton life stages, collected with a twin Wisconsin net, at:	
2.1	nine stations in Lake 149, July 22, 1987	62
2.2	10 stations in Lake 164, July 22, 1987	63
2.3	nine stations in Lake 165, July 22, 1987	64
2.4	nine stations in Lake 373, July 21, 1987	65
2.5	nine stations in Lake 377, July 21, 1987	66
2.6	11 stations in Lake 442, July 21, 1987	67
2.7	12 stations in Lake 938, July 22, 1987	68
	Abundance of zooplankton species life stages, collected with a twin Wisconsin net sampler and a flexible tube sampler, at:	
3.1	eight littoral stations in Lake 377, July 27, 1988	69
3.2	six pelagic stations in Lake 377, July 27, 1988	70
3.3	eight littoral stations in Lake 442, July 27, 1988	71
3.4	six pelagic stations in Lake 442, July 27, 1988	72
3.5	10 littoral stations in Lake 938, July 28, 1988	73
3.6	five pelagic stations in Lake 938, July 28, 1988	74

ABSTRACT

Salki, A.G. 1993. Lake variation and climate change study: VII. Crustacean plankton of a lake flushing rate series in the Experimental Lakes Area, Northwest Ontario, 1987-1990. Can. Data Rep. Fish. Aquat. Sci. 880: v + 74 p.

The abundance of zooplankton species in seven lakes in the Experimental Lakes Area of Northwest Ontario, measured biweekly during the open water period of 1988, 1989 and 1990 are presented. The lakes differ in water renewal time (from 0.04 to 45 yrs) and morphoedaphic features (3 deep-stratified and 4 shallow-mixed lakes with variable watershed size and type). Average zooplankton abundance in the littoral and pelagic regions are derived from composite samples collected at 5 to 10 stations within each zone. Zooplankton concentrations per litre in lake inflows and outflows are also reported. Results of a pilot study in 1987 to determine the spatial variation of zooplankton among 9 to 12 stations in each lake are presented. Comparison of zooplankton samples collected by two samplers, a twin Wisconsin net and a flexible plastic hose is included. Field and laboratory methods are given and sampling sites on the seven lakes are indicated.

Key words: climatic changes; horizontal variation; limnology; long-term monitoring; methodology; natural variability; zooplankton abundance; zooplankton species composition.

RÉSUMÉ

Salki, A.G. 1993. Lake variation and climate change study: VII. Crustacean plankton of a lake flushing rate series in the Experimental Lakes Area, Northwest Ontario, 1987-1990. Can. Data Rep. Fish. Aquat. Sci. 880: v + 74 p.

L'abondance des espèces de zooplancton dans sept lacs de la Région des Lacs Expérimentaux du nord-ouest de l'Ontario a été mesurée deux fois par semaine pendant la saison d'eau libre en 1988, 1989 et 1990, et les résultats sont présentés. Les lacs présentent des temps de renouvellement de l'eau (de 0, 04 à 45 ans) et des caractéristiques morphoédaphiques différents (3 lacs profonds aux eaux stratifiées et 4 lacs peu profonds aux mélangées avec bassins versants de type et de dimensions variables). L'abondance moyennne du zooplancton dans les régions littorales et pélagiques est dérivée d'échantillons composites recueillis dans 5 à 10 stations à l'intérieur de chaque zone. Les concentrations de zooplancton par litre dans les écoulement entrant et sortant des lacs sont également signalées. Les résultats d'une étude pilote effectuée en 1987 afin de déterminer la variation spatiale du zooplancton en 9 à 12 stations de chaque lac sont présentés. Une comparison des échantillons de zooplancton recueillis au moyen de deux échantillonneurs, un filet Wisconsin double et un tuyau flexible en plastique, est fournie. Les méthodes utilisées sur le terrain et an laboratoire sont indiquées, comme les emplacements d'échantillonnage dans chacun des sept lacs.

Mots-clés: changements climatiques; variation horizontale; limnologie; surveillance à long terme; méthodologie; variabilité naturelle; abondance du zooplancton; composition en espèces du zooplancton.

INTRODUCTION

This report archives initial information on the abundance and distribution of crustacean plankton species in seven lakes (149, 164, 165, 373, 377, 442, 938) in the Experimental Lakes Area (ELA) of Northwest Ontario. Sampling was conducted bi-weekly during the open water periods of 1988, 1989 and 1990. Results of a pilot survey in July, 1987 to examine the spatial variation of zooplankton within each lake is also included. Finally, a comparison of zooplankton samples collected with two samplers, a twin Wisconsin net and a flexible plastic tube in Lakes 377, 442 and 938 in July, 1988 is presented.

Zooplankton samples were collected as part of the "Lake Variation and Climate Change Study" of the Freshwater Institute designed to determine the functional relationship between lake flushing rate and limnological variability (Campbell 1992). Flushing times for the study lakes ranged between approximately 0.04 and 45 years for the period 1987-1990 (Table 1). All lakes are about the same size, surface areas ranging from 16.0 to 27.3 ha. Concurrently, a second study in the Red Lake District of Northwest Ontario is examining the influence of lake size on limnological variability (Fee et al. 1989). Surface areas of the Northwest Ontario Lake Size Series (NOLSS) lakes range between 0.89 and 346.9 km^2 while water renewal times are all longer than five years. The zooplankton species composition, abundance and biomass found in the NOLSS lakes, as well as in Lake Nipigon, are presented in Salki (1992). Overall, this joint study, with a planned duration of 10 years, will provide a better understanding of the effect that lake size and water renewal time have on natural variability in unperturbed lakes. This information is required to assess the impact of a variety of environmental effects on aquatic ecosystems.

METHODS

During the pilot surveys in July, 1987, zooplankton were sampled with twin Wisconsin nets (mesh size 72 μm, mouth opening total = 904 cm^2, length 1 m) attached to a metal crossframe to ensure that the retrieval line did not disturb the water column passing through each net. Nets were towed vertically from 0.25 m above the bottom to the surface at a rate of 0.5 $m \cdot sec^{-1}$. The 1987 zooplankton sampling sites are shown in Figs. 1(a)-7(a).

Beginning in May, 1988, zooplankton were collected biweekly from 6 to 10 near-shore stations and from 5 to 7 open-water stations in each lake. The sampling sites, indicated in Figs. 1(b)-7(b), were permanently fixed with all-season marker buoys (Campbell and Salki 1992). Littoral stations were usually situated within the 2.0 to 4.0 m contour to ensure that the entire sample represented warmer epilimnetic waters. The zooplankton sampler used at all sampling sites consisted of a flexible PVC hose marked at meter intervals and fitted at one end with a 30 cm length of 7.6 cm diameter clear plexiglass pipe to which a retrieval cord was attatched. At each littoral station, the plexiglass mouth-end (opening area = 50 cm^2) was lowered to within 0.25 m of the bottom. The water column captured as the hose descended was collected by retrieving the mouth from the bottom to the surface with the attached cord. During retrieval of the hose, the tail end was held steady to avoid sample loss from the mouth. Following withdrawl from the water, the mouth was placed into a 72 μm mesh net attatched to the gunwale and the contents of the hose were filtered by retrieving the tail into the boat. One net served to composite all littoral stations in a lake. Using the same procedure and a second net, composite samples were collected from the open-water stations in each shallow lake (149, 164, 165, and 938). At the open-water stations of deeper Lakes 373, 377 and 442, the column of water collected with the flexible hose was divided into two, a lower (5 m-bottom) and an upper (0-5 m) layer. The sample was divided by placing the hose mouth into a net for the lower layer, retrieving the tail end to the five metre mark, transferring the mouth into an upper layer net and filtering the remaining volume of water by completely retrieving the hose. This sampling technique permits the subdivision of deeper water columns into as many layers as necessary.

A comparison of the twin net and hose samplers was conducted on Lakes 377, 442 and 938 in July, 1988. In Lake 377, total water column samples were collected with both samplers at six pelagic stations (nos. 9-14, Fig. 5b) varying in depth from 7.5-17.9 m. Since evaluation of sampler efficiency required similar volumes of water from each sampler, five hose samples were taken for each net haul collected.

Samples were also obtained with the net and hose from eight littoral stations in Lake 377 (Fig. 5b). The eight net samples were retained separately for information on zooplankton spatial variation, but the hose hauls were pooled into two groups - littoral stations 1 to 4 combined as one group and stations 5 to 8 another. Each littoral composite sample (4 x 5 = 20 hose hauls) was compared with the mean of the group of corresponding net samples. Pooling of samples was used in the pilot survey since it reflected the actual sampling protocol employed to

assess seasonal zooplankton dynamics in the study lakes. In addition, pooling reduced the number of samples for counting to a manageable level.

In Lake 442, net hauls were collected at littoral stations 1 to 8 and pelagic stations 9 to 14 to determine crustacean distribution (Fig. 6b). For a comparison of sampler efficiency, five hose hauls were also taken at each station and pooled into three samples: the first representing littoral stations 1 to 4 (total 20 hose hauls), the second littoral stations 5 to 8 (20 hose hauls) and the third pelagic stations 9 to 14 (30 hose hauls). A similar approach was used in Lake 938 where 10 littoral and five pelagic stations were sampled separately with twin nets. The five hose hauls taken at each station were pooled into three samples: littoral stations 1 to 4 (20 hose hauls), littoral stations 5 to 10 (30 hose hauls) and pelagic stations 11 to 15 (25 hose hauls). The pooled hose samples were compared with the means of respective groups of net samples.

Zooplankton retained by the 72 μm filtering nets were placed in glass jars and preserved in a 5% formalin solution. After settling, samples were decanted and transferred to 45-mL glass vials. Additional formalin solution (5%) was added to standardize sample volumes to 40-mL. One-mL subsamples were withdrawn using a calibrated 4 mm I.D. glass tube and transferred into a 1-mL Sedgwick-Rafter counting chamber. Zooplankton were identified with a 63 X compound microscope and enumerated using a voice recognition system. All specimens except cyclopoid and diaptomid nauplii were identified to species using keys of Yeatman (1959), Wilson (1959), and Brooks (1957). Generally, at least 200 individuals of the most common species were identified per sample which provided total abundance estimates with counting errors not exceeding 7% (Cassie 1971). Larger, less abundant animals (Leptodora, Senecella, Mysis, Gammarus) were enumerated under a 12x dissecting microscope. The entire 40-mL sample was examined to eliminate counting errors for the rarer species.

DATA SUMMARY

The limnological characteristics of the seven study lakes are given in Table 1. The littoral and pelagic (upper and lower in the deep lakes) volumes used to calculate lake weighted means for Fig. 8a are also included.

The mean abundance of each zooplankton species found in the study lakes during the open water periods of 1988, 1989 and 1990 is reported in Table 2. In total, 50 crustacean species, eight cyclopoids, six calanoids and 36 cladocerans were identified in the seven lakes. Lake 377 contained the highest number of species, 34, and Lake 373 the lowest, 22. The high number of cladoceran taxa reflected numerous littoral species.

Mean annual total zooplankton abundances per litre and per square centimeter for each study lake are indicated in Fig. 8. Highest concentrations of zooplankton were found in shallow Lake 149 (Fig. 8a). Despite the much deeper water columns in Lakes 373, 377 and 442, plankton concentrations were higher than in shallow lakes, 164, 165 and 938. Total abundances of plankton per square centimeter were highest in deep Lakes 377 and 442 and comparable in Lakes 373 and 149 (Fig. 8b).

Cyclopoids were the most abundant crustaceans in all lakes, calanoids were more common in deeper Lakes 373 and 442 while cladocerans favoured shallow lakes, particularly Lake 149. Even though essentially the same group of calanoid species occurred in all three deep lakes (Table 2), their abundance in Lake 377 was very low, due mainly to the relative scarcity of Diaptomus sicilis.

Biweekly changes in the abundance of Cyclopoida, Calanoida, Cladocera and total zooplankton during 1988, 1989 and 1990 are summarized in Figs. 9-17. Results from the littoral, pelagic (upper and lower in deeper Lakes 373, 377 and 442), inflow (Lakes 165, 377, and 938) and outflow (Lakes 164, 377 and 938) of the study lakes are included. The abundances of all zooplankton species life stages on the same sampling dates and lake locations are given in Tables 3-40, Appendix 1.

Although a variety of seasonal patterns was observed among the study lakes (Figs. 9-17), considerable similarity was noted between years within particular lakes and to some extent between lakes. In all lakes, the seasonal cycles of 1989 and 1990 were most similar and differed from those in 1988. In deep Lakes 373, 377 and 442, each zone exhibited remarkable consistancy over the two year period (compare Figs. 12, 13, 14 and 15). For example, crustacean abundances in the lower pelagic zone of Lake 377 during 1989 and 1990 were almost identical. In 1988, during September and October, all deep lakes simultaneously experienced a severe depletion of plankton in the lower pelagic zone with a coincidental increase in upper pelagic waters. This translocation of zooplankton which signified vertical migration was also clearly visible in Lakes 373 and 442 during July 1989. In Lake 377, indication of a

plankton migration into the upper pelagic zone in summer was only visible in 1988. Of the shallow lakes, Lake 149 demonstrated the least variation in seasonal crustacean cycles with 1989 and 1990 patterns most similar (Fig. 9). The remaining shallow lakes, 164, 165 and 938 generally exhibited more variation than the other lakes (Figs. 10, 11, 16 and 17). However, crustacean dynamics in the two interconnected Lakes 165 and 164 displayed substantial synchrony in each study year. Further analysis and interpretation of the crustacean plankton dynamics in the seven study lakes will be presented in Salki and Patalas (1994).

Results of the 1987 pilot survey indicated that zooplankton were not distributed uniformly throughout each lake (Tables 41-47). On average, the widest ranges of abundances occurred in the shallower lakes. A comprehensive analysis of the spatial variation in zooplankton species within each ELA and NOLSS study lake will be presented in Patalas and Salki (1993a and b).

The analyses of the zooplankton samples collected in Lakes 377, 442 and 938 with the twin Wisconsin net and flexible hose samplers are presented in Tables 48 to 53. At all pelagic stations sampled, the hose collected, on average, 20% (range 6 to 38%) more zooplankton than the nets whereas at littoral stations quantities collected with the net were 25% higher than those with the hose (range 13 to 44%). These results indicated that net samples from the pelagic zone were reduced by clogging of the filtering net. In the littoral zone, the hose produced underestimates of plankton abundance because it had not been lowered close enough to the lake bottom. Subsequent littoral samples were collected from within 0.25 m rather than 0.5 m of the bottom.

ACKNOWLEDGMENTS

The interest, care and hard work extended by the ELA field staff, particularly Dana Cruikshank, Scott Herron, John Embury and Paul Campbell to collect many of the biweekly samples deserves recognition and a sincere thanks.

REFERENCES

BROOKS, J.L. 1957. The systematics of North American Daphnia. Mem. Connect. Acad. Arts Sci. 13: 1-180.

CAMPBELL, P. 1992. Lake variation and climate change study: ELA lakes, 1986-1990. I. Study rationale and lake selection criteria. Can. Data Rep. Fish. Aquat. Sci. 1897: iv + 7 p.

CAMPBELL, P., and A. SALKI. 1992. A durable all-season marker float and mooring buoy for limnological field studies. Can. Tech. Rep. Fish. Aquat. Sci. 1852: iv + 5 p.

CASSIE, R.M. 1971. Sampling and statistics, p. 174-209. In W.T. Edmondson and G.G. Winberg (ed.) A manual on methods for the assessment of secondary productivity in fresh waters. Blackwell Scientific Publications, Oxford (IBP (Int. Biol. Programme) Handb. 17).

EDMONDSON, W.T. 1971. Properties of organisms, p. 140-145. In W.T. Edmondson and G.G. Winberg (ed.) A manual on methods for the assessment of secondary productivity in fresh waters. Blackwell Scientific Publications, Oxford (IBP (Int. Biol. Programme) Handb. 17).

FEE, E.J., R.E. HECKY, M.P. STAINTON, P. SANDBERG, L.L. HENDZEL, S.J. GUILDFORD, H.J. KLING, G.K. McCULLOUGH, C. ANEMA, and A. SALKI. 1989. Lake variability and climate research in northwestern Ontario: study design and 1985-1986 data from the Red Lake District. Can. Tech. Rep. Fish. Aquat. Sci. 1662: v + 39 p.

McCULLOUGH, G., and P. CAMPBELL. 1993. Lake variation and climate change study: ELA lakes, 1986-1990. II. Watershed geography and lake morphology. Can. Data Rep. Fish. Aquat. Sci. iv + 29 p.

PATALAS, K., and A. SALKI. 1993a. Spatial variation of crustacean plankton in lakes of different size. Can. J. Fish. Aquat. Sci. (In prep.)

PATALAS, K., and A. SALKI. 1993b. Spatial variation of crustacean plankton in lakes with different flushing rates. (In prep.)

SALKI, A., and K. PATALAS. 1994. The effect of water renewal on the abundance and seasonal dynamics of the crustacean plankton communities in ELA lakes. (In prep.)

SALKI, A. 1992. Lake variability and climate change study: Crustacean plankton of a lake size series in the Red Lake District, Northwest Ontario, 1987-1989 and Lake Nipigon, 1989. Can. Data Rep. Fish. Aquat. Sci. 862: v + 30 p.

WILSON, M.S. 1959. Calanoida, p. 738-794. In W.T. Edmondson (ed.) Fresh-water biology. 2nd ed. John Wiley and Sons, New York, NY.

YEATMAN, H.C. 1959. Cyclopoida, p. 795-815. In W.T. Edmondson (ed.) Fresh-water biology. 2nd ed. John Wiley and Sons, New York, NY.

Table 1. Some limnological characteristics of the study lakes in the Experimental Lakes Area. Data for the seven lakes are from McCullough and Campbell (1993).

	1	2	3	4	5	6	7	8	9
	A_o	z_m	V	V_L	$V_{P(u)}$	V_{PL}	t	A_d	A_d/V
Units	ha	m			$m^3\ 10^5$		yrs	ha	m^{-1}
149	26.9	4.1	5.38	2.19	3.19		6.2	93.6	17.4
164	20.3	7.1	10.02	0.73	9.29		0.21	4947	493.7
165	18.4	4.6	6.19	0.76	5.43		0.13	4802	775.8
373	27.6	21.0	30.09	1.64	9.85	18.6	45	80.5	2.7
377	26.9	17.9	24.66	1.79	9.80	13.07	1.2	2123	86.1
442	16.0	17.8	14.40	0.76	6.15	7.49	8.4	161	11.2
938	19.2	6.0	5.17	2.51	2.66		0.04	12021	2325

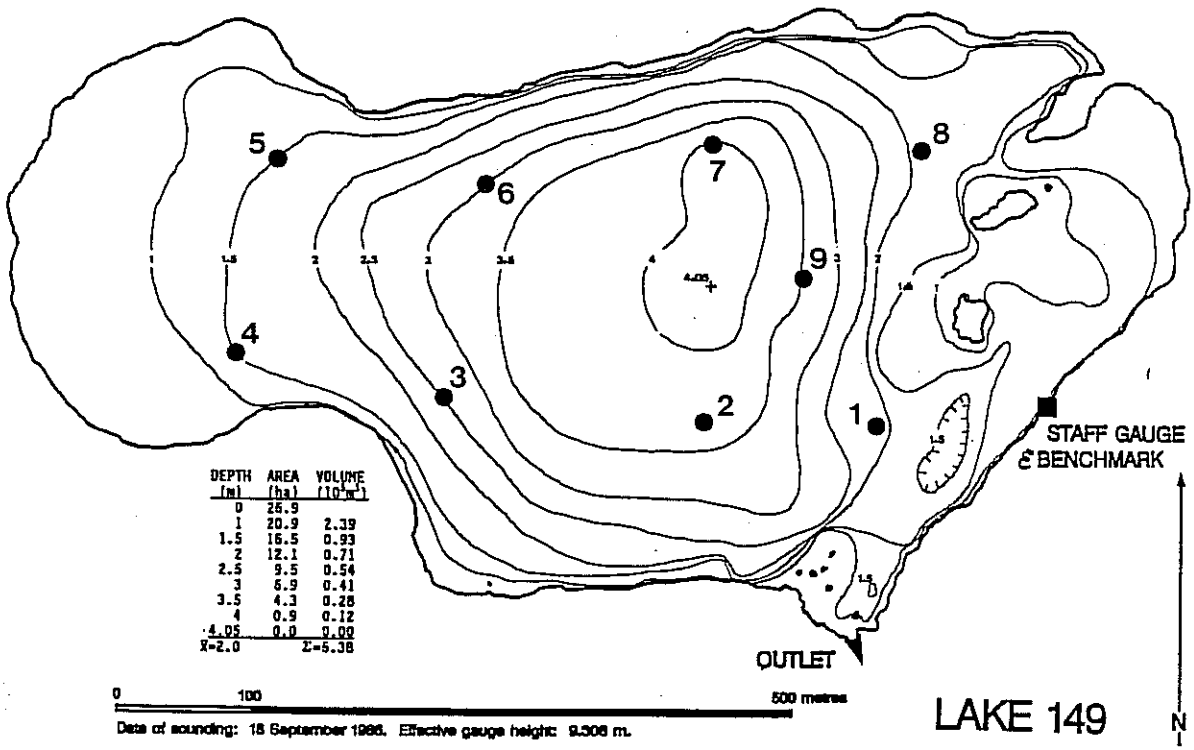
1. A_o = Lake surface area (net water area).
2. z_m = Maximum depth.
3. V = Total lake volume.
4. V_L = Littoral zone volume.
5. $V_{P(u)}$ = Volume of pelagic shallow lakes or (u) upper pelagic (0-5 m) deep lakes.
6. V_{PL} = Lower (5 m - bottom) pelagic deep lakes.
7. t = Nominal water renewal time, calculated from lake volume, basin area, measured precipitation and evaporation, and a watershed yield extrapolated from the Lake 240 watershed.
8. A_d = Terrestrial drainage area (including lake surface, A_o).
9. A_d/V = Unit area of watershed (m^2) per unit lake volume (m^3).

TABLE 2. Species composition and mean abundance (individuals per litre) of zooplankton life stages in the seven study lakes during the open water period of 1988, 1989 and 1990. Total abundances also presented per square centimeter of lake surface area.

	LAKE	373	373	373	377	377	377	442	442	442
	YEAR	1988	1989	1990	1988	1989	1990	1988	1989	1990
		SEASON MEAN	SEASON MEAN	SEASON MEAN	SEASON MEAN	SEASON MEAN	SEASON MEAN	SEASON MEAN	SEASON MEAN	SEASON MEAN
SPECIES										
Cyclops bicuspidatus thomasi FORBES	FEMALE	0.269	0.693	0.538	0.866	0.921	1.160	0.480	0.722	0.615
	FEMALE WITH EGG	0.001	0.031	0.021	0.022	0.018	0.082	0.086	0.015	0.012
	MALE	0.215	0.446	0.513	0.684	0.600	0.875	0.574	0.328	0.379
	COPEPODID 1–V	9.642	15.577	6.785	21.283	23.270	14.855	25.544	15.963	16.011
	TOTAL	10.098	16.746	7.857	22.854	24.808	16.552	26.681	17.048	17.017
Acanthocyclops vernalis FISCHER	FEMALE	0.000					0.000			
	FEMALE WITH EGG									
	MALE				0.009	0.020	0.008			
	COPEPODID 1–V	0.044	0.119	0.035	0.050	0.077	0.049	0.132	0.097	0.025
	TOTAL	0.044	0.119	0.035	0.058	0.098	0.057	0.131	0.097	0.025
Mesocyclops edax FORBES	FEMALE				0.057	0.052	0.052	0.005	0.005	0.024
	FEMALE WITH EGG				0.008	0.040	0.009	0.022	0.020	0.010
	MALE				0.029	0.046	0.031	0.015	0.133	0.085
	COPEPODID 1–V	0.008			0.367	0.829	0.755	0.590	0.561	0.587
	TOTAL	0.008			0.460	0.787	0.847	0.631	0.779	0.707
Tropocyclops prasinus mexicanus KIEFER	FEMALE	0.027	0.006	0.034	0.346	0.140	0.518	0.314	0.328	0.189
	FEMALE WITH EGG	0.000		0.000	0.024	0.003	0.009	0.019	0.009	0.011
	MALE	0.002	0.002	0.002	0.161	0.167	0.212	0.205	0.305	0.092
	COPEPODID 1–V	0.009			0.660	0.314	0.584	0.844	0.684	0.329
	TOTAL	0.038	0.008	0.036	1.190	0.625	1.323	1.368	1.324	0.591
Macrocyclops albidus (JURINE)	TOTAL	0.000			0.000	0.001				
Eucyclops agilis (KOCH)	TOTAL				0.000				0.000	
Cyclops varicans rubellus LILLJEBORG	TOTAL		0.072		0.003	0.000		0.017	0.009	
Paracyclops fimbriatus poppei (REHBERG)	TOTAL								0.026	0.537
Diaptomus minutus LILLJEBORG	FEMALE	0.489	0.393	0.515	0.095	0.389	0.101	0.486	0.984	1.131
	FEMALE WITH EGG	0.083	0.053	0.041	0.023	0.048	0.008	0.148	0.161	0.226
	MALE	0.568	0.529	0.702	0.153	0.227	0.065	0.600	0.922	1.008
	COPEPODID 1–V	0.746	1.290	0.959	0.405	1.804	0.565	6.584	5.365	11.908
	TOTAL	1.886	2.266	2.218	0.678	2.248	0.739	7.813	7.080	14.273
Diaptomus oregonensis LILLJEBORG	FEMALE		0.001		0.070	0.035	0.016		0.001	
	FEMALE WITH EGG				0.009		0.002			
	MALE				0.002	0.007	0.007			
	COPEPODID 1–V	0.013	0.208		0.000	0.087	0.041		0.001	
	TOTAL	0.013	0.209		0.081	0.129	0.066		0.002	
Diaptomus sicilis FORBES	FEMALE	0.379	0.284	0.426	0.001		0.002	0.048	0.176	0.283
	FEMALE WITH EGG	0.021	0.130	0.087		0.000		0.018	0.068	0.061
	MALE	0.360	0.245	0.638		0.001	0.009	0.062	0.119	0.230
	COPEPODID 1–V	11.411	6.831	6.957	0.041	0.009	0.009	4.779	2.230	3.536
	TOTAL	12.172	7.491	8.108	0.042	0.010	0.020	4.908	2.578	4.109
Diaptomus ashlandi MARSH	FEMALE									
	FEMALE WITH EGG									
	MALE							0.008		0.000
	COPEPODID 1–V									
	TOTAL							0.008	0.000	0.000
Senecella calanoides JUDAY	TOTAL				0.000	0.000	0.000			
Epischura lacustris S.A.Forbes	ADULT	0.139	0.069	0.074	0.070	0.067	0.052	0.090	0.116	0.103
	JUVENILE	0.591	0.294	0.228	0.103	0.196	0.148	0.119	0.149	0.210
	TOTAL	0.730	0.363	0.302	0.173	0.263	0.201	0.209	0.265	0.313
CYCLOPOID NAUPLII	NI–NVI	3.578	6.994	4.871	37.891	34.089	38.031	12.578	18.456	11.949
CALANOID NAUPLII	NI–NVI	1.008	3.535	2.649	0.800	2.418	0.920	4.509	6.813	5.686
Daphnia retrocurva FORBES	FEMALE				0.204	0.317	0.033			
	FEMALE WITH EGG				0.040	0.013	0.006			
	MALE				0.068	0.018	0.009			
	JUVENILE				0.381	0.615	0.100			
	TOTAL				0.713	0.981	0.148			
Daphnia galeata mendotae BIRGE	FEMALE	0.539	1.295	0.546	0.395	0.408	0.332	1.113	1.175	1.046
	FEMALE WITH EGG	0.178	0.146	0.043	0.108	0.239	0.100	0.121	0.254	0.215
	MALE	0.145	0.213	0.058	0.145	0.034	0.098	0.051	0.130	0.153
	JUVENILE	0.603	1.242	0.349	0.852	0.665	0.734	1.447	1.596	1.274
	TOTAL	1.466	2.896	0.996	2.030	1.647	1.271	2.732	3.151	2.688
Daphnia longiremis SARS	FEMALE				0.135	0.459	0.064		0.001	
	FEMALE WITH EGG				0.035	0.060	0.028			
	MALE					0.032	0.001		0.006	
	JUVENILE				0.259	0.919	0.209			
	TOTAL				0.463	1.504	0.303		0.007	
Daphnia parvula FORDYCE	FEMALE				0.018	0.021	0.026			
	FEMALE WITH EGG						0.009			
	MALE									
	JUVENILE					0.001	0.009			
	TOTAL				0.016	0.023	0.043			
Daphnia dubia HERRICK	FEMALE	0.085	0.018	0.007				0.002		0.007
	FEMALE WITH EGG	0.014	0.003	0.001				0.000	0.000	
	MALE	0.014	0.014	0.002				0.002	0.022	0.009
	JUVENILE	0.047	0.043	0.008				0.001	0.001	0.006
	TOTAL	0.160	0.078	0.018				0.005	0.023	0.022
Daphnia rosea SARS	FEMALE									
	FEMALE WITH EGG									
	MALE									
	JUVENILE									
	TOTAL									
Daphnia ambigua SCOURFIELD	FEMALE					0.046				
	FEMALE WITH EGG									
	MALE									
	JUVENILE									
	TOTAL					0.046				
Daphnia pulex LEYDIG	TOTAL				0.056		0.777			
Ceriodaphnia lacustris BIRGE	TOTAL				0.009	0.001	0.002			
Ceriodaphnia quadrangula (O.F.MULLER)	TOTAL							0.013		
Ceriodaphnia reticulata BIRGE	TOTAL									
Simocephalus vetulus SCHODLER	TOTAL									
Simocephalus serrulatus (KOCH)	TOTAL									
Bosmina longirostris (O.F.MULLER)	AD+JUV	0.794	0.848	0.513	2.338	1.471	0.442	1.026	0.869	0.681
	FEMALE WITH EGG	0.052	0.051	0.051	0.270	0.037	0.050	0.067	0.075	0.018
	TOTAL	0.846	0.899	0.564	2.605	1.508	0.491	1.109	0.694	0.699
Eubosmina longispina	TOTAL				0.004	1.248	0.773	0.009		
Chydorus sphaericus (O.F.MULLER)	TOTAL	0.001		0.008	0.890	0.237	0.012	0.001	0.078	
Alona affinis (LEYDIG)	TOTAL	0.001		0.035	0.021	0.000	0.025	0.001	0.027	0.009
Polyphemus pediculus (LINNE)	TOTAL				0.029	0.062	0.025			
Sida crystallina (O.F.MULLER)	TOTAL	0.000	0.002	0.012	0.020	0.017	0.023	0.000	0.003	0.024
Scapholeberis kingi SARS	TOTAL									
Ilyocryptus sordidus (LIEVEN)	TOTAL				0.019	0.001				
Drepanothrix dentata (EUREN)	TOTAL									
Pleuroxus denticulatus (BIRGE)	TOTAL									
Eurycercus lamellatus (O.F.MULLER)	TOTAL					0.000				
Acroperus harpae (BAIRD)	TOTAL			0.002		0.001	0.000			
Macrothrix laticornis (JURINE)	TOTAL		0.000							
Diaphanosoma leuchtenbergianum FISCHER	TOTAL	0.528	0.550	0.690	1.304	1.331	0.910	0.334	0.423	0.392
Holopedium gibberum ZADDACH	TOTAL		0.001		0.828	1.871	3.504	0.073	0.072	0.113
Leptodora kindtii (FOCKE)	TOTAL	0.004	0.005	0.006	0.007	0.010	0.009	0.004	0.005	0.003
Alona quadrangularis (O.F.MULLER)	TOTAL						0.001			
Acantholeberis curvirostris (O.F.MULLER)	TOTAL			0.006						
Ophryoxus gracilis SARS	TOTAL				0.161	0.000				
Latona setifera (O.F.MULLER)	TOTAL					0.000				
Alonella sp.	TOTAL									
Camptocercus rectirostris SCHODLER	TOTAL									
Pleuroxus procurvis BIRGE	TOTAL									
Chaoborus sp.	TOTAL		0.000	0.000	0.009	0.011	0.020			
Mysis relicta LOVEN	TOTAL	0.000	0.000	0.000						
CYCLOPOIDA TOTAL	Ind.L^{-1}	13.889	23.939	12.799	62.257	60.387	54.809	41.428	35.396	30.330
	Ind.cm^{-2}	11.709	20.839	10.848	41.315	40.469	36.827	24.643	20.730	17.905
CALANOIDA TOTAL	Ind.L^{-1}	15.809	13.864	13.277	1.772	5.068	1.948	17.445	17.615	24.381
	Ind.cm^{-2}	12.168	10.658	10.241	1.578	3.238	1.535	9.742	9.444	13.582
CLADOCERA TOTAL	Ind.L^{-1}	3.006	4.430	2.330	8.446	9.990	7.531	4.276	4.486	3.948
	Ind.cm^{-2}	2.198	3.418	1.744	5.516	8.441	4.808	2.501	2.481	2.271
TOTAL	Ind.L^{-1}	32.504	42.233	28.407	72.512	75.458	64.308	63.147	57.497	58.668
	Ind.cm^{-2}	26.075	34.716	22.833	48.432	50.138	43.183	36.886	32.635	33.763

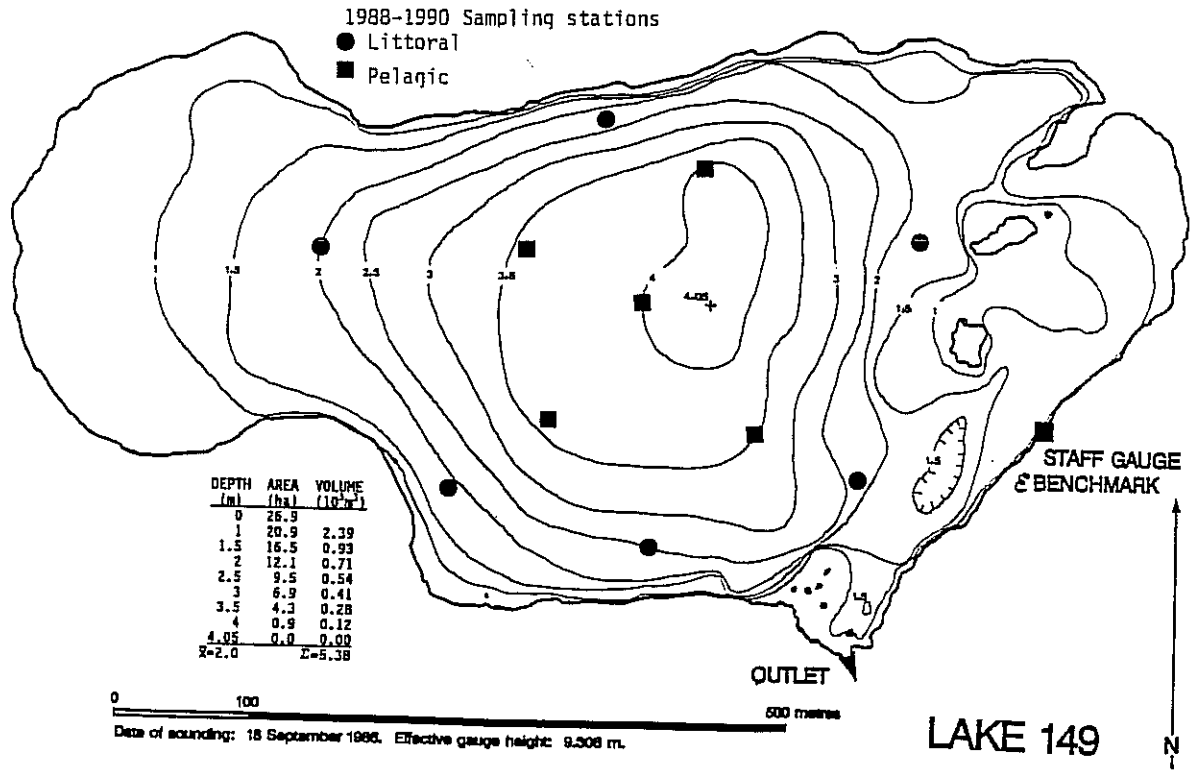
TABLE 2. (cont.)

SPECIES		LAKE YEAR	149 1988 SEASON MEAN	149 1989 SEASON MEAN	149 1990 SEASON MEAN	164 1988 SEASON MEAN	164 1989 SEASON MEAN	164 1990 SEASON MEAN	165 1988 SEASON MEAN	165 1989 SEASON MEAN	165 1990 SEASON MEAN	938 1988 SEASON MEAN	938 1989 SEASON MEAN	938 1990 SEASON MEAN
C. b. thomasi	FEMALE		0.003	0.154	0.042	0.081	0.142	0.019	0.001	0.067	0.139	0.001	0.083	0.152
	FEMALE WITH EGG			0.001			0.004			0.001	0.001	0.001		0.000
	MALE		0.077	0.162	0.125	0.030	0.070	0.019	0.000	0.041	0.078	0.006	0.106	0.132
	COPEPODID 1-V		0.169	2.719	7.028	0.202	3.619	3.134	0.317	2.245	2.036	0.097	3.302	2.116
	TOTAL		0.248	3.036	7.195	0.293	3.524	3.171	0.318	2.354	2.252	0.095	3.492	2.403
A. vernalis	FEMALE				0.003	0.001	0.002	0.000	0.000	0.003	0.011	0.001	0.001	0.002
	FEMALE WITH EGG				0.003									
	MALE		0.001	0.040	0.029	0.031	0.017	0.025	0.038	0.004	0.007	0.001	0.001	0.004
	COPEPODID 1-V		2.507	9.077	4.621	0.887	0.640	0.744	1.534	0.879	1.360	1.234	0.972	2.021
	TOTAL		2.508	9.117	4.656	0.919	0.658	0.769	1.570	0.885	1.378	1.112	0.974	2.028
M. edax	FEMALE			0.012	0.005	0.049	0.037	0.039	0.051	0.082	0.009	0.001	0.021	0.002
	FEMALE WITH EGG					0.006	0.001	0.005	0.009		0.001			
	MALE		0.001	0.045	0.001	0.169	0.132	0.076	0.055	0.056	0.092	0.010	0.018	0.003
	COPEPODID 1-V		1.494	2.064	0.762	1.262	0.683	0.591	1.770	0.842	0.841	0.704	0.618	0.283
	TOTAL		1.495	2.121	0.768	1.476	0.765	0.710	1.885	0.960	0.943	0.843	0.656	0.288
T. p. mexicanus	FEMALE		3.412	4.302	2.485	2.662	1.044	1.113	1.268	0.736	0.467	1.998	0.264	0.043
	FEMALE WITH EGG		0.203	0.406	0.095	0.045	0.143	0.112	0.184	0.007	0.078	0.149	0.030	0.002
	MALE		5.402	2.896	1.741	1.893	0.689	0.485	1.323	0.755	0.410	4.785	0.309	0.043
	COPEPODID 1-V		15.342	11.789	6.951	2.584	2.085	2.944	2.446	3.360	3.383	12.024	0.824	0.323
	TOTAL		24.359	19.373	11.272	7.184	3.862	4.654	5.219	4.858	4.337	17.060	1.416	0.411
M. albidus	TOTAL			0.009	0.013	0.000	0.002	0.000			0.000		0.000	0.000
E. agilis	TOTAL			0.004	0.013			0.000	0.086	0.009	0.005	0.001	0.012	0.007
C. v. rubellus	TOTAL			0.079				0.000	0.005	0.001				
P.f. poppei	TOTAL													
D. minutus	FEMALE					0.012	0.056	0.012	0.023	0.171	0.022	0.022	0.077	0.045
	FEMALE WITH EGG					0.001	0.025	0.001	0.002	0.023	0.001	0.001	0.026	0.008
	MALE					0.020	0.135	0.019	0.052	0.203	0.016	0.025	0.233	0.069
	COPEPODID 1-V			0.223	0.013	0.126	0.509	0.112	0.129	0.427	0.092	0.218	1.642	0.915
	TOTAL			0.223	0.013	0.159	0.667	0.144	0.206	0.823	0.131	0.239	1.976	1.037
D. oregonensis	FEMALE		0.235	0.981	0.918	0.102	0.073	0.028	0.020	0.070	0.009	0.003		
	FEMALE WITH EGG		0.081	0.124	0.070	0.003	0.015	0.015	0.002	0.001	0.003	0.001		
	MALE		0.155	0.850	0.433	0.039	0.134	0.015	0.059	0.040	0.006	0.002		
	COPEPODID 1-V		1.826	5.091	3.994	0.699	0.351	0.159	0.148	0.282	0.064	0.079	0.008	
	TOTAL		2.277	6.826	5.415	0.843	0.527	0.217	0.227	0.392	0.092	0.085	0.008	
D. sicilis	FEMALE		0.031		0.038	0.005	0.033	0.014	0.085	0.002	0.017			0.002
	FEMALE WITH EGG												0.000	0.003
	MALE			0.068			0.018	0.003	0.047	0.003	0.002		0.001	0.012
	COPEPODID 1-V						0.004			0.008	0.002		0.035	0.008
	TOTAL		0.031	0.068	0.038	0.005	0.049	0.017	0.128	0.012	0.021		0.036	0.025
D. ashlandi	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V													
	TOTAL													
S. calanoides	TOTAL													
E. lacustris	ADULT		0.001	0.024	0.001	0.029	0.075	0.033	0.047	0.053	0.005	0.001	0.003	0.003
	JUVENILE		0.024	0.080	0.090	0.040	0.219	0.213	0.100	0.181	0.074	0.007	0.414	0.160
	TOTAL		0.025	0.105	0.091	0.069	0.271	0.246	0.147	0.234	0.080	0.008	0.417	0.164
CYCLOPOID NAUPLII	NI-NVI		23.515	38.284	23.132	4.306	6.828	7.966	11.801	6.881	12.670	33.110	8.990	8.120
CALANOID NAUPLII	NI-NVI		3.067	11.162	9.078	1.123	2.428	1.139	1.072	2.797	1.109	0.525	2.648	2.566
D. retrocurva	FEMALE					0.253	0.078	0.073	0.236	0.024	0.048		0.014	
	FEMALE WITH EGG					0.008	0.051	0.016	0.023	0.079	0.009			
	MALE					0.051		0.001	0.000	0.001	0.005			
	JUVENILE					0.289	0.116	0.126	0.739	0.492	0.192	0.002	0.002	
	TOTAL					0.601	0.226	0.216	0.998	0.597	0.253	0.002	0.016	
D. g. mendotae	FEMALE						0.001			0.000			0.010	
	FEMALE WITH EGG		0.001				0.031						0.009	0.000
	MALE													
	JUVENILE		0.009		0.001		0.000		0.043	0.009			0.017	0.010
	TOTAL		0.010		0.001		0.029		0.043	0.009			0.036	0.010
D. longiremis	FEMALE										0.001		0.037	0.009
	FEMALE WITH EGG												0.021	0.004
	MALE													
	JUVENILE							0.012					0.101	0.032
	TOTAL							0.012			0.001		0.159	0.046
D. parvula	FEMALE													
	FEMALE WITH EGG						0.001			0.000				
	MALE													
	JUVENILE								0.001					
	TOTAL						0.001		0.001	0.000				
D. dubia	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. rosea	FEMALE						0.001							
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL						0.001							
D. ambigua	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. pulex	TOTAL													
C. lacustris	TOTAL		2.808	2.851	1.415	0.080	0.048	0.002	0.288	0.002	0.038	1.756	0.655	0.166
C. quadrangula	TOTAL					0.080	0.080	0.080						
C. reticulata	TOTAL					0.080	0.080	0.080						
S. vetulus	TOTAL				0.001									
S. serrulatus	TOTAL										0.027	0.012		
B. longirostris	AD+JUV		38.255	27.339	28.636	4.477	4.095	6.376	7.898	5.633	7.477	10.762	5.128	2.034
	FEMALE WITH EGG		3.838	1.673	3.354	0.142	0.040	0.191	0.063	0.118	1.241	0.521	0.246	0.111
	TOTAL		40.093	29.012	31.990	4.619	3.825	6.566	7.961	5.751	8.718	10.155	5.374	2.145
E. longispina	TOTAL													
C. sphaericus	TOTAL		3.817	1.731	0.282	0.005	0.001	0.038		0.028	0.051	0.140	0.218	0.042
A. affinis	TOTAL		0.070	0.021	0.091			0.002	0.000	0.001	0.021	0.029		0.002
P. pediculus	TOTAL			0.005			0.001	0.000		0.000	0.009	2.297	0.026	0.004
S. crystallina	TOTAL		0.001	0.078	0.013	0.027	0.012	0.051	0.001	0.007	0.013	0.003	0.027	0.011
S. kingi	TOTAL				0.001	1.012							0.110	
I. sordidus	TOTAL				0.001					0.007		0.012		
D. dentata	TOTAL		0.062	0.031										0.091
P. denticulatus	TOTAL			0.033					0.008					
E. lamellatus	TOTAL			0.017	0.001	0.001		0.000				0.017	0.000	0.003
A. harpae	TOTAL			0.017		0.001		0.001	0.000	0.001	0.001	0.038	0.016	
M. laticornis	TOTAL				0.077				0.000					
D. leuchtenbergianum	TOTAL		1.071	2.539	0.961	0.875	0.122	0.064	0.278	0.109	0.006	0.208	0.923	0.068
H. gibberum	TOTAL		4.532	7.184	6.402	2.509	4.224	3.645	2.324	2.657	2.019	0.313	0.176	1.983
L. kindtii	TOTAL		0.048	0.024	0.014	0.020	0.007	0.010	0.023	0.005	0.014	0.061	0.014	0.009
A. quadrangularis	TOTAL													
A. curvirostris	TOTAL						0.002							0.014
O. gracilis	TOTAL							0.002		0.018		0.006	0.006	0.014
L. setifera	TOTAL					0.001			0.001			0.012	0.006	
Alonella sp.	TOTAL													
C. rectirostris	TOTAL													
P. procurvis	TOTAL													
Chaoborus sp.	TOTAL		0.020	0.035	0.018	0.072	0.057	0.025	0.020	0.007	0.015	0.005	0.005	
M. relicta	TOTAL													
CYCLOPOIDA TOTAL	Ind.L^{-1}		52.187	70.121	47.128	14.176	14.853	17.271	20.883	17.948	21.585	48.711	15.540	13.257
	Ind.cm^{-2}		11.119	17.184	11.869	7.009	7.338	8.530	7.036	6.047	8.401	15.210	4.780	4.214
CALANOIDA TOTAL	Ind.L^{-1}		5.420	18.383	14.633	2.199	3.756	1.784	1.780	4.258	1.422	0.795	5.290	3.791
	Ind.cm^{-2}		1.254	4.674	3.654	1.088	1.856	0.873	0.600	1.434	0.524	0.200	1.600	1.169
CLADOCERA TOTAL	Ind.L^{-1}		52.250	43.253	41.169	8.840	8.136	10.808	11.925	9.171	11.148	14.537	7.550	4.500
	Ind.cm^{-2}		13.165	10.636	10.534	4.369	4.019	5.336	4.018	3.090	4.259	4.550	2.350	1.461
TOTAL	Ind.L^{-1}		109.876	131.791	102.949	25.288	29.078	29.868	34.607	31.381	34.170	71.163	28.480	21.548
	Ind.cm^{-2}		25.544	32.402	26.063	12.502	13.238	14.751	11.681	10.573	13.189	19.980	8.730	6.844



DEPTH (m)	AREA (ha)	VOLUME ($10^4 m^3$)
0	25.9	
1	20.9	2.39
1.5	16.5	0.93
2	12.1	0.71
2.5	9.5	0.54
3	6.9	0.41
3.5	4.3	0.28
4	0.9	0.12
4.05	0.0	0.00
$\bar{X}$=2.0		Σ=5.38

Fig. 1a. Zooplankton sampling stations Lake 149, July 1987.



DEPTH (m)	AREA (ha)	VOLUME ($10^4 m^3$)
0	25.9	
1	20.9	2.39
1.5	16.5	0.93
2	12.1	0.71
2.5	9.5	0.54
3	6.9	0.41
3.5	4.3	0.28
4	0.9	0.12
4.05	0.0	0.00
$\bar{X}$=2.0		Σ=5.38

Fig. 1b. Zooplankton sampling stations Lake 149, 1988 - 1990.

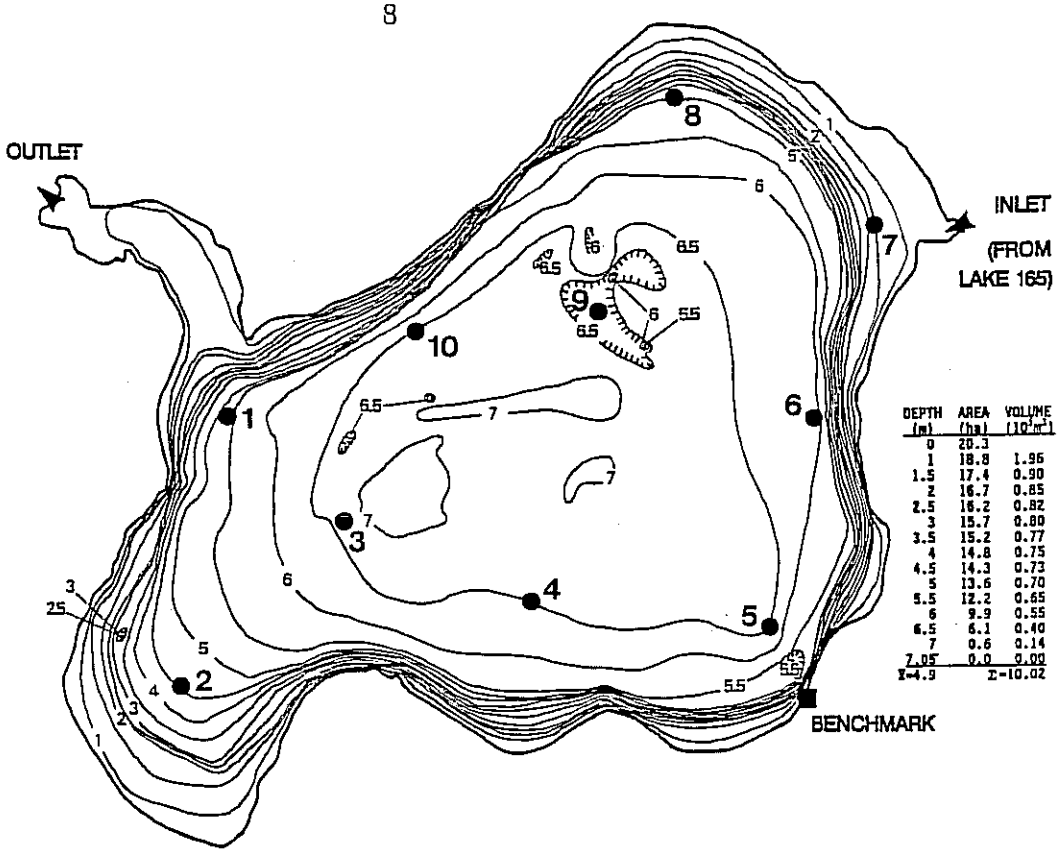


Fig. 2a. Zooplankton sampling stations Lake 164, July 1987.

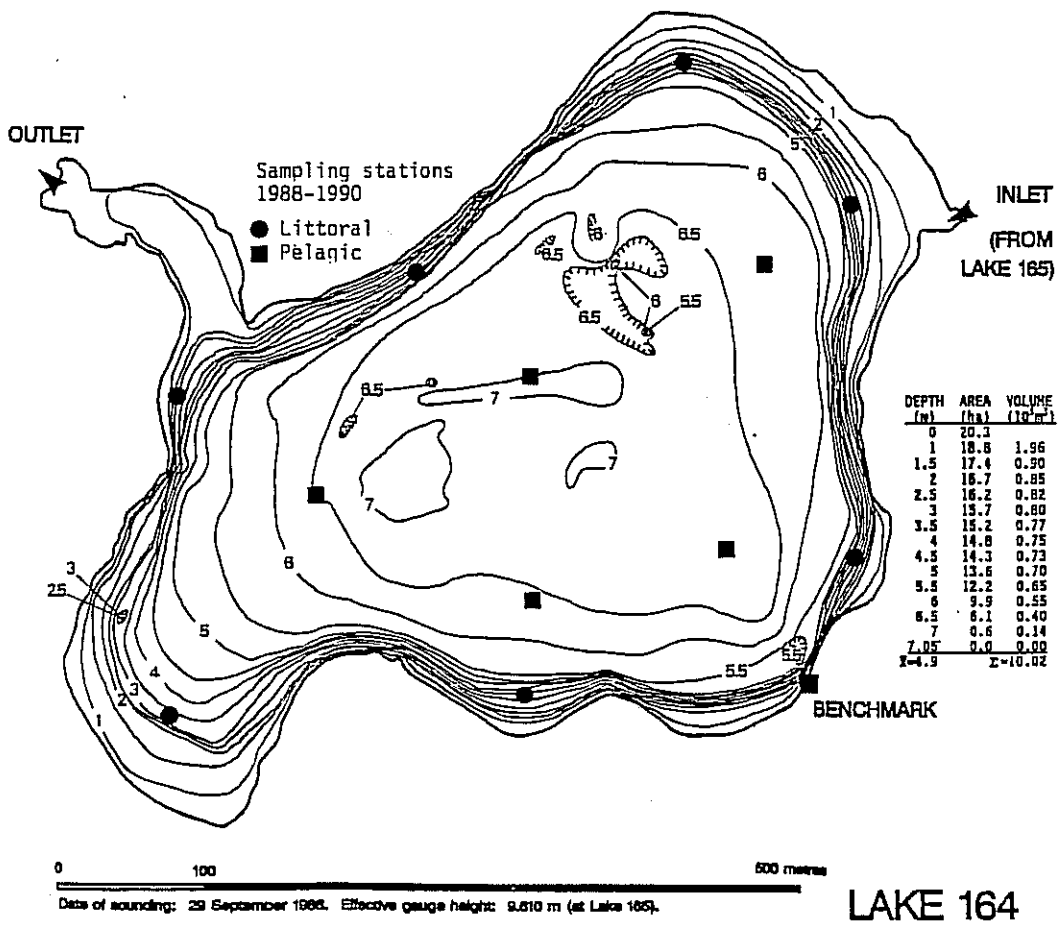


Fig. 2b. Zooplankton sampling stations Lake 164, 1988-1990.

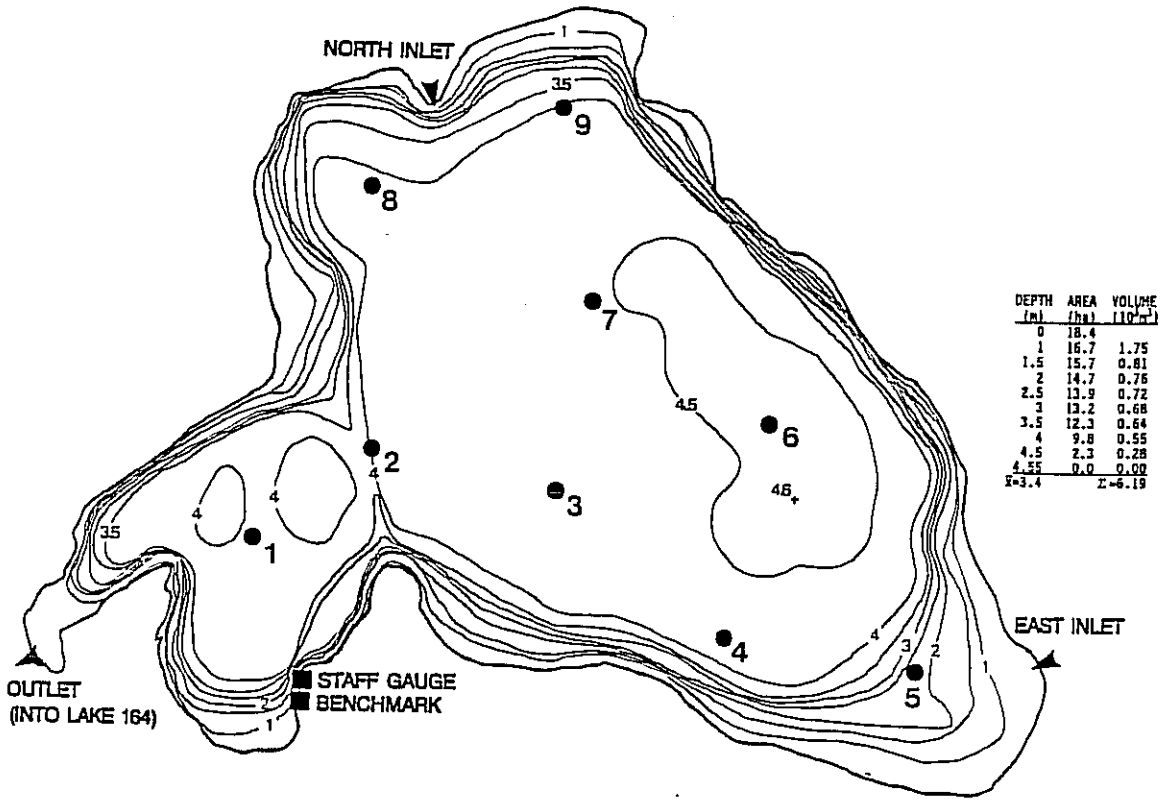


Fig. 3a. Zooplankton sampling stations Lake 165, July 1987.

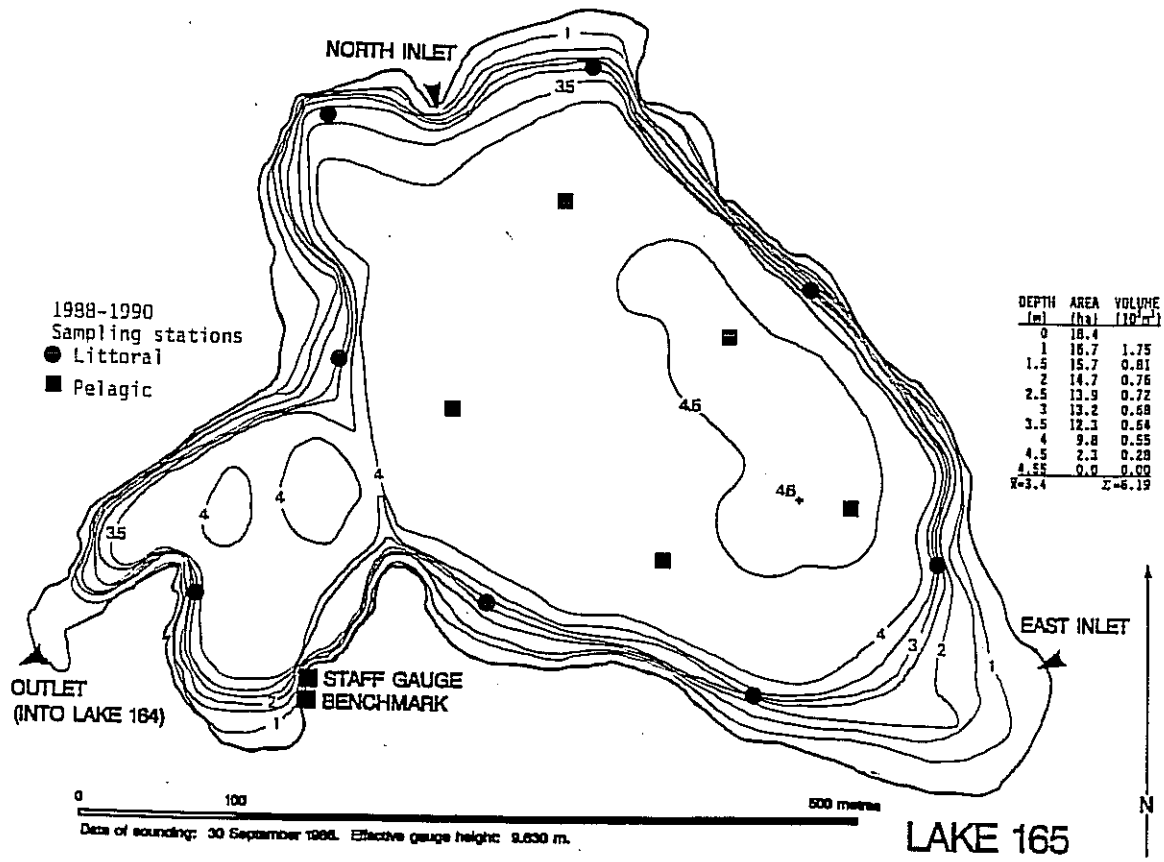
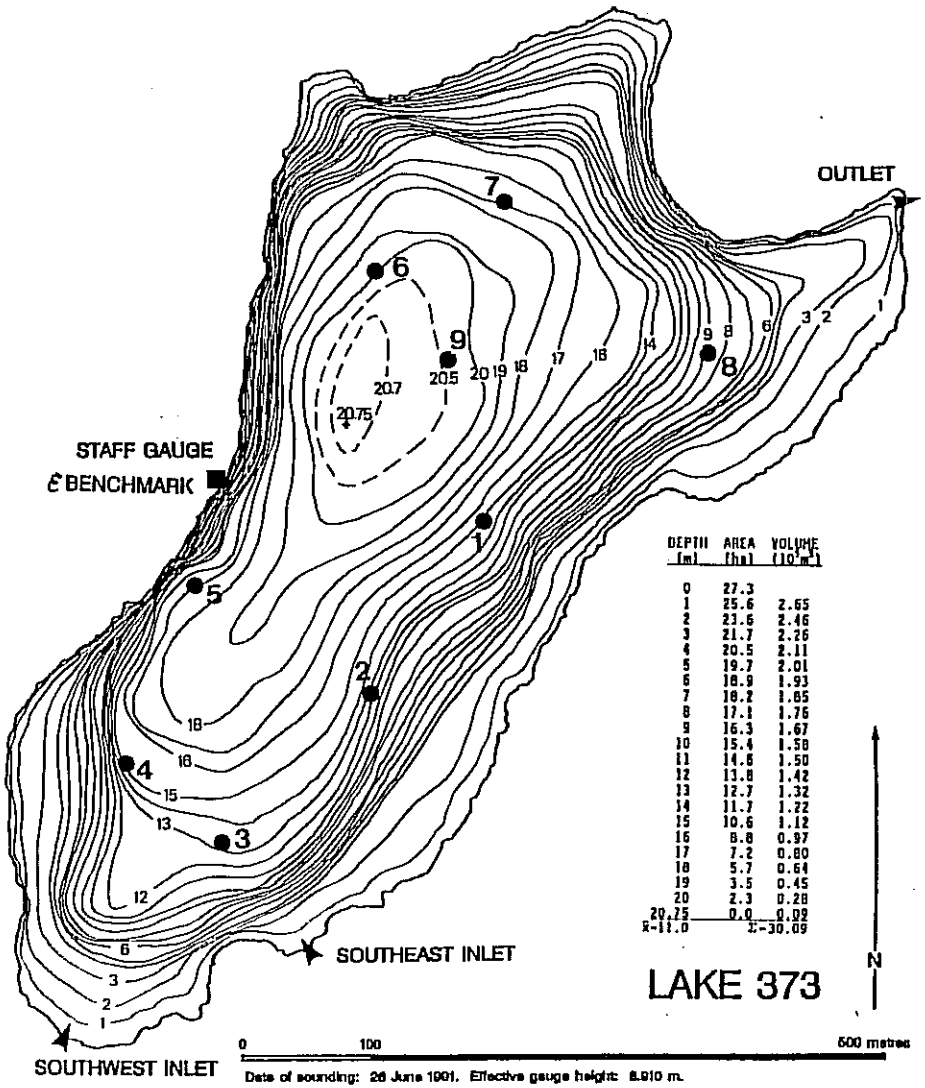
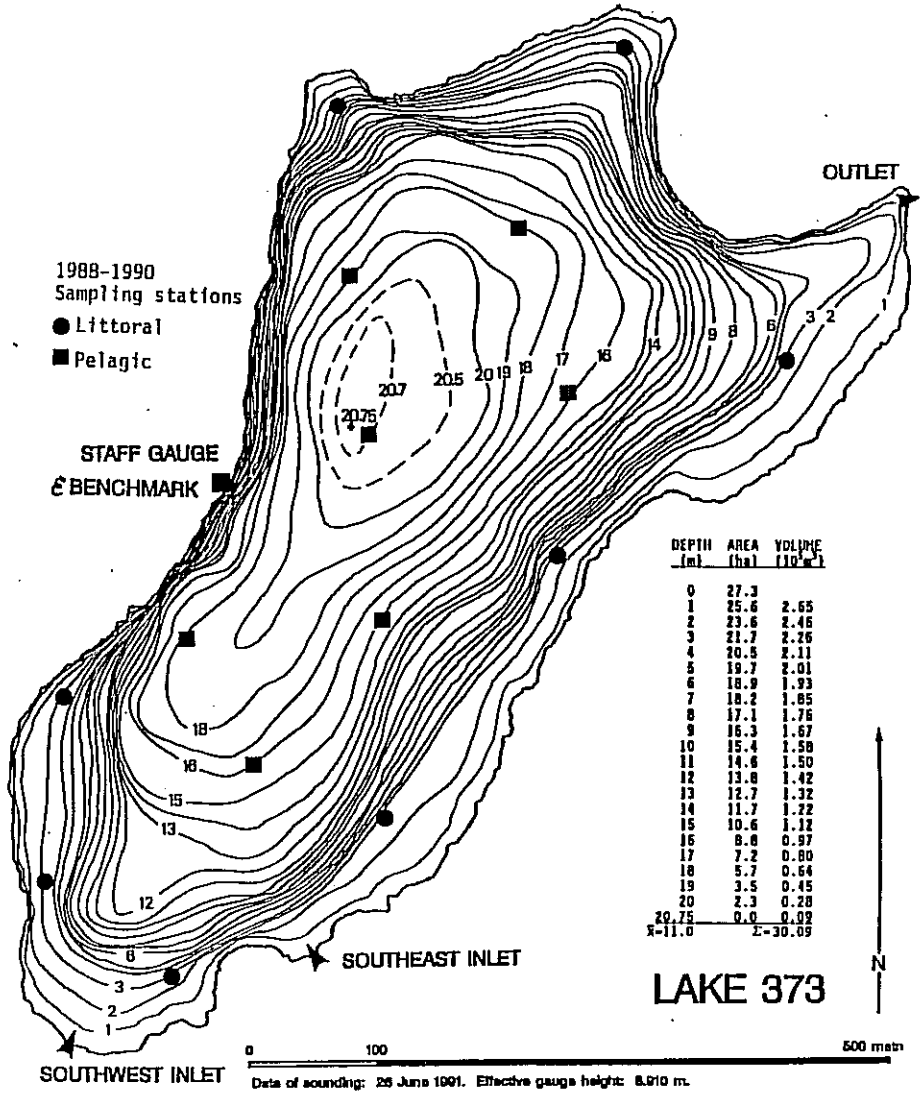


Fig. 3b. Zooplankton sampling stations Lake 165, 1988-1990.



DEPTH (m)	AREA (ha)	VOLUME (10^4 m^3)
0	27.3	
1	25.6	2.65
2	23.6	2.46
3	21.7	2.26
4	20.5	2.11
5	19.7	2.01
6	18.9	1.93
7	18.2	1.85
8	17.1	1.76
9	16.3	1.67
10	15.4	1.58
11	14.6	1.50
12	13.8	1.42
13	12.7	1.32
14	11.7	1.22
15	10.6	1.12
16	8.8	0.97
17	7.2	0.80
18	5.7	0.64
19	3.5	0.45
20	2.3	0.28
20.75	0.0	0.09
x̄=11.0		Σ=30.09

Fig. 4a. Zooplankton sampling stations Lake 373, July 1987.



DEPTH (m)	AREA (ha)	VOLUME (10^4 m^3)
0	27.3	
1	25.6	2.65
2	23.6	2.46
3	21.7	2.26
4	20.5	2.11
5	19.7	2.01
6	18.9	1.93
7	18.2	1.85
8	17.1	1.76
9	16.3	1.67
10	15.4	1.58
11	14.6	1.50
12	13.8	1.42
13	12.7	1.32
14	11.7	1.22
15	10.6	1.12
16	8.8	0.97
17	7.2	0.80
18	5.7	0.64
19	3.5	0.45
20	2.3	0.28
20.75	0.0	0.09
x̄=11.0		Σ=30.09

Fig. 4b. Zooplankton sampling stations Lake 373, 1988-1990.

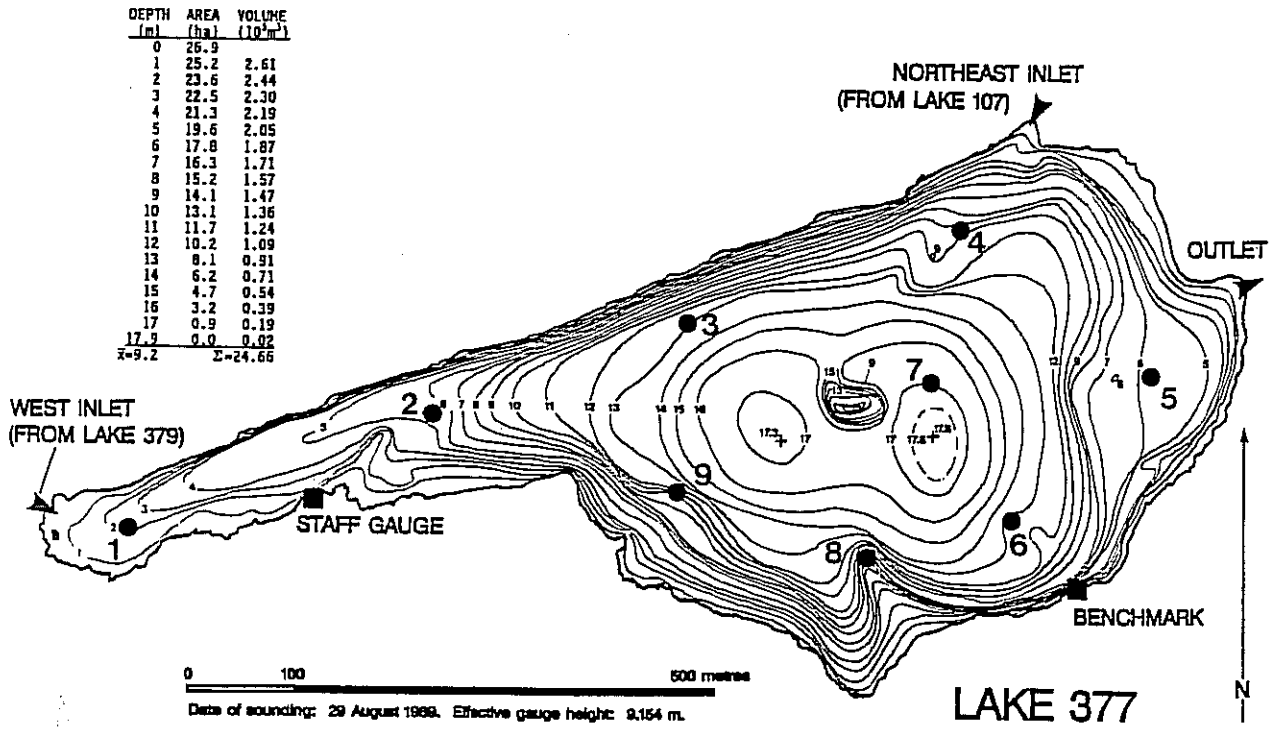


Fig. 5a. Zooplankton sampling stations Lake 377, July 1987.

