

## Appendix

Table A1. Summary of common phytoplankton species occurrence in Lake Ontario during April and August, 1986. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM CELLS/ML	AVERAGE % OF TOTAL CELLS/ML	% OF TOTAL CELLS	MEAN % OF TOTAL BIOVOLUME $\mu\text{m}^3/\text{mL}$	% OF TOTAL BIOVOLUME
<b>BACILLARIOPHYTA</b>					
Asterionella formosa	18	6.7	0.22	2,479	0.55
Diatoma tenue	50	6.2	0.20	5,238	1.16
Fragilaria capucina	229	13.1	0.43	4,213	0.94
Fragilaria crotonensis	150	20.8	0.68	13,215	2.93
Melosira islandica	54	11.1	0.36	7,886	1.75
Nitzschia sublinearis	12	2.8	0.09	3,168	0.70
Stephanodiscus alpinus	40	4.1	0.13	73,379	16.29
Stephanodiscus binderanus	31	4.1	0.14	2,408	0.53
Stephanodiscus niagarae	3	0.3	0.01	11,552	2.57
Tabellaria flocculosa	91	9.6	0.31	24,212	5.38
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Total			2.58		32.81
<b>CHLOROPHYTA</b>					
Chlamydomonas sp.	49	16.3	0.53	949	0.21
Cosmarium sp.	8	0.3	0.01	2,409	0.54
Green coccoid	9254	476.3	15.60	31,952	7.10
Monoraphidium setiformae	8	1.4	0.05	3,520	0.78
Scenedesmus ecornis	106	23.0	0.75	1,041	0.23
Sphaerocystis Schroeteri	376	25.6	0.84	5,181	1.15
Tetraedron minimum	205	17.4	0.57	9,283	2.06
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Total			18.35		12.07
<b>CHRYSOPHYTA</b>					
Chromulina sp.	172	72.3	2.37	5,184	1.15
Haptophyceae	802	306.0	10.02	5,138	1.14
Ochromonas sp.	385	137.8	4.51	11,364	2.52
Unidentified coccoids	205	65.2	2.14	1,278	0.28
			-----		-----
Total			19.04		5.10
<b>COLORLESS FLAGELLATES</b>					
Colorless flagellates	123	37.0	1.21	1,426	0.32
<b>CRYPTOPHYTA</b>					
Cryptomonas erosa	245	50.9	1.67	82,491	18.32
Cryptomonas marssonii	90	14.1	0.46	9,750	2.17
Cryptomonas ovata	25	4.0	0.13	7,340	1.63
Cryptomonas phaseolus	41	4.6	0.15	3,277	0.73
Cryptomonas sp.	25	4.7	0.16	2,389	0.53
Rhodomonas minuta	1325	358.3	11.74	17,799	3.95
			-----		-----
Total			14.30		27.32
<b>CYANOPHYTA</b>					
Anabaena sp.	368	35.3	1.16	4,265	0.95
Anacystis montana	3502	807.1	26.44	5,336	1.18
Oscillatoria limnetica	1734	325.7	10.67	2,005	0.45
			-----		-----
Total			38.27		2.58
<b>PYRROPHYTA</b>					
Ceratium hirundinella	16	1.1	0.04	34,288	7.61
Gymnodinium sp.	18	4.2	0.14	6,353	1.41
Peridinium sp.	41	3.6	0.12	11,985	2.66
Peridinium sp. #02	25	1.3	0.04	3,176	0.71
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Total			0.33		12.39
			=====		=====
Total			94.09		92.58

Table A2. Summary of common phytoplankton species occurrence in Lake Ontario during April and August, 1987. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM CELLS/ML	AVERAGE CELLS/ML	% OF TOTAL CELLS	MEAN BIOVOLUME $\mu\text{m}^3/\text{mL}$	% OF TOTAL BIOVOLUME
<b>BACILLARIOPHYTA</b>					
Actinocyclus normanii	8	0.6	0.01	3,399	0.72
Aulacoseira islandica	1095	101.7	2.69	75,910	16.11
Fragilaria crotonensis	241	37.3	0.99	22,938	4.87
Nitzschia lauenburgiana	17	1.6	0.04	9,855	2.09
Stephanodiscus alpinus	94	7.2	0.19	23,207	4.93
Stephanodiscus binderanus	1426	85.1	2.25	33,629	7.14
Stephanodiscus niagarae	10	0.7	0.02	18,083	3.84
Stephanodiscus transilvanicus	3	0.2	0.00	3,163	0.67
Tabellaria flocculosa	127	14.1	0.37	29,812	6.33
			-----		-----
Total			6.57		46.70
<b>CHLOROPHYTA</b>					
Cosmarium subcostatum	8	0.3	0.01	2,775	0.59
Green coccoid	4524	1,246.2	32.95	80,588	17.11
Oocystis parva	74	14.1	0.37	2,376	0.50
Oocystis pusilla	393	33.0	0.87	5,256	1.12
Scenedesmus ecornis	205	63.3	1.67	1,682	0.36
Sphaerocystis Schroeteri	2120	121.5	3.21	7,502	1.59
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Total			39.09		21.27
<b>CHRYSOPHYTA</b>					
Chromulina sp.	106	39.0	1.03	1,811	0.38
Chrysophycean coccoids	254	19.7	0.52	331	0.07
Haptophyceae	401	116.2	3.07	1,855	0.39
Ochromonas sp.	295	107.1	2.83	3,967	0.84
			-----		-----
Total			7.46		1.69
<b>CRYPTOPHYTA</b>					
Chroomonas norstedtii	131	28.4	0.75	812	0.17
Cryptomonas erosa	82	24.3	0.64	35,052	7.44
Cryptomonas marssonii	41	10.9	0.29	7,987	1.70
Rhodomonas minuta	393	140.3	3.71	9,372	1.99
			-----		-----
Total			5.39		11.30
<b>CYANOPEYTA</b>					
Anacystis montana	5964	1,173.0	31.01	9,188	1.95
Coelosphaerium naegelianum	785	24.5	0.65	103	0.02
Oscillatoria limnetica	744	118.6	3.14	1,317	0.28
			-----		-----
Total			34.80		2.25
<b>PYROPEYTA</b>					
Gymnodinium sp.	41	4.6	0.12	20,398	4.33
Peridinium aciculiferum	8	0.3	0.01	6,023	1.28
Peridinium sp.	16	1.9	0.05	15,106	3.21
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Total			0.18		8.82
			=====		=====
Total			93.48		92.02

Table A3. Summary of common phytoplankton species occurrence in Lake Ontario during April and August, 1988. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIM-UN CELLS/ML	AVERAGE CELLS/EL	% OF TOTAL CELLS	MEAN BIOVOLUME $\mu\text{m}^3/\text{mL}$	% OF TOTAL BIOVOLUME
<b>BACILLARIOPHYTA</b>					
Actinocyclus normanii	201	6.8	0.11	17,472	3.41
Asterionella formosa	102	11.5	0.18	3,849	0.75
Aulacoseira islandica	413	61.9	0.97	46,204	9.03
Fragilaria crotonensis	80	20.0	0.31	10,617	2.07
Stephanodiscus alpinus	131	17.2	0.27	48,922	9.56
Stephanodiscus binderanus	168	30.2	0.47	5,483	1.07
Stephanodiscus niagarae	22	2.6	0.04	29,231	5.71
Tabellaria flocculosa	152	19.7	0.31	34,591	6.76
			-----		-----
Total			2.65		38.38
<b>CHLOROPHYTA</b>					
Cosmarium sp.	33	1.6	0.03	4,559	0.89
Green coccoid	965	178.9	2.79	8,614	1.68
Oocystis parva	2602	125.7	1.96	8,686	1.70
Oocystis pusilla	393	46.0	0.72	5,596	1.09
Pediastrum simplex	524	16.4	0.26	4,469	0.87
Scenedesmus ecornis	2323	190.6	2.97	9,835	1.92
Sphaerocystis schroeteri	2553	206.1	3.22	7,361	1.44
			-----		-----
Total			11.94		9.60
<b>CHRYSOPHYTA</b>					
Chromulina sp.	147	41.1	0.64	2,719	0.53
Haptophyceae	1439	473.4	7.39	9,625	1.88
Ochromonas sp.	573	161.6	2.52	13,930	2.72
			-----		-----
Total			10.55		5.13
<b>CRYPTOPHYTA</b>					
Cryptomonas erosa	82	24.2	0.38	45,822	8.96
Cryptomonas marssonii	65	15.4	0.24	12,749	2.49
Cryptomonas ovata	33	4.9	0.08	7,602	1.49
Cryptomonas sp.	65	20.0	0.31	5,289	1.03
Rhodomonas minuta	941	302.9	4.73	17,698	3.46
			-----		-----
Total			5.73		17.42
<b>CYANOPHYTA</b>					
Anacystis montana	26916	3,691.7	57.60	36,103	7.06
Oscillatoria limnetica	6496	461.6	7.20	10,371	2.03
			-----		-----
Total			64.81		9.08
<b>PYRROPHYTA</b>					
Ceratium hirundinella	33	1.5	0.02	43,217	8.45
Gymnodinium sp.	33	8.2	0.13	18,462	3.61
Peridinium aciculiferum	16	0.5	0.01	2,570	0.50
Peridinium sp.	16	3.1	0.05	6,834	1.34
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Total			0.21		13.89
			=====		=====
Total			95.89		93.51

