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Table 1a. Temperature profiles of Loon Lake Mid Site, 2011. All values in degrees C.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	14.0	15.8	18.6	21.0	21.1	22.6	22.2	20.5	17.8	14.8	9.8	7.2
1	14.0	15.7	18.4	21.0	21.0	22.6	22.0	20.6	17.9	14.8	9.8	7.2
2	13.9	15.6	18.1	21.0	20.9	22.6	21.9	20.6	17.9	14.8	9.8	7.2
3	13.9	15.5	18.0	20.9	20.8	22.5	21.9	20.6	17.9	14.8	9.8	7.2
4	13.4	15.1	17.8	20.4	20.7	22.5	21.8	20.6	17.9	14.8	9.8	7.2
5	12.4	15.0	17.5	19.8	20.7	22.4	21.7	20.6	17.9	14.8	9.8	7.2
6	11.5	14.6	16.9	18.4	18.3	20.7	21.6	20.6	17.9	14.8	9.8	7.2
7	10.3	14.1	14.6	15.6	16.2	17.6	20.1	19.5	17.9	14.8	9.8	7.2
8	8.5	11.3	11.7	13.7	13.9	14.5	16.1	16.7	17.8	14.8	9.8	7.2
9	7.6	9.3	10.0	11.8	12.4	13.3	13.6	13.4	15.2	14.8	9.8	7.2
10	7.0	8.6	8.8	9.9	10.6	11.5	12.4	12.0	13.0	13.3	9.8	7.2
11	6.8	7.8	8.0	8.9	9.1	10.1	10.5	10.5	10.7	11.6	9.5	7.1
12	6.3	7.1	7.4	8.5	8.4	9.0	9.0	9.5	8.9	9.6	8.4	7.1
13	6.2	6.5	6.7	7.8	7.8	8.1	8.2	8.5	8.1	8.4	7.8	7.1
14	6.0	6.3	6.7	7.0	7.2	7.6	7.2	7.8	7.4	7.7	7.4	7.1
15	5.9	6.1	6.5	6.6	6.7	7.1	6.9	7.2	7.0	7.1	7.2	7.1
16	5.8	6.0	6.3	6.3	6.4	6.9	6.7	6.8	6.8	6.8	7.1	7.1
17	5.8	5.9	6.2	6.2	6.2	6.6	6.4	6.5	6.5	6.6	6.7	7.1
18	5.8	5.8	6.0	6.1	6.1	6.5	6.2	6.4	6.4	6.3	6.6	7.1
19	5.7	5.8	5.9	6.0	6.0	6.2	6.2	6.2	6.2	6.3	6.5	7.0
20	5.7	5.7	5.9	6.0	6.0	6.0	6.1	6.2	6.2	6.2	6.4	6.9
21	5.7	5.7	5.8	6.0	5.9	6.0	6.0	6.1	6.0	6.1	6.2	6.6
22	5.6	5.7	5.8	5.9	5.8	5.9	5.9	6.0	6.0	6.0	6.2	6.5
23	5.6	5.7	5.8	5.8	5.8	5.8	5.9	5.9	5.9	6.0	6.1	6.3
24	5.6	5.6	5.8	5.9	5.8	5.8	5.8	5.8	5.8	5.9	6.1	6.2
25	5.6	5.6	5.7	5.8	5.7	5.7	5.8	5.8	5.8	5.8	6.1	6.1
26	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.8	5.7	5.7	6.0	6.1
27	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.0	5.9
28	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.6	5.6	5.9	5.8
29	5.5	5.6	5.6	5.6	5.7	5.6	5.6	5.7	5.6	5.6	5.9	5.8
30	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.8	5.8

Table 1b. Temperature profiles of Loon Lake North Site and inlets, 2011. All values in degrees C.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	14.2	16.4	19.3	21.5	21.1	23.2	22.6	-	18.2	14.9	9.8	-
1	14.2	16.4	19.2	21.5	20.9	23.2	22.6	-	18.2	14.9	9.8	-
2	14.2	16.3	18.9	21.3	20.7	23.1	22.4	-	18.2	14.9	9.8	-
3	14.2	16.1	18.3	21.3	20.5	23.1	22.2	-	18.1	14.9	9.8	-
4	14.2	15.1	17.9	21.3	20.5	23.0	22.2	-	18.1	14.9	9.8	-
5	12.2	14.5	17.6	21.3	20.4	22.9	22.1	-	18.1	14.9	9.8	-
6	11.5	14.2	17.0	19.5	20.4	22.7	21.9	-	18.1	14.8	9.8	-
7	11.0	11.8	15.1	15.0	19.7	19.5	20.8	-	18.0	14.8	9.8	-
8	10.5	10.6	13.0	12.4	13.6	16.6	18.2	-	17.9	14.8	9.8	-
9	9.7	9.7	11.6	10.0	11.0	10.9	15.0	-	17.7	14.8	9.8	-
10	9.4	8.7	9.9	9.0	9.9	9.1	11.4	-	12.7	12.4	9.7	-
11	8.6	7.4	8.6	7.9	8.4	8.2	9.4	-	10.4	10.3	9.7	-
12	7.2	6.6	7.5	7.3	7.6	7.4	8.4	-	9.2	9.3	9.7	-
13	6.8	6.4	7.0	6.8	7.0	7.1	7.4	-	8.2	8.5	9.7	-
14	6.4	6.4	6.7	6.6	6.6	6.9	6.9	-	7.9	7.8	9.7	-
15	6.2	6.3	6.4	6.4	6.5	6.6	6.6	-	7.2	7.4	9.5	-
16	6.1	6.1	6.3	6.3	6.4	6.4	6.6	-	6.9	6.9	8.0	-
17	6.0	6.1	6.2	6.2	6.3	6.3	6.5	-	6.6	6.6	7.0	-
18	5.8	5.9	6.0	6.1	6.2	6.2	6.4	-	6.5	6.5	6.7	-
19	5.8	5.9	6.0	6.1	6.1	6.2	6.3	-	6.3	6.4	6.5	-
20	5.7	5.9	6.0	6.0	6.1	6.1	6.2	-	6.2	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	10.7	13.0	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	12.0	16.8	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 2a. Dissolved oxygen profiles of Loon Lake Mid Site, 2011. All values in mg/L.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	10.0	9.7	9.6	8.9	9.0	8.7	8.8	8.3	9.2	9.3	9.1	7.1
1	10.0	9.2	9.6	8.9	9.0	8.7	8.8	8.5	9.2	9.3	9.1	7.1
2	10.0	9.9	9.6	8.9	9.0	8.8	8.8	8.5	9.2	9.3	9.1	7.0
3	10.0	9.9	9.6	8.9	9.1	8.8	8.8	8.5	9.1	9.3	9.1	7.1
4	10.3	10.2	9.7	9.3	9.1	8.7	8.8	8.5	9.1	9.3	9.1	7.0
5	10.6	10.2	9.7	9.9	9.1	8.9	8.8	8.5	9.1	9.3	9.1	7.0
6	10.7	10.4	10.4	11.2	12.0	11.0	8.9	8.5	9.1	9.2	9.1	6.9
7	10.7	10.6	11.6	12.6	13.1	13.6	11.4	10.0	9.1	9.2	9.1	6.7
8	10.5	11.1	11.8	12.9	13.3	13.5	14.2	13.4	9.1	9.2	9.1	6.7
9	10.2	10.7	11.1	12.4	13.0	13.0	13.1	12.2	12.1	9.2	9.1	6.7
10	9.5	10.3	9.8	11.3	11.9	12.3	12.6	11.4	11.9	10.0	9.1	6.7
11	9.0	9.4	9.0	10.0	9.9	11.1	11.6	10.3	10.2	8.9	7.0	6.7
12	8.5	8.8	8.0	9.5	9.0	9.7	9.2	8.7	6.0	6.2	1.0	6.7
13	7.9	7.5	6.4	8.4	7.9	8.0	7.6	6.2	3.6	3.3	0.0	6.7
14	7.5	7.1	6.3	6.6	6.5	5.8	4.8	4.5	2.1	1.3	0.0	6.7
15	7.4	6.6	6.1	5.5	5.2	4.7	3.8	2.9	0.5	0.3	0.0	6.6
16	7.0	6.2	5.1	4.3	3.9	3.6	2.8	1.9	0.3	0.2	0.0	6.6
17	6.8	5.9	5.1	3.8	3.3	2.8	1.9	0.9	0.2	0.2	0.0	6.2
18	6.7	5.7	4.2	3.5	2.9	2.1	1.1	0.3	0.2	0.2	0.0	5.1
19	6.8	5.7	4.1	2.9	2.6	1.6	0.7	0.3	0.2	0.2	0.0	5.2
20	6.7	5.6	4.2	2.5	1.3	1.7	0.4	0.3	0.2	0.2	0.0	3.5
21	6.6	5.5	4.3	2.2	1.6	1.4	0.3	0.3	0.2	0.2	0.0	1.6
22	6.5	5.5	4.0	2.3	1.2	1.0	0.3	0.3	0.2	0.2	0.0	0.0
23	6.4	5.2	3.5	2.4	0.8	0.5	0.3	0.3	0.2	0.2	0.0	0.0
24	6.2	5.1	3.5	2.2	0.3	0.4	0.3	0.3	0.2	0.2	0.0	0.0
25	6.1	4.5	2.9	1.6	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0
26	6.0	4.3	1.7	0.8	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0
27	5.9	3.9	1.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0
28	5.8	3.8	0.9	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0
29	5.4	3.6	0.5	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0
30	5.2	2.7	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0

Table 2b. Dissolved oxygen profiles of Loon Lake North Site and inlets, 2011. All values in mg/L.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	9.8	9.6	9.5	8.8	9.2	8.8	8.8	-	9.1	9.2	9.5	-
1	9.8	9.6	9.5	8.9	9.2	8.7	8.7	-	9.1	9.2	9.6	-
2	9.8	9.6	9.6	8.9	9.3	8.8	8.8	-	9.0	9.2	9.5	-
3	9.8	9.7	9.7	8.9	9.3	8.8	8.9	-	9.1	9.2	9.6	-
4	9.8	10.3	9.8	8.9	9.3	8.8	8.9	-	9.1	9.2	9.6	-
5	10.5	10.4	10.0	8.9	9.3	8.8	8.8	-	9.1	9.2	9.6	-
6	10.6	10.5	10.4	10.5	9.4	8.6	8.9	-	9.1	9.1	9.6	-
7	10.6	11.1	11.4	12.6	9.7	12.3	9.6	-	9.1	9.1	9.5	-
8	10.5	11.0	11.7	12.3	12.9	13.7	13.3	-	8.7	9.1	9.6	-
9	10.5	10.9	11.7	11.1	11.9	11.4	13.3	-	11.0	9.0	9.5	-
10	10.4	10.4	10.8	9.9	10.5	8.9	11.2	-	9.0	7.2	9.6	-
11	10.3	8.8	9.3	8.0	7.9	6.6	8.9	-	5.9	7.1	9.5	-
12	9.3	7.8	7.8	6.4	5.9	5.1	5.5	-	2.4	5.3	9.5	-
13	8.8	6.8	6.2	4.9	3.5	3.8	3.5	-	1.3	1.3	9.5	-
14	7.7	6.6	5.6	3.5	2.8	2.8	0.9	-	0.3	0.4	9.5	-
15	7.1	6.2	4.5	2.8	2.7	1.9	0.5	-	0.2	0.3	9.3	-
16	6.8	5.6	4.2	1.8	1.3	0.8	0.4	-	0.2	0.2	1.8	-
17	6.4	5.3	3.9	1.4	1.0	0.6	0.4	-	0.2	0.2	0.1	-
18	6.0	5.0	3.3	1.2	1.0	0.3	0.3	-	0.2	0.2	0.0	-
19	6.0	4.8	2.9	1.0	0.5	0.3	0.3	-	0.2	0.2	0.0	-
20	5.4	4.2	2.2	1.0	0.3	0.3	0.3	-	0.2	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	9.5	9.8	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	7.0	7.6	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 3a. Dissolved oxygen profiles of Loon Lake Mid Site, 2011. All values expressed as percent of saturation.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	117.3	107.5	113.7	109.0	110.7	110.5	109.9	101.6	106.6	100.8	86.9	64.4
1	117.0	109.3	113.4	109.3	110.3	110.2	109.7	103.6	106.5	101.7	86.7	63.9
2	117.1	109.4	112.6	109.3	110.5	110.5	109.6	103.0	106.2	101.4	86.5	63.6
3	116.9	109.7	112.3	109.6	110.8	110.4	109.4	103.2	106.2	101.3	86.8	63.8
4	118.9	112.3	113.0	112.4	111.8	110.1	109.1	103.3	106.0	101.3	86.7	63.6
5	120.1	112.2	112.6	119.2	111.5	111.3	109.6	103.4	105.7	100.9	86.7	63.3
6	118.2	112.8	118.4	130.9	138.9	134.3	110.4	103.7	105.7	100.7	86.5	62.0
7	115.0	113.5	125.9	138.2	145.7	155.5	137.1	118.9	105.6	100.6	86.8	61.1
8	108.7	111.3	120.4	135.5	140.2	144.1	156.6	151.2	105.3	100.5	86.6	60.9
9	102.5	103.4	108.0	125.3	133.0	135.9	137.3	127.6	132.6	100.2	86.7	61.0
10	94.2	97.1	93.5	109.2	116.5	123.5	128.9	116.0	124.1	105.2	86.3	60.5
11	89.3	87.5	84.0	94.4	93.9	107.5	113.1	100.7	101.6	90.4	66.3	60.2
12	82.6	80.0	73.0	88.4	83.8	90.9	87.1	83.8	56.8	59.5	9.2	60.2
13	76.4	67.3	57.8	76.8	72.3	73.5	70.1	57.7	33.5	30.6	0.3	60.4
14	72.4	63.3	57.1	59.1	59.1	52.9	43.1	40.8	18.7	11.7	0.0	60.4
15	71.4	58.5	54.6	48.4	46.0	42.3	34.0	26.3	4.3	2.8	0.0	60.2
16	67.1	54.4	45.9	38.5	34.3	32.5	25.1	16.7	2.3	2.2	0.0	60.0
17	65.7	52.2	45.2	33.8	29.2	24.6	17.2	7.9	2.1	2.1	0.0	59.4
18	64.6	49.9	37.5	30.3	25.5	18.1	9.3	3.0	2.0	2.1	0.0	56.4
19	65.5	50.4	36.0	25.4	23.2	14.3	6.0	2.7	1.9	2.0	0.0	46.0
20	64.0	49.5	37.1	21.7	11.4	14.6	3.1	2.7	2.0	1.9	0.0	46.2
21	62.9	48.3	37.6	19.5	13.8	12.5	2.8	2.6	1.9	1.9	0.0	31.1
22	62.4	48.3	35.7	20.3	10.4	8.5	2.7	2.5	1.8	1.9	0.0	14.5
23	61.0	45.4	31.0	21.3	7.1	4.1	2.6	2.4	1.8	1.9	0.0	0.0
24	59.6	44.4	31.2	19.1	2.9	3.5	2.5	2.5	1.8	1.9	0.0	0.0
25	58.1	39.4	25.8	14.3	2.6	2.8	2.5	2.4	1.7	1.8	0.0	0.0
26	57.5	37.9	15.1	6.7	2.5	2.7	2.5	2.4	1.7	1.8	0.0	0.0
27	56.1	34.0	12.1	2.9	2.4	2.6	2.5	2.4	1.7	1.8	0.0	0.0
28	55.2	33.0	7.7	2.7	2.4	2.6	2.4	2.3	1.7	1.8	0.0	0.0
29	51.9	31.2	4.7	2.6	2.4	2.5	2.5	2.3	1.7	1.8	0.0	0.0
30	49.6	23.7	2.8	2.6	2.4	2.5	2.4	2.3	1.7	1.7	0.0	0.0

Table 3b. Dissolved oxygen profiles of Loon Lake North Site and inlets, 2011. All values expressed as percent of saturation.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	114.6	107.8	113.8	109.4	113.0	112.2	111.4	-	105.9	100.5	90.5	-
1	114.6	108.3	114.1	110.2	113.0	110.7	110.7	-	105.9	100.8	91.1	-
2	114.9	108.3	113.7	110.2	113.1	111.8	111.3	-	105.7	100.7	90.7	-
3	114.9	108.6	113.7	110.1	112.8	111.9	111.6	-	105.6	100.6	91.0	-
4	114.7	113.2	114.5	109.7	113.0	112.1	111.3	-	105.7	100.1	91.3	-
5	118.0	112.8	115.5	109.7	112.8	112.3	110.6	-	105.6	99.9	91.0	-
6	116.8	113.0	118.4	124.8	113.4	108.2	111.1	-	105.7	99.7	91.1	-
7	115.6	112.8	124.8	137.1	115.7	146.4	117.5	-	105.9	99.4	90.9	-
8	113.8	109.3	123.0	125.9	135.2	153.4	154.4	-	105.7	99.2	91.0	-
9	110.9	106.3	118.5	107.3	117.5	112.3	143.4	-	100.9	98.4	90.5	-
10	109.2	97.5	105.1	93.8	101.3	84.4	111.9	-	113.9	74.7	91.0	-
11	106.8	80.9	87.6	73.6	73.3	61.3	84.3	-	88.3	69.4	90.6	-
12	93.1	70.2	72.1	58.4	54.3	45.9	51.1	-	56.3	50.9	90.4	-
13	87.4	60.8	56.4	43.8	31.2	34.2	32.0	-	22.7	12.3	89.8	-
14	75.6	59.0	50.6	30.6	25.2	25.5	8.1	-	12.3	3.3	89.8	-
15	68.7	55.6	40.2	24.8	24.1	17.1	4.5	-	2.6	2.7	88.3	-
16	65.8	49.6	37.5	16.2	11.7	7.4	3.4	-	2.1	2.0	19.1	-
17	61.5	46.7	34.6	12.1	8.5	5.3	3.1	-	2.0	2.0	0.6	-
18	57.5	43.8	29.2	10.3	9.1	3.0	3.0	-	1.9	1.9	0.0	-
19	57.7	42.0	25.6	9.0	4.5	2.8	3.0	-	1.9	1.9	0.0	-
20	52.0	36.6	19.8	8.5	2.9	2.7	2.9	-	1.8	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	103.2	102.3	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	78.4	86.4	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 4a. Conductivity profiles of Loon Lake Mid Site, 2011. All values in microSiemens/cm2.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	175	176	178	180	181	181	181	180	179	177	175	176
1	176	177	178	180	181	181	180	180	179	178	176	176
2	176	176	178	180	180	181	180	180	179	177	176	175
3	175	176	178	180	180	181	180	180	180	178	175	175
4	175	175,9	177	179	180	181	180	179	179	177	176	176
5	174	176	177	178	180	181	180	180	179	177	175	176
6	174	176	177	176	176	178	180	180	179	177	175	175
7	173	175	175	174	175	174	177	178	179	177	176	175
8	173	174	174	174	174	174	173	175	179	177	176	176
9	173	174	174	174	174	175	173	174	178	177	176	175
10	173	174	175	174	174	175	175	175	176	177	175	175
11	173	174	174	174	175	175	174	175	177	178	175	176
12	173	174	174	175	175	175	175	176	176	177	176	176
13	174	174	174	175	174	175	174	175	177	176	176	176
14	174	173	174	174	174	175	174	175	176	176	176	175
15	173	173	174	174	175	175	174	175	176	176	177	176
16	174	173	174	174	174	175	174	174	176	176	176	175
17	174	173	174	174	175	174	174	174	176	176	176	176
18	174	174	174	174	174	175	174	174	177	177	176	175
19	173	174	174	174	174	174	174	175	177	178	176	176
20	174	174	174	174	176	174	175	175	178	179	176	176
21	174	174	174	174	175	174	175	176	177	178	177	177
22	173	174	174	174	175	174	174	176	178	179	175	178
23	173	175	174	174	175	175	175	176	180	180	177	178
24	174	175	174	174	175	175	175	177	181	181	179	179
25	174	175	174	174	176	177	179	181	184	183	178	181
26	174	174	175	175	177	182	182	184	188	187	179	182
27	174	175	175	176	178	186	185	187	190	190	180	188
28	174	175	175	178	180	188	187	191	195	194	182	191
29	175	175	175	181	184	191	191	193	197	196	183	192
30	175	177	178	216	191	195	199	200	198	199	190	192

Table 4b. Conductivity profiles of Loon Lake North Site and inlets, 2011. All values in microSiemens/cm2.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	176	177	179	181	180	182	181	-	179	177	175	-
1	176	176	179	181	181	181	181	-	179	177	175	-
2	175	176	179	181	180	181	181	-	179	177	175	-
3	176	176	178	181	180	181	180	-	179	177	176	-
4	176	176	177	180	180	181	180	-	179	177	175	-
5	174	175	178	180	179	181	180	-	179	177	175	-
6	173	175	177	177	180	181	180	-	179	177	175	-
7	174	177	175	173	179	175	178	-	179	177	175	-
8	174	174	174	175	174	174	175	-	179	178	175	-
9	174	174	174	174	175	175	174	-	179	177	175	-
10	173	174	175	174	175	176	175	-	177	178	175	-
11	173	174	175	174	175	175	175	-	177	177	175	-
12	173	174	175	175	175	175	176	-	177	177	175	-
13	173	174	175	174	176	175	175	-	178	177	175	-
14	173	174	175	175	175	175	175	-	177	177	175	-
15	173	174	175	176	175	175	175	-	178	178	175	-
16	173	174	174	175	176	175	176	-	177	179	176	-
17	173	174	174	175	176	175	176	-	177	178	176	-
18	173	174	174	175	176	176	176	-	179	180	179	-
19	174	174	175	175	176	176	176	-	180	181	179	-
20	174	175	176	176	178	176	178	-	181	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	136	156	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	120	130	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 5a. Profiles of total dissolved solids (TDS) at Loon Lake Mid Site, 2011. All values derived from conductivity and expressed in mg/L.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.1124	0.1126	0.1142	0.1151	0.1156	0.1162	0.1156	0.1149	0.1145	0.1134	0.1123	0.1124
1	0.1121	0.1126	0.1141	0.1155	0.1155	0.1161	0.1154	0.1150	0.1145	0.1134	0.1121	0.1122
2	0.1122	0.1128	0.1136	0.1154	0.1154	0.1161	0.1155	0.1150	0.1147	0.1131	0.1120	0.1121
3	0.1121	0.1129	0.1138	0.1152	0.1154	0.1159	0.1154	0.1148	0.1143	0.1134	0.1122	0.1124
4	0.1118	0.1126	0.1135	0.1145	0.1152	0.1158	0.1156	0.1150	0.1145	0.1134	0.1121	0.1125
5	0.1114	0.1126	0.1136	0.1140	0.1152	0.1158	0.1152	0.1150	0.1146	0.1134	0.1120	0.1124
6	0.1110	0.1124	0.1130	0.1126	0.1124	0.1135	0.1153	0.1150	0.1143	0.1134	0.1120	0.1122
7	0.1112	0.1123	0.1129	0.1114	0.1118	0.1115	0.1132	0.1140	0.1147	0.1135	0.1124	0.1125
8	0.1112	0.1113	0.1114	0.1114	0.1113	0.1115	0.1111	0.1121	0.1145	0.1131	0.1119	0.1124
9	0.1108	0.1106	0.1115	0.1112	0.1114	0.1119	0.1112	0.1120	0.1135	0.1132	0.1125	0.1124
10	0.1107	0.1115	0.1115	0.1115	0.1119	0.1118	0.1114	0.1123	0.1129	0.1133	0.1122	0.1124
11	0.1107	0.1114	0.1117	0.1115	0.1121	0.1120	0.1116	0.1119	0.1132	0.1135	0.1123	0.1121
12	0.1108	0.1112	0.1114	0.1112	0.1117	0.1120	0.1118	0.1120	0.1129	0.1131	0.1127	0.1121
13	0.1107	0.1111	0.1114	0.1116	0.1117	0.1120	0.1113	0.1121	0.1129	0.1131	0.1128	0.1125
14	0.1107	0.1109	0.1112	0.1114	0.1115	0.1117	0.1111	0.1122	0.1129	0.1129	0.1130	0.1122
15	0.1111	0.1112	0.1112	0.1110	0.1114	0.1114	0.1111	0.1116	0.1128	0.1128	0.1129	0.1123
16	0.1109	0.1112	0.1114	0.1110	0.1114	0.1119	0.1114	0.1116	0.1125	0.1128	0.1129	0.1125
17	0.1109	0.1108	0.1114	0.1111	0.1113	0.1116	0.1111	0.1117	0.1125	0.1124	0.1125	0.1125
18	0.1109	0.1112	0.1111	0.1114	0.1117	0.1115	0.1114	0.1116	0.1127	0.1129	0.1123	0.1126
19	0.1112	0.1112	0.1111	0.1116	0.1118	0.1115	0.1115	0.1116	0.1131	0.1133	0.1123	0.1127
20	0.1109	0.1110	0.1111	0.1116	0.1123	0.1113	0.1126	0.1122	0.1143	0.1142	0.1131	0.1130
21	0.1113	0.1114	0.1111	0.1118	0.1120	0.1115	0.1117	0.1123	0.1132	0.1137	0.1133	0.1134
22	0.1112	0.1113	0.1114	0.1113	0.1121	0.1118	0.1113	0.1124	0.1142	0.1149	0.1136	0.1133
23	0.1111	0.1114	0.1116	0.1113	0.1123	0.1119	0.1118	0.1126	0.1152	0.1152	0.1136	0.1144
24	0.1111	0.1117	0.1115	0.1112	0.1125	0.1124	0.1121	0.1131	0.1153	0.1153	0.1142	0.1146
25	0.1113	0.1115	0.1114	0.1116	0.1127	0.1137	0.1142	0.1156	0.1175	0.1173	0.1143	0.1162
26	0.1112	0.1116	0.1120	0.1121	0.1133	0.1166	0.1166	0.1181	0.1196	0.1199	0.1147	0.1164
27	0.1114	0.1122	0.1119	0.1126	0.1141	0.1196	0.1186	0.1197	0.1219	0.1210	0.1151	0.1200
28	0.1114	0.1124	0.1122	0.1145	0.1150	0.1206	0.1205	0.1223	0.1249	0.1245	0.1158	0.1224
29	0.1115	0.1125	0.1123	0.1152	0.1180	0.1222	0.1219	0.1238	0.1259	0.1250	0.1177	0.1223
30	0.1117	0.1134	0.1134	0.1406	0.1223	0.1246	0.1260	0.1277	0.1273	0.1276	0.1216	0.1230