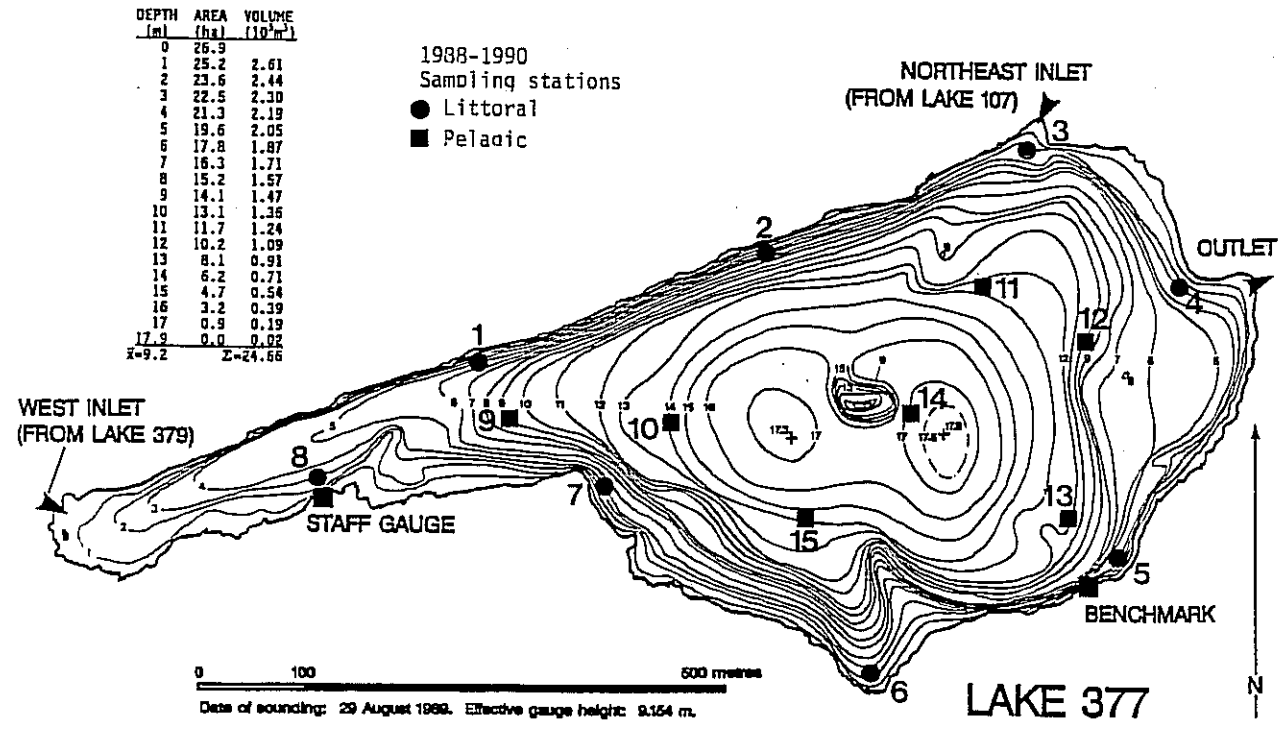


Fig. 5b. Zooplankton sampling stations Lake 377, 1988-1990.

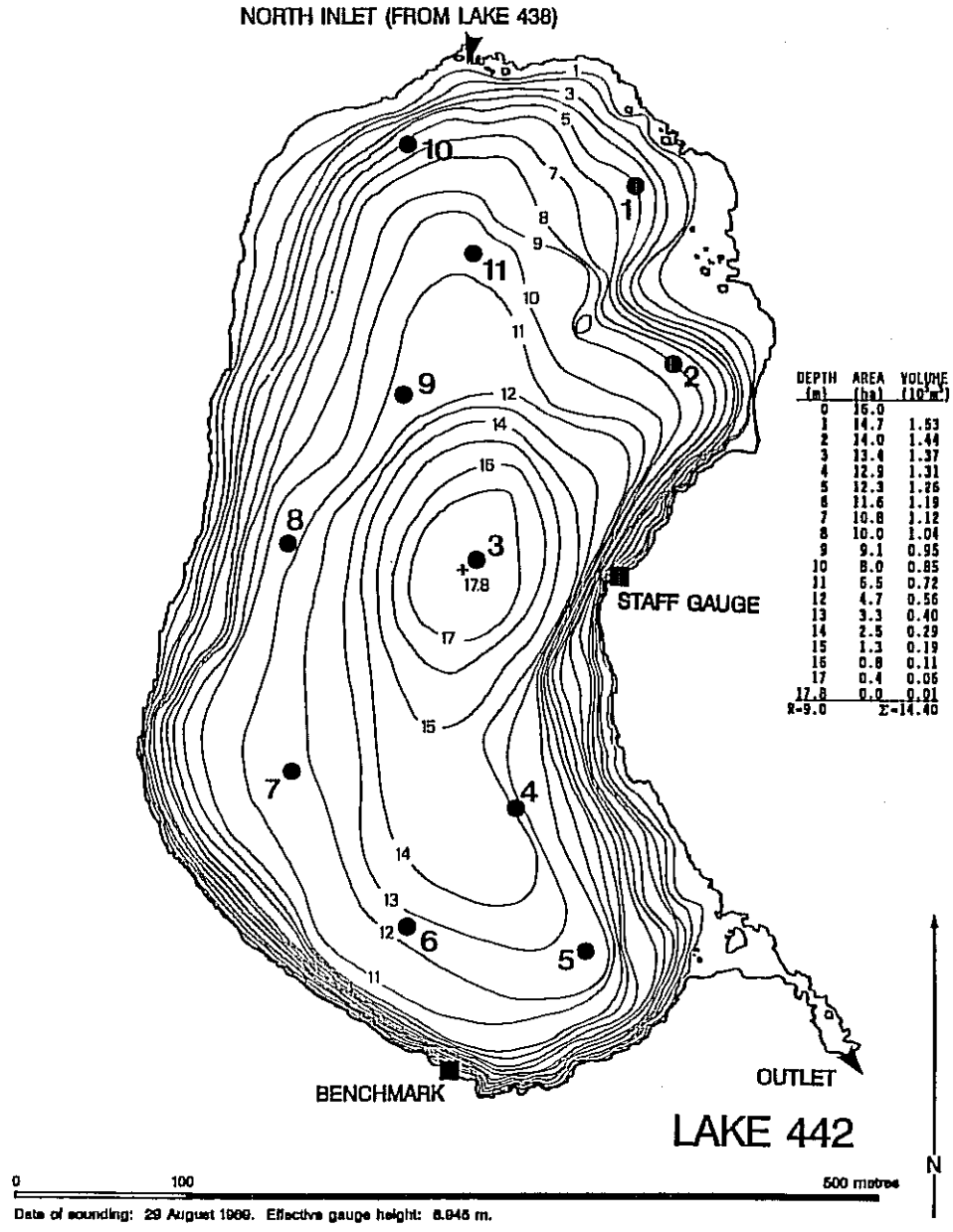


Fig. 6a. Zooplankton sampling stations Lake 442, July 1987.

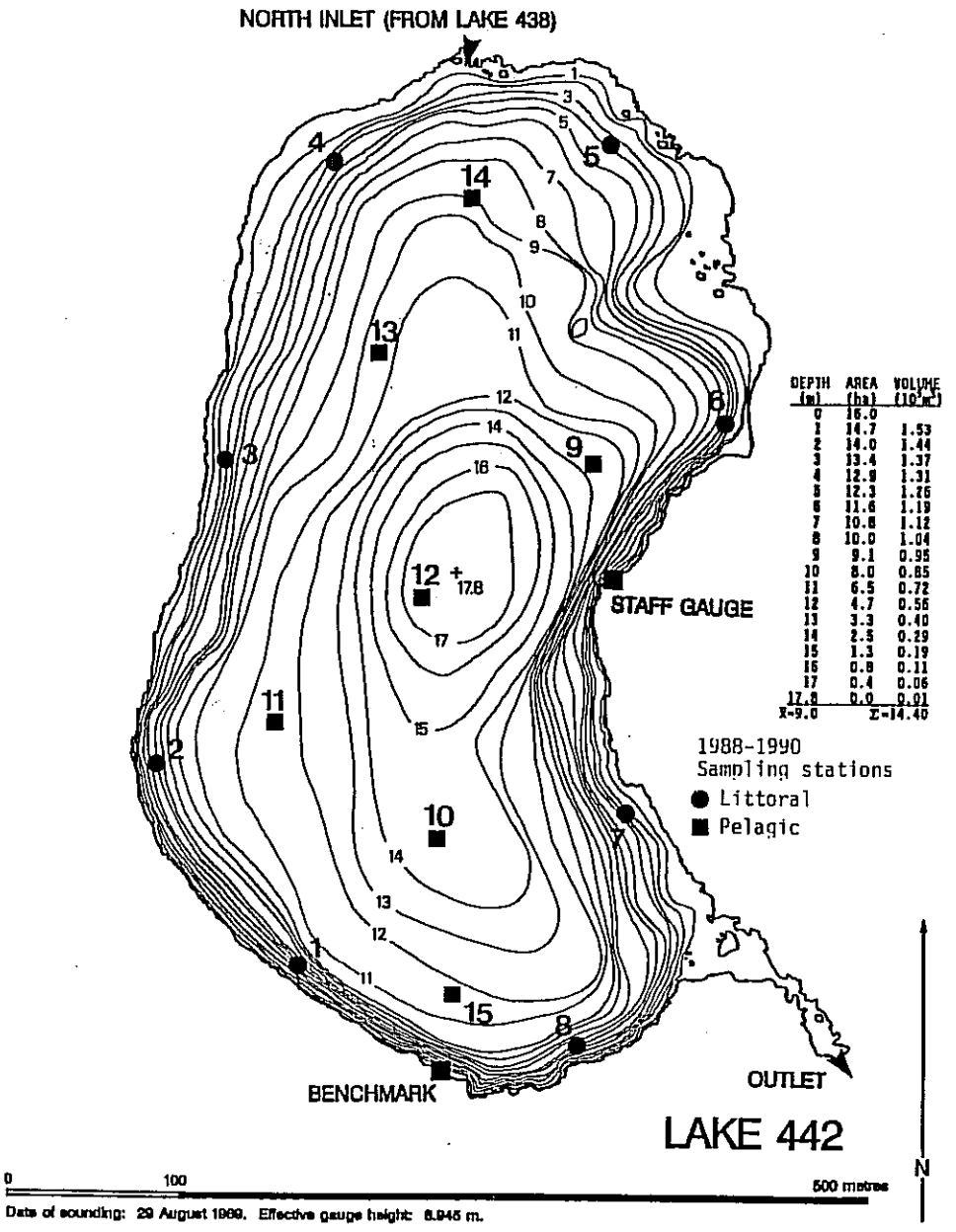


Fig. 6b. Zooplankton sampling stations Lake 442, 1988-1990.

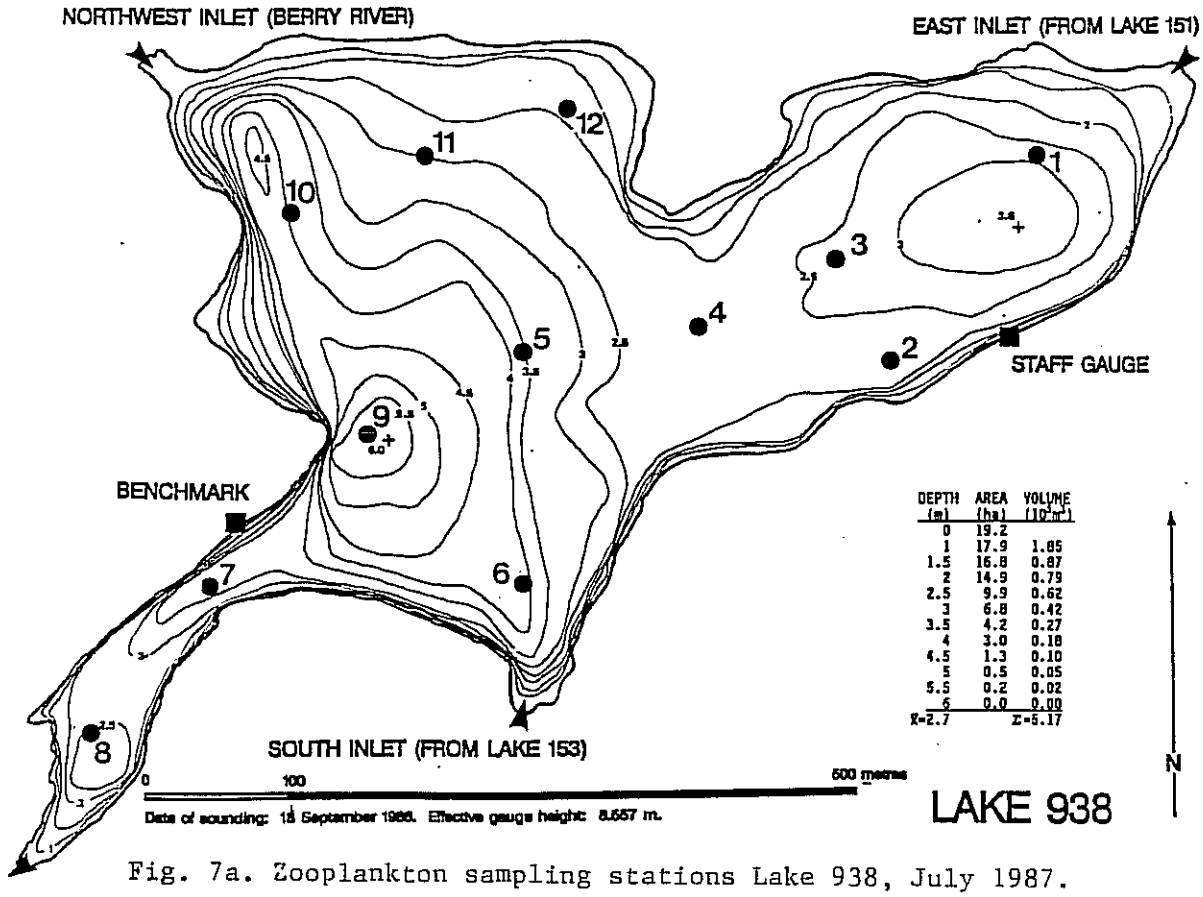


Fig. 7a. Zooplankton sampling stations Lake 938, July 1987.

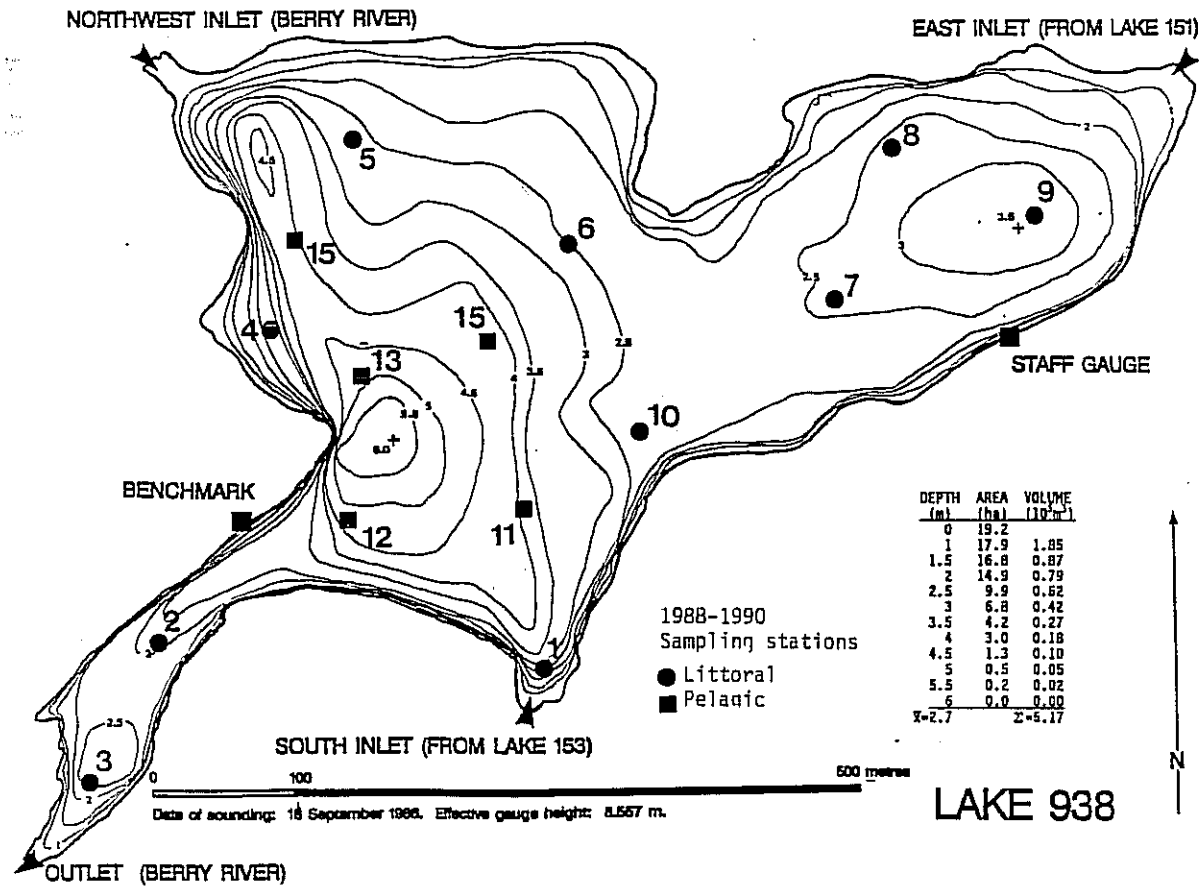


Fig. 7b. Zooplankton sampling stations Lake 938, 1988-1990.

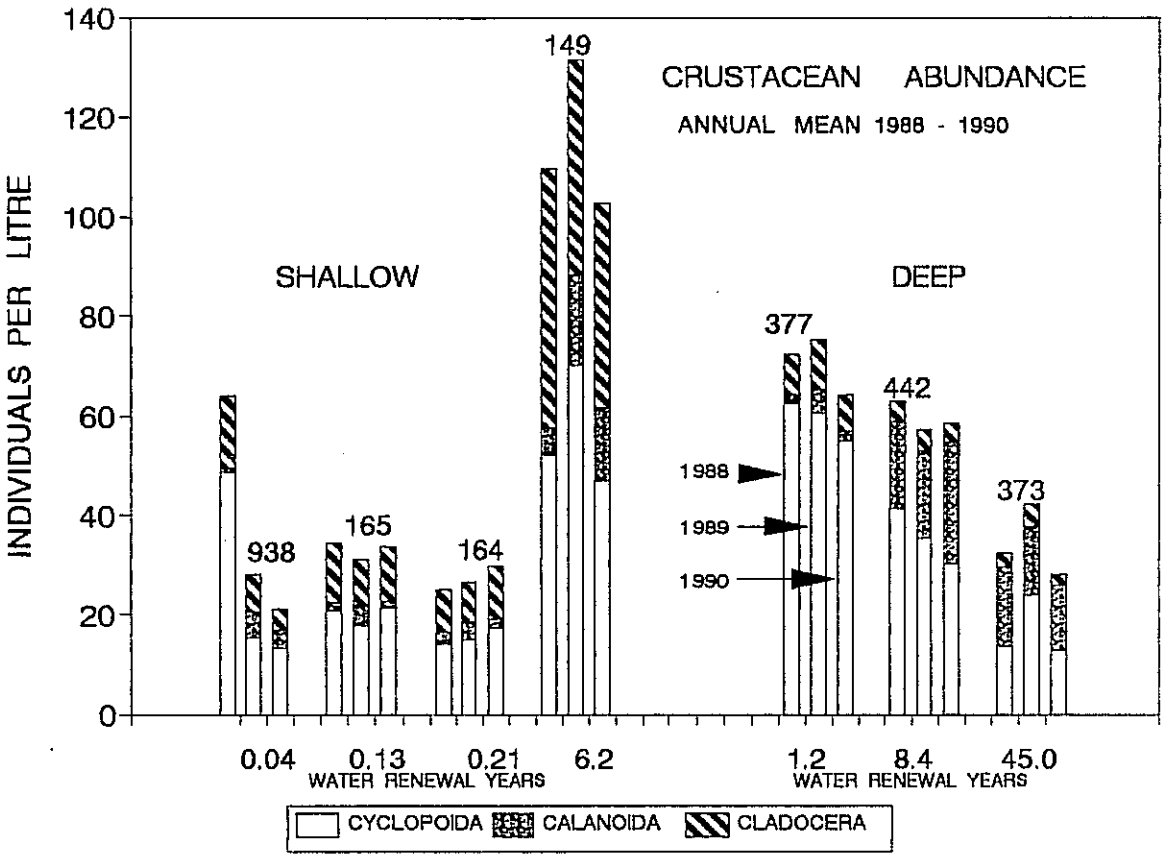


Fig. 8a. Annual mean crustacean abundance per litre in the seven study lakes during the open water periods of 1988, 1989 and 1990.

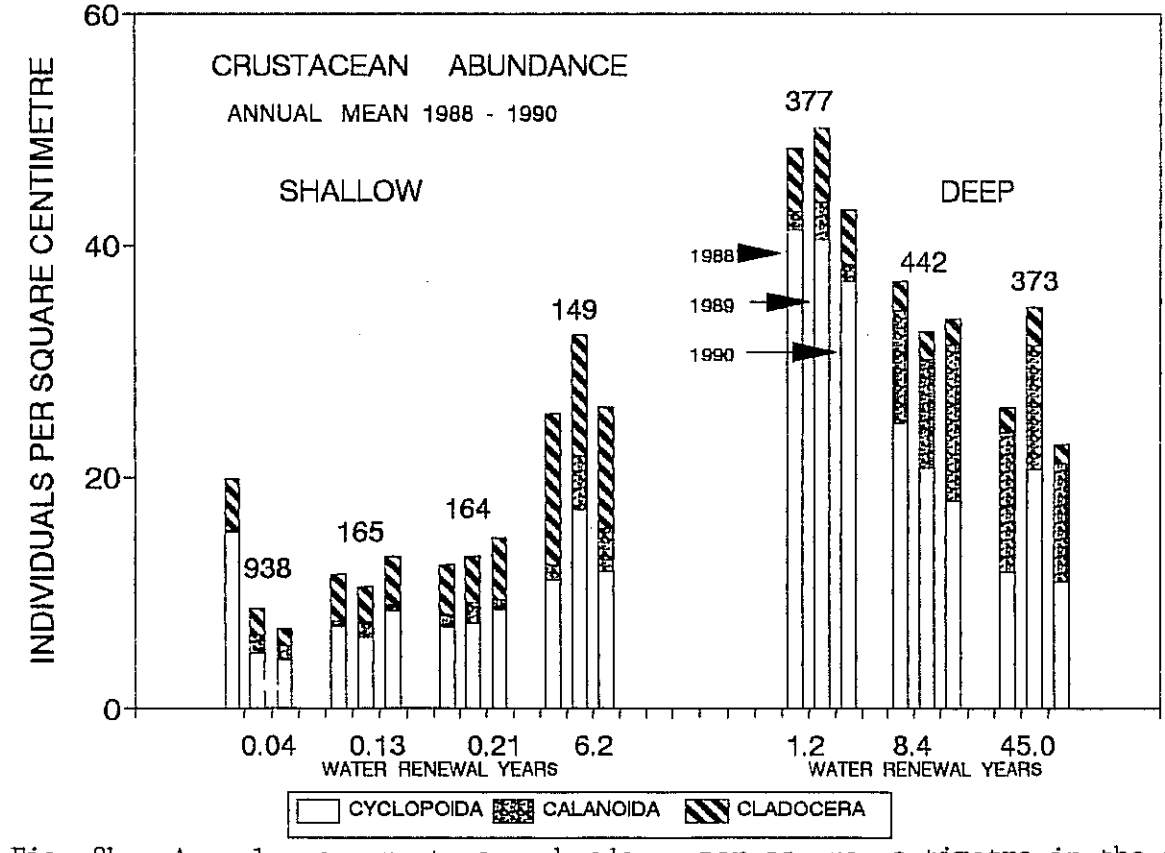


Fig. 8b. Annual mean crustacean abundance per square centimetre in the study lakes during the open water periods of 1988, 1989 and 1990.

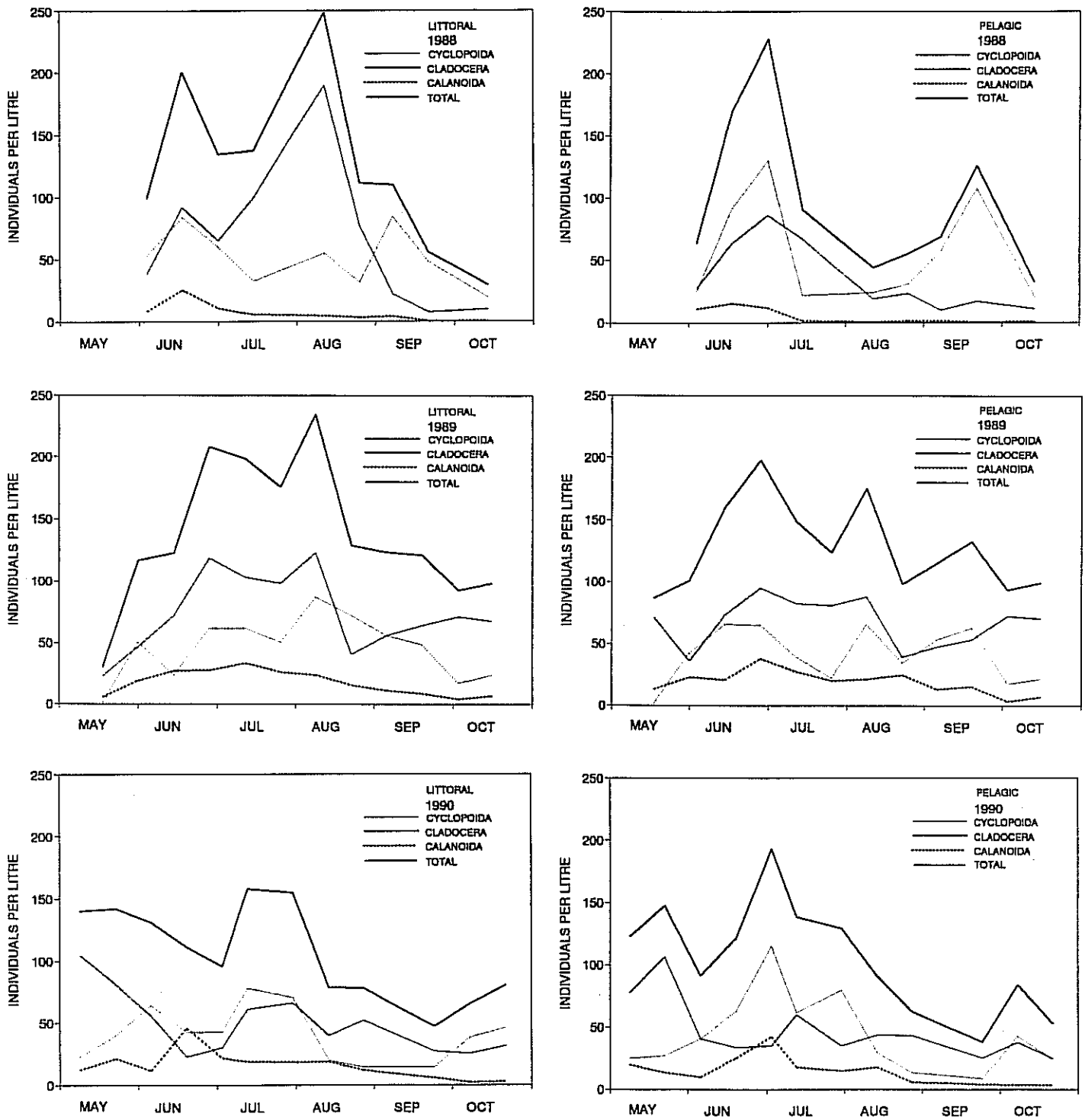


Fig. 9. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the littoral and pelagic regions of Lake 149.

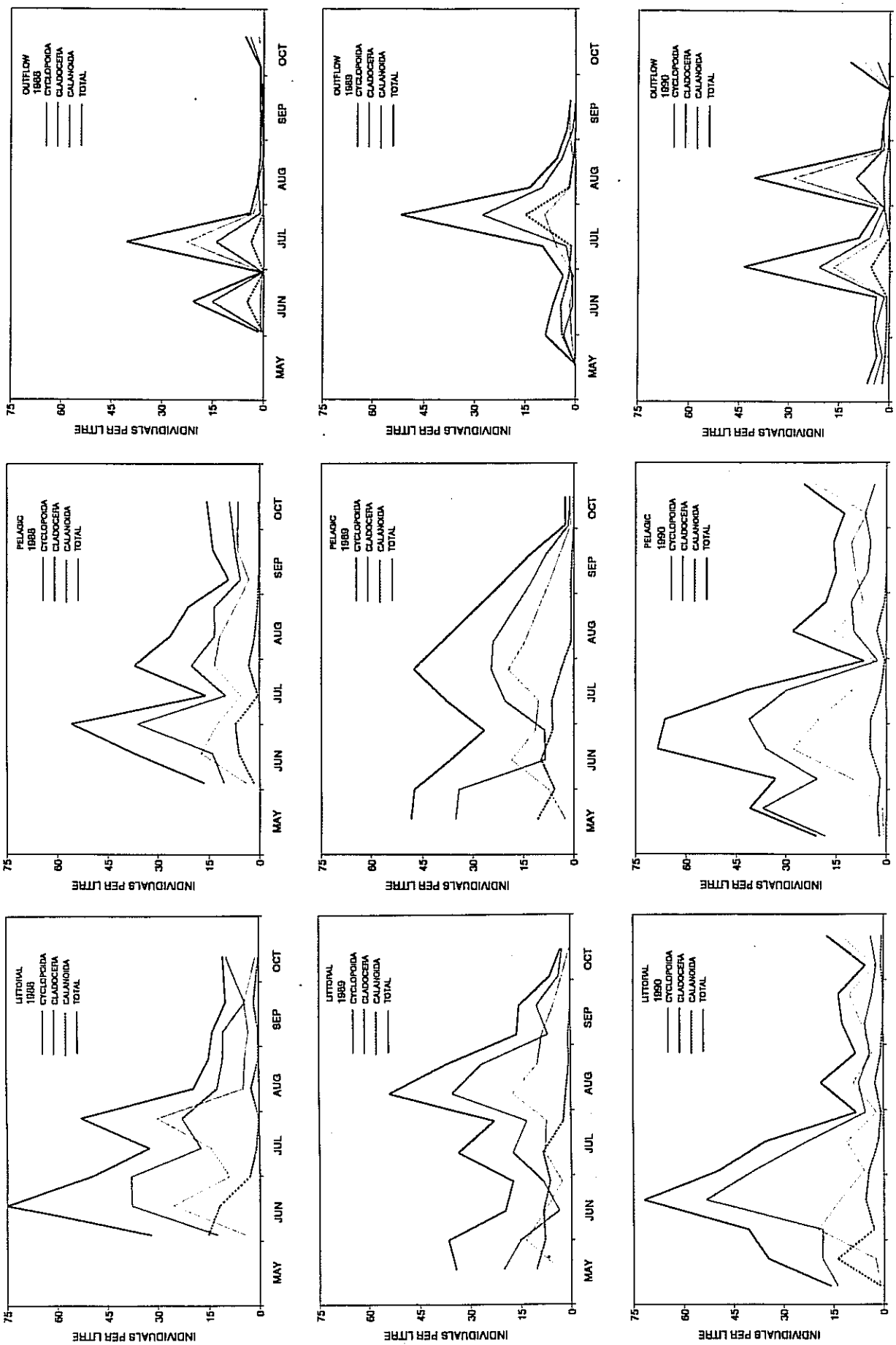


Fig. 10. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the littoral, pelagic regions and the outflow of Lake 164.

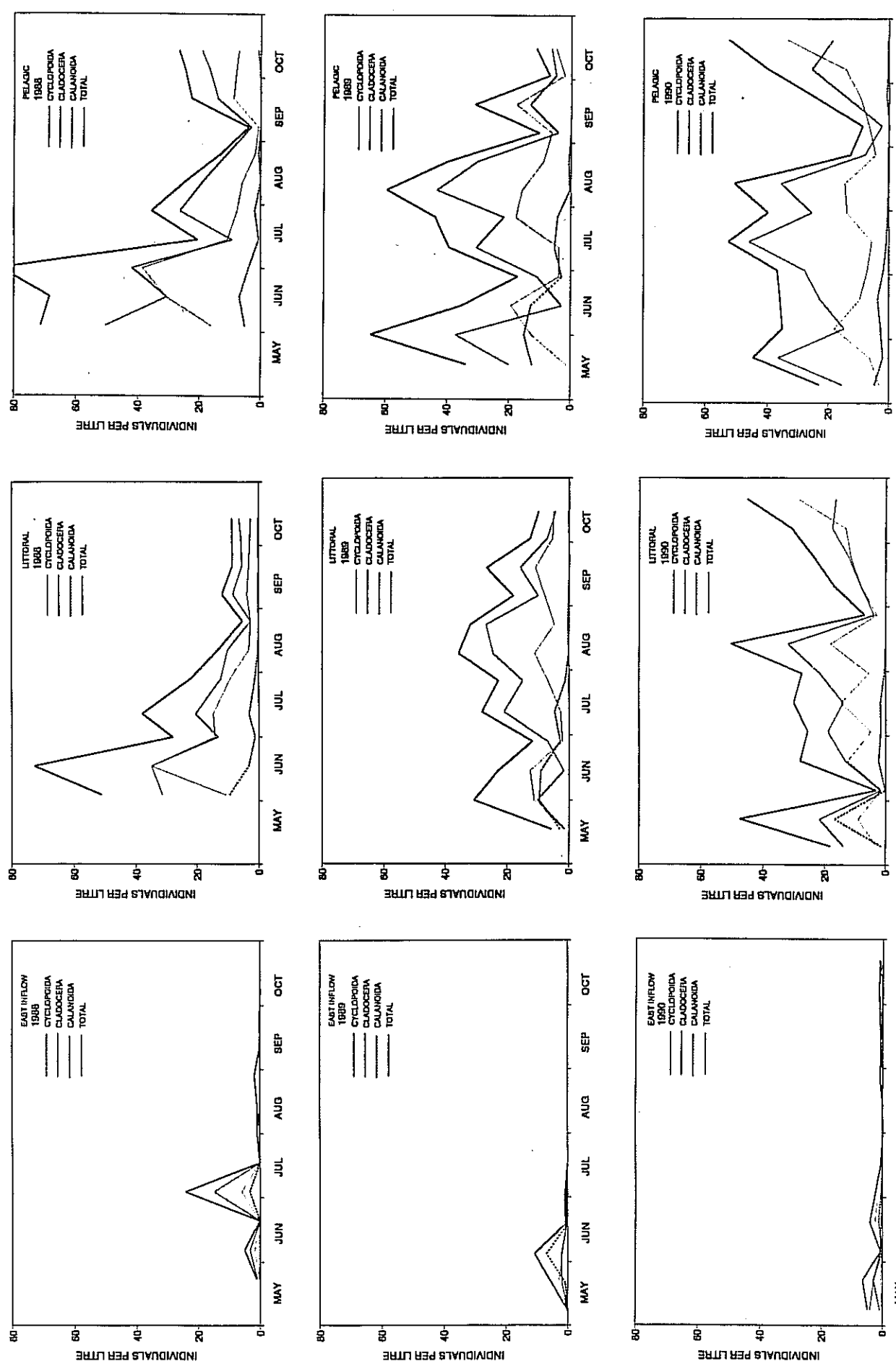


Fig. 11. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the East inflow, littoral and pelagic regions of Lake 165.

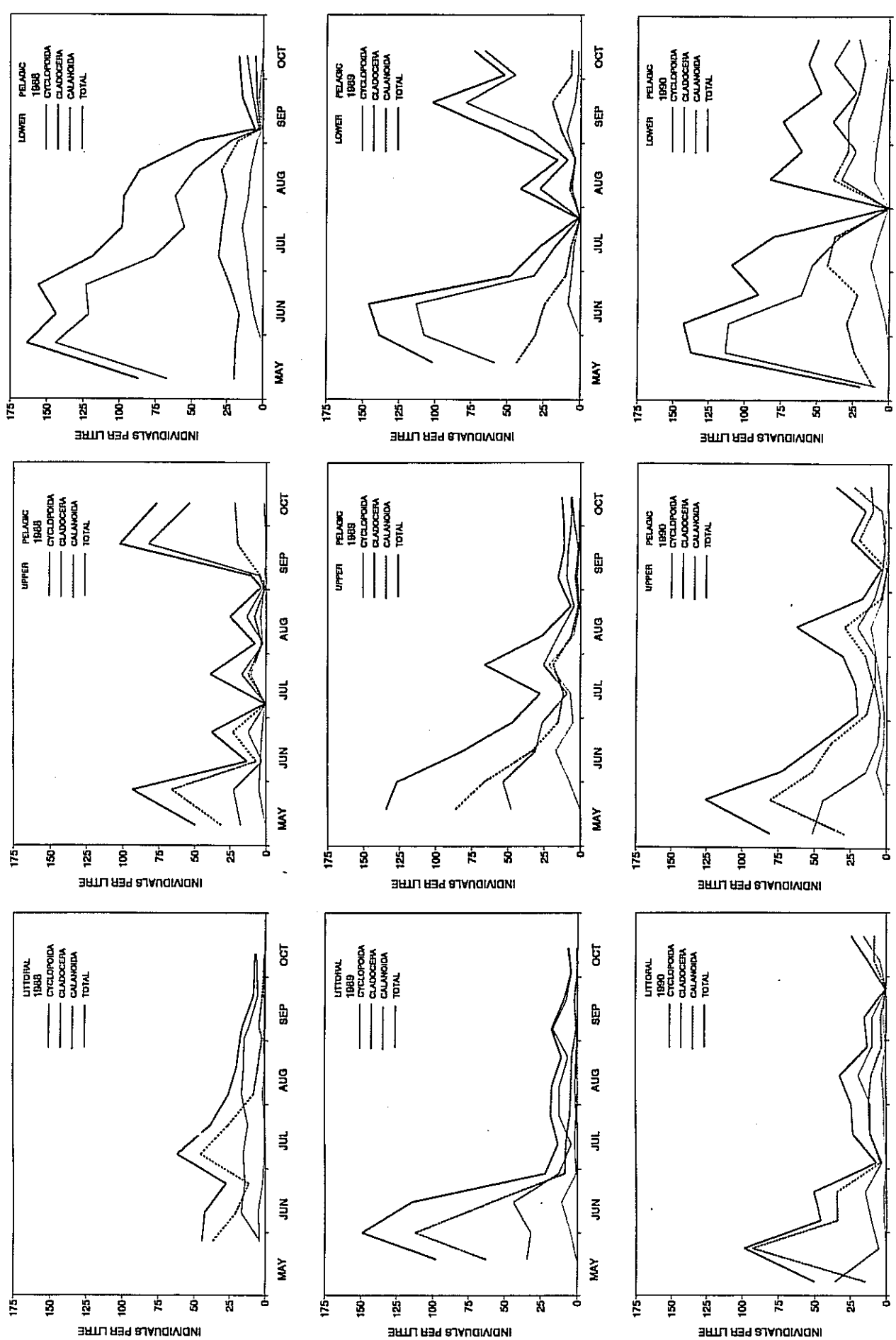


Fig. 12. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the littoral, upper pelagic and lower pelagic regions of Lake 373.

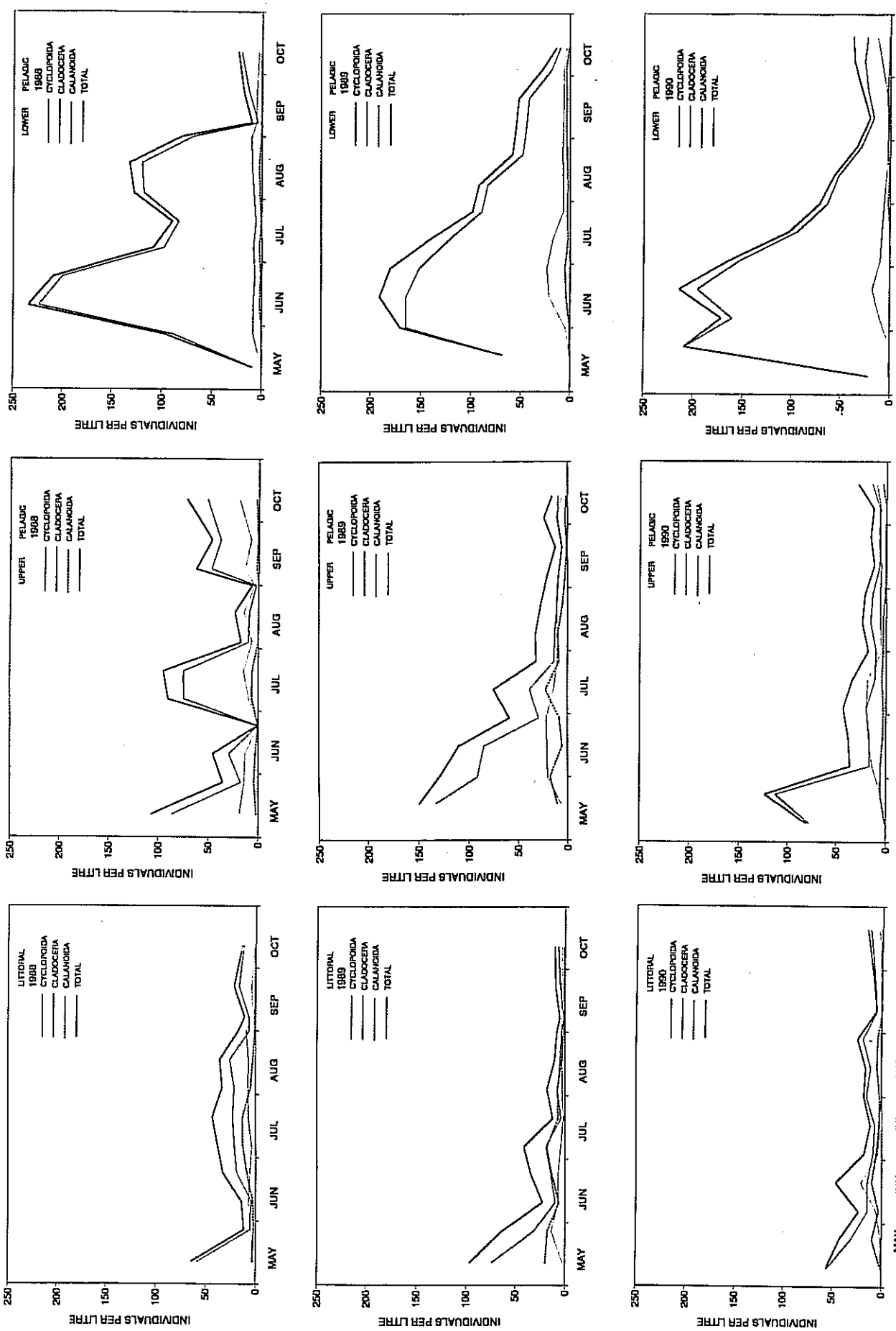


Fig. 13. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the littoral, upper pelagic and lower pelagic regions of Lake 377.

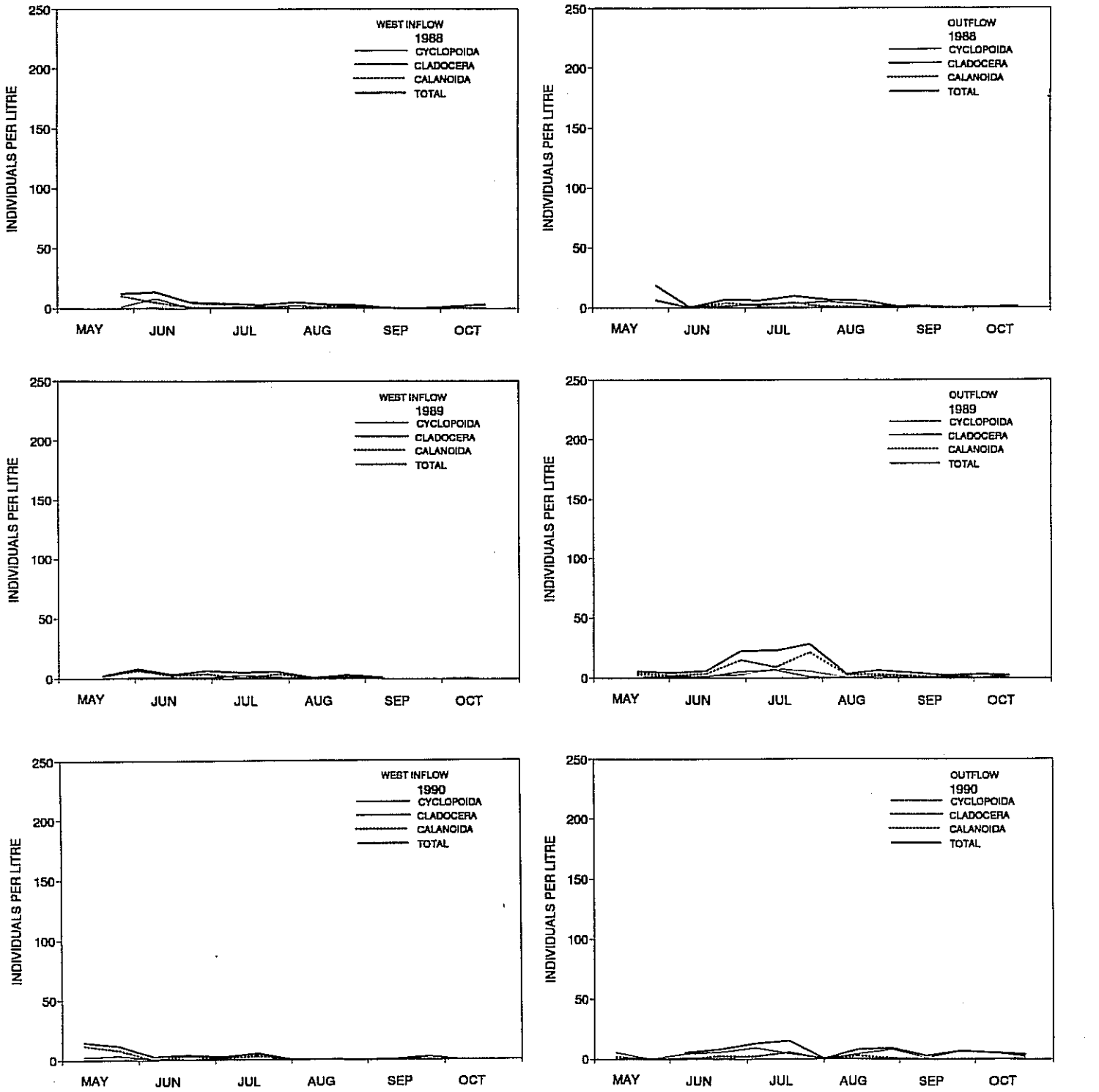


Fig. 14. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the West inflow and outflow of Lake 377.

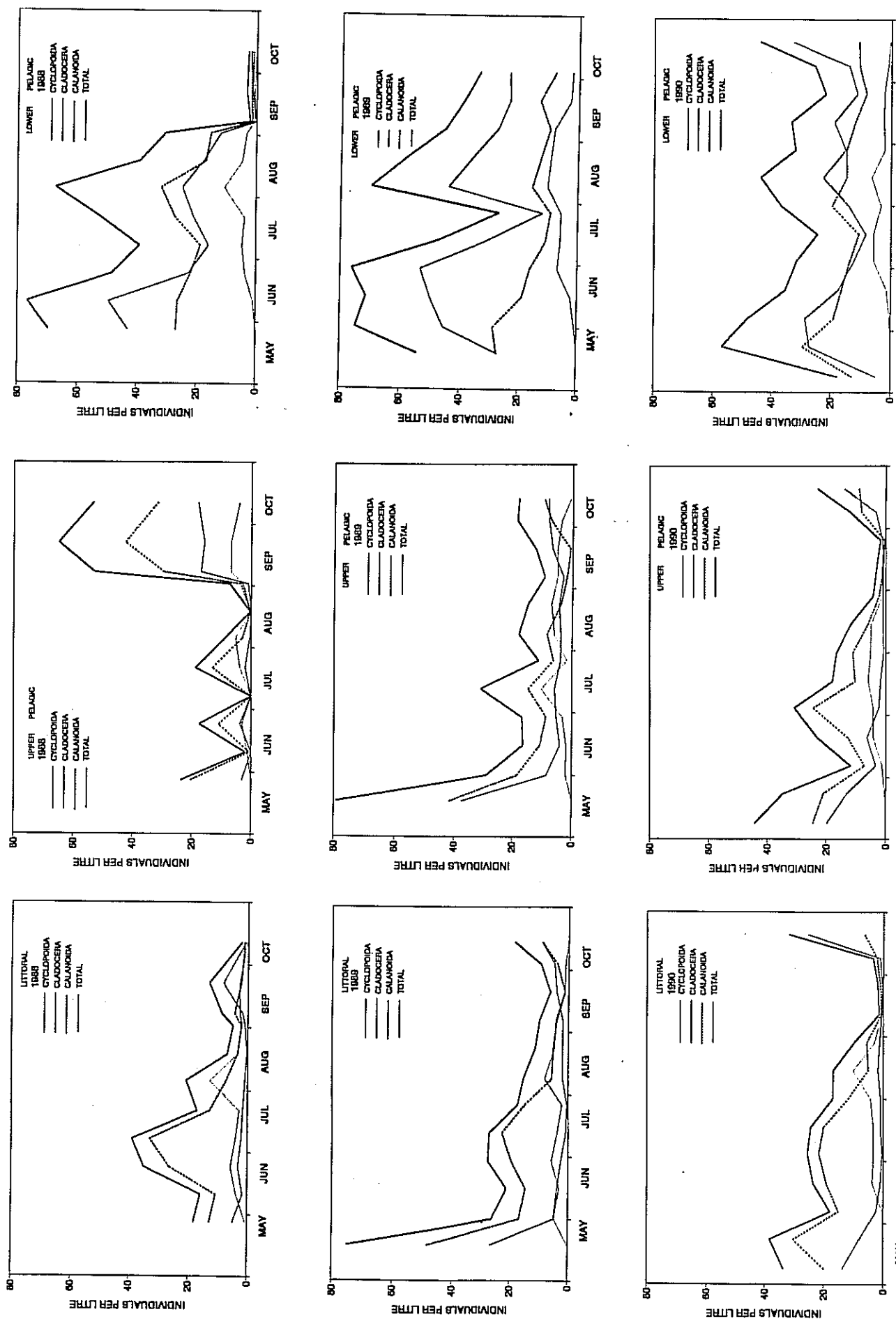


Fig. 15. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the littoral, upper pelagic and lower pelagic regions of Lake 442.

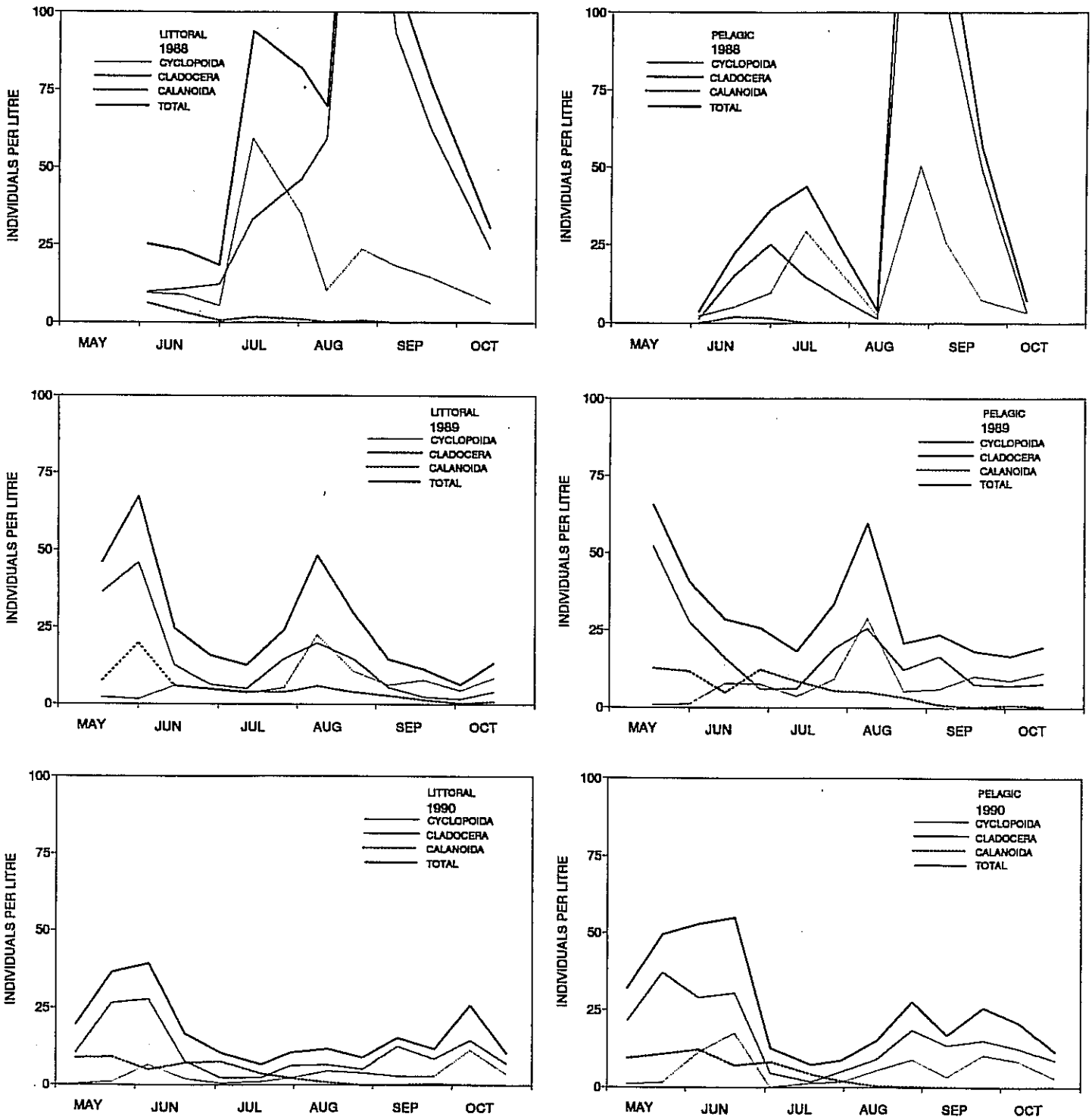


Fig. 16. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the littoral and pelagic regions of Lake 938.

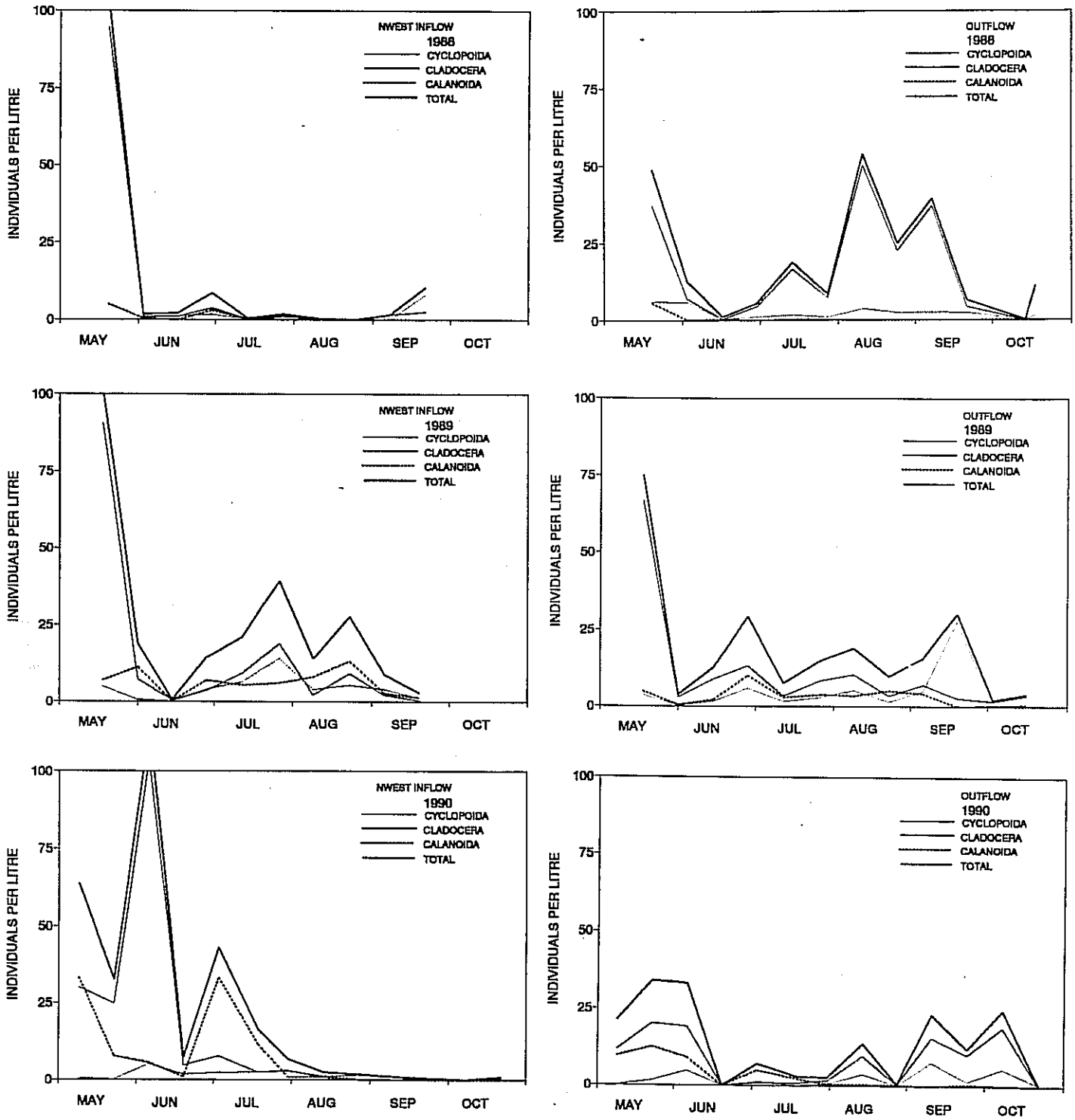


Fig. 17. Changes in the abundance of Cyclopoida, Calanoida and Cladocera during the open water seasons of 1988, 1989 and 1990 in the Northwest inflow and the outflow of Lake 938.

Appendix 1.1a. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 149, 1988.

	REGION	PELAGIC											LITTORAL									
	MONTH	JUNE	JUNE	JUNE	JULY	NS*	AUG	AUG	SEPT	SEPT	OCT	SEASON	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	SEASON
	DATE	2	16	30	14		11	25	7	21	14	MEAN	2	16	30	14	28	11	25	7	21	14	MEAN
	DAY	154	168	182	196	210	224	238	251	265	288		154	168	182	196	210	224	238	251	265	288	
	TOTAL DEPTH (m)	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0		14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	
SPECIES																							
C. b. thomasi	FEMALE										0.02	0.00									0.02	0.02	0.00
	FEMALE WITH EGG																						
	MALE										0.27	0.03										1.49	0.15
	COPEPODID 1-V									0.67	0.40	0.11	0.30	0.74							0.06	1.49	0.26
	TOTAL									0.67	0.66	0.14	0.30	0.74							0.07	2.99	0.41
A. vernalis	FEMALE																						
	FEMALE WITH EGG																						
	MALE																0.01	0.02					0.00
	COPEPODID 1-V	2.00	6.01	5.34	0.67	0.67	0.67	1.34		1.34	0.67	1.87	0.74	4.46	5.21	4.46	6.70	8.93	2.23		1.49		3.42
	TOTAL	2.00	6.01	5.34	0.67	0.67	0.67	1.34		1.34	0.67	1.87	0.74	4.46	5.21	4.46	6.71	8.95	2.23		1.49		3.43
M. edax	FEMALE																						
	FEMALE WITH EGG																						
	MALE																		0.02				0.00
	COPEPODID 1-V		4.01	3.34	0.67	0.67	0.67			1.34	0.13	1.08	1.49	7.44	1.49	2.23	2.98	3.72	0.74	0.74	0.04		2.09
	TOTAL		4.01	3.34	0.67	0.67	0.67			1.34	0.13	1.08	1.49	7.44	1.49	2.23	2.98	3.72	0.76	0.74	0.04		2.09
T. p. mexicanus	FEMALE			10.02	2.67	1.34		0.67		4.01	2.67	2.14	1.49	0.74	6.70	8.93	10.04	11.16	5.16	4.46		0.74	5.25
	FEMALE WITH EGG	0.27	0.02	0.27		0.02	0.03					0.06			0.74	1.49	1.12	0.74					0.41
	MALE		2.00	10.02	5.34	2.87	0.40	4.01	3.34	2.67	0.67	3.13			6.70	3.72	20.46	37.20	11.16	6.70	0.74		8.87
	COPEPODID 1-V	1.34	2.00	22.71	34.07	19.71	5.34	8.68	2.67	1.34	2.67	10.05	2.98	9.67	20.83	39.43	58.40	77.38	14.14		2.98	3.72	22.95
	TOTAL	1.60	4.02	43.02	42.08	23.93	5.78	13.36	6.01	8.02	6.01	15.38	4.46	10.42	34.97	53.57	90.02	126.48	33.48	11.16	3.72	4.46	37.27
M. albidus	TOTAL																						
E. agilis	TOTAL																						
C. v. rubellus	TOTAL																						
D. minutus	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	COPEPODID 1-V																						
	TOTAL																						
D. oregonensis	FEMALE	0.02	1.34	0.67	0.15	0.08			0.03		0.53	0.28	0.15	1.04		0.06	0.05	0.04	0.11	0.04	0.04	0.17	0.17
	FEMALE WITH EGG		0.22	0.13	0.02	0.02	0.02					0.04		0.11		0.02	0.02	0.02		0.74			0.09
	MALE	0.03	0.40	0.67	0.10	0.06	0.02		0.02	0.13	0.67	0.21	0.11	0.30	0.15	0.04	0.03	0.02		0.02		0.09	0.08
	COPEPODID 1-V	1.34	7.35	8.68				0.67	0.67	0.67		1.94	1.04	5.21	4.46	2.23	1.49	0.74	0.74	0.74			1.67
	TOTAL	1.39	9.30	10.15	0.27	0.15	0.03	0.67	0.72	0.80	1.20	2.47	1.30	6.66	4.61	2.34	1.58	0.82	0.86	1.54	0.04	0.26	2.00
D. sicilis	FEMALE																		0.74				0.07
	FEMALE WITH EGG																						
	MALE																						
	COPEPODID 1-V																						
	TOTAL																		0.74				0.07
E. lacustris	ADULT		0.02									0.00											
	JUVENILE	0.13		0.27								0.04	0.02										0.00
	TOTAL	0.13	0.02	0.27								0.04	0.02										0.00
CYCLOPOID NAUPLII	NI-NVI	24.05	49.43	34.07	23.38	17.70	12.02	8.68	4.01	6.01	3.34	18.27	31.25	67.70	23.08	39.43	45.01	50.59	40.18	8.93	2.23	2.23	31.08
CALANOID NAUPLII	NI-NVI	9.35	6.01	1.34	1.34	1.00	0.67	0.67	0.67			2.10	6.70	16.60	5.95	2.98	3.35	3.72	1.49	2.23			4.50
D. g. mendotae	FEMALE																						
	FEMALE WITH EGG																					0.02	0.00
	MALE																						
	JUVENILE															0.15	0.07						0.02
	TOTAL															0.15	0.07					0.02	0.02
C. lacustris	TOTAL	0.13	0.67	6.01	4.01	3.67	3.34	3.34	1.34	3.34		2.59		0.74	1.49	4.46	5.58	6.70	4.46	2.23	0.74		2.64
S. vetulus	TOTAL																						
C. sphaericus	TOTAL		4.68	10.69	2.67	2.00	1.34	3.34	3.34	1.34	0.67	3.01	0.74	3.72	9.67	5.21	6.70	8.18	6.18	4.46	2.23	0.74	4.96
B. longirostris	AD+JUV	10.02	71.48	81.50	8.02	11.38	14.70	18.70	45.42	86.84	18.03	38.61	33.48	67.70	40.92	16.37	25.67	34.97	14.88	88.45	40.92	14.14	35.75
	FEMALE WITH EGG		2.00	12.02	4.01	2.67	1.34	4.68	7.35	13.36	1.34	4.66	1.49	3.72	1.49		0.37	0.74	2.98	8.93	2.98	0.74	2.34
	TOTAL	10.02	73.48	93.52	12.02	14.03	16.03	23.38	52.77	102.20	17.37	41.48	34.97	71.42	42.41	16.37	26.04	35.71	17.86	77.38	43.90	14.88	36.09
A. affinis	TOTAL										0.67	0.07										0.74	0.07
D. leuchtenberglanum	TOTAL		2.00	4.68		1.67	3.34	0.67				1.24		0.30	1.49	0.15	1.93	3.72	0.74				0.63
H. gibberum	TOTAL	14.70	10.69	14.70	3.34	1.69	0.03		0.05	0.53	1.87	4.76	17.11	7.44	4.46	5.95	2.99	0.04	0.02	0.30	0.74	2.98	4.20
L. kindtii	TOTAL		0.12	0.40	0.02	0.02	0.02					0.06		0.09	0.09	0.11	0.06						0.04
P. pediculus	TOTAL																						
S. crystallina	TOTAL																0.01	0.02					0.00
S. kingi	TOTAL																						
I. sordidus	TOTAL																						
D. dentata	TOTAL													0.74						0.74		0.02	0.15
P. denticulatus	TOTAL																						
E. lamellatus	TOTAL																						
A. harpae	TOTAL																						
M. laticornis	TOTAL																						
Chaoborus sp.	TOTAL	0.02	0.13	0.13	0.02	0.01						0.03		0.02		0.02	0.01						0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	27.7	63.5	85.8	66.8	43.0	19.1	23.4	10.0	17.4	10.6	38.7	38.2	91.5	64.7	99.7	144.7	189.7	76.7	21.6	7.6	9.7	74.4
	Ind.cm^{-2}	9.3	21.3	28.8	22.4	14.4	6.4	7.9	3.4	5.8	3.6	12.3	4.8	11.5	8.1	12.5	18.2	23.9	9.6	2.7	1.0	1.2	9.4
CALANOIDA TOTAL	Ind.L^{-1}	10.9	15.3	11.8	1.6	1.2	0.7	1.3	1.4	0.8	1.2	4.6	8.0	25.3	10.6	5.3	4.9	4.5	3.1	3.6	0.0	0.3	6.6
	Ind.cm^{-2}	3.7	5.1	3.9	0.5	0.4	0.2	0.4	0.5	0.3	0.4	1.5	1.0	3.2	1.3	0.7	0.6	0.6	0.4	0.5	0.0	0.0	0.8
CLADOCERA TOTAL	Ind.L^{-1}	24.8	91.6	130.0	22.1	23.1	24.1	30.7	57.5	107.4	20.6	53.2	52.8	83.7	59.8	32.4	43.4	54.4	31.3	84.4	47.6	19.4	50.9
	Ind.cm^{-2}	8.3	30.8	43.7	7.4	7.7	8.1	10.3	19.3	36.1	6.9	17.9	6.6	10.5	7.5	4.1	5.6	6.8	3.9	10.6	6.0	2.4	6.4
TOTAL	Ind.L^{-1}	63.4	170.6	227.7	90.5	67.2	43.9	55.4	68.9	125.6	32.6	94.6	99.1	200.5	134.9	137.4	193.0	248.6	111.0	109.7	55.2	29.3	131.9
	Ind.cm^{-2}	21.29	57.26	76.44	30.38	22.57	14.75	18.62	23.14	42.17	10.95	31.76	12.47	25.24	16.98	17.30	24.30	31.29	13.97	13.81	6.95	3.69	16.60

* Interpolated values

Appendix 1.1b. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 149, 1989.