Table A4. Summary of common phytoplankton species occurrence in Lake Ontario during August, 1989. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM CELLS/ML	AVERAGE CELLS/ML	% OF TOTAL CELLS	MEAN BIOVOLUME $\mu\text{m}^3/\text{mL}$	% OF TOTAL BIOVOLUME
<b>BACILLARIOPHYTA</b>					
Fragilaria crotonensis	123	17.9	0.37	10,030	1.23
<b>CHLOROPHYTA</b>					
Chlamydomonas sp.	229	36.4	0.76	6,003	0.74
Coelastrum microporum	262	44.8	0.93	7,080	0.87
Green coccoid	3338	743.2	15.43	37,242	4.57
Monoraphidium minutum	82	25.8	0.54	402	0.05
Oocystis borgei	49	8.5	0.18	5,509	0.68
Oocystis gigas v. incrassata	82	5.1	0.11	8,549	1.05
Oocystis solitaria	106	29.1	0.61	23,200	2.84
Pediastrum duplex	655	40.9	0.85	157,105	19.26
Sphaerellopsis sp.	245	15.3	0.32	4,112	0.50
			-----		-----
	Total		19.71		30.56
<b>CHRYSOPHYTA</b>					
Chromulina sp.	164	24.0	0.50	8,666	1.06
Chrysococcus sp.	270	49.3	1.02	9,855	1.21
Haptophyceae	2143	440.4	9.14	9,651	1.18
Ochromonas sp.	295	75.0	1.56	24,744	3.03
			-----		-----
	Total		12.22		6.49
<b>COLORLESS FLAGELLATES</b>					
Colorless flagellate	98	27.3	0.57	3,618	0.44
<b>CRYPTOPHYTA</b>					
Cryptomonas erosa	131	41.8	0.87	101,722	12.47
Cryptomonas ovata	98	27.4	0.57	32,616	4.00
Cryptomonas phaseolus	82	9.9	0.21	6,044	0.74
Rhodomonas minuta	2798	406.0	8.43	49,444	6.06
			-----		-----
	Total		10.07		23.28
<b>CYANOPHYTA</b>					
Anabaena flos-aquae	1694	105.8	2.20	3,547	0.43
Anacystis montana	4434	1,425.6	29.60	18,884	2.32
Aphanizomenon flos-aquae	736	53.3	1.11	21,067	2.58
Chroococcus limneticus	311	26.0	0.54	4,665	0.57
Coelosphaerium dubium	908	68.0	1.41	5,735	0.70
Oscillatoria limnetica	2863	428.4	8.90	2,844	0.35
Synechococcus sp.	1620	252.8	5.25	12,153	1.49
			-----		-----
	Total		49.00		8.45
<b>PYRROPHYTA</b>					
Ceratium hirundinella	16	1.2	0.03	31,558	3.87
Glenodinium sp.	16	1.7	0.04	15,388	1.89
Gymnodinium helveticum	3	0.2	0.00	8,218	1.01
Peridinium - cyst	20	2.0	0.04	9,371	1.15
Peridinium sp.	57	13.6	0.28	116,726	14.31
			-----		-----
	Total		0.39		22.23
			=====		=====
	Total		92.34		92.67

Table AS. Summary of common phytoplankton species occurrence in Lake Ontario during April and August, 1990. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM CELLS/EL	AVERAGE CELLS/ML	% OF TOTAL CELLS	MEAN BIOVOLUME $\mu\text{m}^3/\text{mL}$	% OF TOTAL BIOVOLUME
<b>BACILLARIOPHYTA</b>					
Asterionella formosa	224	25.6	0.68	7,140	0.86
Aulacoseira islandica	1041	212.5	5.63	220,059	26.61
Fragilaria crotonensis	240	34.5	0.91	19,978	2.42
Nitzschia lauenburgiana	16	2.9	0.08	17,861	2.16
Stephanodiscus alpinus	48	8.6	0.23	26,957	3.26
Stephanodiscus binderanus	171	26.0	0.69	16,303	1.97
Stephanodiscus niagarae	11	1.2	0.03	17,441	2.11
Tabellaria flocculosa	74	10.1	0.27	12,374	1.50
			-----		-----
Total			8.51		40.88
<b>CHLOROPHYTA</b>					
Chlamydomonas sp.	115	41.7	1.10	1,664	0.20
Coelastrum microporum	262	21.5	0.57	1,296	0.16
Cosmarium depressum	8	1.0	0.03	5,780	0.70
Gloeocystis planktonica	434	44.5	1.18	3,593	0.43
Gloeocystis sp.	605	45.0	1.19	2,196	0.27
Green coccoid	172	38.4	1.02	3,295	0.40
Oocystis borgei	205	24.5	0.65	10,572	1.28
Oocystis pusilla	270	69.4	1.84	3,941	0.48
Oocystis solitaria	147	10.1	0.27	4,552	0.55
Scenedesmus bijuga	998	208.5	5.52	18,368	2.22
Sphaerocystis schroeteri	164	20.0	0.53	1,932	0.23
Staurastrum sp.	3	0.1	0.00	104,408	12.62
Tetraedron minimum	65	13.7	0.36	6,605	0.80
			-----		-----
Total			14.25		20.34
<b>CHRYSOPHYTA</b>					
Chromulina sp.	213	62.5	1.65	8,942	1.08
Chrysococcus sp.	188	36.3	0.96	1,960	0.24
Haptophyceae	589	276.7	7.32	6,697	0.81
Ochromonas sp.	524	116.5	3.08	19,982	2.42
Stichogloea sp.	1718	53.7	1.42	5,527	0.67
			-----		-----
Total			14.44		5.21
<b>COLORLESS FLAGELLATES</b>					
Colorless flagellate	2470	129.0	3.41	6,032	0.73
<b>CRYPTOPHYTA</b>					
Cryptomonas caudata	131	16.9	0.45	4,682	0.57
Cryptomonas erosa	98	24.4	0.65	45,919	5.55
Cryptomonas marssonii	82	10.4	0.27	7,028	0.85
Cryptomonas ovata	16	2.8	0.07	4,440	0.54
Cryptomonas phaseolue	90	19.9	0.53	6,604	0.80
Cryptomonas pyrenoidifera	65	14.6	0.39	11,663	1.41
Rhodomonas minuta	664	259.0	6.86	17,596	2.13
			-----		-----
Total			9.21		11.84
<b>CYANOPHYTA</b>					
Anacystis montana	2389	1,089.2	28.83	12,354	1.49
Aphanothece gelatinosa	655	20.5	0.54	337	0.04
Chroococcus sp.	475	40.9	1.08	1,069	0.13
Coelosphaerium naegelianum	785	71.0	1.88	4,422	0.53
Oscillatoria sp.	769	98.3	2.60	4,274	0.52
Synechococcus sp.	4582	297.4	7.87	16,454	1.99
			-----		-----
Total			42.81		4.70
<b>PYRROPHYTA</b>					
Ceratium hirundinella	8	0.6	0.02	4,976	0.60
Gymnodinium helveticum	16	2.0	0.05	16,410	1.98
Gymnodinium sp.	25	8.9	0.24	24,988	3.02
Peridinium sp.	57	9.4	0.25	29,381	3.55
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Total			0.55		9.16
			=====		=====
Total			93.19		92.87

Table A6. Summary of common phytoplankton species occurrence in Lake Ontario during April and August, 1991. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM		AVERAGE % OF TOTAL		MEAN % OF TOTAL	
	CELLS/ML	CELLS/ML	CELLS	BIOVOLUME	BIOVOLUME	$\mu\text{m}^3/\text{mL}$
<b>BACILLARIOPHYTA</b>						
<i>Aulacoseira islandica</i>	487	89.8	2.92	86,987	17.79	
<i>Cyclotella comta</i>	28	1.5	0.05	5,533	1.13	
<i>Cymatopleura solea</i>	3	0.1	0.00	3,897	0.80	
<i>Fragilaria crotonensis</i>	262	52.2	1.70	36,123	7.39	
<i>Stephanodiscus alpinus</i>	12	2.4	0.08	9,275	1.90	
<i>Stephanodiscus binderanus</i>	79	6.6	0.21	4,197	0.86	
<i>Stephanodiscus niagarae</i>	2	0.4	0.01	5,125	1.05	
<i>Stephanodiscus parvus</i>	121	17.1	0.55	693	0.14	
<i>Tabellaria flocculosa</i>	38	5.5	0.18	11,499	2.35	
			-----		-----	
Total			5.70		33.41	
<b>CHLOROPHYTA</b>						
<i>Ankistrodesmus falcatus</i>	90	15.4	0.50	761	0.16	
<i>Ankistrodesmus gracilis</i>	82	18.9	0.61	572	0.12	
<i>Chlamydomonas globosa</i>	33	3.2	0.10	3,259	0.67	
<i>Chlamydomonas sp.</i>	131	44.9	1.46	2,416	0.49	
<i>Cosmarium depressum</i>	16	1.0	0.03	3,076	0.63	
<i>Gloecystis sp.</i>	720	154.6	5.02	8,377	1.71	
Green coccoid	106	36.2	1.17	1,470	0.30	
<i>Monoraphidium contortum</i>	90	15.9	0.52	401	0.08	
<i>Oocystis borgei</i>	90	27.1	0.88	8,094	1.66	
<i>Oocystis elliptica</i>	180	9.2	0.30	6,236	1.28	
<i>Oocystis pusilla</i>	409	93.1	3.02	6,340	1.30	
<i>Oocystis solitaria</i>	57	6.9	0.22	5,729	1.17	
<i>Scenedesmus bijuga</i>	303	117.1	3.81	6,677	1.37	
<i>Sphaerocystis schroeteri</i>	344	60.1	1.95	5,446	1.11	
<i>Tetraedron minimum</i>	98	17.4	0.57	7,710	1.58	
			-----		-----	
Total			20.18		13.62	
<b>CHRYSOPHYTA</b>						
<i>Chromulina sp.</i>	172	51.2	1.66	8,173	1.67	
<i>Chrysococcus sp.</i>	123	28.2	0.92	1,914	0.39	
Haptophyceae	1137	484.0	15.73	12,165	2.49	
<i>Mallomonas sp.</i>	8	0.6	0.02	8,677	1.78	
<i>Monoaiga ovata</i>	82	16.1	0.52	980	0.20	
<i>Ochromonas sp.</i>	180	82.4	2.68	12,645	2.59	
			-----		-----	
Total			21.53		9.11	
<b>COLORLESS FLAGELLATES</b>						
Colorless flagellate	90	31.4	1.02	1,001	0.20	
<b>CRYPTOPHYTA</b>						
<i>Cryptomonas caudata</i>	41	9.1	0.30	2,522	0.52	
<i>Cryptomonas erosa</i>	74	29.2	0.95	60,384	12.35	
<i>Cryptomonas marssonii</i>	41	13.5	0.44	10,279	2.10	
<i>Cryptomonas ovata</i>	25	3.5	0.11	7,030	1.44	
<i>Cryptomonas parapyrenoidifera</i>	16	2.0	0.06	2,501	0.51	
<i>Cryptomonas phaseolus</i>	65	16.4	0.53	6,360	1.30	
<i>Cryptomonas pyrenoidifera</i>	49	13.8	0.45	13,152	2.69	
<i>Cryptomonas reflexa</i>	16	1.5	0.05	3,628	0.74	
<i>Rhodomonas minuta</i>	1244	325.3	10.57	21,661	4.43	
			-----		-----	
Total			13.46		26.09	
<b>CYANOPEYTA</b>						
<i>Anacystis montana</i>	1808	582.0	18.92	6,221	1.27	
<i>Chroococcus sp.</i>	425	73.9	2.40	2,659	0.54	
<i>Oscillatoria sp.</i>	1014	214.2	6.96	4,043	0.83	
<i>Synechococcus sp.</i>	172	69.8	2.27	3,152	0.64	
			-----		-----	
Total			30.55		3.29	