Table 5b. Profiles of total dissolved solids (TDS) at Loon Lake North Site and inlets, 2011. All values derived from conductivity and expressed in mg/L.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.1123	0.1128	0.1147	0.1156	0.1153	0.1161	0.1159	-	0.1149	0.1135	0.1121	-
1	0.1123	0.1129	0.1144	0.1155	0.1154	0.1159	0.1155	-	0.1144	0.1134	0.1121	-
2	0.1124	0.1128	0.1144	0.1154	0.1153	0.1161	0.1154	-	0.1145	0.1133	0.1122	-
3	0.1124	0.1127	0.1140	0.1154	0.1151	0.1162	0.1151	-	0.1147	0.1135	0.1122	-
4	0.1125	0.1124	0.1135	0.1156	0.1151	0.1159	0.1151	-	0.1148	0.1134	0.1121	-
5	0.1114	0.1124	0.1133	0.1153	0.1151	0.1157	0.1151	-	0.1146	0.1132	0.1119	-
6	0.1112	0.1125	0.1133	0.1137	0.1152	0.1161	0.1149	-	0.1148	0.1134	0.1119	-
7	0.1111	0.1130	0.1121	0.1111	0.1144	0.1123	0.1141	-	0.1144	0.1134	0.1122	-
8	0.1111	0.1110	0.1116	0.1119	0.1115	0.1113	0.1121	-	0.1145	0.1137	0.1119	-
9	0.1110	0.1114	0.1118	0.1115	0.1120	0.1119	0.1112	-	0.1147	0.1134	0.1121	-
10	0.1113	0.1114	0.1117	0.1118	0.1120	0.1118	0.1119	-	0.1130	0.1140	0.1121	-
11	0.1110	0.1113	0.1117	0.1117	0.1123	0.1127	0.1122	-	0.1130	0.1134	0.1120	-
12	0.1110	0.1114	0.1113	0.1115	0.1123	0.1118	0.1125	-	0.1132	0.1132	0.1121	-
13	0.1110	0.1111	0.1114	0.1112	0.1127	0.1121	0.1120	-	0.1134	0.1132	0.1120	-
14	0.1110	0.1113	0.1117	0.1119	0.1122	0.1123	0.1122	-	0.1138	0.1130	0.1119	-
15	0.1109	0.1113	0.1117	0.1115	0.1121	0.1118	0.1120	-	0.1141	0.1134	0.1123	-
16	0.1107	0.1113	0.1113	0.1117	0.1128	0.1122	0.1125	-	0.1137	0.1145	0.1131	-
17	0.1110	0.1111	0.1114	0.1120	0.1124	0.1119	0.1130	-	0.1137	0.1139	0.1132	-
18	0.1109	0.1113	0.1118	0.1121	0.1124	0.1124	0.1129	-	0.1146	0.1151	0.1141	-
19	0.1112	0.1113	0.1120	0.1122	0.1125	0.1120	0.1128	-	0.1152	0.1153	0.1146	-
20	0.1115	0.1123	0.1123	0.1124	0.1134	0.1131	0.1135	-	0.1156	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	0.0872	0.1003	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	0.0769	0.083	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 6a. pH profiles of Loon Lake Mid Site, 2011. All values are the negative log of the hydrogen ion activity.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	8.5	7.9	7.9	7.9	7.9	7.9	7.9	8.1	8.4	8.2	8.1	7.7
1	8.5	7.8	8.0	7.9	7.9	7.9	8.0	8.1	8.4	8.2	8.1	7.8
2	8.5	7.9	8.0	7.9	7.9	8.0	8.1	8.1	8.4	8.1	8.1	7.8
3	8.5	7.9	8.0	8.0	8.0	8.0	8.1	8.1	8.3	8.1	8.1	7.8
4	8.5	7.9	8.0	8.0	8.0	8.0	8.1	8.1	8.2	8.0	8.1	7.8
5	8.5	8.0	8.0	8.1	8.0	8.0	8.1	8.1	8.2	8.0	8.1	7.8
6	8.5	8.0	8.0	8.2	8.2	8.2	8.0	8.1	8.1	8.0	8.1	7.7
7	8.4	8.0	8.1	8.2	8.2	8.3	8.2	8.1	8.0	8.0	8.1	7.7
8	8.2	7.8	7.9	8.1	8.1	8.1	8.3	8.3	8.0	8.0	8.1	7.7
9	8.1	7.5	7.6	7.9	8.0	8.0	8.1	8.0	7.9	8.0	8.1	7.7
10	7.9	7.3	7.2	7.5	7.7	7.8	7.9	7.8	7.7	7.4	8.0	7.7
11	7.9	7.2	7.0	7.2	7.2	7.5	7.6	7.4	7.3	7.1	7.6	7.7
12	7.8	7.0	6.9	7.1	7.0	7.1	7.0	7.0	6.6	6.8	7.2	7.7
13	7.7	6.9	6.8	6.9	6.9	6.9	6.8	6.7	6.4	6.5	7.1	7.7
14	7.7	6.9	6.8	6.7	6.7	6.7	6.6	6.6	6.4	6.3	7.1	7.7
15	7.7	6.8	6.8	6.6	6.6	6.6	6.5	6.6	6.3	6.2	7.1	7.7
16	7.6	6.8	6.7	6.6	6.6	6.5	6.5	6.5	6.3	6.2	7.1	7.7
17	7.6	6.7	6.7	6.6	6.5	6.5	6.5	6.4	6.3	6.3	7.1	7.7
18	7.6	6.8	6.6	6.6	6.5	6.5	6.4	6.4	6.3	6.2	7.1	7.7
19	7.6	6.8	6.7	6.5	6.5	6.4	6.4	6.4	6.3	6.2	7.1	7.6
20	7.6	6.8	6.7	6.5	6.5	6.4	6.4	6.4	6.2	6.3	7.1	7.5
21	7.6	6.8	6.7	6.5	6.5	6.4	6.4	6.5	6.3	6.3	7.1	7.4
22	7.6	6.8	6.6	6.5	6.5	6.4	6.4	6.4	6.4	6.3	7.1	7.3
23	7.6	6.7	6.6	6.5	6.5	6.4	6.4	6.4	6.4	6.4	7.1	7.2
24	7.6	6.7	6.6	6.5	6.5	6.4	6.4	6.5	6.4	6.4	7.1	7.2
25	7.6	6.7	6.6	6.5	6.5	6.4	6.4	6.5	6.5	6.5	7.1	7.2
26	7.6	6.7	6.6	6.4	6.5	6.4	6.4	6.5	6.5	6.5	7.1	7.2
27	7.6	6.7	6.5	6.4	6.5	6.5	6.5	6.5	6.6	6.5	7.1	7.2
28	7.6	6.7	6.5	6.5	6.5	6.5	6.5	6.5	6.6	6.6	7.1	7.2
29	7.6	6.7	6.5	6.5	6.5	6.5	6.5	6.5	6.6	6.6	7.1	7.2
30	7.6	6.6	6.5	6.5	6.6	6.5	6.5	6.5	6.7	6.7	7.1	7.2

Table 6b. pH profiles of Loon Lake North Site and inlets, 2011. All values are the negative log of the hydrogen ion activity.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	8.6	7.8	7.9	7.7	7.9	7.9	7.9	-	8.4	7.9	8.3	-
1	8.6	7.8	7.9	7.7	7.8	7.8	7.8	-	8.4	7.9	8.3	-
2	8.7	7.9	7.9	7.8	7.8	7.8	7.8	-	8.4	8.0	8.3	-
3	8.6	7.9	8.0	7.9	7.9	7.8	7.9	-	8.4	7.9	8.3	-
4	8.7	8.0	8.0	7.9	7.9	7.9	7.9	-	8.4	7.9	8.3	-
5	8.7	7.9	8.0	7.9	7.9	8.0	7.9	-	8.3	7.9	8.3	-
6	8.7	7.9	8.0	8.0	7.9	7.8	8.0	-	8.3	7.9	8.3	-
7	8.6	7.9	8.0	8.0	7.8	8.2	8.0	-	8.3	7.9	8.3	-
8	8.5	7.7	7.9	7.8	7.9	8.2	8.2	-	8.2	7.9	8.2	-
9	8.5	7.6	7.8	7.4	7.6	7.5	8.0	-	8.0	7.9	8.3	-
10	8.4	7.3	7.4	7.1	7.2	7.0	7.4	-	7.7	7.0	8.3	-
11	8.3	7.1	7.1	6.8	6.8	6.7	6.9	-	7.2	6.9	8.3	-
12	8.1	6.9	6.9	6.7	6.6	6.6	6.6	-	6.8	6.7	8.3	-
13	8.0	6.8	6.8	6.6	6.5	6.5	6.5	-	6.6	6.5	8.3	-
14	7.8	6.8	6.7	6.5	6.5	6.5	6.3	-	6.5	6.4	8.3	-
15	7.8	6.7	6.6	6.5	6.5	6.4	6.3	-	6.5	6.3	8.2	-
16	7.8	6.7	6.6	6.4	6.4	6.4	6.3	-	6.5	6.3	7.2	-
17	7.8	6.7	6.6	6.4	6.4	6.4	6.3	-	6.4	6.3	7.1	-
18	7.7	6.7	6.6	6.4	6.4	6.3	6.3	-	6.4	6.3	7.1	-
19	7.7	6.7	6.6	6.4	6.4	6.4	6.3	-	6.4	6.3	7.1	-
20	7.7	6.7	6.5	6.4	6.4	6.4	6.3	-	6.4	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	7.9	7.3	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	7.2	6.7	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 7a. Profiles of oxidation/reduction potentials (ORP) at Loon Lake Mid Site, 2011. All values in mV.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	401	307	613	332	445	437	306	350	452	447	399	417
1	406	330	605	347	445	306	317	355	452	458	400	420
2	410	343	598	362	446	368	333	362	452	461	400	421
3	410	348	592	378	446	372	340	369	458	463	402	423
4	410	352	592	382	446	378	349	377	462	465	402	425
5	409	355	592	388	446	387	362	383	464	467	403	425
6	411	358	592	398	444	393	368	387	473	469	403	425
7	418	362	289	405	446	400	379	396	474	469	402	425
8	421	368	595	413	450	409	392	408	475	469	403	426
9	427	377	601	424	454	415	402	419	478	470	404	427
10	432	385	610	437	462	425	409	426	481	477	404	427
11	434	388	617	445	475	433	418	434	487	483	410	428
12	437	392	621	448	479	440	430	441	502	489	419	428
13	438	396	624	454	483	445	432	448	508	499	361	429
14	441	397	626	460	487	450	437	452	509	506	309	429
15	441	399	627	465	490	450	439	454	511	496	282	430
16	443	401	630	468	493	454	442	456	511	420	274	430
17	444	403	632	469	494	454	442	455	510	393	269	431
18	446	404	634	469	495	457	443	434	467	323	267	431
19	447	406	634	470	496	456	443	405	418	271	265	422
20	448	407	635	470	500	459	347	321	307	234	200	354
21	451	407	637	471	502	459	348	287	235	218	153	288
22	452	407	638	473	506	462	357	288	199	202	136	-
23	452	408	640	473	506	463	366	267	186	191	127	178
24	453	409	641	474	507	462	371	265	174	180	115	167
25	453	408	643	476	506	379	304	226	157	169	109	153
26	454	409	644	476	468	280	243	198	135	154	102	139
27	456	411	647	476	398	213	210	183	125	144	95	134
28	456	412	648	452	349	193	191	165	115	131	84	129
29	458	413	650	382	268	181	164	156	107	123	81	124
30	460	411	649	156	219	167	150	143	98	115	73	118

Table 7b. Profiles of oxidation/reduction potentials (ORP) at Loon Lake North Site and inlets, 2011. All values in mV.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	421	305	532	383	464	439	429	-	321	351	379	-
1	420	316	532	392	466	355	325	-	323	357	377	-
2	421	322	530	396	474	370	309	-	325	357	375	-
3	423	328	527	402	464	379	338	-	328	359	376	-
4	422	332	725	406	464	389	351	-	329	361	376	-
5	422	339	528	410	464	394	366	-	334	362	376	-
6	423	344	531	415	463	402	370	-	337	363	376	-
7	428	346	533	421	465	400	379	-	342	365	376	-
8	431	351	535	427	471	408	385	-	346	366	376	-
9	433	356	538	438	477	426	398	-	353	367	376	-
10	438	364	547	445	488	440	416	-	360	376	376	-
11	441	369	556	451	497	447	427	-	366	379	376	-
12	447	374	561	456	502	452	435	-	372	383	376	-
13	449	377	567	459	505	456	442	-	376	387	376	-
14	453	379	569	461	507	458	444	-	378	386	376	-
15	455	383	575	461	507	460	412	-	272	297	377	-
16	456	383	576	463	509	461	314	-	266	240	394	-
17	457	384	577	464	509	461	273	-	255	228	345	-
18	458	385	579	464	510	463	256	-	208	210	199	-
19	459	386	581	464	510	459	241	-	192	196	162	-
20	460	387	578	465	420	384	231	-	180	-	-	-

	May-24	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	407	389	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	372	381	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 8a. Total phosphorus concentrations in Loon Lake Mid station, 2011. All values are in mg/L, as P.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.018	0.018	0.015	0.019	0.018	0.024	0.019	0.020	0.018	0.020	0.025	0.031
1	0.019	0.023	0.019	0.018	0.021	0.021	0.018	0.020	0.021	0.023	0.028	-
2	0.026	0.021	0.021	0.019	0.018	0.020	0.020	0.016	0.019	0.021	0.027	-
3	0.022	0.022	0.017	0.019	0.019	0.022	0.020	0.020	0.020	0.024	0.025	0.046
4	0.024	0.029	0.017	0.019	0.020	0.024	0.019	0.016	0.021	0.022	0.027	-
5	-	0.025	0.013	0.019	0.021	0.018	0.021	0.014	0.018	0.027	0.028	-
6	-	0.017	-	0.020	-	-	0.021	0.019	0.022	0.019	0.027	0.033
7	-	-	0.022	-	-	0.021	-	-	0.018	0.023	0.027	-
8	0.030	-	-	0.023	0.024	-	0.023	0.024	0.029	0.022	0.026	-
9	-	-	-	-	-	-	-	0.023	-	0.022	0.029	0.031
10	-	-	-	-	-	-	-	-	0.028	-	0.028	-
10.5	-	0.026	-	-	-	-	-	-	-	-	-	-
11	-	-	-	0.028	-	-	-	-	-	-	-	-
12	0.029	0.022	-	-	0.032	0.032	0.034	-	-	0.030	0.033	0.032
13	-	-	0.027	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	0.031	-	-	-	-
15	-	-	-	-	-	-	-	-	0.035	0.042	0.042	0.032
16	-	-	-	0.029	-	-	-	-	-	-	-	-
17	0.024	0.023	-	-	0.033	0.027	0.032	-	-	-	-	-
18	-	-	0.027	-	-	-	-	-	-	-	-	0.032
19	-	-	-	-	-	-	-	0.024	-	-	-	-
20	-	-	-	-	-	-	-	-	0.048	0.054	0.051	-
21	-	-	-	0.033	-	-	-	-	-	-	-	0.048
22	0.027	0.008	-	-	0.027	0.030	0.035	-	-	-	-	-
23	-	-	0.030	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	0.027	-	-	-	0.065
25	-	-	-	-	-	-	-	-	0.067	0.102	0.071	-
26	-	-	-	0.045	-	-	-	-	-	-	-	-
27	0.029	0.034	-	-	0.057	0.085	0.107	-	-	-	-	0.100
28	-	-	0.038	-	-	-	-	-	-	-	-	-
29	0.030	-	-	-	0.057	0.114	0.150	0.161	0.121	-	-	-
30	0.031	0.040	0.053	0.060	0.074	0.129	0.128	0.114	0.110	0.103	0.138	0.117

Table 8b. Total phosphorus concentrations in Loon Lake North station and inlets, 2011. All values are in mg/L, as P.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	0.021	0.015	0.019	0.019	0.019	0.022	0.021	0.025	0.022	0.022	0.027	-
1	0.020	0.016	0.021	0.019	0.021	0.016	0.021	0.017	0.019	0.025	0.029	-
2	0.022	0.021	0.012	0.019	0.020	0.022	0.018	0.022	0.022	0.022	0.026	-
3	0.018	0.022	0.019	0.019	0.021	0.022	0.014	0.020	0.019	0.024	0.026	-
4	0.024	0.020	0.014	0.018	0.018	0.021	0.022	0.018	0.022	0.024	0.023	-
5	-	0.021	0.020	0.020	0.022	0.022	0.022	0.020	0.013	0.021	0.027	-
6	-	0.029	-	-	0.021	0.018	0.022	0.013	0.021	0.024	0.027	-
7	-	-	0.019	0.022	-	-	-	-	0.028	0.024	0.028	-
8	-	-	-	-	0.026	0.021	-	0.018	0.017	0.022	0.026	-
9	-	0.030	-	-	-	-	0.029	0.019	-	0.022	0.025	-
10	-	-	-	-	-	0.033	-	-	0.029	-	0.026	-
11	-	-	-	-	-	-	0.044	-	-	0.028	0.025	-
12	0.028	0.029	-	0.033	0.037	-	-	-	-	-	0.026	-
13	-	-	0.025	-	-	-	-	-	0.044	-	0.029	-
14	-	-	-	-	-	-	-	0.038	-	0.044	0.032	-
15	-	-	-	-	-	0.035	0.046	-	-	-	-	-
16		0.027	-	0.036	0.037	-	-	-	0.037	-	0.048	-
17	0.024	-	0.032	-	-	-	-	0.038	-	0.059	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	0.059	0.053	0.065	0.062	0.070	-
20	0.034	0.031	0.067	0.095	0.065	0.043	-	-	-	-	-	-

	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	0.128	0.119	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	0.120	0.143	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 8c. Total phosphorus concentrations at Loon Lake surface stations, 2011. All values are in mg/L, as P.

Surface Location	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	0.023	0.027	-	0.019	0.017	0.021	0.021	0.025	0.019	0.022	0.026	-
2	0.022	0.023	-	0.017	0.021	0.020	0.020	0.021	0.021	0.024	0.026	-
3	0.019	0.014	-	0.018	0.018	0.022	0.018	0.015	0.020	0.022	0.027	-
4	0.020	-	-	-	-	-	-	-	-	-	-	-
5	0.022	0.027	-	0.015	0.019	0.023	0.020	0.021	0.019	0.021	0.029	-
6	0.015	-	-	-	-	-	-	-	-	-	-	-
7	0.017	-	-	-	-	-	-	-	-	-	-	-
8	0.021	-	-	-	-	-	-	-	-	-	-	-
9	0.022	0.023	-	0.017	0.017	0.022	0.015	0.021	0.021	0.022	0.025	-
10	0.019	0.021	-	0.018	0.021	0.022	0.019	0.019	0.021	0.020	0.030	-
11	0.024		-	-	-	-	-	-	-	-	-	-
12	0.017	0.025	-	0.019	0.020	0.021	0.022	0.024	0.020	0.021	0.026	-
13	0.020	-	-	-	-	-	-	-	-	-	-	-
14	0.014	-	-	-	-	-	-	-	-	-	-	-
15	0.017	0.022	-	0.019	0.016	0.020	0.020	0.013	0.023	0.031	0.023	-
16	0.014	-	-	-	-	-	-	-	-	-	-	-

Table 9a. Orthophosphate concentrations in Loon Lake Mid station, 2011. All values in mg/L, as P.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.007
1	0.002	0.004	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.005	0.007	-
2	0.002	-	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.005	0.005	-
3	0.002	0.002	<MDL	0.003	0.002	0.002	0.002	0.002	0.002	0.006	0.005	0.009
4	<MDL	0.002	<MDL	0.003	<MDL	0.002	0.002	0.002	0.002	0.005	0.005	-
5	-	0.002	0.002	0.005	0.002	0.002	0.002	0.002	0.006	0.008	0.006	-
6	-	0.002	-	0.003	-	-	0.002	0.002	0.004	0.003	0.005	0.009
7	-	0.002	0.003	-	-	0.003	-	-	0.003	0.005	0.005	-
8	0.002	-	-	0.003	0.004	-	0.002	0.004	0.004	0.005	0.004	-
9	-	-	-	-	-	-	-	0.004		0.005	0.007	0.008
10	-	-	-	-	-	-	-	-	0.007	-	0.005	-
10.5	-	0.007	-	-	-	-	-	-	-	-	-	-
11	-	-	-	0.005	-	-	-	-	-	-	-	-
12	0.002	0.008	-	-	0.011	0.003	0.002	-	-	0.009	0.008	0.008
13	-	-	0.003	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	0.010	-	-	-	-
15	-	-	-	-	-	-	-	-	0.015	0.014	0.009	0.007
16	-	-	-	0.006	-	-	-	-	-	-	-	-
17	0.003	0.003	-	-	0.010	0.005	0.003	-	-	-	-	-
18	-	-	0.003	-	-	-	-	-	-	-	-	0.008
19	-	-	-	-	-	-	-	0.004	-	-	-	-
20	-	-	-	-	-	-	-	-	0.012	0.016	0.011	-
21	-	-	-	0.005	-	-	-	-	-	-	-	0.010
22	0.004	0.003	-	-	0.009	0.005	0.004	-	-	-	-	-
23	-	-	0.004	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	0.006	-	-	-	0.014
25	-	-	-	-	-	-	-	-	0.021	0.023	0.016	-
26	-	-	-	0.020	-	-	-	-	-	-	-	-
27	0.004	0.004	-	-	0.017	0.014	0.008	-	-	-	-	0.018
28	-	-	0.005	-	-	-	-	-	-	-	-	-
29	0.006	-	-	-	0.017	0.020	0.023	0.030	0.036	-	-	-
30	0.006	0.009	0.005	0.016	0.017	0.026	0.017	0.031	0.034	0.032	0.027	0.027

Table 9b. Orthophosphate concentrations in Loon Lake North station and inlets, 2011. All values in mg/L, as P.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.002	0.002	0.002	0.003	0.002	0.002	0.003	0.004	0.002	0.006	0.005	-
1	0.002	0.002	<MDL	0.003	0.002	0.002	0.002	0.003	0.004	0.005	0.006	-
2	0.002	0.002	<MDL	0.003	0.003	0.002	0.002	0.002	0.002	0.004	0.005	-
3	0.002	0.002	<MDL	0.003	0.002	0.002	0.002	0.002	0.003	0.002	0.004	-
4	0.002	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.003	0.004	0.005	-
5	-	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.003	0.005	-
6	-	0.003	-	-	0.002	0.002	0.002	0.002	0.002	0.006	0.005	-
7	-	-	0.002	0.003	-	-	-	-	0.002	0.005	0.005	-
8	-	-	-	-	0.005	0.002	-	0.002	0.003	0.004	0.005	-
9	-	0.007	-	-	-	-	0.002	0.004	-	0.004	0.005	-
10	-	-	-	-	-	0.006	-	-	0.008	-	0.005	-
11	-	-	-	-	-	-	0.005	-	-	0.008	0.004	-
12	0.002	0.007	-	0.011	0.014	-	-	-	-	-	0.004	-
13	-	-	0.003	-	-	-	-	-	0.016	-	0.007	-
14	0.002	-	-	-	-	-	-	0.012	-	0.016	0.005	-
15	-	-	-	-	-	0.004	0.007	-	-	-	-	-
16	-	0.003	-	0.012	0.013	-	-	-	0.014	-	0.015	-
17	0.003	-	0.004	-	-	-	-	0.004	-	0.016	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	0.005	0.012	0.018	0.017	0.017	-
20	0.005	0.006	0.016	0.044	0.019	0.006	-	-	-	-	-	-

	May-25	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	0.088	0.106	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	0.072	0.110	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 9c. Orthophosphate concentrations at Loon Lake surface stations, 2011. All values are in mg/L, as P.