		PELAGIC													LITTORAL										
REGION	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	17	31	14	28	12	26	9	23	6	20	4	17	MEAN	17	31	14	28	12	26	9	23	6	20	4	17	MEAN
	DAY	137	151	165	179	193	207	221	235	249	263	277	290		137	151	165	179	193	207	221	235	249	263	277	290	
TOTAL DEPTH (m)		16.95	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9		12.25	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	
SPECIES																											
C. b. thomasi	FEMALE	0.16										0.67	1.34	0.18		0.92										0.46	0.12
	FEMALE WITH EGG	0.02												0.00													
	MALE	0.02										0.67	1.01	0.14												2.30	0.19
	COPEPODID 1-V	34.54		1.34								1.68	5.36	3.58	2.62	2.76		0.92							2.76	8.74	1.48
	TOTAL	34.73		1.34								3.02	7.73	3.90	2.62	3.68		0.92							2.76	11.59	1.79
A. vernalis	FEMALE																										
	FEMALE WITH EGG																										
	MALE						0.17							0.01		0.02			0.92								0.08
	COPEPODID 1-V	5.65	10.75	4.70	12.10	16.80	18.14	12.77	4.03	4.70	3.36	6.38	8.74	9.01	6.10	8.28	7.36	10.12	16.56	17.48	21.16	2.76	2.76	4.60	5.06	7.82	9.17
	TOTAL	5.65	10.75	4.70	12.10	16.80	18.31	12.77	4.03	4.70	3.36	6.38	8.74	9.03	6.10	8.30	7.36	10.12	17.48	17.48	21.16	2.76	2.76	4.60	5.06	7.82	9.25
M. edax	FEMALE				0.08									0.01			0.09	0.12	0.02								0.02
	FEMALE WITH EGG																										
	MALE				0.08		0.02	0.02						0.01			0.12	0.12	0.92								0.10
	COPEPODID 1-V	0.08		2.69	5.38	1.34	5.38	8.06	2.02	2.02				2.25			0.12	4.60	0.92	4.60	9.20	0.92	0.81		0.46		1.80
	TOTAL	0.08		2.69	5.54	1.34	5.39	8.08	2.02	2.02				2.26			0.32	4.83	1.80	4.60	9.20	0.92	0.81		0.46		1.92
T. p. mexicanus	FEMALE				6.05	3.36	2.69	1.34	5.38	6.72	13.10	12.10		4.23			0.92		1.84	3.68	5.52	1.84	3.68	8.28	10.12	17.02	4.41
	FEMALE WITH EGG			0.67	0.67	0.25	1.34	0.67	0.67					0.36				0.12	0.35	3.68	0.92	0.32	0.35				0.46
	MALE				1.34	1.34	5.38	4.70	1.34	1.34	3.36	6.05	3.36	2.35			0.92		5.52	13.80	6.44	1.84	0.92	3.68	6.90	4.14	3.68
	COPEPODID 1-V		0.67	1.34	4.03	12.10	11.42	19.49	13.44	12.77	24.19	22.85	14.45	11.40		0.92	0.92	3.68	11.04	14.72	32.20	14.72	13.80	17.48	26.68	11.50	12.31
	TOTAL		0.67	2.02	6.05	13.74	21.50	27.55	16.80	19.49	34.27	42.00	29.90	18.33		0.92	2.76	3.80	18.75	35.88	45.08	18.72	18.75	29.44	43.70	32.66	20.87
M. albidus	TOTAL	0.02				0.08								0.01		0.12											0.01
E. agilis	TOTAL																	0.12									0.01
C. v. rubellus	TOTAL																										0.01
D. minutus	FEMALE															0.92			0.92							0.46	0.19
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V		0.67		1.34									0.17	0.87	0.92		1.84									0.30
	TOTAL		0.67		1.34									0.17	0.87	0.92		1.84									0.30
D. oregonensis	FEMALE	0.24	4.03			0.50	1.34	3.36	1.18	0.12	0.07	0.67	2.35	1.16		0.23	0.35	0.81	0.92	2.76	0.35	0.69	0.02		0.69	1.38	0.68
	FEMALE WITH EGG		0.15	0.34	0.08	0.03	0.03	0.67	0.08	0.03		0.34		0.15		0.35	0.23	0.12	0.02	0.35			0.05				0.09
	MALE	0.16	2.02	2.69	1.34	0.42	0.76			0.02	0.02	0.34	1.34	0.76	0.02	0.23	0.69	0.69	0.92	0.92	0.35	0.12	0.05		0.56	1.38	0.49
	COPEPODID 1-V	3.77	7.39	2.69	2.02	7.39	4.03	4.70	10.08	8.74	14.78	2.35	2.69	5.69	0.44	6.44	0.92	2.76	5.52	3.68	5.52	3.68	2.76	8.28	3.22	4.14	3.95
	TOTAL	4.16	13.59	5.71	3.44	8.35	6.17	8.74	11.34	8.90	14.87	3.70	6.38	7.95	0.46	7.25	2.19	4.97	7.38	7.71	6.21	4.49	2.88	8.28	4.49	6.90	5.22
D. sicilis	FEMALE																										
	FEMALE WITH EGG																										
	MALE							0.67		0.67				0.11													
	COPEPODID 1-V																										
	TOTAL							0.67		0.67				0.11													
E. lacustris	ADULT		0.17	0.08						0.02				0.02		0.12	0.12	0.09									0.03
	JUVENILE	0.63					0.67							0.11	0.44					0.05							0.04
	TOTAL	0.63	0.17	0.08			0.67			0.02				0.13	0.44	0.12	0.12	0.09		0.05							0.07
CYCLOPOID NAUPLII	NI-NVI	30.77	24.19	62.50	71.23	43.68	35.62	39.65	16.13	21.50	16.13	21.17	23.52	33.84	14.39	33.12	61.64	98.44	64.40	40.48	47.84	18.40	34.04	30.36	19.32	15.18	39.80
CALANOID NAUPLII	NI-NVI	8.79	8.74	14.78	32.93	18.82	13.44	12.10	13.44	4.03	0.67		0.67	10.70	3.92	11.04	24.84	21.16	25.76	18.40	17.48	11.04	8.28				11.83
D. g. mendotae	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE																										
	TOTAL																										
C. lacustris	TOTAL			2.02	8.74	7.39	4.03	1.34	0.08	1.34	0.67			2.14		0.92	0.23	14.72	11.98	9.20		0.92	2.76				3.39
S. vetulus	TOTAL																										
C. sphaericus	TOTAL	0.08		0.67	4.03	2.02	2.69	2.69	5.38	0.67	0.67		0.67	1.63	0.44	0.92		3.68	0.92	5.52	7.36	3.68					1.88
B. longirostris	AD+JUV	1.26	28.90	23.52	16.80	11.42	10.75	53.76	23.52	45.70	54.43	15.12	15.79	25.08	0.44	42.32	10.12	11.04	19.32	26.68	69.92	60.72	46.00	46.00	14.72	19.76	30.59
	FEMALE WITH EGG		4.70	4.03		1.34	0.67	0.67	2.69	1.34	2.69	1.01	4.03	1.93	0.44	3.68				0.92	2.76	0.92	3.68	0.92	0.92	1.36	1.30
	TOTAL	1.26	33.60	27.55	16.80	12.77	11.42	54.43	26.21	47.04	57.12	16.13	19.82	27.01	0.87	46.00	10.12	11.04	19.32	27.60	72.68	61.64	49.68	46.92	15.64	21.16	31.89
A. affinis	TOTAL										0.02			0.00						0.12				0.02	0.46		0.05
D. leuchtenberglanum	TOTAL	0.08			1.34	10.08	3.36	4.70	0.67	1.34				1.80		0.02	0.92	2.76	21.16	8.28	7.36	2.76					3.61
H. gibberum	TOTAL	0.63	8.74	35.62	34.27	6.72	0.67	2.02	1.34	3.38	4.70	1.34	1.34	8.40		2.76	11.98	29.44	8.28		0.23	3.68	3.68	1.84	0.92	2.76	5.46
L. kindtii	TOTAL				0.08	0.08	0.07							0.02				0.05	0.23	0.07	0.02						0.03
P. pediculus	TOTAL																	0.02		0.12							0.01
S. crystallina	TOTAL			0.08			0.02	0.67	0.67					0.12			0.12				0.02						0.01
S. kingi	TOTAL																										
I. sordidus	TOTAL																										
D. dentata	TOTAL																	0.92									0.08
P. denticulatus	TOTAL					0.67								0.06													
E. lamellatus	TOTAL												0.34	0.03													
A. harpae	TOTAL												0.34	0.03													
M. laticornis	TOTAL																										
Chaoborus sp.	TOTAL			0.08		0.17	0.08	0.02						0.03				0.05	0.23	0.23							0.04
CYCLOPOIDA TOTAL	Ind.L^{-1}	71.25	35.62	73.25	94.92	82.32	80.82	88.05	38.98	47.71	53.76	72.58	70.56	67.48	23.11	47.06	72.08	119.14	103.41	98.44	123.28	40.80	58.35	64.40	71.30	67.62	73.92
	Ind.cm^{-3}	23.92	11.96	24.60	31.87	27.64	27.14	29.57	13.09	16.02	18.05	24.37	23.69	22.66	2.91	5.92	9.07	15.00	13.02	12.39	15.52	5.14	7.09	8.11	8.97	8.51	9.30
CALANOIDA TOTAL	Ind.L^{-1}	13.58	23.17	20.58	37.72	27.17	20.28	21.50	24.78	13.62	15.54	3.70	7.06	19.06	5.69	19.32	27.14	27.46	33.14	26.15	23.69	15.53	11.16	8.28	4.49	6.90	17.41
	Ind.cm^{-3}	4.56	7.78	6.91	12.66	9.12	6.81	7.22	8.32	4.58	5.22	1.24	2.37	6.40	0.72	2.43	3.42	3.46	4.17	3.29	2.98	1.95	1.40	1.04	0.56	0.87	2.19
CLADOCERA TOTAL	Ind.L^{-1}	2.04	42.34	65.94	65.27	39.06	22.26	65.86	34.36	53.76	63.18	17.47	21.84	41.11	1.31	50.62	23.35	61.71	61.87	50.90	87.66	72.58	58.12	48.78	17.02	23.92	46.33
	Ind.cm^{-3}	0.69	14.22	22.14	21.92	13.12	7.47	22.11	11.54	18.05	21.22	5.87	7.33	13.81	0.16	6.37	2.94	7.77	7.79	6.41	11.04	9.15	7.06	6.14	2.14	3.01	5.83
TOTAL	Ind.L^{-1}	86.87	101.12	159.85	197.90	148.71	123.46	175.43	98.11	115.10	132.48	93.74	99.46	127.69	30.11	117.00	122.57	208.30	198.65	175.72	234.65	129.01	123.03	121.46	92.81	98.44	137.70
	Ind.cm^{-3}	29.17	33.95	53.68	66.45	49.94	41.45	58.91	32.94	38.65	44.49	31.48	33.40	42.86	3.79	14.73	15.43	26.22	25.00	22.12	29.53	16.24	15.56	15.29	11.68	12.39	17.33

Appendix 1.1c. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 149, 1990.

		PELAGIC														LITTORAL											
REGION / MONTH		MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
DATE		8	22	5	19	3	13	31	14	28	11	25	9	23	MEAN	8	22	5	19	3	17	31	14	28	11	25	9	23	MEAN
DAY		128	142	156	170	184	194	212	226	240	254	268	282	296		128	142	156	170	184	194	212	226	240	254	268	282	296	
TOTAL DEPTH (m)		17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75	17.75		12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	
SPECIES																													
C. b. thomasi	FEMALE	0.07												0.28	0.03	0.10												0.71	0.06
	FEMALE WITH EGG																												
	MALE	0.35	0.07										0.65	0.35	0.12	0.20	0.02										0.10	1.32	0.13
	COPEPODID 1–V	32.15	56.96	0.65							0.28	4.23	5.64	7.70		39.38	25.58										3.25	10.56	6.06
	TOTAL	32.57	57.03	0.65							0.28	5.08	6.27	7.85		39.69	25.60										3.35	12.59	6.25
A. vernalis	FEMALE																	0.04		0.02							0.02		0.01
	FEMALE WITH EGG																0.10												0.01
	MALE	0.28			0.01										0.02														0.04
	COPEPODID 1–V		11.00	12.97	7.33	1.69	7.61	4.79	3.38	1.69	5.64	1.13	3.95	3.10	4.95		6.90	17.86	5.68	4.47	6.09	5.28	1.22	2.84		0.81	1.62	1.22	4.15
	TOTAL	0.28	11.00	12.97	7.35	1.69	7.61	4.79	3.38	1.69	5.64	1.13	3.95	3.10	4.97		7.00	17.90	5.68	4.49	6.09	5.38	1.22	3.25		0.81	1.64	1.22	4.21
M. edax	FEMALE				0.01										0.00				0.10	0.04									0.01
	FEMALE WITH EGG																												
	MALE		0.01		0.01										0.00														
	COPEPODID 1–V		0.07	1.13	0.56	0.56	1.13	3.38	2.82	2.26	0.85	0.28	0.28	0.07	1.03			0.81			0.41	1.22	0.41	2.03					0.37
	TOTAL		0.08	1.13	0.59	0.56	1.13	3.38	2.82	2.26	0.85	0.28	0.28	0.07	1.03			0.81	0.10	0.04	0.41	1.22	0.41	2.03					0.39
T. p. mexicanus	FEMALE	3.10	2.82	0.26	0.56	0.56	0.56	0.56	1.13	1.69	3.38	6.20	5.92	6.49	2.56	1.62	2.44	0.41	0.81	1.22	0.41	4.67	2.84	1.22	0.04	2.84	5.28	6.90	2.38
	FEMALE WITH EGG		0.26		0.01	0.56	0.01		0.56	0.01					0.11		0.81		0.02				0.10						0.07
	MALE				3.10	0.56	0.28	1.97	1.41	1.13	4.23	1.69	5.36	3.67	1.80	0.41			1.22	1.62	0.81	4.06	0.81	2.64		2.03	1.22	6.50	1.66
	COPEPODID 1–V	0.28		2.26	5.36	2.82	6.77	6.20	10.43	16.07	25.10	7.90	7.05	1.69	7.07			3.25	3.25	2.44	8.53	18.27	12.59	18.27		12.18	6.90	2.44	6.78
	TOTAL	3.38	3.10	2.54	9.04	4.51	7.63	8.74	13.54	18.91	32.71	15.79	18.33	11.84	11.54	2.03	3.25	3.65	5.30	5.28	9.74	27.20	16.34	22.33	0.04	17.05	13.40	15.83	10.68
M. albidus	TOTAL				0.28										0.02														
E. agilis	TOTAL																					0.41							0.03
C. v. rubellus	TOTAL																												
D. minutus	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																0.41												0.03
	TOTAL																0.41												0.03
D. oregonensis	FEMALE	0.14	0.35	1.69	1.34	5.64	0.21	3.10	1.13	0.42		0.07	1.41	0.99	1.27	0.61		1.22	0.61	0.91	0.41	0.51	0.10			0.20	0.20	0.61	0.41
	FEMALE WITH EGG	0.21	0.03	0.08	0.06	0.14	0.03		0.08	0.07	0.07				0.06	0.41	0.41					0.20	0.10	0.02				0.02	0.09
	MALE	0.14	0.21	0.85	1.48	2.26	0.07		0.85	0.28	0.07	0.07	0.28	0.92	0.57	0.20	0.02	0.41	0.91	0.20	0.41	0.30	0.10				0.10	0.30	0.23
	COPEPODID 1–V		8.74	4.78	1.97	10.72	1.13	7.90	5.92	3.10	8.74	3.67	1.97	1.13	4.60		3.65	2.84	4.87	7.71	2.84	5.28	0.41	6.09		3.65	1.62	1.62	3.12
	TOTAL	0.49	9.33	7.39	4.85	18.75	1.44	11.00	7.98	3.88	8.88	3.81	3.67	3.03	6.50	1.22	4.08	4.47	6.39	8.83	3.65	6.29	0.71	6.11		3.86	1.93	2.56	3.85
D. sicilis	FEMALE										0.56				0.04											0.41			0.03
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																												
	TOTAL										0.56				0.04											0.41			0.03
E. lacustris	ADULT																	0.04											0.00
	JUVENILE																2.03		0.41		0.41								0.22
	TOTAL																2.03	0.04	0.41		0.41								0.22
CYCLOPOID NAUPLII	NI–NVI	41.17	35.53	23.12	16.36	28.76	43.43	18.61	23.97	20.59	19.18	8.18	10.15	3.67	22.52	62.52	45.47	33.29	11.77	20.71	44.66	31.67	21.52	22.74		8.93	6.90	2.03	24.02
CALANOID NAUPLII	NI–NVI	19.46	4.23	2.54	20.59	23.69	16.07	3.67	9.59	1.69	2.82	0.28		0.56	8.09	10.96	14.62	6.90	38.68	12.99	14.62	12.18	18.27	5.68		1.22			10.49
D. g. mendotae	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																				0.04								0.00
	TOTAL																				0.04								0.00
B. longirostris	AD+JUV	22.84	23.69	32.15	42.86	20.87	46.25	68.53	20.87	10.43	28.48	6.77	31.02	14.66	28.42	20.71	32.89	50.75	37.76	24.36	47.91	59.28	13.40	9.74	3.65	11.77	30.04	34.10	28.95
	FEMALE WITH EGG	2.26	1.69	5.64	0.56	1.69	1.13		0.28		2.82	1.69	9.87	8.46	2.78	1.62	5.28	12.59	1.22	2.84	5.28	2.44		2.03		1.62	7.71	11.77	4.16
	TOTAL	25.10	25.38	37.79	43.43	22.56	47.38	68.53	21.15	10.43	31.30	8.46	40.89	23.12	31.19	22.33	38.16	63.34	38.98	27.20	53.19	61.71	13.40	11.77	3.65	13.40	37.76	45.86	33.14
C. lacustris	TOTAL					1.13	3.10	5.36	5.64	1.97	1.13		0.07		1.42				0.10	2.03	5.28	4.06	5.28	1.62	0.02				1.41
C. sphaericus	TOTAL	0.28	1.69	0.28			0.28	0.56					0.56		0.28	0.41	1.22			0.81	0.41		0.81						0.28
D. leuchtenbergianum	TOTAL			0.07	0.28	2.82	2.82	3.95	2.54						0.98			0.10	0.02	2.84	5.68	3.25	0.20	0.41					0.98
H. gibberum	TOTAL	0.03	0.14	2.47	18.33	58.55	7.61	0.85	0.21	0.85	0.14	0.07	0.21	0.35	9.22	0.41	0.04	0.51	3.35	9.34	13.40	1.22	0.41	0.41		0.81	0.41	0.30	2.35
L. kindtii	TOTAL					0.04	0.07		0.01		0.03				0.01						0.20	0.02							0.02
S. vetulus	TOTAL				0.01										0.00														
A. affinis	TOTAL				0.56								0.56	0.56	0.13					0.41		0.04							0.03
P. pediculus	TOTAL																												
S. crystallina	TOTAL																			0.41									0.03
S. kingi	TOTAL					0.01									0.00			0.02											0.00
I. sordidus	TOTAL																							0.04					0.00
D. dentata	TOTAL																												
P. denticulatus	TOTAL																												
E. lamellatus	TOTAL																											0.02	0.00
A. harpae	TOTAL																												
M. laticornis	TOTAL															0.41								1.62		0.41			0.10
Chaoborus sp.	TOTAL					0.35									0.03							0.06							0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	77.41	106.75	40.61	33.61	35.55	59.80	35.53	43.71	43.44	58.37	25.66	37.79	24.96	47.94	104.65	81.32	55.68	22.86	30.51	60.90	65.87	39.46	52.01	0.04	27.20	25.29	31.69	45.96
	Ind.cm^{-2}	25.99	35.85	13.64	11.29	11.94	20.08	11.93	14.68	14.59	19.60	8.62	12.69	8.38	16.10	13.17	10.24	7.01	2.88	3.84	7.67	8.29	4.97	6.55	0.01	3.42	3.18	3.99	5.78
CALANOIDA TOTAL	Ind.L^{-1}	19.95	13.56	9.93	25.44	42.44	17.51	14.66	17.57	5.57	12.27	4.09	3.67	3.60	14.63	12.18	21.13	11.41	45.78	21.62	18.68	18.47	18.98	11.79		5.48	1.93	2.58	14.53
	Ind.cm^{-2}	6.70	4.55	3.33	8.54	14.25	5.88	4.92	5.90	1.87	4.12	1.37	1.23	1.21	4.91	1.53	2.66	1.44	5.78	2.75	2.35	2.33	2.39	1.48		0.69	0.24	0.32	1.84
CLADOCERA TOTAL	Ind.L^{-1}	25.41	27.21	40.61	62.62	115.10	61.26	79.24	29.55	13.25	32.60	8.53	42.30	24.04	43.21	23.14	39.42	63.95	42.45	43.04	78.20	70.30	20.10	14.21	3.67	14.21	38.16	46.16	38.23
	Ind.cm^{-2}	8.53	9.14	13.64	21.03	38.65	20.57	26.61	9.92	4.45	10.95	2.86	14.20	8.07	14.51	2.91	4.96	8.05	5.34	5.42	9.84	8.85	2.53	1.79	0.46	1.79	4.80	5.81	4.81
TOTAL	Ind.L^{-1}	122.77	147.53	91.14	121.67	193.44	138.57	129.44	90.83	62.27	103.24	36.28	83.75	52.59	105.81	139.97	141.88	131.04	111.08	95.37	157.77	154.71	78.50	78.01	3.71	46.89	65.39	80.43	98.83
	Ind.cm^{-2}	41.22	49.54	30.60	40.86	64.95	46.53	43.46	30.50	20.91	34.67	12.85	28.12	17.66	35.53	17.62	17.86	16.49	13.98	12.00	19.86	19.47	9.89	9.82	0.47	5.90	8.23	10.12	12.44

Appendix 1.2a. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 164,

	REGION	PELAGIC										LITTORAL									
	MONTH	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	SEASON	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	SEASON
	DATE	2	16	30	14	28	11	25	7	21	14	MEAN	2	16	30	14	28	11	25	7	21	14	MEAN
	DAY	154	168	182	196	210	224	238	251	265	280		154	168	182	196	210	224	238	251	265	287	
SPECIES	TOTAL DEPTH (m)	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5	39.5		15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	
C. b. thomasi	FEMALE	0.54									0.11	0.07											
	FEMALE WITH EGG																						
	MALE	0.27									0.05	0.03											
	COPEPODID 1-V	1.36	0.27			0.05				0.16	0.27	0.21	0.02								0.02	0.69	0.07
	TOTAL	2.18	0.27			0.05				0.16	0.44	0.31	0.02								0.02	0.69	0.07
A. vernalis	FEMALE		0.01				0.01					0.00											
	FEMALE WITH EGG																						
	MALE	0.27	0.05				0.01					0.03											
	COPEPODID 1-V	1.63	1.09	2.99	1.36	0.27		0.27		0.01	1.63	0.93	0.07	0.69		2.06			0.14	0.14	0.05	0.55	0.37
	TOTAL	1.90	1.15	2.99	1.36	0.27	0.01	0.27		0.01	1.63	0.96	0.07	0.69		2.06			0.14	0.14	0.05	0.55	0.37
M. edax	FEMALE	0.11	0.05	0.16	0.01	0.16	0.03					0.05											
	FEMALE WITH EGG	0.05					0.01					0.01											
	MALE	0.07	0.22	0.54	0.01	0.82	0.04					0.17	0.03	0.02								0.14	0.02
	COPEPODID 1-V		1.90	6.26	0.54	1.63	1.09	1.09	0.27			1.28		5.50	2.06	0.69	1.42			0.03		0.69	1.04
	TOTAL	0.24	2.18	6.86	0.56	2.61	1.16	1.09	0.27			1.51	0.03	5.52	2.06	0.69	1.42			0.03		0.69	1.06
T. p. mexicanus	FEMALE		1.09	2.72	0.54	5.98	4.90	7.89	0.54	1.36	2.45	2.75	1.38	2.06	5.50	2.06	1.42		1.38	0.69	0.69	0.14	1.53
	FEMALE WITH EGG	0.05					0.04	0.01	0.27	0.05		0.04			0.07	0.14			0.28	0.14			0.06
	MALE		0.27	3.81	2.18	4.35	2.99	2.45	0.27	2.18	0.27	1.88	0.14	1.38	1.38	3.44	9.97	1.38	2.06	1.38			2.11
	COPEPODID 1-V		4.35	10.34	2.45	2.45	0.82	1.36	1.36	0.82	1.36	2.53	0.69	8.26	10.32	4.13	1.42	2.06	0.69	1.38	0.69	3.44	3.31
	TOTAL	0.05	5.71	16.86	5.17	12.78	8.74	11.71	2.45	4.41	4.08	7.20	2.20	11.70	17.27	9.77	12.82	3.44	4.40	3.58	1.38	3.58	7.01
M. albidus	TOTAL																	0.02					0.00
E. agilis	TOTAL																						
D. minutus	FEMALE	0.01	0.01		0.01		0.05	0.01	0.01			0.01	0.03	0.05		0.14		0.14			0.02		0.04
	FEMALE WITH EGG														0.14								0.01
	MALE	0.05		0.11			0.01				0.01	0.02	0.03	0.14			0.11	0.14		0.14		0.02	0.06
	COPEPODID 1-V		1.09	0.27								0.14											
	TOTAL	0.07	1.09	0.38	0.01		0.06	0.01	0.01		0.01	0.16	0.07	0.19	0.14	0.14	0.11	0.28		0.14	0.02	0.02	0.11
D. oregonensis	FEMALE	0.11	0.03	0.05	0.02	0.82	0.05	0.01			0.01	0.11											
	FEMALE WITH EGG		0.02			0.01						0.00											
	MALE		0.03	0.05	0.05	0.22	0.04		0.02	0.01		0.04											
	COPEPODID 1-V	0.27	1.90	2.45	0.27	1.09	0.54	0.54	0.27			0.73	2.06						0.14		0.02		0.22
	TOTAL	0.38	1.99	2.56	0.35	2.13	0.64	0.55	0.29	0.01	0.01	0.89	2.06						0.14		0.02		0.22
D. sicilis	FEMALE																				0.69		0.07
	FEMALE WITH EGG																						
	MALE																						
	COPEPODID 1-V																						
	TOTAL																						
A. denticornis	FEMALE																				0.69		0.07
	FEMALE WITH EGG																						
	MALE																						
	COPEPODID 1-V																						
	TOTAL																						
E. lacustris	ADULT	0.10	0.10	0.11	0.01							0.03											
	JUVENILE	0.11	0.27									0.04		0.69									0.07
	TOTAL	0.20	0.37	0.11	0.01							0.07		0.69									0.07
CYCLOPOID NAUPLII	NI-NVI	6.26	4.62	9.25	2.99	4.35	3.26	0.27	2.99	2.72	2.72	3.94	10.32	19.95	18.58	4.82	8.54	8.94	6.19	6.06	2.75	4.13	9.11
CALANOID NAUPLII	NI-NVI	1.09	2.72	4.08		1.09	0.54				0.27	0.98	13.07	11.01	2.75	0.69		2.06			0.69		3.03
D. retrocurva	FEMALE				0.54	1.36	0.27	0.27			0.27	0.27				0.02				0.03			0.01
	FEMALE WITH EGG						0.01	0.01	0.03	0.01	0.03	0.01											
	MALE										0.54	0.05											
	JUVENILE		0.27	0.27		1.36	0.54	0.05	0.27	0.27		0.30		0.69			0.04		0.14				0.09
	TOTAL		0.27	0.27	0.54	2.72	0.82	0.34	0.30	0.29	0.84	0.64		0.69		0.02	0.04		0.14	0.03			0.09
D. g. mendotae	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE																						
	TOTAL																						
D. longiremis	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE																						
	TOTAL																						
D. parvula	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE																						
	TOTAL																						
D. rosea	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE																						
	TOTAL																						
B. longirostris	AD+JUV	2.18	10.34	5.17	2.99	1.90	2.99	5.17	2.45	3.81	4.35	4.13	4.13	24.08	7.57	12.38	27.06	4.13	3.44	2.75	4.13	0.69	9.04
	FEMALE WITH EGG			0.54			0.01			0.27	0.54	0.14				0.69							0.21
	TOTAL	2.18	10.34	5.71	2.99	1.90	3.00	5.17	2.45	4.08	4.90	4.27	4.13	24.08	8.94	13.07	27.06	4.13	3.44	2.75	4.13	0.69	9.24
D. leuchtenberglanum	TOTAL		0.27	0.27	0.54	2.72	3.81	1.09	0.11	0.27		0.91			0.02	0.41	2.05	0.55	0.41	0.07			0.43
C. sphaericus	TOTAL															0.69							0.07
H. gibberum	TOTAL	1.90	5.98	5.17	1.36	5.44	3.54	0.54	0.33	1.90	0.71	2.69	0.14	0.55		0.07	0.07		0.14	0.14	0.14	0.14	0.14
L. kindtii	TOTAL			0.01	0.01	0.16	0.03					0.02											
C. lacustris	TOTAL		0.27		0.01	0.27	0.27	0.01		0.01		0.06		0.14		0.14	0.04			0.02			0.03
A. affinis	TOTAL																						
P. pediculus	TOTAL																						
S. crystallina	TOTAL	0.01		0.01			0.27		0.01			0.03	0.02										
A. quadrangularis	TOTAL																						0.00
P. denticulatus	TOTAL																						
E. lamellatus	TOTAL				0.01							0.00											
A. harpae	TOTAL																						
A. curvirostris	TOTAL																					0.14	0.01
O. gracilis	TOTAL																						
P. l. poppei	TOTAL																						
S. serrulatus	TOTAL																						
I. sordidus	TOTAL																						
S. kingi	TOTAL			1.09								1.09											
L. setifera	TOTAL																	0.02					0.02
Chaoborus sp	TOTAL			0.16	0.05	0.49	0.05	0.01				0.08											
CYCLOPOIDA TOTAL	Ind.L^{-1}	10.63	13.93	36.07	10.06	20.07	13.19	13.34	5.71	7.30	8.07	13.92	12.64	37.66	37.91	17.34	22.78	12.40	10.73	10.63	4.20	9.77	17.63
	Ind.cm^{-3}	6.67	8.75	22.64	6.33	12.60	8.28	8.37	3.59	4.58	5.57	8.74	1.68	5.02	5.03	2.30	3.02	1.65	1.42	1.41	0.56	1.30	2.34
CALANOIDA TOTAL	Ind.L^{-1}	1.74	6.17	7.13	0.36	3.22	1.24	0.56	0.30	0.01	0.29	2.10	16.20	11.89	2.69	0.83	0.11	2.34	0.14	0.14	1.41	0.02	3.50
	Ind.cm^{-3}	1.09	3.88	4.47	0.23	2.02	0.78	0.35	0.19	0.00	0.18	1.32	2.02	1.58	0.30	0.11	0.01	0.31	0.02	0.02	0.19	0.00	0.46
CLADOCERA TOTAL	Ind.L^{-1}	4.09	17.14	12.53	5.47	13.22	11.74	7.15	3.19	6.55	6.45	8.75	4.28	25.46	8.90	14.40	30.05	4.70	4.13	3.01	4.27	0.96	10.02
	Ind.cm^{-3}	2.57	10.76	7.87	3.43	8.30	7.37	4.49	2.00	4.11	4.05	5.49	0.57	3.38	1.19	1.91	3.99	0.62	0.55	0.40	0.57	0.13	1.33
TOTAL	Ind.L^{-1}	16.46	37.24	55.69	15.96	37.00	26.22	21.06	9.20	13.05	15.60	24.85	32.13	75.20	49.76	32.56	52.94	19.44	15.00	13.78	9.87	10.75	31.14
	Ind.cm^{-3}	10.33	23.38	35.00	10.02	23.22	16.46	13.22	5.78	8.59	9.79	15.60	4.26	8.98	6.60	4.32	7.03	2.58	1.99	1.83	1.31	1.43	4.13

Appendix 1.2b. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 164, 1989.

	REGION	PELAGIC												LITTORAL										
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	17	31	14	28	12	27	9	23	6	20	4	17	MEAN	17	31	14	28	12	27	9	23	6	20	4	17	MEAN
	DAY	137	151	165	179	193	208	221	235	249	263	277	290		137	151	165	179	193	208	221	235	249	263	277	290	
SPECIES	TOTAL DEPTH (m)	29.8	29.8	29.8	29.8	29.8	29.8	29.8	NS	29.0	29.8	29.8	12.0		22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	12.0	
C. b. thomasi	FEMALE	0.09	1.07	0.09	0.36								0.03	0.15			0.46	0.12		0.06						0.02	0.06
	FEMALE WITH EGG			0.04										0.00													
	MALE	0.13	0.36	0.04	0.04					0.18			0.04	0.07	0.01	0.29										0.02	0.03
	COPEPODID 1–V	15.49	22.96	1.42			0.53	0.53			0.36	0.18		3.77	11.03	6.73	0.23					0.23			0.23		1.60
	TOTAL	15.71	24.39	1.60	0.40		0.53	0.53		0.18	0.36	0.18	0.07	3.66	11.84	7.48	0.35		0.06			0.23			0.23	0.04	1.69
A. vernalis	FEMALE	0.03												0.00		0.01											0.00
	FEMALE WITH EGG																										
	MALE	0.01	0.01								0.18			0.02	0.02	0.06						0.06	0.01				0.01
	COPEPODID 1–V	0.71	1.42	0.71	1.42	1.42	0.53	0.36		0.18	0.36			0.65	0.46	1.62	0.46	0.93	0.93	0.23	0.93	0.23		0.23	0.46		0.54
	TOTAL	0.75	1.43	0.71	1.42	1.42	0.53	0.36		0.18	0.53			0.61	0.49	1.69	0.46	0.93	0.93	0.23	0.93	0.29	0.01	0.23	0.46		0.55
M. edax	FEMALE	0.02	0.06	0.04	0.02	0.04	0.04	0.01		0.18				0.04													
	FEMALE WITH EGG		0.01											0.00													
	MALE		0.18	0.04	0.04	0.71	0.04	0.53						0.14		0.06											0.00
	COPEPODID 1–V	0.04		0.36	0.71	2.48	1.06	0.71		1.25			0.01	0.69	0.23			0.46	0.70	0.23	0.93	0.23	0.23	0.70	0.23	0.44	0.37
	TOTAL	0.06	0.27	0.45	0.77	3.25	2.05	1.25		1.42			0.01	0.79	0.23	0.06		0.46	0.70	0.23	0.93	0.23	0.23	0.70	0.23	0.44	0.37
T. p. mexicanus	FEMALE	0.18	0.36			1.07	1.42	1.78		3.56	1.42	0.89	0.89	1.05	0.70	0.70	0.23	0.46		0.70	1.86	3.25	0.23	0.70	0.70	1.78	0.84
	FEMALE WITH EGG	0.04				1.07		0.53						0.15	0.23			0.93			0.01	0.23					0.05
	MALE			0.04		0.71	1.25	1.07		1.60	2.14	0.36		0.65			0.46		1.16	0.93	1.16	5.80	2.32	1.86	0.46	0.11	1.19
	COPEPODID 1–V			1.07	1.07	3.20	4.63	8.01		2.14	1.78	0.18		2.01		0.46	0.46	1.39	3.48	5.80	14.15	4.87	3.02	3.25	0.70		3.13
	TOTAL	0.22	0.36	1.11	1.07	6.05	7.30	11.39		7.30	5.34	1.42	0.89	3.54	0.93	1.16	1.16	1.89	4.70	7.42	17.18	14.15	5.57	5.80	1.86	1.89	5.31
M. albidus	TOTAL					0.01								0.00					0.23								0.02
E. agilis	TOTAL								ns																		
D. minutus	FEMALE			0.53	0.09						0.01			0.06			0.29	0.06			0.01	0.02	0.06				0.04
	FEMALE WITH EGG			0.18	0.09									0.02				0.12				0.23					0.03
	MALE			0.89	0.53						0.01			0.14			0.46	0.35			0.01	0.23			0.03		0.09
	COPEPODID 1–V	1.25	0.18	0.36	1.42	1.42	1.07							0.52	1.86			0.46	0.70	1.16	0.23	0.23					0.39
	TOTAL	1.25	1.78	1.07	1.42	1.51	1.07				0.02			0.68	1.86	0.75	0.99	0.70	1.16	0.26	0.72	0.06		0.03			0.54
D. oregonensis	FEMALE	0.01	0.36	0.04	0.09	0.13		0.18			0.01	0.01	0.03	0.09	0.01	0.06	0.01				0.01							0.01
	FEMALE WITH EGG			0.04	0.02	0.04		0.01					0.07	0.02		0.01											0.00
	MALE	0.01		0.18	0.36	0.13	0.09	0.09		0.53	0.18			0.14	0.01	0.06	0.01								0.02	0.09	0.02
	COPEPODID 1–V	1.07	0.36	0.04	0.36	1.42	0.53				0.18			0.36	0.70			0.01	1.39	0.46			0.23				0.23
	TOTAL	1.09	0.71	0.30	0.82	1.74	0.62	0.28		0.53	0.36	0.01	0.10	0.55	0.72	0.13	0.02	0.01	1.39	0.46	0.01		0.23		0.06	0.11	0.26
D. sicilis	FEMALE						0.18	0.18						0.03					0.23			0.23					0.04
	FEMALE WITH EGG																										
	MALE										0.18			0.02						0.23							0.02
	COPEPODID 1–V					0.04								0.00													
	TOTAL					0.04	0.18	0.18			0.18			0.05					0.23	0.23		0.23					0.06
A. denticornis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1–V																										
	TOTAL																										
E. lacustris	ADULT			0.22	0.49	0.09	0.07							0.08			0.27	0.03									0.03
	JUVENILE	0.53	0.71	0.71	0.36			0.18						0.23	0.23	0.93	0.23										0.12
	TOTAL	0.53	0.93	1.20	0.45	0.07	0.18							0.29	0.23	1.19	0.27										0.14
CYCLOPOID NAUPLII	NI–NVI	18.51	7.65	4.63	4.98	9.61	14.06	10.32		3.92	2.14		0.30	6.92	6.73	4.87	1.62	5.10	10.67	5.34	16.24	11.60	0.93	3.48	0.70		5.61
CALANOID NAUPLII	NI–NVI	7.83	2.31	7.12	3.56	3.20	1.60	0.36		0.36				2.39	7.66	5.80	6.96	5.57	5.57	1.39	0.70	0.23	0.46					2.86
D. retrocurva	FEMALE			0.18			0.53			0.18	0.02	0.02		0.08														
	FEMALE WITH EGG		0.02	0.04	0.09	0.01	0.18	0.09		0.18				0.06							0.01			0.01	0.01		0.00
	MALE																										
	JUVENILE		0.02	0.09	0.36		0.18	0.36		0.36				0.12		0.23		0.01	0.06		0.05						0.03
	TOTAL		0.04	0.31	0.45	0.01	0.89	0.45		0.71	0.02	0.02		0.24		0.23		0.01	0.06		0.06			0.01	0.01		0.03
D. g. mendotae	FEMALE							0.01						0.06													
	FEMALE WITH EGG					0.36	0.01							0.03													
	MALE																										
	JUVENILE																				0.01	0.01					0.00
	TOTAL					0.36	0.01	0.01						0.03							0.01	0.01					0.00
D. longiremis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE																										
	TOTAL																										
D. parvula	FEMALE																										
	FEMALE WITH EGG	0.01												0.00													
	MALE																										
	JUVENILE																										
	TOTAL	0.01												0.00													
D. rosea	FEMALE			0.01										0.00													
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE																										
	TOTAL			0.01										0.00													
B. longirostris	AD+JUV	0.89	1.78	6.05	1.42	3.20	11.75	10.32		3.92	2.49	0.89	0.89	3.96	2.32	10.44	4.64	1.86	5.34	6.73	15.54	9.05	7.66	4.18	1.86	0.44	5.84
	FEMALE WITH EGG						0.18			0.18				0.03					0.23	0.23	0.46		0.23	0.23	0.23		0.14
	TOTAL	0.89	1.78	6.05	1.42	3.20	11.93	10.32		4.09	2.49	0.89	0.89	3.66	2.32	10.44	4.64	1.86	5.57	6.96	16.01	9.05	7.89	4.41	2.09	0.44	5.97
D. leuchtenbergianum	TOTAL				0.01		0.53	0.09						0.13				0.01	0.06		0.02						0.01
C. sphaericus	TOTAL																0.01	0.02	0.17								0.02
H. gibberum	TOTAL	1.60	5.87	12.10	9.81	6.76	5.87	2.65		2.31	1.78		0.30	4.46	1.39	2.78	3.25	0.70	1.39	0.23	1.16	0.46	0.70	0.46	0.46		1.06
L. Endtii	TOTAL					0.04	0.02			0.01				0.01				0.01	0.17	0.01	0.01	0.01		0.01			0.02
C. lacustris	TOTAL					0.01		0.09		0.36	0.02			0.04				0.06	0.46	0.06	0.01	0.46	0.03	0.23			0.11
A. affinis	TOTAL																										
P. pediculus	TOTAL					0.01								0.00		0.01	0.01		0.01								0.00
S. crystallina	TOTAL	0.01	0.01		0.05	0.04				0.02		0.01		0.01				0.02				0.01					0.00
A. quadrangularis	TOTAL																										
P. denticulatus	TOTAL																										
E. lamellatus	TOTAL																										
A. harpae	TOTAL																										
A. curvirostris	TOTAL																					0.03					0.03
O. gracilis	TOTAL																										
P. l. poppei	TOTAL																										
S. serrulatus	TOTAL																										
L. sordidus	TOTAL																										
S. kingi	TOTAL																										
L. setifera	TOTAL																										
Chaoborus sp	TOTAL				0.01	0.36	0.22	0.04		0.04				0.06					0.06								0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	35.25	34.10	8.50	8.65	20.35	24.46	23.86		12.99	8.37	1.60	1.27	14.95	20.22	15.27	3.60	0.39	17.28	13.22	35.28	26.51	6.74	10.21	3.48	2.36	13.55
	Ind.cm^{-3}	22.13	21.40	5.34	5.43	12.77	15.36	14.98		8.16	5.25	1.01	0.80	9.38	2.68	2.03	0.48	1.11	2.29	1.76	4.68	3.52	0.89	1.35	0.46	0.32	1.80
CALANOIDA TOTAL	Ind.L^{-1}	10.70	5.74	9.69	8.25	6.57	3.65	0.81		0.89	0.56	0.01	0.10	3.75	10.48	7.08	8.24	5.28	8.35	2.34	1.43	0.52	0.70	0.03	0.00	0.11	3.07
	Ind.cm^{-3}	6.72	3.60	6.08	3.92	4.12	2.29	0.51		0.56	0.35	0.01	0.07	2.35	1.39	1.05	1.09	0.83	1.11	0.31	0.19	0.07	0.09	0.00	0.01	0.01	0.51
CLADOCERA TOTAL	Ind.L^{-1}	2.51	7.70	10.49	11.54	10.44	19.25	14.60		7.50	4.31	0.92	1.16	8.20	3.71	13.48	7.90	2.69	7.90	7.26	17.28	10.05	8.62	5.13	2.56	0.44	7.25
	Ind.cm^{-3}	1.58	4.83	11.60	7.25	6.55	12.08	9.17		4.71	2.70	0.58	0.74	5.15	0.49	1.78	1.05	0.36	1.05	0.96	2.29	1.33	1.14	0.66	0.34	0.06	0.96
TOTAL	Ind.L^{-1}	48.46	47.53	36.67	28.45	37.71	47.60	39.32		21.42	13.23	2.53	2.56	29.41	34.39	36.62	19.73	17.35	33.59	22.83	53.99	37.07	16.05	15.37	6.10	2.93	24.67
	Ind.cm^{-3}	30.42	29.84	23.02	16.60	23.67	29.88	24.68		13.45	8.31	1.59	1.61	18.92	4.57	4.86	2.62	2.30	4.46	3.03	7.17	4.92	2.13	2.04	0.81	0.39	3.27

Appendix 1.2c. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 164, 1990.

		PELAGIC													LITTORAL										
	REGION																								
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	9	22	5	19	3	17	31	14	28	11	25	9	23	MEAN	9	22	5	19	3	17	31	14	28	11	25	9	23	MEAN
	DAY	129	142	156	170	184	198	212	226	240	254	268	282	296		129	142	156	170	184	198	212	226	240	254	268	282	296	
SPECIES	TOTAL DEPTH (m)	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7		22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	
C. b. thomasi	FEMALE	0.04	0.00		0.04			0.04					0.04	0.01	0.02				0.01									0.06	0.01
	FEMALE WITH EGG																												
	MALE	0.04	0.03	0.04			0.04						0.08	0.01	0.02												0.11		0.02
	COPEPODID 1–V	11.26	24.70	3.19	0.50		0.67	0.17		0.17		0.06	1.51	0.17	3.26	10.12	6.82	1.54										0.22	1.44
	TOTAL	11.34	24.81	3.23	0.55		0.71	0.21		0.17		0.06	1.64	0.18	3.30	10.15	6.93	1.54	0.01								0.11	0.26	1.46
A. vernalis	FEMALE																		0.01		0.02								0.00
	FEMALE WITH EGG																												
	MALE			0.34											0.03														
	COPEPODID 1–V		2.69	0.84	2.18	1.34	0.50	0.34	0.50		0.50	0.34	0.34	0.17	0.75		3.08	2.64	0.66	0.44	0.88	0.06		0.06	0.22	0.22	0.22	0.22	0.67
	TOTAL		2.69	1.18	2.18	1.34	0.50	0.34	0.50		0.50	0.34	0.34	0.17	0.78		3.08	2.64	0.66	0.44	0.88	0.06		0.06	0.22	0.22	0.22	0.22	0.68
M. edax	FEMALE		0.17	0.08	0.25		0.04								0.04		0.01												0.00
	FEMALE WITH EGG			0.03	0.04										0.01														
	MALE		0.03	0.29	0.34	0.34	0.04								0.00		0.11	0.03											0.01
	COPEPODID 1–V	0.13	0.84		1.68	1.68	1.01	0.17	0.04	1.68	0.50	0.03	0.17	0.13	0.62	0.06	0.44	0.22		0.88	0.22	0.02	0.11	0.06	0.44	0.06	0.22	0.06	0.21
	TOTAL	0.13	1.04	0.41	2.31	2.02	1.09	0.17	0.04	1.68	0.50	0.03	0.17	0.13	0.75	0.06	0.56	0.25		0.88	0.22	0.02	0.11	0.06	0.44	0.06	0.22	0.06	0.23
T. p. mexicanus	FEMALE	0.84	3.02	2.35	0.67	0.84	3.02	0.17	1.18	0.84	0.50	0.50	0.50	0.50	1.15		2.64	0.66	1.10	1.10	0.88			0.44	0.22	0.44	0.66		0.63
	FEMALE WITH EGG		0.01	0.04	0.34	0.50	0.50		0.01	0.01					0.11		0.66	0.29	0.55	0.02	0.44			0.06	0.02	0.01			0.16
	MALE				0.67	1.18	1.85	0.34	0.50	0.50	0.17	0.34	0.67	0.17	0.49				0.66	1.54	1.54	0.22	0.22			0.66	0.22	0.22		0.41
	COPEPODID 1–V	0.17		0.17	9.07	12.77	6.38	0.17	1.34	2.18	0.67	2.18	2.02	0.84	2.92				13.64	13.86	4.62	2.20	1.10	1.54	1.54	1.76	0.88	1.10	3.25
M. albidus	TOTAL	1.01	3.03	2.56	10.75	15.29	11.76	0.67	3.03	3.54	1.34	3.02	3.19	1.51	4.67		3.30	0.94	15.95	16.52	7.48	2.42	1.32	2.04	2.44	2.43	1.76	1.10	4.44
E. agilis	TOTAL																				0.04								0.00
D. minutus	FEMALE			0.04			0.08		0.02	0.01			0.01		0.01					0.01	0.01								0.00
	FEMALE WITH EGG			0.01		0.01									0.00				0.06	0.01			0.01						0.01
	MALE			0.04		0.04	0.04	0.04	0.02		0.03	0.02	0.02		0.02				0.01										0.00
	COPEPODID 1–V		0.17	0.17	0.34	0.34	0.34		0.13		0.02	0.01			0.12				0.06	0.03		0.01		0.01	0.01			0.01
	TOTAL		0.17	0.26	0.34	0.39	0.46	0.04	0.16	0.01	0.05	0.03	0.03		0.15		0.22		0.34	0.44			0.06		0.01				0.07
D. oregonensis	FEMALE	0.04	0.08		0.04		0.13		0.03	0.02			0.02	0.03	0.03			0.06				0.01	0.07	0.01	0.02			0.01	0.04	0.09
	FEMALE WITH EGG			0.03	0.01	0.17									0.02								0.02						0.01
	MALE		0.01	0.04	0.04	0.04	0.04	0.01	0.03						0.02														
	COPEPODID 1–V		0.50		0.04	0.50	0.50	0.04	0.13	0.34	0.09	0.02			0.17												0.02	0.01	0.08
	TOTAL	0.04	0.60	0.08	0.13	0.71	0.67	0.05	0.18	0.35	0.09	0.02	0.02	0.03	0.23				0.22				0.06	0.06	0.02	0.02	0.22	0.06	0.05
D. sicilis	FEMALE					0.17									0.01				0.28				0.08	0.06	0.02	0.02	0.25	0.11	0.06
	FEMALE WITH EGG																				0.22						0.22		0.03
	MALE					0.04									0.00														
	COPEPODID 1–V																			0.01									0.00
	TOTAL					0.21									0.02					0.01	0.22						0.22		0.03
A. denticornis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																												
	TOTAL																												
E. lacustris	ADULT			0.29	0.04	0.08	0.04								0.04														
	JUVENILE		0.67	0.50	1.01	0.67						0.01			0.22				0.02										0.00
	TOTAL		0.67	0.80	1.05	0.76	0.04					0.01			0.26		1.10	0.22	0.22										0.12
CYCLOPOID NAUPLII	NI–NVI	5.71	5.54	13.44	20.16	22.51	15.62	1.18	6.22	5.21	3.36	1.51	1.18	1.51	7.93		1.10	0.24	0.22										0.12
CALANOID NAUPLII	NI–NVI	2.02	1.18	0.84	3.36	2.69	0.34	0.34	2.52	0.17		0.17			1.05	3.52	4.40	12.76	38.74	21.12	14.30	2.86	5.94	1.98	2.42	0.66		2.20	8.38
D. retrocurva	FEMALE						0.67	0.08	0.17	0.04	0.03		0.01	0.02	0.08	1.10	12.54	2.42	4.84	3.96	1.32	0.66	2.42	0.66	0.22		0.22	0.44	2.37
	FEMALE WITH EGG						0.17		0.04		0.01			0.01	0.02											0.01	0.01		0.00
	MALE												0.01		0.00			0.01								0.01			0.00
	JUVENILE			0.17	0.17	0.50	0.17	0.04	0.50	0.17		0.01	0.01		0.13			0.06			0.22					0.02		0.01	0.02
	TOTAL			0.17	0.17	0.50	1.01	0.13	0.71	0.21	0.03	0.01	0.03	0.03	0.23			0.07			0.22					0.04	0.01	0.01	0.03
D. g. mendotae	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. longiremis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE		0.17												0.01														
	TOTAL		0.17												0.01														
D. parvula	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. rosea	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
B. longirostris	AD+JUV	0.04	0.34	2.52	6.55	6.38	4.03	2.35	10.92	6.22	7.56	10.08	5.38	20.50	6.37	0.06	1.54	14.30	9.02	5.06	10.12	1.98	8.36	3.30	6.38	9.90	2.20	10.78	6.38
	FEMALE WITH EGG			0.17	0.17			0.17	0.67		0.17	0.17	0.34	0.50	0.18		0.22	1.10	0.22	0.22	0.44	0.06	0.22					1.76	0.33
	TOTAL	0.04	0.34	2.69	6.72	6.38	4.03	2.52	11.59	6.22	7.73	10.25	5.71	21.00	6.56	0.06	1.76	15.40	9.24	5.28	10.56	2.04	8.58	3.30	6.38	9.90	2.20	12.54	6.71
D. leuchtenbergianum	TOTAL			0.17	0.17		0.17	0.01	0.04	0.17	0.17				0.07			0.01	0.01		0.01	0.01		0.01					0.00
C. sphaericus	TOTAL					0.50									0.04			0.06		0.22									0.02
H. gibberum	TOTAL	0.67	0.67	7.22	20.50	12.26	5.21	1.01	3.02	0.38	1.34	0.34	0.34	0.04	4.08	0.66	0.50	3.96	3.74	0.39	0.06	0.06	0.06	0.11	0.10	0.11	0.11	0.02	0.76
L. kindtii	TOTAL				0.02	0.04	0.01	0.07							0.01						0.11		0.01						0.01
C. lacustris	TOTAL										0.01	0.01			0.00			0.02	0.01	0.06					0.02		0.06		0.01
A. affinis	TOTAL															0.22	0.22												0.03
P. pediculus	TOTAL																		0.06	0.01									0.01
S. crystallina	TOTAL				0.13	0.59									0.05				0.04			0.01			0.01	0.01			0.01
A. quadrangularis	TOTAL																												
P. denticulatus	TOTAL																												
E. lamellatus	TOTAL																				0.01								0.00
A. harpae	TOTAL																						0.22						0.02
A. curvirostris	TOTAL																												
O. gracilis	TOTAL															0.01					0.03								0.02
P. f. poppei	TOTAL																												
S. serrulatus	TOTAL																												
I. sordidus	TOTAL																												
S. kingi	TOTAL																												
L. sellifera	TOTAL																												
Chaoborus sp	TOTAL					0.13	0.21								0.03					0.22									0.02
CYCLOPOIDA TOTAL	Ind.L–1	18.19	37.11	20.02	35.95	41.16	29.69	2.56	9.78	10.59	5.71	4.96	6.51	3.50	17.43	13.73	18.27	18.16	53.43	38.97	22.96	5.36	7.37	4.13	5.52	3.37	2.31	3.85	15.19
	Ind.cm–2	11.42	23.29	13.07	22.57	25.84	18.64	1.61	6.15	6.65	3.59	3.11	4.09	2.20	10.94	1.82	2.43	2.41	7.09	5.17	3.05	0.71	0.98	0.55	0.73	0.45	0.31	0.51	2.02
CALANOIDA TOTAL	Ind.L–1	2.06	2.61	1.97	4.88	4.75	1.51	0.43	2.88	0.53	0.14	0.22	0.04	0.03	1.69	1.10	13.86	2.94	5.40	4.46	1.54	0.67	2.56	0.73	0.26	0.02	0.09	0.56	2.68
	Ind.cm–2	1.29	1.64	1.24	3.06	2.98	0.95	0.27	1.79	0.33	0.09	0.14	0.03	0.02	1.06	0.15	1.84	0.39	0.72	0.59	0.20	0.09	0.34	0.10	0.04	0.00	0.09	0.07	0.35
CLADOCERA TOTAL	Ind.L–1	0.71	1.18	10.25	27.59	29.29	10.42	3.73	15.37	8.97	9.28	10.60	6.07	21.07	11.05	0.95	2.48	19.51	13.10	5.95	11.00	2.11	0.07	3.42	8.51	10.00	2.38	12.57	7.61
	Ind.cm–2	0.45	0.74	6.43	17.38	12.73	6.54	2.34	9.65	4.38	5.83	6.65	3.81	13.22	6.94	0.13	0.33	2.59	1.74	0.79	1.46	0.28	1.18	0.45	0.86	1.34	0.32	1.67	1.01
TOTAL	Ind.L–1	20.96	40.90	33.05	68.53	66.33	41.64	6.72	28.02	19.09	15.14	15.78	12.63	24.60	30.20	15.77	34.61	40.61	71.93	49.60	35.50	8.14	10.00	8.27	12.30	13.46	5.30	16.98	25.49
	Ind.cm–2	13.16	25.67	20.74	43.01	41.63	26.26	4.22	17.59	11.36	9.50	9.90	7.92	15.44	18.95	2.09	4.59	5.39	9.55	6.58	4.71	1.00	2.50	1.10	1.63	1.79	0.71	2.25	3.38

Appendix 1.3a. Mean abundance (individuals per litre) of zooplankton species life stages in the outflow from Lake 164 during the open water seasons of 1988 and 1989.

SPECIES	REGION	MONTH	DATE	DAY	JUNE 1 153	JUNE 15 167	JUNE 29 181	JULY 13 195	JULY 27 209	1988 AUG 10 223	AUG 24 237	OCT 5 279	OCT 19 293	SEASON MEAN	MAY 17 137	MAY 31 151	JUNE 14 165	JUNE 28 179	JULY 12 193	JULY 27 208	1989 AUG 9 221	AUG 23 235	SEPT 6 249	SEPT 20 263	SEASON MEAN
C. b. thomasi		FEMALE																							
		FEMALE WITH EGG																							
		MALE																							
		COPEPODID 1-V													0.02	0.02									0.00
		TOTAL													0.02	0.02									0.00
A. vernalis		FEMALE																							
		FEMALE WITH EGG																							
		MALE		0.04										0.00			0.02								0.00
		COPEPODID 1-V		0.16	0.80		2.40	0.02			0.02			0.38		0.10	0.40		0.40	1.20		0.16			0.23
		TOTAL		0.20	0.80		2.40	0.02			0.02			0.31		0.10	0.42		0.40	1.20		0.16			0.23
M. edax		FEMALE																							
		FEMALE WITH EGG																							
		MALE																							
		COPEPODID 1-V			7.20	0.16								0.02						0.40					0.04
		TOTAL			7.20	0.16								0.67						0.40					0.04
T. p. mexicanus		FEMALE										0.02	0.00	0.09							0.40				0.04
		FEMALE WITH EGG			0.80		0.48							0.14											
		MALE					0.80	0.16				0.02	1.60	0.29						0.80	0.40	0.40	0.00		0.24
		COPEPODID 1-V		0.16	1.60		2.40					0.00		0.55		0.80	0.40		0.80	4.00	2.80	1.20			1.08
		TOTAL		0.16	2.40		3.68	0.16				0.84	2.40	0.88		0.80	0.40		0.80	5.60	3.60	1.60	0.80		1.36
M. albidus		TOTAL											0.02	0.00							0.02				0.00
E. agilis		TOTAL		0.04										0.00		0.20				0.02					0.02
D. minutus		FEMALE			0.06			0.02						0.01			0.04				0.02	0.02			0.01
		FEMALE WITH EGG																							
		MALE		0.16	0.16			0.02						0.04			0.26	0.40	0.08			0.08			0.08
		COPEPODID 1-V			0.32		0.32	0.02						0.07				0.80		2.00		0.04			0.28
		TOTAL		0.16	0.54		0.32	0.06						0.10			0.30	1.20	0.08	2.00	0.02	0.14			0.37
D. oregonensis		FEMALE																							
		FEMALE WITH EGG																							
		MALE					0.16							0.02			0.02								0.00
		COPEPODID 1-V			0.64		0.80				0.02			0.16						3.20	0.40				0.36
		TOTAL			0.64		0.96				0.02			0.15			0.02			3.20	0.40				0.36
D. sicilis		FEMALE																							
		FEMALE WITH EGG																							
		MALE																							
		COPEPODID 1-V															0.04								0.00
		TOTAL															0.04								0.00
A. denticornis		FEMALE																							
		FEMALE WITH EGG																							
		MALE																	0.02						0.00
		COPEPODID 1-V																	0.02						0.00
		TOTAL																	0.04						0.00
E. lacustris		ADULT														0.02	0.40								0.04
		JUVENILE			0.48									0.05		0.90									0.09
		TOTAL			0.48									0.04		0.92	0.40								0.13
CYCLOPOID NAUPLII		NI-NVI			4.00		8.00	0.80	1.60				1.60	1.87		2.40		1.20	1.60	20.40	6.40	2.40			3.44
CALANOID NAUPLII		NI-NVI			3.20		2.40							0.62	0.02	3.20	3.60	0.80	1.20	9.60	1.60	0.40			2.04
D. retrocurva		FEMALE																0.02							0.00
		FEMALE WITH EGG					0.02							0.00											
		MALE																							
		JUVENILE															0.02								0.00
		TOTAL					0.02							0.00			0.02	0.02							0.00
D. g. mendotae		FEMALE																							
		FEMALE WITH EGG																							
		MALE																							
		JUVENILE																							
		TOTAL																							
D. longiremis		FEMALE																							
		FEMALE WITH EGG																							
		MALE																							
		JUVENILE																							
		TOTAL																							
D. parvula		FEMALE																							
		FEMALE WITH EGG																							
		MALE																							
		JUVENILE																							
		TOTAL																							
D. rosea		FEMALE																	0.02						0.00
		FEMALE WITH EGG																							
		MALE																	0.04						0.00
		JUVENILE																							
		TOTAL																	0.06						0.01
B. longirostris		AD+JUV			0.80		20.00	2.40					0.96	2.68		0.80	0.40	0.40	5.60	6.80	0.80	0.80		0.80	1.64
		FEMALE WITH EGG					0.16							0.02		0.02		0.02							0.00
		TOTAL			0.80		20.16	2.40					0.96	2.21		0.82	0.40	0.42	5.60	6.80	0.80	0.80		0.80	1.64
D. leuchtenbergianum		TOTAL			0.02		0.16	0.08						0.03					0.02	0.00	0.40	0.04			0.13
C. sphaericus		TOTAL		0.80		0.16					0.06	0.02		0.12	0.02	0.10							1.60	0.40	0.21
H. gibberum		TOTAL			0.04		0.48	0.02						0.06			1.20			1.20					0.24
L. kindtii		TOTAL																	0.06						0.01
C. lacustris		TOTAL					0.32							0.04					0.02	0.40	0.40				0.08
A. affinis		TOTAL				0.32	1.60					0.04	0.32	0.25						0.06				0.40	0.05
P. pediculus		TOTAL						0.32						0.04			0.04	0.06	0.02	0.02	0.02				0.02
S. crystallina		TOTAL			0.02		0.02							0.00		0.30	0.02								0.03
A. quadrangularis		TOTAL							0.16					0.02				0.04		0.02			0.10		0.02
P. denticulatus		TOTAL														0.10									0.01
E. lamellatus		TOTAL									0.16			0.02		0.02									0.00
A. harpae		TOTAL						0.02				0.16	0.16	0.04								0.02			0.00
A. curvirostris		TOTAL																							
O. gracilis		TOTAL		0.02										0.02											
P. f. poppei		TOTAL			0.02									0.02											
S. serrulatus		TOTAL					0.04	0.02	0.02	0.16	0.02	0.04		0.05											
I. sordidus		TOTAL								0.48				0.48							0.02	0.04	0.10		0.05
S. kingi		TOTAL																							
L. sellifera		TOTAL																							
Chaoborus sp		TOTAL																							
CYCLOPOIDA TOTAL		Ind.L^{-1}		0.40	15.20	0.16	14.08	0.98	1.60			0.86	4.02	3.39	0.02	3.52	0.82	1.20	2.80	27.62	10.02	4.16	0.80		5.10
CALANOIDA TOTAL		Ind.L^{-1}		0.16	4.06		3.68	0.06			0.02			0.00	0.02	4.12	4.36	2.00	1.32	14.80	2.02	0.54			2.92
CLADOCERA TOTAL		Ind.L^{-1}		0.82	0.90	0.48	22.80	2.88	0.16	0.06	0.24	1.48	2.76	0.02	1.34	1.68	0.54	5.78	9.30	1.64	0.90	1.80	1.60	2.46	
TOTAL		Ind.L^{-1}		1.38	20.96	0.64	40.56	3.90	1.78	0.80	1.10	5.50	6.97	0.06	8.98	6.86	3.74	9.90	51.72	13.68	5.60	2.60	1.60	10.47	

Appendix 1.3b. Mean abundance (individuals per litre) of zooplankton species life stages in the outflow from Lake 164 during the open water season of 1990.

	REGION	OUTFLOW												
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	SEASON
	DATE	8	22	5	19	3	17	31	14	28	11	25	9	MEAN
SPECIES	DAY	129	142	156	170	184	198	212	226	240	254	268	282	
C. b. thomasi	FEMALE													
	FEMALE WITH EGG													
	MALE												0.02	0.00
	COPEPODID 1-V	2.00	0.40	0.40									0.02	0.13
	TOTAL	2.00	0.40	0.40									0.04	0.12
A. vernalis	FEMALE													
	FEMALE WITH EGG													
	MALE			0.04		0.10								0.01
	COPEPODID 1-V		1.20		0.40			1.60	0.40		0.04		0.40	0.29
	TOTAL		1.20	0.04	0.40	0.10		1.60	0.40		0.04		0.40	0.28
M. edax	FEMALE			0.02										0.00
	FEMALE WITH EGG													
	MALE					0.20								0.01
	COPEPODID 1-V					0.80	0.40	0.04	1.20	0.08				0.13
	TOTAL			0.02		1.00	0.40	0.04	1.20	0.08				0.12
T. p. mexicanus	FEMALE	0.02			0.80	0.40	1.20	0.02	0.40				0.80	0.18
	FEMALE WITH EGG						0.02		0.40	0.02				0.02
	MALE					0.80							0.40	0.18
	COPEPODID 1-V					3.80	2.00	0.04	0.80	0.40	0.40		0.40	0.84
	TOTAL	0.02			0.80	4.80	3.22	0.08	1.60	0.42	0.40		1.60	1.06
M. albidus	TOTAL													0.00
E. agilis	TOTAL								0.02					0.01
D. minutus	FEMALE						0.04		0.02					0.01
	FEMALE WITH EGG													
	MALE				0.02	0.04	0.02	0.02	0.02					0.04
	COPEPODID 1-V				0.20			0.10	0.10	0.04	0.02			0.15
	TOTAL				0.22	0.04	0.08	0.12	0.14	0.04	0.02			0.18
D. oregonensis	FEMALE													
	FEMALE WITH EGG													
	MALE						0.08							0.00
	COPEPODID 1-V					0.80	0.02	0.14	0.12	0.02				0.21
	TOTAL					0.80	0.08	0.14	0.12	0.02				0.19
D. sicilis	FEMALE							0.02					0.40	0.02
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V													0.00
	TOTAL							0.02					0.40	0.02
A. denticornis	FEMALE													
	FEMALE WITH EGG													
	MALE													0.00
	COPEPODID 1-V													0.00
	TOTAL													0.00
E. lacustris	ADULT													0.02
	JUVENILE		0.04	0.06	0.22			0.02						0.08
	TOTAL		0.04	0.06	0.22			0.02						0.07
CYCLOPOID NAUPLII	NI-NVI	2.40	0.40	3.60	0.40	15.20	2.40		6.80	1.20	1.20		1.60	3.16
CALANOID NAUPLII	NI-NVI	2.00	1.20	0.80	0.40	4.80		1.20	1.60	0.40				1.49
D. retrocurva	FEMALE													0.00
	FEMALE WITH EGG													
	MALE													
	JUVENILE						0.04	0.02						0.00
	TOTAL						0.04	0.02						0.00
D. g. mendotae	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. longiremis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. parvula	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. rosea	FEMALE													0.00
	FEMALE WITH EGG													
	MALE													0.00
	JUVENILE													
	TOTAL													0.00
B. longirostris	AD+JUV	0.02			1.20	15.60	2.40		28.00	0.40			5.60	3.07
	FEMALE WITH EGG	0.04				0.40	0.40		1.60				1.60	0.19
	TOTAL	0.06			1.20	16.00	2.80		27.60	0.40			7.20	2.87
D. leuchtenbergianum	TOTAL					0.10	0.02	0.02	0.02		0.02			0.07
C. sphaericus	TOTAL					0.40								0.11
H. gibberum	TOTAL	0.10			0.06	0.10	0.10	0.08	0.02	0.02				0.13
L. kindtii	TOTAL							0.02	0.02					0.00
C. lacustris	TOTAL				0.02	0.10	0.04	0.04	0.80					0.06
A. affinis	TOTAL						0.02	0.04	0.02	0.02			0.40	0.04
P. pediculus	TOTAL						0.04				0.06			0.01
S. crystallina	TOTAL				0.30		0.02				0.02			0.03
A. quadrangularis	TOTAL													0.01
P. denticulatus	TOTAL													0.00
E. lamellatus	TOTAL													0.00
A. harpae	TOTAL										0.02			0.00
A. curvirostris	TOTAL												0.02	0.02
O. gracilis	TOTAL		0.02										0.02	0.02
P. l. poppei	TOTAL												0.02	0.02
S. serrulatus	TOTAL													
I. sordidus	TOTAL		0.40											0.14
S. kingi	TOTAL			0.02										0.02
L. setifera	TOTAL		0.02											0.02
Chaoborus sp	TOTAL					0.10								0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	4.42	2.00	4.06	1.60	21.10	8.02	1.70	10.02	1.68	1.64		3.64	4.35
CALANOIDA TOTAL	Ind.L^{-1}	2.00	1.24	0.86	0.84	5.64	0.14	1.50	1.86	0.46	0.02		0.40	1.77
CLADOCERA TOTAL	Ind.L^{-1}	0.16	0.44	0.02	1.58	16.70	3.08	0.22	28.48	0.44	0.12		7.66	3.34
TOTAL	Ind.L^{-1}	6.58	3.68	4.94	4.02	43.54	9.24	3.42	40.36	2.58	1.78		11.70	10.75

Appendix 1.4a. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 165, 1988.