Table A6 (cont.). Summary of common phytoplankton species occurrence in Lake Ontario during 1991. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM CELLS/ML	AVERAGE % OF TOTAL		MEAN % OF TOTAL	
		CELLS/ML	CELLS	BIOVOLUME $\mu\text{m}^3/\text{mL}$	BIOVOLUME
PYRROPHYTA					
Glenodinium sp.	8	0.3	0.01	2,927	0.60
Gymnodinium helveticum	8	0.3	0.01	2,832	0.58
Gymnodinium sp.	25	6.3	0.20	7,207	1.47
Peridinium sp.	16	2.9	0.09	16,033	3.28
			-----		-----
Total			0.31		5.93
			=====		=====
Total			92.76		91.65



Table A7. Summary of common phytoplankton species occurrence in Lake Ontario during April, 1992. Summary includes the maximum population density encountered, the average population density and biovolume, and the relative abundance (% of total cells and % of total biovolume). Common species were arbitrarily defined as having an abundance  $\geq 0.5\%$  of the total cells or  $\geq 0.5\%$  of the total biovolume.

TAXON	MAXIMUM CELLS/ML	AVERAGE CELLS/ML	% OF TOTAL CELLS	MEAN BIOVOLUME $\mu\text{m}^3/\text{mL}$	% OF TOTAL BIOVOLUME
<b>BACILLARIOPHYTA</b>					
Asterionella formosa	145	41.3	1.03	15,073	1.49
Aulacoseira islandica	1029	512.2	12.80	442,812	43.79
Cymatopleura solea	2	0.5	0.01	38,277	3.78
Diatoma tenue	14	5.6	0.14	5,496	0.54
Fragilaria crotonensis	21	12.6	0.31	6,687	0.66
Nitzschia lauenburgiana	11	4.8	0.12	25,025	2.47
Nitzschia sublinearis	29	13.4	0.34	16,277	1.61
Stephanodiscus alpinus	10	3.3	0.08	15,197	1.50
Stephanodiscus binderanus	767	150.8	3.71	96,273	9.52
Stephanodiscus hantrschii	127	21.7	0.54	1,949	0.19
Stephanodiscus transilvanicus	24	7.1	0.18	6,375	0.63
Tabellaria flocculosa	157	42.5	1.06	60,623	5.99
			-----		-----
Total			20.40		72.19
<b>CHLOROPHYTA</b>					
Ankistrodesmus gracilis	74	51.1	1.28	1,342	0.13
Chlamydomonas sp.	98	45.0	1.12	2,966	0.29
Green coccoid	49	31.7	0.79	1,286	0.13
Oocystis pusilla	106	27.6	0.69	981	0.10
Scenedesmus bijuga	98	49.1	1.23	1,784	0.18
			-----		-----
Total			5.11		0.83
<b>CHRYSOPHYTA</b>					
Chromulina sp.	90	45.0	1.12	8,094	0.80
Chrysococcus sp.	180	73.6	1.84	4,204	0.42
Haptophyceae	393	282.3	7.06	11,858	1.17
Ochromonas sp.	131	90.0	2.25	16,483	1.63
			-----		-----
Total			12.27		4.02
<b>COLORLESS FLAGELLATES</b>					
Colorless flagellate	64	37.7	0.94	986	0.10
<b>CRYPTOPHYTA</b>					
Cryptomonas brevis	16	6.1	0.15	29,382	2.91
Cryptomonas caudata	49	15.3	0.38	6,849	0.68
Cryptomonas curvata	8	1.0	0.03	5,482	0.54
Cryptomonas erosa	41	16.4	0.41	40,444	4.00
Cryptomonas phaseolus	49	27.6	0.69	12,386	1.22
Cryptomonas pyrenoidifera	25	13.3	0.33	10,769	1.06
Rhodomonas minuta	360	240.3	6.01	25,238	2.50
			-----		-----
Total			8.00		12.91
<b>CYANOPHYTA</b>					
Anacystis montana	2430	1,588.2	39.70	17,382	1.72
Oscillatoria limnetica	180	22.5	0.56	1,113	0.11
Oscillatoria sp.	875	301.7	7.54	3,470	0.34
Synechococcus sp.	65	31.7	0.79	1,359	0.13
			-----		-----
Total			48.60		2.31
<b>PYRROPHYTA</b>					
Gymnodinium sp.	25	13.3	0.33	14,201	1.40
Peridinium sp.	16	8.2	0.20	25,530	2.52
			-----		-----
Total			0.54		3.93
			=====		=====
Total			95.85		96.28

Appendix A8. SPECIES LIST - LAKE ONTARIO PHYTOPLANKTON (1986- 1992)

DIVISION	TAXON	AUTHORITY
BACILLARIOPHYTA		
	<i>Achnanthes affinis</i>	Grun.
	<i>Achnanthes biasoletiana</i>	(Kutz.) Grun.
	<i>Achnanthes brevipes</i>	
	<i>Achnanthes clevei</i>	Grun.
	<i>Achnanthes conspicua</i>	A. Mayer
	<i>Achnanthes didyma</i>	
	<i>Achnanthes exigua</i>	Grun.
	<i>Achnanthes kryophila</i>	
	<i>Achnanthes lanceolata</i>	(Breb.) Greg.
	<i>Achnanthes linearis</i>	(W. Sm.) Grun.
	<i>Achnanthes minutissima</i>	Kutz.
	<i>Achnanthes oestrupii</i>	(Backm. & A. Cl.) Hust.
	<i>Achnanthes</i> sp.	
	<i>Achnanthes</i> sp. #1	
	<i>Achnanthes sublaevis</i>	Hust.
	<i>Actinocyclus normanii</i>	
	<i>Amphipleura pellucida</i>	(Kutz.) Kutz.
	<i>Amphora ovalis</i>	(Kutz.) Kutz.
	<i>Amphora perpusilla</i>	(Grun.) Grun.
	<i>Amphora</i> sp.	
	<i>Amphora thumensis</i>	(Mayer) A. Cl.
	<i>Anomoeoneis vitrea</i>	(Grun.) Patr. & Reim.
	<i>Asterionella formosa</i>	Hass.
	<i>Aulacoseira granulata</i>	(Ehr.) Ralfs
	<i>Aulacoseira islandica</i>	O. Mull.
	<i>Aulacoseira italica</i>	(Ehr.) Kutz.
	<i>Aulacoseira</i> sp.	
	<i>Cocconeis diminuta</i>	Pant.
	<i>Cocconeis pediculus</i>	Ehr.
	<i>Cocconeis placentula</i>	Ehr.
	<i>Coscinodiscus lacustris</i>	Grun.
	<i>Coscinodiscus</i> sp.	
	<i>Coscinodiscus volthii</i> v. <i>septentrionalis</i>	
	<i>Cyclostephanos dubius</i>	(Fricke) Round
	<i>Cyclostephanos tholiiformis</i>	
	<i>Cyclotella atomus</i>	Pant.
	<i>Cyclotella comensis</i>	Grun.
	<i>Cyclotella comta</i>	(Ehr.) Kutz.
	<i>Cyclotella cryptica</i>	Reim. et al.
	<i>Cyclotella delicatula</i>	Hust.
	<i>Cyclotella krammeri</i>	
	<i>Cyclotella meneghiniana</i>	Kutz.
	<i>Cyclotella michiganiana</i>	Skv.
	<i>Cyclotella ocellata</i>	Pant.
	<i>Cyclotella pseudostelligera</i>	Hust.
	<i>Cyclotella</i> sp.	
	<i>Cyclotella</i> sp. #1	
	<i>Cyclotella</i> sp. #2	
	<i>Cyclotella</i> sp. #4	
	<i>Cyclotella stelligera</i>	(Cl. & Grun.) V.H.
	<i>Cyclotella unipunctata</i>	
	<i>Cyclotella wolterecki</i>	Hust.
	<i>Cymatopleura solea</i>	(Breb. & Godey) W. Sm.
	<i>Cymbella affinis</i>	Kutz.
	<i>Cymbella microcephala</i>	Grun.
	<i>Cymbella minuta</i>	Hilse
	<i>Cymbella prostrata</i>	(Berk.) Cl.
	<i>Cymbella</i> sp.	
	<i>Denticula</i> sp.	
	<i>Diatoma hiemale</i>	(Lyng.) Heib.
	<i>Diatoma tenue</i>	Ag.
	<i>Diatoma vulgare</i>	Bory
	<i>Eunotia</i> sp.	
	<i>Fragilaria brevistriata</i>	Grun .
	<i>Fragilaria capucina</i>	Desm.
	<i>Fragilaria construens</i>	(Ehr.) Grun.
	<i>Fragilaria crotonensis</i>	Kitton
	<i>Fragilaria intermedia</i>	Grun.
	<i>Fragilaria pinnata</i>	Ehr.