Surface Location	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	<MDL	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.004	0.003	0.003	-
2	<MDL	0.002	0.002	0.003	0.002	0.002	0.002	0.003	0.002	0.005	0.005	-
3	<MDL	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.005	-
4	<MDL	-	-	-	-	-	-	-	-	-	-	-
5	<MDL	0.002	0.002	0.003	0.002	0.002	0.002	0.003	0.002	0.005	0.007	-
6	<MDL	-	-	-	-	-	-	-	-	-	-	-
7	<MDL	-	-	-	-	-	-	-	-	-	-	-
8	0.008	-	-	-	-	-	-	-	-	-	-	-
9	0.007	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.003	0.004	0.003	-
10	0.007	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.003	0.003	0.007	-
11	0.007	-	-	-	-	-	-	-	-	-	-	-
12	0.006	0.002	0.002	0.003	0.002	0.002	0.002	0.003	0.003	0.004	0.005	-
13	0.007	-	-	-	-	-	-	-	-	-	-	-
14	0.005	-	-	-	-	-	-	-	-	-	-	-
15	0.006	0.002	0.002	0.003	0.002	0.002	0.002	0.003	0.002	0.013	0.004	-
16	0.004	-	-	-	-	-	-	-	-	-	-	-

Table 10a. Total nitrogen profiles in Loon Lake Mid station, 2011. All values in mg/L, as N.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.416	0.364	0.408	0.388	0.364	0.388	0.332	0.400	0.332	0.344	0.368	0.380
1	0.424	0.396	0.392	0.344	0.380	0.376	0.320	0.380	0.352	0.376	0.384	-
2	0.444	-	0.356	0.348	0.340	0.372	0.352	0.324	0.360	0.356	0.364	-
3	0.424	0.388	0.372	0.364	0.360	0.396	0.344	0.352	0.340	0.384	0.368	0.360
4	0.424	0.484	0.368	0.360	0.364	0.392	0.344	0.304	0.368	0.368	0.376	-
5	-	0.604	0.320	0.364	0.376	0.332	0.376	0.260	0.352	0.384	0.376	-
6	-	0.412	-	0.356	-	-	0.368	0.340	0.348	0.352	0.376	0.400
7	-	0.340	0.420	-	-	0.368	-	-	0.348	0.372	0.368	-
8	0.508	-	-	0.356	0.388	-	0.360	0.384	0.396	0.392	0.360	-
9	-	-	-	-	-	-	-	0.324	-	0.372	0.376	0.384
10	-	-	-	-	-	-	-	-	0.392	-	0.372	-
10.5	-	0.420	-	-	-	-	-	-	-	-	0.336	-
11	-	-	-	0.412	-	-	-	-	-	-	-	-
12	0.440	0.416	-	-	0.428	0.416	0.408	-	-	0.348	-	0.392
13	-	-	0.388	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	0.364	-	-	-	-
15	-	-	-	-	-	-	-	-	0.356	0.412	0.360	0.392
16	-	-	-	0.388	-	-	-	-	-	-	-	-
17	0.440	0.428	-	-	0.412	0.360	0.412	-	-	-	-	-
18	-	-	0.416	-	-	-	-	-	-	-	-	0.400
19	-	-	-	-	-	-	-	0.284	-	-	-	-
20	-	-	-	-	-	-	-	-	0.380	0.440	0.408	-
21	-	-	-	0.420	-	-	-	-	-	-	-	0.424
22	0.520	0.260	-	-	0.412	0.440	0.424	-	-	-	-	-
23	-	-	0.448	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	0.264	-	-	-	0.480
25	-	-	-	-	-	-	-	-	0.536	0.796	0.480	-
26	-	-	-	0.592	-	-	-	-	-	-	-	-
27	0.508	0.608	-	-	0.608	0.740	0.788	-	-	-	-	0.688
28	-	-	0.604	-	-	-	-	-	-	-	-	-
29	0.528	-	-	-	0.544	0.948	1.132	1.116	1.152	-	-	-
30	0.520	0.628	0.788	0.648	0.840	0.988	1.084	1.268	1.016	1.144	0.908	0.880

Table 10b. Total nitrogen profiles in Loon Lake North station and inlets, 2011. All values in mg/L, as N.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	0.420	0.352	0.380	0.340	0.368	0.392	0.376	0.416	0.348	0.396	0.404	-
1	0.380	0.332	0.396	0.348	0.380	0.300	0.360	0.316	0.368	0.408	0.376	-
2	0.400	0.400	0.300	0.352	0.364	0.380	0.344	0.368	0.344	0.376	0.380	-
3	0.348	0.388	0.376	0.356	0.376	0.388	0.276	0.360	0.356	0.372	0.360	-
4	0.420	0.376	0.340	0.344	0.352	0.408	0.376	0.348	0.284	0.388	0.336	-
5	-	0.376	0.408	0.368	0.376	0.388	0.388	0.352	0.348	0.352	0.368	-
6	-	0.416	-	-	0.376	0.364	0.380	0.256	0.360	0.384	0.368	-
7	-	-	0.396	0.352	-	-	-	-	0.304	0.376	0.380	-
8	-	-	-	-	0.392	0.356	-	0.316	0.372	0.392	0.364	-
9	-	0.424	-	-	-	-	0.396	0.300	-	0.404	0.376	-
10	-	-	-	-	-	0.424	-	-	-	-	0.384	-
11	-	-	-	-	-	-	0.488	-	-	0.424	0.448	-
12	0.468	0.416	-	0.400	0.420	-	-	-	-	-	0.392	-
13	-	-	0.388	-	-	-	-	-	0.408	-	0.400	-
14	0.424	-	-	-	-	-	-	0.356	-	0.408	0.380	-
15	-	-	-	-	-	0.376	0.396	-	-	-	-	-
16	-	0.368	-	0.404	0.392	-	-	-	0.344	-	0.440	-
17	0.480	-	0.448	-	-	-	-	0.352	-	0.488	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	0.380	0.388	0.508	0.492	0.520	-
20	0.564	0.468	0.712	0.768	0.456	0.376	-	-	-	-	-	-

	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	0.248	0.212	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	0.460	0.636	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 10c. Total nitrogen concentrations at Loon Lake surface stations, 2011. All values are in mg/L, as N.

Surface Location	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	0.508	0.388	-	0.356	0.328	0.392	0.392	0.364	0.424	0.392	0.396	-
2	0.456	0.396	-	0.332	0.368	0.372	0.384	0.344	0.372	0.384	0.376	-
3	0.408	0.340	-	0.344	0.340	0.408	0.360	0.328	0.304	0.384	0.396	-
4	0.424	-	-	-	-	-	-	-	-	-	-	-
5	0.544	0.400	-	0.292	0.372	0.416	0.352	0.352	0.356	0.384	0.380	-
6	0.360	-	-	-	-	-	-	-	-	-	-	-
7	0.452	-	-	-	-	-	-	-	-	-	-	-
8	0.456	-	-	-	-	-	-	-	-	-	-	-
9	0.396	0.416	-	0.348	0.320	0.388	0.368	0.284	0.416	0.384	0.376	-
10	0.416	0.416	-	0.344	0.376	0.412	0.360	0.348	0.404	0.392	0.424	-
11	0.448	-	-	-	-	-	-	-	-	-	-	-
12	0.376	0.392	-	0.348	0.360	0.396	0.356	0.360	0.408	0.396	0.412	-
13	0.400	-	-	-	-	-	-	-	-	-	-	-
14	0.356	-	-	-	-	-	-	-	-	-	-	-
15	0.376	0.400	-	0.332	0.304	0.392	0.364	0.340	0.260	0.480	0.356	-
16	0.360	-	-	-	-	-	-	-	-	-	-	-

Table 11a. Ammonia profiles in Loon Lake Mid station, 2011. All values in mg/L, as N.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	0.018	0.033	0.022	0.024	0.038	0.027	0.012	0.053	0.025	0.004	0.037	<MDL
1	0.017	0.056	0.021	0.022	0.036	0.008	0.011	0.036	0.045	0.004	0.047	-
2	0.019	-	0.034	0.018	0.033	0.005	0.006	0.030	0.035	<MDL	0.035	-
3	0.016	0.045	0.032	0.021	0.027	0.014	0.019	0.035	0.039	0.004	0.038	0.004
4	0.018	0.084	0.033	0.033	0.053	0.014	0.008	0.032	0.037	0.004	0.024	-
5	-	0.132	0.036	0.064	0.035	0.010	0.008	0.026	0.029	0.006	0.047	-
6	-	0.034	-	0.027	-	-	0.014	0.029	0.046	0.049	0.045	0.004
7	-	0.056	0.033	-	-	0.016	-	-	0.041	0.007	0.043	-
8	0.038	-	-	0.014	0.046	-	0.017	0.008	0.008	0.005	0.036	-
9	-	-	-	-	-	-	-	0.005	-	0.005	0.043	0.010
10	-	-	-	-	-	-	-	-	0.008	-	0.005	-
10.5	-	0.094	-	-	-	-	-	-	-	-	-	-
11	-	-	-	0.046	-	-	-	-	-	-	-	-
12	0.036	0.115	-	-	0.054	0.020	0.007	-	-	0.004	<MDL	0.005
13	-	-	0.029	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	0.004	-	-	-	-
15	-	-	-	-	-	-	-	-	0.012	0.121	<MDL	0.008
16	-	-	-	0.022	-	-	-	-	-	-	-	-
17	0.062	0.009	-	-	0.016	0.016	0.014	-	-	-	-	-
18	-	-	0.013	-	-		-	-	-	-	-	<MDL
19	-	-	-	-	-		-	0.014	-	-	-	-
20	-	-	-	-	-		-	-	0.008	0.012	0.007	-
21	-	-	-	0.011	-		-	-	-	-	-	<MDL
22	0.078	0.006	-	-	0.019	0.007	0.027	-	-	-	-	-
23	-	-	0.007	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	0.004	-	-	-	0.004
25	-	-	-	-	-	-	-	-	0.008	0.010	<MDL	-
26	-	-	-	0.017	-	-	0.100	-	-	-	-	-
27	0.107	0.014	-	-	0.006	0.007	-	-	-	-	-	0.007
28	-	-	0.007	-	-	-	-	-	-	-	-	-
29	0.126	-	-	-	0.007	0.013	0.201	0.014	0.008	-	-	-
30	0.135	0.005	0.108	0.027	0.006	0.444	0.400	0.006	0.008	0.827	0.010	0.566

Table 11b. Ammonia profiles in Loon Lake North station and inlets, 2011. All values in mg/L, as N.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
0	0.019	0.014	0.034	0.013	0.038	0.017	0.034	0.084	0.035	0.066	0.065	-
1	0.020	0.039	0.034	0.013	0.032	0.021	0.030	0.045	0.006	0.009	0.046	-
2	0.018	0.039	0.020	0.011	0.030	0.011	0.026	0.010	0.039	<MDL	0.037	-
3	0.016	0.044	0.044	0.027	0.031	0.006	0.006	0.037	0.037	0.045	0.039	-
4	0.018	0.060	0.026	0.011	0.034	0.029	0.012	0.054	0.032	0.012	0.025	-
5	-	0.014	0.029	0.029	0.030	0.008	0.023	0.035	0.045	0.033	0.049	-
6	-	0.054	-	-	0.052	0.013	0.015	0.051	0.054	0.008	0.041	-
7	-	-	0.038	0.009	-	-	-	-	0.040	0.039	0.005	-
8	-	-	-	-	-	0.034	-	0.041	0.043	0.007	0.042	-
9	-	0.072	-	-	0.053	-	0.029	0.009	-	0.020	0.033	-
10	-	-	-	-	-	0.044	-	-	0.009	-	0.037	-
11	-	-	-	-	-	-	0.060	-	-	0.010	0.027	-
12	0.035	0.040	-	0.010	0.007	-	-	-	-	-	0.023	-
13	-	-	0.031	-	-	-	-	-	0.015	-	0.017	-
14	0.036	-	-	-	-	-	-	0.007	-	0.006	0.004	-
15	-	-	-	-	-	0.008	0.030	-	-	-	-	-
16	-	0.011	-	0.014	0.011	-	-	-	0.007	-	0.004	-
17	0.047	-	0.006	-	-	-	-	0.006	-	0.007	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	0.017	0.011	0.006	0.010	0.008	-
20	0.118	0.009	0.006	0.021	0.007	0.009	-	-	-	-	-	-

	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	0.015	0.009	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	0.018	0.011	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 11c. Ammonia concentrations in Loon Lake surface stations, 2011. All values are in mg/L, as N.

Surface Location	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	0.028	0.058	0.110	0.012	0.030	0.021	0.013	0.032	0.010	0.007	0.032	-
2	0.089	0.024	0.040	0.011	0.031	0.032	0.013	0.048	0.034	0.006	0.004	-
3	0.026	0.020	0.022	0.017	0.032	0.023	0.020	0.035	0.007	0.036	<MDL	-
4	0.022	-	-	-	-	-	-	-	-	-	-	-
5	0.115	0.033	0.065	0.018	0.027	0.032	0.010	0.050	0.029	0.004	<MDL	-
6	0.022	-	-	-	-	-	-	-	-	-	-	-
7	0.033	-	-	-	-	-	-	-	-	-	-	-
8	0.026	-	-	-	-	-	-	-	-	-	-	-
9	0.027	0.039	0.029	0.017	0.040	0.007	0.019	0.036	0.005	<MDL	0.036	-
10	0.018	0.040	0.032	0.010	0.040	0.028	0.023	0.028	0.005	0.007	0.007	-
11	0.021	-	-	-	-	-	-	-	-	-	-	-
12	0.026	0.048	0.017	0.028	0.033	0.027	0.019	0.022	0.004	<MDL	0.024	-
13	0.024	-	-	-	-	-	-	-	-	-	-	-
14	0.017	-	-	-	-	-	-	-	-	-	-	-
15	0.017	0.047	0.028	0.012	0.033	0.024	0.010	0.027	0.039	0.007	0.013	-
16	0.024	-	-	-	-	-	-	-	-	-	-	-

Table 12a. Nitrate/nitrite profiles in Loon Lake Mid station, 2011. All values in mg/L, as N.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.002	0.002	<MDL	<MDL	0.002	<MDL	<MDL	0.005	<MDL	0.047	0.003	0.062
1	0.002	<MDL	<MDL	<MDL	0.003	<MDL	<MDL	0.006	<MDL	0.061	0.008	-
2	0.002	-	<MDL	0.002	<MDL	<MDL	<MDL	0.004	<MDL	0.060	0.004	-
3	0.002	<MDL	<MDL	<MDL	<MDL	0.005	<MDL	0.003	<MDL	0.067	0.002	0.066
4	<MDL	<MDL	<MDL	<MDL	0.002	<MDL	<MDL	0.002	0.002	0.044	0.023	-
5	-	0.002	<MDL	<MDL	<MDL	0.075	0.003	<MDL	0.075	0.056	0.002	-
6	-	0.002	-	0.003	-	-	<MDL	<MDL	0.005	<MDL	0.002	0.099
7	-	0.003	<MDL	-	-	0.015	-	-	0.015	0.053	<MDL	-
8	0.002	-	-	<MDL	0.002	-	<MDL	0.059	0.047	0.063	0.003	-
9	-	-	-	-	-	-	-	0.044	-	0.057	0.011	0.069
10	-	-	-	-	-	-	-	-	0.069	-	0.048	-
10.5	-	0.006	-	-	-	-	-	-	-	-	-	-
11	-	-	-	0.011	-	-	-	-	-	-	-	-
12	0.005	0.006	-	-	0.046	<MDL	<MDL	-	-	0.054	0.052	0.065
13	-	-	0.006	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	0.076	-	-	-	-
15	-	-	-	-	-	-	-	-	0.117	<MDL	0.064	0.065
16	-	-	-	0.046	-	-	-	-	-	-	-	-
17	0.019	0.068	-	-	0.081	0.012	0.013	-	-	-	-	-
18	-	-	0.072	-	-	-	-	-	-	-	-	0.066
19	-	-	-	-	-	-	-	0.003	-	-	-	-
20	-	-	-	-	-	-	-	-	0.100	0.141	0.086	-
21	-	-	-	0.057	-	-	-	-	-	-	-	0.112
22	0.031	0.115	-	-	0.155	0.106	0.034	-	-	-	-	-
23	-	-	0.117	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	0.026	-	-	-	0.153
25	-	-	-	-	-	-	-	-	0.266	0.408	0.169	-
26	-	-	-	0.313	-	-	-	-	-	-	-	-
27	0.035	0.243	-	-	0.256	0.333	0.109	-	-	-	-	0.320
28	-	-	0.295	-	-	-	-	-	-	-	-	-
29	0.040	-	-	-	0.300	0.489	0.349	0.742	0.706	-	-	-
30	0.041	0.280	0.296	0.343	0.485	0.113	0.077	0.781	0.705	0.146	0.491	0.080

Table 12b. Nitrate/nitrite profiles in Loon Lake North Station and Inlets, 2011. All values in mg/L, as N.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.032	0.004	0.007	0.022	0.007	-
1	0.004	<MDL	0.003	<MDL	<MDL	<MDL	0.010	0.003	0.056	0.063	0.003	-
2	<MDL	<MDL	<MDL	0.011	0.003	<MDL	<MDL	0.003	0.011	0.060	0.008	-
3	0.002	<MDL	0.006	<MDL	<MDL	<MDL	<MDL	<MDL	0.017	0.002	0.004	-
4	0.002	0.002	<MDL	<MDL	<MDL	<MDL	0.027	<MDL	0.015	0.062	0.021	-
5	-	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.008	0.005	0.010	-
6	-	0.002	-	-	<MDL	<MDL	<MDL	<MDL	<MDL	0.069	0.014	-
7	-	-	<MDL	<MDL	-	-	-	-	0.018	0.025	0.052	-
8	-	-	-	-	0.006	0.007	-	<MDL	0.004	0.058	0.008	-
9	-	0.002	-	-	-	-	<MDL	0.054	-	0.053	0.022	-
10	-	-	-	-	-	0.004	-	-	0.078	-	0.016	-
11	-	-	-	-	-	-	0.004	-	-	0.055	0.024	-
12	<MDL	0.032	-	0.070	0.106	-	-	-	-	-	0.052	-
13	-	-	0.012	-	-	-	-	-	0.094	-	0.049	-
14	0.002	-	-	-	-	-	-	0.080	-	0.114	0.051	-
15	-	-	-	-	-	<MDL	0.006	-	-	-	-	-
16	-	0.021	-	0.099	0.083	-	-	-	0.072	-	0.128	-
17	0.013		0.074	-	-	-	-	<MDL	-	0.181	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	0.020	0.115	0.190	0.142	0.187	-
20	0.023	0.120	0.211	0.409	0.112	0.015	-	-	-	-	-	-

	May-25	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	0.002	0.027	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	0.002	0.118	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 12c. Nitrate/nitrite concentrations at Loon Lake surface stations, 2011. All values are in mg/L, as N.

Surface Location	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	0.002	<MDL	0.004	<MDL	0.002	<MDL	<MDL	<MDL	0.084	0.057	0.019	-
2	0.002	<MDL	0.003	0.004	0.007	<MDL	<MDL	<MDL	0.019	0.068	0.041	-
3	0.002	<MDL	0.002	<MDL	<MDL	<MDL	0.013	<MDL	0.042	0.015	0.060	-
4	0.002	-	-	-	-	-	-	-	-	-	-	-
5	0.002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.020	0.059	0.061	-
6	0.002	-	-	-	-	-	-	-	-	-	-	-
7	0.002	-	-	-	-	-	-	-	-	-	-	-
8	0.005	-	-	-	-	-	-	-	-	-	-	-
9	0.035	<MDL	<MDL	<MDL	<MDL	<MDL	0.004	<MDL	0.063	0.059	0.014	-
10	0.014	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.044	0.056	0.070	-
11	0.002	-	-	-	-	-	-	-	-	-	-	-
12	0.007	<MDL	<MDL	<MDL	0.012	<MDL	<MDL	<MDL	0.063	0.070	0.031	-
13	<MDL	-	-	-	-	-	-	-	-	-	-	-
14	0.002	-	-	-	-	-	-	-	-	-	-	-
15	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.007	0.145	0.037	-
16	0.002	-	-	-	-	-	-	-	-	-	-	-

Table 13a. Alkalinity profiles in Loon Lake Mid station, 2011. All values are in mg/L, as $CaCO_3$.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	86.84	82.42	82.59	82.64	-	-	83.69	78.55	55.83	82.38	54.30	75.86
1	52.61	80.28	82.04	79.55	-	-	83.61	82.04	81.35	80.66	74.09	-
2	86.30	81.57	82.57	75.79	-	-	81.92	33.09	83.23	79.01	73.67	-
3	86.61	81.25	81.42	82.82	-	-	80.39	85.05	79.34	81.41	75.76	77.03
4	79.08	82.43	82.61	83.75	-	-	82.08	82.59	55.15	80.34	78.62	-
5	-	81.87	61.52	77.89	-	-	83.22	83.45	74.38	58.15	78.43	-
6	-	81.11	-	50.02	-	-	79.93	80.67	79.71	54.05	78.14	76.22
7	-	-	83.06	-	-	-	-	-	81.20	17.75	78.21	-
8	90.23	-	-	69.65	-	-	78.75	81.78	82.89	77.07	76.70	-
9	-	-	-	-	-	-	-	81.27	-	76.43	73.46	77.51
10	-	-	-	-	-	-	-	-	48.72	-	77.69	-
10.5	-	82.06	-	-	-	-	-	-	-	-	-	-
11	-	-	-	71.47	-	-	-	-	-	-	-	-
12	89.70	82.62	-	-	-	-	82.84	-	-	82.07	53.50	38.79
13	-	-	83.40	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	84.24	-	-	-	-
15	-	-	-	-	-	-	-	-	15.81	83.37	76.97	43.28
16	-	-	-	71.47	-	-	-	-	-	-	-	-
17	88.71	81.37	-	-	-	-	84.15	-	-	-	-	-
18	-	-	78.57	-	-	-	-	-	-	-	-	78.14
19	-	-	-	-	-	-	-	83.05	-	-	-	-
20	-	-	-	-	-	-	-	-	82.26	84.63	77.64	-
21	-	-	-	68.17	-	-	-	-	-	-	-	77.60
22	87.08	82.26	-	-	-	-	82.95	-	-	-	-	-
23	-	-	83.77	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	82.12	-	-	-	75.07
25	-	-	-	-	-	-	-	-	82.47	78.68	72.61	-
26	-	-	-	72.87	-	-	-	-	-	-	-	-
27	67.75	81.35	-	-	-	-	85.73	-	-	-	-	76.43
28	-	-	76.53	-	-	-	-	-	-	-	-	-
29	62.64	-	-	-	-	-	85.98	80.99	79.61	-	-	-
30	89.13	82.03	82.43	30.06	-	-	83.45	81.20	84.33	86.52	74.61	80.58

Table 13b. Alkalinity profiles in Loon Lake North station and inlets, 2011. All values are in mg/L, as $CaCO_3$.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	84.30	78.77	-	84.62	-	-	87.63	82.75	84.41	81.20	73.92	-
1	86.92	79.77	75.09	84.77	-	-	84.17	80.89	80.63	83.97	75.09	-
2	86.50	82.14	77.25	85.46	-	-	85.00	83.26	82.72	83.37	76.66	-
3	87.85	81.44	80.05	81.09	-	-	80.04	79.96	32.30	81.93	75.93	-
4	88.23	83.19	81.16	84.43	-	-	84.49	35.53	84.42	83.67	77.04	-
5	-	83.29	81.24	60.61	-	-	83.91	81.94	54.78	82.61	69.27	-
6	-	81.48	-	-	-	-	82.25	81.61	82.95	78.79	77.70	-
7	-	-	79.28	79.01	-	-	-	-	80.95	56.71	73.22	-
8	-	-	-	-	-	-	-	82.43	85.21	83.40	76.15	-
9	-	78.13	-	-	-	-	78.57	80.64	-	82.49	80.31	-
10	-	-	-	-	-	-	-	-	80.98	-	79.96	-
11	-	-	-	-	-	-	83.07	-	-	83.09	81.88	-
12	90.02	81.05	-	80.34	-	-	-	-	-	-	72.99	-
13	-	-	81.86	-	-	-	-	-	78.76	-	75.66	-
14	90.39	-	-	-	-	-	-	81.41	-	86.52	79.16	-
15	-	-	-	-	-	-	82.36	-	-	-	-	-
16	-	82.17	-	81.96	-	-	-	-	81.23	-	76.40	-
17	86.27	-	81.55	-	-	-	-	75.42	-	52.68	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	82.50	82.69	81.96	46.06	-	-
20	88.28	79.20	80.82	75.14	-	-	-	-	-	-	79.31	-

	May-25	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
Inlet 1	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 2	70.25	-	-	-	-	-	-	-	-	-	-	-
Inlet 3	-	-	-	-	-	-	-	-	-	-	-	-
Inlet 4	54.50	-	-	-	-	-	-	-	-	-	-	-
Inlet 5	-	-	-	-	-	-	-	-	-	-	-	-

Table 13c. Alkalinity at Loon Lake surface stations, 2011. All values are in mg/L, as $CaCO_3$.

Surface Location	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	89.39	75.58	78.91	78.83	-	-	80.03	78.00	57.83	82.28	77.05	-
2	86.77	79.46	81.89	82.34	-	-	82.05	29.99	81.38	83.13	77.86	-
3	89.85	77.36	80.52	83.43	-	-	82.32	80.51	80.82	84.69	76.62	-
4	88.33	-	-	-	-	-	-	-	-	-	-	-
5	85.98	73.19	79.06	83.35	-	-	79.36	81.29	80.56	79.45	76.46	-
6	88.42	-	-	-	-	-	-	-	-	-	-	-
7	89.07	-	-	-	-	-	-	-	-	-	-	-
8	87.43	-	-	-	-	-	-	-	-	-	-	-
9	57.58	83.01	78.76	81.11	-	-	83.82	79.91	80.65	82.67	32.77	-
10	87.56	81.09	80.91	81.90	-	-	83.11	52.42	84.18	80.10	76.37	-
11	87.54	-	-	-	-	-	-	-	-	-	-	-
12	47.23	81.59	77.89	80.94	-	-	80.70	53.18	82.06	85.21	74.83	-
13	84.87	-	-	-	-	-	-	-	-	-	-	-
14	87.23	-	-	-	-	-	-	-	-	-	-	-
15	87.27	80.26	81.09	80.83	-	-	82.29	83.41	-	85.34	77.45	-
16	88.78	-	-	-	-	-	-	-	-	-	-	-

Table 14a. Phytoplankton biovolume by phylum at Loon Lake Mid Site, 2011. All measurements in mm/mL^3.