	REGION	PELAGIC												LITTORAL									
	MONTH	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	NS*	OCT	SEASON	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	NS*	OCT	SEASON
	DATE	2	16	30	14	28	11	25	7	21		14	MEAN	2	16	30	11	28	11	25	7	21		14	MEAN
	DAY	154	168	182	196	210	224	238	251	265		288		154	168	182	193	210	224	238	251	265		288	
	TOTAL DEPTH (m)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0		21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	
SPECIES																									
C. b. thomasi	FEMALE	0.01											0.00												
	FEMALE WITH EGG																								
	MALE																						0.01	0.01	0.00
	COPEPODID 1-V	3.72								0.11	0.05		0.35	0.50								0.02	0.01		0.05
	TOTAL	3.74								0.11	0.05		0.35	0.50								0.02	0.02	0.01	0.05
A. vernalis	FEMALE														0.01			0.01							0.00
	FEMALE WITH EGG																								
	MALE		0.43				0.01						0.04	0.10	0.01										0.01
	COPEPODID 1-V	3.19	2.13	1.60	0.53	1.60	0.53		0.11	0.21	2.77	5.32	1.63	1.98	0.99	0.99	2.48	0.02	0.01			0.50	0.74	0.99	0.79
	TOTAL	3.19	2.55	1.60	0.53	1.60	0.55		0.11	0.21	2.77	5.32	1.67	2.08	1.02	0.99	2.48	0.04	0.01			0.50	0.74	0.99	0.80
M. edax	FEMALE	0.53			0.11								0.06				0.01								0.00
	FEMALE WITH EGG	0.11											0.01												
	MALE	0.21	0.43			0.03							0.06	0.01	0.01	0.01						0.10	0.05		0.02
	COPEPODID 1-V	3.19	10.11	2.13		1.06	1.60	1.06	0.11	0.21	0.11		1.78	4.86	9.42	0.50	0.99	0.01	0.50	0.01	0.04	1.49	0.74		1.70
	TOTAL	4.04	10.53	2.13	0.11	1.09	1.60	1.06	0.11	0.21	0.11		1.91	4.97	9.44	0.51	1.00	0.01	0.50	0.01	0.04	1.59	0.76		1.71
T. p. mexicanus	FEMALE			3.19		5.32	3.19	1.06	0.11	1.06	0.53		1.32		2.48		4.46	1.49	0.99		0.50				0.90
	FEMALE WITH EGG			0.04	0.11	0.21	0.32	1.60					0.21		0.10		0.05								0.01
	MALE		2.66	0.53	2.66	4.26	0.53	1.60	0.03	1.06	1.06	1.06	1.40	0.50	0.99		1.98	1.49		0.50	0.99	0.50	0.50	0.50	0.72
	COPEPODID 1-V		4.26	7.98	3.19	1.06	1.60	1.60	0.11	1.06	2.66	4.26	2.52		3.97	4.96	3.47	1.49	0.50	1.49	0.99	1.98	1.24	0.50	1.67
	TOTAL		6.92	11.74	5.98	10.85	5.64	5.85	0.24	3.19	4.25	5.32	5.45	0.50	7.54	4.96	9.97	4.46	1.49	1.98	2.48	2.48	1.74	0.99	3.51
M. albidus	TOTAL																								
E. agilis	TOTAL	1.06											0.10												
C. v. rubellus	TOTAL														0.50										0.05
P. l. poppei	TOTAL																								
D. minutus	FEMALE		0.11	0.11	0.01	0.05							0.03				0.01	0.01							0.00
	FEMALE WITH EGG	0.03											0.00	0.01											0.00
	MALE	0.21	0.21		0.05			0.01					0.04	0.10	0.01	0.01	0.99	0.01	0.02						0.10
	COPEPODID 1-V		1.06	0.53						0.01	0.01		0.16										0.01	0.01	0.00
	TOTAL	0.24	1.38	0.64	0.07	0.05		0.01		0.01	0.01		0.22	0.11	0.01	0.01	1.00	0.02	0.02				0.01	0.01	0.11
D. oregonensis	FEMALE	0.11	0.03	0.04	0.01	0.01	0.01				0.01	0.01	0.02	0.10			0.01								0.01
	FEMALE WITH EGG	0.03											0.00												
	MALE	0.05	0.03	0.53		0.07					0.01	0.03	0.07	0.10			0.01								0.01
	COPEPODID 1-V	0.53	1.06		0.01			0.03	0.01	0.03	0.01		0.16			0.01	0.99				0.01				0.09
	TOTAL	0.72	1.12	0.57	0.03	0.08	0.01	0.03	0.01	0.03	0.03	0.04	0.24	0.20		0.01	1.02				0.01				0.11
D. sicilis	FEMALE					1.06							0.10												
	FEMALE WITH EGG																								
	MALE							0.53					0.05												
	COPEPODID 1-V																								
	TOTAL					1.06		0.53					0.15												
E. lacustris	ADULT	0.43									0.05	0.11	0.06	0.01											0.00
	JUVENILE	0.53	0.53						0.11				0.11	0.50	0.10										0.05
	TOTAL	0.96	0.53						0.11		0.05	0.11	0.16	0.51	0.10										0.06
CYCLOPOID NAUPLII	NI-NVI	38.30	10.64	26.60	2.66	12.77	11.17	3.72	2.66	10.11	9.31	8.51	12.41	23.31	16.37	6.45	6.94	7.44	7.94	0.50	5.46	0.50	2.23	3.97	7.37
CALANOID NAUPLII	NI-NVI	3.19	3.72	2.66	0.53	0.53					0.27	0.53	1.04	8.43	2.98	0.99	0.99	0.99							1.31
D. retrocurva	FEMALE	1.06			1.06	0.53	0.01	0.03		0.05	0.06	0.11	0.27	0.01			0.10	0.01							0.01
	FEMALE WITH EGG		0.11							0.01	0.06	0.11	0.03	0.01					0.01						0.00
	MALE																						0.01	0.01	0.00
	JUVENILE	0.53		2.66	3.72	2.13	0.04			0.03	0.01		0.83		0.10	0.10	0.50				0.10				0.07
	TOTAL	1.60	0.11	2.66	4.79	2.66	0.05	0.03		0.09	0.15	0.21	1.12	0.02	0.10	0.10	0.60	0.01	0.01		0.10		0.01	0.01	0.09
D. g. mendotae	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE	0.53											0.05												
	TOTAL	0.53											0.05												
D. longiremis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE																								
	TOTAL																								
D. parvula	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE				0.01								0.00												
	TOTAL				0.01								0.00												
C. lacustris	TOTAL			3.19	0.04		0.01			0.01	0.01		0.30	0.01	0.50	0.20	0.99					0.50	0.25		0.22
C. sphaericus	TOTAL																								
B. longirostris	AD+JUV	4.79	22.34	24.47	3.19	3.72	4.26	1.06	0.64	8.51	7.45	6.36	7.89	9.92	32.74	13.39	10.91	6.94	1.49	2.48	3.47	1.98	1.98	1.98	7.94
	FEMALE WITH EGG								0.01	0.05	0.19	0.32	0.05	0.50	0.50								0.20	0.40	0.14
	TOTAL	4.79	22.34	24.47	3.19	3.72	4.26	1.06	0.65	8.57	7.63	6.70	7.94	10.42	33.23	13.39	10.91	6.94	1.49	2.48	3.47	1.98	2.18	2.38	8.08
A. affinis	TOTAL																						0.01	0.01	0.00
D. leuchtenberglanum	TOTAL			0.11	0.53	0.01	1.60	0.53	0.04	0.01	0.01		0.26				0.99	1.98	1.49	0.01					0.41
H. gibberum	TOTAL	9.04	8.51	7.98	2.13	1.06				0.01	0.01		2.61	0.05	0.89	0.30	0.99					0.01	0.01		0.20
L. kindtii	TOTAL			0.21	0.01	0.04			0.01				0.03		0.02		0.02								0.00
P. pediculus	TOTAL																								
S. crystallina	TOTAL													0.01			0.10								0.01
A. quadrangularis	TOTAL																								
C. rectirostris	TOTAL																								
P. denticulatus	TOTAL														0.01							0.50	0.25		0.07
A. harpae	TOTAL																				0.01		0.01	0.01	0.00
M. laticornis	TOTAL																					0.01	0.01		0.00
S. serrulatus	TOTAL																								
L. sallfera	TOTAL																					0.01	0.01		0.01
I. sordidus	TOTAL																								
O. gracilis	TOTAL																								
S. kingli	TOTAL																								
Alonella sp.	TOTAL																								
Chaoborus sp	TOTAL		0.13	0.11									0.02		0.04						0.01				0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	50.34	30.64	42.07	9.26	26.31	18.95	10.64	3.11	13.83	16.49	19.15	21.89	31.36	34.06	12.91	20.40	11.95	9.93	2.49	7.97	5.08	5.52	5.96	13.50
	Ind.cm^{-2}	20.71	12.61	17.31	3.81	10.82	7.80	4.38	1.28	5.69	6.78	7.88	9.00	4.58	5.09	1.89	2.98	1.75	1.45	0.36	1.17	0.74	0.81	0.87	1.97
CALANOIDA TOTAL	Ind.L^{-1}	5.11	6.76	3.87	0.83	1.73	0.01	0.57	0.12	0.04	0.36	0.66	1.81	9.25	3.09	1.02	3.01	1.02	0.02		0.01		0.01	0.01	1.59
	Ind.cm^{-2}	2.10	2.78	1.59	0.26	0.71	0.01	0.24	0.05	0.02	0.15	0.28	0.74	1.35	0.45	0.15	0.44	0.15	0.00		0.00		0.00	0.00	0.23
CLADOCERA TOTAL	Ind.L^{-1}	15.96	30.96	38.62	10.71	7.50	5.92	1.62	0.70	8.70	7.81	6.92	12.31	10.52	34.76	13.99	14.61	8.94	2.99	2.49	3.58	3.03	2.72	2.41	9.00
	Ind.cm^{-2}	6.57	12.74	15.89	4.40	3.09	2.43	0.67	0.29	3.58	3.21	2.84	5.06	1.54	5.08	2.04	2.13	1.31	0.44	0.36	0.52	0.44	0.40	0.35	1.33
TOTAL	Ind.L^{-1}	71.41	68.50	84.87	20.59	35.54	24.88	12.83	3.94	22.57	24.66	26.75	38.03	51.13	72.74	27.91	38.02	21.91	12.95	4.98	11.58	8.11	8.25	8.38	24.10
	Ind.cm^{-2}	29.37	28.18	34.83	8.47	14.62	10.24	5.28	1.62	9.28	10.14	11.00	14.82	7.47	10.63	4.08	5.56	3.20	1.89	0.73	1.69	1.19	1.21	1.23	3.53

*Interpolated values

Appendix 1.4b. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 165, 1989.

	REGION	PELAGIC													LITTORAL										
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	17	31	14	28	12	27	9	23	6	20	4	17	MEAN	17	31	14	28	12	27	9	23	6	20	4	17	MEAN
	DAY	137	151	165	179	193	208	221	235	249	263	277	290		137	151	165	179	193	208	221	235	249	263	277	290	
	TOTAL DEPTH (m)	15.55	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5		23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	
SPECIES																											
C. b. thomasi	FEMALE		0.69	0.09			0.09							0.07		0.22	0.17										0.03
	FEMALE WITH EGG			0.02										0.00													
	MALE	0.02	0.51											0.04	0.01	0.22											0.02
	COPEPODID 1–V	13.03	13.72	0.43	1.37	0.69		0.34					0.09	2.47	1.11	4.00			0.22					0.22	0.67	0.67	0.57
	TOTAL	13.05	14.92	0.53	1.37	0.69	0.09	0.34					0.09	2.59	1.12	4.44	0.17		0.22					0.22	0.67	0.67	0.63
A. vernalis	FEMALE					0.02				0.02				0.00		0.06								0.01			0.01
	FEMALE WITH EGG																										
	MALE	0.03			0.02									0.00													
	COPEPODID 1–V		1.72	0.26	0.34	3.43	0.34	0.69	1.03		1.03	0.34	1.72	0.91		0.89	0.89	0.67	1.11	1.55	0.44	0.89	0.89		0.44	0.22	0.67
	TOTAL	0.03	1.72	0.26	0.36	3.45	0.34	0.69	1.03	0.02	1.03	0.34	1.72	0.91		0.94	0.89	0.67	1.11	1.55	0.44	0.89	0.89	0.01	0.44	0.22	0.67
M. edax	FEMALE	0.05	0.77	0.02										0.07		0.03											0.00
	FEMALE WITH EGG																										
	MALE	0.02	0.60	0.02	0.09	0.02								0.06													
	COPEPODID 1–V	0.69			0.69	3.77	2.06	2.06	0.69		0.69	0.03	0.10	0.90	0.02	0.22		0.67	0.67	0.67	1.11	0.89	0.44	0.44	0.03	0.02	0.43
	TOTAL	0.75	1.37	0.03	0.77	3.79	2.06	2.06	0.69		0.69	0.03	0.10	1.03	0.02	0.48		0.67	0.67	0.67	1.11	0.89	0.44	0.44	0.03	0.02	0.45
T. p. mexicanus	FEMALE	1.03	0.69			1.03	1.03	2.06	1.37			1.03	1.37	0.80	0.02	0.44			0.22	0.22	0.89	0.67			0.22	0.44	0.26
	FEMALE WITH EGG					0.09								0.01	0.01				0.01								0.00
	MALE					0.34	1.37	1.72	1.72	1.03	1.37	0.69	1.03	0.77					0.06		0.89	4.22	0.89	0.67	0.67	0.22	0.63
	COPEPODID 1–V			1.37	1.37	4.46	4.12	10.98	9.26	2.06	4.46	2.06	1.03	3.43				1.11	3.33	2.66	5.11	7.33	4.22	5.99	2.00	2.44	2.85
	TOTAL	1.03	0.69	1.37	1.37	5.92	6.52	14.75	12.35	3.09	5.83	3.77	3.43	5.01	0.03	0.44		1.11	3.62	2.89	6.88	12.21	5.11	6.67	2.89	3.11	3.75
M. albidus																			0.01								
E. agilis	TOTAL					0.09								0.01					0.03			0.22	0.01	0.01			0.02
C. v. rubellus	TOTAL																			0.06							0.00
P. f. poppei	TOTAL																										
D. minutus	FEMALE		2.06	0.17			0.02							0.19		0.50	0.06		0.02	0.01							0.05
	FEMALE WITH EGG	0.02	0.17	0.02	0.02	0.09								0.03													
	MALE		2.40	0.09	0.02			0.09	0.02					0.22		0.83	0.17	0.11	0.02			0.01					0.10
	COPEPODID 1–V	4.12	0.69	0.09	0.34		0.34							0.46	0.22	0.44	0.44	0.44	0.22			0.01				0.01	0.15
	TOTAL	4.13	5.32	0.36	0.38	0.09	0.36	0.09	0.02					0.69	0.22	1.78	0.67	0.56	0.27	0.01		0.02				0.01	0.29
D. oregonensis	FEMALE	0.03	0.69	0.10		0.02	0.05	0.02						0.08		0.28	0.06										0.03
	FEMALE WITH EGG																0.06										0.01
	MALE		0.34	0.05			0.12		0.02					0.04			0.04								0.01		0.00
	COPEPODID 1–V		0.34	0.09		1.37	1.72		0.03	0.03				0.30	0.44	0.89			0.05	0.44		0.02			0.01		0.16
	TOTAL	0.03	1.37	0.24		1.39	1.89	0.02	0.05	0.03				0.42	0.44	1.17	0.16		0.05	0.44		0.02			0.01	0.02	0.19
D. sicilis	FEMALE																			0.22							0.02
	FEMALE WITH EGG																										
	MALE				0.02	0.02								0.00			0.06										0.00
	COPEPODID 1–V			0.09										0.01													
	TOTAL			0.09	0.02	0.02								0.01			0.06			0.22							0.02
E. lacustris	ADULT		0.43	0.26	0.02									0.06		0.04	0.05										0.01
	JUVENILE		2.06	0.17										0.19		1.78											0.15
	TOTAL		2.49	0.43	0.02									0.24		1.82	0.06										0.16
CYCLOPOID NAUPLII	NI–NVI	5.15	16.52	0.69	6.86	16.46	12.69	25.38	16.12	1.03	5.83	0.69	1.03	9.20	0.22	3.77	0.44	4.44	15.32	9.77	15.98	12.65	3.55	8.44	3.11	0.44	6.51
CALANOID NAUPLII	NI–NVI	6.23	5.83	11.66	2.40	3.77	2.06	0.34	0.69					2.92	2.22	4.66	7.99	2.22	4.22	0.44	0.22	0.44	0.22			0.44	1.02
D. retrocurva	FEMALE		0.09	0.09						0.03	0.05		0.02	0.02			0.17				0.22		0.01		0.01	0.02	0.04
	FEMALE WITH EGG		0.34	0.09			0.34	0.09	0.17	0.02			0.02	0.09			0.11										0.01
	MALE												0.02	0.00													
	JUVENILE			0.09	0.69	1.03	4.46		0.34		0.03			0.55			0.06			0.01	0.22	0.22					0.04
	TOTAL		0.43	0.26	0.69	1.03	4.80	0.09	0.51	0.05	0.09		0.05	0.67			0.33			0.01	0.44	0.22	0.01		0.01	0.02	0.09
D. g. mendotae	FEMALE																0.01										0.00
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE					0.09								0.01		0.06			0.22								0.02
	TOTAL					0.09								0.01		0.06	0.01		0.22								0.02
D. longiremis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE																										
	TOTAL																										
D. parvula	FEMALE																										
	FEMALE WITH EGG														0.01												0.00
	MALE																										
	JUVENILE																										
	TOTAL														0.01												0.00
C. lacustris	TOTAL																		0.22	0.02							0.02
C. sphaericus	TOTAL				0.34									0.03	0.01		0.06	0.01						0.02		0.22	0.03
B. longirostris	AD+JUV		4.80	3.43	0.69	1.03	7.20	14.06	7.89	6.17	17.15	2.06	4.46	5.75	0.44	6.44	1.78	1.55	0.67	5.99	9.55	4.44	7.33	10.66	5.11	3.77	4.61
	FEMALE WITH EGG		0.34						0.34		0.34		0.34	0.11	0.22	0.44							0.22		0.22	0.67	0.15
	TOTAL		5.15	3.43	0.69	1.03	7.20	14.06	8.23	6.17	17.49	2.06	4.80	5.86	0.67	6.88	1.78	1.55	0.67	5.99	9.55	4.44	7.55	10.66	5.33	4.44	4.96
A. affinis	TOTAL									0.02				0.00										0.01			0.00
D. leuchtenberglanum	TOTAL				0.34	0.03	0.34	0.69			0.02			0.12					0.11	0.11	0.22		0.01				0.04
H. gibberum	TOTAL	1.37	6.86	15.78	1.72	1.37	5.49	1.03			0.03		0.02	2.61	0.67	4.22	10.21	0.44	1.33	0.44	0.89		0.22	0.22		0.22	1.57
L. kindtii	TOTAL					0.03		0.02						0.00			0.01	0.02	0.07								0.01
P. pediculus	TOTAL														0.01												0.00
S. crystallina	TOTAL				0.02	0.02				0.02	0.03			0.01				0.03						0.01			0.00
A. quadrangularis	TOTAL																										
C. rectirostris	TOTAL																										
P. denticulatus	TOTAL																										
A. harpae	TOTAL									0.02				0.00													
M. laticornis	TOTAL																										
S. serrulatus	TOTAL																										
L. setifera	TOTAL																										
L. sordidus	TOTAL																			0.06							0.06
O. gracilis	TOTAL										0.02			0.02										0.02			0.02
S. kindtii	TOTAL																										
Alonella sp.	TOTAL																										
Chaoborus sp	TOTAL					0.07	0.02							0.01					0.06								0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	20.01	37.22	2.88	10.74	30.39	21.69	43.22	30.18	4.13	13.38	4.84	6.35	18.75	1.40	10.06	1.50	6.86	20.98	14.93	24.42	26.86	10.00	15.80	7.14	4.46	12.04
	Ind.cm^{-2}	8.23	15.31	1.19	4.42	12.50	8.92	17.78	12.42	1.70	5.50	1.99	2.62	7.71	0.20	1.47	0.22	1.01	3.07	2.18	3.57	3.93	1.46	2.31	1.04	0.65	1.76
CALANOIDA TOTAL	Ind.L^{-1}	12.40	15.01	12.78	2.61	5.27	4.30	0.45	0.75	0.03				4.46	2.89	9.42	8.92	2.78	4.54	1.12	0.22	0.49	0.22		0.01	0.48	2.59
	Ind.cm^{-2}	5.10	6.17	5.28	1.16	2.17	1.77	0.18	0.31	0.01				1.84	0.42	1.36	1.30	0.41	0.66	0.16	0.03	0.07	0.03		0.00	0.07	0.38
CLADOCERA TOTAL	Ind.L^{-1}	1.37	12.43	19.47	3.79	3.60	17.84	15.88	8.75	6.26	17.66	2.06	4.87	9.50	1.37	11.16	12.40	2.06	2.62	6.64	11.10	4.66	7.79	10.94	5.34	4.91	6.75
	Ind.cm^{-2}	0.56	5.11	8.01	1.56	1.48	7.34	6.53	3.60	2.58	7.27	0.85	2.00	3.91	0.20	1.63	1.81	0.30	0.36	0.97	1.62	0.68	1.14	1.60	0.78	0.72	0.99
TOTAL	Ind.L^{-1}	33.79	64.66	35.12	17.34	39.32	43.85	59.54	39.69	10.44	31.06	6.89	11.23	32.75	5.65	30.66	22.82	11.72	28.19	22.69	35.74	32.01	18.02	26.74	12.49	9.85	21.38
	Ind.cm^{-2}	13.90	26.60	14.45	7.13	16.18	18.04	24.49	16.33	4.30	12.78	2.84	4.62	13.47	0.83	4.46	3.34	1.71	4.12	3.32	5.22	4.68	2.63	3.91	1.83	1.44	3.12

Appendix 1.4c. Mean abundance (individuals per litre) of zooplankton species life stages in the pelagic and littoral regions of Lake 165, 1990.

	REGION	PELAGIC														LITTORAL											
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	9	22	5	19	3	17	31	14	28	11	25	9	23	MEAN	9	22	5	19	3	17	31	14	28	11	25	9	23	MEAN
	DAY	129	142	156	170	184	198	212	226	240	254	268	282	296		129	142	156	170	184	198	212	226	240	254	268	282	296	
	TOTAL DEPTH (m)	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	21.0		24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.0	
SPECIES																													
C. b. thomasi	FEMALE	0.50	1.26	0.13										0.06	0.15		0.62										0.05	0.05	0.06
	FEMALE WITH EGG	0.01													0.00														
	MALE	0.25	0.25	0.01									0.06	0.49	0.08	0.10	0.21										0.02	0.03	0.03
	COPEPODID 1-V	6.80	13.10	5.54	1.01	0.76	0.25			0.01			0.19	0.25	2.15	4.12	9.66	0.41	0.41		0.21				0.01		0.21	0.83	1.22
	TOTAL	7.57	14.62	5.68	1.01	0.76	0.25			0.01			0.25	0.80	2.38	4.22	10.51	0.41	0.41		0.21				0.01		0.26	0.92	1.30
A. vernalis	FEMALE				0.03	0.06			0.06						0.01					0.01			0.05						0.00
	FEMALE WITH EGG																												
	MALE			0.01	0.06				0.01						0.01			0.01	0.02				0.05						0.01
	COPEPODID 1-V		4.28	2.02	1.01	1.01	1.76	1.76	0.25	0.01		0.25	2.27	3.69	1.41		1.65	0.62	1.03	1.24	0.41	1.24	0.62	0.41	1.03	0.21	0.62	3.74	1.00
	TOTAL		4.28	2.03	1.10	1.07	1.76	1.76	0.33	0.01		0.25	2.27	3.69	1.43		1.85	0.63	1.05	1.25	0.41	1.24	0.72	0.41	1.03	0.21	0.62	3.74	1.01
M. edax	FEMALE		0.06		0.06										0.01		0.01												0.00
	FEMALE WITH EGG		0.01												0.00														
	MALE		1.26	0.01		0.06	0.01								0.10		0.10												0.01
	COPEPODID 1-V	0.25	0.76	0.25	2.27	1.01	1.76	1.01	2.02	0.01		0.76	0.76	0.74	0.89		0.62		1.65		0.41	0.21	1.44	0.41	0.41	0.62	0.21	0.21	0.48
	TOTAL	0.25	2.09	0.26	2.33	1.07	1.78	1.01	2.02	0.01		0.76	0.76	0.74	1.01		0.73		1.65		0.41	0.21	1.44	0.41	0.41	0.62	0.21	0.21	0.48
T. p. mexicanus	FEMALE		0.76	0.25	1.01	0.50	0.25	0.25	0.50			0.76	0.76	0.98	0.46		0.41		0.21	0.62		0.21	0.82		0.21	0.82	1.65	1.04	0.49
	FEMALE WITH EGG			0.06	0.06	0.76	0.06			0.06		0.06			0.08				0.21	0.02	0.01	0.05	0.05		0.01	0.01		0.21	0.04
	MALE						1.51	1.26	1.26				1.26	0.25	0.43				0.06	0.41	1.65		0.41			0.26	0.62	0.42	0.29
	COPEPODID 1-V			0.25	3.78	3.53	6.55	4.28	11.34	2.02	0.50	3.53	7.06	2.46	3.48			0.05	5.97	3.30	4.12	4.53	5.56	0.82	2.27	3.50	3.09	1.04	2.64
	TOTAL		0.76	0.57	4.85	4.79	8.36	5.80	13.10	2.08	0.50	4.35	9.07	3.69	4.46		0.41	0.05	6.44	4.55	5.78	4.79	6.85	0.82	2.48	4.59	5.56	2.70	3.46
M. albidus																							0.05						
E. agilis	TOTAL				0.06										0.00				0.05										0.00
C. v. rubellus	TOTAL																												
P. l. poppei	TOTAL																												
D. minutus	FEMALE			0.13		0.06	0.13						0.01		0.03				0.01	0.01									0.00
	FEMALE WITH EGG																		0.01				0.05						0.00
	MALE			0.13	0.04			0.01		0.01					0.01		0.02	0.02	0.02	0.05	0.21								0.02
	COPEPODID 1-V		1.01		0.25					0.01					0.10		0.21			0.21	0.21								0.05
	TOTAL		1.01	0.25	0.29	0.06	0.13	0.01		0.03			0.01		0.14		0.23	0.02	0.04	0.27	0.41		0.05						0.08
D. oregonensis	FEMALE		0.06	0.03	0.03										0.01		0.02						0.05			0.02		0.05	0.01
	FEMALE WITH EGG			0.04											0.00														
	MALE			0.03			0.06								0.01													0.05	0.00
	COPEPODID 1-V	0.25			0.25	0.04		0.25	0.06			0.01	0.01		0.07		0.21		0.21	0.01	0.01						0.05		0.04
	TOTAL	0.25	0.06	0.09	0.28	0.04	0.06	0.25	0.06			0.01	0.01		0.09		0.23		0.21	0.01	0.01		0.05			0.02	0.05	0.10	0.05
D. sicilis	FEMALE								0.26						0.02														
	FEMALE WITH EGG																												
	MALE																0.21												0.02
	COPEPODID 1-V																0.21												0.02
	TOTAL								0.25						0.02		0.41												0.03
E. lacustris	ADULT			0.04	0.03		0.01								0.01														
	JUVENILE			0.50	0.06								0.06	0.12	0.06		2.06	0.21	0.21	0.01	0.01	0.05							0.20
	TOTAL			0.54	0.09		0.01						0.06	0.12	0.06		2.06	0.21	0.21	0.01	0.01	0.05							0.20
CYCLOPOID NAUPLII	NI-NVI	7.56	14.62	6.05	13.36	20.16	33.77	16.88	20.16	6.05	1.76	6.57	13.10	9.59	13.20	9.68	8.24	0.41	3.71	13.18	7.21	15.24	22.87	2.27	4.53	6.80	10.92	8.94	8.77
CALANOID NAUPLII	NI-NVI	4.28	0.76	1.76	3.02	1.51	0.50	0.25		0.25		0.76	0.25	0.25	1.05	1.44	13.80		1.85	1.24	1.24	0.41		0.21	0.21				1.57
D. retrocurva	FEMALE				0.03		0.25	0.05		0.25			0.08	0.06	0.05						0.01						0.01		0.00
	FEMALE WITH EGG			0.06	0.01		0.01	0.01				0.01	0.01		0.01												0.01	0.01	0.00
	MALE													0.06	0.00													0.01	0.05	0.00
	JUVENILE			0.50	0.76	0.50	0.19	0.25	0.25	0.06				0.25	0.21					0.21	0.01			0.21					0.05	0.04
	TOTAL		0.06	0.54	0.76	0.77	0.25	0.25	0.50	0.06	0.01	0.08	0.37	0.28						0.21	0.02			0.21		0.01	0.03	0.11	0.05
D. g. mendotae	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. longiremis	FEMALE	0.01													0.00														
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL	0.01													0.00														
D. parvula	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
C. lacustris	TOTAL				0.01	0.13	0.25							0.06	0.03	0.21			0.02	0.41	0.01				0.05	0.05		0.01	0.06
C. sphaericus	TOTAL					0.76									0.06											0.01			0.00
B. longirostris	AD+JUV	1.26	3.53	5.04	2.52	2.52	3.53	10.84	13.86	3.53	5.80	9.07	12.10	21.65	7.33	1.44	5.80	1.44	10.09	3.71	13.80	5.36	17.72	2.27	8.03	10.71	9.89	20.38	8.59
	FEMALE WITH EGG		0.50	0.25		0.50		1.26	0.26	0.25	0.25	0.25	2.02	11.07	1.28	0.62	0.41				0.21			0.21		0.62	2.66	7.70	0.97
	TOTAL	1.26	4.03	5.29	2.52	3.02	3.53	12.10	14.11	3.78	6.05	9.32	14.11	32.72	8.60	2.06	7.21	1.44	10.09	3.71	14.01	5.36	17.72	2.47	8.03	11.33	12.77	28.08	9.56
A. affinis	TOTAL						0.06				0.25				0.02														
D. leuchtenbergianum	TOTAL							0.01		0.01					0.00				0.01	0.05	0.01		0.21	0.21	0.01				0.04
H. gibberum	TOTAL	1.78	2.21	12.60	6.55	2.52	1.01	1.51	0.19	0.06	0.01	0.13	0.13	0.25	2.22	0.62	1.85	0.05	2.08	0.36	0.36	0.05	0.21	0.02	0.21	0.05	0.36	0.42	0.51
L. kindtii	TOTAL					0.01	0.04	0.01	0.06	0.03	0.03				0.01	0.01	0.01			0.04	0.01	0.05	0.05	0.03						0.02
P. pediculus	TOTAL								0.01		0.13				0.01														
S. crystallina	TOTAL	0.01						0.10			0.03				0.01	0.03		0.05		0.21	0.05				0.01				0.03
A. quadrangularis	TOTAL																												
C. rectirostris	TOTAL																												
P. denticulatus	TOTAL																												
A. harpae	TOTAL													0.01	0.00														
M. laticornis	TOTAL																												
S. serrulatus	TOTAL										0.01				0.01				0.21				0.05						0.13
L. sellifera	TOTAL																												
I. sordidus	TOTAL																												
O. gracilis	TOTAL																												
S. lingii	TOTAL																												
Alonella sp.	TOTAL																												
Chaoborus sp	TOTAL					0.19	0.03								0.02					0.02									0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	15.38	36.36	14.59	22.71	27.85	45.94	25.45	35.61	8.16	2.27	13.92	25.45	18.51	22.48	13.91	21.74	1.50	13.31	18.98	14.02	21.48	31.93	3.91	8.47	12.22	17.58	16.52	15.04
	Ind.cm^{-2}	6.33	14.96	6.00	9.34	11.45	18.90	10.47	14.65	3.36	0.93	5.73	10.47	7.61	9.25	2.03	3.16	0.22	1.94	2.77	2.05	3.14	4.67	0.57	1.24	1.79	2.57	2.41	2.20
CALANOIDA TOTAL	Ind.L^{-1}	4.54	1.83	2.65	3.68	1.61	0.71	0.52	0.32	0.28		0.77	0.34	0.37	1.35	1.44	16.73	0.23	2.31	1.52	1.87	0.46	0.10	0.21	0.21	0.02	0.05	0.10	1.93
	Ind.cm^{-2}	1.87	0.75	1.09	1.51	0.66	0.29	0.21	0.13	0.11		0.32	0.14	0.15	0.56	0.21	2.44	0.03	0.34	0.22	0.24	0.07	0.02	0.03	0.03	0.00	0.01	0.02	0.28
CLADOCERA TOTAL	Ind.L^{-1}	3.05	8.24	17.96	9.63	7.19	5.68	13.99	14.63	4.38	6.56	9.46	14.31	33.41	11.27	2.93	9.07	1.55	12.39	4.99	14.47	5.46	18.23	2.64	8.31	11.45	13.16	28.62	10.27
	Ind.cm^{-2}	1.25	2.57	7.39	3.96	2.96	2.33	5.75	6.02	1.80	2.70	3.89	5.89	13.74	4.63	0.43	1.33	0.23	1.81	0.73	2.12	0.80	2.66	0.43	1.21	1.67	1.92	4.18	1.50
TOTAL	Ind.L^{-1}	22.97	44.43	35.19	36.01	36.64	52.33	39.95	50.55	12.83	8.83	24.15	40.11	52.29	35.11	18.27	47.54	3.26	28.01	25.51	30.16	27.40	50.26	7.66	16.98	23.69	30.80	45.24	27.25
	Ind.cm^{-2}	9.46	18.28	14.48	14.81	15.18	21.53	16.44	20.79	5.28	3.63	9.94	16.50	21.51	14.44	2.67	6.95	0.48	4.09	3.73	4.41	4.00	7.35	1.03	2.48	3.46	4.50	6.61	3.98

Appendix 1.5a. Mean abundance (individuals per litre) of zooplankton species life stages in the East inflow to Lake 165 during the open water seasons of 1988 – 1989.

		1988												1989										
	YEAR																							
	MONTH	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	NS	AUG	NS	SEPT	OCT	OCT	SEASON
	DATE	1	15	29	13	27	10	24	7	21	5	19	MEAN	17	31	14	28	12	27		23		20	4	17	MEAN
	DAY	153	167	181	195	209	223	237	251	265	279	293		137	151	165	179	193	208		235		263	277	290	
SPECIES																										
C. b. thomasi	FEMALE														0.02	0.02										0.00
	FEMALE WITH EGG																									
	MALE														0.02	0.06										0.01
	COPEPODID 1-V														0.10		0.02									0.01
	TOTAL														0.14	0.08	0.02									0.02
A. vernalis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V				0.16					0.02			0.02		0.40	0.40	0.04									0.06
	TOTAL				0.16					0.02			0.02		0.40	0.40	0.04									0.07
M. edax	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V		0.04		0.16								0.02													
	TOTAL		0.04		0.16								0.02													
T. p. mexicanus	FEMALE		0.04		0.80								0.08			0.40	0.02	0.04								0.05
	FEMALE WITH EGG				0.06								0.01			0.02										0.00
	MALE				1.60								0.15				0.04	0.18								0.02
	COPEPODID 1-V	0.10	2.40		4.00	0.02							0.59			0.80	0.04	0.08								0.09
	TOTAL	0.10	2.44		6.46	0.02							0.82			1.22	0.10	0.30								0.14
M. albidus	TOTAL																									
E. agilis	TOTAL				0.02								0.00												0.02	0.00
C. v. rubellus	TOTAL																									
P. f. poppei	TOTAL	0.80											0.07													
D. minutus	FEMALE				0.48								0.04		0.10											0.01
	FEMALE WITH EGG				0.06								0.01		0.04											0.00
	MALE				0.48								0.04		0.08	0.04										0.01
	COPEPODID 1-V														0.40		0.04									0.04
	TOTAL				1.02								0.09		0.62	0.04	0.04									0.06
D. oregonensis	FEMALE															0.02		0.02								0.00
	FEMALE WITH EGG																									
	MALE				0.02								0.00													
	COPEPODID 1-V		0.02										0.00													
	TOTAL		0.02		0.02								0.00			0.02		0.02								0.00
D. sicilis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V														0.02											0.00
	TOTAL														0.02											0.00
E. lacustris	ADULT																									
	JUVENILE	0.02											0.00		0.08											0.01
	TOTAL	0.02											0.00		0.08											0.01
CYCLOPOID NAUPLII	NI-NVI		0.80		8.00		0.80						0.87		0.80	0.40										0.12
CALANOID NAUPLII	NI-NVI				2.40								0.22			6.80	0.04	0.40								0.72
D. retrocurva	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE																									
	TOTAL																									
D. g. mendotae	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE																									
	TOTAL																									
D. longiremis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE																									
	TOTAL																									
D. parvula	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE																									
	TOTAL																									
C. lacustris	TOTAL																									
C. sphaericus	TOTAL	0.16	0.08						0.02				0.02			0.40	0.10	0.06	0.02						0.02	0.06
B. longirostris	AD+JUV	0.04	1.60		4.00								0.51		2.80	0.80	0.34	0.06			0.02					0.40
	FEMALE WITH EGG				0.80								0.07													
	TOTAL	0.04	1.60		4.80								0.59		2.80	0.80	0.34	0.06			0.02					0.34
A. affinis	TOTAL	0.02		0.08				0.04	0.80	0.02	0.16		0.10					0.04									0.01
D. leuchtenbergianum	TOTAL				0.80	0.02							0.07			0.02										0.00
H. gibberum	TOTAL		0.02		0.32								0.03			0.40	0.04	0.02								0.06
L. kindtii	TOTAL																									
P. pediculus	TOTAL			0.02									0.00												0.02	0.00
S. crystallina	TOTAL																	0.02								0.00
A. quadrangularis	TOTAL								0.02				0.00					0.02					0.02	0.02	0.04	0.01.
C. rectirostris	TOTAL																									
P. denticulatus	TOTAL																									
A. harpae	TOTAL			0.02					0.80	0.02			0.08													
M. laticornis	TOTAL																									
S. serrulatus	TOTAL	0.02					0.04						0.03													
L. sellifera	TOTAL																									
L sordidus	TOTAL							0.80					0.80													
O. gracilis	TOTAL															0.04										0.04
S. kingii	TOTAL															0.02										0.02
Alonella sp.	TOTAL																0.02									0.02
Chaoborus sp	TOTAL		0.04		0.02								0.01													
CYCLOPOIDA TOTAL	ind.L^{-1}	0.90	3.28		14.80	0.02	0.80			0.02			1.80		1.74	2.10	0.16	0.30							0.02	0.36
CALANOIDA TOTAL	ind.L^{-1}	0.02	0.02		3.44								0.32		0.72	6.66	0.08	0.42								0.67
CLADOCERA TOTAL	ind.L^{-1}	0.24	1.68	0.10	5.92	0.02	0.04	0.84	1.64	0.04	0.16		0.97		2.80	1.68	0.50	0.22	0.02		0.02		0.02	0.02	0.08	0.45
TOTAL	ind.L^{-1}	1.16	5.02	0.10	24.16	0.04	0.84	0.84	1.64	0.06	0.16		3.09		5.26	10.64	0.74	0.96	0.02		0.02		0.02	0.02	0.10	1.76

Appendix 1.5b. Mean abundance (individuals per litre) of zooplankton species life stages in the East Inflow to Lake 165, 1990.

	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	8	22	5	19	17	31	14	28	11	25	9	23	MEAN
	DAY	128	142	156	170	198	212	226	240	254	268	282	296	
SPECIES														
C. b. thomasi	FEMALE													
	FEMALE WITH EGG													
	MALE		0.08											0.01
	COPEPODID 1-V		0.80	0.02										0.07
	TOTAL		0.88	0.02										0.07
A. vernalis	FEMALE													
	FEMALE WITH EGG													
	MALE		0.02											0.00
	COPEPODID 1-V	0.40	0.80	0.08		0.04				0.02		0.02	0.02	0.12
	TOTAL	0.40	0.82	0.08		0.04				0.02		0.02	0.02	0.11
M. edax	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V	0.02		0.02										0.00
	TOTAL	0.02		0.02										0.00
T. p. mexicanus	FEMALE		0.40									0.02	0.40	0.07
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V			0.02	0.40						0.25			0.06
	TOTAL		0.40	0.02	0.40						0.25	0.02	0.40	0.11
M. albidus	TOTAL													
E. agilis	TOTAL							0.02						0.00
C. v. rubellus	TOTAL													
P. f. poppei	TOTAL													
D. minutus	FEMALE		0.02		0.08									0.01
	FEMALE WITH EGG													
	MALE	0.02		0.04	0.04									0.01
	COPEPODID 1-V		0.50		0.40									0.08
	TOTAL	0.02	0.52	0.04	0.50									0.08
D. oregonensis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V	0.02	0.20											0.02
	TOTAL	0.02	0.20											0.02
D. sicilis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V													
	TOTAL													
E. lacustris	ADULT													
	JUVENILE		0.30		0.02									0.03
	TOTAL		0.30		0.02									0.02
CYCLOPOID NAUPLII	NI-NVI	3.60	0.80	0.40					0.60		0.25		0.40	0.52
CALANOID NAUPLII	NI-NVI	0.80	2.00	0.02	0.80									0.30
D. retrocurva	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. g. mendotae	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. longiremis	FEMALE	0.04												0.00
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL	0.04												0.00
D. parvula	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
C. lacustris	TOTAL		0.10											0.01
C. sphaericus	TOTAL		0.08		0.40				0.02			0.02		0.04
B. longirostris	AD+JUV	0.04		0.04	1.60	0.40				0.40	0.50	0.02	0.02	0.25
	FEMALE WITH EGG				0.40							0.06	0.02	0.04
	TOTAL	0.04		0.04	2.00	0.40				0.40	0.50	0.08	0.04	0.27
A. affinis	TOTAL		0.02	0.02		0.08				0.02		0.04	0.02	0.02
D. leuchtenbergianum	TOTAL													
H. gibberum	TOTAL		0.40			0.02								0.04
L. kindtii	TOTAL													
P. pediculus	TOTAL											0.88	0.04	0.06
S. crystallina	TOTAL								0.02	0.04		0.04		0.01
A. quadrangularis	TOTAL								0.02					0.00
C. rectirostris	TOTAL		0.02											0.00
P. denticulatus	TOTAL													
A. harpae	TOTAL											0.06		0.01
M. laticornis	TOTAL													
S. serrulatus	TOTAL								0.02	0.10				0.06
L. setifera	TOTAL													
I. sordidus	TOTAL								0.02			0.16	0.02	0.07
O. gracilis	TOTAL		0.02											0.02
S. kingi	TOTAL													
Alonella sp.	TOTAL													
Chaoborus sp	TOTAL													
CYCLOPOIDA TOTAL	Ind.L^{-1}	4.02	2.88	0.54	0.40	0.04		0.02	0.60	0.02	0.50	0.04	0.82	0.78
CALANOIDA TOTAL	Ind.L^{-1}	0.84	3.02	0.06	1.32									0.40
CLADOCERA TOTAL	Ind.L^{-1}	0.08	0.64	0.06	2.40	0.50			0.10	0.58	0.50	1.28	0.12	0.48
TOTAL	Ind.L^{-1}	4.94	6.54	0.66	4.12	0.54		0.02	0.90	0.58	1.01	1.32	0.94	1.66

Appendix 1.6a. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5 m) and lower (5 – 20 m) pelagic regions of Lake 373, 1988.

		UPPER PELAGIC												LOWER PELAGIC										
	REGION																							
	MONTH	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEPT	OCT	SEASON	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEPT	OCT	SEASON
	DATE	26	9	23	7	21	5	18	1	7	22	12	MEAN	26	9	23	7	21	5	18	1	7	22	12	MEAN
	DAY	147	161	175	189	203	218	231	245	251	266	286		147	161	175	189	203	218	231	245	251	266	286	
	TOTAL DEPTH (m)	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2		88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	
SPECIES																									
C. b. thomasi	FEMALE									0.70	0.70		0.13	0.90	0.45			0.67	0.67	0.67	0.67				0.37
	FEMALE WITH EGG									0.02			0.00												
	MALE															0.67	1.57	1.12	0.45						0.35
	COPEPODID 1-V	2.46		2.99	0.04	1.76	0.35		0.35	13.38	13.02	11.97	4.21	16.13	28.45	16.14	13.44	17.47	23.52	15.90	9.63		0.95	0.90	13.14
	TOTAL	4.93		2.99	0.04	1.76	0.35		0.35	14.10	13.73	11.97	4.57	17.02	28.90	16.82	15.01	19.26	24.64	16.58	10.30		0.95	0.90	13.65
A. vernalis	FEMALE													0.00											0.00
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V					0.18				0.70	0.35		0.11										0.06		0.01
	TOTAL					0.18				0.70	0.35		0.11	0.00									0.06		0.01
M. edax	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V																					0.06			0.01
	TOTAL																					0.06			0.01
T. p. mexicanus	FEMALE			0.18								0.70	0.08												
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V																								
	TOTAL			0.18								0.70	0.08												
M. albidus	TOTAL																								
C. v. rubellus	TOTAL																								
D. minutus	FEMALE		0.04	3.34	0.02	2.82	0.35		0.53				0.65			0.67	0.45	1.12	0.90	0.22		0.17	0.06		0.33
	FEMALE WITH EGG					0.04	0.04			0.01	0.04	0.09	0.02					0.45	0.67		0.01	0.01	0.01	0.01	0.11
	MALE		0.04	2.46		3.70	0.68		0.35		0.35		0.71					1.79	0.45	0.22		0.34	0.11	0.11	0.40
	COPEPODID 1-V	11.26	0.35	1.23		2.29	0.70	0.02					1.44	0.90	1.12	0.22	0.22								0.22
	TOTAL	11.26	0.44	7.04	0.02	8.84	1.98	0.02	0.88	0.01	0.40	0.09	2.82	0.90	1.34	1.12	0.90	3.36	2.02	0.45	0.01	0.52	0.18	0.12	1.05
D. oregonensis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V													0.22											0.02
	TOTAL													0.22											0.02
D. sicilis	FEMALE	0.18								1.06	1.41	6.34	0.82	0.22		0.22	0.22	0.45	0.22	0.22	0.22		0.01	0.22	0.18
	FEMALE WITH EGG													0.14	0.22										0.03
	MALE	0.13		0.18		0.18					0.35	9.50	0.94	0.22						0.22				0.56	0.09
	COPEPODID 1-V	1.41		0.18		0.18		0.18	0.35	27.10	37.68	15.14	7.47	19.26	22.62	19.71	15.01	21.95	29.12	15.46	14.56	0.11	1.29	0.73	14.53
	TOTAL	1.72		0.35		0.35		0.18	0.35	28.16	39.42	30.98	9.23	19.85	22.85	19.94	15.23	22.40	29.34	15.90	14.78	0.11	1.30	1.51	14.84
E. lacustris	ADULT	0.01		0.18		0.04			0.18	0.53	1.76	0.35	0.26		0.14	0.04	0.08	0.10	0.03	0.04	0.11	0.28	0.03	0.03	0.08
	JUVENILE	4.58		0.18		1.41	0.18		1.76	0.35	0.70		0.83	0.67	0.67	0.22	1.57	0.90	0.22		0.45	0.45			0.47
	TOTAL	4.58		0.35		1.45	0.18		1.94	0.88	2.46	0.35	1.11	0.67	0.81	0.27	1.65	0.99	0.25	0.04	0.56	0.73	0.03	0.03	0.55
CYCLOPOID NAUPLII	NI-NVI	0.70		0.53			0.18		0.70	2.11	1.76	5.28	1.02	25.78	20.61	4.03	0.90	1.79	0.22	1.12	1.57	0.06	0.22	0.06	5.12
CALANOID NAUPLII	NI-NVI	2.82	0.18	2.99		2.29	0.70		0.35	0.35			0.88	5.15	1.34	0.67	0.22	0.45	0.22	0.45					0.77
D. g. mendotae	FEMALE		0.04	0.13					0.35	0.35	0.70	0.35	0.18	0.01	0.13	1.79	0.90	1.12	2.91	0.67	0.90	0.01	0.07	0.06	0.78
	FEMALE WITH EGG	0.01	0.01							0.31	1.76	2.82	0.45		0.01		0.01	0.01	0.45	0.03	0.06	0.00	0.04		0.06
	MALE							0.18	0.18	1.06	1.76	0.35	0.32							0.22	0.22		0.28	0.01	0.07
	JUVENILE	0.04	0.09	0.13						1.06	1.41		0.25		0.08	0.90	2.24	2.02	2.46	0.45	0.90	0.11	0.11		0.84
	TOTAL	0.05	0.14	0.26				0.18	0.53	2.77	5.63	3.52	1.19	0.01	0.22	2.69	3.15	3.15	5.82	1.37	2.07	0.13	0.50	0.07	1.75
D. dubia	FEMALE		0.09	0.09		0.18	0.13		0.02				0.05		0.01	0.01		0.45	0.67	0.08					0.11
	FEMALE WITH EGG		0.04										0.00						0.22						0.02
	MALE							0.01					0.00						0.22						0.02
	JUVENILE		0.04	0.13		1.06	0.22						0.13		0.03					0.01					0.00
	TOTAL		0.18	0.22		1.23	0.35	0.01	0.02				0.18		0.04	0.01		0.45	1.12	0.10					0.16
C. sphaericus	TOTAL																								
B. longirostris	AD+JUV		0.88	0.88		1.58	2.82	0.01	0.88	1.41	0.35		0.80		0.45	0.67	0.22	0.22	2.46	1.79	0.22	0.34	0.06		0.59
	FEMALE WITH EGG		0.04			0.18	0.18	0.01		0.35	0.35		0.10									0.11	0.00		0.01
	TOTAL		0.92	0.88		1.76	2.99	0.02	0.88	1.76	0.70		0.90		0.45	0.67	0.22	0.22	2.48	1.79	0.22	0.45	0.06		0.60
A. alfinis	TOTAL																							0.01	0.00
D. leuchtenbergianum	TOTAL	0.04	0.02	1.58		0.70	1.76		1.23	2.11	0.35	0.35	0.74		0.00	0.22	1.12		1.12	1.34	0.90	0.08	0.03		0.44
H. gibberum	TOTAL																								
L. kindtii	TOTAL			0.01		0.01			0.01	0.01			0.00			0.00	0.01	0.01	0.01	0.00	0.01				0.00
S. crystallina	TOTAL			0.01									0.00												
A. harpae	TOTAL																								
M. laticornis	TOTAL																								
A. curvirostris	TOTAL																								
M. relicta	TOTAL														0.01										0.00
Chaoborus sp	TOTAL																								
CYCLOPOIDA TOTAL	Ind.L-1	3.17		3.70	0.04	1.94	0.53		1.06	16.91	15.84	17.95	5.56	42.79	49.50	22.85	15.90	21.06	24.86	17.70	11.67	0.11	1.23	0.95	16.98
	Ind.cm-2	1.58		1.84	0.02	0.97	0.26		0.53	8.44	7.90	8.96	2.77	39.24	45.40	20.95	14.58	19.31	22.80	16.23	10.89	0.10	1.13	0.87	17.41
CALANOIDA TOTAL	Ind.L-1	20.38	0.62	10.74	0.02	12.94	2.66	0.19	3.52	29.40	42.28	31.42	14.03	26.80	26.35	21.99	18.66	27.20	31.84	16.84	15.06	1.36	1.51	1.65	17.23
	Ind.cm-2	10.17	0.31	5.36	0.01	6.46	1.43	0.10	1.76	14.67	21.10	15.67	7.00	24.67	24.16	20.17	17.13	24.94	29.19	15.44	14.08	1.25	1.38	1.52	15.60
CLADOCERA TOTAL	Ind.L-1	0.10	1.26	2.87		3.70	5.10	0.20	2.67	6.65	6.69	3.87	3.02	0.01	0.72	3.59	4.51	3.83	10.53	4.81	3.21	0.66	0.59	0.08	2.94
	Ind.cm-2	0.05	0.63	1.48		1.85	2.65	0.10	1.33	3.32	3.34	1.93	1.51	0.01	0.68	3.29	4.13	3.51	9.66	4.23	2.94	0.61	0.54	0.08	2.70
TOTAL	Ind.L-1	23.65	1.87	17.40	0.06	18.58	8.49	0.40	7.24	52.97	64.81	53.24	22.61	69.60	76.57	48.43	39.09	52.09	67.23	39.15	30.44	2.13	3.33	2.69	39.16
	Ind.cm-2	11.80	0.94	8.68	0.03	9.27	4.24	0.20	3.61	26.43	32.34	26.56	11.28	63.62	70.22	44.42	35.84	47.77	61.65	35.90	27.91	1.95	3.05	2.47	35.91

Appendix 1.6b. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5 m) and lower (5 – 20 m) pelagic regions of Lake 373, 1989.

	REGION	UPPER PELAGIC													LOWER PELAGIC											
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG*	SEPT	SEPT	OCT	SEASON
	DATE	18	31	15	29	13	27	9	24	7	21	5	16	MEAN	18	31	15	29	13	27	9	23	7	21	5	MEAN
	DAY	138	151	166	180	194	208	221	236	250	264	278	289		138	151	166	180	194	208	221	236	250	264	278	
	TOTAL DEPTH (m)	30.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	
SPECIES																										
C. b. thomasi	FEMALE	3.92	0.30								0.15			0.36		1.66	0.13	0.51	0.51	0.51	1.79	1.41	1.02	1.54	0.51	0.87
	FEMALE WITH EGG	0.71												0.06			0.13				0.00	0.01	0.02	0.05		0.02
	MALE	1.42			0.04									0.12	0.06	0.64	1.02	1.54	1.26	0.26	1.28	0.77	0.26			0.65
	COPEPODID 1-V	6.05	3.65	3.04	3.34	3.34	2.43	2.43	3.19	1.52	5.93	6.64	6.69	4.04	2.56	13.18	29.44	45.57	25.34	11.25	39.42	31.49	23.55	15.36	13.57	22.80
	TOTAL	12.10	3.95	3.04	3.38	3.34	2.43	2.43	3.19	1.52	6.08	6.64	6.69	4.58	2.62	15.49	30.72	47.62	27.14	12.03	42.50	33.67	24.85	16.94	14.08	24.33
A. vernalis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V				0.30	0.91	0.61	0.91	0.15			0.15		0.25		0.13					0.26	0.13			0.13	0.06
	TOTAL				0.30	0.91	0.61	0.91	0.15			0.15		0.25		0.13					0.26	0.13			0.13	0.06
M. edax	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V																									
	TOTAL																									
T. p. mexicanus	FEMALE				0.15									0.01												
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V																									
	TOTAL				0.15									0.01												
M. albidus	TOTAL																									
C. v. rubellus	TOTAL														1.28											0.12
D. minutus	FEMALE			0.61	1.22	3.34	1.52	2.43	0.91	0.15	0.15	0.15	0.30	0.90			0.26	0.51							0.13	0.08
	FEMALE WITH EGG		0.30	0.08	0.11	0.91	0.15	0.08		0.01	0.04	0.01		0.14												
	MALE			0.30	1.82	4.86	1.22	3.19	1.82	0.46		0.15	0.15	1.17			0.26	1.02	0.26						0.13	0.15
	COPEPODID 1-V	0.71	13.68	7.90	1.22	1.82	0.30		-0.15	0.30				2.15		5.25	1.92	0.77								0.72
	TOTAL	0.71	13.98	8.89	4.37	10.94	3.19	5.70	2.56	0.92	0.19	0.31	0.46	4.35		5.25	2.43	2.30	0.26						0.26	0.95
D. oregonensis	FEMALE							0.04						0.00												
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V	6.76												0.56												
	TOTAL	6.76						0.04						0.57												
D. sicilis	FEMALE	2.49	0.30									0.15	1.06	0.33	0.02	2.05	0.13		0.02		0.26	0.14	0.02		0.14	0.25
	FEMALE WITH EGG	2.49	0.08											0.21	0.10	0.77	0.02									0.08
	MALE	3.56											0.76	0.36	0.16	1.79									0.13	0.19
	COPEPODID 1-V	0.35	0.91		0.76	0.61	0.61	0.15	0.30			6.54	6.99	1.44	0.03	10.88	13.95	11.62	10.24	8.45	15.10	12.29	9.47	12.60	7.30	10.18
	TOTAL	6.60	1.29		0.76	0.61	0.61	0.15	0.30			6.69	8.82	2.34	0.30	15.49	14.10	11.52	10.26	8.45	15.36	12.42	9.49	12.60	7.57	10.70
E. lacustris	ADULT		0.19	0.08	0.04	0.14	0.02	0.06	0.15	0.04	0.30	0.11	0.30	0.12		0.06	0.10	0.03	0.02		0.03	0.04	0.06	0.06	0.10	0.05
	JUVENILE		0.30	0.30	0.30		0.61	1.67	0.15	0.61	0.15			0.34		0.38	0.51	0.77	0.26	0.51				0.26		0.24
	TOTAL		0.49	0.38	0.34	0.14	0.63	1.75	0.30	0.65	0.45	0.11	0.30	0.46		0.45	0.61	0.80	0.27	0.51	0.03	0.04	0.06	0.32	0.10	0.29
CYCLOPOID NAUPLII	NI-NVI	25.28	4.56	0.91	1.37	1.52	0.61	0.30	0.91	1.37	0.61	0.91	1.37	3.31	23.04	29.82	19.46	6.63	3.84		1.28	1.92	2.56	6.40	9.34	9.39
CALANOID NAUPLII	NI-NVI	25.28	2.74	1.52	3.19	3.04	1.82	0.76	0.46	0.15				3.25	26.86	7.30	1.66	1.54		0.28						3.42
D. g. mendotae	FEMALE		0.04	0.23	0.19		0.15	0.15	0.76	1.06	1.37	0.91	0.38	0.44			0.51	0.51	2.82	3.07	3.58	3.64	4.10	1.54	0.51	1.66
	FEMALE WITH EGG		0.04	0.04	0.04	0.19	0.01				0.15	1.67	0.11	0.19		0.13		0.21	0.35	0.19					0.64	0.14
	MALE									0.04	0.46	0.15		0.05							0.51	0.90	1.28		0.77	0.31
	JUVENILE			0.19	0.04	0.30	0.30	0.30	0.15		0.91	0.15	0.04	0.20		0.38	0.51	3.58	2.30	2.30	5.89	3.84	1.79	0.26		1.90
	TOTAL		0.08	0.46	0.27	0.49	0.48	0.46	0.91	1.10	2.89	2.89	0.53	0.88		0.51	1.02	4.30	5.47	5.57	9.98	8.58	7.17	1.79	1.92	4.21
D. dubia	FEMALE			0.04	0.11	0.15	0.04	0.23						0.05							0.03	0.02				0.00
	FEMALE WITH EGG				0.04			0.02	0.01	0.04				0.01												
	MALE								0.30	0.15				0.04							0.02	0.01				0.00
	JUVENILE				0.04	0.91	0.04	0.46	0.15					0.13												
	TOTAL			0.04	0.19	1.06	0.08	0.71	0.46	0.19				0.23							0.05	0.02				0.01
C. sphaericus	TOTAL																									
B. longirostris	AD+JUV		1.22	1.22	0.91	1.52	0.46	3.80	3.04	1.98	0.91	0.30		1.28		0.26	1.28	2.05			0.26	0.26	0.26	0.51	0.13	0.45
	FEMALE WITH EGG		0.61	0.04				0.30			0.30			0.10												
	TOTAL		1.82	1.25	0.91	1.52	0.46	4.10	3.04	1.98	1.22	0.30		1.38		0.26	1.28	2.05			0.26	0.26	0.26	0.51	0.13	0.45
A. affinis	TOTAL																									
D. leuchtenbergianum	TOTAL		0.03		1.67	7.30	0.42	0.68	2.58	1.52	0.91	0.34	0.11	1.30		0.02	0.02	0.26	0.26			0.38	0.77	0.38	0.13	0.20
H. gibberum	TOTAL																									
L. lindtii	TOTAL				0.01	0.01	0.04	0.01						0.01				0.02	0.00	0.00		0.01	0.02			0.00
S. crystallina	TOTAL			0.04			0.01							0.00			0.02									0.00
A. harpae	TOTAL																									
M. laticornis	TOTAL																									
A. curvirostris	TOTAL																									
M. relicta	TOTAL														0.00											0.00
Chaoborus sp	TOTAL																				0.00	0.00				0.00
CYCLOPOIDA TOTAL	ind.L^{-1}	37.38	8.51	3.95	5.21	5.78	3.65	3.65	4.26	2.89	6.69	7.80	8.06	8.16	26.94	45.44	50.18	53.25	30.98	12.03	44.04	35.72	27.41	23.34	23.55	33.90
	ind.cm^{-2}	18.65	4.25	1.97	2.60	2.88	1.82	1.82	2.12	1.44	3.34	3.94	4.02	4.07	24.71	41.67	46.01	48.83	28.41	11.03	40.38	32.76	25.13	21.41	21.60	31.09
CALANOIDA TOTAL	ind.L^{-1}	41.65	18.51	10.79	8.66	14.74	6.25	5.40	3.65	1.72	0.65	7.11	9.58	10.98	27.16	28.48	18.80	16.16	10.76	9.22	15.39	12.47	9.55	13.12	7.92	15.37
	ind.cm^{-2}	20.78	9.23	5.38	4.32	7.35	3.12	4.19	1.82	0.86	0.32	3.55	4.78	5.48	24.93	28.12	17.24	14.82	9.89	8.45	14.11	11.43	8.76	12.03	7.26	14.09
CLADOCERA TOTAL	ind.L^{-1}		1.93	1.79	3.05	10.38	1.46	6.96	7.00	4.79	5.02	3.53	0.85	3.80		0.78	2.34	6.62	5.73	5.57	10.29	8.25	8.21	2.69	2.18	4.88
	ind.cm^{-2}		0.96	0.89	1.52	5.16	0.73	2.97	3.49	2.39	2.50	1.76	0.32	1.89		0.72	2.14	6.07	5.26	5.11	9.43	8.48	7.53	2.46	2.00	4.47
TOTAL	ind.L^{-1}	79.03	28.95	16.53	16.92	30.89	11.36	18.00	14.90	9.39	12.35	18.55	18.28	22.93	54.13	74.70	71.31	76.03	47.49	26.82	69.71	57.44	45.17	39.15	33.65	54.15
	ind.cm^{-2}	39.43	14.44	8.25	8.44	15.41	5.67	8.98	7.44	4.69	6.16	9.26	9.12	11.44	49.64	68.51	65.39	69.72	43.55	24.59	63.93	52.67	41.42	35.90	30.86	49.65

* Values interpolated

Appendix 1.6c. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5 m) and lower (5 – 20 m) pelagic regions of Lake 373, 1990.

	REGION	UPPER PELAGIC														LOWER PELAGIC													
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	8	23	6	20	5	18	1	15	29	12	26	10	22	MEAN	8	23	6	20	5	18	1	15	29	12	26	10	22	MEAN
	DAY	128	143	157	171	186	199	213	227	241	255	269	283	295		128	143	157	171	186	199	213	227	241	255	269	283	295	
	TOTAL DEPTH (m)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	
SPECIES																													
C. b. thomasi	FEMALE	0.57													0.04		0.13	0.26	0.13	0.26	0.38	0.77	3.20	2.30	0.90	1.28	0.51	0.64	0.83
	FEMALE WITH EGG	0.14													0.01	0.02	0.02	0.02					0.19			0.00	0.13		0.03
	MALE	1.42	0.65		0.04		0.28								0.20	0.38	0.26	0.26	1.54	1.92	1.02	1.41	1.28	0.90				0.13	0.70
	COPEPODID 1–V	9.37	7.95	3.12	4.26		0.28				0.28	0.85	3.12	4.26	2.56	0.77	6.59	16.00	15.62	9.00	5.76	10.75	14.59	9.73	12.42	5.63	6.53	7.17	9.47
	TOTAL	11.50	8.80	3.12	4.30		0.57				0.28	0.85	3.12	4.26	2.83	1.17	6.98	16.53	17.26	11.78	7.17	12.93	19.26	12.93	13.31	6.92	7.17	7.94	11.03
A. vernalis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V								0.28						0.02			0.13				0.13				0.13	0.13		0.04
	TOTAL								0.28						0.02			0.13				0.13				0.13	0.13		0.04
M. edax	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																												
	TOTAL																												
T. p. mexicanus	FEMALE				0.28	0.28	0.57								0.09														
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																												
	TOTAL				0.28	0.28	0.57								0.09														
M. albidus	TOTAL																												
C. v. rubellus	TOTAL																												
D. minutus	FEMALE				1.42	1.99	2.84	2.84	0.65	0.65	0.28		0.57		0.90					0.38	1.54	0.38	0.77	0.13	0.26	0.26	0.13	0.13	0.31
	FEMALE WITH EGG				0.04	0.46		0.04	0.18		0.02	0.02	0.04	0.28	0.08									0.13		0.00		0.00	0.01
	MALE				4.26	4.83	1.42	3.12	1.14	1.14	0.28	0.16	0.28		1.28				0.13	0.51	1.28	0.13	1.54	1.02	0.13	0.13			0.37
	COPEPODID 1–V	0.57	3.41	4.26	0.57	5.11	3.69	3.98	1.99						1.61	0.26	2.56	0.13			0.51	0.26	0.90						0.35
	TOTAL	0.57	3.41	4.26	6.28	12.39	7.95	9.98	4.15	1.99	0.59	0.20	0.89	0.28	4.07	0.26	2.56	0.13	0.13	0.90	3.33	0.77	3.20	1.28	0.38	0.39	0.13	0.13	1.04
D. oregonensis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																												
	TOTAL																												
D. sicilis	FEMALE	0.28	0.28										0.57	2.27	0.26		0.26	0.26	0.26	0.26		0.03	0.38	0.51	0.38	0.38	1.02	3.20	0.53
	FEMALE WITH EGG	1.14	0.85												0.15	0.21	0.37								0.13				0.05
	MALE	2.84	0.85				0.28		0.28				0.28	4.83	0.72	0.38	1.41				0.13	0.13					0.90	5.25	0.63
	COPEPODID 1–V		8.52	2.27		0.28	0.28		0.28				6.25	1.42	1.49		13.82	18.43	15.10	11.01	6.91	18.05	10.50	12.54	10.75	7.42	8.32	2.05	10.38
	TOTAL	4.26	10.51	2.27		0.28	0.57		0.57				7.10	8.52	2.62	0.59	16.86	18.69	15.36	11.26	7.04	18.21	10.88	13.06	11.26	7.81	10.24	10.50	11.60
E. lacustris	ADULT			0.21	0.36	0.04	0.07	0.05	0.04	0.01		0.02	0.14	0.14	0.08			0.10	0.11		0.05	0.10	0.10	0.08	0.05	0.11	0.11	0.18	0.08
	JUVENILE		0.57	0.26		1.42	0.28		0.28	0.28	0.28	0.26			0.28			0.13	0.38			0.38	0.51	0.38	0.25					0.20
	TOTAL		0.57	0.50	0.36	1.46	0.36	0.05	0.32	0.29	0.28	0.31	0.14	0.14	0.37			0.22	0.50	0.51	0.05	0.48	0.61	0.46	0.30	0.11	0.11	0.18	0.27
CYCLOPOID NAUPLII	NI–NVI	8.24	4.26	0.28	1.70	1.99	0.57	0.57	0.57	0.85	0.57	0.28	0.28	9.66	2.29	3.71	18.30	11.90	0.26	0.51	1.15	0.90	3.33	2.18	5.76	4.22	6.78	24.83	6.45
CALANOID NAUPLII	NI–NVI	18.60	6.53		5.96	10.22	1.42	0.85	0.85						3.50	11.76	11.01	0.03	0.38	0.90	0.13	0.13								1.87
D. g. mendotae	FEMALE		0.07	0.14	0.43	0.14		0.28	0.04	0.04	0.14	0.11	0.11	0.05	0.12		0.00	0.08	0.38	2.30	0.64	1.41	3.46	1.02	0.64	0.38	0.26	0.08	0.82
	FEMALE WITH EGG		0.01	0.04		0.01						0.02	0.07	0.07	0.02			0.01	0.02	0.10	0.06		0.06	0.13	0.00	0.30	0.08	0.03	0.06
	MALE												0.04		0.00						0.13		0.38			0.51	0.13	0.03	0.09
	JUVENILE	0.01	0.07	0.18	0.28						0.28	0.04	0.04		0.07			0.05	0.77	2.05	0.51	1.15	1.54		0.51	0.26			0.53
	TOTAL	0.01	0.15	0.36	0.71	0.15		0.28	0.04	0.04	0.43	0.16	0.25	0.12	0.21		0.00	0.13	1.17	4.45	1.34	2.56	5.44	1.15	1.16	1.46	0.46	0.14	1.50
D. dubia	FEMALE				0.04	0.11	0.01	0.01	0.11	0.02					0.02														
	FEMALE WITH EGG					0.01	0.01		0.01						0.00														
	MALE									0.05	0.04				0.01														
	JUVENILE					0.04	0.04	0.07	0.18						0.02														
	TOTAL				0.04	0.16	0.06	0.08	0.29	0.07	0.04				0.06														
C. sphaericus	TOTAL									0.04	0.04				0.01											0.13		0.01
B. longirostris	AD+JUV			0.85	1.70	1.14	1.14	1.14	2.56	0.57	0.57				0.74				0.26	0.77	0.38	0.13	0.13	0.38	0.90	0.38	0.13	0.00	0.27
	FEMALE WITH EGG					0.04		0.28		0.07	0.28				0.05					0.13		0.13			0.26				0.04
	TOTAL			0.85	1.70	1.17	1.14	1.42	2.56	0.64	0.85				0.79				0.26	0.90	0.38	0.26	0.13	0.38	1.15	0.38	0.13	0.00	0.31
A. affinis	TOTAL				0.28							0.01			0.02		0.13	0.26									0.13		0.04
D. leuchtenbergianum	TOTAL		0.28	0.11	1.42	2.84	4.54	3.12	1.89	0.36		0.02	0.04	0.03	1.13			0.02		0.26	3.84	0.38	0.90	0.51	0.13	0.51	0.13	0.05	0.52
H. gibberum	TOTAL																												
L. kindtii	TOTAL					0.02	0.05	0.01	0.01						0.01					0.02	0.03	0.01		0.01	0.00				0.01
S. crystallina	TOTAL																											0.26	0.02
A. harpae	TOTAL																												
M. laticornis	TOTAL																												
A. curvirostris	TOTAL																												
M. relicta	TOTAL															0.01													0.00
Chaoborus sp	TOTAL																												
CYCLOPOIDA TOTAL	Ind.L⁻¹	19.74	13.06	3.41	6.28	2.27	1.70	0.57	0.85	0.85	0.85	1.14	3.41	13.92	5.23	4.88	27.28	28.56	17.54	12.29	8.32	13.95	22.59	15.10	19.07	11.27	14.08	32.77	17.52
	Ind.cm⁻²	9.85	6.52	1.70	3.14	1.13	0.85	0.28	0.43	0.43	0.43	0.57	1.70	6.94	2.61	4.48	25.02	26.19	16.08	11.27	7.63	12.79	20.72	13.85	17.49	10.33	12.91	30.05	16.06
CALANOIDA TOTAL	Ind.L⁻¹	24.42	21.02	7.03	12.50	24.35	10.30	10.88	5.89	2.28	0.87	0.50	8.13	8.95	10.56	12.62	29.42	19.07	16.37	13.57	10.54	19.58	14.69	14.80	11.95	8.31	10.48	10.80	14.79
	Ind.cm⁻²	12.19	10.49	3.51	6.29	12.15	5.14	5.43	2.94	1.14	0.44	0.25	4.06	4.46	5.27	11.58	28.96	17.49	15.01	12.44	9.67	17.96	13.47	13.57	10.96	7.62	9.61	9.91	13.56
CLADOCERA TOTAL	Ind.L⁻¹	0.01	0.43	1.31	4.15	4.33	5.79	4.91	4.88	1.14	1.35	0.19	0.28	0.15	2.23		0.13	0.41	1.42	5.62	5.60	3.21	6.46	2.06	2.44	2.35	0.98	0.45	2.39
	Ind.cm⁻²	0.01	0.22	0.66	2.07	2.16	2.89	2.45	2.43	0.57	0.67	0.10	0.14	0.07	1.11		0.12	0.37	1.31	5.15	5.13	2.94	5.93	1.89	2.24	2.16	0.90	0.41	2.29
TOTAL	Ind.L⁻¹	44.16	34.51	11.75	23.04	30.96	17.79	16.36	11.62	4.27	3.07	1.83	11.82	23.01	18.02	17.51	56.84	48.04	35.33	31.47	24.46	36.74	43.74	31.96	33.46	21.93	25.54	44.02	34.70
	Ind.cm⁻²	22.04	17.22	5.86	11.50	15.45	8.87	8.16	5.80	2.13	1.53	0.91	5.90	11.48	8.99	16.06	52.12	44.05	32.40	28.86	22.43	33.69	40.11	29.31	30.69	20.11	23.42	40.97	31.82

Appendix 1.7a. Mean abundance (individuals per litre) of zooplankton life stages in the littoral region of Lake 373 during 1988 and 1989.