Appendix A8. SPECIES LIST - LAKE ONTARIO PHYTOPLANKTON (1986- 1992)

DIVISION	TAXON	AUTHORITY
<b>BACILLARIOPHYTA</b>		
	Pragilaria vaucheriae	(Kutz.) Peters.
	Pragilaria virescens	Ralfs
	Gomphonema olivaceum	(Lyngb.) Kutz.
	Gomphonema simus	
	Gomphonema sp.	
	Gomphonema tenellum	Kutz.
	Gyrosigma sciotense	(Sulliv. & Wormley) Cl.
	Navicula cryptocephala	Kutz.
	Navicula decussis	Ostr.
	Navicula gregaria	Donk.
	Navicula lanceolata	(Ag.) Kutz.
	Navicula menisculus	Schum.
	Navicula minima	Grun.
	Navicula odiosa	Wallace
	Navicula radiosa	Kutz.
	Navicula reinhardtii	(Grun.) Grun.
	Navicula seminuloides	Hust.
	Navicula sp.	
	Navicula splendidula	Vanland.
	Navicula submuralis	Hust.
	Navicula subtilissima	Cl.
	Navicula viridula	(Kutz.) Ehr.
	Nitzschia acicularis	(Kutz.) W. sm.
	Nitzschia amphibia	Grun .
	Nitzschia angustata	(W. Sm.) Grun.
	Nitzschia capitellata	Hust.
	Nitzschia confinis	Hust.
	Nitzschia denticula	Grun.
	Nitzschia dissipata	(Kutz.) Grun.
	Nitzschia fonticola	Grun.
	Nitzschia frustulum	(Kutz.) Grun.
	Nitzschia gandersheimiensis	Krasske
	Nitzschia graciliformis	Lang. -Bert. & Simon.
	Nitzschia kuetzingiana	Hilse
	Nitzschia lacuum	
	Nitzschia lauenburgiana	Hust.
	Nitzschia palea	(Kutz.) W. Sm.
	Nitzschia pilum	
	Nitzschia pura	Hust.
	Nitzschia recta	Hantz.
	Nitzschia rostellata	Hust.
	Nitzschia sp.	
	Nitzschia sp. #01	
	Nitzschia sp. #02	
	Nitzschia sp. #03	
	Nitzschia subacicularis	Hust.
	Nitzschia sublinearis	Hust.
	Nitzschia subrostrata	Hust.
	Nitzschia tropica	Hust.
	Nitzschia tryblionella	
	Rhizosolenia longiseta	Zach.
	Rhoicosphenia sp.?	
	Stephanodiscus alpinus	Hust.
	Stephanodiscus binderanus	(Kutz.) Krieg.
	Stephanodiscus hantzschii	Grun.
	Stephanodiscus minutulus	Hak.
	Stephanodiscus niagarae	Ehr.
	Stephanodiscus parvus	Hak. + Stoerm.
	Stephanodiscus sp.	
	Stephanodiscus tenuis	Hust.
	Stephanodiscus transilvanicus	Pant.
	Surirella ovata	Kutz.
	Synedra acus	Kutz.
	Synedra cyclopus	Brutschy
	Synedra delicatissima	W. Sm.
	Synedra filiformis	Grun.
	Synedra ostefeldii	(Krieg.) A. Cl.
	Synedra radians	Kutz.
	Synedra socia	
	Synedra sp.	

Appendix A8. SPECIES LIST - LAKE ONTARIO PHYTOPLANKTON (1986- 1992)

DIVISION	TAXON	AUTHORITY
BACILLARIOPHYTA	<i>Synedra tenera</i>	w. sm.
	<i>Synedra ulna</i>	(Nitz.) Ehr.
	<i>Tabellaria flocculosa</i>	(Roth) Kutz.
CHLOROPHYTA	<i>Ankistrodesmus falcatus</i>	(Corda) Ralfs
	<i>Ankistrodesmus gracilis</i>	(Reinsch) Kors.
	<i>Ankistrodesmus</i> sp.	
	<i>Ankistrodesmus stipitatus?</i>	(Chod.) Kom.-Legn.
	<i>Ankyra lanceolata</i>	(Kors.) Fott
	<i>Ankyra</i> sp.	
	<i>Carteria cordifonnis</i>	(Carter) Dill.
	<i>Carteria</i> sp.	
	<i>Carteria wisconsinensis</i>	Huber-Pest.
	<i>Chlamydocapsa planktonica</i>	(W. & G.S. West) Fott
	<i>Chlamydocapsa</i> sp.	
	<i>Chlamydomonas globosa</i>	Snow
	<i>Chlamydomonas planktonica</i>	(West & West) Fott
	<i>Chlamydomonas</i> sp.	
	<i>Chlorella</i> sp.	
	<i>Closteriopsis longissima?</i>	Lemm.
	<i>Closteriopsis</i> sp.	
	<i>Closterium aciculare</i>	T. West
	<i>Closterium</i> sp.	
	<i>Coelastrum astroideum</i>	
	<i>Coelastrum cambricum</i>	Arch.
	<i>Coelastrum microporum</i>	Nag. in A. Braun
	<i>Coelastrum morus</i>	
	<i>Coelastrum reticulatum</i>	
	<i>Coelastrum</i> sp.	
	<i>Cosmarium depressum</i>	
	<i>Cosmarium</i> sp.	
	<i>Cosmarium subcostatum</i>	
	<i>Crucigenia quadrata</i>	Morren
	<i>Crucigenia rectangularis</i>	A. Braun
	<i>Dictyosphaerium ehrenbergianum</i>	Naeg .
	<i>Dictyosphaerium pulchellum</i>	Wood.
	<i>Elakatothrix gelatinosa</i>	Wille
	<i>Elakatothrix genevensis</i>	
	<i>Eudorina elegans</i>	Ehr.
	<i>Franceia droescheri</i>	(Lemm.) G.M. Sm.
	<i>Gloeocystis major</i>	
	<i>Gloeocystis planktonica</i>	
	<i>Gloeocystis</i> sp.	
	<i>Gloeocystis</i> sp. #1	
	<i>Gloeocystis</i> sp. #2	
	<i>Gloeocystis</i> sp. #3	
	<i>Golenkinia radiata</i>	(Chod.) Wille
	<i>Green coccoid</i>	
	<i>Green filament</i>	
	<i>Green flagellate - sphere</i>	
	<i>Kirchneriella contorta</i>	(Schmid.) Bohlm
<i>Kirchneriella</i> sp.		
<i>Lagerheimia ciliata</i>	(Lagerh.) Chod.	
<i>Lagerheimia citriformis</i>	(Snow) G.M. Sm.	
<i>Lagerheimia genevensis</i>	(Chod.) Chod.	
<i>Lagerheimia longiseta</i>	(Lemm.) Printz	
<i>Lagerheimia quadriseta</i>	(Lemm.) G.M. Sm.	
<i>Lagerheimia</i> sp.		
<i>Lagerheimia subsalsa</i>	Lemm.	
<i>Lagsrheimia subsalsa - autospore</i>		
<i>Micractinium pusillum</i>	Fresenius	
<i>Monoraphidium Braunii</i>	(Nag.) Kom.-Legn.	
<i>Monoraphidium arcuatum</i>		
<i>Monoraphidium contortum</i>	(Thur.) Kom.-Legn.	
<i>Monoraphidium gracilis</i>		
<i>Monoraphidium irregulare</i>	(G.M. Sm.) Kom.-Legn.	
<i>Monoraphidium minutum</i>	(Nag.) Kom.-Legn.	
<i>Monoraphidium pusillum</i>	(Printz.) Kom.-Legn.	
<i>Monoraphidium setiformae</i>	(Nyg.) Kom.-Legn.	