Top (.5 m)

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	6,432	23,437	42,456	199,296	82,172	26,591	16,468	9,308	12,888	5,716	8,592
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	43,816	2,544	2,544	0	0	0	0	0	0	0	6,360
Chrysophyta	0	2,000	49,800	26,092	200	0	4,000	1,000	7,292	0	200
Bacillariophyta	103,500	27,350	53,300	92,840	94,600	2,050	1,500	3,500	5,800	6,350	150,550
Cyanophyta	0	23	113	0	0	768	0	0	2,147	136	39,500
Other	0	0	0	0	0	0	500	0	0	500	0
All Phyla Totals	***153,748***	***55,354***	***148,213***	***318,228***	***176,972***	***29,409***	***21,968***	***13,808***	***28,127***	***12,202***	***205,202***

Mid

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	3,506	15,728	68,083	122,375	35,060	45,232	33,661	133,664	20,012	132,148	5,716
Euglenophyta	0	0	0	0	0	0	7,775	0	0	0	0
Pyrrhophyta	81,272	1,000	1,272	11,448	0	40,000	40,000	0	0	0	40,000
Chrysophyta	1,000	0	16,000	50,000	400	3,292	0	0	0	0	98,000
Bacillariophyta	14,900	13,900	99,050	315,450	421,800	9,500	96,570	4,125	102,400	4,500	37,550
Cyanophyta	0	23	2,933	4,036	113	158	4,712	2,848	0	294	271
	0	0	0	0	0	0	0	0	500	0	0
All Phyla Totals	***100,678***	***30,651***	***187,338***	***503,309***	***457,373***	***98,182***	***182,718***	***140,637***	***122,412***	***136,942***	***181,537***

Bottom

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	0	1,432	7,876	3,580	716	0	0	0	0	716	111
Euglenophyta	7,775	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	0	0	0	0	0	1,000	0	40,000	0	0
Chrysophyta	0	3,292	200	0	0	0	0	21,000	0	0	0
Bacillariophyta	60,400	189,025	3,140	3,750	900	300	23	300	300	300	350
Cyanophyta	0	0	9,176	0	0	68	0	0	0	0	0
	0	0	0	0	0	0	*1.739*	0	0	0	0
All Phyla Totals	***68,175***	***193,749***	***20,392***	***7,330***	***1,616***	***368***	***0***	***21,300***	***40,300***	***1,016***	***461***

Totals

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	9,938	40,597	118,415	325,251	117,948	71,823	50,129	142,972	32,900	138,580	14,419
Euglenophyta	7,775	0	0	0	0	0	7,775	0	0	0	0
Pyrrhophyta	125,088	3,544	3,816	11,448	0	40,000	41,000	0	40,000	0	46,360
Chrysophyta	1,000	5,292	66,000	76,092	600	3,292	4,000	22,000	7,292	0	98,200
Bacillariophyta	178,800	230,275	155,490	412,040	517,300	11,850	98,093	7,925	108,500	11,150	188,450
Other	0	0	0	0	0	0	2,239	0	500	500	0
Cyanophyta	0	45	12,222	4,036	113	994	4,712	2,848	2,147	429	39,771
All except cyanophyta	322,601	279,708	343,721	824,831	635,848	126,965	203,235	172,897	189,192	150,230	347,429
All Phyla Totals	322,601	279,753	355,943	828,867	635,961	127,959	207,947	175,745	191,339	150,659	387,200

Figure 11. Surface phytoplankton biovolume by group for Mid Site at Loon Lake, 2011

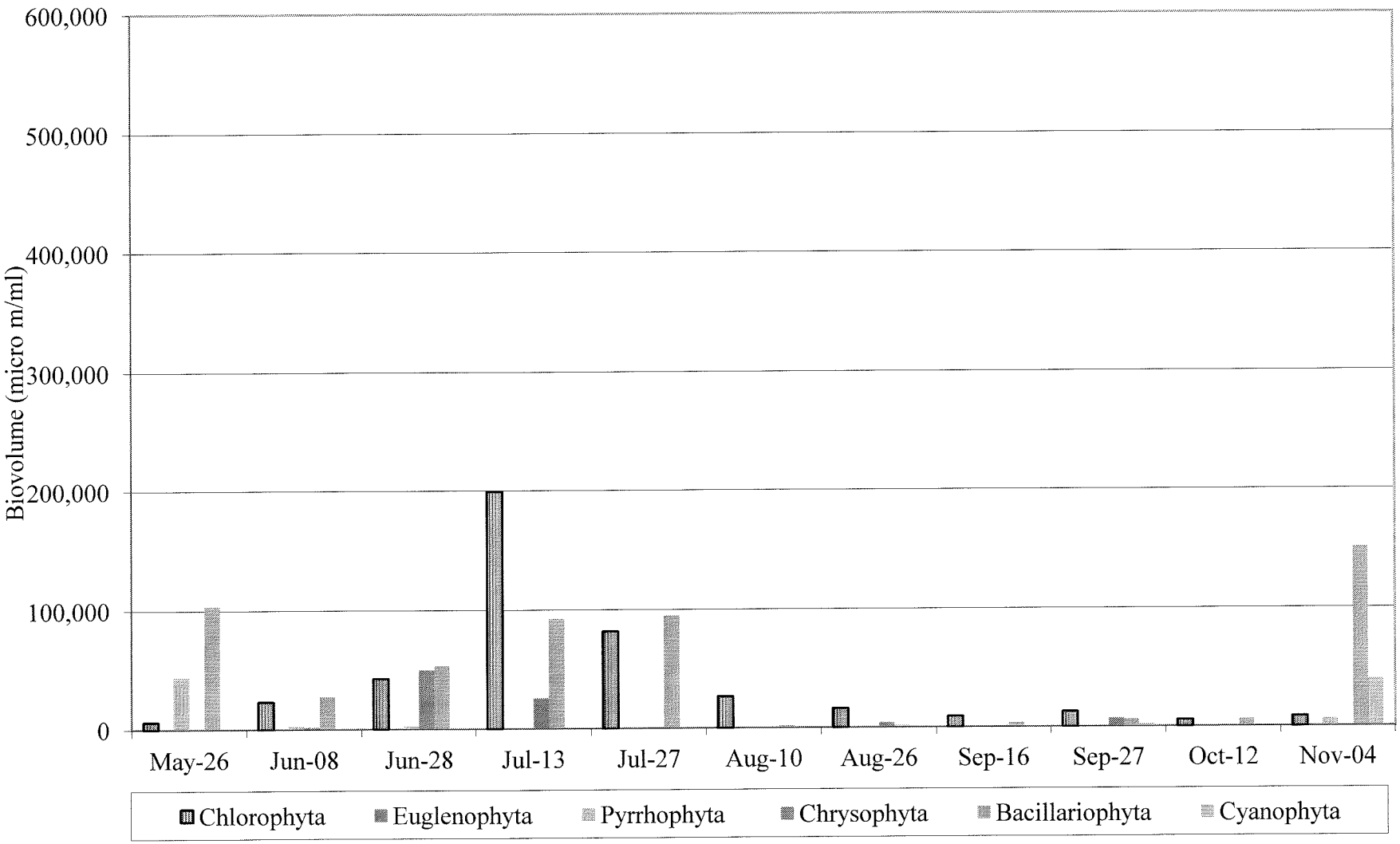


Figure 12. Surface phytoplankton biovolume for Mid Site at Loon Lake, 2011.

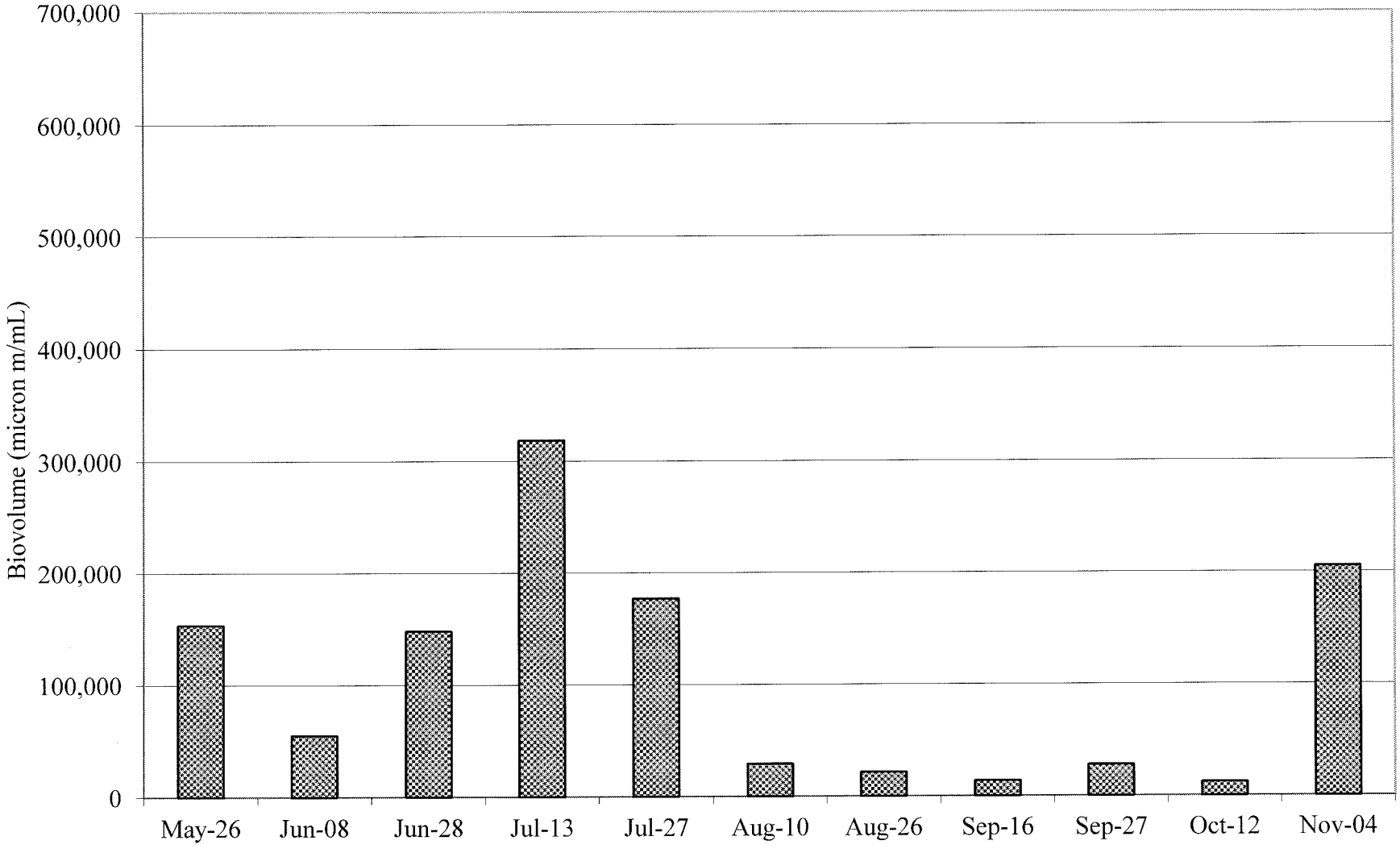


Table 14b. Phytoplankton biovolume by phylum at Loon Lake North Site, 2011. All measurements in mm/mL^3.

Top (.5 m)

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	2,148	9,296	16,265	3,740	17,888	20,764	9,308	10,740	5,262	5,012	21,456
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	5,088	0	50,000	0	0	0	0	0	0	0
Chrysophyta	0	0	94,400	1,000	88,400	25,000	105,292	1,000	0	1,000	90,000
Bacillariophyta	12,950	224,450	104,600	90,950	2,100	6,600	1,800	300	900	10,900	511,500
Cyanophyta	0	6,990	622	0	0	0	0	11	2,091	1,955	2,185
Other	0	0	0	0	0	0	0	1,000	0	500	0
All Phyla Totals	***15,098***	***245,824***	**215,265**	***145,690***	***108,388***	***52,364***	***116,400***	***12,051***	***8,253***	***18,867***	***625,141***

Mid

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	2,685	19,546	28,126	34,879	64,905	44,412	35,681	134,296	4,117	3,615	7,410
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	45,088	1,272	3,816	40,000	0	85,088	50,000	0	0	0
Chrysophyta	6,000	0	2,600	18,200	2,400	200	90,000	1,000	0	1,000	183,292
Bacillariophyta	110,400	12,450	69,050	101,950	186,125	92,700	10,075	600	9,300	97,870	589,570
Cyanophyta	0	0	463	271	237	124	181	531	45	11	79
Other	0	0	0	0	0	500	500	0	0	0	0
All Phyla Totals	***119,085***	***77,084***	***101,511***	***159,116***	***293,667***	***137,436***	***221,025***	***186,427***	***13,462***	***102,496***	***780,351***

Bottom

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	-	716	2,148	0	3,580	1,253	2,864	716	716	5,716	0
Euglenophyta	-	0	0	7,775	0	7,775	0	0	0	0	0
Pyrrhophyta	-	0	0	0	0	0	0	0	0	0	0
Chrysophyta	-	0	0	2,000	13,584	1,000	10,584	0	1,000	0	0
Bacillariophyta	-	9,450	1,250	2,400	5,400	99,000	98,900	1,700	3,700	2,150	1,600
Cyanophyta	-	1,898	34	0	0	667	0	475	0	0	249
Other	-	0	0	0	0	0	0	0	0	0	0
All Phyla Totals	**-**	***12,064***	***3,432***	***12,175***	***22,564***	***109,695***	***112,348***	***2,891***	***5,416***	***7,866***	***1,849***

Totals

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	4,833	29,558	46,539	38,619	86,373	66,429	47,853	145,752	10,095	14,343	28,866
Euglenophyta	0	0	0	7,775	0	7,775	0	0	0	0	0
Pyrrhophyta	0	50,176	1,272	53,816	40,000	0	85,088	50,000	0	0	0
Chrysophyta	6,000	0	97,000	21,200	104,384	26,200	205,876	2,000	1,000	2,000	273,292
Bacillariophyta	123,350	246,350	174,900	195,300	193,625	198,300	110,775	2,600	13,900	110,920	1,102,670
Other	0	0	0	0	0	500	500	1,000	0	500	0
Cyanophyta	0	8,888	1,119	271	237	791	181	1,017	2,136	1,966	2,512
All except cyanophyta	134,183	326,084	319,711	316,710	424,382	299,204	450,092	201,352	24,995	127,763	1,404,828
All Phyla Totals	134,183	334,972	320,830	316,981	424,619	299,995	450,273	202,369	27,131	129,729	1,407,340

Table 14c. Surface phytoplankton biovolume by phylum of surface samples at Loon Lake Mid and North Sites, 2011. All measurements in mm/mL^3.

North

Top (.5 m)

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	2,148	9,296	16,265	3,740	17,888	20,764	9,308	10,740	5,262	5,012	21,456
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	5,088	0	50,000	0	0	0	0	0	0	0
Chrysophyta	0	0	94,400	1,000	88,400	25,000	105,292	1,000	0	1,000	90,000
Bacillariophyta	12,950	224,450	104,600	90,950	2,100	6,600	1,800	300	900	10,900	511,500
Other	0	0	0	0	0	0	0	1,000	0	500	0
Cyanophyta	0	6,990	622	0	0	0	0	11	2,091	1,955	2,185
All except cyano's	**15,098**	**238,834**	**215,265**	**145,690**	**108,388**	**52,364**	**116,400**	**13,040**	**6,162**	**17,412**	**622,956**
All Phyla Totals	**15,098**	**245,824**	**215,887**	**145,690**	**108,388**	**52,364**	**116,400**	**13,051**	**8,253**	**19,367**	**625,141**

Mid

Top (.5 m)

	May-26	Jun-08	Jun-28	Jul-13	Jul-27	Aug-10	Aug-26	Sep-16	Sep-27	Oct-12	Nov-04
Chlorophyta	6,432	23,437	42,456	199,296	82,172	26,591	16,468	9,308	12,888	5,716	8,592
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	43,816	2,544	2,544	0	0	0	0	0	0	0	6,360
Chrysophyta	0	2,000	49,800	26,092	200	0	4,000	1,000	7,292	0	200
Bacillariophyta	103,500	27,350	53,300	92,840	94,600	2,050	1,500	3,500	5,800	6,350	150,550
Other	0	0	0	0	0	0	500	0	0	500	0
Cyanophyta	0	23	113	0	0	768	0	0	2,147	136	39,500
All except cyano's	**153,748**	**55,331**	**148,100**	**318,228**	**176,972**	**28,641**	**22,468**	**13,808**	**25,980**	**12,566**	**165,702**
All Phyla Totals	**153,748**	**55,354**	**148,213**	**318,228**	**176,972**	**29,409**	**22,468**	**13,808**	**28,127**	**12,702**	**205,202**

Table 15. Secchi depths in Loon Lake, 2011. All values in meters.

	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
Mid:	3.25	3.75	4.5	5	6.25	5.5	5.75	5.5	4.5	4.75	3.75	4.5
North:	3.5	3.5	4.5	5.5	5.75	5.5	5.75	6	4.5	4.25	3.75	-

Table 16. Average monthly zooplankton summaries by major groups in Loon Lake North and Mid Sites, 2011. All counts in number of organisms/m^3.

NORTH

Zooplankton group	May	June	July	August	September	October	November	Total
Cladocera	32,172	10,676	5,370	733	1,479	3,127	5,730	59,287
Copepoda	23,460	16,009	7,143	4,889	3,459	3,658	14,246	72,864
Nauplii	30,781	16,859	4,580	2,162	4,675	3,688	11,425	74,170
Rotifera	141,741	98,608	27,528	10,359	4,713	7,612	41,231	331,793
Chaoboridae	0	0	0	0	0	0	0	0
Total # Zoo	228,154	142,152	44,621	18,144	14,326	18,086	72,631	538,114

MID

Zooplankton group	May	June	July	August	September	October	November	Total
Cladocera	47,863	13,939	6,762	2,076	1,692	2,366	2,199	76,898
Copepoda	56,723	15,431	7,967	6,067	3,319	4,690	7,856	102,053
Nauplii	60,415	14,016	3,689	7,419	3,128	4,427	7,394	100,489
Rotifera	125,557	110,874	19,689	20,584	4,298	8,831	35,713	325,546
Chaoboridae	0	0	0	0	0	0	0	0
Total # Zoo	290,558	154,260	38,107	36,147	12,438	20,313	53,162	604,986

Lake Average

Zooplankton group	May	June	July	August	September	October	November	Total
Cladocera	40,017	12,308	6,066	1,405	1,586	2,746	3,964	68,092
Copepoda	40,092	15,720	7,555	5,478	3,389	4,174	11,051	87,459
Nauplii	45,598	15,438	4,134	4,791	3,901	4,057	9,410	87,329
Rotifera	133,649	104,741	23,609	15,472	4,506	8,222	38,472	328,670
Chaoboridae	0	0	0	0	0	0	0	0
Total # Zoo	259,356	148,206	41,364	27,145	13,382	19,200	62,897	571,550

Total Zooplankton (number of organisms/m^3) in the Epilimnion for each sampling site by month

Site	May	June	July	August	September	October	November	Total
MID	227,804	187,218	33,780	22,079	8,812	27,230	67,939	574,861
NORTH	181,202	136,714	31,202	8,871	7,136	19,660	136,729	521,514

Table 17a. Benthic invertebrate densities in Loon Lake, 2011. All densities in organisms/m^2.

B2	**May-24**	**May-27**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**
Chironomidae	140	258	398	1097	1376	1978	2795	441	226	2107	516	828
Oligochate	65	301	527	473	258	645	441	65	43	559	215	473
Chaoboridae	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	129	387	430	387	656	11	43	387	172	172

B3	**May-24**	**May-27**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**
Chironomidae	1193	258	430	1344	409	2924	3365	4300	4472	4150	5246	5031
Oligochate	4160	301	2655	4569	1838	1419	2322	2559	1720	2580	8944	8170
Chaoboridae	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	204	0	0	0	0	43	0	0	0	0

B7	**May-24**	**May-27**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**
Chironomidae	1677	2279	1021	0	1677	1591	5278	4289	1806	946	3096	1075
Oligochate	785	258	280	0	903	86	4795	624	2967	688	1462	989
Chaoboridae	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	1527	1806	806	0	2903	301	2021	742	387	1290	2623	6321

B10	**May-24**	**May-27**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**
Chironomidae	1247	1537	1150	516	968	3268	3311	2365	2193	2666	3784	4472
Oligochate	5590	3021	5827	2494	6934	5504	8439	5031	7095	12169	989	10406
Chaoboridae	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	32	0	0	0	0	0	0	0	2322	0

Table 17b. Monthly average benthic invertebrate densities in Loon Lake, 2011. All densities in organisms/m^2.

B2	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**
Chironomidae	199	747	1677	1618	1166	672
Oligochate	183	500	452	253	301	344
Chaoboridae	0	0	0	0	0	0
Misc.	0	258	409	333	215	172

B3	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**
Chironomidae	726	887	1666	3832	4311	5139
Oligochate	2231	3612	1629	2440	2150	8557
Chaoboridae	0	0	0	0	0	0
Misc.	0	102	0	22	0	0

B7	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**
Chironomidae	1978	511	1634	4784	1376	2086
Oligochate	521	140	495	2709	1828	1226
Chaoboridae	0	0	0	0	0	0
Misc.	1666	403	1602	1381	839	4472

B10	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**
Chironomidae	1392	833	2118	2838	2430	4128
Oligochate	4305	4160	6219	6735	9632	5698
Chaoboridae	0	0	0	0	0	0
Misc.	0	16	0	0	0	1161

Table 18. Sampling site GPS locations for Loon Lake, 2011. All locations based on WGS 84 Datum.

Station	Latitude (N)	Longitude (W)	UTM
Mid Profile	48.0361466109752	-117.616771431639	11 U 454024 5320502
North Profile	48.0511981621384	-117.633267519995	11 U 452808 5322185
Surface 1	48.0541437305510	-117.641631402075	11 U 452187 5322517
Surface 2	48.0562684591859	-117.623600922524	11 U 453533 5322742
Surface 3	48.0449712462723	-117.637311788275	11 U 452501 5321495
Surface 4	48.0479947663843	-117.628503078594	11 U 453160 5321826
Surface 5	48.0497211869806	-117.619997039437	11 U 453796 5322012
Surface 6	48.0465808231383	-117.613104432821	11 U 454306 5321659
Surface 7	48.0431290715932	-117.627622978761	11 U 453221 5321284
Surface 8	48.0415810178965	-117.619560258463	11 U 453821 5321107
Surface 9	48.0423622112721	-117.608098424971	11 U 454676 5321187
Surface 10	48.0391568038612	-117.610122989863	11 U 454522 5320832
Surface 11	48.0329185724258	-117.618299033492	11 U 453907 5320144
Surface 12	48.0364963039755	-117.610768647864	11 U 454472 5320537
Surface 13	48.0341898556798	-117.607236681506	11 U 454733 5320279
Surface 14	48.0325922649353	-117.608230439946	11 U 454657 5320102
Surface 15	48.0317345447838	-117.610018886625	11 U 454523 5320007
Surface 16	48.0308789201080	-117.607667176052	11 U 454698 5319911
Benthic 1	48.0542096961289	-117.640481740236	11 U 452273 5322524
Benthic 2	48.0561066884547	-117.623835867270	11 U 453515 5322724
Benthic 3	48.0533601902425	-117.630672063678	11 U 453003 5322423
Benthic 4	48.0446452740579	-117.637089332565	11 U 452517 5321459
Benthic 5	48.0405181087553	-117.627093074843	11 U 453258 5320994
Benthic 6	48.0417280364781	-117.609292929992	11 U 454586 5321118
Benthic 7	48.0330215021967	-117.618261734023	11 U 453910 5320155
Benthic 8	48.0347873177379	-117.607114473357	11 U 454743 5320345
Benthic 9	48.0283562187105	-117.606151476502	11 U 454809 5319630
Benthic 10	48.0399010330438	-117.612945428118	11 U 454312 5320917
Inlet 1	48.0558429937809	-117.618701867759	11 U 453898 5322692
Inlet 2	48.0418731272220	-117.606556070968	11 U 454790 5321132
Inlet 3	48.0406465195119	-117.606816245242	11 U 453785 5320061
Inlet 4	48.0321673024445	-117.619925374165	11 U 452449 5321194
Inlet 5	-	-	-

Table 19a. Water density profiles for Relative Thermal Resistence calculations for Loon Lake mid station, 2011. All values in g/cm^3.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.9992712	0.9990023	0.9985105	0.9980210	0.9979993	0.9976613	0.9977537	0.9981280	0.9986599	0.9991564	0.9997450	0.9999200
1	0.9992712	0.9990182	0.9985485	0.9980210	0.9980210	0.9976613	0.9977993	0.9981068	0.9986416	0.9991564	0.9997450	0.9999200
2	0.9992850	0.9990340	0.9986046	0.9980210	0.9980426	0.9976613	0.9978219	0.9981068	0.9986416	0.9991564	0.9997450	0.9999200
3	0.9992850	0.9990497	0.9986232	0.9980426	0.9980641	0.9976846	0.9978219	0.9981068	0.9986416	0.9991564	0.9997450	0.9999200
4	0.9993524	0.9991113	0.9986599	0.9981490	0.9980855	0.9976846	0.9978444	0.9981068	0.9986416	0.9991564	0.9997450	0.9999200
5	0.9994780	0.9991265	0.9987141	0.9982733	0.9980855	0.9977077	0.9978669	0.9981068	0.9986416	0.9991564	0.9997450	0.9999200
6	0.9995803	0.9991858	0.9988195	0.9985485	0.9985673	0.9980855	0.9978892	0.9981068	0.9986416	0.9991564	0.9997450	0.9999200
7	0.9997008	0.9992572	0.9991858	0.9990340	0.9989374	0.9986961	0.9982117	0.9983341	0.9986416	0.9991564	0.9997450	0.9999200
8	0.9998442	0.9996017	0.9995585	0.9993123	0.9992850	0.9992003	0.9989538	0.9988538	0.9986599	0.9991564	0.9997450	0.9999200
9	0.9998992	0.9997859	0.9997277	0.9995473	0.9994780	0.9993655	0.9993258	0.9993524	0.9990961	0.9991564	0.9997450	0.9999200
10	0.9999295	0.9998374	0.9998234	0.9997364	0.9996724	0.9995803	0.9994780	0.9995247	0.9994040	0.9993655	0.9997450	0.9999200
11	0.9999384	0.9998879	0.9998762	0.9998162	0.9998013	0.9997189	0.9996820	0.9996820	0.9996627	0.9995694	0.9997699	0.9999248
12	0.9999581	0.9999248	0.9999099	0.9998442	0.9998509	0.9998088	0.9998088	0.9997699	0.9998162	0.9997617	0.9998509	0.9999248
13	0.9999616	0.9999506	0.9999426	0.9998879	0.9998879	0.9998701	0.9998638	0.9998442	0.9998701	0.9998509	0.9998879	0.9999248
14	0.9999649	0.9999581	0.9999426	0.9999295	0.9999200	0.9998992	0.9999200	0.9998879	0.9999099	0.9998936	0.9999099	0.9999248
15	0.9999712	0.9999649	0.9999506	0.9999467	0.9999426	0.9999248	0.9999340	0.9999200	0.9999295	0.9999248	0.9999200	0.9999248
16	0.9999741	0.9999681	0.9999581	0.9999581	0.9999544	0.9999340	0.9999426	0.9999384	0.9999384	0.9999384	0.9999248	0.9999248
17	0.9999741	0.9999712	0.9999616	0.9999616	0.9999616	0.9999467	0.9999544	0.9999506	0.9999506	0.9999467	0.9999426	0.9999248
18	0.9999741	0.9999741	0.9999681	0.9999649	0.9999649	0.9999506	0.9999616	0.9999544	0.9999544	0.9999581	0.9999467	0.9999248
19	0.9999769	0.9999741	0.9999712	0.9999681	0.9999681	0.9999616	0.9999616	0.9999616	0.9999616	0.9999581	0.9999506	0.9999295
20	0.9999769	0.9999769	0.9999712	0.9999681	0.9999681	0.9999681	0.9999649	0.9999616	0.9999616	0.9999616	0.9999544	0.9999340
21	0.9999769	0.9999769	0.9999741	0.9999681	0.9999712	0.9999681	0.9999681	0.9999649	0.9999681	0.9999649	0.9999616	0.9999467
22	0.9999795	0.9999769	0.9999741	0.9999712	0.9999741	0.9999712	0.9999712	0.9999681	0.9999681	0.9999681	0.9999616	0.9999506
23	0.9999795	0.9999769	0.9999741	0.9999741	0.9999741	0.9999741	0.9999712	0.9999712	0.9999712	0.9999681	0.9999649	0.9999581
24	0.9999795	0.9999795	0.9999741	0.9999712	0.9999741	0.9999741	0.9999741	0.9999741	0.9999741	0.9999712	0.9999649	0.9999616
25	0.9999795	0.9999795	0.9999769	0.9999741	0.9999769	0.9999769	0.9999741	0.9999741	0.9999741	0.9999741	0.9999649	0.9999649
26	0.9999795	0.9999795	0.9999769	0.9999769	0.9999769	0.9999769	0.9999769	0.9999741	0.9999769	0.9999769	0.9999681	0.9999649
27	0.9999795	0.9999795	0.9999795	0.9999769	0.9999769	0.9999769	0.9999769	0.9999769	0.9999769	0.9999769	0.9999681	0.9999712
28	0.9999795	0.9999795	0.9999795	0.9999795	0.9999769	0.9999769	0.9999769	0.9999769	0.9999795	0.9999795	0.9999712	0.9999741
29	0.9999819	0.9999795	0.9999795	0.9999795	0.9999769	0.9999795	0.9999795	0.9999769	0.9999795	0.9999795	0.9999712	0.9999741
30	0.9999819	0.9999819	0.9999795	0.9999795	0.9999795	0.9999795	0.9999795	0.9999795	0.9999795	0.9999795	0.9999741	0.9999741