		1988												1989											
	MONTH	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEPT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	26	9	23	7	21	5	18	1	7	22	12	MEAN	18	31	15	29	13	27	9	24	7	21	5	16	MEAN
	DAY	147	161	175	189	203	218	231	245	251	266	286		138	151	166	180	194	208	221	236	250	264	278	289	
	TOTAL DEPTH (m)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0		27.2	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	
SPECIES																									
C. b. thomasi	FEMALE											0.06	0.01	6.66	0.45											0.59
	FEMALE WITH EGG																									
	MALE													1.18												0.10
	COPEPODID 1-V	3.11		0.44	0.22	1.11		0.02	0.11		3.11	0.67	0.80	6.27	2.26	2.26	0.45	0.23		1.81	0.45	0.90	3.62	4.29	7.68	2.52
	TOTAL	3.11		0.44	0.22	1.11		0.02	0.11		3.11	0.72	0.80	14.11	2.71	2.26	0.45	0.23		1.81	0.45	0.90	3.62	4.29	7.68	3.21
A. vernalis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V			0.89									0.08				0.23		0.23							0.04
	TOTAL			0.89									0.08				0.23		0.23							0.04
M. edax	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V		0.22							0.22			0.04													
	TOTAL		0.22							0.22			0.04													
T. p. mexicanus	FEMALE					0.22							0.02			0.06					0.23					0.02
	FEMALE WITH EGG								0.01				0.00													
	MALE		0.22							0.06			0.03					0.23	0.23							0.04
	COPEPODID 1-V	0.44	0.22			0.22	0.44	0.02	0.11	0.22			0.15													
	TOTAL	0.44	0.44			0.44	0.44	0.02	0.12	0.28			0.20			0.06		0.23	0.23		0.23					0.06
M. albidus	TOTAL									0.02			0.00													
C. v. rubellus	TOTAL																									
D. minutus	FEMALE		0.22	7.10	3.55	0.67	2.00	0.22	0.11	0.44	0.22	0.22	1.34			0.40	2.49	0.68	4.07	1.81	0.45	0.68	0.23		0.23	0.92
	FEMALE WITH EGG		0.11	0.17	1.33	0.17	0.06		0.01	0.06	0.06	0.06	0.18				0.23	0.85	0.28	0.03	0.06	0.11	0.06		0.06	0.14
	MALE		1.55	7.55	5.11	0.44	0.67	0.67	0.22	1.11	0.22		1.59			0.45	2.84	0.45	4.52	1.58	0.90	0.90	0.28	0.45		1.04
	COPEPODID 1-V	6.66	7.10	2.22	7.33	2.44	0.89						2.42			13.11	1.58	1.58	1.81		0.45					2.59
	TOTAL	6.66	8.99	17.04	17.32	3.72	3.61	0.89	0.34	1.61	0.50	0.28	5.54	0.78	11.75	13.96	7.23	3.56	10.68	3.42	1.86	1.70	0.55	0.45	0.28	4.69
D. oregonensis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V													5.49												0.46
	TOTAL													5.49												0.46
D. sicilis	FEMALE	0.22									0.01	0.44	0.06	3.92	0.06									0.01	0.40	0.37
	FEMALE WITH EGG	0.01											0.00	2.35	0.11	0.01										0.21
	MALE	0.06										0.44	0.05	1.96	0.11										0.45	0.21
	COPEPODID 1-V	0.44								0.44	1.33		0.20			0.06				0.23	0.23		0.11	2.84	7.91	0.96
	TOTAL	0.73								0.44	1.34	0.89	0.31	8.23	0.28	0.07				0.23	0.23		0.11	2.95	8.76	1.74
E. lacustris	ADULT		0.01	0.02		0.02					0.06		0.01		0.17	0.01	0.03		0.01	0.01	0.01			0.05	0.02	0.03
	JUVENILE	1.78	0.11	0.44	1.78	0.67	0.89	0.03	0.44	0.22			0.56		1.81		0.90	0.68	0.45	0.68	0.23	1.36	0.23	0.23		0.55
	TOTAL	1.78	0.12	0.47	1.78	0.69	0.89	0.03	0.44	0.22	0.06		0.59		1.98	0.01	0.94	0.68	0.46	0.68	0.24	1.36	0.23	0.27	0.02	0.57
CYCLOPOID NAUPLII	NI-NVI	1.33	0.89	1.78	1.78		0.44	0.22	0.67	1.11	5.11		1.21	12.54	2.26	1.36	1.81	0.23			1.13	0.90	0.23	0.45	1.56	1.67
CALANOID NAUPLII	NI-NVI	3.55	1.55	8.88	13.99	8.44	2.66	2.44	1.33	2.22	0.22		4.12	33.71	2.71	0.45	11.30	18.53	3.62	1.13	2.71	0.68	0.23			6.28
D. g. mendotae	FEMALE																0.02		0.01		0.01	0.06	0.03			0.01
	FEMALE WITH EGG											0.06	0.01											0.11	0.01	0.01
	MALE										0.22		0.02								0.01			0.11	0.01	0.01
	JUVENILE		0.22			0.01			0.01				0.02	0.01	0.06	0.02				0.23	0.01			0.06		0.03
	TOTAL		0.22			0.01			0.01		0.22	0.06	0.05	0.01	0.06	0.02	0.02		0.01	0.23	0.03	0.06	0.03	0.28	0.02	0.06
D. dubia	FEMALE		0.03		0.02	0.06		0.06	0.06				0.02			0.01										0.00
	FEMALE WITH EGG																				0.02					0.00
	MALE										0.22		0.02				0.06				0.01					0.01
	JUVENILE			0.06	0.17	0.22	0.03						0.04			0.03	0.06		0.02	0.01						0.01
	TOTAL		0.03	0.06	0.19	0.28	0.03	0.06	0.06		0.22		0.08			0.05	0.11		0.02	0.01	0.03					0.02
C. sphaericus	TOTAL										0.22		0.02													
B. longirostris	AD+JUV	0.44	2.89	4.86	2.00	2.44	10.21	2.89	1.78	2.44	1.78	0.22	2.91		4.52	2.71	4.75	3.16	1.58	6.33	3.84	3.16	0.90	0.45		2.62
	FEMALE WITH EGG	0.03	0.44	0.06	0.22		1.11	0.22		0.11	0.22	0.01	0.22		0.07		0.45	0.29		1.13	0.45	0.90	0.23			0.29
	TOTAL	0.48	3.33	4.94	2.22	2.44	11.32	3.11	1.78	2.55	2.00	0.23	3.13		4.59	2.71	5.20	3.39	1.58	7.46	4.29	4.07	1.13	0.45		2.91
A. affinis	TOTAL																									
D. leuchtenbergianum	TOTAL	0.06		0.50	1.55		1.33	0.03	0.02	0.02	0.04		0.32			0.03	0.23	0.23	0.45	0.34	0.11	0.23	0.07	0.28	0.01	0.16
H. gibberum	TOTAL															0.17										0.01
L. kindtii	TOTAL	0.02	0.01	0.01		0.01							0.01				0.03	0.01	0.05		0.05					0.01
S. crystallina	TOTAL																									
A. harpae	TOTAL																									
M. latiocornis	TOTAL																	0.01								0.00
A. curvirostris	TOTAL																									
M. relicta	TOTAL																									
Chaoborus sp	TOTAL																									
CYCLOPOIDA TOTAL	ind.L^{-1}	4.66	1.55	3.11	2.00	1.55	0.89	0.27	0.90	1.63	8.21	0.72	2.34	26.66	4.97	3.67	2.49	0.68	0.45	1.81	1.81	1.81	3.84	4.75	9.27	5.18
	ind.cm^{-2}	0.99	0.32	0.63	0.41	0.32	0.18	0.05	0.18	0.33	1.67	0.15	0.48	5.42	1.01	0.75	0.51	0.14	0.09	0.37	0.37	0.37	0.78	0.97	1.88	1.05
CALANOIDA TOTAL	ind.L^{-1}	12.72	10.67	28.38	33.06	12.84	7.16	3.36	2.12	4.50	2.12	1.17	10.56	48.22	16.72	14.49	19.47	22.77	14.76	5.47	5.04	3.73	1.12	3.87	9.06	13.71
	ind.cm^{-2}	2.69	2.17	5.97	6.73	2.61	1.46	0.68	0.43	0.91	0.43	0.24	2.15	9.81	3.40	2.95	3.96	4.63	3.00	1.11	1.03	0.76	0.23	0.75	1.84	2.79
CLADOCERA TOTAL	ind.L^{-1}	0.56	3.60	5.51	3.96	2.74	12.69	3.20	1.86	2.68	2.71	0.29	3.61	0.01	4.64	2.98	5.59	3.64	2.11	8.03	4.52	4.35	1.23	1.02	0.03	3.18
	ind.cm^{-2}	0.11	0.73	1.12	0.81	0.56	2.58	0.65	0.38	0.52	0.55	0.06	0.73	0.00	0.94	0.61	1.14	0.74	0.43	1.63	0.92	0.88	0.25	0.21	0.01	0.65
TOTAL	ind.L^{-1}	18.16	15.82	35.00	39.04	17.14	20.73	6.83	4.88	8.70	13.04	2.18	16.50	74.88	26.34	21.14	27.55	27.09	17.32	15.31	11.37	9.89	6.19	9.44	18.36	22.07
	ind.cm^{-2}	3.69	3.22	7.12	7.94	3.49	4.22	1.39	0.99	1.77	2.65	0.44	3.36	15.23	5.36	4.30	5.60	5.51	3.52	3.11	2.31	2.01	1.26	1.92	3.74	4.49

Appendix 1.7b. Mean abundance (individuals per litre) of zooplankton life stages in the littoral region of Lake 373 during 1990.

	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	8	23	6	20	5	18	1	15	29	12	26	10	22	MEAN
	DAY	128	143	157	171	186	199	213	227	241	255	269	283	295	
	TOTAL DEPTH (m)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
SPECIES															
C. b. thomasi	FEMALE	1.14			0.42									0.83	0.18
	FEMALE WITH EGG	0.05													0.00
	MALE	2.50	0.83												0.26
	COPEPODID 1-V	7.07	4.58	1.66	0.42							0.10	0.62	4.58	1.46
	TOTAL	10.76	5.41	1.66	0.83							0.10	0.62	5.41	1.91
A. vernalis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V									0.83					0.06
	TOTAL									0.83					0.06
M. edax	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V														
	TOTAL														
T. p. mexicanus	FEMALE							0.83	0.42						0.10
	FEMALE WITH EGG		0.05												0.00
	MALE										0.42				0.03
	COPEPODID 1-V														
	TOTAL		0.05					0.83	0.42		0.42				0.13
M. albidus	TOTAL														
C. v. rubellus	TOTAL														
D. minutus	FEMALE				0.42	2.50	2.08	0.83		1.66	0.42	0.36	0.21		0.65
	FEMALE WITH EGG				0.78	0.47	0.16	0.10	0.05	0.10	0.01		0.10	0.05	0.14
	MALE				4.99	0.83	1.25	1.25	0.42	2.91	0.16	0.62	0.21	0.42	1.00
	COPEPODID 1-V	2.08	7.49	9.57	0.42	4.16	5.82	4.16	0.83						2.66
	TOTAL	2.08	7.49	9.57	6.60	7.96	9.31	6.34	1.30	4.68	0.58	0.99	0.52	0.47	4.45
D. oregonensis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V														
	TOTAL														
D. sicilis	FEMALE	0.42	0.31									0.01	0.05	1.66	0.19
	FEMALE WITH EGG	0.73	0.21												0.07
	MALE	2.08	0.16										0.16	1.25	0.28
	COPEPODID 1-V		1.66	3.74					0.42			0.02	1.46	2.91	0.79
	TOTAL	3.22	2.34	3.74					0.42			0.03	1.66	5.82	1.33
E. lacustris	ADULT			0.01		0.03			0.05			0.03	0.03	0.10	0.02
	JUVENILE		0.42	0.83	1.25				0.42	0.42					0.26
	TOTAL		0.42	0.84	1.25	0.03			0.47	0.42		0.03	0.03	0.10	0.28
CYCLOPOID NAUPLII	NI-NVI	2.91	2.50	0.83		0.42	0.83		1.25	0.42		0.42	0.42	19.97	2.30
CALANOID NAUPLII	NI-NVI	14.58	19.97	0.83	11.23	13.73	10.82	5.41	2.91	0.42					6.14
D. g. mendotae	FEMALE											0.01		0.02	0.00
	FEMALE WITH EGG										0.01		0.01	0.04	0.00
	MALE									0.01		0.01	0.01	0.01	0.00
	JUVENILE	0.05		0.05									0.01		0.01
	TOTAL	0.05		0.05						0.01	0.01	0.02	0.03	0.07	0.02
D. dubia	FEMALE						0.01								0.00
	FEMALE WITH EGG														
	MALE									0.01					0.00
	JUVENILE						0.01								0.00
	TOTAL						0.02			0.01					0.00
C. sphaericus	TOTAL														
B. longirostris	AD+JUV	0.01		0.16	3.33	3.33	2.91	2.91	7.90	2.91	0.42				1.64
	FEMALE WITH EGG	0.01		0.10	0.21		0.10	0.83	0.42	0.10		0.16	0.16		0.16
	TOTAL	0.02		0.26	3.54	3.33	3.02	3.74	8.32	3.02	0.42	0.16	0.16		2.00
A. affinis	TOTAL								0.83						0.06
D. leuchtenbergianum	TOTAL				0.05		0.38	0.42	0.42			0.01	0.02	0.05	0.10
H. gibberum	TOTAL														
L. kindtii	TOTAL							0.05							0.00
S. crystallina	TOTAL						0.01								0.00
A. harpae	TOTAL								0.42						0.03
M. laticornis	TOTAL														
A. curvirostris	TOTAL							0.10							0.10
M. relicta	TOTAL														
Chaoborus sp	TOTAL							0.01							0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	13.68	7.98	2.50	0.83	0.42	0.83	0.83	1.66	1.25	0.42	0.52	1.04	25.36	4.41
	Ind.cm^{-2}	2.78	1.62	0.51	0.17	0.08	0.17	0.17	0.34	0.25	0.08	0.11	0.21	5.16	0.90
CALANOIDA TOTAL	Ind.L^{-1}	19.86	30.21	14.89	19.08	21.72	20.12	11.75	5.10	5.51	0.58	1.05	2.22	8.40	12.20
	Ind.cm^{-2}	4.04	6.15	3.05	3.88	4.42	4.09	2.39	1.04	1.12	0.12	0.21	0.45	1.30	2.48
CLADOCERA TOTAL	Ind.L^{-1}	0.07		0.31	3.59	3.33	3.41	4.32	9.98	3.04	0.43	0.19	0.21	0.12	2.23
	Ind.cm^{-2}	0.01		0.06	0.73	0.68	0.69	0.88	2.03	0.62	0.09	0.04	0.04	0.03	0.45
TOTAL	Ind.L^{-1}	33.61	38.17	17.79	23.50	25.46	24.37	16.91	16.74	9.80	1.42	1.76	3.48	31.90	18.84
	Ind.cm^{-2}	6.84	7.78	3.62	4.78	5.18	4.96	3.44	3.41	1.99	0.29	0.36	0.70	6.49	3.83

Appendix 1.8a. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5m) and lower (5 – 18m) pelagic regions of Lake 377, 1988.

		UPPER PELAGIC													LOWER PELAGIC											
REGION																										
MONTH		MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	SEASON
DATE		10	26	9	23	6	20	3	18	31	7	22	12	MEAN	10	26	9	23	6	20	3	18	31	7	22	12	MEAN
DAY		131	147	161	175	188	202	216	231	244	252	266	286		131	147	161	175	188	202	216	231	244	251	266	286	
TOTAL DEPTH (m)		30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2		65.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	
SPECIES																											
C. b. thomasi	FEMALE	10.16	3.01	0.38		0.38						0.36	1.88	1.35	1.22	2.43	1.28				0.32		0.02	0.16		0.64	0.51
	FEMALE WITH EGG	0.09										0.01	0.03	0.02	0.05											0.04	0.00
	MALE	4.04	0.75									1.13	5.02	1.00	0.46	0.46			0.64	0.32	0.02				0.64	1.28	0.32
	COPEPODID 1-V	42.11	9.02												2.56												
	TOTAL	56.40	12.76	8.65	0.18	24.44	21.43	0.38	0.38	1.32	19.18	13.54	23.65	13.99	4.28	39.61	61.44	56.96	28.44	25.92	40.80	43.52	28.86	1.82	9.64	13.76	28.32
				9.02	0.18	24.82	21.43	0.38	0.38	1.32	19.18	15.05	31.68	16.06		41.50	62.72	57.60	28.76	25.94	41.12	43.52	28.86	2.06	9.76	17.96	30.45
A. vernalis	FEMALE																										
	FEMALE WITH EGG																										
	MALE	0.05												0.00											0.16		0.01
	COPEPODID 1-V						0.38							0.03							0.32	0.32				0.00	0.09
	TOTAL	0.05					0.38							0.03							0.32	0.32				0.00	0.09
M. edax	FEMALE		0.19	0.05		0.05		0.01	0.05	0.02	0.01			0.07		0.15			0.64		0.02				0.00		0.07
	FEMALE WITH EGG					0.05	0.05							0.01						0.04							0.00
	MALE		0.01			0.19	0.09	0.01						0.03							0.04	0.32					0.03
	COPEPODID 1-V	0.05	0.36			0.39	0.75	0.58	1.88	0.19	0.38	0.75	0.88	0.45	0.02					0.16	0.16	1.28					0.21
	TOTAL	0.05	0.56	0.05		0.50	1.19	0.59	0.75	0.21	0.38	0.75	1.13	0.56	0.04	0.15	0.01		0.64	0.32	0.16	1.28		0.24			0.10
T. p. mexicanus	FEMALE	0.75	0.38	0.38		0.05	0.05	0.19						0.02											0.16	0.16	
	FEMALE WITH EGG						0.05	0.19					0.38	0.03							0.16	0.96					0.09
	MALE						1.50	0.75						0.21							0.32	0.48				0.32	0.16	0.46
	COPEPODID 1-V			1.50		4.51	3.76	0.75					1.50	1.85	0.04	0.15			0.32	0.32	0.48	1.44	1.82		0.32	0.32	
	TOTAL	0.75	0.38	1.88		6.06	8.44	2.07	0.75					0.00													
M. albidus	TOTAL								0.01					0.13													
E. aplis	TOTAL													0.00													
C. v. rubellus	TOTAL													0.00													
D. minutus	FEMALE		0.05	0.38	0.18		0.75	0.19		0.01				0.13					0.32	0.32							0.05
	FEMALE WITH EGG						0.05	0.02	0.05	0.01				0.01					0.01	0.32	0.02						0.03
	MALE		0.05	1.13		0.75	0.56	0.19		0.01				0.11					0.02	0.32						0.02	0.11
	COPEPODID 1-V		1.22	0.75	0.01	1.88	1.63	0.39	0.05	0.03	1.50	0.02	0.95	0.50		0.15	0.02		0.64	0.32	0.80	0.64	0.64	0.16	0.16	0.16	0.50
	TOTAL		1.22	2.26	0.18	1.88	1.63	0.39	0.05	0.03	1.50	0.16	1.10	0.50		0.15	0.02		0.64	0.32	0.80	0.64	0.64	0.16	0.16	0.16	0.50
D. oregonensis	FEMALE											0.38	0.02	0.11			0.64					1.12	1.60			0.06	0.11
	FEMALE WITH EGG										0.05			0.01										0.16			0.01
	MALE												0.05	0.00												0.02	0.00
	COPEPODID 1-V																										
	TOTAL										0.05	0.38	0.07	0.04			0.64	0.32						0.48		0.02	0.12
D. sicilis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V										0.38		0.38	0.08			0.32										0.03
	TOTAL										0.38		0.38	0.08			0.32										0.03
D. siciloides	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V																										
	TOTAL																										
D. sehlandi	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V																										
	TOTAL																										
S. calanoides	TOTAL																										
E. lacustris	ADULT		0.05	0.14		0.19	0.19			0.01	0.01		0.05	0.05		0.02	0.05	0.04	0.64	0.02	0.12	0.00	0.03	0.04	0.04	0.03	0.00
	JUVENILE		1.10			0.56			0.01	0.02		0.05	0.05	0.02					0.96			0.08			0.16		0.02
	TOTAL		1.15	0.14		0.75	0.19		0.01	0.02	0.01	0.05	0.10	0.07		0.02	0.05	0.04	0.64	0.02	0.12	0.08	0.03	0.04	0.20	0.03	0.02
CYCLOPOID NAUPLII	NI-NV	26.85	3.38	18.42		42.49	45.12	8.86	8.02	0.75	27.45	22.10	17.87	18.28	5.17	48.97	161.29	142.08	67.20	58.35	75.52	72.64	39.56	2.40	2.08	2.40	5.16
CALANOID NAUPLII	NI-NV	1.88	1.88	0.38		3.14	3.76	0.38		0.19		0.38		0.05			0.64			0.32	0.64	0.64	0.48		0.16		0.04
D. retrocurva	FEMALE					0.05	0.05		0.38		0.75		1.13	0.08						0.32	0.64	0.64				0.16		0.04
	FEMALE WITH EGG						0.05				0.50	0.05	0.13	0.05			0.02	0.00	0.32	0.02					0.02		0.00
	MALE										0.38	0.38	0.38	0.08													
	JUVENILE				0.01	1.13	0.75				0.38	1.50	0.38	0.51		0.15	0.32	0.64	0.64	0.16	0.64	0.64	2.08		0.16	0.32	0.48
	TOTAL				0.01	1.13	0.75		0.38		0.50	1.50	0.38	0.51		0.15	0.32	0.64	0.64	0.16	0.64	0.64	2.08		0.16	0.32	0.48
D. g. mendotae	FEMALE			0.38		1.13	0.38	0.94	0.19	0.56	0.75	0.75	0.75	0.56			0.00			0.32		1.92		0.96	0.08	0.48	0.32	0.37
	FEMALE WITH EGG			0.05		0.05	0.19	0.01	0.14	0.38	0.03	0.25	0.14	0.10			0.00	0.00	0.32	0.16				0.06		0.48	0.16	0.06
	MALE											0.38	0.38	0.08												0.48	0.16	0.06
	JUVENILE		0.75	1.50	0.04	1.88	4.51	0.56	2.26	1.32	2.63	1.50	4.13	1.69					0.32	0.32	0.48	0.32	1.60		1.12	0.96	0.32	0.44
	TOTAL		0.75	1.88	0.04	1.88	4.51	0.56	2.26	1.32	2.63	2.63	4.88	1.79					0.32	0.32	0.48	0.32	1.60		1.12	0.96	0.32	0.44
D. longiremis	FEMALE	0.14	0.09	1.93	0.04	3.08	5.08	1.21	5.53	2.26	5.41	2.81	4.65	2.49					0.01	0.32	0.64	0.96	0.32	2.56		1.92	2.16	2.20	1.16	0.95
	FEMALE WITH EGG													0.02		0.15			0.32	0.32	1.28	0.16	0.48			0.16			0.07
	MALE																		0.08	0.04	0.64	0.04				0.02			
	JUVENILE	1.13	0.75			0.75					1.13	0.75		0.38	0.02													0.20
	TOTAL	1.27	0.85			0.75					1.13	0.75		0.40	0.02	0.15	0.32	0.64	0.32	0.20	0.16	0.64	0.64	0.16	0.16			0.20
D. parvula	FEMALE		0.38											0.03	0.02													0.51
	FEMALE WITH EGG																											0.00
	MALE																											
	JUVENILE																											
	TOTAL		0.38											0.03	0.02													0.00
D. schoedleri	FEMALE		0.05											0.00														0.01
	FEMALE WITH EGG																								0.16			
	MALE																											
	JUVENILE																											
	TOTAL		0.05											0.00											0.16			0.01
C. lacustris	TOTAL																								0.02			0.00
C. sphaericus	TOTAL						0.38	0.94	0.38	0.38	4.14	1.88	7.90	1.33		0.02					1.60	1.92		0.16		0.48		0.60
B. longirostris	ADULT	15.04	7.14	3.76	0.02	1.88	0.38	1.32	0.38	0.19	0.75		1.13	2.82	0.30	0.38	2.88	3.20	2.56	1.12	0.64	0.64	0.64	0.80	0.16	1.28	0.48	0.96
	FEMALE WITH EGG	1.88	0.38	0.38		0.05	0.38		0.38				0.13	0.08		0.15	0.64	0.32	0.64	0.48					0.16			0.26
	TOTAL	16.92	7.52	4.14	0.02	1.93	1.88	1.32	0.76	0.19	0.75		1.13	3.30	0.30	0.75	3.52	3.52	3.84	1.60	0.64	0.64	0.64	0.80	1.44	1.28	0.48	2.10
A. affinis	TOTAL															0.15											0.00	0.01
D. leptchtenbergianum	TOTAL			0.75		1.88	4.89	1.88	5.64	0.56	1.88	0.19	0.14	1.45	0.06	0.15	0.32		0.32	2.56	0.32	2.88	0.64	3.52	1.76	0.32	0.16	0.60
H. gibberum	TOTAL	0.75	4.51			0.38	0.38	0.56	0.38	0.19		0.00	1.13	0.51			0.02	1.92	0.01	0.00		0.16	0.64	0.96	0.02	0.02	0.32	0.00
L. kindtii	TOTAL			0.01		0.38	0.01				0.02			0.01									0.02	0.01	0.00			0.00
P. pediculus	TOTAL					0.05	0.05	0.02	0.08	0.01	0.38	0.01		0.03						0.02					0.00	0.01		0.00
S. crystallina	TOTAL					0.05	0.09	0.09	0.09	0.19	0.75	0.38	0.05	0.11							0.02	0.00	0.04	0.04	0.02		0.00
D. pulex	TOTAL																						0.02			0.02	0.00
A. quadrangularis	TOTAL																										
C. lamellatus	TOTAL																										
A. harpae	TOTAL																										
I. serdicus	TOTAL								0.05					0.05													
O. gracilis	TOTAL												0.38	0.08								0.02					0.02
C. longispina	TOTAL																										
D. ambigua	TOTAL																										
L. setifera	TOTAL																										
M. relicta	TOTAL																										
Chaoborus sp	TOTAL					0.09	0.02					0.05		0.01					0.00			0.06	0.02					0.01
CYCLOPOIDA TOTAL	Ind.L^{-1}	86.29	17.12	29.36	0.18	74.07	74.26	9.86	9.08	2.27	47.01	37.89	50.95	38.55	8.50	88.77	224.33	200.32	97.92	83.10	116.30	118.76	69.06	4.48	13.12	20.68	87.45
	Ind.cm^{-3}	43.15	8.56	14.69	0.09	37.04	37.13	4.93	4.54	1.14	23.50	18.95	25.47	19.27	8.33	59.19	149.59	133.55	65.30	55.41	78.89	79.18	46.05	2.99	8.75	13.79	58.31
CALANOIDA TOTAL	Ind.L^{-1}	1.88	2.39	2.26	0.18	6.58	6.89	0.76	0.08	0.24	1.88	0.38	0.71	2.23		0.17	1.91	1.28	0.08	1.28	1.28	1.28	0.96	0.64	0.96	0.96	1.60
	Ind.cm^{-3}	0.94	2.14	1.88	0.09	3.29	2.89	0.38	0.04	0.12	0.94	0.19	0.36	1.12		0.11	1.27	0.85	0.05	0.85	0.85	0.85	0.64	0.43	0.64	0.64	1.07
CLADOCERA TOTAL	Ind.L^{-1}	10.54	14.05	12.94	0.03	9.59	14.34	8.33	14.39	3.77	13.66	7.50	19.93	11.25	0.40	0.38	0.43	2.40	0.64	4.00	7.68	10.80	10.57	5.58	4.04	2.96	6.76
	Ind.cm^{-3}	0.47	7.03	6.42	0.03	4.64	7.17	5.18	7.14	1.88	6.88	3.69	9.86	5.62	0.27	5.56	5.62	4.95	5.76	4.00	5.25	8.67	7.05	3.73	3.22	1.98	4.51
TOTAL	Ind.L^{-1}	107.11	35.45	44.98	0.42	90.03	94.50	17.08	23.42	6.28	62.80	46.76	71.88	50.08	8.90	87.47	224.43	200.39	108.80	88.78	125.12	132.10	80.46	10.75	18.46	23.88	95.30
	Ind.cm^{-3}	53.56	17.72	22.46	0.21	45.02	47.26	8.54	11.71	3.14	31.45	23.38	35.66	26.04	8.60	64.96	156.33	139.83	72.56	59.67	85.47	88.09	53.68	7.17	12.52	15.92	63.55

Appendix 1.8b. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5 m) and lower (5 – 18m) pelagic regions of Lake 377, 1989.

UPPER PELAGIC

SPECIES	REGION / MONTH / DATE / DAY / TOTAL DEPTH (m)	MAY 18 138 35.0	MAY 31 151 35.0	JUNE 15 166 35.0	JUNE 29 180 35.0	JULY 13 194 35.0	JULY 27 208 35.0	AUG 9 221 35.0	AUG 24 236 35.0	SEPT 7 250 35.0	SEPT 21 264 35.0	OCT 5 278 35.0	OCT 16 289 35.0	SEASON MEAN
C. b. thomasi	FEMALE	14.29	4.26	[illegible]					0.30	0.46	0.46		[illegible]	1.74
	FEMALE WITH EGG	[illegible]	[illegible]	[illegible]	0.04								[illegible]	[illegible]
	MALE	[illegible]	[illegible]									[illegible]	[illegible]	[illegible]
	COPEPODID I-V	[illegible]	48.82	32.83	18.54	13.98	3.34	[illegible]	1.92	[illegible]	2.43	[illegible]	[illegible]	[illegible]
	TOTAL	102.48	54.76	35.48	18.58	13.98	3.34	[illegible]	2.13	3.50	2.89	7.82	7.31	21.23
A. vernalis	FEMALE													
	FEMALE WITH EGG													
	MALE							[illegible]	[illegible]	[illegible]				[illegible]
	COPEPODID I-V							[illegible]	[illegible]	[illegible]			0.15	[illegible]
	TOTAL							[illegible]	[illegible]	[illegible]	0.61		0.15	[illegible]
M. edax	FEMALE			[illegible]		[illegible]								[illegible]
	FEMALE WITH EGG		[illegible]	[illegible]	[illegible]	[illegible]	0.01	[illegible]	0.02					[illegible]
	MALE				[illegible]	[illegible]		[illegible]						[illegible]
	COPEPODID I-V	[illegible]	[illegible]	0.36	[illegible]	[illegible]	1.22	[illegible]	2.13	[illegible]	1.06	0.61	[illegible]	[illegible]
	TOTAL	[illegible]	[illegible]		[illegible]	3.12	1.22	[illegible]	2.15	3.69	[illegible]		[illegible]	[illegible]
T. p. mexicanus	FEMALE													[illegible]
	FEMALE WITH EGG													
	MALE										0.15			
	COPEPODID I-V	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]
	TOTAL	[illegible]	0.61		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.61		0.15	[illegible]
M. albidus	TOTAL													
E. agilis	TOTAL													
C. v. rubellus	TOTAL													
D. minutus	FEMALE	[illegible]	0.61			[illegible]	[illegible]	[illegible]	0.46	0.15	0.15		0.15	[illegible]
	FEMALE WITH EGG	[illegible]	[illegible]	0.08		[illegible]	[illegible]	[illegible]						[illegible]
	MALE	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]					[illegible]
	COPEPODID I-V	[illegible]	[illegible]	3.04	2.13	[illegible]	[illegible]	[illegible]	[illegible]	0.91	[illegible]	1.52	[illegible]	[illegible]
	TOTAL	[illegible]	[illegible]	3.12	2.13	[illegible]	[illegible]	[illegible]	[illegible]	0.76	[illegible]	1.52	[illegible]	[illegible]
D. oregonensis	FEMALE	0.01	[illegible]		[illegible]	0.04	[illegible]	0.02	[illegible]		[illegible]	0.04	0.02	[illegible]
	FEMALE WITH EGG											0.04	0.03	[illegible]
	MALE													
	COPEPODID I-V													
	TOTAL													
D. sicilis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID I-V												[illegible]	[illegible]
	TOTAL												[illegible]	[illegible]
D. siciloides	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID I-V													
	TOTAL													
D. ashlandi	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID I-V													
	TOTAL													
S. calanoides	TOTAL													
E. lacustris	ADULT		[illegible]	0.11	[illegible]	0.08	[illegible]	0.04	[illegible]	[illegible]	[illegible]	[illegible]	0.04	[illegible]
	JUVENILE		[illegible]		[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	TOTAL		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CYCLOPOID NAUPLII	NI-NVI	28.79	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CALANOID NAUPLII	NI-NVI	0.51	[illegible]	1.82	5.47	17.83	3.65	6.63	2.26	0.61	0.30	0.91	1.22	[illegible]
D. retrocurva	FEMALE		[illegible]											[illegible]
	FEMALE WITH EGG			0.15										[illegible]
	MALE													[illegible]
	JUVENILE		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]						[illegible]
	TOTAL		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]						[illegible]
D. g. mendotae	FEMALE		0.30	[illegible]	[illegible]	[illegible]	1.22	[illegible]	0.61	[illegible]	[illegible]		[illegible]	[illegible]
	FEMALE WITH EGG			[illegible]	1.82	1.22		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	MALE											[illegible]	[illegible]	[illegible]
	JUVENILE		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL		[illegible]	[illegible]	7.60	4.26	5.34	2.66	2.58	2.78	1.28	1.03	0.76	[illegible]
D. longiremis	FEMALE	1.22	[illegible]	0.30										[illegible]
	FEMALE WITH EGG	0.30	[illegible]											[illegible]
	MALE													
	JUVENILE	[illegible]	[illegible]	[illegible]					[illegible]					[illegible]
	TOTAL	[illegible]	[illegible]	1.52					[illegible]					[illegible]
D. parvula	FEMALE	[illegible]	0.04											[illegible]
	FEMALE WITH EGG													
	MALE													
	JUVENILE	[illegible]												[illegible]
	TOTAL	0.15	0.04											[illegible]
D. schoedleri	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
C. lacustris	TOTAL													
C. sphaericus	TOTAL	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
B. longirostris	AD+JUV	2.74	[illegible]	4.86	2.74	1.22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		0.15	1.66
	FEMALE WITH EGG													
	TOTAL	2.74	8.21	4.86	2.74	1.22	0.61	0.61	0.61	0.46	0.15		0.15	1.66
A. affinis	TOTAL													
D. leuchtenbergianum	TOTAL		0.61	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.30	2.58	[illegible]
H. gibberum	TOTAL			[illegible]	[illegible]		[illegible]		[illegible]	[illegible]				[illegible]
L. kindtii	TOTAL	0.01	0.30	[illegible]	[illegible]	0.34	[illegible]	0.23	[illegible]	[illegible]				[illegible]
P. pediculus	TOTAL			[illegible]			[illegible]			[illegible]	0.04			[illegible]
S. crystallina	TOTAL													
D. pulex	TOTAL													
A. quadrangularis	TOTAL													
E. lamellatus	TOTAL													
A. harpae	TOTAL													
I. sordidus	TOTAL													
O. gracilis	TOTAL													
E. longispina	TOTAL		0.61	0.61	0.30	0.61	1.22	0.61	1.67	3.34	2.43	2.74	1.67	1.44
P. ambiguus	TOTAL		0.11											0.11
L. setifera	TOTAL													
M. relicta	TOTAL													
Chaoborus sp	TOTAL					0.08		0.08						0.01
CYCLOPOIDA TOTAL	Ind.L-1	133.18	91.28	84.32	29.30	38.38	13.38	13.18	10.38	9.01	5.02	10.34	9.14	37.24
	Ind.cm-2	66.60	45.64	42.16	14.65	19.19	6.69	6.60	5.19	4.50	2.51	5.17	4.57	18.62
CALANOIDA TOTAL	Ind.L-1	10.38	17.29	5.05	7.99	22.34	7.94	9.74	4.91	2.17	1.03	2.24	1.28	7.70
	Ind.cm-2	5.19	8.65	2.53	3.99	11.12	3.97	4.87	2.45	1.08	0.52	1.12	0.64	3.85
CLADOCERA TOTAL	Ind.L-1	6.24	20.22	20.31	21.39	13.72	10.22	9.65	11.23	9.14	6.05	11.06	5.17	12.03
	Ind.cm-2	3.12	10.11	10.16	10.70	6.86	5.11	4.83	5.61	4.57	3.02	5.53	2.58	6.02
TOTAL	Ind.L-1	149.81	128.78	109.69	58.67	74.52	31.55	32.66	26.49	20.31	12.11	23.64	15.58	56.98
	Ind.cm-2	74.91	64.39	54.85	29.34	37.26	15.77	16.33	13.25	10.15	6.05	11.82	7.79	28.49

LOWER PELAGIC

SPECIES	REGION / MONTH / DATE / DAY / TOTAL DEPTH (m)	MAY 18 138 52.0	MAY 31 151 56.1	JUNE 15 166 56.1	JUNE 29 180 56.1	JULY 13 194 56.1	JULY 27 208 56.1	AUG 9 221 56.1	AUG 24 236 56.1	SEPT 7 250 56.1	SEPT 21 264 56.1	OCT 5 278 56.1	OCT 16 289 56.1	SEASON MEAN
C. b. thomasi	FEMALE	0.58	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]			[illegible]	0.36	[illegible]
	FEMALE WITH EGG		[illegible]	[illegible]	0.02	[illegible]	[illegible]		[illegible]			[illegible]		[illegible]
	MALE	1.92	[illegible]			[illegible]	[illegible]					[illegible]		[illegible]
	COPEPODID I-V	[illegible]	[illegible]	58.79	45.72	[illegible]	[illegible]	24.84	20.88	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL	47.62	45.82	[illegible]	45.74	31.73	19.11	25.87	21.42	23.30	24.88	9.54	4.41	20.81
A. vernalis	FEMALE													[illegible]
	FEMALE WITH EGG													[illegible]
	MALE							[illegible]		[illegible]			0.09	[illegible]
	COPEPODID I-V							[illegible]	0.18	[illegible]		0.18		[illegible]
	TOTAL			0.18				[illegible]	0.18	[illegible]		0.18	0.09	[illegible]
M. edax	FEMALE						[illegible]							[illegible]
	FEMALE WITH EGG			0.05		0.05		0.18	[illegible]					[illegible]
	MALE													[illegible]
	COPEPODID I-V	[illegible]		0.05		0.05	[illegible]	0.18	[illegible]	[illegible]	1.44	[illegible]	[illegible]	[illegible]
	TOTAL	[illegible]					[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T. p. mexicanus	FEMALE													
	FEMALE WITH EGG													
	MALE												0.18	[illegible]
	COPEPODID I-V			[illegible]			0.36		0.36		[illegible]	[illegible]		[illegible]
	TOTAL			[illegible]			0.36		0.36		[illegible]	[illegible]	0.27	[illegible]
M. albidus	TOTAL													
E. agilis	TOTAL													
C. v. rubellus	TOTAL													
D. minutus	FEMALE	[illegible]	0.01	0.36	[illegible]	[illegible]	0.72		[illegible]	0.72			[illegible]	[illegible]
	FEMALE WITH EGG							0.02			0.00			[illegible]
	MALE			[illegible]								[illegible]	[illegible]	[illegible]
	COPEPODID I-V	0.07	[illegible]	[illegible]	[illegible]	[illegible]	1.08	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL			3.24	4.23	[illegible]		[illegible]	2.62	3.60	[illegible]	[illegible]	[illegible]	[illegible]
D. oregonensis	FEMALE									[illegible]	[illegible]	[illegible]	0.02	[illegible]
	FEMALE WITH EGG			0.18	0.36	[illegible]		0.02		[illegible]	[illegible]	[illegible]	0.04	[illegible]
	MALE													
	COPEPODID I-V					0.02								
	TOTAL					0.02								
D. sicilis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID I-V												[illegible]	[illegible]
	TOTAL												[illegible]	[illegible]
D. siciloides	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID I-V													
	TOTAL													
D. ashlandi	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID I-V													
	TOTAL													
S. calanoides	TOTAL	0.00			[illegible]									[illegible]
E. lacustris	ADULT		[illegible]	[illegible]	[illegible]	0.07	[illegible]	0.05	[illegible]	0.14	[illegible]	0.09	0.01	[illegible]
	JUVENILE		[illegible]	[illegible]	[illegible]		[illegible]		[illegible]		[illegible]			[illegible]
	TOTAL		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.14	[illegible]	[illegible]	[illegible]	[illegible]
CYCLOPOID NAUPLII	NI-NVI	20.54	[illegible]	[illegible]	108.20	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]			[illegible]
CALANOID NAUPLII	NI-NVI	0.58	[illegible]	[illegible]	3.24	1.44	[illegible]	[illegible]	24.84	18.08	15.12	7.38	4.86	[illegible]
D. retrocurva	FEMALE			[illegible]										[illegible]
	FEMALE WITH EGG													[illegible]
	MALE				[illegible]									[illegible]
	JUVENILE		[illegible]	[illegible]	[illegible]	[illegible]								[illegible]
	TOTAL		[illegible]	[illegible]	[illegible]	[illegible]	1.08							[illegible]
D. g. mendotae	FEMALE			0.18				[illegible]	[illegible]	0.36	[illegible]	[illegible]		[illegible]
	FEMALE WITH EGG							[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
	MALE													[illegible]
	JUVENILE			[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL	0.01	0.54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D. longiremis	FEMALE			[illegible]			[illegible]			[illegible]	[illegible]			[illegible]
	FEMALE WITH EGG													[illegible]
	MALE													[illegible]
	JUVENILE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]			[illegible]
	TOTAL	[illegible]	[illegible]	[illegible]	3.88	[illegible]	2.18	3.86	0.18	[illegible]	[illegible]	0.38	0.48	[illegible]
D. parvula	FEMALE		0.00							0.36				0.03
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. schoedleri	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
C. lacustris	TOTAL											[illegible]		[illegible]
C. sphaericus	TOTAL	0.19		[illegible]		[illegible]	[illegible]	[illegible]	0.18	0.36	[illegible]			[illegible]
B. longirostris	AD+JUV		1.62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			[illegible]
	FEMALE WITH EGG													
	TOTAL	[illegible]	1.62	[illegible]	[illegible]	1.08	0.72	0.90	[illegible]		0.18			[illegible]
A. affinis	TOTAL													
D. leuchtenbergianum	TOTAL		0.05	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	2.10	[illegible]	[illegible]	0.72	[illegible]
H. gibberum	TOTAL			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.00	[illegible]			[illegible]
L. kindtii	TOTAL		0.01	[illegible]					[illegible]					[illegible]
P. pediculus	TOTAL					0.05			[illegible]	0.00	0.00			[illegible]
S. crystallina	TOTAL													
D. pulex	TOTAL													
A. quadrangularis	TOTAL													
E. lamellatus	TOTAL													
A. harpae	TOTAL													
I. sordidus	TOTAL													
O. gracilis	TOTAL													
E. longispina	TOTAL		0.90	0.90	1.80	1.08	1.08	0.36	0.90	0.36	0.90	3.24	1.53	1.19
P. ambiguus	TOTAL													
L. setifera	TOTAL													
M. relicta	TOTAL													
Chaoborus sp	TOTAL					0.03	0.04	0.05	0.01	0.00	0.00			0.01
CYCLOPOIDA TOTAL	Ind.L-1	68.18	165.44	165.35	151.94	122.13	88.60	82.87	47.70	43.92	41.76	18.36	8.72	83.83
	Ind.cm-2	45.46	110.30	110.24	101.30	81.42	59.06	55.25	31.80	29.28	27.84	12.24	5.49	55.89
CALANOIDA TOTAL	Ind.L-1	0.46	0.74	4.43	5.20	2.00	2.61	1.71	2.82	3.76	3.47	5.03	1.13	2.99
	Ind.cm-2	0.31	0.50	2.96	3.47	1.34	1.74	1.14	1.94	2.51	2.31	2.55	0.76	1.79
CLADOCERA TOTAL	Ind.L-1	0.23	4.55	21.19	23.45	17.33	6.86	6.86	7.58	6.85	6.33	5.84	3.06	8.18
	Ind.cm-2	0.15	3.04	14.12	15.63	11.55	4.58	4.58	5.06	4.57	4.22	3.89	2.04	6.12
TOTAL	Ind.L-1	68.88	170.75	190.99	180.59	141.49	98.11	91.49	58.22	54.53	51.58	28.93	13.91	95.71
	Ind.cm-2	45.93	113.66	127.34	120.42	94.35	65.42	61.01	38.82	36.36	34.38	18.69	9.28	63.82

Appendix 1.8c. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 - 5 m) and lower (5 - 18 m) pelagic regions of Lake 377, 1990.

UPPER PELAGIC

SPECIES	REGION / MONTH / DATE / DAY / TOTAL DEPTH (m)	MAY 9 129 35.0	MAY 23 143 35.0	JUNE 6 157 35.0	JUNE 20 171 35.0	JULY 4 185 35.0	JULY 18 199 35.0	AUG 1 213 35.0	AUG 15 227 35.0	AUG 29 241 35.0	SEPT 12 255 35.0	SEPT 26 269 35.0	OCT 10 283 35.0	OCT 22 295 35.0	SEASON MEAN
C. b. thomasi	FEMALE	15.90	6.53	0.28									0.85	1.70	1.84
	FEMALE WITH EGG	0.57	0.07	0.07											0.05
	MALE	4.54	0.28	0.26	0.57									2.84	0.66
	COPEPODID I-V	20.73	15.90	7.10	7.38	10.22	1.14	0.85	1.70		0.57	1.42	2.56	4.26	5.88
	TOTAL	41.75	22.79	7.74	7.95	10.22	1.14	0.85	1.70		0.57	1.42	3.41	8.80	8.33
A. vernalis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V				[illegible]	[illegible]		[illegible]		[illegible]					[illegible]
	TOTAL				[illegible]	[illegible]		[illegible]		[illegible]					[illegible]
M. edax	FEMALE			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					[illegible]
	FEMALE WITH EGG		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					[illegible]
	MALE		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]
	COPEPODID I-V	0.57	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.70	1.14	0.28	[illegible]
	TOTAL	0.57	[illegible]	0.09	0.31	[illegible]	1.30	[illegible]	[illegible]	[illegible]	[illegible]	1.70	1.14	0.28	[illegible]
T. p. mexicanus	FEMALE		[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.42	0.28	[illegible]
	FEMALE WITH EGG		[illegible]	[illegible]		[illegible]		0.04							[illegible]
	MALE					[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	COPEPODID I-V			[illegible]	[illegible]	[illegible]	[illegible]	1.42	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	TOTAL		0.32	[illegible]	[illegible]	2.02	2.84	2.59	2.56	4.26	2.56	2.56	1.42	0.28	1.71
M. albidus	TOTAL														
E. agilis	TOTAL														
C. v. rubellus	TOTAL														
D. minutus	FEMALE		[illegible]		0.85	0.18	[illegible]	[illegible]		0.28	0.57			0.28	0.19
	FEMALE WITH EGG	0.01	[illegible]				[illegible]	[illegible]	[illegible]						[illegible]
	MALE	0.04	[illegible]	[illegible]		0.11	[illegible]	[illegible]	[illegible]						[illegible]
	COPEPODID I-V			[illegible]	[illegible]			[illegible]	[illegible]	[illegible]			[illegible]	2.56	[illegible]
	TOTAL	0.04	0.02	1.43	1.14	0.28	0.25	0.78	0.60	[illegible]	0.57		0.28	2.84	[illegible]
D. oregonensis	FEMALE									[illegible]					[illegible]
	FEMALE WITH EGG									[illegible]					[illegible]
	MALE						0.04	[illegible]							[illegible]
	COPEPODID I-V							[illegible]				[illegible]	[illegible]	0.04	[illegible]
	TOTAL						0.04	0.02		0.04		[illegible]	[illegible]	0.04	[illegible]
D. sicilis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V	[illegible]												0.28	[illegible]
	TOTAL	[illegible]												0.28	[illegible]
D. siciloides	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V														
	TOTAL														
D. ashlandi	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V														
	TOTAL														
S. calanoides	TOTAL														
E. lacustris	ADULT			[illegible]	0.28	0.04	0.01	0.01	0.11	[illegible]	[illegible]	[illegible]	0.02	0.01	[illegible]
	JUVENILE		[illegible]	[illegible]						[illegible]	[illegible]	[illegible]			[illegible]
	TOTAL		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CYCLOPOID NAUPLII	NI-NVI	35.78	89.18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.42	[illegible]	[illegible]	[illegible]	14.24
CALANOID NAUPLII	NI-NVI	0.85	5.40	1.70	1.78	2.27	3.88	2.27	2.27	0.57		0.28	0.28	0.28	1.68
D. retrocurva	FEMALE														
	FEMALE WITH EGG														
	MALE												0.28		[illegible]
	JUVENILE					[illegible]							[illegible]		[illegible]
	TOTAL					[illegible]							[illegible]		[illegible]
D. g. mendotae	FEMALE			[illegible]	[illegible]	[illegible]	0.57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.42	[illegible]
	FEMALE WITH EGG												[illegible]	0.85	[illegible]
	MALE														[illegible]
	JUVENILE			[illegible]	[illegible]	[illegible]	[illegible]					[illegible]			[illegible]
	TOTAL	0.07	[illegible]	1.17	2.56	7.10	4.83	1.60	1.53	1.18	0.53	1.60	0.19	2.27	[illegible]
D. longiremis	FEMALE									0.04					[illegible]
	FEMALE WITH EGG														
	MALE														
	JUVENILE	[illegible]	[illegible]							0.04				[illegible]	[illegible]
	TOTAL	0.11	[illegible]											[illegible]	[illegible]
D. parvula	FEMALE		[illegible]												[illegible]
	FEMALE WITH EGG														
	MALE														
	JUVENILE		[illegible]												[illegible]
	TOTAL		1.14												[illegible]
D. schoedleri	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL														
C. lacustris	TOTAL														
C. sphaericus	TOTAL		[illegible]			[illegible]	[illegible]					0.01			[illegible]
B. longirostris	AD+JUV		[illegible]	1.14	1.14	1.42	0.85	0.28	[illegible]	0.28				0.28	[illegible]
	FEMALE WITH EGG	0.04	[illegible]	[illegible]											[illegible]
	TOTAL	0.04	0.36	1.99	1.14	1.42	0.85	0.28	0.60	0.28				0.28	[illegible]
A. affinis	TOTAL												0.04		[illegible]
D. leuchtenbergianum	TOTAL	1.42	2.84	10.51	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.11	2.27	[illegible]	[illegible]
H. gibberum	TOTAL			0.01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]
L. kindtii	TOTAL						[illegible]		[illegible]	[illegible]	[illegible]				[illegible]
P. pediculus	TOTAL														
S. crystallina	TOTAL						[illegible]			[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
D. pulex	TOTAL										1.99	1.42	2.84	3.88	[illegible]
A. quadrangularis	TOTAL													[illegible]	[illegible]
E. lamellatus	TOTAL														
A. harpae	TOTAL														
I. sordidus	TOTAL														
O. gracilis	TOTAL														
E. longispina	TOTAL					0.01									0.01
P. ambigua	TOTAL														
L. setifera	TOTAL														
M. relicta	TOTAL														
Chaoborus sp	TOTAL														
CYCLOPOIDA TOTAL	Ind.L-1	78.10	112.58	16.95	18.76	20.20	10.96	10.25	15.44	13.70	6.85	6.53	6.82	14.46	25.38
	Ind.cm-2	39.05	56.29	8.47	9.38	10.10	5.48	5.12	7.72	6.85	3.43	3.27	3.41	7.24	12.68
CALANOIDA TOTAL	Ind.L-1	1.18	5.70	5.18	3.12	2.60	4.27	3.09	2.98	1.48	0.75	1.03	0.60	3.45	2.73
	Ind.cm-2	0.59	2.85	2.60	1.56	1.30	2.13	1.54	1.49	0.74	0.38	0.51	0.30	1.73	1.36
CLADOCERA TOTAL	Ind.L-1	1.56	5.22	13.87	17.94	20.04	18.35	4.59	5.42	6.11	4.72	8.17	5.63	10.30	9.38
	Ind.cm-2	0.78	2.61	6.94	8.97	10.02	9.18	2.30	2.71	3.06	2.36	4.09	2.82	5.15	4.68
TOTAL	Ind.L-1	80.84	123.50	35.81	37.85	42.83	33.58	17.93	23.84	21.28	12.33	15.73	13.05	28.23	37.45
	Ind.cm-2	40.42	61.75	17.91	18.93	21.42	16.79	8.96	11.92	10.64	6.16	7.87	6.52	14.11	18.72

LOWER PELAGIC

SPECIES	REGION / MONTH / DATE / DAY / TOTAL DEPTH (m)	MAY 9 129 58.5	MAY 23 143 58.5	JUNE 6 157 58.5	JUNE 20 171 58.5	JULY 4 185 58.5	JULY 18 199 58.5	AUG 1 213 58.5	AUG 15 227 58.5	AUG 29 241 58.5	SEPT 12 255 58.5	SEPT 26 269 58.5	OCT 10 283 58.5	OCT 22 295 58.5	SEASON MEAN
C. b. thomasi	FEMALE	1.72	1.72	0.69	0.72			0.17	0.17	0.17	0.17	0.86	0.52	1.03	0.01
	FEMALE WITH EGG	0.00	0.17	0.02	0.36	0.04	0.02		0.17					0.17	0.07
	MALE	1.03	0.69	0.34	0.38	0.04	0.02	0.17	0.02	0.34	0.52	1.20	2.08	2.41	0.71
	COPEPODID I-V	[illegible]	33.71	53.32	[illegible]	38.46	20.96	17.03	21.87	13.24	[illegible]	[illegible]	[illegible]	5.68	23.05
	TOTAL	7.57	36.29	54.37	68.40	38.55	21.03	17.37	22.04	13.76	8.94	11.01	11.18	8.28	24.45
A. vernalis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V				0.02		0.17								[illegible]
	TOTAL				0.02		[illegible]		[illegible]						[illegible]
M. edax	FEMALE		0.00				[illegible]		[illegible]	0.34	[illegible]		0.00		[illegible]
	FEMALE WITH EGG						[illegible]	0.04			[illegible]				[illegible]
	MALE			0.02					[illegible]						[illegible]
	COPEPODID I-V		[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.24	1.55	[illegible]
	TOTAL		[illegible]	0.02			0.04	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.24	[illegible]	[illegible]
T. p. mexicanus	FEMALE								[illegible]	1.03	[illegible]	[illegible]	2.24	1.72	[illegible]
	FEMALE WITH EGG						0.02	[illegible]	[illegible]						[illegible]
	MALE							[illegible]	0.52	0.52		[illegible]		0.34	[illegible]
	COPEPODID I-V						[illegible]	[illegible]			[illegible]	[illegible]	[illegible]		[illegible]
	TOTAL						[illegible]	[illegible]	0.69	1.55	1.03	1.89	2.02	2.06	[illegible]
M. albidus	TOTAL														
E. agilis	TOTAL														
C. v. rubellus	TOTAL														
D. minutus	FEMALE				[illegible]	[illegible]	[illegible]		0.02		0.17			0.06	[illegible]
	FEMALE WITH EGG				[illegible]	[illegible]	[illegible]								[illegible]
	MALE	0.17	0.02	[illegible]	[illegible]	0.15	[illegible]	[illegible]						[illegible]	[illegible]
	COPEPODID I-V			[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL	0.17	0.02	0.73	0.54	0.28	0.30	[illegible]	0.71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D. oregonensis	FEMALE							[illegible]		[illegible]	[illegible]	0.17	[illegible]	[illegible]	[illegible]
	FEMALE WITH EGG							[illegible]							[illegible]
	MALE														[illegible]
	COPEPODID I-V		[illegible]						[illegible]	[illegible]		[illegible]	0.04	[illegible]	[illegible]
	TOTAL		0.17					0.04	0.34	0.04	0.04	0.30	0.11	0.11	0.08
D. sicilis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V														
	TOTAL														
D. siciloides	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V														
	TOTAL														
D. ashlandi	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID I-V														
	TOTAL														
S. calanoides	TOTAL														
E. lacustris	ADULT			0.06	[illegible]	0.02	0.11	0.09	0.01	[illegible]	[illegible]		0.03	0.03	[illegible]
	JUVENILE				[illegible]					[illegible]	[illegible]				[illegible]
	TOTAL			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
CYCLOPOID NAUPLII	NI-NVI	13.42	172.34	106.36	127.44	116.96	[illegible]	[illegible]	28.38	12.60	4.64	8.43	[illegible]	18.15	[illegible]
CALANOID NAUPLII	NI-NVI	0.34	0.17				0.17	[illegible]		0.34		0.17	[illegible]	[illegible]	[illegible]
D. retrocurva	FEMALE				[illegible]	[illegible]		0.17					0.17	[illegible]	[illegible]
	FEMALE WITH EGG				[illegible]	[illegible]								[illegible]	[illegible]
	MALE														
	JUVENILE					[illegible]									
	TOTAL				0.11	1.48	[illegible]	0.17	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
D. g. mendotae	FEMALE			0.02	0.36	0.04	[illegible]	0.17	[illegible]	0.86	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	FEMALE WITH EGG														[illegible]
	MALE														[illegible]
	JUVENILE				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL	[illegible]	[illegible]	[illegible]	0.72	[illegible]	2.48	1.85	[illegible]	0.71	[illegible]	0.73	[illegible]	[illegible]	[illegible]
D. longiremis	FEMALE	[illegible]	[illegible]	[illegible]	0.05	[illegible]	0.06	0.17	[illegible]	0.00	[illegible]	0.02	[illegible]	[illegible]	[illegible]
	FEMALE WITH EGG														
	MALE														[illegible]
	JUVENILE	[illegible]	[illegible]	[illegible]	0.05	[illegible]	0.06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	TOTAL	0.01	0.00	0.45		0.02		0.69	1.25	[illegible]	0.54	0.71	1.57	1.04	[illegible]
D. parvula	FEMALE									0.17					[illegible]
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL		0.00			0.02				0.17					0.02
D. schoedleri	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL														
C. lacustris	TOTAL														
C. sphaericus	TOTAL											[illegible]			[illegible]
B. longirostris	AD+JUV				0.36	[illegible]	0.17				0.17	[illegible]		0.34	[illegible]
	FEMALE WITH EGG					[illegible]									[illegible]
	TOTAL				0.36	1.72	0.17				0.17	[illegible]		0.34	[illegible]
A. affinis	TOTAL							[illegible]		[illegible]		[illegible]			[illegible]
D. leuchtenbergianum	TOTAL	0.17	0.17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.86	[illegible]	1.55	4.64	[illegible]
H. gibberum	TOTAL			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					[illegible]
L. kindtii	TOTAL						0.08	[illegible]							[illegible]
P. pediculus	TOTAL										[illegible]				[illegible]
S. crystallina	TOTAL					[illegible]									[illegible]
D. pulex	TOTAL					[illegible]	0.17	0.17	0.17	0.17	0.17	1.03	3.44	4.82	0.78
A. quadrangularis	TOTAL														
E. lamellatus	TOTAL														
A. harpae	TOTAL														
I. sordidus	TOTAL														
O. gracilis	TOTAL														
E. longispina	TOTAL														
P. ambigua	TOTAL														
L. setifera	TOTAL														
M. relicta	TOTAL														
Chaoborus sp	TOTAL					0.34	0.02	0.11	0.00		0.00			0.00	0.04
CYCLOPOIDA TOTAL	Ind.L-1	20.88	208.81	160.69	195.86	153.51	84.54	63.40	51.89	29.24	16.60	22.70	26.32	23.05	82.13
	Ind.cm-2	14.00	139.24	107.15	130.61	102.37	63.04	42.28	34.67	19.50	11.07	15.14	17.55	15.37	54.77
CALANOIDA TOTAL	Ind.L-1	0.52	0.37	0.80	0.27	0.30	0.58	2.02	1.06	2.15	1.61	2.18	1.35	1.34	1.16
	Ind.cm-2	0.34	0.24	0.53	0.51	0.20	0.39	1.35	0.71	1.43	1.08	1.46	0.90	0.89	0.77
CLADOCERA TOTAL	Ind.L-1	0.19	0.22	10.47	18.16	10.04	8.26	6.08	4.09	1.78	2.41	3.01	8.54	12.82	6.70
	Ind.cm-2	0.13	0.15	6.98	12.11	6.70	5.51	4.06	2.67	1.18	1.61	2.01	5.69	8.65	4.48
TOTAL	Ind.L-1	21.70	209.40	171.96	214.78	164.20	103.38	71.62	57.06	33.17	20.63	28.81	36.20	37.37	90.03
	Ind.cm-2	14.47	139.64	114.67	143.23	109.46	68.95	47.76	38.05	22.12	13.76	19.21	24.14	24.92	60.05

Appendix 1.9a. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral region of Lake 377, 1988 and 1989.

SPECIES	MONTH / DATE / DAY / TOTAL DEPTH (m)	1988 MAY 10 131 24.0	MAY 26 147 24.0	JUNE 9 161 24.0	JUNE 23 175 24.0	JULY 6 188 24.0	JULY 20 202 24.0	AUG 3 216 24.0	AUG 17 230 24.0	AUG 31 244 24.0	SEPT 7 251 24.0	SEPT 22 266 24.0	OCT 12 286 24.0	SEASON MEAN	1989 MAY 18 138 25.6	MAY 31 151 25.2	JUNE 15 166 25.2	JUNE 29 180 25.2	JULY 13 194 25.2	JULY 27 208 25.2	AUG 9 221 25.2	AUG 24 236 25.2	SEPT 7 250 25.2	SEPT 21 264 25.2	OCT 5 278 25.2	OCT 16 289 25.2	SEASON MEAN
C. b. thomasi	FEMALE	[illegible]	1.33			0.06						0.22		[illegible]	[illegible]	3.82							0.01		0.21	0.64	[illegible]
	FEMALE WITH EGG / MALE / COPEPODID I-V	[illegible]	[illegible]									[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.02						[illegible]			[illegible]	[illegible]
A. vernalis	TOTAL / FEMALE	20.42	[illegible]		1.78	[illegible]		[illegible]	[illegible]	2.44	4.22	[illegible]	11.10	4.30	[illegible]	20.99	5.53	2.33	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	2.76	4.03	[illegible]
	FEMALE WITH EGG / MALE / COPEPODID I-V / TOTAL				[illegible]				[illegible]					[illegible]					[illegible]				[illegible]				[illegible]
M. edax	FEMALE / FEMALE WITH EGG		0.02	0.01	[illegible]	0.44	[illegible]		[illegible]	0.06	[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	[illegible]	0.05		[illegible]	[illegible]			[illegible]	[illegible]
	MALE		0.06											[illegible]													[illegible]
T. p. mexicanus	COPEPODID I-V / TOTAL / FEMALE	[illegible]	[illegible]	0.01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	0.42	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.48	1.27	[illegible]	[illegible]	[illegible]	[illegible]
	FEMALE WITH EGG / MALE / COPEPODID I-V		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				0.21		[illegible]
M. albidus / E. agilis	TOTAL		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	1.25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
C. v. rubellus	TOTAL											0.01		[illegible]													[illegible]
D. minutus	TOTAL / FEMALE	0.44		0.04	[illegible]	[illegible]		0.22	[illegible]	0.06		0.01		[illegible]		[illegible]			[illegible]	0.42	[illegible]	0.21	0.01				[illegible]
	FEMALE WITH EGG / MALE	0.44	[illegible]			[illegible]	[illegible]	[illegible]		0.22		[illegible]	0.11	[illegible]	0.01	[illegible]			[illegible]	[illegible]	[illegible]		[illegible]				[illegible]
D. oregonensis	COPEPODID I-V / TOTAL / FEMALE	0.89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.44	0.28		[illegible]	0.11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
	FEMALE WITH EGG / MALE / COPEPODID I-V / TOTAL									[illegible]		[illegible]		[illegible]		[illegible]								[illegible]	[illegible]		[illegible]
D. sicilia	FEMALE / FEMALE WITH EGG							0.22						[illegible]	0.01												0.00
	MALE / COPEPODID I-V / TOTAL										[illegible]		[illegible]	[illegible]													
D. ashlandi	FEMALE / FEMALE WITH EGG							0.22							0.01												0.00
	MALE / COPEPODID I-V / TOTAL																										
S. calanoides	TOTAL																										
E. lacustris	TOTAL / ADULT						0.11							[illegible]													[illegible]
	JUVENILE / TOTAL	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
CYCLOPOID NAUPLII	NI-NVI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.88	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.38	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
CALANOID NAUPLII	NI-NVI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.69	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	16.14	11.45		11.87	18.92	[illegible]	[illegible]	[illegible]	[illegible]	0.64	[illegible]	[illegible]	[illegible]
D. retrocurva	FEMALE / FEMALE WITH EGG / MALE / JUVENILE / TOTAL										[illegible]	[illegible]	[illegible]	[illegible]													
D. g. mendotae	FEMALE		0.01				[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	0.05	[illegible]		[illegible]				0.21				0.02	[illegible]
	FEMALE WITH EGG / MALE									0.01				[illegible]													
	JUVENILE											[illegible]	0.17	[illegible]													
D. longiremis	TOTAL / FEMALE		[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	1.12	[illegible]	[illegible]	0.61	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	FEMALE WITH EGG / MALE / JUVENILE / TOTAL														[illegible]												
D. parvula	FEMALE						0.44				0.06	[illegible]		[illegible]	[illegible]		0.01			[illegible]						[illegible]	[illegible]
	FEMALE WITH EGG																				0.01						
D. ambigua	TOTAL / FEMALE						0.44							0.04						0.01	0.01						
	FEMALE WITH EGG / MALE / JUVENILE / TOTAL															0.01											[illegible]
C. lacustris	TOTAL			0.01									0.02	[illegible]		0.01			0.01	0.01						0.05	[illegible]
C. sphaericus	TOTAL	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]						[illegible]	[illegible]	0.05		[illegible]
B. longirostris	AD+JUV / FEMALE WITH EGG	[illegible]	4.44	6.66	1.33	0.89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.08	[illegible]	[illegible]	[illegible]	[illegible]	1.70	2.33	0.64	0.42	0.85	[illegible]	[illegible]		0.64	[illegible]
	TOTAL	1.33	4.44	6.66	1.33	0.89	[illegible]	[illegible]	4.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.72	[illegible]	5.51	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
E. longispina / A. affinis	TOTAL							[illegible]	0.06		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A. quadrangula / D. leuchtenbergianum	TOTAL	0.44			[illegible]	[illegible]	[illegible]	[illegible]	0.89	[illegible]	0.67	[illegible]	[illegible]	[illegible]		0.21	[illegible]	[illegible]	[illegible]	0.21	0.21	1.27	[illegible]	0.21	[illegible]	0.85	[illegible]
H. gibberum / L. kindtii	TOTAL		0.06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.02	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					[illegible]		[illegible]
P. pediculus / S. crystallina	TOTAL	0.44	0.06	[illegible]	[illegible]	0.44	0.17	[illegible]		[illegible]	0.02	[illegible]	0.01	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.01	[illegible]	0.01		[illegible]
E. lamellatus / A. harpae	TOTAL													[illegible]												0.01	[illegible]
A. sordidus	TOTAL					0.01			0.01					[illegible]										0.21		0.21	[illegible]
O. gracilis / E. longispina	TOTAL											0.01		[illegible]		0.06											[illegible]
D. ambigua / L. setifera	TOTAL																								0.01		0.00
M. relicta / Chaoborus sp / Gammarus sp	TOTAL																					0.01					0.00
CYCLOPOIDA TOTAL	Ind.L-1 / Ind.cm-2	58.61	5.41	4.41	19.26	21.42	23.03	21.33	28.02	6.56	6.67	18.72	11.99	18.45	74.97	31.18	9.61	14.81	19.35	3.88	7.04	4.66	3.41	1.27	4.89	7.88	16.12
CALANOIDA TOTAL	Ind.L-1 / Ind.cm-2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CLADOCERA TOTAL	Ind.L-1 / Ind.cm-2	[illegible]	11.00	16.84	11.89	8.16	17.85	16.41	17.28	22.27	7.17	10.52	2.56	12.54	6.78	34.87	16.84	17.67	10.87	4.67	6.40	6.52	6.67	8.46	8.52	6.78	11.38
TOTAL	Ind.L-1	64.39	11.82	14.17	33.13	38.45	43.48	33.83	35.88	17.82	19.89	21.60	13.62	29.29	98.45	62.92	22.48	34.44	41.83	12.16	19.06	19.45	8.13	5.29	9.79	10.54	27.69
	Ind.cm-2	154.39	28.37	34.02	79.52	92.28	104.38	81.20	86.10	46.84	28.37	51.84	32.69	67.67	248.36	150.56	56.68	86.78	104.88	30.64	45.92	28.34	20.48	13.33	24.42	28.55	76.27

Appendix 1.9b. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral region of Lake 377, 1990.

	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	9	23	6	20	4	18	1	15	29	12	26	10	22	MEAN
	DAY	129	143	157	171	185	199	213	227	241	255	269	283	295	
	TOTAL DEPTH (m)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
SPECIES															
C. b. thomasi	FEMALE	4.58	2.08	1.66									0.42	2.08	0.83
	FEMALE WITH EGG	0.03	0.05	0.01											0.01
	MALE	3.74	0.21	0.83	0.05							0.05	0.42	1.66	0.54
	COPEPODID 1-V	11.23	1.66	4.99	1.66	1.25	0.42					2.50	4.99	2.08	2.37
	TOTAL	19.58	4.00	7.50	1.72	1.25	0.42					2.55	5.82	5.82	3.74
A. vernalis	FEMALE				0.01										0.00
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V			0.42	0.42	0.42									0.10
	TOTAL			0.42	0.43	0.42									0.10
M. edax	FEMALE					0.01	0.01	0.05	0.01		0.01				0.01
	FEMALE WITH EGG			0.01					0.01						0.00
	MALE			0.01		0.02				0.01					0.00
	COPEPODID 1-V	0.01	0.42			0.42		0.42	2.08	4.16	1.66	2.91	1.66		1.06
	TOTAL	0.01	0.42	0.02		0.45	0.01	0.47	2.10	4.17	1.67	2.91	1.66		1.07
T. p. mexicanus	FEMALE		1.66	0.16	1.66	0.83	0.42	2.50	1.66		0.42	0.42			0.75
	FEMALE WITH EGG		0.05		0.08			0.01	0.01		0.01				0.01
	MALE				0.08	1.25	0.05	0.42		1.66	0.42	0.05	0.42		0.33
	COPEPODID 1-V				4.16	3.74	2.50	2.08		2.08	1.66	0.42	0.42	0.42	1.34
	TOTAL		1.72	0.16	5.97	5.82	2.96	5.00	1.67	3.74	2.51	0.88	0.83	0.42	2.44
M. albidus	TOTAL														
E. agilis	TOTAL														
C. v. rubellus	TOTAL														
D. minutus	FEMALE		0.02			0.42	0.05	0.05	0.05	0.10			0.05	0.01	0.08
	FEMALE WITH EGG	0.01													0.00
	MALE		0.01		0.02	0.04	0.05	0.05	0.16				0.10	0.01	0.03
	COPEPODID 1-V		1.66	1.25		0.42		0.83	0.83			0.42	0.42	0.42	0.48
	TOTAL	0.01	1.70	1.25	0.02	0.87	0.10	0.94	1.04	0.10		0.42	0.57	0.44	0.57
D. oregonensis	FEMALE	0.05											0.01		0.00
	FEMALE WITH EGG														
	MALE		0.01						0.05					0.01	0.01
	COPEPODID 1-V								0.42	0.42					0.06
	TOTAL	0.05	0.01						0.47	0.42			0.01	0.01	0.07
D. sicilis	FEMALE					0.42									0.03
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V														
	TOTAL					0.42									0.03
D. ashlandi	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V														
	TOTAL														
S. calanoides	TOTAL														
E. lacustris	ADULT			0.16			0.05	0.01							0.02
	JUVENILE		1.66	0.83	0.83		0.05			0.83				0.01	0.32
	TOTAL		1.66	0.99	0.83		0.10	0.01		0.83				0.01	0.34
CYCLOPOID NAUPLII	NI-NVI	35.36	25.38	6.66	6.66	0.83	3.74	9.98	7.49	11.23	0.42	0.83	1.25	5.82	8.90
CALANOID NAUPLII	NI-NVI	0.83	6.66	0.83	9.57	3.74	2.50	1.25	3.33	2.91					2.43
D. retrocurva	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE											0.05			0.00
	TOTAL											0.05			0.00
D. g. mendotae	FEMALE		0.01	0.05		0.01			0.05		0.42		0.10		0.05
	FEMALE WITH EGG		0.02	0.01	0.01										0.00
	MALE												0.05		0.00
	JUVENILE		0.42		0.02	0.03	0.10		0.05	0.01					0.05
	TOTAL		0.45	0.06	0.03	0.04	0.10		0.10	0.01	0.42		0.16		0.11
D. longiremis	FEMALE													0.05	0.00
	FEMALE WITH EGG		0.05												0.00
	MALE														
	JUVENILE												0.10		0.01
	TOTAL		0.05										0.10	0.05	0.02
D. parvula	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE	0.01													0.00
	TOTAL	0.01													0.00
D. ambigua	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL														
C. lacustris	TOTAL		0.42												0.03
C. sphaericus	TOTAL						0.01								0.00
B. longirostris	AD+JUV		0.42	2.91	19.14	2.91	0.83	0.02				0.42			2.05
	FEMALE WITH EGG		0.10	0.42			0.42								0.07
	TOTAL		0.52	3.33	19.14	2.91	1.25	0.02				0.42			2.12
E. longispina	TOTAL						0.02	0.01	0.21	0.42	0.05	0.42	1.25	2.08	0.34
A. affinis	TOTAL			0.42									0.05		0.04
A. quadrangula	TOTAL										0.01				0.00
D. leuchtenbergianum	TOTAL					0.83	0.16	0.42	0.42	0.16	0.42	0.05	0.10		0.20
H. gibberum	TOTAL	0.42		1.66	2.08					0.42	0.05		0.10	0.83	0.43
L. kindtii	TOTAL			0.02			0.01								0.00
P. pediculus	TOTAL		0.01		0.12	0.21	0.26	0.36	0.10	0.03		0.05			0.09
S. crystallina	TOTAL					0.01	0.05		0.02	0.01	0.05				0.01
E. lamellatus	TOTAL														
A. harpae	TOTAL				0.01										0.00
I. sordidus	TOTAL														
O. gracilis	TOTAL														
E. longispina	TOTAL														
D. ambigua	TOTAL														
L. setifera	TOTAL														
M. relicta	TOTAL														
Chaoborus sp	TOTAL														
Gammarus sp	TOTAL														
CYCLOPOIDA TOTAL	ind.L^{-1}	54.95	31.51	14.75	14.77	8.77	7.13	15.45	11.26	19.15	4.60	7.18	9.57	12.06	16.24
	ind.cm^{-2}	131.89	75.63	35.39	35.44	21.04	17.12	37.09	27.03	45.95	11.03	17.22	22.96	28.95	38.96
CALANOIDA TOTAL	ind.L^{-1}	0.89	10.03	3.07	10.42	5.03	2.70	2.19	4.84	4.26		0.42	0.58	0.46	3.45
	ind.cm^{-2}	2.15	24.06	7.36	25.01	12.08	6.49	5.27	11.61	10.23		1.00	1.40	1.10	8.29
CLADOCERA TOTAL	ind.L^{-1}	0.43	1.45	5.49	21.38	4.00	1.86	0.81	0.85	1.04	1.00	0.99	1.77	2.96	3.39
	ind.cm^{-2}	1.02	3.47	13.18	51.32	9.61	4.47	1.95	2.05	2.50	2.40	2.37	4.24	7.11	8.13
TOTAL	ind.L^{-1}	56.27	42.98	23.31	46.57	17.80	11.70	18.46	16.95	24.45	5.60	8.58	11.92	15.49	23.08
	ind.cm^{-2}	135.06	103.16	55.94	111.77	42.73	28.08	44.30	40.68	58.68	13.43	20.59	28.60	37.17	55.40

Appendix 1.10a. Mean abundance (individuals per litre) of zooplankton species life stages in the West inflow and outflow of Lake 377, 1988.