Appendix A8. SPECIES LIST - LAKE ONTARIO PHYTOPLANKTON (1986- 1992)

DIVISION	TAXON	AUTHORITY
CHLOROPHYTA	Monoraphidium tortile	(W. & W.) Kom.-Legn.
	Nephrocytium Agardhianum	Nag.
	Nephrocytium limneticum	(G.M. Sm.) G.M. Sm.
	Oedogonium sp.	
	Oocystis sp.	
	Oocystis borgei	Snow
	Oocystis crassa	Wittr. in Wittr. & Nord.
	Oocystis elliptica	w. West
	Oocystis gigas v. incrassata	
	Oocystis lacustris	Chod.
	Oocystis nodulosa	
	Oocystis parva	West & West
	Oocystis pusilla	Hansg.
	Oocystis pyriformis	
	Oocystis solitaria	Wittr. in Wittr. & Nord.
	Oocystis submarina	Lagorh.
	Pediastrum boryanum	(Turp.) Menegh.
	Pediastrum duplex	Meyen
	Pediastrum simplex	(Meyen) Lemm.
	Pyramidomonas sp.	
	Quadrigula closteriodes	(Bohl.) Printz
	Quadrigula lacustris	(Chod.) G.M. Sm.
	Scenedesmus arcuatus	Lemm.
	Scenedesmus armatus	(Chod.) G.M. Sm.
	Scenedesmus bicaudatus	(Hansg.) Chod.
	Scenedesmus bijuga	(Turp.) Lagerh.
	Scenedesmus brevispina	(G.M. Sm.) Chod.
	Scenedesmus denticulatus	Lagerh.
	Scenedesmus ecornis	(Ralfs) Chod.
	Scenedesmus microspina	
	Scenedesmus opoliensis	P. Richt.
	Scenedesmus quadricauda	(Turp.) Breb.
	Scenedesmus sp.	
	Scenedesmus spinosus	Chod.
	Schroederia setigera	(Schroed.) Lemm.
	Selenastrum sp.	
	Sphaerellopsis sp.	
	Sphaerocystis schroeteri	Chod.
	Sphaerocystis sp.	
	Staurastrum sp.	
	Stichococcus sp.	
	Tetraedron minimum	(A. Braun) Hansg.
	Tetraedron minimum - autospore	
Tetraedron muticum	(A. Braun) Hansg.	
Tetraedron regulare		
Tetraedron trigonum	(Nag.) Hansg.	
Treubaria setigera	(Arch.) G.M. Sm.	
Treubaria sp.		
Treubaria triappendiculata	Ber.	
Trochiscia sp.		
Ulothrix sp.		
CHRYSOPHYTA	Bitrichia longispina	
	Chromulina erkensis	
	Chromulina sp.	
	Chromulina vagans	
	Chrysarachnion insidians	
	Chrysococcus sp.	
	Chrysolykos planktonicus	Mack.
	Chrysolykos sp.	
	Chrysophyceae coccoids	
	Chrysosphaerella longispina	Laut. em. Nich.
	Chrysosphaerella sp.	
	Desmarella brachycalyx	
	Desmarella sp.	
	Dinobryon - cyst	
	Dinobryon acuminatum	Rutt.
Dinobryon bavaricum	Imhof	
Dinobryon borgei	Lemm.	

Appendix A8. SPECIES LIST - LAKE ONTARIO PHYTOPLANKTON (1986- 1992)

DIVISION	TAXON	AUTHORITY
CHRYSOPHYTA		
	Dinobryon crenulatum	
	Dinobryon cylindricum	Imhof
	Dinobryon divergens	Imhof
	Dinobryon sociale	Ehr.
	Epipyxis sp.	
	Haptophyceae	
	Kephyrion boreale	Skuja
	Kephyrion cupuliformae	Conr.
	Kephyrion doliolum	Conr.
	Xephyrion littorale	Lund.
	Kephyrion ovale	
	Kephyrion sp.	
	Kephyrion sp. #2	
	Kephyrion sp. #3	
	Mallomonas sp.	
	Monosiga ovata	S. Kent
	Monosiga sp.	
	Ochromonas sp.	
	Ochromonas sp. #4	
	Paraphysomonas sp.	
	Pseudokephyrion entzii	Conr.
	Pseudokephyrion attenuatum	
	Pseudokephyrion conicum	(Schill.) Schum.
	Pseudokephyrion ellipsoideum	
	Pseudokephyrion latum	(Schill.) Schum.
	Pseudokephyrion millerense	Nich.
	Salpingoeca gracilis	Clark
	Spiniferomonas sp.	
	Stichogloea sp.	
	Synura sp.	
	Unidentified chrysophyte	
	Unidentified coccoid - ovoid	
	Unidentified coccoid - sphere	
	Unidentified coccoids	
	Unidentified loricate - ovoid	
	Unidentified loricate - ovoid flagellate	
	Unidentified loricate - sphere	
COLORLESS FLAGELLATES		
	Bicoeca petiolata	(Stein) Pringsh.
	Bicoeca sp.	
	Bicoeca tubiformis	Skuja
	Colorless flagellate	
	Stellexmonas dichotoma	Lack.
CRYPTOPHYTA		
	Chroomonas acuta	Uterm.
	Chroomonas norstedtii	Hansg.
	Chroomonas sp.	
	Cryptomonas brevis	Schill.
	Cryptomonas caudalus	
	Cryptomonas caudata	Schill.
	Cryptomonas curvata	Ehr.
	Cryptomonas erosa	Ehr.
	Cryptomonas marssonii	Skuj a
	Cryptomonas ovata	Ehr.
	Cryptomonas parapyrenoidifera	Skuja
	Cryptomonas phaseolus	Skuja
	Cryptomonas platyuris	Skuja
	Cryptomonas pyrenodiosa	
	Cryptomonas pyrenoidifera	Geitl.
	Cryptomonas reflexa	Skuja
	Cryptomonas rostratiformis	Skuja
	Cryptomonas sp.	
	Cryptomonas sp. #1	
	Cryptomonas sp. #3	
	Cryptomonas tenuis	Pasch.
	Cryptomonas tetrapyrenoidiosa	Skuja
	Rhodomonas lacustris	Pasch. & Rutt.
	Rhodomonas lens	Pasch. & Rutt.

Appendix A8. SPECIES LIST - LAKE ONTARIO PHYTOPLANKTON (1986- 1992)

DIVISION	TAXON	AUTHORITY
CRYPTOPHYTA	<i>Rhodomonas minuta</i>	Skuja
	<i>Rhodomonas pusilla</i>	
CYANOPHYTA	<i>Anabaena circinalis</i>	Rabenhorst
	<i>Anabaena flos-aquae</i>	(Lyngb.) Breb.
	<i>Anabaena</i> sp.	
	<i>Anabaena spiroides</i>	Kleb.
	<i>Anacystis montana</i>	Dr. & Daily
	<i>Anacystis thermalis</i>	(Menegh.) Dr. & Daily
	<i>Aphanizomenon flos-aquae</i>	(L.) Ralfs
	<i>Aphanothece gelatinosa</i>	(Henn.) Lemm.
	<i>Chroococcus dispersus</i>	
	<i>Chroococcus limneticus</i>	Lemm.
	<i>Chroococcus</i> sp.	
	<i>Coelosphaerium dubium</i>	Grun. in Rabh.
	<i>Coelosphaerium naegelianum</i>	Unger
	<i>Gloeotheca ruprestris</i>	(Lyngb.) Born.
	<i>Gomphosphaeria aponina</i>	Kutz.
	<i>Oscillatoria limnetica</i>	Lemm.
<i>Oscillatoria</i> sp.		
<i>Spirulina</i> sp.		
<i>Synechococcus</i> sp.		
EUGLENOPHYTA	<i>Phacus</i> sp.	
	<i>Trachelomonas</i> sp.	
	<i>Trachelomonas volvocina</i>	
PYRROPHYTA	<i>Amphidinium</i> sp.	
	<i>Ceratium hirundinella</i>	(O.F.Mull.) Schrank
	Dinoflagellate cyst	
	<i>Glenodinium</i> sp.	
	<i>Gymnodinium helveticum</i>	Pen.
	<i>Gymnodinium</i> sp.	
	<i>Peridinium</i> - cyst	
	<i>Peridinium aciculiferum</i>	Lemm.
	<i>Peridinium</i> sp.	
	<i>Peridinium</i> sp. #02	
<i>Peridinium viguieri</i>	Lef.	
UNIDENTIFIED	Unidentified colony	
	Unidentified flagellate - triangular	

APPENDIX A-9. LAKE ONTARIO ZOOPLANKTON SPECIES LIST  
(1986 - 1992)

DIVISION	TAXON
Calanoida	Diaptomus - copepodite
	Diaptomus ashlandi
	Diaptomus minutus
	Diaptomus oregonensis
	Diaptomus sicilis
	Diaptomus siciloides
	Epischura - copepodite
	Epischura lacustris
	Eurytemora - copepodite
	Eurytemora affinis
	Limnocalanus - copepodite
	Limnocalanus macrurus
	Senecella - copepodite
Cladocera	Bosmina longirostris
	Bythotrephes cederstroemi
	Ceriodaphnia lacustris
	Ceriodaphnia sp.
	Daphnia galaeta mendotae
	Daphnia longiremis
	Daphnia pulicaria
	Daphnia retrocurva
	Diaphanosoma birgei
	Diaphanosoma sp.
	Eubosmina coregoni
	Holopedium gibberum
	Leptodora kindtii
	Polyphemus pediculus
Scapholeberis aurita	
Copepoda	Copepoda - nauplii
Cyclopoida	Cyclopoid - copepodite
	Cyclops bicuspidatus thomasi
	Cyclops vernalis
	Mesocyclops - copepodite
	Mesocyclops edax
	Tropocyclops - copepodite
Tropocyclops prasinus mexicanus	
Mysidacea	Mysis relicta
Rotifera	Ascomorpha ovalis
	Ascomorpha saltans
	Asplanchna priodonta
	Collotheca sp.
	Conochiloides sp.
	Conochilus unicornis
	Encentrum sp.
Filina longiseta	



GREAT LAKES ZOOPLANKTON SPECIES LIST  
 LAKE ONTARIO  
 (1986 - 1992)

DIVISION	TAXON
Rotifera	Gastropus stylifer
	Hexarthra mira
	Kellicottia longispina
	Keratella cochlearis
	Keratella crassa
	Keratella earlinae
	Keratella hiemalis
	Keratella quadrata
	Lecane flexilis
	Notholca acuminata
	Notholca foliacea
	Notholca laurentiae
	Notholca squamula
	Ploesoma hudsoni
	Ploesoma lenticulare
	Ploesoma truncatum
	Polyarthra dolichoptera
	Polyarthra euryptera
	Polyarthra major
	Polyarthra remata
	Polyarthra vulgaris
	Pompholyx sulcata
	Synchaeta sp.
	Trichocerca cylindrica
	Trichocerca multicrinis
	Trichocerca pusilla
	Trichocerca rousoletti
Trichocerca similis	
Trichocerca sp.	
Mollusca	Dreissena polymorpha - veliger