Table 19b. Water density profiles for Relative Thermal Resistence calculations for Loon Lake North Station, 2011. All values in g/cm^3.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
0	0.9992432	0.9989043	0.9983740	0.9979114	0.9979993	0.9975198	0.9976613	-	0.9985861	0.9991415	0.9997450	-
1	0.9992432	0.9989043	0.9983938	0.9979114	0.9980426	0.9975198	0.9976613	-	0.9985861	0.9991415	0.9997450	-
2	0.9992432	0.9989209	0.9984526	0.9979556	0.9980855	0.9975437	0.9977077	-	0.9985861	0.9991415	0.9997450	-
3	0.9992432	0.9989538	0.9985673	0.9979556	0.9981280	0.9975437	0.9977537	-	0.9986046	0.9991415	0.9997450	-
4	0.9992432	0.9991113	0.9986416	0.9979556	0.9981280	0.9975674	0.9977537	-	0.9986046	0.9991415	0.9997450	-
5	0.9995016	0.9992003	0.9986961	0.9979556	0.9981490	0.9975910	0.9977765	-	0.9986046	0.9991415	0.9997450	-
6	0.9995803	0.9992432	0.9988022	0.9983341	0.9981490	0.9976380	0.9978219	-	0.9986046	0.9991564	0.9997450	-
7	0.9996328	0.9995473	0.9991113	0.9991265	0.9982937	0.9983341	0.9980641	-	0.9986232	0.9991564	0.9997450	-
8	0.9996820	0.9996724	0.9994040	0.9994780	0.9993258	0.9988707	0.9985861	-	0.9986416	0.9991564	0.9997450	-
9	0.9997534	0.9997534	0.9995694	0.9997277	0.9996328	0.9996428	0.9991265	-	0.9986781	0.9991564	0.9997450	-
10	0.9997780	0.9998305	0.9997364	0.9998088	0.9997364	0.9998013	0.9995911	-	0.9994415	0.9994780	0.9997534	-
11	0.9998374	0.9999099	0.9998374	0.9998821	0.9998509	0.9998638	0.9997780	-	0.9996915	0.9997008	0.9997534	-
12	0.9999200	0.9999467	0.9999046	0.9999150	0.9998992	0.9999099	0.9998509	-	0.9997936	0.9997859	0.9997534	-
13	0.9999384	0.9999544	0.9999295	0.9999384	0.9999295	0.9999248	0.9999099	-	0.9998638	0.9998442	0.9997534	-
14	0.9999544	0.9999544	0.9999426	0.9999467	0.9999467	0.9999340	0.9999340	-	0.9998821	0.9998879	0.9997534	-
15	0.9999616	0.9999581	0.9999544	0.9999544	0.9999506	0.9999467	0.9999467	-	0.9999200	0.9999099	0.9997699	-
16	0.9999649	0.9999649	0.9999581	0.9999581	0.9999544	0.9999544	0.9999467	-	0.9999340	0.9999340	0.9998762	-
17	0.9999681	0.9999649	0.9999616	0.9999616	0.9999581	0.9999581	0.9999506	-	0.9999467	0.9999467	0.9999295	-
18	0.9999741	0.9999712	0.9999681	0.9999649	0.9999616	0.9999616	0.9999544	-	0.9999506	0.9999506	0.9999426	-
19	0.9999741	0.9999712	0.9999681	0.9999649	0.9999649	0.9999616	0.9999581	-	0.9999581	0.9999544	0.9999506	-
20	0.9999769	0.9999712	0.9999681	0.9999681	0.9999649	0.9999649	0.9999616	-	0.9999616	-	-	-

Table 20a. Thermal Relative Resistence (RTR) profiles for Loon Lake Mid Station, 2011.

Depth (m)	May-25	Jun-07	Jun-27	Jul-12	Jul-26	Aug-09	Aug-25	Sep-15	Sep-26	Oct-11	Nov-03	Nov-15
1	0	2	5	0	3	0	6	3	2	0	0	0
2	2	2	7	0	3	0	3	0	0	0	0	0
3	0	2	2	3	3	3	0	0	0	0	0	0
4	8	8	5	13	3	0	3	0	0	0	0	0
5	16	2	7	16	0	3	3	0	0	0	0	0
6	13	7	13	34	60	47	3	0	0	0	0	0
7	15	9	46	61	46	76	40	28	0	0	0	0
8	18	43	47	35	43	63	93	65	2	0	0	0
9	7	23	21	29	24	21	47	62	55	0	0	0
10	4	6	12	24	24	27	19	22	38	26	0	0
11	1	6	7	10	16	17	25	20	32	25	3	1
12	2	5	4	3	6	11	16	11	19	24	10	0
13	0	3	4	5	5	8	7	9	7	11	5	0
14	0	1	0	5	4	4	7	5	5	5	3	0
15	1	1	1	2	3	3	2	4	2	4	1	0
16	0	0	1	1	1	1	1	2	1	2	1	0
17	0	0	0	0	1	2	1	2	2	1	2	0
18	0	0	1	0	0	0	1	0	0	1	1	0
19	0	0	0	0	0	1	0	1	1	0	0	1
20	0	0	0	0	0	1	0	0	0	0	0	1
21	0	0	0	0	0	0	0	0	1	0	1	2
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	1
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	1
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0

Table 20b. Thermal Relative Resistence (RTR) profiles for Loon Lake North Station, 2011.

Depth (m)	**May-25**	**Jun-07**	**Jun-27**	**Jul-12**	**Jul-26**	**Aug-09**	**Aug-25**	**Sep-15**	**Sep-26**	**Oct-11**	**Nov-03**	**Nov-15**
1	0	0	2	0	5	0	0	-	0	0	0	-
2	0	2	7	6	5	3	6	-	0	0	0	-
3	0	4	14	0	5	0	6	-	2	0	0	-
4	0	20	9	0	0	3	0	-	0	0	0	-
5	32	11	7	0	3	3	3	-	0	0	0	-
6	10	5	13	47	0	6	6	-	0	2	0	-
7	7	38	39	99	18	87	30	-	2	0	0	-
8	6	16	37	44	129	67	65	-	2	0	0	-
9	9	10	21	31	38	97	68	-	5	0	0	-
10	3	10	21	10	13	20	58	-	95	40	1	-
11	7	10	13	9	14	8	23	-	31	28	0	-
12	10	5	8	4	6	6	9	-	13	11	0	-
13	2	1	3	3	4	2	7	-	9	7	0	-
14	2	0	2	1	2	1	3	-	2	5	0	-
15	1	0	1	1	0	2	2	-	5	3	2	-
16	0	1	0	0	0	1	0	-	2	3	13	-
17	0	0	0	0	0	0	0	-	2	2	7	-
18	1	1	1	0	0	0	0	-	0	0	2	-
19	0	0	0	0	0	0	0	-	1	0	1	-
20	0	0	0	0	0	0	0	-	0	-	-	-

Figure 13. Surface phytoplankton biovolume by group for North Site at Loon Lake, 2011

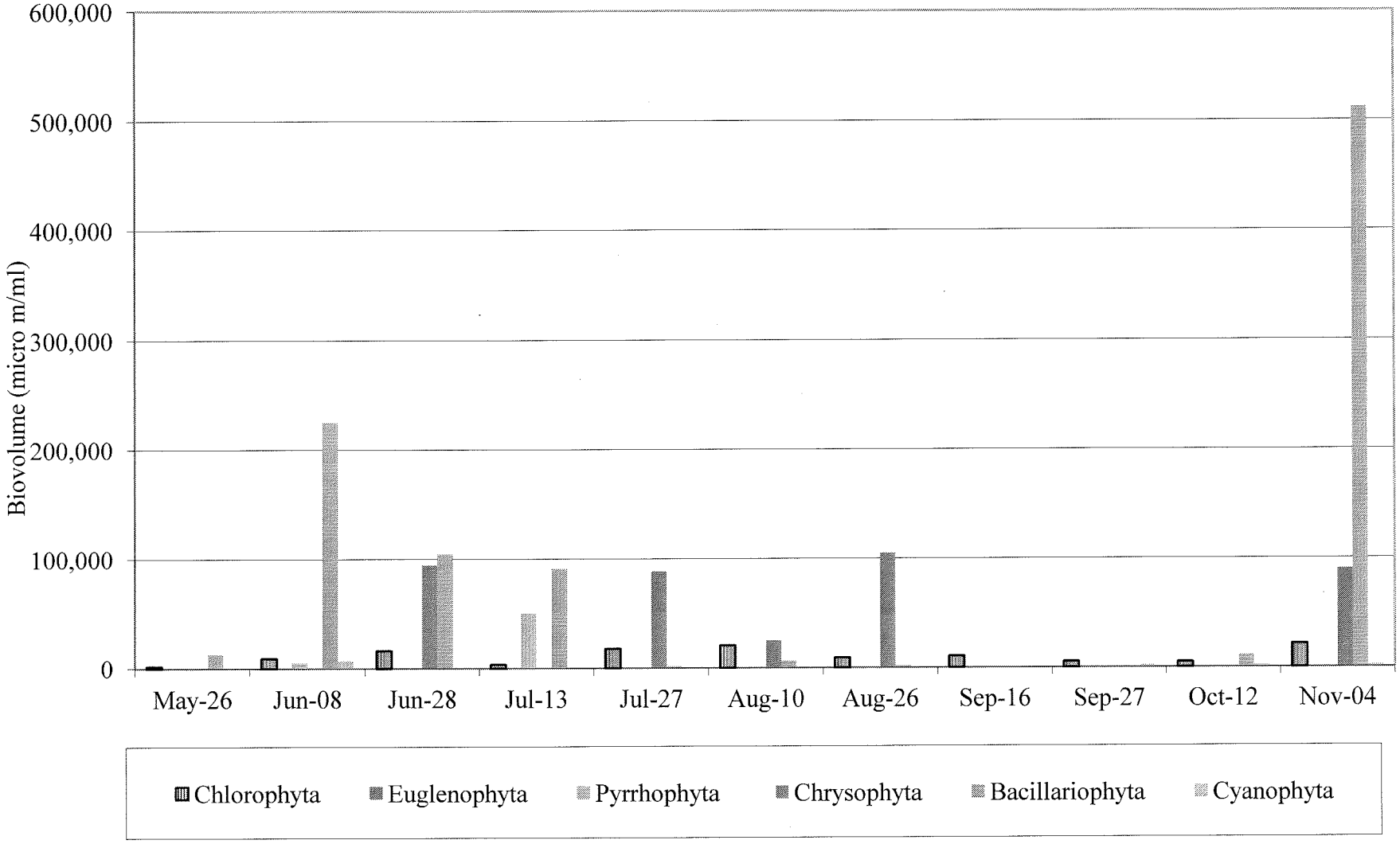


Figure 14. Surface phytoplankton biovolume for North Site at Loon Lake, 2011.

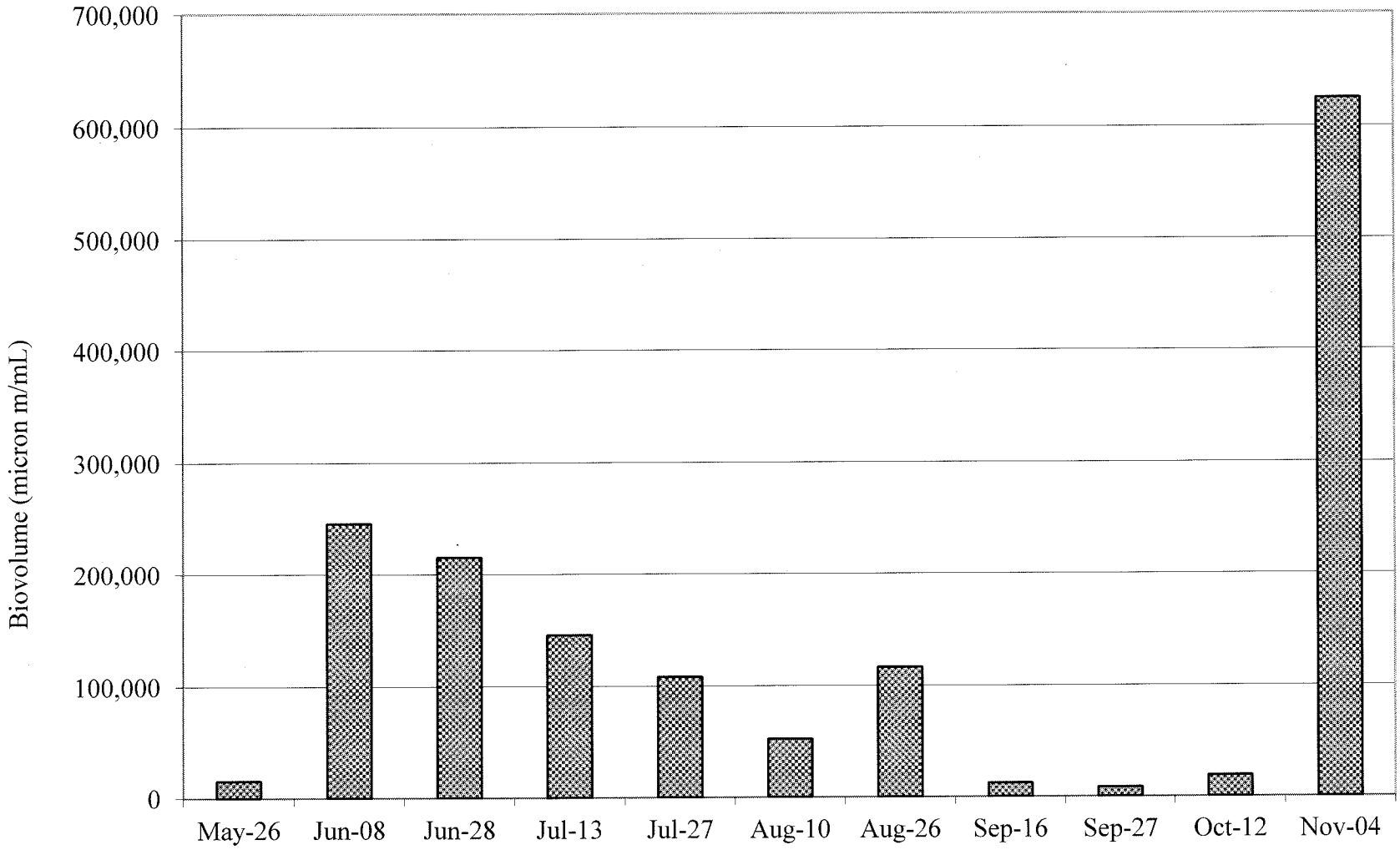


Figure 15. Surface phytoplankton biovolume comparisons between Mid and North Sites at Loon Lake, 2011.

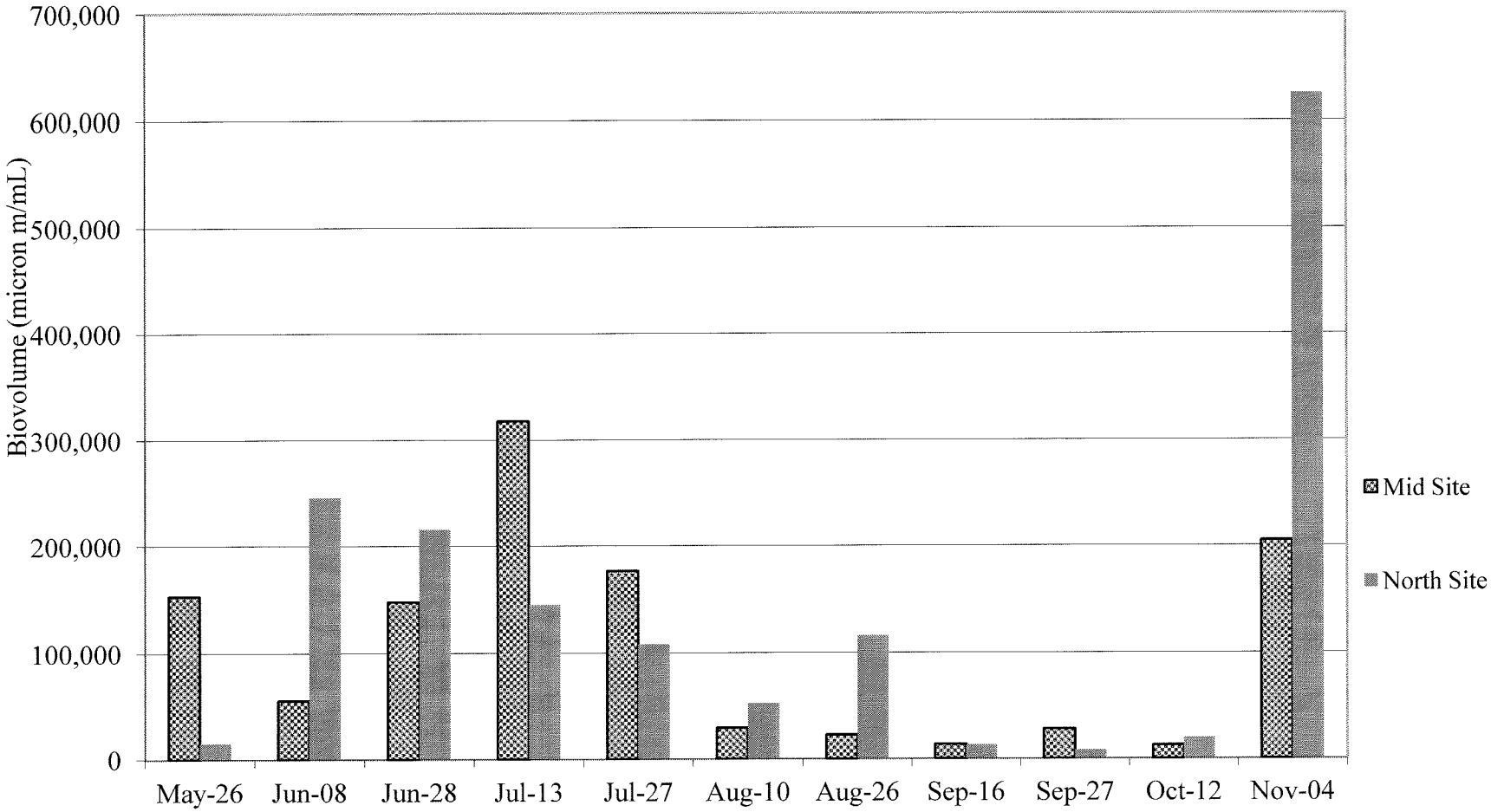


Figure 16. Mean monthly zooplankton density by group for Mid Site at Loon Lake, 2011.

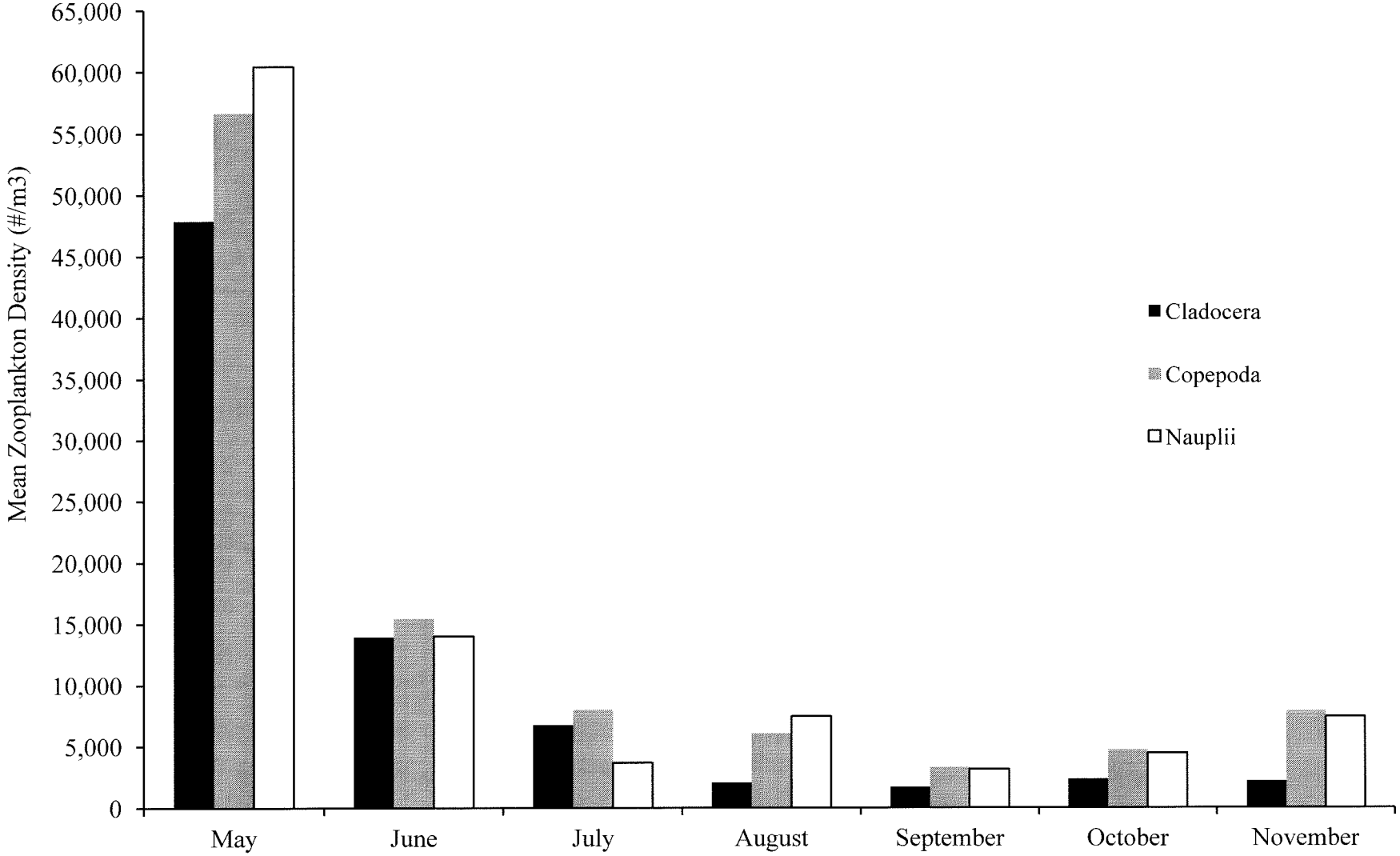


Figure 17. Mean monthly zooplankton density by group for North Site at Loon Lake, 2011

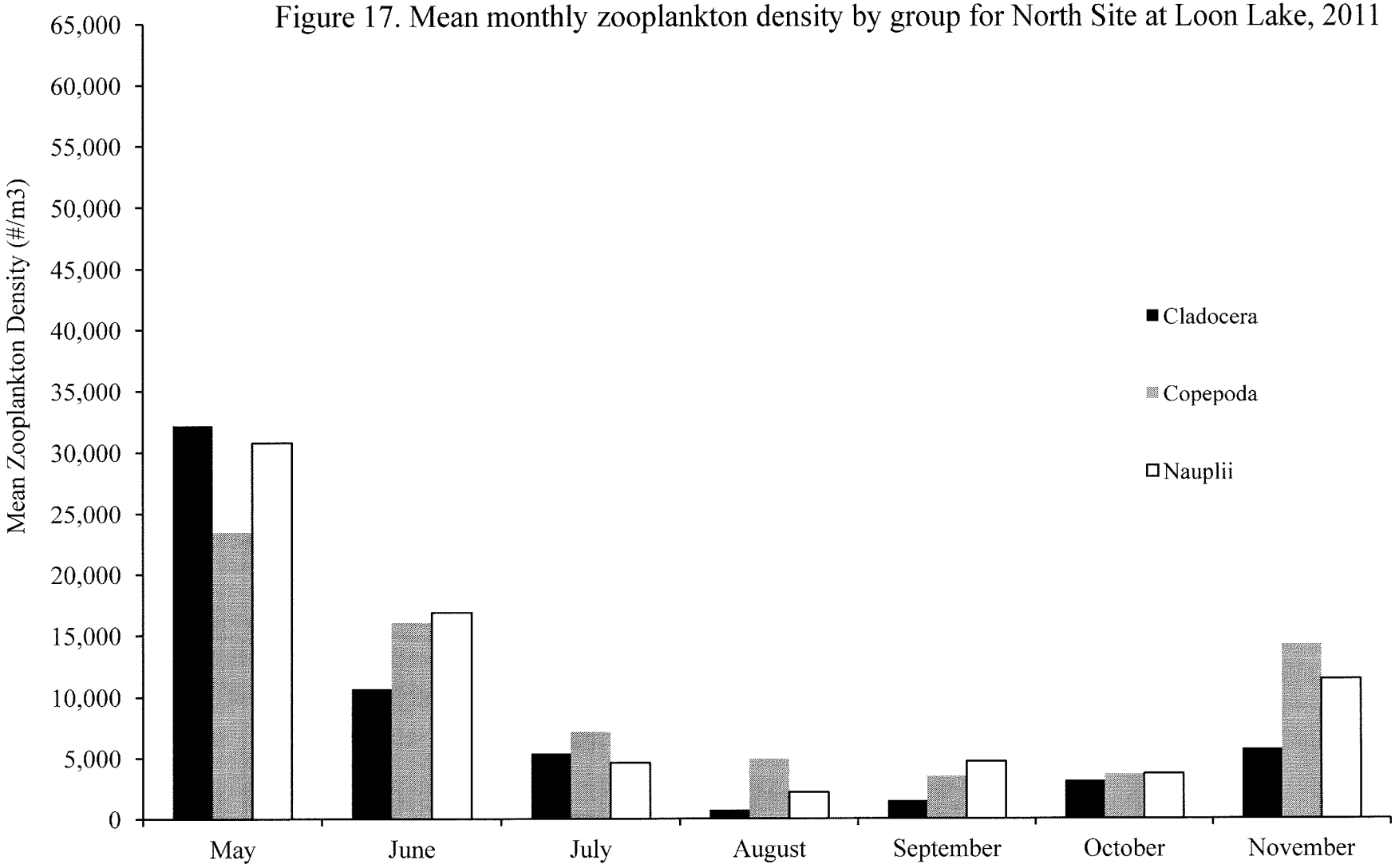


Figure 18. Mean monthly rotifera density for Mid Site at Loon Lake.