		INFLOW												OUTFLOW										
	MONTH	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	SEASON	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	SEASON
	DATE	25	8	22	6	20	3	17	31	7	21	19	MEAN	25	8	22	6	20	3	17	31	7	21	19	MEAN
SPECIES	DAY	146	160	174	188	202	216	230	244	251	265	293		146	160	174	188	202	216	230	244	251	265	293	
C. b. thomasi	FEMALE	0.40	0.08										0.04	2.00			0.02								0.18
	FEMALE WITH EGG	0.02											0.00												
	MALE	0.40	0.04										0.04												
	COPEPODID 1-V	0.80	0.40	0.02	0.02	0.02							0.11	2.80		0.04		0.40	0.40			0.04		0.02	0.34
	TOTAL	1.62	0.52	0.02	0.02	0.02							0.20	4.80		0.04	0.02	0.40	0.40			0.04		0.02	0.52
A. vernalis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V				0.04	0.40							0.04				0.02								0.00
	TOTAL				0.04	0.40							0.04				0.02		0.40						0.11
M. edax	FEMALE																0.82		0.40						0.11
	FEMALE WITH EGG																0.02		0.02						0.00
	MALE																	0.02							0.00
	COPEPODID 1-V			0.04				0.04					0.01			0.40		0.02		0.80		0.40			0.16
	TOTAL				0.04				0.04				0.01				0.40		0.04	0.02	0.80		0.40		0.15
T. p. mexicanus	FEMALE		1.60	0.02	0.04	0.04							0.15			0.40	0.80		0.80						0.18
	FEMALE WITH EGG		0.20			0.02							0.02												
	MALE																	0.40							0.04
	COPEPODID 1-V				0.80	0.04							0.08	0.40			0.40								0.07
	TOTAL		1.80	0.02	0.84	0.10							0.25	0.40		0.40	1.20	0.40	0.80						0.29
M. albidus	TOTAL				0.02								0.00	0.02					0.02						0.00
E. agilis	TOTAL																								
C. v. rubellus	TOTAL																								
D. minutus	FEMALE	0.02				0.02							0.00			0.02		0.02		0.02					0.01
	FEMALE WITH EGG																	0.02							0.00
	MALE	0.04											0.00					0.10	0.02						0.06
	COPEPODID 1-V	1.60	0.40			0.02		0.40	0.02			0.40	0.26	0.40		0.12		0.60				0.02			0.07
	TOTAL	1.68	0.40			0.04		0.40	0.02			0.40	0.27	0.40		0.14		0.94	0.02	0.02		0.02			0.14
D. oregonensis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V		0.40	0.04									0.04												
	TOTAL		0.40	0.04									0.04												
D. sicilis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V																								
	TOTAL																								
L. macrurus	TOTAL																								
E. lacustris	ADULT																								
	JUVENILE	0.02	0.40										0.04	0.08			0.02								0.01
	TOTAL	0.02	0.40										0.04	4.40		0.02	0.04								0.41
CYCLOPOID NAUPLII	NI-NVI		5.60			0.40	2.00		0.40				0.76	4.48		0.02	0.06								0.41
CALANOID NAUPLII	NI-NVI	8.80	3.60	1.20	0.40	1.60		0.80	1.20	0.02			1.60	0.40		0.40	1.20	2.80	3.20	1.60			0.04	0.40	0.91
D. retrocurva	FEMALE													1.60		3.60	2.00	3.60		0.80					1.05
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE																								
	TOTAL																					0.06			0.01
D. g. mendotae	FEMALE																					0.66			0.01
	FEMALE WITH EGG																					0.02			0.00
	MALE																								
	JUVENILE					0.04							0.00	0.40											0.04
	TOTAL					0.04							0.00	0.40								0.02			0.04
D. longiremis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE																								
	TOTAL																								
D. parvula	FEMALE													0.40											0.04
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE																								
	TOTAL													0.40											0.04
C. lacustris	TOTAL		0.02				0.40						0.04												
C. sphaericus	TOTAL	0.10	0.40	0.60		0.10	1.20	0.40		0.40		2.60	0.56				0.06	0.04	0.80	0.40	0.40	0.80		0.14	0.24
B. longirostris	AD+JUV		0.80	2.60	2.80	0.02	0.80	0.80	0.80				0.80	5.20		1.60				1.60					0.76
	FEMALE WITH EGG	0.02				0.02		0.40					0.04	0.40		0.02					0.40				0.07
	TOTAL	0.02	0.80	2.60	2.80	0.04	0.80	1.20	0.80				0.84	5.60		1.62				1.60	0.40				0.84
A. affinis	TOTAL				0.02				0.04				0.01		0.02		0.60	0.40	0.40		0.40			0.40	0.22
D. leuchtenbergianum	TOTAL			0.02	0.02		0.08						0.01					0.40		0.40		0.08			0.08
H. gibberum	TOTAL	0.02	0.02				0.08	0.40					0.05					0.40							0.04
L. kindtii	TOTAL																								
P. pediculus	TOTAL				0.02								0.00			0.06		0.06				0.04			0.01
S. crystallina	TOTAL															0.02		0.02				0.02			0.01
A. quadrangularis	TOTAL																								
C. rectirostris	TOTAL									0.02			0.00											0.02	0.00
A. harpae	TOTAL																								
O. gracilis	TOTAL													0.04			0.02		0.40						0.15
C. rectirostris	TOTAL													0.02											0.02
C. laviformis	TOTAL																	0.02							0.02
L. spratidus	TOTAL																								
P. l. poppei	TOTAL																								
L. sellifera	TOTAL																								
M. relicta	TOTAL																								
Chaoborus sp	TOTAL																								
G. lacustris	TOTAL																								
CYCLOPOIDA TOTAL	ind.L^{-1}	1.62	7.92	0.08	0.02	0.92	2.00	0.04	0.40				1.26	5.62		1.24	3.26	3.64	4.84	2.40		0.44	0.04	0.42	1.99
CALANOIDA TOTAL	ind.L^{-1}	10.48	4.80	1.24	0.40	1.64		1.20	1.22	0.02		0.40	1.85	6.48		3.76	2.06	4.54	0.02	0.82		0.02			1.61
CLADOCERA TOTAL	ind.L^{-1}	0.14	1.24	3.62	2.86	0.18	2.56	2.00	0.64	0.42		2.60	1.51	6.46	0.02	1.70	0.88	1.34	1.60	2.40	1.20	1.02		0.56	1.58
TOTAL	ind.L^{-1}	12.24	13.96	4.94	4.16	2.74	4.56	3.24	2.46	0.44		3.20	4.72	18.56	0.02	6.70	6.20	9.52	6.46	5.62	1.20	1.48	0.04	0.98	5.16

Appendix 1.10b. Mean abundance (individuals per litre) of zooplankton species life stages in the West inflow and outflow of Lake 377, 1989.

		Inflow												Outflow									
	MONTH	MAY	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	OCT	OCT	SEASON	MAY	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	18	1	15	29	13	27	11	24	7	5	16	MEAN	18	1	15	29	13	27	11	24	7	21	5	16	MEAN
SPECIES	DAY	138	152	166	180	194	208	223	236	251	278	289		138	152	166	180	194	208	223	236	251	264	278	289	
C. b. thomasi	FEMALE			0.02									0.00		0.02									0.10		0.01
	FEMALE WITH EGG																									
	MALE			0.04									0.00		0.02											0.00
	COPEPODID 1-V	0.40	0.06	0.08		0.80			0.02	0.10		0.02	0.13	0.10	0.80	0.08						0.02	0.60	0.10	1.60	0.29
	TOTAL	0.40	0.06	0.14		0.80			0.02	0.10		0.02	0.14	0.10	0.84	0.08						0.02	0.60	0.20	1.60	0.30
A. vernalis	FEMALE																							0.02		0.00
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V					0.40	0.08						0.04					0.40			0.80	0.08		0.10		0.12
	TOTAL					0.40	0.08						0.04					0.40			0.80	0.08		0.12		0.12
M. edax	FEMALE																0.02									0.04
	FEMALE WITH EGG																									
	MALE																0.04									0.01
	COPEPODID 1-V				0.40	0.10	0.02		0.02				0.05			2.00		0.80		0.02		0.12	0.80			0.31
	TOTAL					0.40	0.10	0.02		0.02			0.05			0.06		2.00	1.24		0.02		0.12	0.60		0.35
T. p. mexicanus	FEMALE			0.02		0.40	0.02						0.04	0.10			0.02									0.01
	FEMALE WITH EGG				0.04								0.00				0.02									0.00
	MALE				0.40	0.80							0.11					1.20								0.10
	COPEPODID 1-V					0.40	0.40						0.07				0.02	1.20	0.40					0.40		0.17
	TOTAL			0.02	0.44	1.60	0.42						0.23	0.10			0.06	1.20	1.60					0.40		0.28
M. albidus	TOTAL																							0.10		0.01
E. agilis	TOTAL																					0.02				0.00
C. v. rubellus	TOTAL							0.02					0.00					0.02								0.00
D. minutus	FEMALE			0.02	0.04				0.02	0.20			0.03		0.02	0.04	0.02	0.40	1.20							0.14
	FEMALE WITH EGG															0.06	0.02									0.01
	MALE	0.10	0.04				0.40						0.05	0.60		0.10	0.02	0.40	2.00			0.02				0.25
	COPEPODID 1-V	0.02	0.80	0.04	0.40		0.40						0.16			0.30	0.80	2.80	3.20	0.06	0.80					0.66
	TOTAL	0.12	0.84	0.06	0.44		0.80		0.02	0.20			0.23	0.60	0.02	0.50	0.86	3.60	6.40	0.06	0.80	0.02				1.07
D. oregonensis	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	COPEPODID 1-V				0.40								0.04													
	TOTAL				0.40								0.04													
D. sicilis	FEMALE																									
	FEMALE WITH EGG																									
	MALE														0.02											0.00
	COPEPODID 1-V																									
	TOTAL														0.02											0.00
L. macrurus	TOTAL						0.40						0.04			0.04		0.80	0.80	0.40	0.80				0.40	0.27
E. lacustris	ADULT			0.04									0.00													
	JUVENILE		0.06	0.02	0.80				0.02				0.08		0.02							0.02				0.00
	TOTAL		0.06	0.06	0.80				0.02				0.09		0.02							0.02				0.00
CYCLOPOID NAUPLII	NI-NVI		0.40	0.80	0.40		0.80		0.80	0.40			0.33		0.80	0.80	2.00	3.20	1.20		0.80				0.40	0.77
CALANOID NAUPLII	NI-NVI	1.60	6.00	2.00	2.80	0.80	2.80	0.80	1.60				1.67	2.80	2.00	2.80	14.00	4.40	14.00	2.40	1.60	1.60				3.80
D. retrocurva	FEMALE																									
	FEMALE WITH EGG		0.02										0.00													
	MALE																									
	JUVENILE																									
	TOTAL		0.02										0.00													
D. g. mendotae	FEMALE																	0.02				0.40				0.04
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE		0.02		0.14								0.01					0.10	0.06							0.01
	TOTAL		0.02		0.14								0.01					0.12	0.06			0.40				0.05
D. longiremis	FEMALE																							0.40		0.03
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE	0.02											0.00	0.10												0.01
	TOTAL	0.02											0.00	0.10										0.40		0.04
D. parvula	FEMALE																									
	FEMALE WITH EGG																									
	MALE																									
	JUVENILE																									
	TOTAL																									
C. lacustris	TOTAL																									
C. sphaericus	TOTAL		0.80	0.20	0.14	0.40	0.10			0.40	0.04		0.19		0.40	0.40	1.20	0.80	0.02	0.40		2.00		0.60	0.08	0.49
B. longirostris	AD+JUV	0.02	0.04	0.16	0.40	0.40	0.40	0.02	0.40	0.40			0.20	1.60	0.04	0.02	0.80	5.20	4.00							0.07
	FEMALE WITH EGG																									
	TOTAL	0.02	0.04	0.16	0.40	0.40	0.40	0.02	0.40	0.40			0.20	1.60	0.04	0.02	0.80	5.20	4.00							0.97
A. affinis	TOTAL								0.02				0.00							0.04						0.00
D. leuchtenbergianum	TOTAL				0.04	0.40	0.04						0.04	0.02		0.02	0.04	1.60	1.60		0.80	0.04	0.40			0.36
H. gibberum	TOTAL			0.08	0.40	0.10							0.05		0.02	0.80	0.40	0.06								0.11
L. kindtii	TOTAL																0.06									0.01
P. pediculus	TOTAL	0.02	0.02		0.06	0.04							0.01		0.02	0.04	0.10	0.04	0.10							0.03
S. crystallina	TOTAL																									
A. quadrangularis	TOTAL																						0.40			0.03
C. rectirostris	TOTAL																									
A. harpae	TOTAL				0.02		0.04		0.02				0.01				0.02				0.80	0.06		1.20		0.17
O. gracilis	TOTAL																				0.10			0.10		0.10
C. rectirostris	TOTAL																									
C. laviformis	TOTAL																									
L. sordidus	TOTAL									0.10			0.10											0.40		0.40
P. l. poppei	TOTAL													0.02												0.02
L. setifera	TOTAL																									
M. relicta	TOTAL																									
Chaoborus sp	TOTAL																									
G. lacustris	TOTAL																									
CYCLOPOIDA TOTAL	ind.L^{-1}	0.40	0.46	0.96	1.24	2.90	1.32	0.02	0.84	0.50		0.02	0.79	0.20	1.64	1.00	5.20	6.46	1.20	0.02	1.60	0.24	1.60	0.82	2.00	1.83
CALANOIDA TOTAL	ind.L^{-1}	1.72	6.90	2.12	4.44	0.80	4.00	0.80	1.64	0.20			2.06	3.40	2.08	3.34	14.86	8.80	21.20	2.86	3.20	1.64			0.40	5.15
CLADOCERA TOTAL	ind.L^{-1}	0.06	0.90	0.44	1.20	1.34	0.58	0.02	0.44	0.90	0.04		0.54	1.74	0.48	1.28	2.62	7.02	5.78	0.44	1.70	2.50	0.80	2.70	0.08	2.33
TOTAL	ind.L^{-1}	2.18	8.26	3.52	6.88	5.04	5.90	0.84	2.92	1.60	0.04	0.02	3.38	5.34	4.16	5.62	22.68	23.08	28.18	3.32	6.50	4.38	2.40	3.52	2.48	9.31

Appendix 1.10c. Mean abundance (individuals per litre) of zooplankton species life stages in the West inflow and outflow of Lake 377, 1990.

		Inflow														Outflow													
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY		JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	9	23	6	20	4	18	1	15	28	12	26	10	22	MEAN	9		6	20	4	18	1	15	29	12	26	10	22	MEAN
SPECIES	DAY	129	143	157	171	185	199	213	227	241	255	269	283	295		129	143	157	171	185	199	213	227	241	255	269	283	295	
C. b. thomasi	FEMALE	0.04																											
	FEMALE WITH EGG															0.20		0.04											
	MALE		0.08																										
	COPEPODID 1-V	1.60	2.40		0.06	0.02	0.04		0.02						0.01	0.70											0.02	0.02	0.06
	TOTAL	1.64	2.48		0.06	0.02	0.04		0.02						0.35			0.10	0.80	1.60	0.20							0.02	0.23
A. vernalis	FEMALE														0.33	0.90		0.14	0.80	1.60	0.20						0.02	0.04	0.26
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1-V				0.02																								
	TOTAL				0.02										0.00	0.02									0.02	0.60	0.80		0.12
M. edax	FEMALE														0.00	0.02									0.02	0.60	0.80		0.11
	FEMALE WITH EGG																												
	MALE																							0.02					0.00
	COPEPODID 1-V		0.10																	0.60			0.10						0.08
	TOTAL			0.10											0.01			0.02		0.14	0.02		0.30		0.22		0.02		0.06
T. p. mexicanus	FEMALE	0.02							0.08						0.01					0.02	0.94	0.02		0.40	0.02	0.22		0.02	0.13
	FEMALE WITH EGG				0.02										0.00			0.02		0.10		0.02	1.60	5.60	0.02	1.60		0.10	0.76
	MALE								0.02			0.80			0.07								1.60	0.02					0.14
	COPEPODID 1-V					0.04	0.02					1.60			0.14	0.80				0.08	0.20		0.80	1.60			1.60			0.42
	TOTAL	0.02			0.02	0.04	0.02		0.10			2.40			0.20						0.80				0.02	3.20			0.40
M. albidus	TOTAL															0.80			0.02	0.16	1.00	0.02	4.00	7.22	0.04	6.40	0.80	0.10	1.58
E. agilis	TOTAL																												
C. v. rubellus	TOTAL																										0.02	0.02	0.00
D. minutus	FEMALE																											0.10	0.01
	FEMALE WITH EGG																		0.02	0.04	0.02		0.20						0.02
	MALE						0.02																	0.02						0.00
	COPEPODID 1-V				0.06	0.06	0.02		0.04						0.00	0.02				0.12	0.10									0.02
	TOTAL				0.06	0.06	0.04		0.04						0.02	0.02			0.80	0.08	0.20		1.60			0.02				0.23
D. oregonensis	FEMALE																		0.82	0.24	0.32		1.80	0.02		0.02				0.26
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1-V																												
	TOTAL																										0.04		0.00
D. sicilis	FEMALE																										0.04		0.00
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1-V																												
	TOTAL																												
L. macrurus	TOTAL																												
E. lacustris	ADULT																												
	JUVENILE						0.10								0.01									0.02					0.00
	TOTAL						0.10								0.01						0.10								0.01
CYCLOPOID NAUPLII	NI-NVI	0.80	0.80	0.80	0.02										0.20						0.10			0.02					0.01
CALANOID NAUPLII	NI-NVI	12.00	8.00		3.20	0.80	3.20								2.27	4.00		4.00	4.80	6.40	3.20			0.80			3.20	1.60	2.40
D. retrocurva	FEMALE															1.60			1.60	1.60	4.80	0.02	0.80	0.80	0.80				0.94
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. g. mendotae	FEMALE																												
	FEMALE WITH EGG																						0.02	0.04		0.06	0.02		0.01
	MALE																												
	JUVENILE					0.60									0.07													0.02	0.00
	TOTAL					0.60									0.08						0.80		0.30	0.04				0.02	0.10
D. longiremis	FEMALE																				0.80		0.32	0.08		0.06	0.02	0.02	0.10
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. parvula	FEMALE																											0.02	0.00
	FEMALE WITH EGG																											0.02	0.00
	MALE																												
	JUVENILE																												
	TOTAL																												
C. lacustris	TOTAL																												
C. sphaericus	TOTAL	0.04	0.30		0.04	0.06	0.10							0.02	0.05	0.80		0.02		0.02	0.02					0.02			0.00
B. longirostris	AD+JUV	0.04	0.30	1.60	0.34	0.28	1.60	0.02							0.35			0.90		1.60	1.60	0.06		0.20			0.06	0.10	0.09
	FEMALE WITH EGG				0.02	0.02									0.00														0.36
	TOTAL	0.04	0.30	1.60	0.36	0.30	1.60	0.02							0.32			0.90		1.60	1.60	0.06		0.20					0.34
A. affinis	TOTAL																		0.02										0.00
D. leuchtenbergianum	TOTAL						0.12		0.08						0.02			0.02		0.48	1.60	0.04	0.60	0.10					0.25
H. gibberum	TOTAL				0.04	0.14								0.02	0.02	1.60		0.04	0.08	0.12	0.20							1.00	0.25
L. kindtii	TOTAL																												
P. pediculus	TOTAL			0.10	0.02	0.04	0.06	0.02							0.02				0.04		1.10		0.04	0.02					0.10
S. crystallina	TOTAL								0.02						0.00	0.02					0.02						0.02		0.01
A. quadrangularis	TOTAL																										0.04		0.00
C. reflexostris	TOTAL																												
A. harpae	TOTAL																	0.02											0.00
O. gracilis	TOTAL													0.04	0.04	0.08											0.04	0.10	0.07
C. reflexostris	TOTAL																												
C. laviformis	TOTAL																												
I. sordidus	TOTAL																												
P. l. poppei	TOTAL																												
L. sellifera	TOTAL																											0.02	0.02
M. relicta	TOTAL																												
Chaoborus sp	TOTAL																							0.02					0.00
G. lacustris	TOTAL																												
CYCLOPOIDA TOTAL	Ind.L^{-1}	2.46	3.38	0.80	0.12	0.08	0.06		0.12			2.40			0.72	5.72		4.14	5.64	9.12	4.42	0.02	4.40	8.04	1.08	7.00	4.86	1.86	4.33
CALANOIDA TOTAL	Ind.L^{-1}	12.00	8.00		3.26	0.86	3.34		0.04						2.12	1.62			2.42	1.84	5.22	0.02	2.60	0.84		0.02	0.04		1.12
CLADOCERA TOTAL	Ind.L^{-1}	0.08	0.60	1.70	0.46	1.36	1.86	0.04	0.08					0.08	0.48	2.50		1.00	0.14	2.24	5.54	0.10	0.96	0.40		0.08	0.18	1.26	1.11
TOTAL	Ind.L^{-1}	14.54	11.98	2.50	3.84	2.28	5.28	0.04	0.26		0.02	2.40		0.08	3.60	9.84		5.14	8.20	13.20	15.18	0.14	8.06	9.30	2.68	7.10	5.08	3.92	7.32

Appendix 1.11a. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5 m) and lower (5 – 17.8 m) pelagic regions of Lake 442, 1988.

		UPPER PELAGIC													LOWER PELAGIC											
	REGION																									
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEPT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEPT	OCT	SEASON
	DATE	9	26	9	23	7	21	5	16	1	7	22	12	MEAN	9	26	9	23	7	21	5	18	1	7	22	12	MEAN
	DAY	130	147	161	175	189	203	216	231	245	251	266	286		130	147	161	175	189	203	216	231	245	251	266	286	
	TOTAL DEPTH (m)	5.0	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2	30.2		13.0	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	
SPECIES																											
C. b. thomasi	FEMALE	0.36					0.18				0.01	1.41	0.35	0.19	1.54	1.72	0.04	0.34	1.03	0.69	2.41	0.34	0.89			0.17	0.75
	FEMALE WITH EGG	1.78										0.03		0.15	0.38	0.09						0.02					0.04
	MALE						0.18						0.35	0.04	1.54	0.34	1.72	2.75	2.75	2.06	0.69	0.69					1.05
	COPEPODID 1-V	4.62	14.06	0.16	2.62		0.35		0.18		1.76	66.88	37.66	10.71	4.61	70.18	80.64	73.96	69.14	50.57	54.35	42.31	19.20		0.86	7.22	39.44
	TOTAL	6.75	14.06	0.16	2.62		0.70		0.18		1.77	68.31	38.37	11.10	6.06	72.33	82.60	77.06	72.93	53.32	57.45	43.37	19.95		0.86	7.40	41.26
A. vernalis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V		0.35		0.35	0.01	0.70		0.35				0.35	0.18					0.34					0.17	0.52		0.09
	TOTAL		0.35		0.35	0.01	0.70		0.35				0.35	0.18					0.34					0.17	0.52		0.09
M. edax	FEMALE			0.09	0.01									0.01		0.04											0.00
	FEMALE WITH EGG		0.18				0.35							0.04					0.02	0.02			0.02				0.01
	MALE			0.18	0.04		0.18	0.01						0.03													
	COPEPODID 1-V			0.53	2.82		1.06	0.18	1.06	0.18	0.35	1.76	0.70	0.72				0.69		0.69	1.72	0.69	0.69	0.34	0.69	0.52	0.50
	TOTAL		0.18	0.79	2.87		1.58	0.18	1.06	0.18	0.35	1.76	0.70	0.80		0.04		0.69	0.02	0.71	1.72	0.69	0.71	0.34	0.69	0.52	0.51
T. p. mexicanus	FEMALE						0.35	0.18	0.53	0.35	0.18	1.41	0.35	0.28							1.03	0.34	0.34	0.52	0.69	0.86	0.32
	FEMALE WITH EGG						0.53	0.01						0.04													
	MALE				0.70		0.53		0.88					0.18								0.69			1.55	0.34	0.22
	COPEPODID 1-V				1.76	0.02	1.58	0.53	3.52	0.86	1.06	2.82	1.06	1.10				0.34			0.34	1.03	0.34	1.20	1.72	0.34	0.44
	TOTAL				2.46	0.02	2.99	0.71	4.93	1.23	1.23	4.22	1.41	1.60				0.34			1.38	2.06	0.69	1.72	3.96	1.55	0.97
E. agilis	TOTAL																										
C. v. rubellus	TOTAL															0.34											0.03
P. l. poppei	TOTAL																							0.01			0.01
D. minutus	FEMALE	0.36	2.46		1.41		1.41		1.41				2.46	0.79		0.34	0.34	0.34	0.34	0.34						1.38	0.26
	FEMALE WITH EGG	1.42	0.70	0.18	0.03		1.06	0.02	0.18	0.01		0.09		0.31	0.10	0.11	0.02		0.11			0.00	0.02	0.00	0.01		0.03
	MALE	1.78	4.93	0.35	1.41		0.35	0.18	0.70	0.02			3.17	1.07	0.58	0.34				0.34						1.72	0.25
	COPEPODID 1-V		26.05	4.75	16.19		1.76	0.35	1.58		1.58	9.15	7.39	5.73	0.38	4.13	9.28	8.84	8.26	16.51	12.73	16.86	9.63	0.86	3.96	0.52	7.67
	TOTAL	3.55	34.14	5.28	19.03		4.58	0.55	3.87	0.03	1.58	9.24	13.02	7.91	1.06	4.92	9.65	9.29	8.71	17.20	12.73	16.86	9.65	0.86	3.96	3.61	8.21
D. oregonensis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V																										
	TOTAL																										
D. sicilis	FEMALE	0.02											0.70	0.06	0.10		0.08			0.34						0.00	0.04
	FEMALE WITH EGG		0.09											0.01	0.15	0.19											0.03
	MALE	0.14											0.70	0.07	0.38											0.34	0.06
	COPEPODID 1-V		1.06						0.18		0.16	10.21	7.04	1.55		9.29	6.54	13.07	22.02	9.98	11.70	11.70	7.57			1.20	7.75
	TOTAL	0.16	1.14						0.18		0.16	10.21	8.45	1.69	0.63	9.48	6.60	13.07	22.02	10.32	11.70	11.70	7.57			1.55	7.89
D. ashlandi	FEMALE																										
	FEMALE WITH EGG																										
	MALE						0.18							0.01													
	COPEPODID 1-V																										
	TOTAL						0.18							0.01													
E. lacustris	ADULT		0.01	0.04	0.19		0.35		0.04		0.02	0.02	0.13	0.07			0.06	0.30	0.13	0.22	0.24	0.17	0.06		0.04	0.04	0.12
	JUVENILE		0.70	0.18			0.53		0.70	0.01	0.01		0.35	0.21							0.34			0.06	0.06		0.04
	TOTAL		0.71	0.22	0.19		0.88		0.74	0.01	0.03	0.02	0.48	0.27			0.06	0.30	0.13	0.22	0.58	0.17	0.06	0.06	0.11	0.04	0.15
CYCLOPOID NAUPLII	NI-NVI	11.01	8.10	1.76	3.87	0.01	10.66	1.06	7.04	0.35	1.58	7.74	12.67	5.48	59.14	71.55	36.53	45.06	2.41	1.03	1.03	2.41	1.38	0.69	1.20	1.72	16.86
CALANOID NAUPLII	NI-NVI	27.71	29.92	1.23	3.87	0.03	6.51	2.64	3.17	0.35	2.29	0.35		6.51	16.43	4.47		0.34	0.34	1.03	0.34	0.34	0.34	1.03	0.17	0.17	2.25
D. g. mendotae	FEMALE			0.35	0.40		0.18	0.01	0.18	0.17	0.70	0.04	0.31	0.19		0.01	0.34	3.10	3.10	5.85	3.10	4.82	2.41		0.52	0.06	1.94
	FEMALE WITH EGG		0.09		0.04		0.01				0.03	0.06	0.67	0.07		0.00	0.06	0.39	0.39	0.65	0.06	0.09	0.19	0.11	0.09	0.06	0.17
	MALE			0.18						0.01		0.22	0.04	0.04									0.34		0.34	0.06	0.06
	JUVENILE	0.36	2.46		0.70		0.35		0.18	0.01	0.18			0.35		0.09	3.10	5.85	6.19	4.82	4.47	2.75	0.69		1.38		2.44
	TOTAL	0.36	2.55	0.53	1.14		0.54	0.01	0.35	0.18	0.91	0.33	0.92	0.65		0.10	3.50	9.33	9.68	11.31	7.63	7.65	3.63	0.11	2.32	0.19	4.62
D. longiremis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE																										
	TOTAL																										
D. dubia	FEMALE			0.01	0.04									0.00													
	FEMALE WITH EGG			0.01										0.00													
	MALE			0.05										0.00													
	JUVENILE			0.02										0.00													
	TOTAL			0.09	0.04									0.01													
C. sphaericus	TOTAL																										
B. longirostris	AD+JUV		1.41	2.82	1.06	0.56	7.39	1.58	1.06		0.18		0.35	1.37	0.02	0.34	2.41	0.34	0.69	2.75	1.38			0.52	0.34		0.73
	FEMALE WITH EGG	0.02	0.03	0.18		0.02	0.70	0.70	0.18	0.18	0.01			0.17					0.34								0.03
	TOTAL	0.02	1.43	2.99	1.06	0.58	8.10	2.29	1.23	0.18	0.18		0.35	1.53	0.02	0.34	2.41	0.34	1.03	2.75	1.38			0.52	0.34		0.76
A. affinis	TOTAL																										
O. leuchtenbergianum	TOTAL			0.01	0.09	0.05	1.58	0.18	1.94	0.88	0.06	0.01		0.40		0.02			0.69	0.34	1.03	0.69	0.69	0.02	0.17		0.30
H. gibberum	TOTAL		0.48	0.04	0.35		0.01		0.01					0.07		0.02		0.41	0.11	0.02		0.34					0.06
L. kindtii	TOTAL				0.02				0.01					0.00				0.00	0.04	0.01		0.00					0.01
S. crystallina	TOTAL																										
C. quadrangula	TOTAL		0.35											0.03													
E. longispina	TOTAL																										
CYCLOPOIDA TOTAL	ind.L^{-1}	17.76	22.70	2.73	12.37	0.04	18.54	1.95	13.55	1.76	4.94	82.04	53.50	19.16	67.20	144.27	121.13	123.15	76.70	55.06	61.58	48.53	22.73	2.93	7.22	11.18	61.72
	ind.cm^{-2}	8.88	11.35	1.36	6.19	0.02	9.27	0.98	6.78	0.88	2.47	41.02	26.75	9.58	42.01	90.19	75.73	77.00	47.93	34.42	38.50	30.34	14.21	1.83	4.52	6.99	38.58
CALANOIDA TOTAL	ind.L^{-1}	31.42	65.92	6.73	23.10	0.03	12.14	3.19	7.96	0.39	4.07	19.82	21.96	16.39	20.12	18.08	16.32	23.01	31.20	26.77	25.35	29.07	17.63	1.96	4.24	5.38	18.49
	ind.cm^{-2}	15.71	32.96	3.37	11.55	0.01	6.07	1.59	3.98	0.19	2.04	9.91	10.98	8.20	12.58	11.30	10.20	14.38	19.50	17.99	15.85	18.18	11.02	1.23	2.65	3.36	11.56
CLADOCERA TOTAL	ind.L^{-1}	0.37	4.82	3.65	2.70	0.52	10.23	2.47	3.54	1.24	1.16	0.33	1.26	2.70	0.02	0.49	6.33	9.83	11.43	14.41	10.04	8.69	4.32	0.65	2.84	0.19	5.77
	ind.cm^{-2}	0.19	2.41	1.83	1.35	0.31	5.11	1.24	1.77	0.62	0.58	0.17	0.64	1.35	0.01	0.31	3.95	6.14	7.14	9.01	6.28	5.43	2.70	0.40	1.77	0.12	3.61
TOTAL	ind.L^{-1}	49.55	93.45	13.11	38.17	0.68	38.91	7.61	25.04	3.39	10.16	102.19	76.74	38.25	87.34	163.83	143.77	155.98	118.32	96.23	96.97	86.29	44.68	5.54	14.31	16.75	85.98
	ind.cm^{-2}	24.78	46.72	6.56	19.09	0.34	19.46	3.81	12.62	1.69	5.08	51.10	38.37	19.13	54.61	102.30	89.89	97.52	73.98	61.42	60.62	53.95	27.93	3.46	8.94	10.47	53.76

Appendix 1.11b. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 - 5 m) and lower (5 - 17.8 m) pelagic regions of Lake 442, 1989.

	REGION	UPPER PELAGIC													LOWER PELAGIC										
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	18	31	15	29	13	27	10	24	7	21	4	16	MEAN	18	31	15	29	13	27	10	24	7	21	4	16	MEAN
	DAY	138	151	166	180	194	208	222	236	250	264	277	289		138	151	166	180	194	208	222	236	250	264	277	289	
	TOTAL DEPTH (m)	34	35	35.0	23.9	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		49.0	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	
SPECIES																											
C. b. thomasi	FEMALE	3.14	1.22		0.04		1.83							0.52	0.51	2.33		0.39	0.58		0.78	0.39	1.75	2.33	0.97	1.16	0.93
	FEMALE WITH EGG									0.01				0.00							0.02	0.01	0.07	0.19	0.01	0.02	0.03
	MALE	0.63		0.30	0.42	0.61	0.61	0.01						0.21	0.10	0.19	1.94	0.39	0.97	0.01		0.03	0.78	0.58	0.19		0.43
	COPEPODID 1-V	9.72	32.31	11.89	15.54	4.57	16.15	1.07	0.30	0.46	1.07	0.76	3.20	8.09	7.04	23.09	57.42	25.03	12.80	0.29	25.41	4.46	21.53	53.16	22.89	27.55	23.39
	TOTAL	13.48	33.53	12.19	16.00	5.18	18.59	1.07	0.30	0.46	1.07	0.76	3.20	8.82	7.65	25.61	59.36	25.80	14.36	0.30	26.21	4.89	24.13	56.26	24.07	28.74	24.76
A. vernalis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V			0.30		0.61		0.30	0.15		0.15	0.30	0.30	0.16											0.39		0.03
	TOTAL			0.30		0.61		0.30	0.15		0.15	0.30	0.30	0.16											0.39		0.03
M. edax	FEMALE		0.61		0.30		0.61		0.03					0.13						0.00	0.19						0.02
	FEMALE WITH EGG		0.11	0.11	0.04	0.04	0.15	0.04						0.04				0.02	0.02								0.00
	MALE	0.31	0.61	0.30	0.30	0.30	0.61	0.61	0.15					0.27					0.39								0.03
	COPEPODID 1-V	1.41			1.22	1.52	2.13	1.52	0.39	1.22	0.76	0.30		0.87		0.19		1.16	0.58		0.19	0.58	0.39	0.19	0.39		0.31
	TOTAL	1.72	1.33	0.42	1.87	1.87	3.51	2.17	0.48	1.22	0.76	0.30		1.31		0.19		1.19	0.99	0.00	0.39	0.58	0.39	0.19	0.39		0.36
T. p. mexicanus	FEMALE		1.22				0.30	0.46		0.46	0.91	0.91	1.22	0.46								0.58	0.19	1.55	0.19		0.21
	FEMALE WITH EGG																					0.60			0.19		0.02
	MALE						0.30	0.76		1.22	1.22	2.74	0.30	0.55									0.58	0.58			0.10
	COPEPODID 1-V					0.30	0.30	3.66	1.37	4.42	3.81	0.30	0.61	1.23						0.10		0.58	0.97	0.19			0.15
	TOTAL		1.22			0.30	0.91	4.88	1.37	6.10	5.94	3.96	2.13	2.24						0.10		1.17	1.75	2.33	0.39		0.48
E. agilis	TOTAL																										
C. v. rubellus	TOTAL																										
P. l. poppei	TOTAL																				0.19						0.02
D. minutus	FEMALE	6.90	6.71	1.52	0.61	1.52	1.83	0.30	0.04	0.46	0.46	0.46	1.68	1.87		0.56	0.39		0.19					0.97	0.56	0.78	0.29
	FEMALE WITH EGG	0.78	0.91	1.52		0.04	0.34	0.15		0.15				0.33	0.03	0.02						0.00		0.02			0.01
	MALE	6.59	6.10	0.91		0.61	2.74					0.46	1.83	1.60	0.20	0.19		0.19	0.19	0.15					0.58	0.78	0.19
	COPEPODID 1-V		19.51	22.25	10.06	4.27	7.92	2.90	0.61	0.91	0.91	3.35	0.30	6.08		14.74	17.65	4.46	2.91		2.52	1.75	5.24	7.37	0.19	1.16	4.85
	TOTAL	14.27	33.22	26.21	10.67	6.44	12.84	3.35	0.65	1.52	1.37	4.27	3.81	9.89	0.23	15.54	18.24	4.66	3.30	0.15	2.52	1.75	5.24	8.37	1.36	2.72	5.34
D. oregonensis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V																										
	TOTAL																										
D. sicilis	FEMALE	1.10	0.61										0.15	0.15	0.61	0.97								0.19		0.78	0.20
	FEMALE WITH EGG	1.10	0.04	0.04										0.10	0.28	0.24	0.02										0.05
	MALE	0.78	0.04										0.30	0.09	0.62	0.78											0.14
	COPEPODID 1-V				3.35	0.91	4.57	0.15		0.91			0.46	0.86			2.33	5.24	2.72	0.19	4.66	1.36	7.76	10.67	4.66	2.33	3.40
	TOTAL	2.98	0.69	0.04	3.35	0.91	4.57	0.15		0.91			0.91	1.21	1.71	1.99	2.35	5.24	2.72	0.19	4.66	1.36	7.76	10.86	4.66	3.10	3.88
D. ashlandi	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V																										
	TOTAL																										
E. lacustris	ADULT		0.02	0.38	0.38	0.23	0.38	0.30	0.02	0.08	0.08	0.11	0.19	0.18			0.05	0.02	0.02		0.12	0.07	0.10	0.19	0.12	0.02	0.06
	JUVENILE				0.30	1.52			0.46	0.61			0.61	0.29								0.19		0.19			0.03
	TOTAL		0.02	0.38	0.68	1.75	0.38	0.30	0.48	0.69	0.08	0.11	0.80	0.47			0.05	0.02	0.02		0.12	0.27	0.10	0.39	0.12	0.02	0.09
CYCLOPOID NAUPLII	NI-NVI	32.46	17.07	18.29	9.23	1.22	2.44	7.16	2.13	1.98	0.76	0.91	0.91	7.99	50.59	61.87	53.93	4.65	1.75	0.39	1.16	2.33	7.18	20.18	19.40	37.25	23.41
CALANOID NAUPLII	NI-NVI	66.99	32.31	6.71	0.91	2.74	0.91	2.44	0.61	0.61	0.15		0.30	9.72	41.51	13.19	3.88		0.19	0.19	0.19	0.39					4.96
D. g. mendotae	FEMALE		0.61	3.35	1.83	2.13	4.57	0.30	0.04	0.46	0.30	0.15	0.08	1.15			0.78	3.48	2.33	0.05	1.94	0.97	3.30	1.36	0.97	0.19	1.28
	FEMALE WITH EGG		0.08	2.74	0.30	0.19	1.22	0.04	0.01	0.04	0.08	0.15	0.08	0.41				0.19			0.19	0.39	0.39	0.19	0.10	0.26	0.15
	MALE									0.15	0.04	0.61	0.04	0.07									1.16	0.78	0.19	0.10	0.19
	JUVENILE	0.08	6.10	6.10	2.44	1.22	4.27	0.46	0.04	0.46		0.15	0.11	1.78		0.27	6.60	2.13	1.75	0.02	2.72	0.97	3.10	0.97	0.19		1.56
	TOTAL	0.08	6.78	12.19	4.57	3.54	10.06	0.80	0.08	1.10	0.42	1.07	0.30	3.42		0.27	7.37	5.82	4.07	0.07	4.85	2.33	7.95	3.30	1.46	0.56	3.17
D. longiremis	FEMALE	0.04												0.00													
	FEMALE WITH EGG																										
	MALE	0.16												0.01													
	JUVENILE																										
	TOTAL	0.20												0.02													
D. dubia	FEMALE																										
	FEMALE WITH EGG																										
	MALE			0.61										0.05													
	JUVENILE	0.04												0.00													
	TOTAL	0.04		0.61										0.05													
C. sphaericus	TOTAL																				0.19						0.02
B. longirostris	AD+JUV	0.16	0.61	2.74	0.30	1.52	5.79	2.90	0.46	0.76	0.61			1.32	0.10		0.78		0.19	0.10	0.19		1.16	0.19			0.23
	FEMALE WITH EGG												0.15	0.01													
	TOTAL	0.16	0.61	2.74	0.30	1.52	5.79	2.90	0.46	0.76	0.61		0.15	1.33	0.10		0.78		0.19	0.10	0.19		1.16	0.19			0.23
A. alfinis	TOTAL												0.15	0.01							0.05	0.02				0.39	0.04
D. leuchtenbergianum	TOTAL			0.04		1.83	5.49	0.91	0.15	0.50	0.08	0.04		0.75						0.10	0.19	0.78	0.39	0.39	0.00	0.39	0.19
H. gibberum	TOTAL		0.08	1.22	0.08		0.30	0.05		0.08				0.15			0.05	0.00	0.02		0.02	0.07					0.01
L. kindtii	TOTAL			0.04	0.05	0.02	0.01							0.01				0.02	0.00								0.00
S. crystallina	TOTAL							0.01						0.00							0.07						0.01
C. quadrangula	TOTAL																										
E. longispina	TOTAL																										
CYCLOPOIDA TOTAL	Ind.L^{-1}	47.67	53.15	31.20	26.10	9.18	25.45	15.59	4.45	9.76	8.69	8.25	6.55	20.34	58.24	107.67	113.30	31.64	17.10	0.79	27.96	8.97	33.44	78.96	44.63	65.98	49.07
	Ind.cm^{-2}	23.83	26.57	15.60	13.05	4.59	12.73	7.80	2.23	4.88	4.34	3.12	3.28	10.17	36.41	67.32	70.83	19.91	10.69	0.49	17.48	5.61	20.91	49.36	27.90	41.25	30.68
CALANOIDA TOTAL	Ind.L^{-1}	86.24	66.23	33.34	15.62	11.85	18.71	6.25	1.74	3.73	1.60	4.37	5.83	21.29	43.45	30.72	24.52	9.92	6.23	0.53	7.49	3.76	13.10	19.62	6.14	5.84	14.28
	Ind.cm^{-2}	43.12	33.12	16.67	7.81	5.92	9.35	3.12	0.87	1.87	0.80	2.19	2.91	10.65	27.17	19.21	15.33	6.20	3.90	0.33	4.68	2.35	8.19	12.27	3.84	3.65	8.93
CLADOCERA TOTAL	Ind.L^{-1}	0.47	7.47	18.84	5.01	0.91	21.65	4.66	0.69	2.44	1.10	1.10	0.61	5.75	0.10	0.27	8.20	5.85	4.30	0.27	5.58	3.20	9.51	3.88	1.46	1.36	3.66
	Ind.cm^{-2}	0.24	3.73	8.42	2.50	3.46	10.82	2.33	0.35	1.22	0.55	0.55	0.30	2.87	0.06	0.17	5.12	3.66	2.69	0.17	3.49	2.00	5.94	2.43	0.91	0.85	2.29
TOTAL	Ind.L^{-1}	134.38	126.85	81.38	46.73	27.94	65.81	26.50	6.88	15.93	11.39	11.73	12.99	47.38	101.80	138.66	146.01	47.61	27.63	1.59	41.03	15.93	56.04	102.46	52.22	73.19	67.01
	Ind.cm^{-2}	67.19	63.43	40.69	23.36	13.97	32.90	13.25	3.44	7.97	5.70	5.86	6.50	23.69	63.64	86.69	91.29	29.78	17.27	0.99	25.65	9.96	35.04	64.06	32.65	45.76	41.90

Appendix 1.11c. Mean abundance (individuals per litre) of zooplankton species life stages in the upper (0 – 5 m) and lower (5 – 17.8 m) pelagic regions of Lake 442, 1990.

	REGION	UPPER PELAGIC													LOWER PELAGIC											
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	7	23	6	20	4	18	1	15	29	12	26	10	22	MEAN	7	23	6	20	4	18	1	15	29	12	26	10	22	MEAN
	DAY	127	143	157	171	185	199	213	227	241	255	269	283	295		127	143	157	171	185	199	213	227	241	255	269	283	295	
	TOTAL DEPTH (m)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0		51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	51.5	
SPECIES																													
C. b. thomasi	FEMALE	6.82	0.28										0.28		0.57	0.00	1.76	0.39	0.59	0.39	0.20		1.76	0.78	1.37	0.78	0.20	0.39	0.66
	FEMALE WITH EGG	0.04													0.00	0.02							0.02	0.05	0.15	0.03			0.02
	MALE	1.42				0.04	0.28		0.42		0.01				0.17	0.20			0.20	1.96	2.94	0.02	1.37	0.20	0.20	0.39			0.57
	COPEPODID 1-V	9.66	19.60	5.96	1.42	0.57	0.57	0.85	0.42		0.16		1.42	11.64	4.02	2.16	31.95	55.47	49.20	48.22	30.38	0.34	29.60	20.76	31.95	15.29	17.64	15.29	26.79
	TOTAL	17.93	19.88	5.96	1.42	0.60	0.85	0.85	0.83		0.16		1.70	11.64	4.76	2.38	33.71	55.86	49.98	50.57	33.52	0.37	32.76	21.81	33.66	16.50	17.84	15.68	28.05
A. vernalis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1-V										0.28				0.02									0.20					0.02
	TOTAL										0.28				0.02									0.20					0.02
M. edax	FEMALE		0.01	0.04	0.11	0.04	0.28								0.04				0.20										0.02
	FEMALE WITH EGG			0.04	0.07			0.14							0.02			0.00				0.05						0.00
	MALE		0.57	0.85		0.28	0.57		0.05						0.18				0.20										0.02
	COPEPODID 1-V	0.14	0.28		0.28	0.85	1.42	0.28	2.91	2.56	0.57	1.70	0.85	0.57	0.96					0.39			0.20		1.96		0.78	0.39	0.29
	TOTAL	0.14	0.87	0.92	0.46	1.17	2.27	0.43	2.96	2.56	0.57	1.70	0.85	0.57	1.19			0.00	0.39	0.39			0.25		1.96		0.78	0.39	0.32
T. p. mexicanus	FEMALE	0.57	0.57	0.57				0.57					1.14	0.57	0.31			0.20							0.20	0.39	0.39			0.09
	FEMALE WITH EGG				0.28										0.02														
	MALE						0.57		0.42	0.26					0.10										0.20		0.20		0.03
	COPEPODID 1-V				0.28		1.42	0.57	2.81	1.70	0.57	0.57			0.62							0.02		0.20					0.02
	TOTAL	0.57	0.57	0.57	0.57		1.99	1.14	3.33	1.99	0.57	0.57	1.14	0.57	1.04			0.20				0.02		0.20	0.39	0.39	0.59		0.14
E. agilis	TOTAL																												
C. v. rubellus	TOTAL																												
D. f. poppei	TOTAL								1.25						1.25														
D. minutus	FEMALE	2.41	5.40	1.99	2.27		1.42	0.85	1.66	0.85	0.01		1.14	3.12	1.63	0.10				0.39			0.78		0.20		0.78	7.84	0.78
	FEMALE WITH EGG	1.56	2.27	1.42	0.57		0.04	0.18	0.10						0.47		0.39	0.05					0.02						0.04
	MALE	2.41	5.68	1.14	0.28	0.28			0.42		0.01	0.57	2.56	5.40	1.44			0.20							0.20	0.20	2.84	5.29	0.68
	COPEPODID 1-V		8.52	25.84	26.13	10.51	4.54	4.54	20.36	2.84	0.57	19.60	6.25	1.14	10.07		7.84	20.78	18.03	30.16	25.87	0.15	25.28	19.01	16.46	13.13	6.10	1.37	14.09
	TOTAL	6.39	21.87	30.39	29.25	10.79	6.00	5.57	22.57	3.69	0.58	20.16	9.94	9.66	13.61	0.10	8.23	21.02	18.03	30.56	25.87	0.15	26.09	19.01	16.86	13.33	6.82	14.50	15.56
D. oregonensis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1-V																												
	TOTAL																												
D. sicilis	FEMALE	1.85	0.28											0.57	0.21	0.59	0.78	0.39									0.78	2.16	0.36
	FEMALE WITH EGG	0.99	0.18												0.09	0.10	0.37	0.02											0.04
	MALE	1.70												0.26	0.15	0.49	1.18	0.59											0.29
	COPEPODID 1-V							0.28	0.42		0.04		0.57	1.42	0.21		1.37	5.10	3.33	12.16	11.56	0.02	12.84	9.21	11.37	7.45	6.86	2.84	6.48
	TOTAL	4.54	0.46					0.28	0.42		0.04		0.57	2.27	0.66	1.18	3.70	6.10	3.33	12.15	11.56	0.02	12.84	9.41	11.56	7.45	7.84	6.09	7.18
D. ashlandi	FEMALE																												
	FEMALE WITH EGG																												
	MALE													0.01	0.00														
	COPEPODID 1-V																												
	TOTAL													0.01	0.00														
E. lacustris	ADULT			0.36	0.21	0.02	0.18	0.18	0.31	0.04	0.01	0.14	0.14	0.08	0.13			0.05	0.27	0.05	0.29		0.07	0.12	0.07	0.12	0.05	0.07	0.09
	JUVENILE		0.85	0.28	0.57	0.28	0.57	0.57	1.66	0.28	0.28				0.41				0.20	0.39									0.05
	TOTAL		0.85	0.64	0.78	0.31	0.75	0.75	1.98	0.32	0.29	0.14	0.14	0.08	0.54			0.05	0.47	0.44	0.29		0.07	0.12	0.07	0.12	0.05	0.07	0.14
CYCLOPOID NAUPLII	NI-NVI	32.66	23.00	6.82	3.41	3.12	3.12	5.96	12.90	4.83	1.99		0.85	11.36	8.46	6.86	79.58	55.47	10.58	2.35	0.78		0.39	0.98	3.33	6.06	19.21	11.96	15.20
CALANOID NAUPLII	NI-NVI	18.50	57.65	20.73	8.24	2.84	2.56	6.52	5.41	0.85					9.65	9.51	12.15	2.16	0.39		0.20							0.20	1.89
D. g. mendotae	FEMALE		0.18	1.70	0.26	0.07	0.14		0.42		0.28	1.14	0.16	0.01	0.34			0.39	3.33	3.14	4.12	0.07	3.53	3.53	2.16	1.37	0.34	0.07	1.70
	FEMALE WITH EGG		0.01	0.64	0.14	0.04			0.02	0.03		0.43	0.14		0.11			0.12	0.76	1.00	0.05	0.05	0.17	0.78	0.32	0.39	0.34	0.16	0.31
	MALE										0.04	0.28	0.21		0.08									0.59	1.18	0.66	0.32	0.02	0.24
	JUVENILE	0.04		3.12	0.57	0.07	0.28	0.04		0.85	0.04	1.14	0.04		0.48			1.57	3.14	8.23	2.74	0.27	4.70	3.72	1.37	0.38		0.02	2.01
	TOTAL	0.04	0.19	5.47	0.99	0.18	0.43	0.04	0.44	0.88	0.36	2.98	0.57	0.29	0.99			2.08	7.23	12.37	6.91	0.39	8.40	8.62	5.02	3.14	1.00	0.22	4.26
D. longiremis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. dubia	FEMALE					0.02	0.04	0.01	0.10						0.01					0.02									0.00
	FEMALE WITH EGG																												
	MALE					0.28									0.02														
	JUVENILE				0.07	0.03	0.07								0.01														
	TOTAL				0.07	0.33	0.11	0.01	0.10						0.05					0.02									0.00
C. sphaericus	TOTAL																												
B. longirostris	ADULT		0.28	0.85	0.57	0.85	2.27	5.11	6.66	0.57	0.14	0.57			1.37						0.20	0.20	0.78		0.20	0.20			0.12
	FEMALE WITH EGG			0.01			0.28								0.02				0.20										0.02
	TOTAL		0.28	0.87	0.57	0.85	2.56	5.11	6.66	0.57	0.14	0.57			1.40				0.20		0.20	0.20	0.78		0.20	0.20			0.14
A. affinis	TOTAL																				0.20								0.02
D. leuchtenbergianum	TOTAL			0.28	0.14	0.18	1.14	1.99	2.91	1.70	0.11		0.07	0.01	0.66					0.39			1.16	0.20	0.59	0.20	0.05	0.02	0.20
H. gibberum	TOTAL		0.03	0.11	0.21	0.02	0.07	0.36	1.25	0.36	0.01				0.19			0.05	0.07	0.20	0.20			0.20	0.02				0.06
L. kindtii	TOTAL				0.01	0.02	0.01		0.01						0.00					0.01	0.01								0.00
S. crystallina	TOTAL							0.28	0.42						0.05							0.00							0.00
C. quadrangula	TOTAL																												
E. longispina	TOTAL																												
CYCLOPOIDA TOTAL	Ind.L^{-1}	51.30	44.32	14.27	5.66	4.90	8.24	8.38	21.27	9.37	3.59	2.27	4.54	24.14	15.57	9.24	113.29	111.53	60.96	53.31	34.30	0.39	33.39	23.18	39.35	22.97	38.42	28.03	43.72
	Ind.cm^{-2}	25.65	22.16	7.14	2.93	2.45	4.12	4.19	10.63	4.69	1.80	1.14	2.27	12.07	7.79	5.77	70.83	69.73	38.11	33.33	21.44	0.25	20.88	14.49	24.60	14.36	24.02	17.52	27.33
CALANOIDA TOTAL	Ind.L^{-1}	29.54	80.83	51.78	38.27	13.94	9.30	15.12	30.37	4.86	0.91	20.31	10.65	12.01	24.45	10.78	24.08	29.33	22.22	43.17	37.93	0.17	39.10	28.54	28.49	20.90	16.71	20.85	24.79
	Ind.cm^{-2}	14.77	40.42	25.88	19.13	6.97	4.65	7.56	15.18	2.43	0.45	10.15	5.33	6.01	12.23	6.74	15.06	18.34	13.89	26.99	23.71	0.11	24.45	17.84	17.81	13.07	10.45	13.04	15.50
CLADOCERA TOTAL	Ind.L^{-1}	0.94	0.50	8.72	2.00	1.59	4.31	7.78	11.78	3.51	0.61	3.55	0.64	0.31	3.33			2.13	7.50	13.00	7.51	0.59	10.36	9.02	5.83	3.53	1.05	0.25	4.67
	Ind.cm^{-2}	0.02	0.26	3.36	1.00	0.80	2.16	3.89	5.89	1.76	0.31	1.78	0.32	0.15	1.67			1.03	4.69	8.13	4.69	0.37	6.46	5.64	3.65	2.21	0.66	0.16	2.92
TOTAL	Ind.L^{-1}	80.87	125.66	72.75	46.12	20.43	21.85	31.28	63.42	17.74	5.11	28.13	15.83	36.46	43.36	20.02	137.37	142.99	90.67	109.48	79.73	1.16	82.86	60.74	73.87	47.39	56.18	49.12	73.20
	Ind.cm^{-2}	40.43	62.83	36.38	23.06	10.21	10.92	15.64	31.71	8.87	2.56	13.06	7.92	18.23	21.68	12.51	85.89	88.40	56.69	68.45	49.85	0.72	51.80	37.97	46.16	29.63	35.12	30.71	45.76

Appendix 1.12a. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral region of Lake 442, 1988.

	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEPT	OCT	SEASON
	DATE	9	26	9	23	7	21	5	18	1	7	22	12	MEAN
	DAY	130	147	161	175	189	203	218	231	245	251	266	286	
	TOTAL DEPTH (m)	NS	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
SPECIES														
C. b. thomasi	FEMALE												0.22	0.02
	FEMALE WITH EGG													
	MALE			0.38										0.03
	COPEPODID 1-V		1.78	1.92	0.38		0.77					0.44	4.00	0.84
	TOTAL		1.78	2.30	0.38		0.77					0.44	4.22	0.82
A. vernalis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V			0.77		0.77	0.77				0.22	0.22	0.22	0.27
	TOTAL			0.77		0.77	0.77				0.22	0.22	0.22	0.25
M. edax	FEMALE					0.02		0.01						0.00
	FEMALE WITH EGG													
	MALE		0.01		0.02	0.02								0.00
	COPEPODID 1-V			1.15	1.15	0.38		0.44	0.22		0.44	0.22	0.22	0.39
	TOTAL		0.01	1.15	1.17	0.42		0.46	0.22		0.44	0.22	0.22	0.36
T. p. mexicanus	FEMALE			0.38	0.38	0.77	0.38	1.78	1.33	1.11	0.22	0.44	0.67	0.68
	FEMALE WITH EGG						0.02	0.02		0.01	0.01			0.01
	MALE				0.77	0.38	0.10	0.44	0.67	0.22	0.44	1.11	0.22	0.40
	COPEPODID 1-V			1.54	2.69	4.61	1.15	5.55	6.88	6.22	6.88	1.55		3.37
	TOTAL			1.92	3.84	5.76	1.65	7.79	8.88	7.56	7.56	3.11	0.89	4.08
E. agilis	TOTAL													
C. v. rubellus	TOTAL					0.38								0.03
P. l. poppei	TOTAL													
D. minutus	FEMALE		0.11	0.19	0.77	0.38	0.19		0.04	0.22	0.07	0.06	0.22	0.21
	FEMALE WITH EGG		0.03	0.02					0.01	0.02	0.01			0.01
	MALE		0.44	0.19	0.29	0.04	0.38		0.01		0.03		0.56	0.18
	COPEPODID 1-V		4.22	5.38	1.15		0.38	0.22		0.22	0.89	1.78		1.29
	TOTAL		4.81	5.78	2.21	0.42	0.96	0.22	0.07	0.47	1.00	1.83	0.78	1.54
D. oregonensis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V													
	TOTAL													
D. sicilis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V						0.02						0.06	0.01
	TOTAL						0.02						0.06	0.01
D. ashlandi	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V													
	TOTAL													
E. lacustris	ADULT		0.01		0.02									0.00
	JUVENILE		1.55	0.38		0.38		0.22						0.23
	TOTAL		1.57	0.38	0.02	0.38		0.22						0.21
CYCLOPOID NAUPLII	NI-NVI		1.78	10.75	8.83	6.06	6.83	7.99	6.77	7.10	3.11	1.33	0.67	5.84
CALANOID NAUPLII	NI-NVI		30.84	14.59	9.60	44.93	24.96	7.55	5.11	1.55	3.33			12.93
D. g. mendotae	FEMALE				0.02									0.00
	FEMALE WITH EGG													
	MALE											0.22	0.22	0.04
	JUVENILE						0.08							0.01
	TOTAL				0.02		0.08					0.22	0.22	0.05
D. longiremis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. dubia	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
C. sphaericus	TOTAL											0.22		0.02
B. longirostris	AD+JUV		3.55	4.99	1.54	0.38	0.38	1.11	0.22	0.89	0.44	0.44		1.27
	FEMALE WITH EGG													
	TOTAL		3.55	4.99	1.54	0.38	0.38	1.11	0.22	0.89	0.44	0.44		1.16
A. affinis	TOTAL					0.38								0.03
D. leuchtenbergianum	TOTAL							0.22		0.02		0.02		0.02
H. gibberum	TOTAL		0.22		0.02	0.02								0.02
L. kindtii	TOTAL													
S. crystallina	TOTAL						0.08							0.01
C. quadrangula	TOTAL													
E. longispina	TOTAL											0.22		0.22
CYCLOPOIDA TOTAL	Ind.L^{-1}		3.56	16.90	14.23	15.40	12.02	16.24	14.87	14.66	11.33	5.33	6.22	11.89
	Ind.cm^{-2}		0.54	2.58	2.15	2.33	1.82	2.46	2.25	2.22	1.72	0.81	0.94	1.80
CALANOIDA TOTAL	Ind.L^{-1}		37.01	20.78	11.83	45.73	25.94	7.99	5.17	2.02	4.33	1.83	0.83	14.86
	Ind.cm^{-2}		5.60	3.14	1.79	6.92	3.93	1.21	0.78	0.31	0.66	0.28	0.13	2.25
CLADOCERA TOTAL	Ind.L^{-1}		3.77	4.99	1.57	0.79	0.52	1.33	0.22	0.91	0.44	1.13	0.22	1.45
	Ind.cm^{-2}		0.57	0.76	0.24	0.12	0.08	0.20	0.03	0.14	0.07	0.17	0.03	0.22
TOTAL	Ind.L^{-1}		44.34	42.64	27.63	61.92	38.48	25.56	20.27	17.59	16.11	8.29	7.27	28.19
	Ind.cm^{-2}		6.71	8.45	4.16	9.37	5.82	3.87	3.07	2.66	2.44	1.25	1.10	4.27

Appendix 1.12b. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral region of Lake 442, 1989.

	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	18	31	15	29	13	27	10	24	7	21	4	18	MEAN
	DAY	138	151	166	180	194	208	222	236	250	264	277	289	
	TOTAL DEPTH (m)	26.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	
SPECIES														
C. b. thomasi	FEMALE	1.38				0.08	0.23				0.01		0.01	0.14
	FEMALE WITH EGG	0.01												0.00
	MALE	0.40			0.11	0.08	0.46		0.23					0.11
	COPEPODID 1-V	10.48	9.82	5.80	1.34		2.09	0.23				0.93	2.09	2.73
	TOTAL	12.27	9.82	5.80	1.46	0.12	2.78	0.23	0.23		0.01	0.93	2.10	2.98
A. vernalis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V			0.01							0.46	0.23	0.23	0.08
	TOTAL			0.01							0.46	0.23	0.23	0.08
M. edax	FEMALE			0.01	0.02	0.23				0.01				0.02
	FEMALE WITH EGG													
	MALE	0.10		0.11										0.02
	COPEPODID 1-V	0.40		0.89	1.79	1.82	0.46	0.23	0.23	1.16	0.70	0.23		0.84
	TOTAL	0.49		1.02	1.81	1.86	0.46	0.23	0.23	1.17	0.70	0.23		0.68
T. p. mexicanus	FEMALE						0.46	0.70	0.46	0.70	1.39	0.70	0.93	0.44
	FEMALE WITH EGG						0.01	0.08	0.08					0.01
	MALE							0.08	0.46	1.86	0.70	2.09	0.46	0.47
	COPEPODID 1-V					0.23	1.86	3.25	2.32	10.21	3.25		0.70	1.82
	TOTAL					0.23	2.33	4.06	3.31	12.76	5.34	2.78	2.09	2.74
E. agilis	TOTAL							0.01						0.00
C. v. rubellus	TOTAL													
D. minutus	FEMALE	2.37	0.45	3.57	0.89		0.23				0.01	0.03	0.17	0.64
	FEMALE WITH EGG	0.20	0.02	0.89	0.11		0.02						0.01	0.10
	MALE	1.98	0.89	2.23								0.02	0.12	0.44
	COPEPODID 1-V	0.59	16.86	18.75	1.79		0.46	0.46	0.23				0.23	3.29
	TOTAL	5.14	18.32	25.44	2.79		0.72	0.46	0.23		0.01	0.06	0.53	4.48
D. oregonensis	FEMALE													
	FEMALE WITH EGG						0.23							0.02
	MALE													
	COPEPODID 1-V													
	TOTAL						0.23							0.02
D. sicilis	FEMALE	0.59												0.05
	FEMALE WITH EGG	0.20												0.02
	MALE	0.20									0.46			0.06
	COPEPODID 1-V					0.93					0.01		0.06	0.08
	TOTAL	0.99				0.93					0.46		0.06	0.20
D. ashlandi	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1-V													
	TOTAL													
E. lacustris	ADULT			0.01		0.02	0.01							0.00
	JUVENILE		0.45	0.45			0.23		0.70					0.15
	TOTAL		0.45	0.46		0.02	0.24		0.70					0.16
CYCLOPOID NAUPLII	NI-NVI	21.76	22.32	37.50	9.37	1.62	6.73	7.42	2.55	2.78	1.16		1.62	9.57
CALANOID NAUPLII	NI-NVI	56.77	93.74	33.48	5.80	6.73	3.94	3.71	2.55	0.93	1.62	0.23		17.46
D. g. mendotae	FEMALE					0.23							0.01	0.02
	FEMALE WITH EGG			0.01										0.00
	MALE										0.01		0.01	0.00
	JUVENILE		0.01	0.02	0.02		0.23							0.02
	TOTAL		0.01	0.03	0.02	0.23	0.23				0.01		0.02	0.05
D. longiremis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	JUVENILE													
	TOTAL													
D. dubia	FEMALE													
	FEMALE WITH EGG													
	MALE			0.01										0.00
	JUVENILE													
	TOTAL			0.01										0.00
C. sphaericus	TOTAL													
B. longirostris	AD+JUV	0.59	4.46	10.71	0.89	1.39	0.46	1.16	0.93	0.23				1.74
	FEMALE WITH EGG		0.07								0.06			0.01
	TOTAL	0.59	4.53	10.71	0.89	1.39	0.46	1.16	0.93	0.23	0.06			1.75
A. affinis	TOTAL													
D. leuchtenbergianum	TOTAL			0.06		0.06	0.29		0.01	0.01				0.04
H. gibberum	TOTAL								0.06	0.01				0.01
L. kindtii	TOTAL			0.04										0.00
S. crystallina	TOTAL													
C. quadrangula	TOTAL													
E. longispina														
CYCLOPOIDA TOTAL	ind.L^{-1}	34.53	32.14	44.33	12.83	3.83	12.31	11.98	6.32	16.72	7.67	4.18	8.04	16.05
	ind.cm^{-2}	5.23	4.86	6.71	1.91	0.58	1.86	1.81	0.96	2.53	1.16	0.63	0.91	2.43
CALANOIDA TOTAL	ind.L^{-1}	62.90	112.52	59.38	8.59	7.68	5.14	4.18	3.48	0.93	2.11	0.29	0.59	22.32
	ind.cm^{-2}	9.52	17.03	8.99	1.30	1.16	0.78	0.63	0.53	0.14	0.32	0.04	0.09	3.38
CLADOCERA TOTAL	ind.L^{-1}	0.59	4.54	10.86	0.92	1.68	0.99	1.16	1.00	0.26	0.07		0.02	1.84
	ind.cm^{-2}	0.09	0.69	1.64	0.14	0.25	0.15	0.18	0.15	0.04	0.01		0.00	0.28
TOTAL	ind.L^{-1}	98.02	149.20	114.57	22.14	13.19	18.43	17.30	10.80	17.90	9.85	4.47	8.66	40.21
	ind.cm^{-2}	14.84	22.58	17.34	3.35	2.00	2.79	2.62	1.63	2.71	1.49	0.68	1.01	6.09

Appendix 1.12c. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral region of Lake 442, 1990.