APPENDIX A-9. LAKE ONTARIO ZOOPLANKTON SPECIES LIST  
(1986 - 1992)

DIVISION	TAXON
Calanoida	Diaptomus - copepodite
	Diaptomus ashlandi
	Diaptomus minutus
	Diaptomus oregonensis
	Diaptomus sicilis
	Diaptomus siciloides
	Epischura - copepodite
	Epischura lacustris
	Eurytemora - copepodite
	Eurytemora affinis
	Limnocalanus - copepodite
	Limnocalanus macrurus
	Senecella - copepodite
Cladocera	Bosmina longirostris
	Bythotrephes cederstroemi
	Ceriodaphnia lacustris
	Ceriodaphnia sp.
	Daphnia galaeta mendotae
	Daphnia longiremis
	Daphnia pulicaria
	Daphnia retrocurva
	Diaphanosoma birgei
	Diaphanosoma sp.
	Eubosmina coregoni
	Holopedium gibberum
	Leptodora kindtii
	Polyphemus pediculus
	Scapholeberis aurita
Copepoda	Copepoda - nauplii
Cyclopoida	Cyclopoid - copepodite
	Cyclops bicuspidatus thomasi
	Cyclops vernalis
	Mesocyclops - copepodite
	Mesocyclops edax
	Tropocyclops - copepodite
	Tropocyclops prasinus mexicanus
Mysidacea	Mysis relicta
Rotifera	Ascomorpha ovalis
	Ascomorpha saltans
	Asplanchna priodonta
	Collotheca sp.
	Conochiloides sp.
	Conochilus unicornis
	Encentrum sp.
Filina longiseta	

APPENDIX A-9. LAKE ONTARIO SPECIES LIST

(1986 - 1992)

DIVISION	TAXON
Rotifera	Gastropus stylifer
	Hexarthra mira
	Kellicottia longispina
	Keratella cochlearis
	Keratella crassa
	Keratella earlinae
	Keratella hiemalis
	Keratella quadrata
	Lecane flexilis
	Notholca acuminata
	Notholca foliacea
	Notholca laurentiae
	Notholca squamula
	Ploesoma hudsoni
	Ploesoma lenticulare
	Ploesoma truncatum
	Polyarthra dolichoptera
	Polyarthra euryptera
	Polyarthra major
	Polyarthra remata
	Polyarthra vulgaris
	Pompholyx sulcata
	Synchaeta sp.
	Trichocerca cylindrica
	Trichocerca multicrinis
	Trichocerca pusilla
	Trichocerca rousoletti
	Trichocerca similis
	Trichocerca sp.
Mollusca	Dreissena polymorpha - veliger

Table A-1 0. Summary of common zooplankton species occurrence in Lake Ontario during April and August, 1986. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance.

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS ( $\mu\text{g}/\text{m}^3$ )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	132,045	46,469.9	15.89	18,588	20.24
Cyclopoida					
Cyclopoid - copepodite	52,855	16,751.4	5.73	25,055	27.28
Cyclops bicuspidatus thomasi	10,445	2,959.4	1.01	11,129	12.12
Calanoida					
Diaptomus - copepodite	2,635	744.9	0.25	1,017	1.11
Limnocalanus macrurus	408	53.0	0.02	1,248	1.36
			-----		-----
Total			22.90		62.11
<b>CLADOCERA</b>					
Bosmina longirostris	97,624	12,033.7	4.12	9,306	10.22
Ceriodaphnia lacustris	4,709	661.5	0.23	675	0.73
Daphnia retrocurva	28,931	6,893.8	2.36	10,341	11.26
			-----		-----
Total			6.70		22.21
<b>ROTIFERA</b>					
Conochilus unicornis	63,426	5,000.7	1.71	105	0.11
Kellicottia longispina	40,986	12,442.7	4.26	158	0.11
Keratella cochlearis	208,453	37,887.1	12.96	181	0.20
Keratella crassa	129,908	18,378.6	6.29	954	1.04
Polyarthra major	215,839	42,049.6	14.38	5,305	5.70
Polyarthra vulgaris	290,925	71,029.3	24.29	2,912	3.17
Pompholyx sulcata	95,310	4,439.5	1.52	67	0.07
			-----		-----
Total			65.40		10.54
			=====		=====
Total			95.01		94.86

Table A- 11. Summary of common zooplankton species occurrence in Lake Ontario during April and August, 1987. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS ( $\mu\text{g}/\text{m}^3$ )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	90,974	26,766.2	17.35	10,706	21.21
Cyclopoida					
Cyclopoid - copepodite	28,162	7,577.a	4.91	2,496	4.94
Cyclops bicuspidatus thomasi	8,902	2,093.4	1.36	6,952	13.77
Tropocyclops - copepodite	8,716	1,891.9	1.23	469	0.93
Tropocyclops prasinus mexicanus	4,127	1,077.4	0.70	940	1.86
Calanoida					
Diaptomus - copepodite	8,295	1,560.9	1.01	1,521	3.01
Eurytemora - copepodite	809	172.4	0.11	115	0.23
Total			26.67		45.96
<b>CLADOCERA</b>					
Bosmina longirostris	28,001	2,439.5	1.58	1,851	3.67
Daphnia galaeta mendotae	41,633	4,614.2	2.99	a,494	16.83
Daphnia retrocurva	29,781	4,761.0	3.09	8,581	17.00
Eubosmina coregoni	1,908	194.2	0.13	419	0.83
Total			7.79		38.32
<b>ROTIFERA</b>					
Ascomorpha ovalis	30,253	6,271.0	4.07	127	0.25
Asplanchna priodonta	3,084	255.8	0.17	770	1.53
Conochilus unicornis	63,563	4,330.3	2.81	66	0.13
Kellicottia longispina	33,048	6,226.0	4.04	86	0.17
Keratella cochlearis	43,063	11,141.5	7.22	38	0.08
Keratella crassa	40,861	8,405.5	5.45	417	0.83
Keratella earlinae	51,075	4,326.6	2.81	97	0.19
Notholca squamula	33,382	2,236.9	1.45	54	0.11
Polyarthra major	103,139	18,828.1	12.21	2,900	5.74
Polyarthra vulgaris	157,277	24,615.5	15.96	781	1.55
Synchaeta sp.	62,904	7,995.5	5.18	181	0.36
Total			61.36		10.93
Total			95.81		95.21

Table A-12. Summary of common zooplankton species occurrence in Lake Ontario during April and August, 1988. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance.

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS ( $\mu\text{g}/\text{m}^3$ )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	<b>144,037</b>	<b>37,552.0</b>	12.09	<b>15,021</b>	<b>18.25</b>
<b>Cyclopoida</b>					
Cyclopoid - copepodite	<b>99,701</b>	23,365.9	<b>7.52</b>	<b>13,567</b>	<b>16.48</b>
Cyclops bicuspidatus thomasi	<b>11,210</b>	4,147.8	<b>1.34</b>	<b>14,784</b>	<b>17.96</b>
<b>Calanoida</b>					
Diaptomus - copepodite	<b>4,109</b>	<b>831.0</b>	<b>0.27</b>	1,101	<b>1.34</b>
Limnocalanus macrurus	<b>2,077</b>	<b>95.3</b>	<b>0.03</b>	<b>2,675</b>	<b>3.25</b>
Total			<b>21.25</b>		<b>57.28</b>
<b>CLADOCERA</b>					
Bosmina longirostris	236,790	36,327.0	11.69	19,011	23.09
Daphnia retrocurva	20,771	<b>5,792.0</b>	1.86	<b>6,647</b>	<b>8.07</b>
Total			<b>13.56</b>		<b>31.17</b>
<b>ROTIFERA</b>					
Kellicottia longispina	<b>103,596</b>	16,408.2	<b>5.28</b>	<b>180</b>	<b>0.22</b>
Keratella cochlearis	<b>260,688</b>	31,535.5	<b>10.15</b>	<b>101</b>	<b>0.12</b>
Keratella crassa	<b>134,048</b>	27,195.8	<b>8.75</b>	<b>1,876</b>	<b>2.28</b>
<b>Keratella earlinae</b>	<b>96,196</b>	11,883.8	<b>3.83</b>	<b>386</b>	<b>0.47</b>
<b>Keratella quadrata</b>	<b>36,999</b>	3,578.4	<b>1.15</b>	<b>237</b>	<b>0.29</b>
Polyarthra major	<b>88,796</b>	<b>22,545.0</b>	<b>7.26</b>	<b>1,526</b>	<b>1.85</b>
Polyarthra remata	<b>36,207</b>	<b>4,631.0</b>	<b>1.49</b>	<b>51</b>	<b>0.06</b>
Polyarthra vulgaris	<b>266,389</b>	58,505.9	<b>18.83</b>	<b>2,270</b>	<b>2.76</b>
Pompholyx sulcata	<b>170,137</b>	10,713.9	<b>3.45</b>	129	<b>0.16</b>
Trichocerca multicroinis	19,733	3,382.9	<b>1.09</b>	115	<b>0.14</b>
Total			<b>61.28</b>		<b>8.35</b>
Total			96.08		96.78

Table A-13. Summary of common zooplankton species occurrence in Lake Ontario during August, 1989. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance.