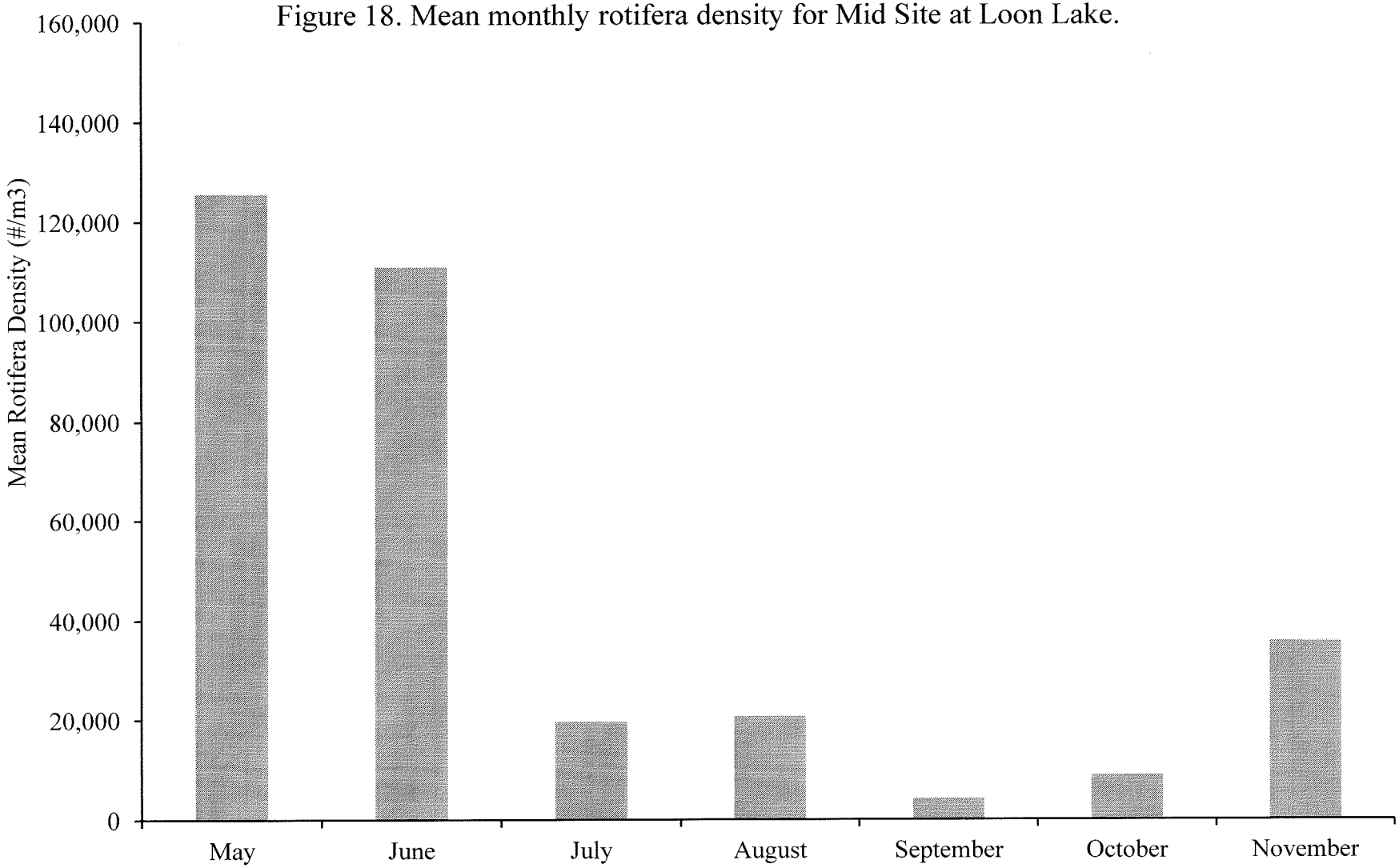


Figure 19. Mean monthly rotifera density for North Site at Loon Lake, 2011

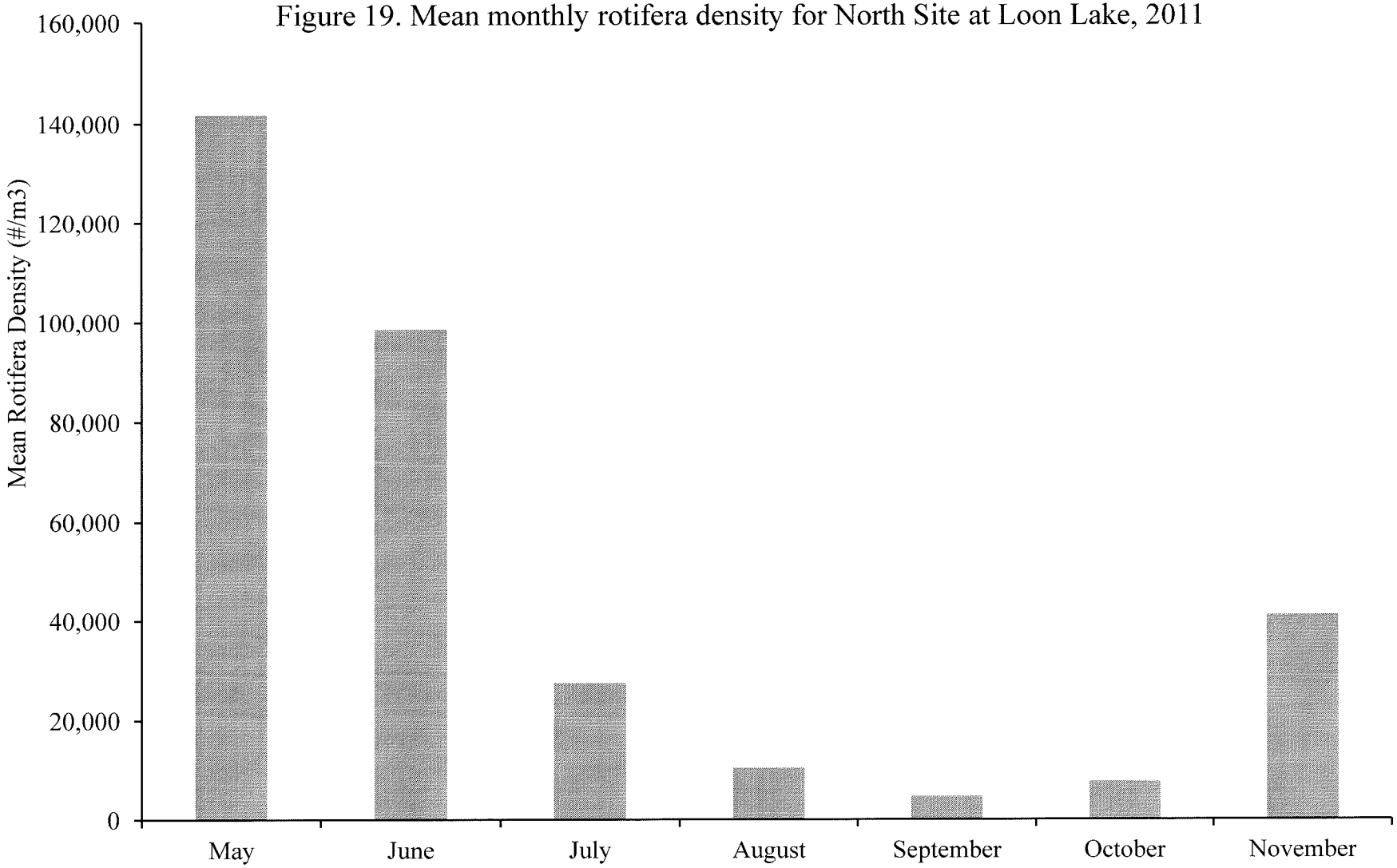


Figure 20. Mean monthly total zooplankton density for Mid Site at Loon Lake, 2011

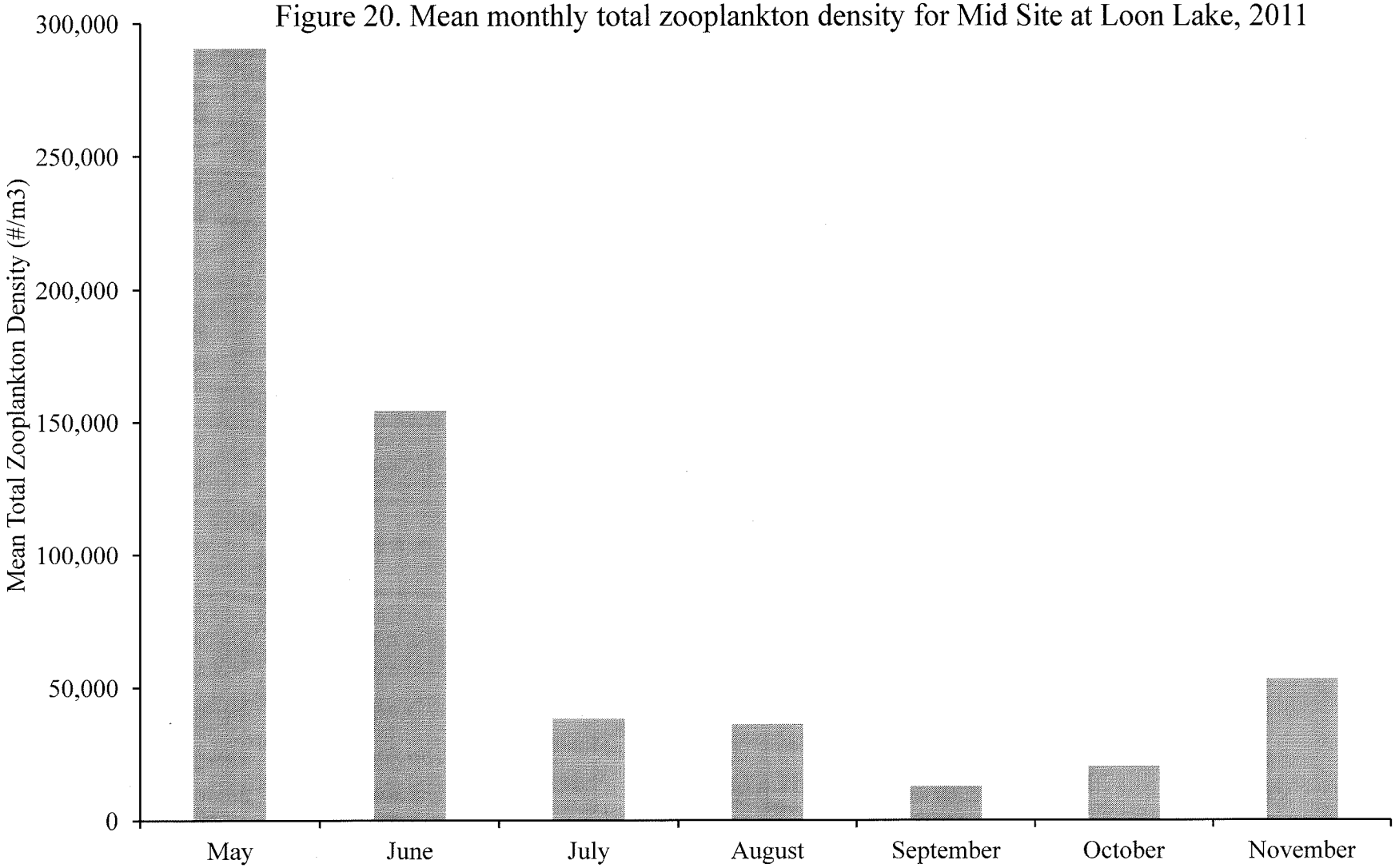


Figure 21. Mean monthly total zooplankton density for North Site at Loon Lake, 2011

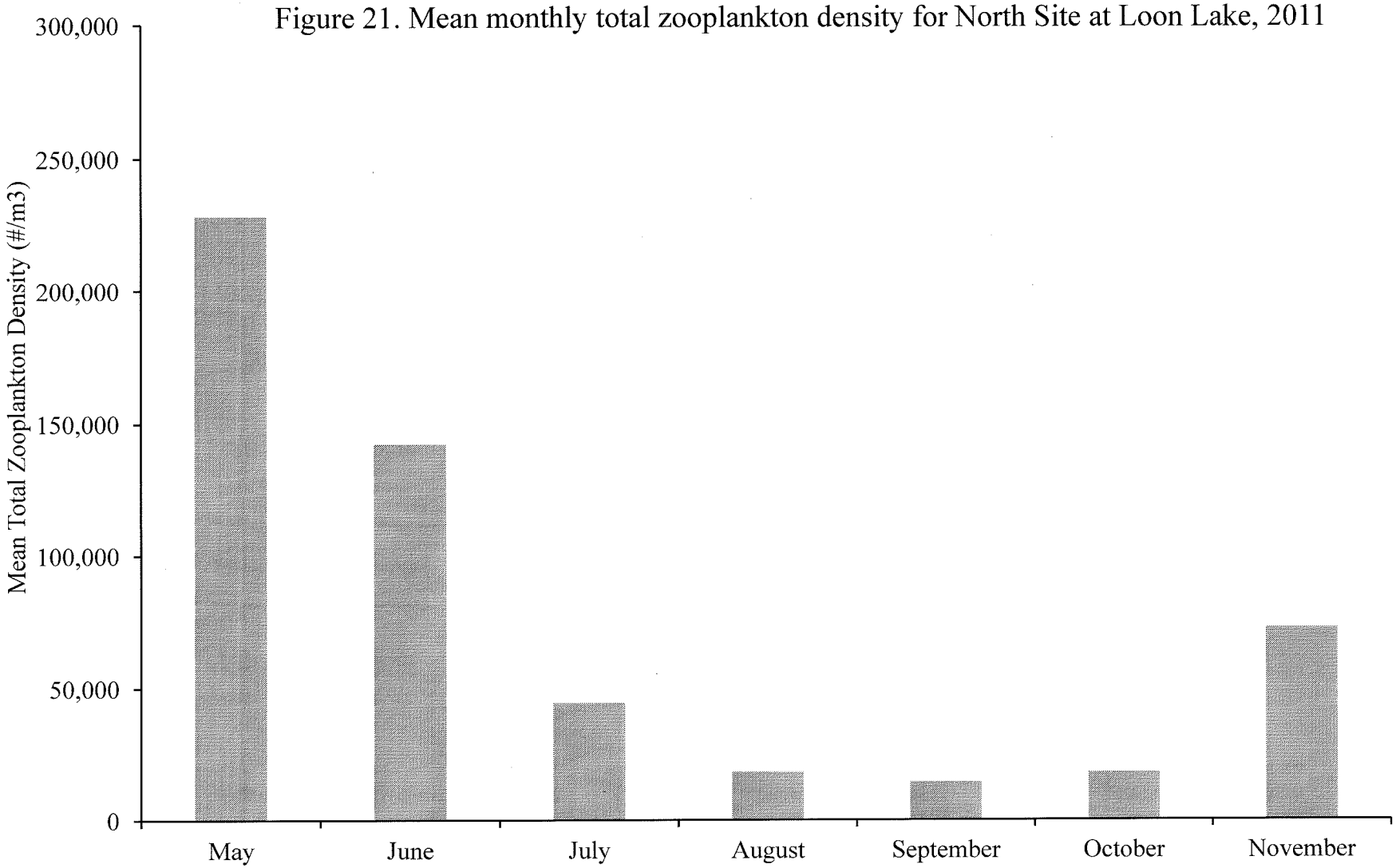


Figure 22. Benthic organism densities for B2 Site at Loon Lake, 2011.

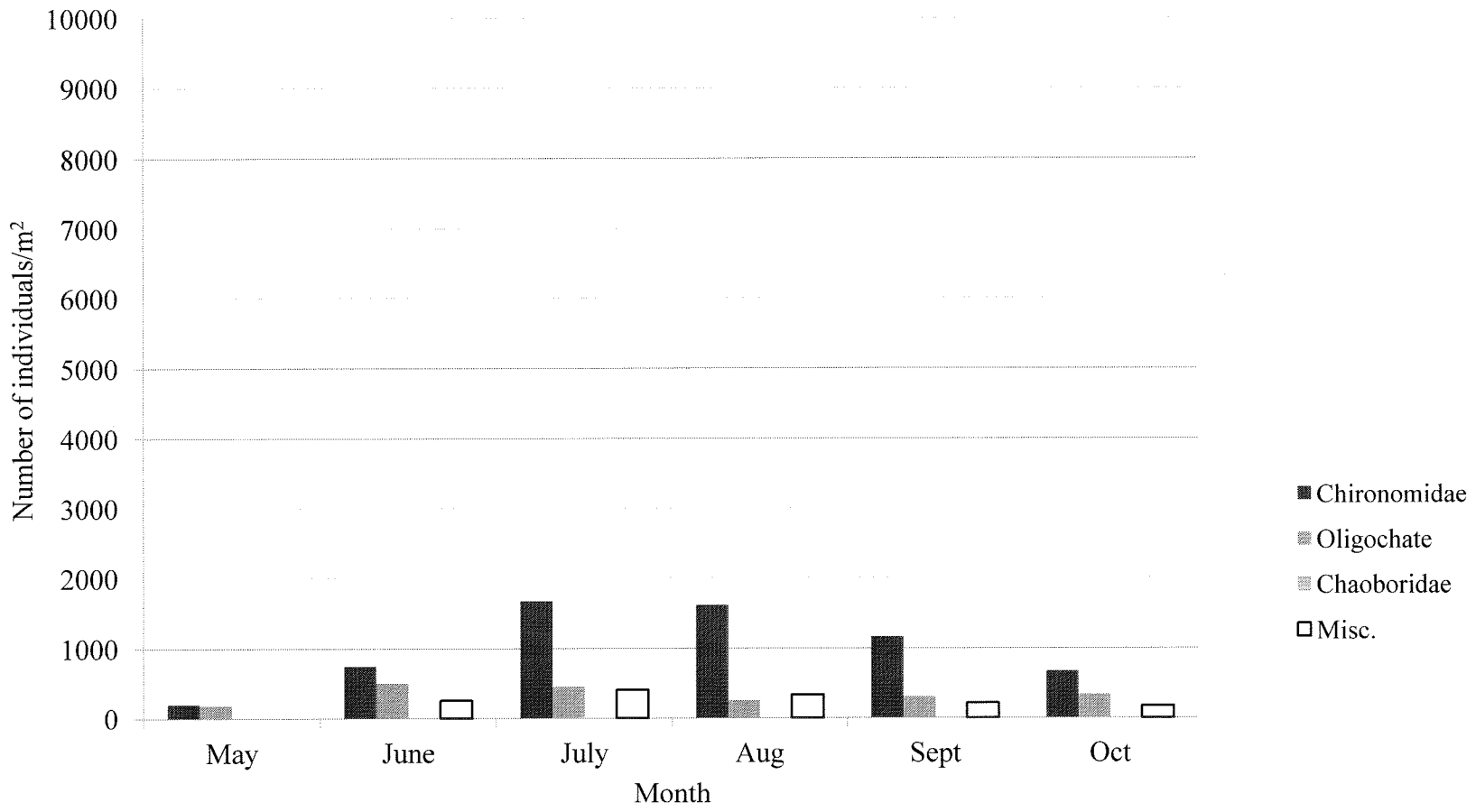


Figure 23. Benthic organism densities for B3 Site at Loon Lake, 2011.

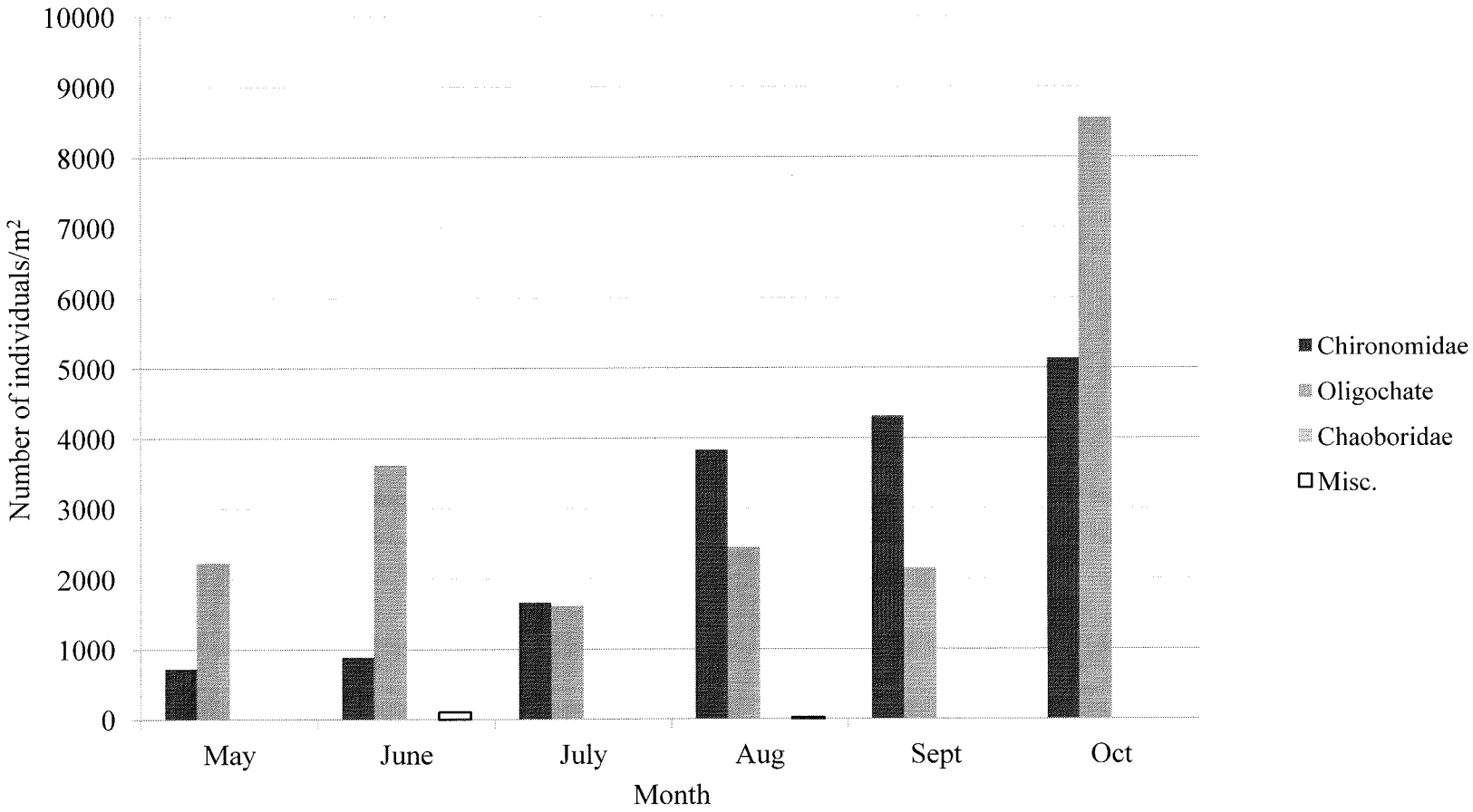


Figure 24. Benthic organism densities for B7 Site at Loon Lake, 2011.