	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	7	23	6	20	4	18	1	15	29	12	26	10	22	MEAN
	DAY	127	143	157	171	185	199	213	227	241	255	269	283	295	
	TOTAL DEPTH (m)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
SPECIES															
C. b. thomasi	FEMALE	6.24													0.48
	FEMALE WITH EGG														
	MALE	0.83								0.05					0.07
	COPEPODID 1-V	9.78	1.66	5.82	1.66				0.42		0.42		2.50	4.99	2.10
	TOTAL	16.85	1.66	5.82	1.66				0.42	0.05	0.42		2.50	4.99	2.64
A. vernalis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V	0.42		0.42	0.42		0.42	0.42			0.42				0.19
	TOTAL	0.42		0.42	0.42		0.42	0.42			0.42				0.19
M. edax	FEMALE							0.05	0.05						0.01
	FEMALE WITH EGG														
	MALE					0.02	0.02	0.01							0.00
	COPEPODID 1-V	0.42	0.42				0.42	0.42	0.83	0.83	3.74	0.01	0.83		0.61
	TOTAL	0.42	0.42			0.02	0.44	0.48	0.88	0.83	3.74	0.01	0.83		0.62
T. p. mexicanus	FEMALE	0.82	0.42			0.42		0.42	0.83	0.42					0.24
	FEMALE WITH EGG							0.10			0.42				0.04
	MALE						0.42	0.42			0.42	0.05			0.10
	COPEPODID 1-V	0.21			2.08	0.83	5.82	1.25	4.99	2.08	0.42				1.36
	TOTAL	0.83	0.42		2.08	1.25	8.24	2.18	5.82	2.50	1.25	0.05			1.74
E. agilis	TOTAL														
C. v. rubellus	TOTAL														
P. l. poppei	TOTAL														
D. minutus	FEMALE	0.83		0.83	1.25	0.08	0.01			0.42			0.83	2.50	0.52
	FEMALE WITH EGG	0.82		0.05	0.42					0.01			0.05		0.09
	MALE	1.25	1.66	2.08	1.25	0.03	0.01	0.01					1.25	1.66	0.71
	COPEPODID 1-V		2.91	6.32	9.57	0.42	0.42	0.83	2.08	0.83	3.33	0.14	4.58	2.50	2.76
	TOTAL	2.70	4.58	11.28	12.48	0.51	0.44	0.84	2.08	1.28	3.33	0.14	6.71	6.66	4.08
D. oregonensis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V														
	TOTAL														
D. sicilis	FEMALE	0.42												0.16	0.04
	FEMALE WITH EGG	0.82													0.05
	MALE	2.50												0.16	0.20
	COPEPODID 1-V							0.05					1.66	1.25	0.23
	TOTAL	3.64						0.05					1.66	1.66	0.52
D. ashlandi	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V														
	TOTAL														
E. lacustris	ADULT				0.01		0.05				0.02	0.01		0.01	0.01
	JUVENILE		2.50	0.03	0.42	0.01	0.01		0.01						0.23
	TOTAL		2.50	0.03	0.43	0.01	0.06		0.01		0.02	0.01		0.01	0.24
CYCLOPOID NAUPLII	NI-NVI	17.47	2.91	4.16	10.40	1.66	3.74	7.90	12.06	8.24	3.74		1.25	11.23	8.37
CALANOID NAUPLII	NI-NVI	8.32	85.70	22.88	21.63	3.33	10.82	11.23	7.90	1.66	0.42				13.38
D. g. mendotae	FEMALE				0.02			0.01			0.42				0.03
	FEMALE WITH EGG				0.01						0.10			0.01	0.01
	MALE								0.05		0.05				0.01
	JUVENILE										0.83		0.01		0.06
	TOTAL				0.03			0.01	0.05		1.40		0.01	0.01	0.12
D. longiremis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL														
D. dubia	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL														
C. sphaericus	TOTAL														
B. longirostris	AD+JUV			1.25	1.66		1.25	0.83	2.91			0.42	0.02		0.64
	FEMALE WITH EGG														
	TOTAL			1.25	1.66		1.25	0.83	2.91			0.42	0.02		0.64
A. affinis	TOTAL						0.01	0.42							0.03
D. leuchtenbergianum	TOTAL		0.42			0.01					0.42	0.01	0.01	0.01	0.07
H. gibberum	TOTAL			0.01	0.02	0.01		0.01		0.42	0.10			0.42	0.08
L. kindtii	TOTAL				0.01										0.00
S. crystallina	TOTAL						0.01		0.05						0.00
C. quadrangula	TOTAL														
E. longispina	TOTAL														
CYCLOPOIDA TOTAL	ind.L^{-1}	35.86	6.41	10.40	14.58	2.93	10.84	10.98	19.19	9.62	9.57	0.06	4.58	16.22	11.58
	ind.cm^{-3}	5.45	0.82	1.57	2.20	0.44	1.64	1.66	2.90	1.46	1.45	0.01	0.69	2.46	1.75
CALANOIDA TOTAL	ind.L^{-1}	14.68	92.77	34.20	34.54	3.85	11.32	12.13	9.99	2.92	3.76	0.15	8.37	8.23	16.21
	ind.cm^{-3}	2.20	14.04	5.18	5.23	0.58	1.71	1.84	1.51	0.44	0.57	0.02	1.27	1.25	2.76
CLADOCERA TOTAL	ind.L^{-1}		0.42	1.26	1.73	0.02	1.27	1.27	3.02	0.42	1.92	0.43	0.04	0.44	0.94
	ind.cm^{-3}		0.06	0.19	0.26	0.00	0.19	0.19	0.46	0.06	0.29	0.06	0.01	0.07	0.14
TOTAL	ind.L^{-1}	50.54	98.59	45.85	50.82	6.80	23.42	24.38	32.20	12.96	15.26	0.63	12.99	24.89	30.72
	ind.cm^{-3}	7.65	14.92	6.94	7.69	1.03	3.54	3.69	4.87	1.96	2.31	0.10	1.97	3.77	4.65

Appendix 1.13a. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral and pelagic regions of Lake 938, 1988.

		LITTORAL											PELAGIC									
REGION																						
MONTH		JUNE	JUNE	JUNE	JULY	NS	AUG	AUG	SEPT	SEPT	OCT	SEASON	JUNE	JUNE	JUNE	JULY		AUG	AUG	SEPT	SEPT	OCT	SEASON
DATE		2	16	30	14		11	25	7	21	14	MEAN	2	16	30	14		11	28	7	21	10	MEAN
DAY		154	168	182	195		224	238	251	265	288		154	168	182	196	NS	224	241	251	265	283	
TOTAL DEPTH (m)		21.0	21.0	21.0	21.0		21.0	21.0	21.0	21.0	21.0		17.0	17.0	17.0	17.0		17.0	17.0	17.0	17.0	17.0	
SPECIES																							
C. b. thomasi	FEMALE	0.01									0.01	0.00											
	FEMALE WITH EGG	0.01										0.00											
	MALE	0.10									0.01	0.01											
	COPEPODID 1–V	0.51		0.51							0.10	0.12		0.02	0.63								0.07
	TOTAL	0.64		0.51							0.13	0.13		0.02	0.63								0.06
A. vernalis	FEMALE								0.01			0.00											
	FEMALE WITH EGG																						
	MALE								0.01			0.00											
	COPEPODID 1–V		1.02	1.52	4.06		2.03			1.52	2.03	1.35	0.02	2.51	3.14	1.88			0.63	1.88			1.12
	TOTAL		1.02	1.52	4.06		2.03		0.03	1.52	2.03	1.22	0.02	2.51	3.14	1.88			0.63	1.88			1.01
M. edax	FEMALE			0.01								0.00											
	FEMALE WITH EGG																						
	MALE		0.01	0.01			0.03					0.01			0.13								0.01
	COPEPODID 1–V	0.51		0.51	2.03			1.02	1.02	0.01		0.57		1.26	2.51	0.63			3.14				0.84
	TOTAL	0.51	0.01	0.53	2.03		0.03	1.02	1.02	0.01		0.62		1.26	2.64	0.63			3.14				0.77
T. p. mexicanus	FEMALE		0.10				3.05	4.06	6.10	4.57	0.51	2.04			2.51				4.40	5.65	4.40	0.63	1.95
	FEMALE WITH EGG			0.01	0.01		0.10					0.01							2.51				0.28
	MALE		1.02	0.51			4.06	7.62	12.70	19.81	6.10	5.76				0.63		0.13	11.30	13.82	7.54	1.26	3.86
	COPEPODID 1–V		1.02		2.54		13.72	38.10	33.02	21.84	4.06	12.70		0.63	1.26	0.63			54.64	26.38	18.21	0.63	11.37
	TOTAL		2.13	0.52	2.55		20.93	49.78	51.82	46.23	10.67	18.46		0.63	3.77	1.26		0.13	72.85	45.84	30.14	2.51	15.71
M. albidus	TOTAL																						
E. agilis	TOTAL								0.01			0.00											
C. v. rubellus	TOTAL																						
D. minutus	FEMALE	0.10	0.01	0.05	0.10							0.03			0.13								0.01
	FEMALE WITH EGG	0.01										0.00											
	MALE	0.01	0.20	0.01	0.09							0.04			0.13	0.02							0.02
	COPEPODID 1–V		1.52		0.51							0.23		1.26	0.63	0.02							0.21
	TOTAL	0.13	1.74	0.06	0.70							0.26		1.26	0.88	0.03							0.22
D. oregonensis	FEMALE						0.01	0.01		0.01	0.01	0.01											
	FEMALE WITH EGG						0.01					0.00											
	MALE																						
	COPEPODID 1–V																			0.02		0.02	0.00
	TOTAL						0.03	0.01		0.01	0.01	0.01		0.63	0.63	0.02				0.13			0.16
D. sicilis	FEMALE													0.63	0.63	0.02				0.14		0.02	0.14
	FEMALE WITH EGG																						
	MALE																						
	COPEPODID 1–V																						
	TOTAL																						
E. lacustris	ADULT	0.01										0.00											
	JUVENILE		0.04									0.00		0.08									0.01
	TOTAL	0.01	0.04									0.01		0.08									0.01
CYCLOPOID NAUPLII	NI–NVI	8.64	7.62	9.14	24.38		36.07	168.15	40.64	14.73	11.16	35.52	1.28	10.68	15.07	10.68		1.26	164.54	52.75	18.84	1.26	30.70
CALANOID NAUPLII	NI–NVI	6.10	1.52	0.51	1.02			0.51				1.07											
D. retrocurva	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE												0.03										0.00
	TOTAL												0.03										0.00
D. g. mendotae	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE																						
	TOTAL																						
D. longiremis	FEMALE																						
	FEMALE WITH EGG																						
	MALE																						
	JUVENILE																						
	TOTAL																						
C. lacustris	TOTAL		0.51	0.13	10.16		0.51	2.03	3.05	2.03		2.05		0.09		1.88		0.63	3.77	6.28	0.63	0.02	1.46
S. vetulus	TOTAL																						
C. ephacicus	TOTAL	0.14		0.10	0.01			0.51	0.51		0.51	0.20		0.13					0.63			0.02	0.09
B. longirostris	AD+JUV	6.10	6.13	4.06	47.24		8.64	10.16	14.22	12.19	4.57	12.81	1.88	3.77	8.16	25.12		1.88	11.30	17.58	6.28	3.14	8.79
	FEMALE WITH EGG	0.01		1.02	1.62		1.02				0.51	0.45	0.13		1.26	1.88			0.63	1.26		0.13	0.59
	TOTAL	6.11	6.13	5.08	48.77		9.65	10.16	14.22	12.19	5.08	11.94	2.01	3.77	9.42	27.00		1.88	11.93	18.84	6.28	3.27	6.44
A. affinis	TOTAL								0.03		0.51	0.06											
D. leuchtenberglanum	TOTAL			0.01	0.10		0.20	0.10		0.10		0.06		0.02		0.25			2.51	0.25	0.13	0.02	0.35
H. gibberum	TOTAL	2.54	0.10				0.01	0.51	0.10	0.20	0.20	0.41	0.25	1.13	0.13	0.13				0.06	0.25	0.05	0.22
L. kindtii	TOTAL	0.51	0.05	0.08	0.05							0.06	0.02	0.11	0.02	0.02		0.13	0.13	0.02			0.05
P. pediculus	TOTAL							10.16				1.13							30.77				3.42
S. crystallina	TOTAL							0.03				0.00								0.02	0.02		0.00
C. quadrangula	TOTAL																						
C. reticulata	TOTAL																						
A. quadrangularis	TOTAL																						
C. rectirostris	TOTAL																						
E. lamellatus	TOTAL								0.30			0.03											
A. harpae	TOTAL																		0.63			0.02	0.07
L. setifera	TOTAL						0.01		0.04			0.03											
O. gracilis	TOTAL								0.01			0.01											
L. sordidus	TOTAL								0.03			0.03											
S. serrulatus	TOTAL								0.03			0.03											
S. lilngi	TOTAL																						
Alonella sp	TOTAL																						
A. curvirostris	TOTAL																						
D. dentata	TOTAL																						
P. procurvis	TOTAL																						
Chaoborus sp	TOTAL			0.03	0.03							0.01		0.03	0.02								0.01
CYCLOPOIDA TOTAL	Ind.L^{-1}	9.76	10.78	12.23	33.03		59.06	218.95	93.51	62.50	24.00	52.38	1.27	15.09	25.25	14.44		1.38	241.15	100.46	48.98	3.77	45.18
	Ind.cm^{-2}	1.98	2.18	2.46	6.69		11.95	44.32	18.93	12.65	4.86	10.60	0.50	5.90	9.88	5.65		0.54	94.33	39.31	19.16	1.47	19.64
CALANOIDA TOTAL	Ind.L^{-1}	6.24	3.30	0.57	1.71		0.03	0.52		0.01	0.01	1.24		1.96	1.51	0.05				0.14		0.02	0.37
	Ind.cm^{-2}	1.26	0.67	0.12	0.35		0.01	0.11		0.00	0.00	0.25		0.77	0.59	0.02				0.06		0.01	0.16
CLADOCERA TOTAL	Ind.L^{-1}	9.30	8.79	5.40	59.09		10.39	23.50	18.31	14.53	6.30	15.56	2.31	5.24	9.56	29.28		2.64	50.37	25.47	7.30	3.38	13.55
	Ind.cm^{-2}	1.88	1.78	1.09	11.96		2.10	4.76	3.71	2.94	1.28	3.16	0.90	2.05	3.74	11.45		1.03	19.70	9.96	2.86	1.32	5.89
TOTAL	Ind.L^{-1}	25.31	22.87	18.22	93.87		69.47	242.96	111.82	77.04	30.31	78.68	3.58	22.33	36.33	43.77		4.02	291.52	126.09	56.28	7.16	65.67
	Ind.cm^{-2}	5.12	4.63	3.69	19.00		14.06	49.18	22.64	15.59	6.14	14.01	1.40	8.73	14.21	17.12		1.57	114.03	49.32	22.02	2.80	25.69

Appendix 1.13b. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral and pelagic regions of Lake 936, 1989.

	REGION	LITTORAL													PELAGIC											
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	17	31	14	28	12	26	9	23	6	20	4	17	MEAN	17	31	14	28	12	26	9	23	6	20	4	17	MEAN
	DAY	137	151	165	179	193	208	221	235	249	263	277	290		137	151	165	179	193	208	221	235	249	263	277	290	
	TOTAL DEPTH (m)	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	22.4		24.4	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	22.2	
SPECIES																											
C. b. thomasi	FEMALE	0.05	0.20	0.59	0.20	0.20		0.20		0.01			0.01	0.12	0.22	0.03			0.22				0.02	0.02	0.05		0.05
	FEMALE WITH EGG																										
	MALE	0.40	0.20	0.59	0.05					0.01				0.10	0.65	0.22	0.43										0.11
	COPEPODID 1-V	7.92	25.15	6.34	1.39	0.20	0.59			0.03		0.20	0.48	3.52	10.46	16.20	7.34	1.08	0.43	0.65			0.02	0.43	0.22	0.24	3.09
	TOTAL	8.37	25.54	7.52	1.63	0.40	0.59	0.20		0.05		0.20	0.49	3.75	11.34	16.45	7.78	1.30	0.43	0.65			0.04	0.45	0.27	0.24	3.25
A. vernalis	FEMALE								0.01					0.00									0.01				0.00
	FEMALE WITH EGG																										
	MALE																									0.01	0.00
	COPEPODID 1-V			0.40	0.79	1.39	2.38	1.39	0.79	0.40			1.43	0.75			0.43	0.86	0.65	3.24	1.30	1.51	1.08	1.08	1.73	2.40	1.19
	TOTAL			0.40	0.79	1.39	2.38	1.39	0.80	0.40			1.43	0.75			0.43	0.86	0.65	3.24	1.30	1.51	1.08	1.08	1.73	2.41	1.19
M. edax	FEMALE		0.02			0.05		0.01		0.20				0.02	0.01					0.22							0.02
	FEMALE WITH EGG																										
	MALE		0.10				0.01	0.20						0.03					0.01	0.05	0.01	0.01					0.01
	COPEPODID 1-V	0.10		0.20		0.79	1.78	1.98	0.99	0.20	0.20	0.02		0.52	0.65	0.02		0.01	0.86	1.94	2.38	0.86	1.30	0.43	0.05	0.02	0.71
	TOTAL	0.10	0.12	0.20		0.84	1.79	2.19	0.99	0.40	0.20	0.02		0.57	0.66	0.02		0.01	0.87	2.21	2.39	0.87	1.30	0.43	0.05	0.02	0.74
T. p. mexicanus	FEMALE		0.20		0.20		0.59	1.19	0.20	0.20	0.20			0.23	0.44					0.65	1.08	0.43		0.22	0.43	0.06	0.28
	FEMALE WITH EGG							0.20	0.20					0.03						0.11	0.22						0.03
	MALE							1.19	0.79	0.40				0.20						0.43	2.16	0.43	1.94	0.01			0.41
	COPEPODID 1-V			0.20	0.40	2.77	1.58	2.97	0.59	0.59			0.24	0.78				0.22	0.43	1.30	2.38	3.02	1.30	1.30		0.46	0.87
	TOTAL		0.20		0.40	3.37	4.16	4.16	1.19	0.79			0.24	1.24	0.44			0.22	0.43	2.48	5.83	3.89	3.24	1.52	0.43	0.54	1.59
M. albidus	TOTAL												0.01	0.00													
E. agilis	TOTAL				0.01									0.00	0.01								0.22		0.05		0.02
C. v. rubellus	TOTAL																										
D. minutus	FEMALE			0.40	0.05		0.20	0.40			0.06	0.01	0.24	0.11			0.22			0.22				0.02		0.06	0.04
	FEMALE WITH EGG			0.13				0.10				0.05	0.01	0.02			0.11	0.05			0.12	0.01		0.02	0.01		0.03
	MALE			0.99	0.20	0.10	0.40	0.79	0.20	0.20	0.12	0.01	0.06	0.25			0.66	0.43		0.43	0.43	0.22		0.06	0.05	0.06	0.21
	COPEPODID 1-V		14.85	0.40	0.20	1.56	1.19	1.39	0.79	1.39	0.20	0.20	0.24	1.87	0.44	7.56	0.43	0.22	2.38	1.30	1.94	1.94	0.43		0.22	0.24	1.42
	TOTAL		14.85	1.91	0.45	1.66	1.78	2.67	0.99	1.58	0.38	0.27	0.55	2.26	0.44	7.56	1.62	0.70	2.38	1.94	2.49	2.17	0.43	0.11	0.28	0.36	1.71
D. oregonensis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1-V					0.20								0.02													
	TOTAL					0.20								0.02													
D. sicilis	FEMALE																										
	FEMALE WITH EGG														0.01												0.00
	MALE														0.02												0.00
	COPEPODID 1-V		0.20	0.59										0.07			0.05										0.00
	TOTAL		0.20	0.59										0.07	0.03		0.05										0.01
E. lacustris	ADULT			0.01	0.01									0.00				0.01	0.01	0.01	0.01						0.00
	JUVENILE		1.58	1.19	0.20	0.20	0.20		0.40	0.20	0.04			0.33		1.08	1.08	0.43	0.86	1.51	0.43	0.22		0.22	0.05	0.01	0.49
	TOTAL		1.58	1.20	0.21	0.20	0.20		0.40	0.20	0.04			0.33		1.08	1.08	0.44	0.87	1.52	0.44	0.22		0.22	0.05	0.01	0.50
CYCLOPOID NAUPLII	NI-NVI	27.72	20.00	4.55	3.56	1.98	6.53	11.86	8.71	3.56	1.19	1.58	1.90	7.77	39.68	11.23	7.78	3.46	3.67	10.37	15.98	5.83	10.80	4.10	4.54	4.56	10.17
CALANOID NAUPLII	NI-NVI	7.62	3.17	2.16	4.16	1.98	1.98	3.17	2.57	0.99	0.99		0.24	2.41	12.21	3.02	1.94	11.02	5.18	1.94	2.16	0.86	0.43		0.43		3.27
D. retrocurva	FEMALE			0.01							0.01			0.00				0.02		0.05			0.22		0.01		0.03
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE																				0.05						0.00
	TOTAL			0.01							0.01			0.00				0.02		0.05	0.05		0.22		0.01		0.03
D. g. mendotae	FEMALE					0.01								0.00							0.22		0.22				0.02
	FEMALE WITH EGG																										0.02
	MALE																										
	JUVENILE				0.01		0.01		0.40					0.03													
	TOTAL				0.01	0.01	0.01		0.40					0.04							0.22		0.22				0.04
D. longiremis	FEMALE														0.22		0.43	0.01	0.22								0.07
	FEMALE WITH EGG		0.01	0.01										0.00	0.01		0.43	0.02									0.04
	MALE																										
	JUVENILE	0.79	0.20	0.40	0.20									0.13	0.22	0.22	0.43										0.07
	TOTAL	0.79	0.21	0.41	0.20									0.13	0.45	0.22	1.30	0.03	0.22								0.18
C. lacustris	TOTAL	0.40		0.20		0.05	0.01	2.77	1.39	1.98	1.58	0.02	0.04	0.70			0.11	0.01	0.05	0.65	3.46	0.43	0.65	1.51	0.43	0.01	0.61
S. vetulus	TOTAL																										
C. sphaericus	TOTAL		0.05	0.40	0.20	0.40		0.79	0.59	0.20			0.24	0.24		0.22	0.22	0.22	0.43	0.43	0.43		0.22	0.22				0.20
B. longirostris	AD+JUV	0.79	0.99	4.16	4.16	2.18	3.76	12.67	6.34	2.97	5.94	3.56	7.38	4.57		0.43	5.62	5.83	1.51	4.32	17.60	3.89	4.54	7.34	7.34	9.60	5.66
	FEMALE WITH EGG			0.59						0.20	0.20	0.79	0.71	0.21				0.22	0.22			0.22		0.43	0.86	1.44	0.26
	TOTAL	0.79	0.99	4.75	4.16	2.18	3.76	12.67	6.34	3.17	6.14	4.36	8.09	4.78		0.43	5.62	6.05	1.73	4.32	17.50	4.10	4.54	7.78	8.21	11.04	5.94
A. affinis	TOTAL																										
D. leuchtenbergianum	TOTAL		0.05		0.02	0.59	1.39	5.94	1.39	0.59	0.01			0.83				0.22	0.86	3.24	7.13	0.65		0.01	0.01		1.01
H. gibberum	TOTAL	0.10	0.20	0.03	0.05	0.20	0.20		0.20	0.20	0.03		0.10	0.11	0.22	0.22	0.43	0.66			0.05	0.22	0.22	0.43	0.06	0.18	0.24
L. kindtii	TOTAL				0.01	0.06	0.01	0.10						0.01					0.14	0.02							0.01
P. pediculus	TOTAL			0.01		0.04	0.08	0.15	0.01		0.02			0.03				0.11	0.09	0.05	0.05	0.01			0.01		0.03
S. crystallina	TOTAL	0.05	0.01	0.02					0.01	0.02				0.01				0.05		0.22		0.01	0.03	0.22	0.01		0.05
C. quadrangula	TOTAL																										
C. reticulata	TOTAL																										
A. quadrangularis	TOTAL																										
C. rectirostris	TOTAL																										
E. lamellatus	TOTAL																							0.01			0.00
A. harpae	TOTAL								0.40					0.03													
L. setifera	TOTAL																	0.01									0.01
O. gracilis	TOTAL																	0.01									0.01
L. sordidus	TOTAL																										
S. serrulatus	TOTAL																										
S. kingii	TOTAL																			0.22							0.22
Alonella sp	TOTAL																										
A. curvirostris	TOTAL																										
D. dentata	TOTAL																										
P. procurvis	TOTAL																										
Chaoborus sp	TOTAL					0.01								0.00						0.01	0.11						0.01
CYCLOPOIDA TOTAL	Ind.L^{-1}	38.18	45.86	12.67	6.40	5.00	14.66	19.81	14.66	5.59	2.18	1.80	4.07	14.07	52.12	27.70	15.98	5.84	6.08	18.95	25.50	12.11	16.69	7.59	7.07	7.78	16.95
	Ind.cm^{-3}	7.32	9.28	2.57	1.29	1.01	2.97	4.01	2.97	1.13	0.44	0.36	0.82	2.85	20.39	10.84	6.25	2.29	2.37	7.41	9.97	4.74	6.53	2.97	2.77	3.04	6.63
CALANOIDA TOTAL	Ind.L^{-1}	7.62	19.80	5.68	4.81	4.06	3.96	5.84	3.96	2.77	1.41	0.27	0.79	5.09	12.66	11.66	4.70	12.16	8.43	5.41	5.10	3.25	0.86	0.32	0.77	0.37	5.48
	Ind.cm^{-3}	1.52	4.01	1.19	0.97	0.82	0.80	1.18	0.80	0.56	0.28	0.05	0.16	1.03	4.96	4.56	1.64	4.76	3.30	2.12	1.99	1.27	0.34	0.13	0.30	0.15	2.14
CLADOCERA TOTAL	Ind.L^{-1}	2.13	1.50	5.82	4.64	3.62	5.45	22.42	10.71	6.16	7.79	4.38	8.46	6.92	0.68	1.08	7.68	7.59	3.52	9.20	26.69	5.42	6.08	10.17	8.75	11.23	8.30
	Ind.cm^{-3}	0.43	0.30	1.18	0.94	0.71	1.10	4.54	2.17	1.25	1.58	0.89	1.71	1.40	0.26	0.42	3.00	2.97	1.38	3.60	11.30	2.12	2.38	3.98	3.42	4.39	3.27
TOTAL	Ind.L^{-1}	45.84	67.16	24.37	15.85	12.59	24.08	48.07	29.33	14.52	11.38	6.44	13.32	26.08	65.47	40.45	28.36	25.60	18.01	33.56	59.59	20.78	23.63	18.09	16.59	19.38	30.79
	Ind.cm^{-3}	9.28	13.59	4.93	3.21	2.55	4.87	9.73	5.94	2.94	2.30	1.30	2.70	5.28	25.61	15.82	11.09	10.01	7.05	13.13	23.31	8.13	9.24	7.09	6.49	7.58	12.05

Appendix 1.13c. Mean abundance (individuals per litre) of zooplankton species life stages in the littoral and pelagic regions of Lake 938, 1990.

		LITTORAL														PELAGIC											
REGION																											
MONTH		MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
DATE		8	22	5	19	3	17	31	14	28	11	25	9	23	MEAN	8	22	5	19	3	19	31	14	28	11	25	9	23	MEAN
DAY		128	142	156	170	184	200	212	226	240	254	268	282	296		128	142	156	170	184	200	212	226	240	254	268	282	296	
TOTAL DEPTH (m)		27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0		24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	
SPECIES																													
C. b. thomasi	FEMALE	0.19		1.12											0.10	0.20	0.20	1.41	0.81										0.20
	FEMALE WITH EGG																0.01												0.00
	MALE	0.05	0.19	0.74											0.08	0.40	0.40	1.41	0.20										0.19
	COPEPODID 1–V	1.12	5.77	16.55	0.19		0.37							0.19	1.86	3.43	8.28	13.13	5.66							0.20		0.06	2.37
	TOTAL	1.35	5.95	18.41	0.19		0.37							0.19	2.04	4.04	8.90	15.96	6.67							0.20		0.06	2.76
A. vernalis	FEMALE																		0.05										0.00
	FEMALE WITH EGG																												
	MALE	0.05													0.00														
	COPEPODID 1–V	0.56	2.60	2.42	1.67		0.37	0.19	1.12	1.86	3.72	2.79	5.77	2.60	1.97	1.01	2.02	3.84	1.41	0.20	0.20	0.61	1.01	2.22	2.42	3.84	4.85	3.23	2.07
	TOTAL	0.60	2.60	2.42	1.67		0.37	0.19	1.12	1.86	3.72	2.79	5.77	2.60	1.98	1.01	2.02	3.84	1.46	0.20	0.20	0.61	1.01	2.27	2.42	3.84	4.85	3.24	2.08
M. edax	FEMALE																0.05								0.01				0.00
	FEMALE WITH EGG																												
	MALE		0.01								0.02				0.00		0.05												
	COPEPODID 1–V	0.19			0.19	0.01	0.19	0.56	0.37	0.19	0.74	0.19	0.19	0.02	0.22	0.40		0.40		0.05		0.40	0.40	1.21	0.81	0.40	0.20	0.20	0.35
	TOTAL	0.19	0.01		0.19	0.01	0.19	0.56	0.37	0.19	0.76	0.19	0.19	0.02	0.22	0.40	0.10	0.40		0.05		0.40	0.40	1.21	0.82	0.40	0.20	0.20	0.35
T. p. mexicanus	FEMALE	0.19						0.01	0.19	0.19	0.19			0.19	0.07								0.05		0.04			0.10	0.01
	FEMALE WITH EGG																												
	MALE							0.01		0.01		0.37		0.09	0.04									0.20	0.03	0.20	0.20		0.05
	COPEPODID 1–V					0.19		0.56	0.37	0.56	0.56	0.19	1.12		0.27								1.01	1.21	0.81	1.41	0.40		0.37
	TOTAL	0.19				0.19		0.58	0.56	0.75	0.74	0.56	1.12	0.28	0.38								1.06	1.46	0.88	1.62	0.61	0.10	0.44
M. albidus	TOTAL	0.01													0.00														
E. agilis	TOTAL			0.19											0.01														
C. v. rubellus	TOTAL																												
D. minutus	FEMALE			0.19		0.01			0.05					0.02	0.02														
	FEMALE WITH EGG			0.05	0.05									0.01	0.01														
	MALE			0.19		0.01	0.01	0.09	0.19			0.19	0.05	0.04	0.06			0.61	0.05		0.20		0.02		0.02				0.07
	COPEPODID 1–V		6.14	0.93	0.56	0.37	1.30	1.12	0.19						0.82			0.10			0.01								0.01
	TOTAL		6.14	1.35	0.60	0.39	1.31	1.21	0.42			0.19	0.05	0.07	0.90	0.20	6.46	2.63	0.81	0.81	1.82	0.20							0.08
D. oregonensis	FEMALE															0.20	6.46	4.34	0.96	0.86	2.08	0.20	0.04		0.02				1.01
	FEMALE WITH EGG																												1.17
	MALE																												
	COPEPODID 1–V																												
	TOTAL																												
D. sicilis	FEMALE	0.05	0.01												0.00	0.01													
	FEMALE WITH EGG	0.05													0.00	0.02													0.00
	MALE	0.05													0.00	0.01	0.20												0.00
	COPEPODID 1–V																							0.05					0.02
	TOTAL	0.14	0.01												0.01	0.04	0.20		0.20					0.05					0.04
E. lacustris	ADULT			0.01							0.01				0.00			0.02	0.03				0.02						0.01
	JUVENILE		0.05	0.37		0.19	0.37		0.01		0.01	0.19			0.09		0.40	2.42			0.10	0.01				0.01			0.23
	TOTAL		0.05	0.38		0.19	0.37		0.01		0.02	0.19			0.09		0.40	2.44	0.03		0.10	0.01	0.02			0.01			0.23
CYCLOPOID NAUPLII	NI–NVI	8.00	18.04	6.70	5.68	2.05	1.30	4.84	4.46	2.23	7.25	4.84	7.44	3.72	5.88	15.96	26.08	8.69	22.22	4.24	1.62	4.04	6.67	13.53	9.29	9.09	6.67	5.05	10.27
CALANOID NAUPLII	NI–NVI	5.56	2.79	3.16	6.51	6.66	1.66	0.93	0.37						2.39	9.09	3.64	5.45	5.66	7.27	2.02	1.62	0.40	0.20					2.73
D. retrocurva	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE																												
	TOTAL																												
D. g. mendotae	FEMALE																												
	FEMALE WITH EGG								0.01						0.00														
	MALE																												
	JUVENILE					0.05									0.00				0.20				0.01						0.02
	TOTAL					0.05			0.01						0.00				0.20				0.01						0.02
D. longiremis	FEMALE		0.19												0.01		0.05												0.00
	FEMALE WITH EGG																0.01		0.10										0.01
	MALE																												
	JUVENILE		0.01	0.19	0.19										0.03		0.05	0.20	0.20										0.03
	TOTAL		0.20	0.19	0.19										0.04		0.11	0.20	0.30										0.05
C. lacustris	TOTAL		0.01	0.05	0.19	0.05			0.01	0.05	0.56	0.93	0.19		0.16	0.20		0.01	0.20			0.05	0.20	0.20	0.61	0.61	0.02		0.16
S. vetulus	TOTAL																												
C. sphaericus	TOTAL		0.05	0.19		0.02	0.05							0.19	0.04	0.05		0.20	0.20	0.01	0.10							0.05	0.05
B. longirostris	AD+JUV	0.19	0.58	2.23	1.12	0.09	0.74	2.05	3.72	3.53	1.86	1.49	3.16	0.37	1.62	0.20	1.01	3.23	3.84	0.04	1.01	1.62	5.25	8.46	2.42	2.22	1.41	0.81	2.43
	FEMALE WITH EGG			0.56		0.19			0.19		0.19		0.93		0.16	0.20	0.05	0.40	0.20								0.01		0.07
	TOTAL	0.19	0.58	2.79	1.12	0.28	0.74	2.05	3.91	3.53	2.05	1.49	4.09	0.37	1.78	0.40	1.06	3.64	4.04	0.04	1.01	1.62	5.25	8.46	2.42	2.22	1.42	0.81	2.49
A. affinis	TOTAL							0.05							0.00														
D. leuchtenbergianum	TOTAL	0.01				0.05		0.05	0.19	0.19			0.37		0.07	0.20				0.01	0.01	0.05		0.05		0.20	0.40		0.07
H. gibberum	TOTAL		0.09	3.16	0.37	0.19	0.05	0.03		0.05	0.19	0.51	6.70	2.98	1.10	0.25	0.45	7.27	12.52	0.01		0.01	0.02	0.10	0.40	7.27	6.46	2.02	2.63
L. kindtii	TOTAL								0.01						0.00				0.04	0.01	0.03	0.01	0.02	0.10					0.02
P. pediculus	TOTAL							0.01	0.01		0.03		0.01	0.01	0.01						0.01		0.01		0.01				0.00
S. crystallina	TOTAL							0.01	0.19						0.02						0.05	0.05							0.01
C. quadrangula	TOTAL																												
C. reticulata	TOTAL																												
A. quadrangularis	TOTAL																												
C. rectinasiis	TOTAL																												
E. lamellatus	TOTAL																							0.05			0.02	0.01	
A. harpae	TOTAL																												
L. setifera	TOTAL																												
O. gracilis	TOTAL	0.05								0.01					0.03														
L. sordidus	TOTAL																												
S. serrulatus	TOTAL																												
S. kingii	TOTAL																												
Alonella sp	TOTAL																												
A. curvirostris	TOTAL			0.05						0.01					0.03														
D. dentata	TOTAL			0.19											0.19														
P. procurvis	TOTAL																												
Chaoborus sp	TOTAL																												
CYCLOPOIDA TOTAL	Ind.L^{-1}	10.33	26.61	27.71	7.63	2.24	2.23	6.16	6.51	5.03	12.48	8.37	14.51	6.81	10.51	21.41	37.08	29.09	30.35	4.49	1.82	5.05	9.14	18.46	13.41	15.15	12.52	8.66	15.90
	Ind.cm^{-3}	2.09	5.39	5.61	1.54	0.45	0.45	1.25	1.32	1.02	2.53	1.69	2.94	1.38	2.13	8.38	14.50	11.38	11.87	1.76	0.71	1.98	3.58	7.23	5.25	5.93	4.90	3.39	6.22
CALANOIDA TOTAL	Ind.L^{-1}	6.70	8.98	4.89	7.11	7.46	3.54	2.14	0.80		0.02	0.37	0.05	0.07	3.39	9.33	10.71	12.24	7.05	8.13	4.20	1.83	0.46	0.25	0.02	0.01			4.17
	Ind.cm^{-3}	1.76	1.82	0.99	1.44	1.51	0.72	0.43	0.16		0.00	0.08	0.01	0.01	0.69	3.65	4.19	4.79	2.76	3.18	1.64	0.72	0.18	0.10	0.01	0.00			1.63
CLADOCERA TOTAL	Ind.L^{-1}	0.24	0.99	8.60	1.86	0.62	0.84	2.19	4.32	3.83	2.82	2.93	11.36	3.54	3.23	1.11	1.63	11.32	17.51	0.08	1.21	1.79	5.51	8.99	3.44	10.50	8.31	2.90	5.72
	Ind.cm^{-3}	0.05	0.18	1.34	0.36	0.13	0.17	0.44	0.87	0.78	0.57	0.59	2.30	0.72	0.65	0.43	0.64	4.43	6.85	0.03	0.47	0.70	2.16	3.52	1.35	4.11	3.25	1.13	2.24
TOTAL	Ind.L^{-1}	19.27	36.49	39.21	16.60	10.32	6.61	10.48	11.63	8.86	15.32	11.67	25.91	10.42	17.14	31.86	49.41	52.65	54.91	12.71	7.23	8.67	15.12	27.72	16.86	25.66	20.84	11.55	25.79
	Ind.cm^{-3}	3.90	7.39	7.94	3.36	2.09	1.34	2.12	2.35	1.79	3.10	2.36	5.24	2.11	3.47	12.46	19.33	20.60	21.48	4.97	2.83	3.39	5.91	10.85	6.60	10.04	8.15	4.52	10.09

Appendix 1.14a. Mean abundance (individuals per litre) of zooplankton species life stages in the Northwest inflow and outflow of Lake 938, 1988.

		INFLOW											OUTFLOW											
REGION	MONTH	MAY	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	SEASON	MAY	JUNE	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	18	1	15	29	13	27	10	24	7	21	MEAN	18	1	15	29	13	27	10	24	7	21	14	19	MEAN
SPECIES	DAY	139	153	167	181	195	209	223	237	251	265		139	153	167	181	195	209	223	237	251	265	288	292	
C. b. thomasi	FEMALE	2.40			0.02							0.24	0.32												0.03
	FEMALE WITH EGG	0.08										0.01	0.02												0.00
	MALE	0.48			0.16							0.06	0.32												0.03
	COPEPODID 1-V	16.40	0.16									1.86	10.40	0.32	0.02										0.90
	TOTAL	21.36	0.16		0.18							2.17	11.06	0.32	0.02										0.95
A. vernalis	FEMALE																							0.04	0.00
	FEMALE WITH EGG																								
	MALE																							0.16	0.01
	COPEPODID 1-V												3.20		0.16	0.80	0.80	0.06	1.60	0.08	1.60	0.16		1.92	0.87
	TOTAL												3.20		0.16	0.80	0.80	0.06	1.60	0.08	1.60	0.16		2.12	0.88
M. edax	FEMALE												0.16												0.01
	FEMALE WITH EGG																								
	MALE												0.32												0.03
	COPEPODID 1-V	0.64			0.16							0.08			0.02	0.32	0.16	0.16						0.16	0.07
	TOTAL	0.64			0.16							0.08	0.48		0.02	0.32	0.16	0.16						0.16	0.11
T. p. mexicanus	FEMALE	1.60			0.16							0.18		0.16	0.02		0.32	0.48	1.60	0.80				2.40	0.48
	FEMALE WITH EGG														0.02				0.32						0.03
	MALE					0.02				0.80		0.08			0.14		0.16	0.16	4.00	1.60	12.00	2.40		0.16	1.72
	COPEPODID 1-V			0.16	1.60		0.04			0.80	0.80	0.34			0.04	0.80	0.80		16.00	6.40	11.20	0.80		2.40	3.20
	TOTAL	1.60		0.16	1.76	0.02	0.04			1.60	0.80	0.60		0.16	0.22	0.80	1.28	0.64	21.92	8.80	23.20	3.20		4.96	5.43
M. albidus	TOTAL							0.16				0.02													
E. agilis	TOTAL										1.60	0.16								0.02				0.16	0.02
C. v. rubellus	TOTAL																								
D. minutus	FEMALE													0.06											0.01
	FEMALE WITH EGG																								
	MALE				0.02							0.00		0.02		0.06	0.16								0.02
	COPEPODID 1-V	0.80	0.16		0.48	0.16						0.16	2.40		0.12	0.02									0.21
	TOTAL	0.80	0.16		0.50	0.16						0.16	2.40	0.06	0.12	0.08	0.16								0.24
D. oregonensis	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	COPEPODID 1-V																								
	TOTAL																								
D. sicilis	FEMALE																								
	FEMALE WITH EGG	0.02										0.00													
	MALE	0.02										0.00													
	COPEPODID 1-V																								
	TOTAL	0.04										0.00													
L. macrurus	TOTAL																								
E. lacustris	ADULT																								
	JUVENILE		0.02		0.16	0.02						0.02	0.80		0.08	0.02	0.02	0.16							0.09
	TOTAL		0.02		0.16	0.02						0.02	0.80		0.08	0.02	0.02	0.16							0.09
CYCLOPOID NAUPLII	NI-NVI	71.20	0.80	0.80	1.60		0.80					7.52	22.40	6.40		2.40	14.40	6.40	26.40	13.60	12.00	0.80		2.40	8.93
CALANOID NAUPLII	NI-NVI	4.00	0.04		2.40							0.64	2.40		0.08										0.21
D. retrocurva	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE																								
	TOTAL																								
D. g. mendotae	FEMALE																								
	FEMALE WITH EGG																								
	MALE																								
	JUVENILE																								
	TOTAL																								
D. longiremis	FEMALE	0.08										0.01													
	FEMALE WITH EGG	0.02										0.00													
	MALE																								
	JUVENILE	0.14										0.01													
	TOTAL	0.24										0.02													
C. lacustris	TOTAL																			0.02					0.08
S. vetulus	TOTAL																					0.02			0.00
C. sphaericus	TOTAL	0.80	0.48	0.80	0.80						0.80	0.37	0.28		0.04							0.80	0.02	0.80	0.16
B. longirostris	AD+JUV	3.20		0.16	0.80		0.80					0.50	5.60	5.60	0.16	0.80	1.60	0.80	2.40	0.80	1.60				1.62
	FEMALE WITH EGG	0.06	0.02			0.02						0.01	0.08	0.02	0.02	0.32	0.16	0.08		0.16					0.07
	TOTAL	3.26	0.02	0.16	0.80	0.02	0.80					0.51	5.68	5.62	0.20	1.12	1.76	0.88	2.40	0.96	1.60				1.69
A. affinis	TOTAL							0.04			0.80	0.08			0.12					0.32	0.16	0.48			0.09
D. leuchtenbergianum	TOTAL				0.02							0.00					0.02		0.32		0.16				0.04
H. gibberum	TOTAL	0.16			0.16							0.03		0.16	0.06				0.02	0.02	0.32				0.05
L. kindtii	TOTAL	0.04										0.00													
P. pediculus	TOTAL										2.40	0.24						0.04		0.04	0.02	0.04		0.08	0.02
S. crystallina	TOTAL					0.16						0.02							0.04						0.00
C. quadrangula	TOTAL																					0.04		0.02	0.01
C. reticulata	TOTAL																								
A. quadrangularis	TOTAL										0.80	0.08													
C. rectirostris	TOTAL																								
E. lamellatus	TOTAL										0.80	0.08										0.02		0.08	0.01
A. harpae	TOTAL						0.16				1.60	0.18											0.02		0.00
L. setifera	TOTAL																								
O. gracilis	TOTAL																				0.16		0.02	0.48	0.22
L. sordidus	TOTAL										0.80	0.80					0.02			0.16					0.09
S. serrulatus	TOTAL																								
S. kingii	TOTAL			0.04								0.04													
Alonella sp	TOTAL																					0.80			0.80
A. curvirostris	TOTAL																								
D. dentata	TOTAL																								
P. procurvis	TOTAL																			0.80					0.80
Chaoborus sp	TOTAL				0.02							0.00					0.16								0.01
CYCLOPOIDA TOTAL	ind.L^{-1}	84.80	0.96	0.96	3.70	0.02	0.84	0.16		1.60	2.40	10.54	37.14	6.88	0.44	4.32	16.64	7.26	49.92	22.50	36.80	4.16		9.80	16.32
CALANOIDA TOTAL	ind.L^{-1}	4.84	0.22		3.06	0.18						0.83	5.60	0.08	0.26	0.10	0.16	0.16							0.53
CLADOCERA TOTAL	ind.L^{-1}	4.50	0.50	1.00	1.78	0.18	0.96	0.04			8.00	1.70	5.98	5.78	0.42	1.14	1.60	0.92	3.58	2.30	2.42	2.20	0.06	1.44	2.34
TOTAL	ind.L^{-1}	104.14	1.68	1.98	8.56	0.38	1.80	0.20		1.60	10.40	13.07	48.70	12.74	1.12	5.56	18.76	8.34	53.50	24.80	39.22	6.36	0.06	11.24	19.20

Appendix 1.14b. Mean abundance (individuals per litre) of zooplankton species life stages in the Northwest inflow and outflow of Lake 938, 1989.

		INFLOW													OUTFLOW										
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	17	31	14	28	12	26	9	23	6	20	4	17	MEAN	17	31	14	28	12	26	9	23	6	20	4	17	MEAN
SPECIES	DAY	137	151	165	179	193	208	221	235	249	263	277	290		137	151	165	179	193	208	221	235	249	263	277	290	
C. b. thomasi	FEMALE	0.40		0.02		0.80					0.02			0.12	0.12	0.02		1.20									0.11
	FEMALE WITH EGG	0.06					0.02			0.40				0.05			0.02										0.00
	MALE	1.20			0.40									0.16	0.40	0.02		0.80									0.10
	COPEPODID 1–V	28.00	4.80	0.40	1.20	1.20	0.40				0.02			3.60	8.40	1.60	5.60	6.00	0.40					0.04			1.84
	TOTAL	29.66	4.80	0.42	1.60	2.00	0.42			0.40	0.04			3.28	8.92	1.64	5.62	8.00	0.40					0.04			2.05
A. vernalis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																		0.02								0.00
	COPEPODID 1–V				0.40	1.60	1.20		0.40					0.36	0.40	0.40		2.40		1.20	0.80			1.60	0.40		0.60
	TOTAL				0.40	1.60	1.20		0.40					0.30	0.40	0.40		2.40	0.02	1.20	0.80			1.60	0.40		0.60
M. edax	FEMALE						0.02	0.02	0.02					0.01													
	FEMALE WITH EGG																										
	MALE						0.10	0.02	0.02					0.01							0.02		0.02				0.00
	COPEPODID 1–V	0.40				1.20	2.40	1.20	1.20	0.80				0.72	0.02				0.80	0.80	1.20	0.04	0.40				0.27
	TOTAL	0.40				1.20	2.52	1.24	1.24	0.80				0.62	0.02				0.80	0.80	1.22	0.04	0.42				0.28
T. p. mexicanus	FEMALE		0.40				0.80	0.40	0.40					0.20	0.80								0.80				0.13
	FEMALE WITH EGG						0.80							0.08				0.02		0.02		0.02					0.01
	MALE						0.80				0.02			0.08	0.40		0.40						0.80				0.13
	COPEPODID 1–V					1.20	2.40		0.80	0.40				0.48					0.40	0.40	1.20	0.80	1.20			0.40	0.37
	TOTAL		0.40			1.20	4.80	0.40	1.20	0.40	0.02			0.70	1.20		0.40	0.02	0.40	0.42	1.20	0.82	2.80			0.40	0.64
M. albidus	TOTAL																									0.40	0.03
E. agilis	TOTAL																0.04							0.10			0.01
C. v. rubellus	TOTAL																							0.04			0.00
D. minutus	FEMALE			0.02	0.16		0.40	0.40	0.40	0.40				0.18			0.04								0.02		0.01
	FEMALE WITH EGG				0.06	0.16		0.04	0.02					0.03				0.04	0.02	0.02	0.80	0.10	0.04				0.09
	MALE			0.02	0.18	2.40		0.40	0.40					0.34			0.08			0.08		0.40	0.40		0.02		0.08
	COPEPODID 1–V		2.40	0.04		2.40	2.40	0.80	4.40		0.02			1.25		0.40	0.40		0.80	2.40	0.80	3.20	1.60				0.80
	TOTAL		2.40	0.06	0.40	4.96	2.80	1.64	5.22	0.40	0.02			1.49		0.40	0.52	0.04	0.82	2.50	1.60	3.70	2.04		0.04		0.97
D. oregonensis	FEMALE																										
	FEMALE WITH EGG																										
	MALE																										
	COPEPODID 1–V																										
	TOTAL																										
D. sicilis	FEMALE																										
	FEMALE WITH EGG																										
	MALE	0.02												0.00	0.02				0.40								0.04
	COPEPODID 1–V																0.02										0.00
	TOTAL	0.02												0.00	0.02		0.02		0.40								0.04
L. macrurus	TOTAL																										
E. lacustris	ADULT																0.40										0.03
	JUVENILE		0.80	0.02		0.40	0.80	0.40						0.24				1.20	0.40		0.02	0.08					0.14
	TOTAL		0.80	0.02		0.40	0.80	0.40						0.20			0.40	1.20	0.40		0.02	0.08					0.18
CYCLOPOID NAUPLII	NI–NVI	60.40	2.00		1.60	3.20	10.00	0.40	6.40	0.40	0.40			8.48	56.00	0.80	2.80	2.80	1.60	6.00	7.20	2.40	3.60	0.80	1.20	2.40	7.30
CALANOID NAUPLII	NI–NVI	6.80	8.00		6.40	0.02	2.40	6.00	8.00	2.40	1.20			4.12	4.80		1.20	6.80	1.20	1.20	1.60	1.20	2.00				1.83
D. retrocurva	FEMALE								0.04					0.00							0.02							0.00
	FEMALE WITH EGG																										
	MALE																										
	JUVENILE					0.02			0.12					0.01								0.02						0.00
	TOTAL					0.02			0.16					0.02							0.02	0.02						0.00
D. g. mendotae	FEMALE							0.40						0.04													
	FEMALE WITH EGG						0.02							0.00							0.60							0.07
	MALE																										
	JUVENILE					0.02			0.28	0.04				0.03								0.10						0.01
	TOTAL					0.02	0.02	0.40	0.28	0.04				0.06							0.60	0.10						0.08
D. longiremis	FEMALE	0.40	0.02											0.04	1.20				0.02									0.10
	FEMALE WITH EGG	0.40												0.04	0.02	0.02	0.02	0.06										0.01
	MALE																										
	JUVENILE	3.60	0.06		0.02									0.37	1.60			0.80									0.20
	TOTAL	4.40	0.08		0.02									0.38	2.82	0.02	0.02	0.86	0.02								0.31
C. lacustris	TOTAL						0.40							0.04				0.02			0.40	0.40	0.40					0.10
S. vetulus	TOTAL																										
C. sphaericus	TOTAL	0.04	0.06	0.02		0.40	2.80	1.20	2.80	1.60	1.20			1.01	0.40		0.40	2.00			0.80		0.40	1.60	0.04		0.50
B. longirostris	AD+JUV		0.40		3.20	2.40	2.00	1.60	1.20	2.40				1.32		0.40	0.80	2.40	0.40	0.40	2.40	0.40	1.20	0.40		0.40	0.77
	FEMALE WITH EGG					0.40	0.02							0.04											0.02		0.00
	TOTAL		0.40		3.20	2.80	2.02	1.60	1.20	2.40				1.14		0.40	0.80	2.40	0.40	0.40	2.40	0.40	1.20	0.40	0.02	0.40	0.77
A. affinis	TOTAL	0.02					0.02							0.00							0.02						0.00
D. leuchtenbergianum	TOTAL				0.02	1.60	8.80	0.40	0.40		0.04			1.13				0.40	0.02	1.60	1.60	0.02	0.40				0.34
H. gibberum	TOTAL	0.40			0.72	0.80		0.08	0.40		0.02			0.24	0.40		0.40	0.28				0.02	0.02	0.40			0.13
L. kindtii	TOTAL					0.04			0.02					0.01													
P. pediculus	TOTAL				0.02	0.60	0.08	0.20	0.06		0.02			0.10					0.10	0.04		0.02		14.00	0.12	0.10	1.20
S. crystallina	TOTAL				0.02	0.02			0.02	0.02				0.01					0.14								0.01
C. quadrangula	TOTAL																										
C. reticulata	TOTAL																								0.04	0.02	0.01
A. quadrangularis	TOTAL																		0.02				0.40	2.40			0.24
C. rectirostris	TOTAL																										
E. lamellatus	TOTAL														0.02									0.40			0.04
A. harpae	TOTAL																		0.80	0.02						0.04	0.07
L. setifera	TOTAL																						0.40				0.40
O. gracilis	TOTAL																		0.02				0.40	5.60		0.02	0.50
I. sordidus	TOTAL																					0.08	0.02	1.60			0.57
S. serrulatus	TOTAL																						1.20	1.20		0.02	0.20
S. kingi	TOTAL																										
Alonella sp	TOTAL																										
A. curvirostris	TOTAL																										
D. dentata	TOTAL																										
P. procurvis	TOTAL																										
Chaoborus sp	TOTAL						0.02							0.00													
CYCLOPOIDA TOTAL	Ind.L^{-1}	90.46	7.20	0.42	3.60	9.20	18.94	2.04	9.24	2.00	0.46			11.96	66.54	2.64	6.66	13.22	3.22	8.42	10.42	3.26	6.82	2.54	1.04	3.20	10.92
CALANOIDA TOTAL	Ind.L^{-1}	6.82	11.20	0.10	6.80	5.38	6.00	6.04	13.22	2.80	1.22			5.13	4.82	0.40	2.14	10.04	2.82	3.70	3.22	4.98	4.04		0.04		3.02
CLADOCERA TOTAL	Ind.L^{-1}	4.86	0.54	0.02	4.00	6.30	14.14	3.86	5.34	4.06	1.28			3.70	3.64	0.42	1.62	5.98	1.52	2.86	5.24	1.46	4.84	27.60	0.22	0.60	4.67
TOTAL	Ind.L^{-1}	102.14	18.94	0.54	14.40	20.88	39.10	13.94	27.80	8.86	2.96			24.96	75.00	3.66	12.62	29.22	7.56	14.98	18.88	9.70	15.70	30.14	1.90	3.80	18.60

Appendix 1.14c. Mean abundance (individuals per litre) of zooplankton species life stages in the Northwest inflow and outflow of Lake 938, 1990.

		INFLOW														OUTFLOW											
	MONTH	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON	MAY	MAY	JUNE	JUNE	JULY	JULY	JULY	AUG	AUG	SEPT	SEPT	OCT	OCT	SEASON
	DATE	8	22	5	19	3	17	31	14	28	11	25	9	23	MEAN	8	22	5	19	97	17	31	14	28	11	25	9	23	MEAN
SPECIES	DAY	128	142	156	170	184	200	212	226	240	254	268	282	296		128	142	156	170	184	200	212	226	240	254	268	282	296	
													NS						NS										
C. b. thomasi	FEMALE	0.40		0.80		0.02									0.09			0.80							0.02				0.06
	FEMALE WITH EGG																												
	MALE	0.80													0.06	0.02	0.10												0.01
	COPEPODID 1–V	2.40	1.20	27.20	3.20	0.40		0.40	0.02					0.02	2.68	3.20	4.40	6.00									0.10		1.05
	TOTAL	3.60	1.20	28.00	3.20	0.42		0.40	0.02					0.02	2.84	3.22	4.50	6.80							0.02		0.10		1.13
A. vernalis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V	0.40	0.02	1.20	0.80		0.40			0.40		0.02			0.25	0.40	2.00	5.20		0.02							0.02		0.00
	TOTAL	0.40	0.02	1.20	0.80		0.40			0.40		0.02			0.25	0.40	2.00	5.20		0.40	0.40	0.40	1.20	0.08	3.20	0.40	4.00	0.04	1.36
M. edax	FEMALE															0.40	2.00	5.20		0.42	0.40	0.40	1.20	0.08	3.20	0.40	4.02	0.04	1.37
	FEMALE WITH EGG																0.02												0.00
	MALE						0.02	0.02							0.00														
	COPEPODID 1–V		0.40			0.02	1.20		0.04						0.13	0.40	0.02												0.00
	TOTAL		0.40			0.02	1.22	0.02	0.04						0.13	0.40	0.04						0.40		0.80				0.12
T. p. mexicanus	FEMALE	0.40		0.80	0.10										0.10	0.40							0.40		0.80				0.13
	FEMALE WITH EGG															0.04							0.40	0.02	0.40				0.07
	MALE							0.40			0.02				0.03			0.40							0.26				0.05
	COPEPODID 1–V						0.40		0.40		0.10			0.40	0.10							0.80			0.06		0.80		0.07
	TOTAL	0.40		0.80	0.10		0.40	0.40	0.40		0.12			0.40	0.23	0.04		0.40				0.80	0.40		1.20	1.20	0.40		0.31
M. albidus	TOTAL																						0.80	0.80	1.92	1.22	1.20		0.49
E. agilis	TOTAL																												
C. v. rubellus	TOTAL																												
D. minutus	FEMALE			0.40				0.04	0.02						0.04					0.02		0.02							0.00
	FEMALE WITH EGG					0.30	0.40	0.10							0.06			0.10											0.01
	MALE	0.40				0.10		0.20	0.06						0.06			0.60		0.02	0.02								0.05
	COPEPODID 1–V		2.40	2.80		3.60	4.40	0.40							1.05	0.40	10.80						0.02				0.02		0.66
	TOTAL	0.40	2.40	3.20		4.00	4.80	0.74	0.08						1.20	0.40	10.80	0.70		0.04	0.02	0.02		0.02				0.02		0.92
D. oregonensis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	COPEPODID 1–V																												
	TOTAL																												
D. sicilis	FEMALE																												
	FEMALE WITH EGG																0.02												0.00
	MALE	0.04	0.02												0.00														
	COPEPODID 1–V																0.02												0.00
	TOTAL	0.04	0.02												0.00		0.04												0.00
L. macrurus	TOTAL																												
E. lacustris	ADULT																												
	JUVENILE				0.80				0.02						0.06			0.40		0.02									0.03
	TOTAL				0.80				0.02						0.06			0.40		0.02									0.03
CYCLOPOID NAUPLII	NI–NVI	25.60	23.20	74.80	0.40	7.20	0.40	2.00	0.40	1.20	0.80				10.48	7.60	13.60	5.80		0.40	0.40	0.40	7.20	0.40	9.60	8.40	13.60		5.26
CALANOID NAUPLII	NI–NVI	32.80	5.20	2.40		29.20	6.80		0.80						5.94	9.20	1.60	8.00		4.80	2.00	0.40	0.40			0.40				2.06
D. retrocurva	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE							0.20							0.02														
	TOTAL							0.20							0.02														
D. g. mendotae	FEMALE																												
	FEMALE WITH EGG																								0.02				0.00
	MALE																												
	JUVENILE			0.02				0.02							0.00								0.02						
	TOTAL			0.02				0.02							0.00								0.02		0.02				0.00
D. longiremis	FEMALE																												
	FEMALE WITH EGG																												
	MALE																												
	JUVENILE	0.06	0.08	0.20						0.02					0.03		0.40	0.02											0.03
	TOTAL	0.06	0.08	0.20						0.02					0.03		0.40	0.02											0.03
C. lacustris	TOTAL																												0.03
S. vetulus	TOTAL																								0.10	0.02	0.30		
C. sphaericus	TOTAL	0.02		1.60	0.10	0.30	0.40	0.40	0.04	0.02		0.40			0.25		0.80						0.02						0.06
B. longirostris	AD+JUV			1.60	1.20	1.60	1.60	1.60	0.40		0.04			0.40	0.65		0.20	2.40		1.20		0.40	3.60	0.02	6.40	1.20	2.60	0.30	1.43
	FEMALE WITH EGG	0.40		0.80		0.10		0.40						0.40	0.13	0.02		1.60						0.06	0.40			0.04	0.16
	TOTAL	0.40		2.40	1.20	1.70	1.60	2.00	0.40		0.04			0.40	0.78	0.02	0.20	4.00		1.20		0.40	3.60	0.06	6.80	1.20	2.60	0.34	1.59
A. affinis	TOTAL										0.02	0.02			0.00							0.20				0.02			0.02
D. leuchtenbergianum	TOTAL	0.02				0.20	0.40	0.40	0.04	0.02					0.08			0.40					0.02		0.02		0.10	0.02	0.04
H. gibberum	TOTAL	0.04		0.80	0.40			0.02							0.10		0.10	0.26							0.10	0.16	2.40	0.06	0.24
L. kindtii	TOTAL						0.02								0.00										0.02				0.00
P. pediculus	TOTAL				0.02			0.04							0.00	0.02									0.40	0.08			0.04
S. crystallina	TOTAL																									0.02			0.00
C. quadrangula	TOTAL																												
C. reticulata	TOTAL																												
A. quadrangularis	TOTAL																												
C. rectirostris	TOTAL																			0.02									0.00
E. lamellatus	TOTAL																												
A. harpae	TOTAL																												
L. setifera	TOTAL																												
O. gracilis	TOTAL																								0.02				0.02
L. sordidus	TOTAL																												
S. serrulatus	TOTAL																						0.02						0.02
S. lingii	TOTAL																												
Alonella sp	TOTAL																												
A. curvirostris	TOTAL																												
D. dentata	TOTAL																												
P. procurvis	TOTAL																												
Chaoborus sp	TOTAL																												
CYCLOPOIDA TOTAL	Ind.L^{-1}	30.00	24.82	104.80	4.50	7.64	2.42	2.82	0.86	1.60	0.92	0.02		0.42	13.91	11.66	20.14	19.20		0.82	0.80	1.60	9.60	0.46	15.54	10.02	18.92	0.04	8.37
CALANOIDA TOTAL	Ind.L^{-1}	33.24	7.62	5.60	0.80	33.20	11.60	0.74	0.90						7.21	9.60	12.44	9.10		4.86	2.02	0.42	0.40	0.02		0.40	0.02		3.02
CLADOCERA TOTAL	Ind.L^{-1}	0.54	0.08	5.02	1.72	2.20	2.42	3.08	0.48	0.06	0.06	0.42		0.40	1.27	0.04	1.50	4.68		1.22		0.60	3.66	0.06	7.48	1.48	5.60	0.42	2.06
TOTAL	Ind.L^{-1}	63.78	32.52	115.42	7.02	43.04	16.44	6.64	2.24	1.66	0.98	0.44		0.82	22.38	21.30	34.08	32.98		6.90	2.82	2.62	13.66	0.58	23.02	11.90	24.54	0.46	13.45

Appendix 2.1. Abundance (individuals per litre) of zooplankton life stages at nine stations in Lake 149, July 22, 1987, collected with a twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	MEAN
	DEPTH	2.2	3.1	2.7	1.3	2.3	2.2	2.2	2.9	3.3	
SPECIES											
C. b. thomasi	FEMALE										
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V									0.27	0.03
	TOTAL									0.27	0.03
A. vernalis	FEMALE										
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	3.02	0.86	0.82	8.51	1.54	2.41	1.81	2.25	1.63	2.54
	TOTAL	3.02	0.86	0.82	8.51	1.54	2.41	1.81	2.25	1.63	2.54
M. edax	FEMALE			0.16							0.02
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	0.80	1.00	0.82	3.40	0.38	1.01	0.20	0.16	0.68	0.94
	TOTAL	0.80	1.00	0.98	3.40	0.38	1.01	0.20	0.16	0.68	0.98
T. p. mexicanus	FEMALE	1.81	0.43	0.66	3.74	0.38	1.21	1.01	0.75	1.50	1.28
	FEMALE WITH EGG	0.40		0.33	4.08		0.80	0.20	0.16	0.68	0.74
	MALE	2.01	0.57	1.31	9.19	0.19	0.80	0.80	1.05	0.68	1.85
	COPEPODID 1 – V	4.63	2.14	3.61	14.98	2.69	8.05	7.44	3.30	4.49	5.70
	TOTAL	8.85	3.14	5.90	32.00	3.27	10.86	9.46	5.25	7.34	9.56
E. agilis	TOTAL	0.40						0.20			0.07
D. minutus	FEMALE			0.16							0.02
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	0.40	0.14	0.16	0.34						0.12
	TOTAL	0.40	0.14	0.33	0.34						0.13
D. oregonensis	FEMALE		0.14					0.20		0.14	0.05
	FEMALE WITH EGG							0.08		0.02	0.01
	MALE		0.14		0.34			0.40			0.10
	COPEPODID 1 – V	0.40	0.43	0.16	1.70	0.08	0.40	0.40	0.30	0.41	0.47
	TOTAL	0.40	0.71	0.16	2.04	0.08	0.40	1.07	0.30	0.57	0.64
E. lacustris	ADULT										
	COPEPODID 1 – V					0.00	0.20				0.02
	TOTAL					0.00	0.20				0.02
CYCLOPOID NAUPLII	NI – NVI	24.75	45.98	32.64	87.82	16.93	38.82	69.01	46.35	43.66	44.88
CALANOID NAUPLII	NI – NVI	0.40	1.29	1.97	1.02	1.35	1.61	2.41	1.65	0.27	1.33
D. retrocurva	FEMALE										
	FEMALE WITH EGG										
	MALE										
	JUVENILE			0.33							0.04
	TOTAL			2.95							0.33
D. g. mendotae	FEMALE					0.00					0.00
	FEMALE WITH EGG										
	MALE										
	JUVENILE	0.60	0.43								0.11
	TOTAL	0.60	0.43			0.00					0.12
C. lacustris	TOTAL		0.29		0.34	0.09	0.40	0.20	0.45	0.82	0.29
C. sphaericus	TOTAL	0.20	0.14	0.33	2.04	0.19	0.20	0.40	0.15		0.41
B. longirostris	AD + JUV	5.63	9.28	8.23	40.17	5.19	17.30	12.68	11.40	16.05	13.77
	FEMALE WITH EGG	1.41	1.00	0.66	6.13	1.73	0.80	0.40	0.90	2.18	1.69
	TOTAL	7.04	10.28	8.89	46.29	8.93	18.11	13.08	12.30	18.22	15.46
A. quadrangularis	TOTAL		0.14	0.33	0.68			0.20			0.15
D. leuchtenbergianum	TOTAL			0.05		0.03	0.20	0.20		0.14	0.07
H. gibberum	TOTAL	0.85	0.67	0.90	4.20	0.38	2.01	2.70	1.43	0.67	1.55
L. kindtii	TOTAL	0.157	0.112	0.179	0.745	0.019	0.283	0.409	0.047	0.003	0.22
Chaoborus sp.	TOTAL								0.15		0.02
CYCLOPOIDA TOTAL	Ind.L^{-1}	37.83	50.98	40.34	131.73	22.13	51.10	80.65	54.00	53.58	58.04
	Ind.cm^{-2}	8.32	15.80	10.89	17.13	5.09	11.24	17.75	15.66	17.68	13.29
CALANOIDA TOTAL	Ind.L^{-1}	1.21	2.14	2.46	3.40	1.41	2.21	3.48	1.95	0.84	2.12
	Ind.cm^{-2}	0.27	0.66	0.66	0.44	0.32	0.49	0.77	0.57	0.28	0.50
CLADOCERA TOTAL	Ind.L^{-1}	8.86	12.08	9.00	54.30	7.82	21.21	17.20	14.38	20.05	18.30
	Ind.cm^{-2}	1.95	3.74	2.43	7.08	1.75	4.67	3.78	4.17	6.62	4.02
TOTAL	Ind.L^{-1}	47.89	65.18	51.80	189.44	31.16	74.53	101.36	70.48	74.47	78.48
	Ind.cm^{-2}	10.53	20.21	13.99	24.63	7.17	16.40	22.30	20.44	24.58	17.80
NUMBER OF SPECIES	11	11	12	12	10	11	12	9	10	9	10.7

Appendix 2.2. Abundance (individuals per litre) of zooplankton species life stages at 10 stations in Lake 164, July 22, 1987, collected with a twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	10	MEAN
	DEPTH	5.5	4.8	6.5	6.4	6.3	5.9	2.0	5.0	6.6	6.2	5.52
SPECIES												
C. b. thomasi	FEMALE	0.16				0.07	0.15			0.13	0.07	0.08
	FEMALE WITH EGG									0.01		0.00
	MALE						0.15			0.07	0.14	0.04
	COPEPODID 1 – V	0.08	0.18	0.14	0.07	0.28	0.45			0.13		0.13
	TOTAL	0.24	0.18	0.14	0.07	0.35	0.75			0.35	0.21	0.23
A. vernalis	FEMALE											
	FEMALE WITH EGG											
	MALE											
	COPEPODID 1 – V	0.88	0.46	0.61	0.42	1.06	0.60	0.66	0.44	0.20	0.36	0.57
	TOTAL	0.88	0.46	0.61	0.42	1.06	0.60	0.66	0.44	0.20	0.36	0.57
M. edax	FEMALE						0.07					0.01
	FEMALE WITH EGG											
	MALE			0.34	0.42	0.28	0.07					0.11
	COPEPODID 1 – V	1.77	1.10	2.04	1.38	1.69	4.19	1.33	0.35	1.14	0.64	1.56
	TOTAL	1.77	1.10	2.38	1.80	1.97	4.34	1.33	0.35	1.14	0.64	1.68
T. p. mexicanus	FEMALE	2.41	1.38	1.50	1.04	2.98	6.51		1.94	3.43	1.42	2.26
	FEMALE WITH EGG	0.08	0.18		0.21	0.07	0.15		0.27	0.27	0.50	0.17
	MALE	1.61	1.38	0.75	0.48	0.63	1.20		1.77	0.67	1.64	1.01
	COPEPODID 1 – V	3.54	4.97	2.18	2.42	3.73	4.19	0.88	4.33	2.25	3.08	3.16
	TOTAL	7.64	7.91	4.42	4.15	7.39	12.04	0.88	8.31	6.65	6.62	6.80
E. agilis	TOTAL	0.08										0.01
D. minutus	FEMALE	0.08	0.09	0.20	0.07	0.42	0.15					0.10
	FEMALE WITH EGG					0.35			0.00	0.02		0.04
	MALE		0.09	0.14		0.35	0.15					0.07
	COPEPODID 1 – V	0.08	0.18	0.34	0.07	0.35	0.22		0.09	0.13	0.07	0.15
	TOTAL	0.16	0.37	0.68	0.14	1.48	0.52		0.09	0.16	0.07	0.37
D. oregonensis	FEMALE			0.07	0.14	0.56				0.07		0.08
	FEMALE WITH EGG				0.35	0.35				0.02		0.07
	MALE			0.20	0.21	0.49				0.27	0.07	0.12
	COPEPODID 1 – V	0.80	0.18	0.14	0.21	0.92	0.97		0.44	0.67	0.14	0.45
	TOTAL	0.80	0.18	0.41	0.60	2.32	0.97		0.44	1.03	0.21	0.73
E. lacustris	ADULT		0.00	0.02								0.00
	COPEPODID 1 – V					0.00						0.00
	TOTAL		0.00	0.02		0.00						0.00
CYCLOPOID NAUPLII	NI – NVI	11.82	10.76	8.64	6.78	12.18	10.85	1.11	14.76	9.61	8.12	9.46
CALANOID NAUPLII	NI – NVI	0.32	0.83	0.88	0.69	1.06	1.35	0.22	0.62	0.74	0.57	0.73
D. retrocurva	FEMALE	0.80	0.09	0.61	0.42	0.70	0.67		0.27	2.69	0.71	0.70
	FEMALE WITH EGG	0.08		0.27	0.07	0.35	0.22		0.01	0.81	0.71	0.25
	MALE											
	JUVENILE	1.45	1.20	1.29	0.48	2.04	3.52	0.44	2.03	2.69	0.85	1.60
	TOTAL	2.33	1.29	2.18	0.97	3.10	4.41	0.44	2.31	6.18	2.28	2.55
C. lacustris	TOTAL	0.24			0.07		0.07		0.09			0.05
B. longirostris	AD + JUV	7.64	18.12	8.23	4.15	6.62	6.88	11.08	4.07	3.29	3.77	7.38
	FEMALE WITH EGG	0.72	1.38	0.88	0.28	0.35	0.67	0.44	0.27	0.20	0.21	0.54
	TOTAL	8.38	19.50	9.11	4.43	6.97	7.55	11.50	4.33	3.49	3.99	7.92
A. quadrangularis	TOTAL							0.22				0.02
D. leuchtenbergianum	TOTAL	0.32	0.74	0.20	0.35	0.07	0.45		0.62	0.20	0.28	0.32
H. gibberum	TOTAL	0.48	0.92	2.45	0.69	1.69	3.07	0.44	3.27	2.69	1.14	1.68
L. kindtii	TOTAL	0.013	0.005	0.002	0.022	0.005	0.002		0.014	0.021	0.004	0.01
S. crystallina	TOTAL							0.03				0.00
Chaoborus sp.	TOTAL	0.18	0.09	0.74	0.08	0.16	0.29		0.03	0.47	1.27	0.33
CYCLOPOIDA TOTAL	Ind.L^{-1}	22.43	20.42	16.18	13.22	22.95	28.57	3.98	23.87	17.95	15.95	18.55
	Ind.cm^{-2}	12.34	9.80	10.52	8.46	14.46	16.86	0.80	11.93	11.85	9.89	10.69
CALANOIDA TOTAL	Ind.L^{-1}	1.29	1.38	1.99	1.73	4.88	2.84	0.22	1.15	1.92	0.85	1.82
	Ind.cm^{-2}	0.71	0.66	1.30	1.11	3.08	1.68	0.04	0.58	1.27	0.53	1.09
CLADOCERA TOTAL	Ind.L^{-1}	11.75	22.45	13.94	8.53	11.83	15.56	12.64	10.64	12.59	7.69	12.56
	Ind.cm^{-2}	6.46	10.78	9.06	4.18	7.45	9.18	2.53	5.32	8.31	4.77	6.80
TOTAL	Ind.L^{-1}	35.64	44.35	32.88	21.55	39.80	47.27	16.85	35.68	32.94	25.76	33.27
	Ind.cm^{-2}	19.60	21.29	21.36	13.79	25.07	27.89	3.37	17.84	21.74	15.97	18.79
NUMBER OF SPECIES (16 TOTAL)		13	11	12	12	11	12	8	11	11	11	11.20