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS ( $\mu\text{g}/\text{m}^3$ )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	<b>93,077</b>	55,267.7	<b>13.08</b>	<b>22,107</b>	<b>16.25</b>
Cyclopoida					
<i>Cyclopoid</i> - copepodite	<b>83,678</b>	32,699.8	<b>7.74</b>	<b>19,489</b>	<b>14.33</b>
Cyclops bicuspidatus thomasi	<b>14,540</b>	4,671.7	1.11	<b>17,424</b>	<b>12.81</b>
Tropocyclops - copepodite	<b>35,904</b>	6,388.9	<b>1.51</b>	2,791	<b>2.05</b>
Tropocyclops prasinus mexicanus	<b>7,715</b>	2,284.1	<b>0.54</b>	<b>3,135</b>	<b>2.30</b>
Calanoida					
Diaptomus - copepodite	<b>2,374</b>	<b>549.2</b>	<b>0.13</b>	1,139	<b>0.84</b>
			-----	-----	-----
			Total		<b>48.58</b>
<b>CLADOCERA</b>					
Bosmina longirostris	<b>171,510</b>	40,032.5	<b>9.48</b>	<b>37,720</b>	<b>27.73</b>
Ceriodaphnia sp.	<b>15,430</b>	4,583.4	1.09	<b>6,392</b>	<b>4.70</b>
Daphnia retrocurva	<b>38,121</b>	8,115.8	<b>1.92</b>	<b>9,913</b>	<b>7.29</b>
			---	-----	-----
			Total		<b>39.71</b>
<b>ROTIFERA</b>					
Conochilus unicornis	<b>13,724</b>	4,446.1	<b>1.05</b>	59	<b>0.04</b>
Kellicottia longispina	<b>38,668</b>	10,782.0	<b>2.55</b>	<b>132</b>	0.10
Keratella cochlearis	<b>77,819</b>	30,783.5	<b>7.29</b>	<b>78</b>	<b>0.06</b>
Keratella crassa	<b>174,292</b>	48,527.9	11.49	<b>1,795</b>	<b>1.32</b>
<i>Keratella</i> earlinae	134,493	39,291.8	9.30	<b>854</b>	<b>0.63</b>
Polyarthra major	41,004	13,563.7	<b>3.21</b>	<b>816</b>	<b>0.60</b>
Polyarthra vulgaris	231,115	95,197.2	<b>22.54</b>	<b>7,539</b>	<b>5.54</b>
Trichocerca multicrinis	21,123	<b>6,504.0</b>	<b>1.56</b>	<b>294</b>	<b>0.22</b>
			-----	-----	-----
			Total		<b>8.50</b>
			=====	=====	=====
			Total		<b>96.80</b>

Table A-14. Summary of common zooplankton species occurrence in Lake Ontario during April and August, 1990. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance.

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS ( $\mu\text{g}/\text{m}^3$ )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	169,360	44,492.4	<b>21.25</b>	<b>17,797</b>	<b>31.62</b>
Cyclopoida					
Cyclopoid - copepodite	<b>48,301</b>	18,501.4	<b>8.84</b>	9,542	<b>16.96</b>
Cyclops bicuspidatus thomasi	<b>13,110</b>	4,716.7	<b>2.25</b>	<b>15,612</b>	<b>27.74</b>
Calanoida					
Diaptomus - copepodite	1,924	595.9	<b>0.28</b>	<b>736</b>	<b>1.31</b>
Limnocalanus macrurus	<b>84</b>	<b>22.7</b>	<b>0.01</b>	<b>607</b>	<b>1.08</b>
			-----	-----	
Total			<b>32.64</b>		<b>78.71</b>
<b>CLADOCERA</b>					
Bosmina longirostris	<b>3,184</b>	<b>334.4</b>	<b>0.16</b>	<b>523</b>	<b>0.93</b>
Ceriodaphnia sp.	<b>1,937</b>	<b>212.8</b>	0.10	<b>445</b>	<b>0.79</b>
Daphnia retrocurva	<b>8,521</b>	1,346.8	<b>0.64</b>	<b>3,907</b>	<b>6.94</b>
Polyphemus pediculus	<b>470</b>	<b>51.0</b>	<b>0.02</b>	<b>608</b>	<b>1.08</b>
			-----	-----	
Total			<b>0.93</b>		<b>9.74</b>
<b>ROTIFERA</b>					
Ascomorpha ovalis	<b>25,564</b>	3,088.2	<b>1.48</b>	<b>42</b>	<b>0.07</b>
Conochilus unicornis	<b>42,426</b>	<b>3,584.0</b>	<b>1.71</b>	<b>68</b>	<b>0.12</b>
Kellicottia longispina	<b>53,758</b>	9,453.3	<b>4.52</b>	<b>106</b>	<b>0.19</b>
Keratella cochlearis	<b>145,649</b>	38,186.2	<b>18.24</b>	<b>139</b>	<b>0.25</b>
Keratella crassa	<b>56,708</b>	18,167.8	<b>8.68</b>	<b>965</b>	<b>1.72</b>
<b>Keratella</b> earlinae	<b>27,476</b>	3,684.7	<b>1.76</b>	<b>126</b>	<b>0.22</b>
<b>Keratella</b> quadrata	<b>35,428</b>	5,156.5	<b>2.46</b>	<b>402</b>	<b>0.71</b>
Polyarthra major	<b>43,006</b>	5,895.6	<b>2.82</b>	<b>676</b>	<b>1.20</b>
Polyarthra remata	<b>35,839</b>	<b>4,853.0</b>	<b>2.32</b>	<b>51</b>	<b>0.09</b>
Polyarthra vulgaris	<b>126,630</b>	33,091.9	<b>15.81</b>	1,114	<b>1.98</b>
Synchaeta sp.	<b>17,527</b>	4,210.4	<b>2.01</b>	135	<b>0.24</b>
Trichocerca multicroinis	<b>14,799</b>	3,296.7	<b>1.57</b>	145	<b>0.26</b>
			-----	-----	
Total			<b>63.38</b>		<b>7.05</b>
			=====	=====	
Total			96.95		<b>95.51</b>



Table A-16. Summary of common zooplankton species occurrence in Lake Ontario during April and August, 1991. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance.

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS (µg/m <sup>3</sup> )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	<b>203,920</b>	27,055.1	15.61	<b>10,822</b>	<b>6.51</b>
<b>Cyclopoida</b>					
Cyclopoid - copepodite	<b>112,288</b>	20,635.4	11.91	<b>11,753</b>	<b>7.07</b>
Cyclops bicuspidatus thomasi	<b>32,124</b>	7,002.6	<b>4.04</b>	<b>26,932</b>	<b>16.21</b>
Cyclops vernalis	<b>10,751</b>	2,615.6	<b>1.51</b>	<b>2,196</b>	<b>1.32</b>
Tropocyclops prasinus mexicanus	<b>2,964</b>	<b>700.7</b>	<b>0.40</b>	<b>887</b>	<b>0.53</b>
<b>Cyclopoida</b>					
Diaptomus - copepodite	<b>3,537</b>	<b>754.4</b>	<b>0.44</b>	<b>975</b>	<b>0.59</b>
Diaptomus sicilis	<b>2,964</b>	<b>274.4</b>	<b>0.16</b>	<b>1,765</b>	<b>1.06</b>
Limnocalanus - copepodite	<b>2,251</b>	<b>347.4</b>	<b>0.20</b>	<b>1,258</b>	<b>0.76</b>
Total			<b>34.26</b>		<b>34.05</b>
<b>CLADOCERA</b>					
Bosmina longirostris	<b>46,682</b>	3,543.1	<b>2.04</b>	<b>4,540</b>	<b>2.73</b>
Daphnia galaeta mendotae	<b>17,413</b>	1,754.5	1.01	<b>14,116</b>	<b>8.49</b>
Daphnia retrocurva	<b>131,895</b>	18,093.1	<b>10.44</b>	<b>83,347</b>	<b>50.15</b>
Total			<b>13.50</b>		<b>61.38</b>
<b>ROTIFERA</b>					
Ascomorpha ovalis	<b>44,123</b>	6,691.6	<b>3.86</b>	<b>90</b>	<b>0.05</b>
Conochilus unicornis	<b>45,316</b>	5,732.5	<b>3.31</b>	<b>108</b>	<b>0.07</b>
<i>Kellicottia</i> longispina	<b>64,396</b>	6,483.1	<b>3.74</b>	<b>73</b>	<b>0.04</b>
Keratella cochlearis	<b>156,220</b>	20,824.4	<b>12.01</b>	<b>76</b>	<b>0.05</b>
<i>Keratella</i> crassa	<b>53,663</b>	5,695.9	<b>3.29</b>	<b>303</b>	<b>0.18</b>
Polyarthra major	<b>52,100</b>	5,175.1	<b>2.99</b>	<b>594</b>	<b>0.36</b>
Polyarthra vulgaris	<b>155,027</b>	<b>24,831.0</b>	<b>14.33</b>	<b>836</b>	<b>0.50</b>
Synchaeta sp.	<b>25,043</b>	<b>5,255.0</b>	<b>3.03</b>	<b>168</b>	0.10
Trichocerca multicroinis	<b>28,620</b>	<b>3,215.6</b>	<b>1.86</b>	<b>141</b>	<b>0.08</b>
Total			<b>48.41</b>		<b>1.44</b>
Total			<b>96.17</b>		<b>96.87</b>

Table A-17. Summary of common zooplankton species occurrence in Lake Ontario during April, 1992. Species were arbitrarily classified as common if they accounted for  $\geq 0.1\%$  of the total abundance or  $\geq 1.0\%$  of the total biomass, with the exception of rotifers. Rotifer species were considered common if they accounted for  $\geq 1.0\%$  of the total abundance.