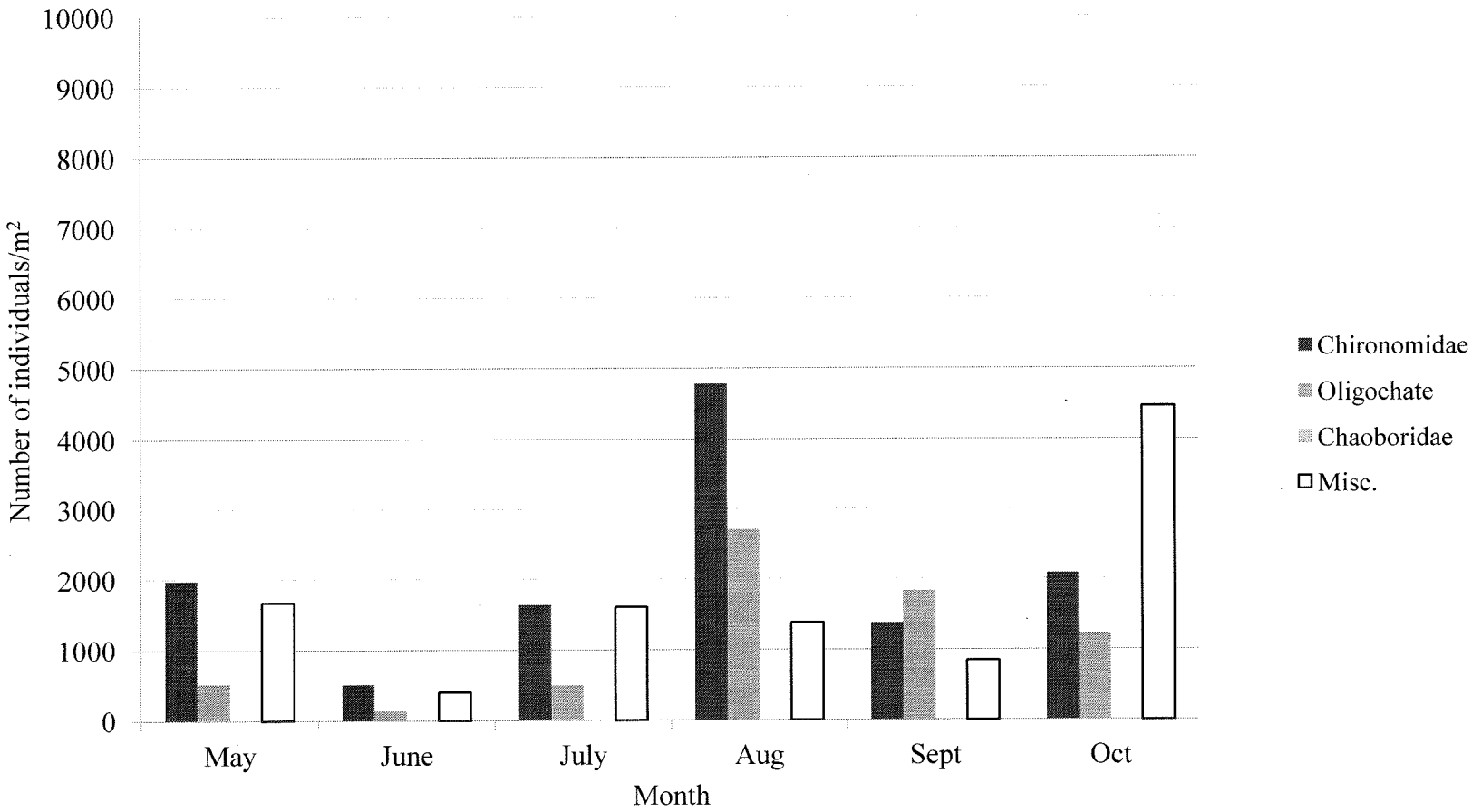
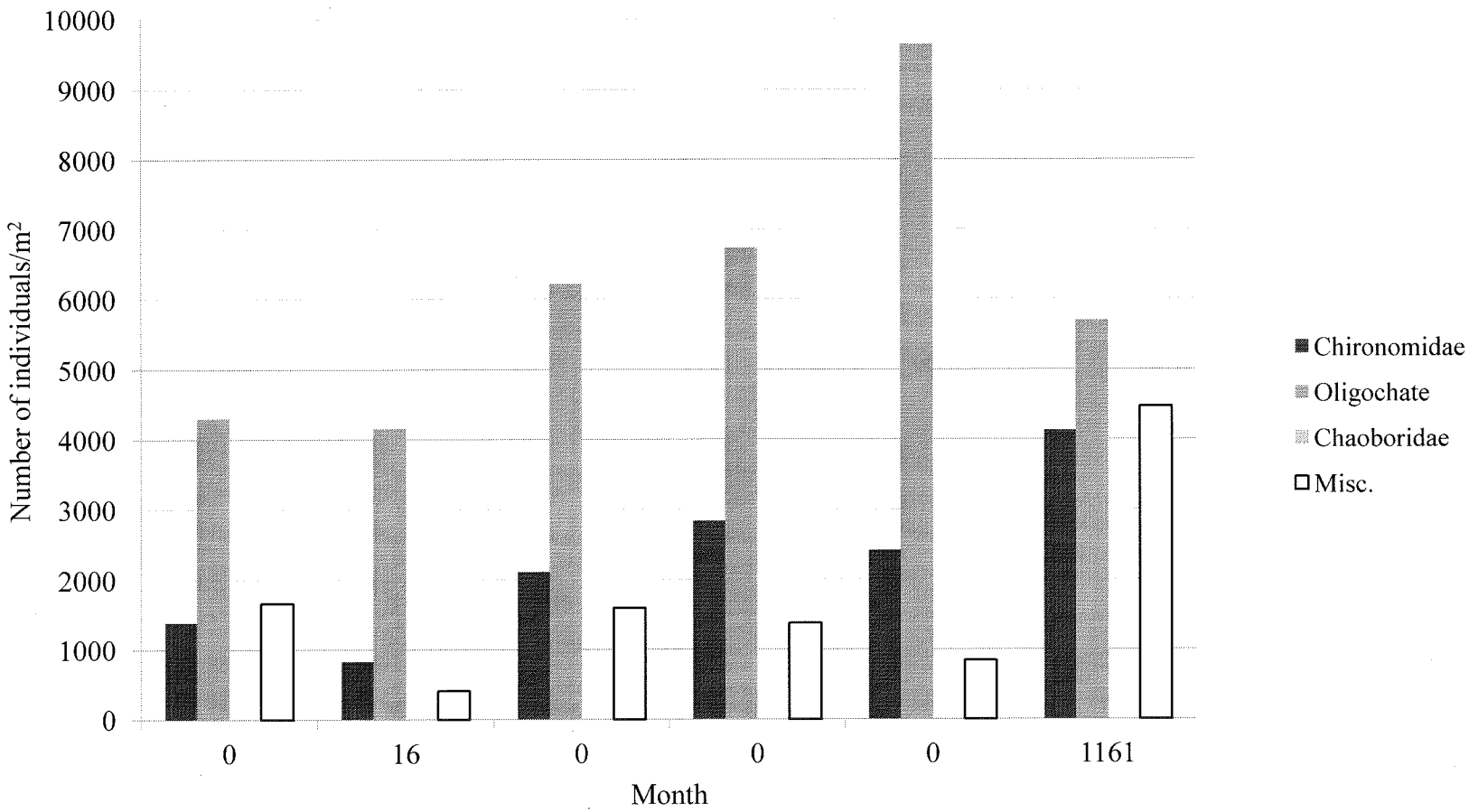


Figure 25. Benthic organism densities for B10 Site at Loon Lake, 2011.



Appendix B. Loon Lake Hydroacoustic Fish Density Estimates

Figures

1. Hydroacoustic fish survey transect map
2. Loon Lake Fish survey echogram example

Tables

1. Latitude/longitude coordinates for fish transects
2. Hydroacoustic fish density estimate summaries by strata
3. Mean fish density vs. temperature
4. Mean fish density vs. dissolved oxygen

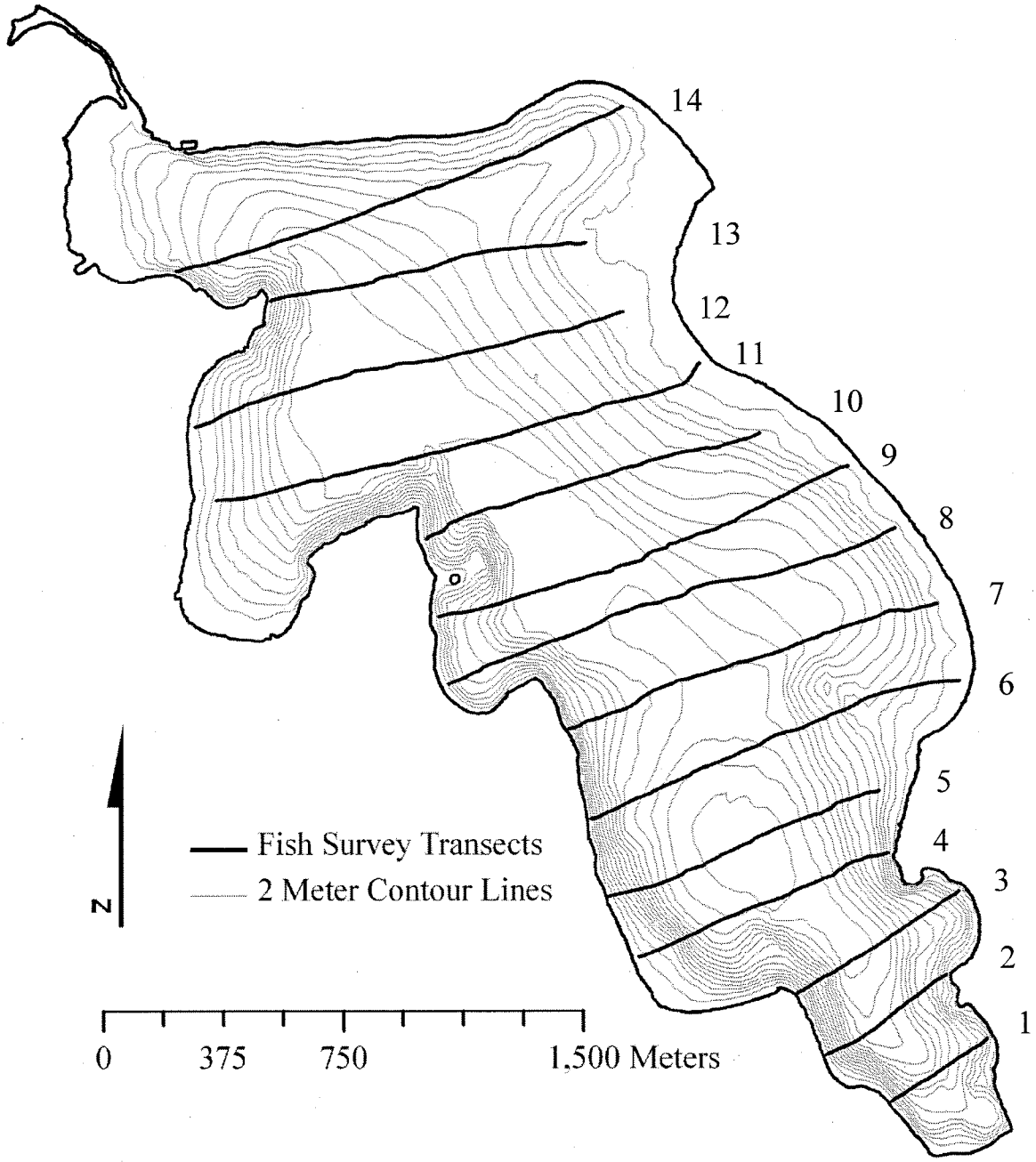


Figure 1. Loon Lake, WA hydroacoustic fish survey transect map with bathymetric contour lines and transect numbers.

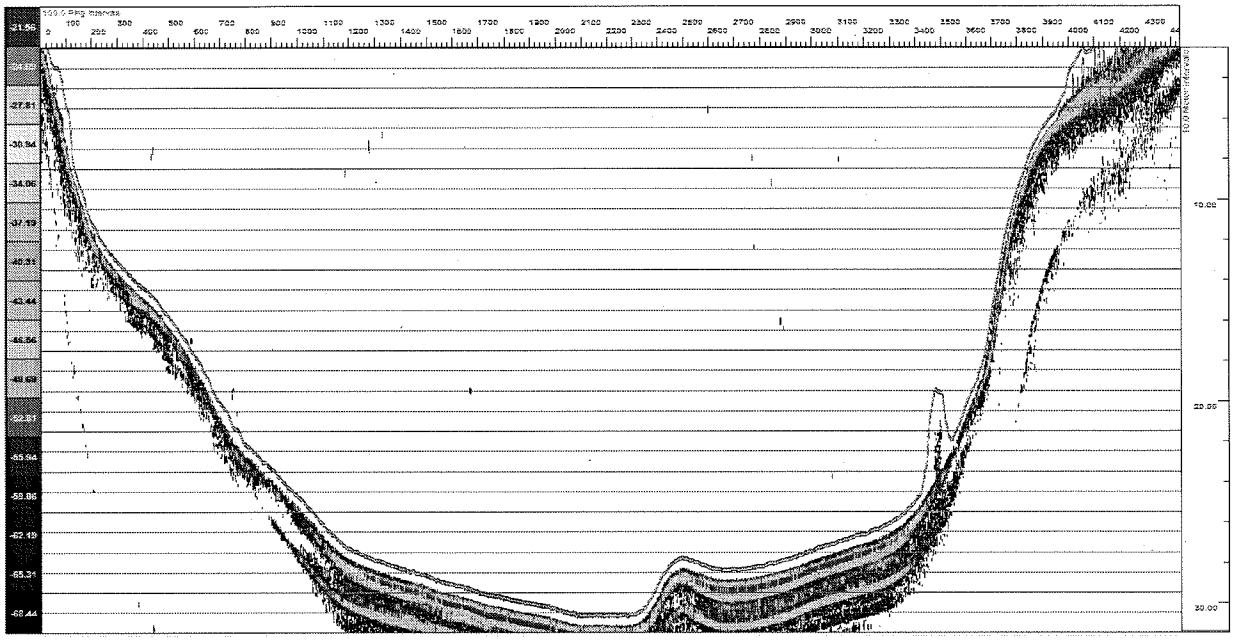


Figure 2. Loon Lake, WA echogram displaying pelagic fish distribution for transect number 4 with the bottom delineated (solid green line) and 1 meter strata (red horizontal lines). Data was collected with a 70 kHz transducer and displayed with a time-varied-gain of 20 from -20 to -70 dB.

Transect	Start Lat/Long		End Lat/Long	
1	48.0310	-117.6058	48.0292	-117.6097
2	48.0328	-117.6074	48.0305	-117.6125
3	48.0351	-117.6069	48.0322	-117.6137
4	48.0362	-117.6099	48.0332	-117.6203
5	48.0379	-117.6103	48.0349	-117.6216
6	48.0371	-117.6224	48.0410	-117.6070
7	48.0431	-117.6079	48.0396	-117.6233
8	48.0408	-117.6283	48.0452	-117.6097
9	48.0470	-117.6117	48.0427	-117.6288
10	48.0449	-117.6293	48.0479	-117.6154
11	48.0498	-117.6180	48.0459	-117.6381
12	48.0479	-117.6391	48.0512	-117.6212
13	48.0532	-117.6227	48.0515	-117.6359
14	48.0523	-117.6399	48.0570	-117.6212

Table 1. Latitude and longitude of the beginning and end of each hydroacoustic fish survey transect.

Depth (m)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Mean	Temp. (°C)	Oxygen (mg/L)
2-3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	20.81	9.05
3-4	0.0000	0.0000	0.0000	0.0000	0.0015	0.0000	0.0000	0.0000	0.0062	0.0000	0.0014	0.0000	0.0000	0.0014	0.0008	20.71	9.14
4-5	0.0000	0.0000	0.0016	0.0029	0.0022	0.0000	0.0000	0.0003	0.0011	0.0000	0.0000	0.0031	0.0016	0.0006	0.0010	20.65	9.14
5-6	0.0000	0.0029	0.0000	0.0020	0.0025	0.0016	0.0002	0.0008	0.0028	0.0006	0.0010	0.0020	0.0000	0.0010	0.0012	18.28	11.96
6-7	0.0000	0.0028	0.0027	0.0056	0.0000	0.0014	0.0021	0.0013	0.0068	0.0014	0.0031	0.0016	0.0017	0.0020	0.0023	16.22	13.08
7-8	0.0033	0.0035	0.0088	0.0058	0.0046	0.0067	0.0028	0.0075	0.0064	0.0081	0.0033	0.0084	0.0051	0.0037	0.0056	13.85	13.25
8-9	0.0036	0.0039	0.0040	0.0024	0.0018	0.0047	0.0089	0.0037	0.0050	0.0064	0.0050	0.0026	0.0090	0.0060	0.0048	12.36	13.01
9-10	0.0040	0.0000	0.0011	0.0000	0.0017	0.0025	0.0027	0.0037	0.0022	0.0062	0.0013	0.0019	0.0030	0.0023	0.0023	10.58	11.86
10-11	0.0000	0.0000	0.0059	0.0009	0.0003	0.0009	0.0028	0.0017	0.0056	0.0042	0.0018	0.0014	0.0023	0.0020	0.0021	9.05	9.91
11-12	0.0000	0.0019	0.0000	0.0016	0.0005	0.0000	0.0026	0.0007	0.0009	0.0020	0.0010	0.0005	0.0012	0.0004	0.0010	8.36	8.99
12-13	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0006	0.0000	0.0000	0.0008	0.0000	0.0000	0.0001	7.78	7.87
13-14	0.0000	0.0000	0.0000	0.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0001	7.21	6.53
14-15	0.0000	0.0000	0.0009	0.0000	0.0003	0.0000	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	6.74	5.15
15-16	0.0000	0.0000	0.0022	0.0018	0.0002	0.0000	0.0000	0.0007	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0004	6.43	3.86
16-17	0.0000	0.0000	0.0000	0.0011	0.0010	0.0004	0.0001	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0002	6.23	3.30
17-18	0.0000	0.0000	0.0000	0.0000	0.0019	0.0013	0.0007	0.0005	0.0000	0.0000	0.0000	0.0006	0.0000	0.0000	0.0004	6.14	2.90
18-19	0.0000	0.0000	0.0000	0.0010	0.0006	0.0001	0.0001	0.0003	0.0020	0.0000	0.0000	0.0000	0.0000		0.0003	6.04	2.64
19-20		0.0000	0.0062	0.0017	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0008	6.01	1.30
20-21		0.0000	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				0.0001	5.93	1.57
21-22		0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000					0.0000	5.84	1.18
22-23		0.0000	0.0005	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000						0.0001	5.79	0.81
23-24		0.0000	0.0000	0.0008	0.0008	0.0000	0.0000	0.0000							0.0002	5.75	0.33
24-25			0.0000	0.0003	0.0002	0.0000									0.0001	5.73	0.30
25-26			0.0000	0.0000	0.0000	0.0000									0.0000	5.72	0.29
26-27			0.0000	0.0000	0.0000	0.0000									0.0000	5.69	0.28
27-28			0.0000	0.0000	0.0000										0.0000	5.66	0.28
28-29				0.0000	0.0000										0.0000	5.65	0.28
29-30				0.0000	0.0000										0.0000	5.60	0.28

Table 2. Fish per cubic meter (FPCM) at 1 meter depth intervals for each transect (1 through 14) and the mean for all transects combined, temperature (°C) and dissolved oxygen concentrations (mg/L) corresponding to depth are displayed.

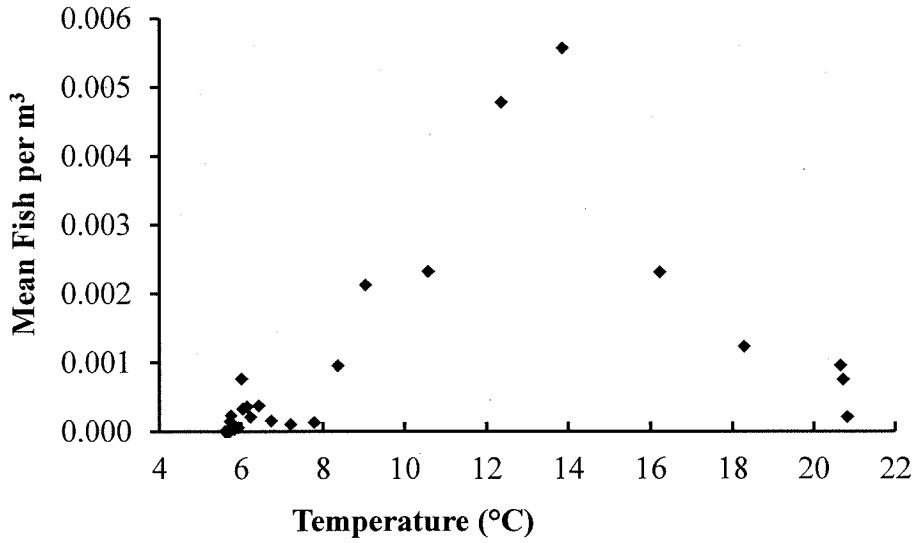


Figure 3. Mean FPCM across all transects compared to temperature (°C).

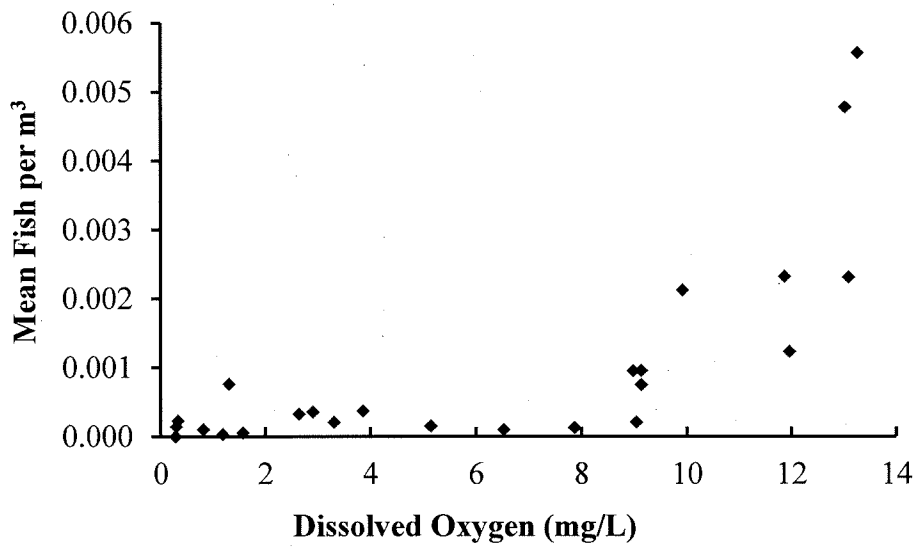


Figure 4. Mean FPCM across all transects compared to dissolved oxygen concentrations (mg/L).

Appendix C. Loon Lake Benthic Invertebrate Densities

Tables

1. Benthic invertebrate densities for B2
2. Benthic invertebrate densities for B3
3. Benthic invertebrate densities for B7
4. Benthic invertebrate densities for B10

Table 1. Loon Lake B2 station benthic invertebrate densities in # individuals/m^2

First sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1	B2 1
Chir.	194	258	710	989	1,204	3,268	2,408	688	172	2,408	688	882
Olig.	43	344	1,054	602	430	946	86	86	86	516	430	430
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	215	258	774	688	860	0	0	258	172	0

Second sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2	B2 2
Chir.	86	258	86	1,204	1,548	688	3,182	194	280	1,806	344	774
Olig.	86	258	0	344	86	344	796	43	0	602	0	516
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	43	516	86	86	452	22	86	516	172	344

Average benthic invertebrates densities between the two bottles

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
Chir.	140	258	398	1,097	1,376	1,978	2,795	441	226	2,107	516	828
Olig.	65	301	527	473	258	645	441	65	43	559	215	473
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	129	387	430	387	656	11	43	387	172	172

Chir.= Chironomidae (midge larvae)
Olig.= Oligochaete (worms)
Chaob.= Chaoborus (phantom midges)

Miscellaneous can include:
Isopoda- Aquatic Sow bug
Sphaeriidae- clams
Hirudinea- leech
Amphipoda- scud
Ephemeroptera- mayflies

Table 2. Loon Lake B3 station benthic invertebrate densities in # individuals/m^2

First sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1	B3 1
Chir.	968	258	452	1,269	237	2,924	3,505	4,816	4,902	3,827	5,504	4,472
Olig.	5,053	344	2,860	3,505	731	2,150	4,257	3,311	2,580	1,656	11,094	3,010
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	65	0	0	0	0	0	0	0	0	0

Second sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2	B3 2
Chir.	1,419	258	409	1,419	581	2,924	3,225	3,784	4,042	4,472	4,988	5,590
Olig.	3,268	258	2,451	5,633	2,946	688	387	1,806	860	3,505	6,794	13,330
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	344	0	0	0	0	86	0	0	0	0

Average benthic invertebrates densities between the two bottles

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
Chir.	1,193	258	430	1,344	409	2,924	3,365	4,300	4,472	4,150	5,246	5,031
Olig.	4,160	301	2,655	4,569	1,838	1,419	2,322	2,559	1,720	2,580	8,944	8,170
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	204	0	0	0	0	43	0	0	0	0

Chir.= Chironomidae (midge larvae)
Olig.= Oligochaete (worms)
Chaob.= Chaoborus (phantom midges)

Miscellaneous can include:
Isopoda- Aquatic Sow bug
Sphaeriidae- clams
Hirudinea- leech
Amphipoda- scud
Ephemeroptera- mayflies

Table 3. Loon Lake B7 station benthic invertebrate densities in # individuals/m^2

First sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1	B7 1
Chir.	1,892	1,376	1,699	0	2,860	2,236	3,935	5,913	3,440	860	5,762	430
Olig.	452	258	516	0	903	172	6,085	1,161	5,848	430	1,634	344
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	1,570	1,892	1,355	0	4,128	516	602	1,140	688	602	2,408	860

Second sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2	B7 2
Chir.	1,462	3,182	344	0	495	946	6,622	2,666	172	1,032	430	1,720
Olig.	1,118	258	43	0	903	0	3,505	86	86	946	1,290	1,634
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	1,484	1,720	258	0	1,677	86	3,440	344	86	1,978	2,838	11,782

Average benthic invertebrates densities between the two bottles

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
Chir.	1,677	2,279	1,021	0	1,677	1,591	5,278	4,289	1,806	946	3,096	1,075
Olig.	785	258	280	0	903	86	4,795	624	2,967	688	1,462	989
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	1,527	1,806	806	0	2,903	301	2,021	742	387	1,290	2,623	6,321

Chir.= Chironomidae (midge larvae)
Olig.= Oligochaete (worms)
Chaob.= Chaoborus (phantom midges)

Miscellaneous can include:
Isopoda- Aquatic Sow bug
Sphaeriidae- clams
Hirudinea- leech
Amphipoda- scud
Ephemeroptera- mayflies

Table 4. Loon Lake B10 station benthic invertebrate densities in # individuals/m^2

First sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1	B10 1
Chir.	968	1,742	1,376	0	731	2,838	3,182	2,494	1,978	2,752	5,762	4,214
Olig.	5,633	3,204	9,073	0	7,504	10,148	4,042	4,214	9,030	9,374	1,634	10,234
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	0	0	0	0	0	0	0	0	2,408	0

Second sample, two dredge pulls per bottle

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2	B10 2
Chir.	1,527	1,333	925	1,032	1,204	3,698	3,440	2,236	2,408	2,580	1,806	4,730
Olig.	5,547	2,838	2,580	4,988	6,364	860	12,836	5,848	5,160	14,964	344	10,578
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	65	0	0	0	0	0	0	0	2,236	0

Average benthic invertebrates densities between the two bottles

Date	May-23	May-26	Jun-06	Jun-26	Jul-11	Jul-25	Aug-08	Aug-24	Sep-14	Sep-25	Oct-10	Nov-02
Chir.	1,247	1,537	1,150	516	968	3,268	3,311	2,365	2,193	2,666	3,784	4,472
Olig.	5,590	3,021	5,827	2,494	6,934	5,504	8,439	5,031	7,095	12,169	989	10,406
Chaob.	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	32	0	0	0	0	0	0	0	2,322	0

Multiply raw count by 21.5 to translate two pulls/bottle of a 36 square inch Ekmas to density per square meter.