Appendix 2.3. Abundance (individuals per litre) of zooplankton species life stages at nine stations in Lake 165, July 22, 1987, collected with a twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	MEAN
	DEPTH	4.0	3.9	3.9	3.8	3.1	4.3	4.0	3.4	3.7	
SPECIES											
C. b. thomasi	FEMALE		0.02								0.00
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V										
	TOTAL		0.02								0.00
A. vernalis	FEMALE										
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	0.78	0.68	0.45	1.18	1.14	0.42	0.55	0.65	0.72	0.73
	TOTAL	0.78	0.68	0.45	1.18	1.14	0.42	0.55	0.65	0.72	0.73
M. edax	FEMALE										
	FEMALE WITH EGG										
	MALE						0.10	0.11			0.02
	COPEPODID 1 – V	1.44	4.20	2.84	1.53	1.86	5.93	3.99	5.59	3.11	3.39
	TOTAL	1.44	4.20	2.84	1.53	1.86	6.03	4.10	5.59	3.11	3.41
T. p. mexicanus	FEMALE	0.22	0.23	0.45		0.29	0.10	0.89	0.13	0.12	0.27
	FEMALE WITH EGG						0.10	0.22	0.13		0.05
	MALE	0.11	0.34	0.57	0.24	0.29	0.42	0.55	0.78	0.98	0.47
	COPEPODID 1 – V	1.11	2.27	1.93	3.07	3.00	2.50	1.99	2.86	2.63	2.37
	TOTAL	1.44	2.84	2.95	3.30	3.57	3.12	3.66	3.90	3.71	3.17
D. minutus	FEMALE										
	FEMALE WITH EGG										
	MALE	0.11									0.01
	COPEPODID 1 – V	0.22	0.23	0.11	0.12		0.10				0.09
	TOTAL	0.33	0.23	0.11	0.12		0.10				0.10
D. oregonensis	FEMALE						0.21	0.11		0.12	0.05
	FEMALE WITH EGG	0.01	0.05			0.00	0.13	0.05			0.03
	MALE						0.10	0.22			0.04
	COPEPODID 1 – V	0.33	0.57	0.23	0.24	0.14	0.73	0.55	0.78	0.24	0.42
	TOTAL	0.34	0.62	0.23	0.24	0.15	1.17	0.94	0.78	0.36	0.54
E. lacustris	ADULT		0.02								0.00
	COPEPODID 1 – V										
	TOTAL		0.02								0.00
CYCLOPOID NAUPLII	NI – NVI	13.30	23.66	18.18	38.35	32.84	24.65	22.27	17.81	19.14	23.38
CALANOID NAUPLII	NI – NVI	0.22	0.57	0.34	0.35	0.86	1.04	1.77	0.26	0.46	0.65
D. retrocurva	FEMALE		0.11			0.14		0.33	0.65		0.14
	FEMALE WITH EGG		0.11				0.10	0.44			0.07
	MALE										
	JUVENILE	0.50	0.45	0.80	0.71	0.43	2.39	0.66	0.78	0.60	0.81
	TOTAL	0.50	0.68	0.80	0.71	0.57	2.50	1.44	1.43	0.60	1.02
C. lacustris	TOTAL									0.12	0.01
C. sphaericus	TOTAL						0.10				0.01
B. longirostris	AD + JUV	19.06	24.65	10.56	6.61	12.14	12.06	13.41	17.16	8.97	13.85
	FEMALE WITH EGG	1.88	2.04	0.23	0.35	0.29	0.62	1.33	0.91	0.60	0.92
	TOTAL	20.94	26.70	10.79	6.96	12.42	12.69	14.74	18.07	9.57	14.76
A. quadrangularis	TOTAL	0.11									0.01
D. leuchtenbergianum	TOTAL	0.11	0.57			0.29	0.21	0.13	0.26	0.09	0.18
H. gibberum	TOTAL	0.78	1.36	3.16	0.59	1.14	3.95	1.11	1.56	1.32	1.67
L. kindtii	TOTAL	0.03	0.04	0.01	0.01		0.01	0.01	0.00	0.01	0.01
S. crystallina	TOTAL		0.00					0.00			0.00
Chaoborus sp.	TOTAL	0.02	0.02	0.01	0.00	0.03	0.04	0.03	0.01	0.00	0.02
CYCLOPOIDA TOTAL	Ind.L^{-1}	16.95	31.60	24.42	44.37	39.41	34.22	30.58	27.95	28.67	30.69
	Ind.cm^{-2}	6.78	12.32	9.53	16.86	12.22	14.71	12.23	9.50	9.87	11.56
CALANOIDA TOTAL	Ind.L^{-1}	0.89	1.43	0.68	0.71	1.00	2.31	2.71	1.04	0.84	1.29
	Ind.cm^{-2}	0.36	0.56	0.27	0.27	0.31	1.00	1.08	0.35	0.31	0.50
CLADOCERA TOTAL	Ind.L^{-1}	22.47	29.35	14.78	8.27	14.42	19.46	17.43	21.32	11.70	17.69
	Ind.cm^{-2}	8.99	11.45	5.76	3.14	4.47	8.37	6.97	7.25	4.33	6.75
TOTAL	Ind.L^{-1}	40.33	62.40	39.89	53.34	54.87	56.02	50.75	50.32	39.21	49.68
	Ind.cm^{-2}	16.13	24.34	15.56	20.27	17.01	24.09	20.30	17.11	14.51	18.81
NUMBER OF SPECIES (16 TOTAL)		11	12	9	9	8	11	9	9	10	9.8

Appendix 2.4. Abundance (individuals per litre) of zooplankton species life stages at nine stations in Lake 373, July 21, 1987, collected with twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	MEAN
	DEPTH	14.7	13.0	13.0	13.1	17.0	20.0	16.8	8.7	20.4	15.19
SPECIES											
C. b. thomasi	FEMALE	0.12	0.14		0.07	0.26	1.67	0.37		1.34	0.44
	FEMALE WITH EGG					0.01	0.09			0.17	0.03
	MALE	0.60	0.20	0.41	0.40	0.38	0.97	0.26		0.56	0.42
	COPEPODID 1 – V	14.34	8.50	10.06	9.81	8.18	15.36	9.77	5.38	12.27	10.41
	TOTAL	15.06	8.84	10.47	10.28	8.80	18.08	10.40	5.38	14.34	11.30
A. vernalis	FEMALE										
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	0.06	0.07		0.07		0.13		0.10	0.09	0.06
	TOTAL	0.06	0.07		0.07		0.13		0.10	0.09	0.06
M. edax	FEMALE										
	FEMALE WITH EGG	0.12									0.01
	MALE										
	COPEPODID 1 – V	0.06		0.20			0.18	0.05			0.05
	TOTAL	0.18		0.20			0.18	0.05			0.07
T. p. mexicanus	FEMALE										
	FEMALE WITH EGG										
	MALE				0.20						0.02
	COPEPODID 1 – V			0.07			0.09	0.05			0.02
	TOTAL			0.07	0.20		0.09	0.05			0.05
M. albidus	TOTAL			0.01							0.00
D. minutus	FEMALE	0.60	0.14	0.54	0.27	0.21	0.13	0.02	0.81	0.30	0.37
	FEMALE WITH EGG	0.12	0.14	0.07	0.07	0.10	0.48	0.26	0.91	0.13	0.25
	MALE	0.48	0.48	0.41	0.20	0.36	0.70	0.79	1.22	0.35	0.55
	COPEPODID 1 – V	1.32	0.75	1.29	0.60	0.42	0.70	0.90	1.42	0.52	0.88
	TOTAL	2.52	1.50	2.31	1.14	1.09	2.02	2.27	4.37	1.30	2.06
D. oregonensis	FEMALE						0.04				0.00
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V										
	TOTAL						0.04				0.00
D. sicilis	FEMALE					0.05				0.09	0.02
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	8.64	5.71	8.50	8.25	8.97	10.38	10.30	1.42	9.42	7.51
	TOTAL	8.64	5.71	8.50	8.25	7.02	10.38	10.30	1.42	9.50	7.53
E. lacustris	ADULT	0.04	0.04	0.02	0.02	0.00	0.01	0.03	0.05	0.01	0.02
	COPEPODID 1 – V	0.18	0.34	0.07	0.13	0.18	0.31	0.05	0.20	0.13	0.17
	TOTAL	0.22	0.38	0.08	0.16	0.18	0.31	0.08	0.25	0.14	0.20
CYCLOPOID NAUPLII	NI – NVI	0.90	0.54	1.09	0.81	0.62	0.84	0.74	0.81	0.60	0.77
CALANOID NAUPLII	NI – NVI	0.18	0.20	1.29	0.54	0.21	0.13	0.05	0.30	0.17	0.34
D. retrocurva	FEMALE										
	FEMALE WITH EGG										
	MALE										
	JUVENILE	0.06			0.07		0.04				0.02
	TOTAL	0.06			0.07		0.04				0.02
D. g. mendotae	FEMALE	0.90	0.41	0.14	0.20	0.26	0.62	1.00		0.26	0.35
	FEMALE WITH EGG		0.07		0.01	0.12	0.18	0.16		0.35	0.10
	MALE										
	JUVENILE	1.32	0.88	0.95	0.27	0.47	1.08	1.53	0.10	0.69	0.81
	TOTAL	1.62	1.36	1.09	0.48	0.85	1.86	2.69	0.10	1.30	1.26
D. longiremis	FEMALE										
	FEMALE WITH EGG										
	MALE										
	JUVENILE		0.14								0.02
	TOTAL		0.14								0.02
C. lacustris	TOTAL		0.20			0.31					0.06
C. sphaericus	TOTAL		0.07								0.01
B. longirostris	AD + JUV	0.66	0.41	0.82	2.35	0.66	0.88	0.48	0.61	0.56	0.83
	FEMALE WITH EGG										
	TOTAL	0.66	0.41	0.82	2.35	0.66	0.88	0.48	0.61	0.56	0.83
D. leuchtenbergianum	TOTAL	0.60	0.20	0.48	0.54	0.10	0.40	0.42	1.63	0.43	0.53
L. kindtii	TOTAL	0.009	0.005	0.001			0.003		0.004	0.001	0.00
M. laticornis	TOTAL	0.06									0.01
Chaoborus sp.	TOTAL			0.01							0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	16.20	9.45	11.84	11.36	9.42	19.32	11.25	6.30	15.03	12.24
	Ind.cm^{-2}	23.81	12.29	16.39	14.88	16.02	36.63	18.89	5.48	30.67	19.56
CALANOIDA TOTAL	Ind.L^{-1}	11.56	7.79	12.19	8.09	8.48	12.90	12.70	6.35	11.11	10.13
	Ind.cm^{-2}	16.99	10.13	16.84	10.59	14.42	25.80	21.34	5.52	22.66	15.92
CLADOCERA TOTAL	Ind.L^{-1}	3.01	2.39	2.36	3.44	1.94	3.17	3.59	2.34	2.29	2.73
	Ind.cm^{-2}	4.42	3.10	3.10	4.50	3.30	6.34	6.03	2.04	4.67	4.17
TOTAL	Ind.L^{-1}	30.77	19.63	26.41	22.88	19.85	35.39	27.54	14.99	28.43	25.10
	Ind.cm^{-2}	45.23	25.51	34.33	29.97	33.74	70.77	46.26	13.04	58.00	39.65
NUMBER OF SPECIES (18 TOTAL)		12	12	11	10	8	13	9	9	9	

Appendix 2.5. Abundance (individuals per litre) of zooplankton species life stages at nine stations in Lake 377, July 21, 1987, collected with twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	MEAN
	DEPTH	3.0	6.2	13.1	13.0	7.0	12.9	17.9	11.6	10.6	10.60
SPECIES											
C. b. thomasi	FEMALE			0.40	0.14		0.14				0.08
	FEMALE WITH EGG			0.02	0.01	0.00	0.21	0.02	0.01		0.03
	MALE				0.07	0.11	0.07			0.08	0.04
	COPEPODID 1 – V	0.59	19.66	14.92	14.69	9.32	15.82	20.58	14.52	15.75	13.98
	TOTAL	0.59	19.66	15.34	14.90	9.43	16.24	20.60	14.53	15.83	14.12
A. vernalis	FEMALE										
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	0.15									0.02
	TOTAL	0.15									0.02
M. edax	FEMALE	0.02	0.14	0.07	0.07	0.11		0.05		0.08	0.08
	FEMALE WITH EGG		0.14	0.03	0.01	0.09	0.02	0.02	0.08	0.04	0.05
	MALE	0.15	0.29	0.07	0.07	0.23	0.07		0.23	0.08	0.13
	COPEPODID 1 – V	5.31	0.38				0.07		0.15	0.08	0.68
	TOTAL	5.48	0.94	0.16	0.15	0.43	0.16	0.07	0.46	0.29	0.90
T. p. mexicanus	FEMALE	7.97	0.38		0.14	0.11			0.08	0.08	0.97
	FEMALE WITH EGG	2.07	0.22				0.07	0.05			0.27
	MALE	3.69	0.50	0.07	0.20	0.11	0.07		0.08	0.24	0.55
	COPEPODID 1 – V	14.81	1.22	0.40	0.20	0.34	0.07	0.10	0.46	0.16	1.95
	TOTAL	28.34	2.30	0.47	0.54	0.57	0.21	0.15	0.61	0.49	3.74
D. minutus	FEMALE		0.22	0.13	0.48	0.34			0.30	0.08	0.17
	FEMALE WITH EGG	0.02	0.29		0.07	0.16	0.05	0.05	0.02	0.16	0.09
	MALE	0.15	0.36	0.07	0.07	0.11	0.07	0.35	0.15	0.49	0.20
	COPEPODID 1 – V	0.59	0.86	0.67	1.02	0.34	0.48	0.30	0.61	0.73	0.62
	TOTAL	0.76	1.73	0.87	1.63	0.95	0.60	0.69	1.08	1.47	1.09
D. oregonensis	FEMALE										
	FEMALE WITH EGG										
	MALE					0.11					0.01
	COPEPODID 1 – V										
	TOTAL					0.11					0.01
D. sicilis	FEMALE										
	FEMALE WITH EGG										
	MALE										
	COPEPODID 1 – V	0.07				0.11					0.02
	TOTAL	0.07				0.11					0.02
E. lacustris	ADULT		0.01	0.02	0.01	0.05	0.03	0.02	0.06	0.11	0.03
	COPEPODID 1 – V	0.30	0.07			0.11	0.07				0.06
	TOTAL	0.30	0.08	0.02	0.01	0.17	0.10	0.02	0.06	0.11	0.10
CYCLOPOID NAUPLII	NI – NVI	51.98	19.01	21.77	22.78	12.72	24.42	22.12	28.98	24.48	25.14
CALANOID NAUPLII	NI – NVI	12.55	4.39	0.87	1.22	1.93	0.89	0.25	0.61	0.98	2.81
D. retrocurva	FEMALE			0.27	0.54		0.21	0.55	0.38	0.08	0.23
	FEMALE WITH EGG				0.07		0.01				0.01
	MALE									0.08	0.01
	JUVENILE		0.14	1.08	0.82	0.45	0.98	0.84	1.44	1.47	0.80
	TOTAL		0.14	1.34	1.43	0.45	1.17	1.39	1.82	1.63	1.04
D. g. mendotae	FEMALE		0.07	0.07		0.34		0.10	0.08	0.08	0.08
	FEMALE WITH EGG		0.07				0.01	0.01	0.02		0.01
	MALE										
	JUVENILE	0.02	0.58	0.40	0.07	0.57	0.07	0.05	0.53	0.49	0.31
	TOTAL	0.02	0.72	0.47	0.07	0.91	0.07	0.16	0.63	0.57	0.40
D. longiremis	FEMALE			0.13	0.34		0.21	1.34		0.08	0.23
	FEMALE WITH EGG			0.07				0.15			0.02
	MALE										
	JUVENILE			1.55	1.02		1.86	1.74	1.52	1.06	0.97
	TOTAL			1.75	1.36		2.06	3.22	1.52	1.14	1.23
C. lacustris	TOTAL	0.44									0.05
C. sphaericus	TOTAL	1.18	2.52	0.94	0.48	1.25	0.34	0.30	0.53	1.31	0.98
B. longirostris	AD + JUV	4.28	1.22	0.20	0.75	0.91	0.76	0.40	0.68	0.65	1.09
	FEMALE WITH EGG	0.15					0.07	0.05		0.24	0.08
	TOTAL	4.43	1.22	0.20	0.75	0.91	0.83	0.45	0.68	0.90	1.15
A. quadrangularis	TOTAL			0.07							0.01
D. leuchtenbergianum	TOTAL	22.88	7.63	1.14	1.50	2.73	0.55	0.40	0.61	0.82	4.25
H. gibberum	TOTAL		0.07	0.16	0.13	0.21	0.13	0.07	0.15	0.11	0.12
L. kindtii	TOTAL	0.023	0.023	0.003	0.002	0.004		0.001	0.00	0.001	0.01
P. pediculus	TOTAL	0.04	0.02	0.01	0.03	0.00	0.01		0.00	0.02	0.01
S. crystallina	TOTAL	0.02	0.02	0.01		0.01	0.01	0.00	0.00	0.01	0.01
Chaoborus sp.	TOTAL	0.05	0.01	0.02	0.02	0.05	0.02	0.04	0.01	0.03	0.03
CYCLOPOIDA TOTAL	Ind.L^{-1}	66.52	41.90	37.75	38.37	23.15	41.03	42.94	42.57	41.09	43.92
	Ind.cm^{-2}	25.95	25.77	49.45	49.89	16.21	52.72	76.67	49.38	44.38	43.40
CALANOIDA TOTAL	Ind.L^{-1}	13.67	6.20	1.57	2.86	3.25	1.59	0.97	1.75	2.58	3.83
	Ind.cm^{-2}	4.10	3.81	2.05	3.72	2.30	2.05	1.73	2.03	2.76	2.73
CLADOCERA TOTAL	Ind.L^{-1}	29.04	12.38	8.09	5.73	6.47	5.18	5.99	5.95	6.51	9.26
	Ind.cm^{-2}	8.71	7.61	7.98	7.46	4.53	6.68	10.72	6.90	7.03	7.51
TOTAL	Ind.L^{-1}	129.27	60.49	45.42	48.99	32.98	47.82	49.94	50.28	50.19	57.04
	Ind.cm^{-2}	38.78	37.20	59.51	61.08	23.07	61.45	89.39	58.33	54.21	53.67
NUMBER OF SPECIES (20 TOTAL)		15	14	16	14	15	14	13	12	15	14.2

Appendix 2.6. Abundance (individuals per litre) of zooplankton species life stages at 11 stations in Lake 442, July 21, 1987, collected with a twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	10	11	MEAN
	DEPTH	6.8	6.8	17.8	13.1	11.5	11.5	11.0	10.1	11.7	10.0	10.0	10.93
SPECIES													
C. b. thomasi	FEMALE			0.67	0.34	0.84	1.38	1.37	0.09	0.81		0.09	0.49
	FEMALE WITH EGG			0.02		0.08	0.01					0.09	0.02
	MALE			0.27	0.30	0.61	0.38	0.40	0.09	0.53	0.27	0.27	0.28
	COPEPODID 1 – V	2.02	3.86	16.54	11.83	39.24	29.03	13.82	12.50	28.65	9.15	10.74	16.12
	TOTAL	2.02	3.86	17.51	12.47	40.78	30.80	15.59	12.67	29.79	9.41	11.19	16.92
A. vernalis	FEMALE												
	FEMALE WITH EGG												
	MALE												
	COPEPODID 1 – V	0.20	0.39	0.12	0.07	0.15	0.08	0.16			0.18	0.09	0.13
	TOTAL	0.20	0.39	0.12	0.07	0.15	0.08	0.16			0.18	0.09	0.13
M. edax	FEMALE	0.07		0.02	0.03			0.24	0.26	0.15	0.09		0.08
	FEMALE WITH EGG	0.07		0.07	0.03	0.15		0.08	0.09			0.09	0.05
	MALE	0.20	0.26	0.10	0.13	0.23	0.15	0.40	0.09	0.15	0.27		0.18
	COPEPODID 1 – V	0.20	0.33	0.15	0.17	0.23		0.16	0.09	0.68		0.09	0.19
	TOTAL	0.52	0.59	0.35	0.37	0.61	0.15	0.89	0.53	0.99	0.38	0.18	0.50
T. p. mexicanus	FEMALE	0.33	0.20	0.05						0.15	0.18	0.27	0.11
	FEMALE WITH EGG	0.07				0.08		0.08					0.02
	MALE	0.72	0.33	0.07	0.03	0.08	0.08	0.08	0.18	0.08	0.09	0.09	0.17
	COPEPODID 1 – V	1.63	2.09	0.30	0.07	0.38	0.69	0.24	0.09	0.38	0.89	0.53	0.68
	TOTAL	2.74	2.61	0.42	0.10	0.54	0.77	0.40	0.28	0.61	1.15	0.89	0.95
D. minutus	FEMALE	0.33	0.39	0.07	0.17	0.08	0.08	0.32	0.35	0.15	0.53	0.27	0.25
	FEMALE WITH EGG	0.65	0.20	0.07	0.03	0.08	0.15	0.16	0.18	0.46	0.36	0.44	0.25
	MALE	0.72	0.59	0.07	0.03	0.15	0.23	0.08	0.26	0.53	0.18	0.53	0.31
	COPEPODID 1 – V	4.69	2.54	2.23	1.71	3.00	3.53	5.33	7.39	4.64	5.77	5.95	4.25
	TOTAL	6.39	3.72	2.46	1.95	3.30	3.99	5.90	8.18	5.78	6.84	7.19	5.06
D. oregonensis	FEMALE												
	FEMALE WITH EGG											0.09	0.01
	MALE												
	COPEPODID 1 – V												
	TOTAL											0.09	0.01
D. sicilis	FEMALE												
	FEMALE WITH EGG												
	MALE										0.09		0.01
	COPEPODID 1 – V	0.20		1.69	1.24	4.68	1.84	5.01	1.94	2.28	0.36	0.71	1.81
	TOTAL	0.20		1.69	1.24	4.68	1.84	5.01	1.94	2.28	0.44	0.71	1.82
E. lacustris	ADULT	0.00	0.05	0.04	0.06	0.16	0.14	0.21	0.12	0.07	0.15	0.14	0.10
	COPEPODID 1 – V	0.20		0.02	0.03				0.09	0.08	0.18	0.27	0.08
	TOTAL	0.20	0.05	0.07	0.09	0.16	0.14	0.21	0.20	0.15	0.33	0.41	0.18
CYCLOPOID NAUPLII	NI – NVI	7.24	5.48	0.55	0.40	0.77	1.77	0.81	1.23	1.67	2.22	3.46	2.33
CALANOID NAUPLII	NI – NVI	5.28	3.19	1.07	0.91	1.23	3.84	0.97	1.41	2.96	2.31	3.11	2.39
D. retrocurva	FEMALE												
	FEMALE WITH EGG												
	MALE											0.09	0.01
	JUVENILE												
	TOTAL											0.09	0.01
D. g. mendotae	FEMALE	0.07		0.45	0.24	0.61	0.77	0.32	0.26	0.68	0.18	0.36	0.36
	FEMALE WITH EGG			0.02	0.30	0.38	0.15	0.48		0.15		0.18	0.18
	MALE												
	JUVENILE	0.59		1.04	1.14	4.61	2.53	2.26	1.58	3.12	2.75	9.66	2.68
	TOTAL	0.65		1.81	1.88	5.61	3.46	3.07	1.85	3.95	2.93	10.39	3.22
C. sphaericus	TOTAL		0.13										0.01
B. longirostris	AD + JUV	0.46	0.33	0.02	0.10	0.31	0.08	0.24	0.35	0.15	0.27	0.27	0.23
	FEMALE WITH EGG						0.08					0.09	0.02
	TOTAL	0.91	0.33	0.02	0.10	0.31	0.15	0.24	0.35	0.15	0.27	0.36	0.29
A. quadrangularis	TOTAL		0.07										0.01
D. leuchtenbergianum	TOTAL	2.15	0.85	0.60	0.37	1.23	0.77	0.24	1.32	0.68	1.42	0.71	0.94
H. gibberum	TOTAL	0.07	0.02	0.04	0.03	0.05	0.00	0.01	0.02	0.05	0.11	0.04	0.04
L. kindtii	TOTAL		0.005	0.001			0.001			0.005		0.008	0.00
Chaoborus sp.	TOTAL												
CYCLOPOIDA TOTAL	Ind.L^{-1}	12.71	12.91	18.95	13.41	42.86	33.57	17.86	14.70	33.06	13.32	15.61	20.83
	Ind.cm^{-2}	8.65	8.78	33.73	17.56	49.28	38.60	19.64	14.84	38.68	13.25	15.73	23.52
CALANOIDA TOTAL	Ind.L^{-1}	12.07	6.98	5.28	4.19	9.37	9.82	12.09	11.73	11.17	9.92	11.51	9.46
	Ind.cm^{-2}	8.21	4.73	9.39	5.49	10.78	11.29	13.30	11.85	13.07	9.87	11.45	9.95
CLADOCERA TOTAL	Ind.L^{-1}	3.33	1.39	2.47	2.18	7.20	4.38	3.56	3.54	4.85	4.73	11.59	4.48
	Ind.cm^{-2}	2.27	0.95	4.40	2.86	8.28	5.04	3.92	3.58	5.67	4.70	11.54	4.84
TOTAL	Ind.L^{-1}	28.11	21.48	26.69	19.78	59.42	47.77	33.51	29.97	49.07	27.97	38.90	34.79
	Ind.cm^{-2}	19.12	14.59	47.51	25.91	68.34	54.94	36.86	30.27	57.42	27.83	38.71	36.32
NUMBER OF SPECIES (17 TOTAL)		11	12	12	11	11	11	11	10	11	11	14	11.4

Appendix 2.7. Abundance (individuals per litre) of zooplankton species life stages at 12 stations in Lake 938, July 22, 1987, collected with a twin Wisconsin net.

	STATION	1	2	3	4	5	6	7	8	9	10	11	12	MEAN
	DEPTH	2.6	2.7	2.4	2.0	2.6	3.8	3.8	2.1	4.7	3.9	2.8	1.8	2.92
SPECIES														
C. b. thomasi	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1 – V			0.55				0.08				0.08		0.08
	TOTAL			0.55				0.08				0.08		0.08
A. vernalis	FEMALE													
	FEMALE WITH EGG													
	MALE													
	COPEPODID 1 – V	1.55	0.98	1.47	1.10	0.28	0.99	0.08	0.32	0.48	0.34		1.22	0.73
	TOTAL	1.55	0.98	1.47	1.10	0.28	0.99	0.08	0.32	0.48	0.34		1.22	0.73
M. edax	FEMALE													
	FEMALE WITH EGG			0.18										0.02
	MALE													
	COPEPODID 1 – V	0.13	0.08	0.18		0.17	0.23	0.19		0.05	0.17	0.08	0.49	0.15
	TOTAL	0.13	0.08	0.37		0.17	0.23	0.19		0.05	0.17	0.08	0.49	0.16
T. p. mexicanus	FEMALE													
	FEMALE WITH EGG													
	MALE			0.18										0.02
	COPEPODID 1 – V						0.06		0.11	0.05		0.08		0.02
	TOTAL			0.18			0.06		0.11	0.05		0.08		0.04
E. agilis	TOTAL							0.06						0.01
D. minutus	FEMALE	0.17	0.16								0.02		0.01	0.03
	FEMALE WITH EGG									0.00			0.12	0.01
	MALE								0.01			0.01	0.01	0.00
	COPEPODID 1 – V										0.06			0.00
	TOTAL	0.17	0.16						0.01	0.00	0.07	0.01	0.13	0.05
E. lacustris	ADULT	0.00												0.00
	COPEPODID 1 – V				0.22					0.00			0.12	0.03
	TOTAL	0.00			0.22					0.00			0.12	0.03
CYCLOPOID NAUPLII	NI – NVI	11.52	6.07	9.02	9.46	5.68	8.06	1.98	0.85	9.52	4.14	3.60	6.83	6.39
CALANOID NAUPLII	NI – NVI	0.17	0.16				0.12	0.12				0.08		0.05
C. lacustris	TOTAL	0.17		0.18		0.09		0.06		0.01	0.06	0.01		0.05
B. longirostris	AD + JUV	4.47	2.13	4.23	6.60	1.48	1.86	2.23	2.01	1.52	2.30	3.92	4.03	3.06
	FEMALE WITH EGG	0.17	0.16	0.18	0.66	0.09	0.23	0.12		0.05	0.06	0.48	0.24	0.20
	TOTAL	4.64	2.30	4.42	7.26	1.55	2.09	2.36	2.01	1.58	2.35	4.40	4.27	3.27
A. quadrangularis	TOTAL											0.03		0.00
D. leuchtenbergianum	TOTAL					0.09								0.01
H. gibberum	TOTAL	0.13	0.10	0.20	0.10	0.09	0.06	0.16	0.17	0.12	0.28	0.15	0.27	0.15
L. kindtii	TOTAL		0.026	0.029		0.009			0.005	0.014	0.035	0.050		0.01
S. crystallina	TOTAL		0.03				0.01							0.00
Chaoborus sp.	TOTAL								0.01	0.03	0.04			0.01
CYCLOPOIDA TOTAL	Ind.L^{-1}	13.21	7.13	11.59	10.56	6.11	9.34	2.38	1.27	10.07	4.65	3.84	8.54	7.39
	Ind.cm^{-2}	3.43	1.92	2.78	2.11	1.59	3.56	0.85	0.27	4.73	1.81	1.08	1.54	2.14
CALANOIDA TOTAL	Ind.L^{-1}	0.35	0.33		0.22		0.12	0.12	0.01	0.00	0.07	0.09	0.26	0.13
	Ind.cm^{-2}	0.09	0.09		0.04		0.04	0.04	0.00	0.00	0.03	0.02	0.05	0.03
CLADOCERA TOTAL	Ind.L^{-1}	4.95	2.45	4.83	7.38	1.81	2.16	2.57	2.19	1.71	2.71	4.63	4.54	3.49
	Ind.cm^{-2}	1.29	0.66	1.16	1.47	0.47	0.82	0.93	0.46	0.80	1.06	1.30	0.82	0.94
TOTAL	Ind.L^{-1}	18.51	9.91	16.42	18.14	7.92	11.61	5.06	3.48	11.82	7.48	8.56	13.33	11.02
	Ind.cm^{-2}	4.81	2.68	3.94	3.63	2.08	4.41	1.82	0.73	5.55	2.91	2.40	2.40	3.11
NUMBER OF SPECIES (14 TOTAL)		6	7	8	4	7	8	7	6	7	7	9	8	6.7

Appendix 3.1. Abundances (individuals per litre) of zooplankton species life stages in eight (2 X 4) littoral stations in Lake 377, July 27, 1988 collected with a twin Wisconsin net sampler. The mean abundance of zooplankton collected from the same stations with a flexible hose sampler is also presented for comparison. Each hose average from 4 stations composed of 20 (4 x 5) hose hauls.

	GEAR	NET	NET	NET	NET	NET	HOSE	NET	NET	NET	NET	NET	HOSE
	STATION	1	2	3	4	AVG	AVG	5	6	7	8	AVG	AVG
	DEPTH	2.20	3.00	3.00	2.75			3.00	2.00	2.90	2.90		
SPECIES													
C. b. thomasi	FEMALE												
	FEMALE WITH EGG												
	MALE												
	COPEPODID 1-V		1.18	0.44	0.84	0.57	1.13	0.15		0.78	0.15	0.27	0.56
	TOTAL		1.18	0.44	0.84	0.57	1.13	0.15		0.78	0.15	0.27	0.56
A. vernalis	FEMALE												
	FEMALE WITH EGG												
	MALE												
	COPEPODID 1-V	0.20			0.32	0.13		0.15				0.04	0.19
	TOTAL	0.20			0.32	0.13		0.15				0.04	0.19
M. edax	FEMALE			0.00		0.00		0.00			0.02	0.01	0.01
	FEMALE WITH EGG	0.01	0.02	0.00	0.01	0.01	0.00		0.01	0.00		0.00	
	MALE	0.20	0.00	0.15	0.16	0.13	0.00	0.01	0.22			0.06	0.02
	COPEPODID 1-V	4.43	1.48	0.74	0.64	1.82	1.13	0.89	7.48	0.81		2.24	0.93
	TOTAL	4.63	1.50	0.90	0.81	1.96	1.14	0.90	7.71	0.81	0.02	2.31	0.96
T. p. mexicanus	FEMALE	2.41	0.74	0.15	0.16	0.87	0.38	0.59	1.54	0.46	1.22	0.95	1.11
	FEMALE WITH EGG	0.40	0.13	0.30		0.21	0.02	0.15	0.22	0.15	0.10	0.15	0.05
	MALE	1.21	0.04		0.80	0.51	0.56	0.74		2.44	0.30	0.87	0.74
	COPEPODID 1-V	5.83	1.33	1.04	1.44	2.41	2.07	1.48	2.86	1.52	2.13	2.00	2.04
	TOTAL	9.86	2.24	1.48	2.40	3.99	3.03	2.98	4.62	4.57	3.75	3.98	3.94
M. albidus	TOTAL						0.19						
D. minutus	FEMALE	0.01	0.15	0.30	0.80	0.31		0.59				0.15	
	FEMALE WITH EGG		0.00	0.01	0.04	0.01	0.07	0.06		0.02	0.02	0.02	0.01
	MALE	0.01	0.02	0.13	0.16	0.08	0.19	0.02	0.22	0.15	0.15	0.14	0.12
	COPEPODID 1-V	0.40		0.89	0.64	0.48	1.32	1.04	0.22	0.15		0.35	0.37
	TOTAL	0.42	0.17	1.32	1.64	0.89	1.57	1.70	0.44	0.32	0.17	0.66	0.50
D. oregonensis	FEMALE				0.00	0.00							
	FEMALE WITH EGG												
	MALE												
	COPEPODID 1-V												
	TOTAL				0.00	0.00							
E. lacustris	ADULT	0.03	0.00	0.01		0.01	0.01	0.00	0.01		0.00	0.00	0.00
	JUVENILE		0.02		0.32	0.08		0.15			0.02	0.04	0.02
	TOTAL	0.03	0.02	0.01	0.32	0.09	0.01	0.15	0.01		0.02	0.05	0.03
CYCLOPOID NAUPLII	NI-NVI	28.97	6.81	7.70	12.00	13.87	9.59	9.77	26.18	6.86	2.59	11.35	11.30
CALANOID NAUPLII	NI-NVI	7.04	4.74	5.77	5.12	5.67	3.38	4.29	6.16	3.81	3.96	4.56	2.59
D. retrocurva	FEMALE												
	FEMALE WITH EGG												
	MALE												
	JUVENILE												
	TOTAL												
D. g. mendotae	FEMALE												
	FEMALE WITH EGG	0.01		0.00	0.00	0.00							
	MALE												
	JUVENILE	0.05	0.02	0.59	1.44	0.53	0.75	0.15		0.06	0.30	0.13	0.19
	TOTAL	0.06	0.02	0.60	1.44	0.53	0.75	0.15		0.06	0.30	0.13	0.19
D. longiremis	FEMALE												
	FEMALE WITH EGG												
	MALE												
	JUVENILE						0.19						
	TOTAL						0.19						
C. sphaericus	TOTAL	0.01	0.44	0.74	1.12	0.58	0.19	1.63	0.44	0.61	0.15	0.71	0.19
B. longirostris	AD+JUV	6.44	6.66	1.92	3.84	4.72	6.02	4.14	3.52	1.68	2.13	2.87	1.67
	FEMALE WITH EGG						0.38						0.19
	TOTAL	6.44	6.66	1.92	3.84	4.72	6.39	4.14	3.52	1.68	2.13	2.87	1.85
D. leuchtenbergianum	TOTAL	4.83	2.52	3.85	2.72	3.48	2.44	1.48	2.20	1.22	0.30	1.30	1.11
H. gibberum	TOTAL	0.02	0.02	0.19	0.14	0.09	0.05	0.02	0.03		0.04	0.02	0.02
L. kindtii	TOTAL		0.04	0.01		0.01	0.02			0.02	0.02	0.01	0.00
P. pediculus	TOTAL		0.00	0.01		0.00	0.02	0.02	0.06	0.10	1.07	0.31	0.37
S. crystallina	TOTAL	0.03	0.01	0.04	0.04	0.03	0.02	0.01	0.06	0.02	0.02	0.03	0.03
C. rectirostris	TOTAL		0.00			0.00							
E. lamellatus	TOTAL	0.01				0.00							
M. laticornis	TOTAL				0.16	0.04							
Chaoborus sp	TOTAL												0.00
CYCLOPOIDA TOTAL	Ind.L^{-1}	43.67	11.73	10.52	16.17	20.52	15.07	13.93	38.51	12.81	6.52	17.94	16.93
	Ind.cm^{-2}	9.81	3.52	3.15	4.45	5.18		4.18	7.70	3.71	1.89	4.37	
CALANOIDA TOTAL	Ind.L^{-1}	7.48	4.93	7.10	7.08	6.65	4.97	6.15	6.81	4.13	4.16	5.26	3.12
	Ind.cm^{-2}	1.65	1.48	2.13	1.95	1.80		1.84	1.32	1.20	1.21	1.39	
CLADOCERA TOTAL	Ind.L^{-1}	11.38	9.71	7.35	9.46	9.48	10.08	7.44	8.30	3.70	4.04	5.37	3.78
	Ind.cm^{-2}	2.50	2.91	2.20	2.60	2.56		2.23	1.26	1.07	1.17	1.43	
TOTAL	Ind.L^{-1}	62.53	26.37	24.97	32.72	36.65	30.12	27.52	51.41	20.63	14.71	28.57	23.81
	Ind.cm^{-2}	13.76	7.91	7.49	9.00	9.54		8.26	10.28	5.98	4.27	7.20	

Appendix 3.2. Abundance (individuals per litre) of zooplankton species life stages at six pelagic stations in Lake 377, July 27, 1988, collected with twin Wisconsin net and flexible hose samplers. Each hose sample consists of five hauls.

	GEAR	NET	HOSE	NET	HOSE	NET	HOSE	NET	HOSE	NET	HOSE	NET	HOSE	NET	HOSE
	STATION	9		10		11		12		13		14		AVG	AVG
	DEPTH	7.50	7.50	13.90	13.90	13.50	13.50	12.75	12.50	13.50	13.50	17.90	17.90		
SPECIES															
C. b. thomasi	FEMALE			0.00	0.14	0.26				0.39	0.15	0.10		0.13	0.05
	FEMALE WITH EGG			0.00	0.02					0.00				0.00	0.00
	MALE			0.13	0.02				0.02		0.15			0.02	0.03
	COPEPODID 1-V	19.52	11.21	29.70	34.27	27.95	33.45	30.35	31.04	31.88	27.97	24.90	36.49	27.38	29.07
	TOTAL	19.52	11.21	29.83	34.45	28.21	33.45	30.35	31.06	32.28	28.27	25.00	36.49	27.53	29.15
A. vernalis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1-V	0.12	0.27		0.14								0.11	0.02	0.09
	TOTAL	0.12	0.27		0.14								0.11	0.02	0.09
M. edax	FEMALE		0.10	0.00	0.14	0.13	0.02		0.04	0.26			0.08	0.07	0.08
	FEMALE WITH EGG	0.00		0.01	0.02	0.02	0.02	0.03	0.02	0.04	0.06	0.10	0.02	0.03	0.02
	MALE	0.12	0.03	0.06	0.29			0.14	0.16	0.13	0.15	0.10	0.01	0.09	0.11
	COPEPODID 1-V	0.47	2.67	0.64	0.58	0.26	0.15		0.64		0.30	0.20	0.45	0.28	0.80
	TOTAL	0.59	2.80	0.72	1.03	0.41	0.19	0.17	0.86	0.43	0.50	0.40	0.56	0.45	0.99
T. p. mexicanus	FEMALE	0.59	2.67	0.19	0.43	0.13	0.44	0.28	0.16	0.39	0.15	0.10	0.11	0.28	0.68
	FEMALE WITH EGG	0.24	0.27											0.04	0.04
	MALE	0.47	1.87	0.51		0.26		0.28	0.16		0.30			0.25	0.39
	COPEPODID 1-V	1.18	2.67	0.63	1.58	0.13	0.59	0.14	0.16	0.39	0.44	0.20	0.45	0.48	0.98
	TOTAL	2.47	7.47	1.54	2.02	0.52	1.04	0.70	0.48	0.79	0.89	0.30	0.56	1.05	2.07
M. albidus	TOTAL														
D. minutus	FEMALE		0.27				0.16	0.14	0.16		0.15			0.02	0.12
	FEMALE WITH EGG	0.02		0.06	0.07	0.01	0.02	0.14	0.02		0.15			0.04	0.04
	MALE	0.35	0.53		0.14		0.16				0.16		0.22	0.06	0.20
	COPEPODID 1-V	0.94	1.07	0.19	0.29	0.79	1.04	0.28	0.80	0.52	0.30	0.20	0.45	0.49	0.66
	TOTAL	1.31	1.87	0.26	0.50	0.80	1.36	0.56	0.98	0.52	0.74	0.20	0.67	0.61	1.02
D. oregonensis	FEMALE			0.13	0.02									0.02	0.00
	FEMALE WITH EGG		0.01												0.00
	MALE														
	COPEPODID 1-V														
	TOTAL		0.01	0.13	0.02									0.02	0.00
E. lacustris	ADULT	0.10	0.10	0.02	0.04	0.05	0.06	0.05	0.08	0.03	0.04	0.30	0.06	0.09	0.06
	JUVENILE	0.02			0.14				0.02		0.02			0.00	0.03
	TOTAL	0.12	0.10	0.02	0.18	0.05	0.06	0.05	0.10	0.03	0.06	0.30	0.06	0.09	0.09
CYCLOPOID NAUPLII	NI-NVI	41.75	25.61	75.65	81.22	66.38	70.60	76.14	68.64	85.28	71.93	53.96	65.40	66.86	63.90
CALANOID NAUPLII	NI-NVI	0.71	2.93	0.32	1.87	0.26	1.04	0.28	2.08	0.66	1.04	0.20	0.22	0.40	1.53
D. retrocurva	FEMALE			0.26		0.66	0.15	0.14		0.39	0.15	0.40	0.33	0.31	0.11
	FEMALE WITH EGG	0.12		0.13						0.13				0.06	
	MALE														
	JUVENILE	0.24	0.53	0.90	0.14	1.71	0.59	1.25	0.32	0.92	0.44	0.60	0.56	0.93	0.43
	TOTAL	0.35	0.53	1.28	0.14	2.36	0.74	1.39	0.32	1.44	0.59	0.99	0.89	1.30	0.54
D. g. mendotae	FEMALE			0.06			1.04	0.84	0.96	0.39	0.15	0.30		0.27	0.36
	FEMALE WITH EGG	0.12		0.13	0.29		0.59	0.28	0.64	0.26	0.59			0.13	0.35
	MALE														
	JUVENILE	0.35	2.13	0.90	2.30	0.79	3.40	2.23	2.24	1.05	1.92	0.50	2.12	0.97	2.35
	TOTAL	0.47	2.13	1.09	2.59	0.79	5.03	3.34	3.84	1.71	2.66	0.79	2.12	1.36	3.06
D. longiremis	FEMALE			0.06	0.29	0.13	0.15		0.32				0.22	0.03	0.16
	FEMALE WITH EGG				0.02					0.13		0.10		0.04	0.00
	MALE							0.14		0.26			0.22	0.07	0.04
	JUVENILE			0.83	0.29	0.39		0.97	0.48	0.39	0.15	0.99	0.78	0.60	0.26
	TOTAL			0.90	0.59	0.52	0.15	1.11	0.80	0.79	0.15	1.09	1.23	0.74	0.49
C. sphaericus	TOTAL	1.18	1.87	0.64	0.72	0.66	1.33	1.11	1.76	0.13	0.74	0.10	0.69	0.64	1.22
B. longirostris	AD+JUV	0.71	3.47	0.77	1.58	0.26	1.92	1.11	1.76	1.84	1.48	1.39	1.79	1.01	2.00
	FEMALE WITH EGG			0.06					0.16			0.10	0.11	0.03	0.05
	TOTAL	0.71	3.47	0.83	1.58	0.26	1.92	1.11	1.92	1.84	1.48	1.49	1.90	1.04	2.05
D. leuchtenbergianum	TOTAL	6.35	8.54	2.24	4.75	0.92	2.37	1.53	3.36	1.44	5.03	1.49	3.12	2.33	4.53
H. gibberum	TOTAL	0.12	0.10	0.13	0.13	0.66	0.81	0.28	0.64	0.52	0.35	0.10	0.36	0.30	0.40
L. kindtii	TOTAL	0.01	0.01	0.01		0.00	0.01	0.00			0.00			0.00	0.00
P. pediculus	TOTAL	0.04	0.07		0.04	0.02	0.04	0.01	0.06		0.09		0.04	0.01	0.06
S. crystallina	TOTAL	0.01	0.03	0.00	0.04	0.00	0.09	0.00	0.04	0.00	0.00		0.01	0.00	0.04
C. rectirostris	TOTAL														
E. lamellatus	TOTAL														
M. laticornis	TOTAL														
Chaoborus sp	TOTAL	0.03	0.01	0.02	0.04	0.01	0.04	0.00	0.04	0.00	0.02		0.01	0.01	0.03
CYCLOPOIDA TOTAL	Ind.L^{-1}	64.45	47.36	107.74	118.85	97.50	105.27	107.35	101.04	118.78	101.58	79.68	103.12	95.91	96.20
	Ind.cm^{-2}	48.34	28.41	149.75	132.17	131.62	113.69	136.87	101.04	160.35	109.71	142.59	147.67	128.25	105.45
CALANOIDA TOTAL	Ind.L^{-1}	2.13	4.91	0.72	2.57	1.11	2.44	0.89	3.16	1.21	1.83	0.69	0.95	1.13	2.64
	Ind.cm^{-2}	1.60	2.95	1.01	2.86	1.50	2.64	1.13	3.16	1.64	1.98	1.24	1.36	1.35	2.49
CLADOCERA TOTAL	Ind.L^{-1}	9.23	16.75	7.12	10.58	6.19	12.50	9.90	12.74	7.88	11.11	6.05	10.57	7.73	12.38
	Ind.cm^{-2}	6.92	10.05	9.89	11.77	8.36	13.50	12.63	12.74	10.63	12.00	10.83	15.14	9.88	12.53
TOTAL	Ind.L^{-1}	75.84	69.03	115.59	132.05	104.81	120.24	118.14	116.98	127.87	114.54	86.40	114.66	104.78	111.25
	Ind.cm^{-2}	56.86	41.42	160.67	146.84	141.49	129.86	150.63	116.98	172.63	123.70	154.66	164.19	139.49	120.50

Appendix 3.3. Abundance (individuals per litre) of zooplankton species life stages at eight littoral stations in Lake 442, July 27, 1988 collected with a twin Wisconsin net sampler. Mean abundance (individuals per litre) of zooplankton species life stages collected at the same stations with a flexible hose sampler also presented. Hose averages consist of 20 (4 x 5) hauls.

	GEAR	NET	NET	NET	NET	NET	HOSE	NET	NET	NET	NET	NET	HOSE
	STATION	1	2	3	4	AVG	AVG	5	6	7	8	AVG	AVG
	DEPTH (m)	2.00	3.00	3.00	2.50			2.00	3.00	3.00	2.00		
SPECIES													
C. b. thomasi	FEMALE		0.02			0.00							
	FEMALE WITH EGG												
	MALE		0.02			0.00							
	COPEPODID I-V		0.17	0.09	0.02	0.07	0.05						
	TOTAL		0.20	0.09	0.02	0.08	0.05						
A. vernalis	FEMALE												
	FEMALE WITH EGG												
	MALE												
	COPEPODID I-V			0.15	0.18	0.08		0.22		0.15	0.02	0.10	
	TOTAL			0.15	0.18	0.08		0.22		0.15	0.02	0.10	
M. edax	FEMALE			0.00		0.00			0.00			0.00	
	FEMALE WITH EGG												
	MALE		0.02	0.02		0.01		0.01		0.00		0.00	0.03
	COPEPODID I-V	0.03	0.15	0.44	0.35	0.24	0.02	0.01	0.30	0.30		0.15	0.20
	TOTAL	0.06	0.17	0.47	0.35	0.26	0.02	0.01	0.30	0.30		0.15	0.23
T. p. mexicanus	FEMALE		0.02	0.44	0.35	0.20	0.19	0.22	0.15	0.15		0.13	
	FEMALE WITH EGG	0.03	0.02	0.15	0.71	0.23	0.07	0.03	0.00	0.30		0.08	0.05
	MALE		0.59		0.35	0.24	0.02	0.22				0.06	
	COPEPODID I-V	1.54	4.74	5.03	8.01	4.33	3.81	2.86	1.92	2.07	2.64	2.37	2.20
	TOTAL	1.57	5.37	5.62	7.43	5.00	4.09	3.33	2.08	2.52	2.64	2.64	2.25
E. agilis	TOTAL	0.03				0.01	0.02				0.01	0.00	
C. v. rubellus	TOTAL							0.22				0.06	
D. minutus	FEMALE		0.07			0.02		0.03	0.02	0.15	0.03	0.06	0.03
	FEMALE WITH EGG		0.01	0.04		0.01		0.01		0.02		0.01	0.03
	MALE	0.03	0.06		0.01	0.02	0.02	0.11		0.11		0.06	0.03
	COPEPODID I-V		0.59	1.04	0.35	0.50	0.02	0.14		0.89		0.26	0.05
	TOTAL	0.03	0.73	1.07	0.36	0.55	0.05	0.29	0.02	1.17	0.03	0.36	0.13
D. oregonensis	FEMALE												
	FEMALE WITH EGG												
	MALE												
	COPEPODID I-V			0.15		0.04							
	TOTAL			0.15		0.04							
D. sicilis	FEMALE							0.22				0.06	
	FEMALE WITH EGG												
	MALE												
	COPEPODID I-V		0.15	0.00		0.04							
	TOTAL		0.15	0.00		0.04		0.22				0.06	
E. lacustris	ADULT												
	JUVENILE	0.01				0.00	0.00		0.15			0.04	
	TOTAL	0.01				0.00	0.00		0.15			0.04	
CYCLOPOID NAUPLII	NI-NVI	8.80	8.73	15.69	45.97	19.80	19.99	8.80	8.36	12.88	7.04	8.77	9.00
CALANOID NAUPLII	NI-NVI	7.92	11.84	5.03	10.61	8.85	8.85	16.72	11.40	10.32	11.22	13.16	8.00
D. g. mendotae	FEMALE		0.02		0.01	0.01							
	FEMALE WITH EGG												
	MALE												
	JUVENILE		0.04	0.04	0.07	0.04	0.05						
	TOTAL		0.06	0.04	0.08	0.04	0.05						
B. longirostris	AD+JUV		1.78	0.74	0.35	0.72	0.38	1.98	0.59	0.89	0.22	0.92	0.05
	FEMALE WITH EGG												
	TOTAL		1.78	0.74	0.35	0.72	0.38	1.98	0.59	0.89	0.22	0.92	0.05
A. affinis	TOTAL	0.22				0.06					0.44	0.11	
D. leuchtenbergianum	TOTAL	0.01		0.02		0.01		0.01	0.02	0.02	0.22	0.07	
H. gibberum	TOTAL									0.02	0.01	0.01	
S. crystallina	TOTAL		0.00			0.00							
CYCLOPOIDA TOTAL	ind.L^{-1}	10.42	14.47	22.02	53.95	25.21	24.18	12.58	8.74	15.84	9.71	11.72	11.48
	ind.cm^{-2}	2.08	4.34	6.61	13.49	6.63	5.61	2.52	2.62	4.75	1.94	2.96	2.54
CALANOIDA TOTAL	ind.L^{-1}	7.98	12.72	6.28	10.97	9.48	8.91	17.23	11.56	14.49	11.25	13.63	8.13
	ind.cm^{-2}	1.59	3.82	1.88	2.74	2.51	1.60	3.45	3.47	4.35	2.25	3.38	1.80
CLADOCERA TOTAL	ind.L^{-1}	0.23	1.84	0.80	0.43	0.82	0.43	1.99	0.61	0.93	0.89	1.10	0.05
	ind.cm^{-2}	0.05	0.55	0.24	0.11	0.24	0.10	0.40	0.18	0.28	0.18	0.26	0.01
TOTAL	ind.L^{-1}	18.61	29.02	29.07	65.35	35.51	31.52	31.80	20.91	31.25	21.84	26.45	19.65
	ind.cm^{-2}	3.72	8.71	8.72	18.34	9.37	7.31	6.36	6.27	9.38	4.37	6.59	4.34

Appendix 3.4. Abundance (individuals per litre) of zooplankton species life stages at six pelagic stations in Lake 442, July 27, 1988 collected with a twin Wisconsin net sampler. Mean abundance (individuals per litre) of zooplankton species life stages collected at the same stations with a flexible hose sampler also presented. Hose average represets 30 (6 x 5) hose hauls.

	GEAR	NET	NET	NET	NET	NET	NET	NET	HOSE
	STATION	9	10	11	12	13	14	AVG	AVG
	DEPTH (m)	12.0	15.2	12.0	17.0	11.5	10.0		
SPECIES									
C. b. thomasi	FEMALE	1.55	1.40	1.32	1.25	1.08	0.36	1.16	0.52
	FEMALE WITH EGG	0.00	0.00					0.00	0.00
	MALE	1.32	0.93	1.32	1.14	1.08	1.42	1.20	1.04
	COPEPODID 1-V	13.40	45.90	62.41	58.14	18.74	22.02	36.77	42.43
	TOTAL	16.27	48.24	65.06	60.53	20.89	23.80	39.13	44.00
A. vernalis	FEMALE								
	FEMALE WITH EGG								
	MALE								
	COPEPODID 1-V		0.23				0.18	0.07	0.10
	TOTAL		0.23				0.18	0.07	0.10
M. edax	FEMALE	0.07		0.16	0.10	0.15		0.08	0.21
	FEMALE WITH EGG		0.12	0.00	0.05	0.15	0.18	0.08	0.03
	MALE				0.21	0.15		0.06	0.42
	COPEPODID 1-V	0.37	0.12	0.59	0.73	0.15	1.42	0.56	0.62
	TOTAL	0.44	0.23	0.74	1.09	0.61	1.60	0.79	1.28
T. p. mexicanus	FEMALE	0.07	0.12		0.10			0.05	0.10
	FEMALE WITH EGG			0.44	0.10			0.09	
	MALE	0.07	0.12	0.29	0.21		0.18	0.15	0.21
	COPEPODID 1-V	1.03	0.70	0.59	0.10	0.92	1.07	0.74	1.14
	TOTAL	1.18	0.93	1.32	0.52	0.92	1.24	1.02	1.46
E. agilis	TOTAL								
C. v. rubellus	TOTAL								
D. minutus	FEMALE		0.12	0.74	0.21	1.08	1.24	0.56	0.83
	FEMALE WITH EGG	0.00		0.44	0.02	0.31	0.71	0.25	
	MALE			0.59	0.31	0.31	1.60	0.47	0.62
	COPEPODID 1-V	9.49	10.63	10.16	7.49	13.38	12.25	10.56	11.75
	TOTAL	9.50	10.75	11.92	8.02	15.05	15.81	11.84	13.21
D. oregonensis	FEMALE								
	FEMALE WITH EGG								
	MALE								
	COPEPODID 1-V								
	TOTAL								
D. sicilis	FEMALE								
	FEMALE WITH EGG								
	MALE								
	COPEPODID 1-V	12.07	9.11	6.92	6.34	8.14	3.91	7.75	8.22
	TOTAL	12.07	9.11	6.92	6.34	8.14	3.91	7.75	8.22
E. lacustris	ADULT	0.07	0.07	0.12	0.04	0.17	0.30	0.13	0.10
	JUVENILE		0.12	0.15			0.18	0.07	0.10
	TOTAL	0.07	0.19	0.27	0.04	0.17	0.48	0.20	0.20
CYCLOPOID NAUPLII	NI-NVI	3.02	1.99	2.21	2.50	3.53	7.84	3.48	3.74
CALANOID NAUPLII	NI-NVI	3.61	3.15	2.94	1.66	4.15	4.44	3.33	4.58
D. g. mendotae	FEMALE	3.31	2.10	1.77	0.52	0.61	0.89	1.53	1.87
	FEMALE WITH EGG	0.22	0.23	0.44	0.10	0.31	0.36	0.28	0.52
	MALE								
	JUVENILE	10.67	7.24	4.27	2.70	2.46	1.42	4.79	6.97
	TOTAL	14.20	9.58	6.48	3.33	3.38	2.66	6.61	9.36
B. longirostris	AD+JUV	3.46	1.40	5.74	5.20	10.44	5.33	5.28	9.15
	FEMALE WITH EGG			0.15		0.15		0.05	
	TOTAL	3.46	1.40	5.89	5.20	10.60	5.33	5.31	9.15
A. affinis	TOTAL								
D. leuchtenbergianum	TOTAL	1.10	0.70	0.44	0.42	1.23	1.24	0.86	1.04
H. gibberum	TOTAL		0.01	0.15	0.00	0.01	0.01	0.03	0.00
S. crystallina	TOTAL								
CYCLOPOIDA TOTAL	Ind.L^{-1}	20.91	51.63	69.34	64.63	25.96	34.45	44.49	50.58
	Ind.cm^{-2}	25.09	78.48	83.20	109.87	29.85	34.45	60.16	57.66
CALANOIDA TOTAL	Ind.L^{-1}	25.24	23.20	22.06	16.07	27.51	24.83	23.12	26.20
	Ind.cm^{-2}	30.29	35.26	26.47	27.32	31.84	24.83	29.27	29.87
CLADOCERA TOTAL	Ind.L^{-1}	18.77	11.69	12.95	8.95	15.22	9.25	12.80	19.56
	Ind.cm^{-2}	22.52	17.77	15.54	15.21	17.50	9.25	16.30	22.29
TOTAL	Ind.L^{-1}	64.92	86.52	104.35	89.64	68.68	68.33	80.41	96.34
	Ind.cm^{-2}	77.90	131.51	125.22	152.39	78.99	68.33	105.72	109.83

Appendix 3.5. Abundance (individuals per litre) of zooplankton species life stages at 10 littoral stations in Lake 938, July 28, 1988 collected with a twin Wisconsin net sampler. Mean abundance (individuals per litre) of zooplankton species life stages collected at same locations with a flexible hose sampler also provided. Hose averages composed of 20 (4 x 5) and 30 (6 x 5) hose hauls, respectively

	GEAR	NET	NET	NET	NET	NET	HOSE	NET	NET	NET	NET	NET	NET	NET	HOSE
	STATION	1	2	3	4	AVG	AVG	5	6	7	8	9	10	AVG	AVG
	DEPTH	2.00	2.50	2.25	2.75			2.00	2.00	2.50	2.00	2.75	2.00		
SPECIES															
C. b. thomasi	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1 - V														
	TOTAL														
A. vernalis	FEMALE						0.03								
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1 - V	0.88	1.59	0.79	1.13	1.10	1.06	1.76	5.28	6.01	9.90	1.93	3.08	4.66	1.36
	TOTAL	0.88	1.59	0.79	1.13	1.10	1.08	1.76	5.28	6.01	9.90	1.93	3.08	4.66	1.36
M. edax	FEMALE									0.00	0.08	0.02		0.01	
	FEMALE WITH EGG														
	MALE								0.22	0.02	0.03	0.32		0.10	
	COPEPODID 1 - V				0.48	0.12	0.42	1.76	5.94	8.84	7.26	14.79	0.44	6.51	3.94
	TOTAL				0.48	0.12	0.42	1.76	6.16	8.87	7.34	15.14	0.44	6.62	3.94
T. p. mexicanus	FEMALE	0.44	1.06	0.59	0.64	0.68	0.21	2.20	4.84	0.35	5.50	1.29	0.44	2.44	1.67
	FEMALE WITH EGG	0.17	0.13		0.08	0.09	0.03	0.22	0.47		0.66	0.32	0.03	0.28	
	MALE	0.44	0.53		2.25	0.81	1.89	1.32	2.42	1.06	7.04	1.93	0.66	2.41	2.73
	COPEPODID 1 - V	0.88	1.24	0.39	2.73	1.31	0.42	3.08	7.04	3.18	28.62	12.54	1.32	8.98	1.36
	TOTAL	1.93	2.96	0.98	5.69	2.89	2.55	6.82	14.77	4.60	39.82	16.08	2.45	14.09	5.76
M. albidus	TOTAL						0.01								
E. agilis	TOTAL			0.02		0.01									
E. speratus	TOTAL														
P. f. poppei	TOTAL	0.01				0.00									
D. minutus	FEMALE			0.02		0.01	0.01	0.03	0.06			0.32		0.07	0.04
	FEMALE WITH EGG		0.02	0.00		0.01		0.01	0.01	0.00	0.01			0.00	
	MALE		0.02	0.02	0.02	0.02		0.03	0.06	0.02			0.03	0.02	0.02
	COPEPODID 1 - V											0.32		0.05	
	TOTAL		0.04	0.05	0.02	0.03	0.01	0.06	0.12	0.03	0.01	0.64	0.03	0.15	0.06
D. oregonensis	FEMALE				0.02	0.01									0.02
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1 - V														
	TOTAL				0.02	0.01									0.02
D. sicilis	FEMALE														
	FEMALE WITH EGG														
	MALE														
	COPEPODID 1 - V														
	TOTAL														
E. lacustris	ADULT														
	COPEPODID 1 - V														
	TOTAL														
CYCLOPOID NAUPLII	NI - NVI	8.80	7.78	3.35	10.77	7.67	6.31	15.84	34.76	38.42	100.32	58.21	21.12	44.45	5.31
CALANOID NAUPLII	NI - NVI	0.88		0.98	0.48	0.59	0.42	0.22	0.22	0.35	0.44		0.44	0.28	
D. retrocurva	FEMALE														
	FEMALE WITH EGG														
	MALE														
	JUVENILE														
	TOTAL														
C. lacustris	TOTAL	0.44	0.35	0.79	0.80	0.60		2.20	7.48	9.19	14.52	15.76	1.76	8.49	1.67
S. serrulatus	TOTAL	0.01				0.00									
B. longirostris	AD + JUV	2.86	4.24	0.79	2.25	2.54	0.42	13.86	39.16	8.13	6.82	23.80	5.72	16.25	6.22
	FEMALE WITH EGG		0.18		0.16	0.08		0.22	2.20	0.71	0.22	1.81	0.88	0.97	0.45
	TOTAL	2.86	4.42	0.79	2.41	2.62	0.42	14.08	41.36	8.84	7.04	25.41	6.60	17.22	6.67
A. affinis	TOTAL										0.22			0.04	
D. leuchtenbergianum	TOTAL	1.32	0.18	0.20	0.16	0.46		0.22	1.54	1.41	1.10	11.26	1.98	2.92	0.15
H. gibberum	TOTAL	0.44	0.18	0.07	0.02	0.18	0.03	0.08	0.03	0.11	0.22	0.32		0.13	0.06
L. kindtii	TOTAL	0.14			0.01	0.04	0.03	0.03				0.04		0.01	
P. pediculus	TOTAL	0.22	0.01	0.00	0.00	0.06	0.01	0.02	0.03		0.03			0.01	0.00
S. crystallina	TOTAL	0.03			0.02	0.01	0.03		0.14	0.01	0.03	0.06	0.66	0.15	0.02
P. procurvis	TOTAL						0.03								
M. laticornis	TOTAL		0.00			0.00					0.06			0.01	
P. tubulatus	TOTAL														0.00
Chaoborus sp.	TOTAL				0.00	0.00				0.09		0.06	0.03	0.03	0.02
CYCLOPOIDA TOTAL	ind.L^{-1}	11.61	12.33	5.14	16.07	11.79	10.37	28.18	80.97	55.80	157.38	91.35	27.09	69.81	16.37
	ind.cm^{-2}	2.32	3.08	1.16	4.97	2.88	2.18	5.24	12.19	13.97	31.48	25.12	5.42	15.57	3.11
CALANOIDA TOTAL	ind.L^{-1}	0.88	0.04	1.04	0.52	0.62	0.43	0.28	0.34	0.38	0.45	0.64	0.47	0.43	0.08
	ind.cm^{-2}	0.18	0.01	0.23	0.14	0.14	0.09	0.06	0.07	0.10	0.09	0.18	0.09	0.10	0.01
CLADOCERA TOTAL	ind.L^{-1}	5.45	5.14	1.85	3.43	3.97	0.54	18.63	50.57	19.57	23.21	52.84	11.00	28.97	8.59
	ind.cm^{-2}	1.09	1.29	0.42	0.94	0.93	0.11	3.33	10.11	4.89	4.64	14.53	2.20	6.62	1.63
TOTAL	ind.L^{-1}	17.94	17.52	8.03	22.03	16.38	11.34	43.09	111.88	75.93	181.04	144.92	38.58	99.24	25.06
	ind.cm^{-2}	3.59	4.38	1.81	6.06	3.96	2.38	8.62	22.38	18.98	36.21	39.85	7.72	22.29	4.76

Appendix 3.6. Abundance (individuals per litre) of zooplankton species life stages at five pelagic stations in Lake 938, July 28, 1988 collected with a twin Wisconsin net sampler. Mean abundance (individuals per litre) of zooplankton species life stages collected at same locations with a flexible hose sampler also provided. Hose average consists of 25 (5 x 5) hose hauls.

	GEAR	NET	NET	NET	NET	NET	NET	HOSE
	STATION	11	12	13	14	15	AVG	AVG
	DEPTH	3.50	3.00	4.90	3.75	4.00		
SPECIES								
C. b. thomasi	FEMALE							
	FEMALE WITH EGG							
	MALE							
	COPEPODID 1 – V			0.18			0.04	
	TOTAL			0.18			0.04	
A. vernalis	FEMALE							
	FEMALE WITH EGG							
	MALE							
	COPEPODID 1 – V	4.55	2.95	5.51	3.54	1.77	3.67	7.31
	TOTAL	4.55	2.95	5.51	3.54	1.77	3.67	7.31
M. edax	FEMALE	0.00		0.02		0.01	0.01	
	FEMALE WITH EGG							
	MALE		0.00	0.09		0.22	0.08	
	COPEPODID 1 – V	3.67	7.08	8.05	3.54	4.43	5.35	7.83
	TOTAL	3.67	7.09	8.16	3.54	4.67	5.42	7.83
T. p. mexicanus	FEMALE	1.14	0.44	2.71	2.12	1.11	1.50	5.22
	FEMALE WITH EGG	0.25	0.09	0.63		0.44	0.28	0.07
	MALE	1.52	3.99	4.25	4.48	3.32	3.51	8.26
	COPEPODID 1 – V	3.54	7.82	13.20	11.58	3.77	7.98	12.53
	TOTAL	8.45	12.34	20.79	18.17	8.64	13.28	24.08
M. albidus	TOTAL							
E. agilis	TOTAL							
E. speratus	TOTAL			0.18			0.04	
P. f. poppei	TOTAL							
D. minutus	FEMALE			0.03			0.01	0.13
	FEMALE WITH EGG		0.00		0.01		0.00	0.01
	MALE			0.18		0.03	0.04	0.52
	COPEPODID 1 – V	0.13	0.30	0.18			0.12	0.52
	TOTAL	0.13	0.30	0.40	0.01	0.03	0.17	1.19
D. oregonensis	FEMALE			0.01			0.00	
	FEMALE WITH EGG							
	MALE			0.01			0.00	0.01
	COPEPODID 1 – V							
	TOTAL			0.02			0.00	0.01
D. sicilis	FEMALE							
	FEMALE WITH EGG							
	MALE							
	COPEPODID 1 – V				0.24		0.05	
	TOTAL				0.24		0.05	
E. lacustris	ADULT							
	COPEPODID 1 – V							0.52
	TOTAL							0.52
CYCLOPOID NAUPLII	NI – NVI	28.82	40.44	64.27	60.74	38.34	44.52	52.72
CALANOID NAUPLII	NI – NVI	0.63	0.30	0.63	1.18	0.22	0.59	1.04
D. retrocurva	FEMALE							
	FEMALE WITH EGG					0.01	0.00	
	MALE							
	JUVENILE			0.18			0.04	
	TOTAL			0.18		0.01	0.04	
C. lacustris	TOTAL	4.42	7.08	11.75	5.43	9.09	7.55	11.48
S. vetulus	TOTAL							
B. longirostris	AD + JUV	5.69	5.02	21.88	13.45	21.72	13.55	38.83
	FEMALE WITH EGG	0.25	0.15	1.08	1.89	1.55	0.98	3.13
	TOTAL	5.94	5.17	22.96	15.34	23.27	14.54	41.78
A. affinis	TOTAL							
D. leuchtenbergianum	TOTAL	2.91	3.25	3.25	2.12	1.77	2.66	2.09
H. gibberum	TOTAL	0.14	0.59	1.38	0.94	0.89	0.78	1.57
L. kindtii	TOTAL				0.00		0.00	
P. pediculus	TOTAL							
S. crystallina	TOTAL	0.03	0.00			0.01	0.01	
P. denticulatus	TOTAL							
M. laticornis	TOTAL							
Chaoborus sp.	TOTAL	0.08		0.01	0.00		0.02	0.07
CYCLOPOIDA TOTAL	Ind.L^{-1}	43.48	62.83	99.10	75.99	53.42	66.96	91.94
	Ind.cm^{-2}	15.22	18.86	48.56	28.50	21.37	26.50	31.26
CALANOIDA TOTAL	Ind.L^{-1}	0.76	0.59	1.06	1.43	0.25	0.62	2.77
	Ind.cm^{-2}	0.27	0.18	0.51	0.54	0.10	0.32	0.94
CLADOCERA TOTAL	Ind.L^{-1}	13.45	16.09	39.50	23.84	35.04	25.58	58.90
	Ind.cm^{-2}	4.71	4.83	19.36	8.94	14.02	10.37	19.35
TOTAL	Ind.L^{-1}	57.76	79.51	139.67	101.26	88.71	93.38	151.67
	Ind.cm^{-2}	20.21	23.85	68.44	37.97	35.48	37.19	51.57