TAXON	MAXIMUM DENSITY (#/m <sup>3</sup> )	AVERAGE DENSITY (#/m <sup>3</sup> )	% OF TOTAL ABUNDANCE	MEAN BIOMASS (µg/m <sup>3</sup> )	% OF TOTAL BIOMASS
<b>COPEPODA</b>					
Copepoda - nauplii	7,204	3,463.6	21.44	1,385	9.17
Cyclopoida					
Cyclopoid - copepodite	8,261	3,905.1	24.17	3,362	22.25
Cyclops bicuspidatus thomasi	3,102	2,123.5	13.14	8,944	59.18
Tropocyclops prasinus mexicanus	55	25.0	0.15	35	0.23
Calanoida					
Diaptomus - copepodite	511	207.9	1.29	241	1.59
Diaptomus sicilis	130	36.8	0.23	240	1.59
Limnocalanus - copepodite	111	61.5	0.38	441	2.92
			60.81		96.93
<b>CLADOCERA</b>					
Eubosmina coregoni	29	16.5	0.10	78	0.51
<b>ROTIFERA</b>					
Kellicottia longispina	3,554	2,036.1	12.60	23	0.15
Keratella cochlearis	1,507	513.9	3.18	2	0.01
Notholca squamula	1,809	945.0	5.85	18	0.12
Polyarthra vulgaris	2,532	1,299.0	8.04	44	0.29
Synchaeta sp.	2,067	1,307.4	8.09	42	0.28
			37.76		0.85
			<u>98.66</u>		<u>98.29</u>

**Table A18.** Changes made in the data base to accomodate changes in species identifications. Decisions were based on recounts between years and discussions between Dr. Paul Bet-tram, Dr. Kit Yung and Dr. Joe Makarewicz. NIR= Not included in the report. Unless stated otherwise, changes were not made in the data base; that is the changes discussed below were only made for the report.

- I. Picoplankton (Since 1989) are defined as
  - A. Unicellular Cyanobacteria
  - B. Either spherical or rod shape
  - C. Size less than or equal to 2  $\mu\text{m}$
  - D. Colonials with individual cells less than 2  $\mu\text{m}$
  - E. Decision: Based on discussion with P. Bertram. All picoplankton will not be considered in our report, but will be included in the electronic data base. For the report, the following decisions were made with individual species:
    1. *Anacystis marina* = picoplankton sphere (size .50-1.5  $\mu\text{m}$ )-NIR
    2. *Coccochloris peniocysts* = picoplankton rods (size 1-2  $\mu\text{m}$ )-NIR
    3. *Anacystis incerta* adopted in 1989 = colonial picoplankton (colony=20 $\mu\text{m}$ ; indiv.=<2  $\mu\text{m}$ )-NIR
    4. *Gleocapsa* (1-2  $\mu\text{m}$ =indiv.)-NIR . Memo of 21 Dec. 93
    5. *Anacystis cyanea* (average=2.2  $\mu\text{m}$  sphere- NIR (Phone call with Paul Bet-tam)
    6. *Agmenellum quadruplicatum* (1.5  $\mu\text{m}$  sphere)-NIR
    7. *Aphanocapsa delicatissima* (0.7  $\mu\text{m}$  sphere)-NIR
    8. *Aphanofheca clathrata* (1.7 X .6  $\mu\text{m}$  ovoid)-NIR
    9. *Microcystis elachista* (1.9 X 1.4  $\mu\text{m}$  ovoid)-NIR
    10. *Microcystis aeruginosa* (1.2  $\mu\text{m}$ ) - NIR
    11. *Microcystis* sp. - (2.0  $\mu\text{m}$ ) - NIR
- II. *Melosira*
  - A. *Melosira varians* and *Melosira undulata* are unchanged as to nomenclature.
  - B. All other *Melosira* will change to the genus *Aulacoseira* (Letter- from Kit Yung).
- III. *Stephanodiscus subtransilvanicus* is changed & combined with *Stephanodiscus transylvanicus* (Letter of 1/94 from Kit Yung)

IV. *Oscillatoria minima* is changed to *Oscillatoria* sp. (Letter of 1/94 from Kit Yung)

V. *Gymnodinium* sp.#2 - group "all" *Gymnodinium* species as *Gymnodinium* sp.

VI. *Rhizosolenia longiseta* - leave as is (Letter of 1/94 from Kit Yung)

VII. *Melosira subarctica* is to be changed to *Melosira italica* subsp. *subarctica* - Ted, this is a permanent change & should be done in the original data base and species list

VIII. *Mallomonas* sp. stays the same

IX. *Synechococcus* sp. is Cyanophyta not a green

A. Make this change in species list

X. Ovoid unidentified flagellates in UNI should be changed to *Ochromonas* sp. (Letter from Kit 1/94). Species affected:

Unidentified flagellate - ovoid

Unidentified flagellate #01

XI. Spherical unidentified flagellates in UNI should be changed to *Chromulina* sp. ? (Letter from Kit 1/94). Species affected:

Unidentified flagellate	Unidentified flagellate #19	Unidentified flagellate #38
Unidentified flagellate - spherical	Unidentified flagellate #20	Unidentified flagellate #39
Unidentified flagellate #02	Unidentified flagellate #21	Unidentified flagellate #40
Unidentified flagellate #03	Unidentified flagellate #22	Unidentified flagellate #41
Unidentified flagellate #04	Unidentified flagellate #23	Unidentified flagellate #42
Unidentified flagellate #05	Unidentified flagellate #24	Unidentified flagellate #43
Unidentified flagellate #06	Unidentified flagellate #25	Unidentified flagellate #44
Unidentified flagellate #07	Unidentified flagellate #26	Unidentified flagellate #45
Unidentified flagellate #08	Unidentified flagellate #27	Unidentified flagellate #47
Unidentified flagellate #09	Unidentified flagellate #28	Unidentified flagellate #48
Unidentified flagellate #10	Unidentified flagellate #29	Unidentified flagellate #49
Unidentified flagellate #12	Unidentified flagellate #31	Unidentified flagellate #50
Unidentified flagellate #13	Unidentified flagellate #32	Unidentified flagellate #51

Unidentified flagellate #14	Unidentified flagellate #33	Unidentified flagellate #52
Unidentified flagellate #15	Unidentified flagellate #34	Unidentified flagellate #53
Unidentified flagellate #16	Unidentified flagellate #35	Unidentified flagellate #55
Unidentified flagellate #17	Unidentified flagellate #36	Unidentified flagellate (w/spines)
Unidentified flagellate #18	Unidentified flagellate #37	

XII. *Stephanodiscus parvus* was not described until late 1984. The name was not used prior to 1985.

XIII. *Cyclotella comensis* var. 1 & *C. comensis* var. 2.

A. Confusion in 1989 samples per letter of Kit Yung (2/94) seemed to have been straightened out. We will combine into *Cyclotella comensis*

XIV. In 1992, Kit Yung (2/94) began to adopt the name "Unidentified Chrysophyte #5" for an alga that resembled algal spore. In recounts it was found in 1989 & 1991.

XV. *Gomphosphaeria lacustris* prior to 1990 & 1991 should be called *Coelosphaerium naegelianum*.

A. Kit Yung re-examined four 1988 Lake Michigan samples with a relatively high *Gomphosphaeria* count. He could only find colonies of *Coelosphaerium naegelianum*, a closely related colonial cyanophyte (2/94 from Kit). Also, prior to 1989 *C. naegelianum* is not found but *Gomphosphaeria* is. After 1990 *Gomphosphaeria* is not found while *Coelosphaerium* is.

XVI. Group together Green Coccoid bacilliforms, ovoid and sphere as Green Coccoids

XVII. Colorless flagellates - all #s group together

XVI II. *Stephanodiscus hantzschii* and *Stephanodiscus hantzschii* var. *hantzschii* group together as *S. hantzschii*

XIX. *Cryptomonas erosa* and *Cryptomonas erosa* var. *reflexa* group together as *C. erosa*

XX. Group all varieties of a species into a single species e.g. *S. tenuis* var. 1, *S. tenuis* var. 2 and *S. tenuis* var. 3 simply report as *S. tenuis*

XXI. The *Cyclotella* complex is still confusing. Will call Bet-tram.

A. Will leave as is. Discussion with P. Bertram and letter of K. Yung (4 March 1994)

XXII. The *Cryptomonas* complex

A. *Cryptomonas pusilla* is changed to *Rhodomonas minuta*. Letter from K. Jung.

B. All other species of *Cryptomonas* are left the same. Discussion between T. Lewis and P. Bet-tram.

XXIII. *Stephanodiscus minutus* will be changed to *Stephanodiscus minutulus*. Letter from K. Yung 31 October 1991.

XXIV. *Stephanodiscus subtilis* and *S. hantzschia f. tenuis* (fine form) will be combined into *Cyclostephanos tholiformis*. Letter from K. Yung 31 October 1991.

Appendix 19. Lake Ontario water chemistry, 1986 to 1992. Average of samples taken at 3 meter depth from sites listed in Table 1. NS = no sample.

Year	Temperature (°C)		Turbidity (NTU)		Nitrate + Nitrite (mg N/L)		Total Phosphorus (µg P/L)		Dissolved orthophosphate (µg P/L)		Dissolved Silicon (µg Si/L)		Chlorophyll a (µg/L)	
	Spring	Summer	Spring	Summer	Spring	Summer	Spring	Summer	Spring	Summer	Spring	Summer	Spring	Summer
1986	2.4	19.9	0.24	1.64	0.40	0.16	10.0	11.0	4.0	0.0	283.5	47.1	1.1	3.9
1987	3.6	22.2	0.35	1.51	0.37	0.12	9.0	8.0	3.0	1.0	235.9	74.0	2.7	2.9
1988	2.5	22.3	0.42	1.49	0.36	0.16	8.0	8.0	2.0	0.0	271.4	39.1	2.3	2.3
1989	NS	20.9	NS	1.32	NS	0.15	NS	9.0	NS	0.0	NS	38.9	NS	7.2
1990	2.4	22.4	0.62	0.96	0.34	0.29	7.0	9.0	2.0	0.0	197.8	40.4	1.2	0.6
1991	3.1	21.5	0.37	0.78	0.37	0.15	8.0	7.0	3.0	1.0	233.3	33.6	2.8	2.9
1992	2.1	NS	0.36	NS	0.36	NS	7.0	NS	2.0	NS	219.9	NS	3.5	NS