Chir.= Chironomidae (midge larvae)
Olig.= Oligochaete (worms)
Chaob.= Chaoborus (phantom midges)

Miscellaneous can include:
Isopoda- Aquatic Sow bug
Sphaeriidae- clams
Hirudinea- leech
Amphipoda- scud
Ephemeroptera- mayflies

Appendix D. Loon Lake Phytoplankton Biovolume Summaries

Tables

1. North site phytoplankton biovolume- surface
2. North site phytoplankton biovolume- mid depth
3. North site phytoplankton biovolume- bottom depth
4. Mid site phytoplankton biovolume- surface
5. Mid site phytoplankton biovolume- mid depth
6. Mid site phytoplankton biovolume- bottom depth

Figures

1. North site phytoplankton biovolume by phylum– surface
2. North site phytoplankton biovolume – surface
3. Surface phytoplankton biovolume comparison
4. Mid site phytoplankton biovolume by phylum– surface
5. Mid site phytoplankton biovolume – surface

Table 1. North Site Phytoplankton Biovolume (mm/mL3) by Phylum-Surface (.5 m)

	5/25/2011	6/7/2011	6/27/2011	7/12/2011	7/26/2011	8/9/2011	8/25/2011	9/15/2011	9/26/2011	10/11/2011	11/3/2011
Chlorophyta	2,148	9,296	16,265	3,740	17,888	20,764	9,308	10,740	5,262	5,012	21,456
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	5,088	0	50,000	0	0	0	0	0	0	0
Chrysophyta	0	0	94,400	1,000	88,400	25,000	105,292	1,000	0	1,000	90,000
Bacillariophyta	12,950	224,450	104,600	90,950	2,100	6,600	1,800	300	900	10,900	511,500
Cyanophyta	0	6,990	622	0	0	0	0	11	2,091	1,955	2,185
Other	0	0	0	0	0	0	0	1,000	0	500	0
All Phyla Totals	***15,098***	***245,824***	**215,265**	***145,690***	***108,388***	***52,364***	***116,400***	***12,051***	***8,253***	***18,867***	***625,141***

Table 2. North Site Phytoplankton Biovolume (mm/mL3) by Phylum-Mid Depth

	5/25/2011	6/7/2011	6/27/2011	7/12/2011	7/26/2011	8/9/2011	8/25/2011	9/15/2011	9/26/2011	10/11/2011	11/3/2011
Chlorophyta	2,685	19,546	28,126	34,879	64,905	44,412	35,681	134,296	4,117	3,615	7,410
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	45,088	1,272	3,816	40,000	0	85,088	50,000	0	0	0
Chrysophyta	6,000	0	2,600	18,200	2,400	200	90,000	1,000	0	1,000	183,292
Bacillariophyta	110,400	12,450	69,050	101,950	186,125	92,700	10,075	600	9,300	97,870	589,570
Cyanophyta	0	0	463	271	237	124	181	531	45	11	79
Other	0	0	0	0	0	500	500	0	0	0	0
All Phyla Totals	***119,085***	***77,084***	***101,511***	***159,116***	***293,667***	***137,436***	***221,025***	***186,427***	***13,462***	***102,496***	***780,351***

Table 3. North Site Phytoplankton Biovolume (mm/mL3) by Phylum-Bottom Depth

	5/25/2011	6/7/2011	6/27/2011	7/12/2011	7/26/2011	8/9/2011	8/25/2011	9/15/2011	9/26/2011	10/11/2011	11/3/2011
Chlorophyta	x	716	2,148	0	3,580	1,253	2,864	716	716	5,716	0
Euglenophyta	x	0	0	7,775	0	7,775	0	0	0	0	0
Pyrrhophyta	x	0	0	0	0	0	0	0	0	0	0
Chrysophyta	x	0	0	2,000	13,584	1,000	10,584	0	1,000	0	0
Bacillariophyta	x	9,450	1,250	2,400	5,400	99,000	98,900	1,700	3,700	2,150	1,600
Cyanophyta	x	1,898	34	0	0	667	0	475	0	0	249
Other	x	0	0	0	0	0	0	0	0	0	0
All Phyla Totals	x	***12,064***	***3,432***	***12,175***	***22,564***	***109,695***	***112,348***	***2,891***	***5,416***	***7,866***	***1,849***

Table 4. Mid Site Phytoplankton Biovolume (mm/mL3) by Phylum-Surface (.5 m)

	5/25/2011	6/7/2011	6/27/2011	7/12/2011	7/26/2011	8/9/2011	8/25/2011	9/15/2011	9/26/2011	10/11/2011	11/3/2011
Chlorophyta	6,432	23,437	42,456	199,296	82,172	26,591	16,468	9,308	12,888	5,716	8,592
Euglenophyta	0	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	43,816	2,544	2,544	0	0	0	0	0	0	0	6,360
Chrysophyta	0	2,000	49,800	26,092	200	0	4,000	1,000	7,292	0	200
Bacillariophyta	103,500	27,350	53,300	92,840	94,600	2,050	1,500	3,500	5,800	6,350	150,550
Cyanophyta	0	23	113	0	0	768	0	0	2,147	136	39,500
Other	0	0	0	0	0	0	500	0	0	500	0
All Phyla Totals	***153,748***	***55,354***	***148,213***	***318,228***	***176,972***	***29,409***	***21,968***	***13,808***	***28,127***	***12,202***	***205,202***

Table 5. Mid Site Phytoplankton Biovolume (mm/mL3) by Phylum-Mid Depth

	5/25/2011	6/7/2011	6/27/2011	7/12/2011	7/26/2011	8/9/2011	8/25/2011	9/15/2011	9/26/2011	10/11/2011	11/3/2011
Chlorophyta	3,506	15,728	68,083	122,375	35,060	45,232	33,661	133,664	20,012	132,148	5,716
Euglenophyta	0	0	0	0	0	0	7,775	0	0	0	0
Pyrrhophyta	81,272	1,000	1,272	11,448	0	40,000	40,000	0	0	0	40,000
Chrysophyta	1,000	0	16,000	50,000	400	3,292	0	0	0	0	98,000
Bacillariophyta	14,900	13,900	99,050	315,450	421,800	9,500	96,570	4,125	102,400	4,500	37,550
Cyanophyta	0	23	2,933	4,036	113	158	4,712	2,848	0	294	271
	0	0	0	0	0	0	0	0	500	0	0
All Phyla Totals	***100,678***	***30,651***	***187,338***	***503,309***	***457,373***	***98,182***	***182,718***	***140,637***	***122,412***	***136,942***	***181,537***

Table 6. Mid Site Phytoplankton Biovolume (mm/mL3) by Phylum-Bottom Depth

	5/25/2011	6/7/2011	6/27/2011	7/12/2011	7/26/2011	8/9/2011	8/25/2011	9/15/2011	9/26/2011	10/11/2011	11/3/2011
Chlorophyta	0	1,432	7,876	3,580	716	0	0	0	0	716	111
Euglenophyta	7,775	0	0	0	0	0	0	0	0	0	0
Pyrrhophyta	0	0	0	0	0	0	1,000	0	40,000	0	0
Chrysophyta	0	3,292	200	0	0	0	0	21,000	0	0	0
Bacillariophyta	60,400	189,025	3,140	3,750	900	300	23	300	300	300	350
Cyanophyta	0	0	9,176	0	0	68	0	0	0	0	0
	0	0	0	0	0	0	*1,739*	0	0	0	0
All Phyla Totals	***68,175***	***193,749***	***20,392***	***7,330***	***1,616***	***368***	***0***	***21,300***	***40,300***	***1,016***	***461***

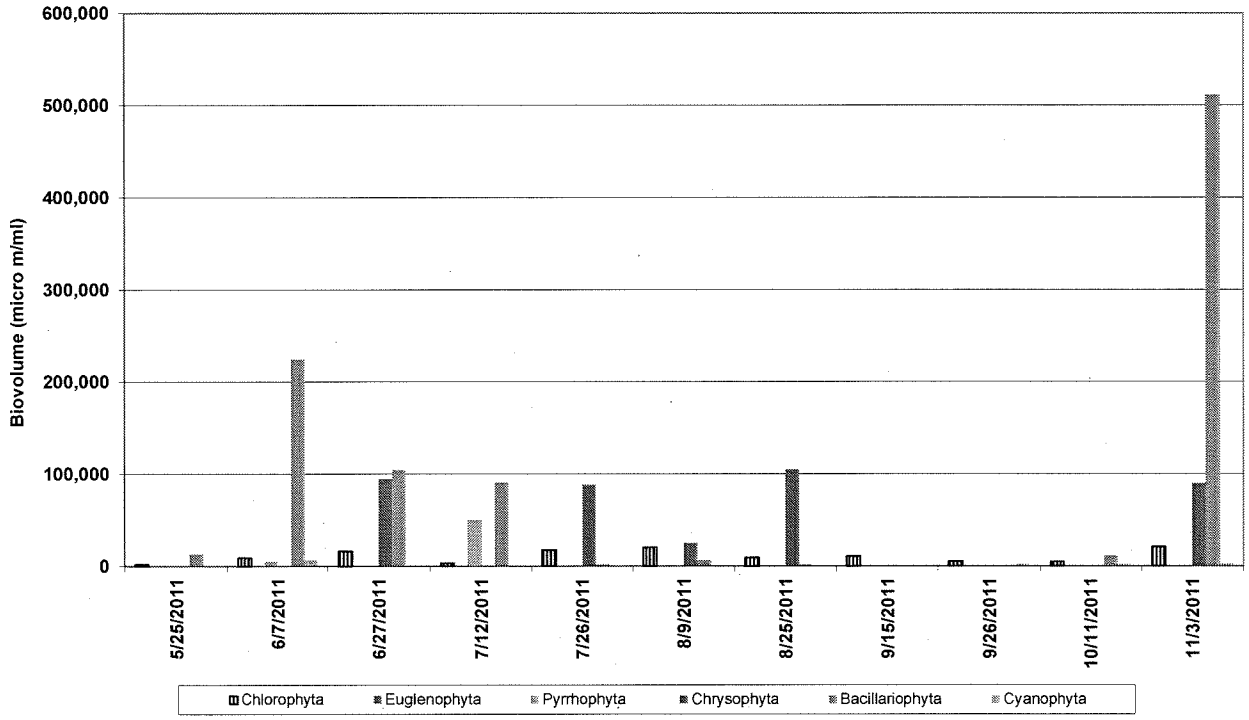


Figure 1. 2011 North site, surface phytoplankton biovolume by phylum

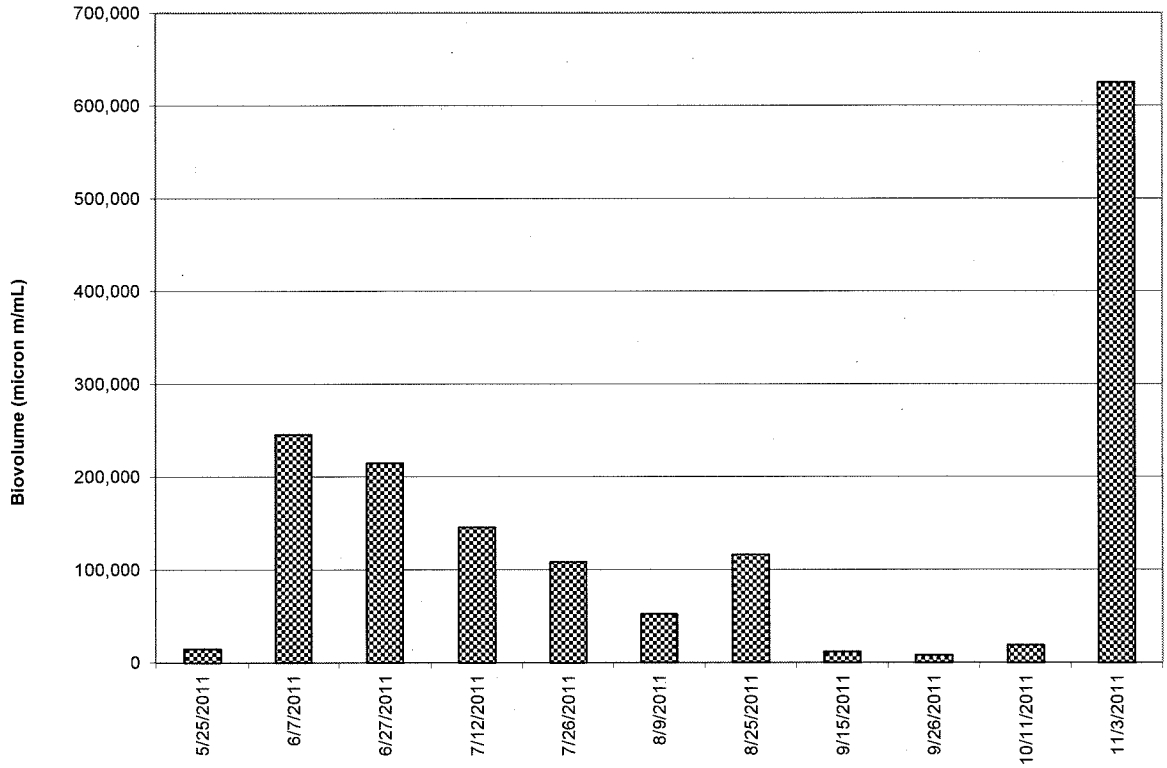


Figure 2. 2011 North site, surface phytoplankton biovolume

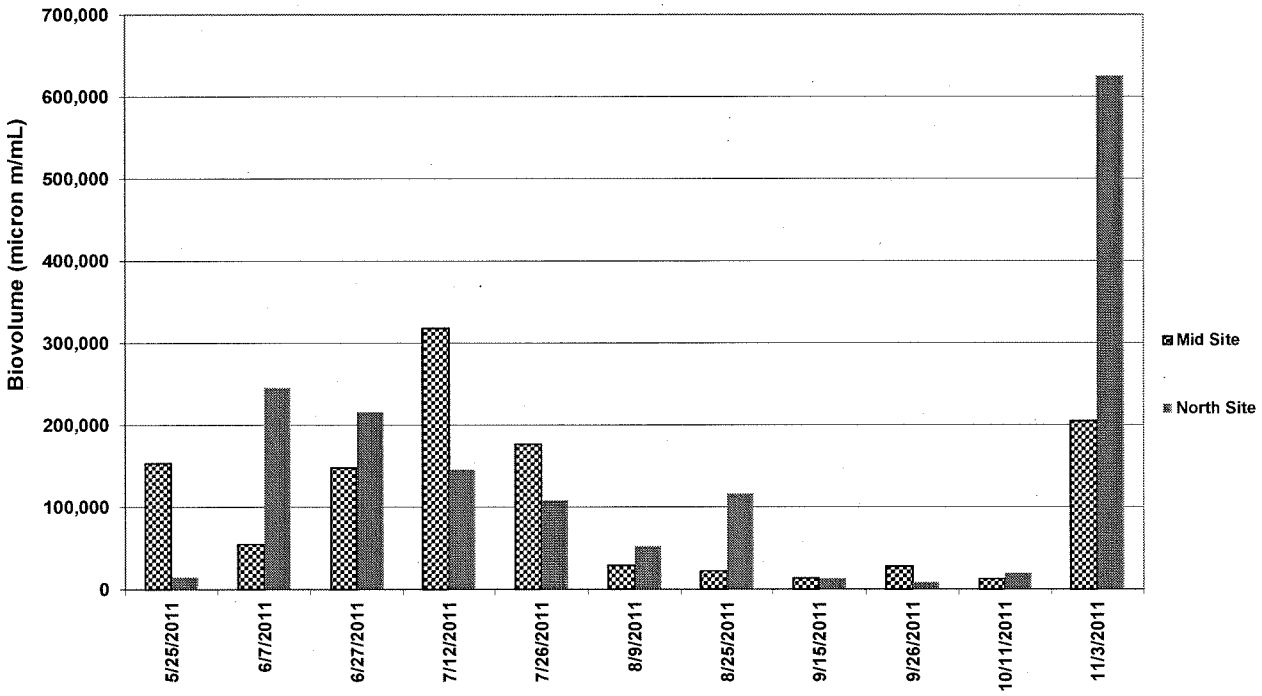


Figure 3. 2011 Surface phytoplankton biovolume, comparison between north and mid sites

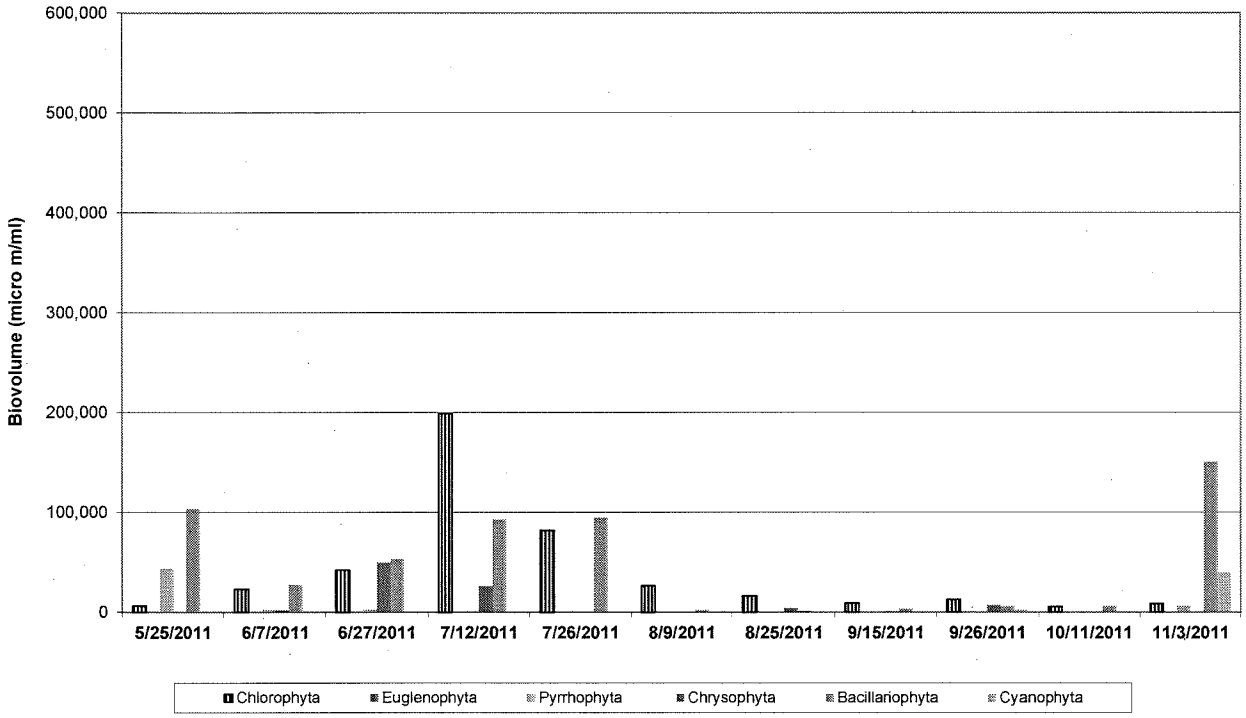


Figure 4. 2011 Mid site, surface phytoplankton biovolume by phylum

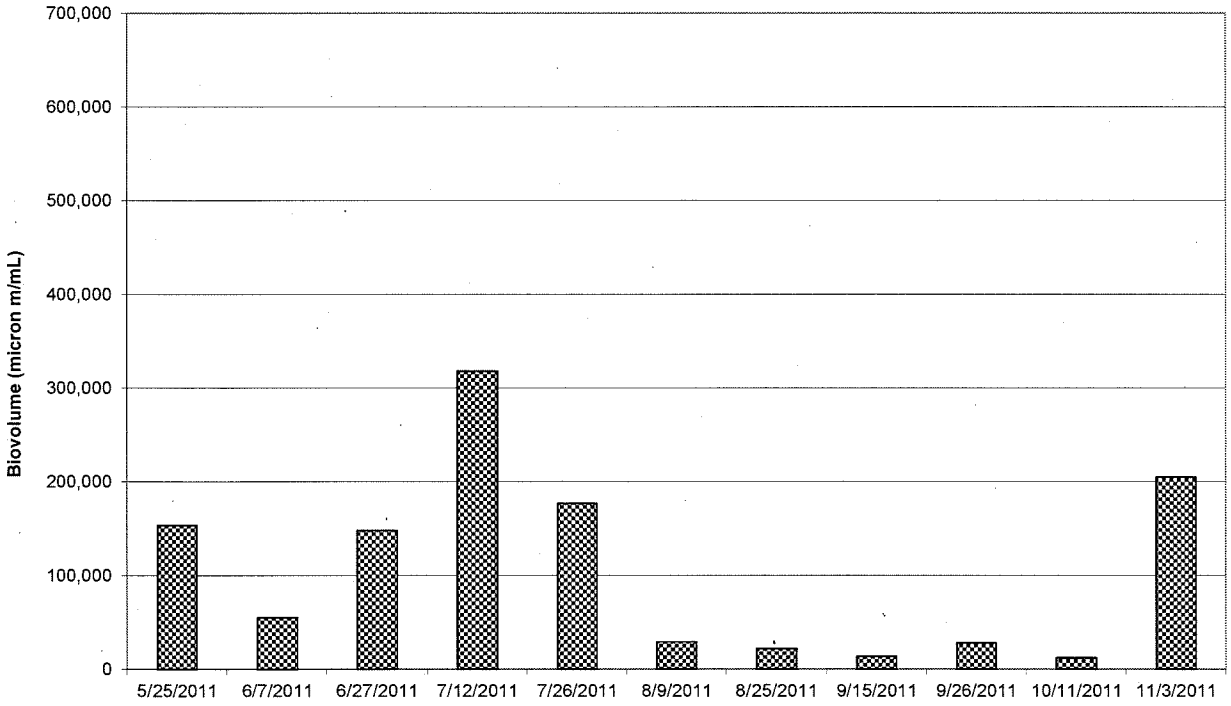


Figure 5. 2011 Mid site, surface phytoplankton biovolume

Appendix E. Loon Lake Phytoplankton Raw Counts

2011 Loon North Site (Top) Phytoplankton Biovolume

5/25/2011
Top

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	3		716	f	2,148	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**2,148**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Top	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	7		350	w	2,450
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	35		300	f	10,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**12,950**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***15,098***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Top N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	4		716	f	2,864	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	2		716	f	1,432	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**9,296**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	4		1,272	f	5,088
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**5,088**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Top	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	17		350	w	5,950
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	35		300	f	10,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.14	200,000	(1mm), v,w	28,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	2		90,000	m	180,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**224,450**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis	3	0.0233	100,000	(1mm), w	6,990
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**6,990**
threads			500	e	0
All Phyla Totals					***245,824***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Top

N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	7		716	f	5,012	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	2		5,000	f	10,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**16,265**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	12		200	f	2,400
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	2	0.01	100,000	(1mm), e	2,000
Uroglena	1		90,000	w,v	90,000
Totals					**94,400**

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Top	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	4		350	w	1,400
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	4		300	f	1,200
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.06	200,000	(1mm), v,w	12,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**104,600**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	4	0.1375	1,130	(1mm), f	622
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**622**
threads	0		500	e	0
All Phyla Totals					215,265

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum	8		20	m	160	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	5		716	f	3,580	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**3,740**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium	1		50,000	f	50,000
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**50,000**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	5		200	f	1,000
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**1,000**

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Top	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	3		300	f	900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**90,950**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***145,690***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	6		716	f	4,296	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	12		716	f	8,592	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**17,888**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	7		200	f	1,400
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	87	0.01	100,000	(1mm), e	87,000
Uroglena			90,000	w,v	0
Totals					**88,400**

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Bacillariophyta	N Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	7		300	f	2,100
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**2,100**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***108,388***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	28		716	f	20,048	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**20,764**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	25	0.01	100,000	(1mm), e	25,000
Uroglena			90,000	w,v	0
Totals					**25,000**

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N

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	2		300	f	600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.03	200,000	(1mm), v,w	6,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**6,600**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***52,364***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	11		716	f	7,876	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**9,308**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	1		3,292	f	3,292
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	12	0.01	100,000	(1mm), e	12,000
Uroglena	1		90,000	w,v	90,000
Totals					**105,292**

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Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	6		300	f	1,800
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**1,800**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***116,400***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	13		716	f	9,308	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**10,740**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

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Bacillariophyta	N Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**300**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	1	0.01	1,130	(1mm), f	11
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**11**
threads	2		500	e	1,000
All Phyla Totals					***12,051***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	6		716	f	4,296	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	1		250	w	250	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**5,262**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	3		300	f	900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**900**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	7	0.26429	1,130	(1mm), f	2,091
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**2,091**
threads			500	e	0
All Phyla Totals					***8,253***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	6		716	f	4,296	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**5,012**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

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Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	26		350	w	9,100
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	6		300	f	1,800
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**10,900**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	11	0.15727	1,130	(1mm), f	1,955
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**1,955**
threads	1		500	e	500
All Phyla Totals					***18,867***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume
Coelastrum			89	f	0
Cosmarium			1,000	f	0
Desmidium			700	f	0
Dictyosphaerium			111	f	0
Euastrum			350,000	m	0
Eudorina			1,767	f	0
Gloeocystis			716	f	0
Golenkinia			80	f	0
Gonium			32,652	e	0
Mougeotia			1,111	f	0
Micrasterias			850,000	m	0
One-celled small grn			537	e	0
Oocystis			1,000	e	0
Pandorina			4,000	v	0
Pediastrum			14,138	f	0
Scenedesmus			255	f	0
Selenastrum			20	m	0
Sm grn colonies			100,000	(1mm), e	0
Sphaerocystis	16		716	f	11,456
Spirogyra			500,000	(1 mm), m	0
Spondylosium			950,000	(1mm), m	0
Staurastrum	2		5,000	f	10,000
Synechocystis			537	e	0
Quadrigula			65,000	m	0
Tetraodon			250	w	0
Volvox			90,000	m	0
Xanthidium			1,200	f	0
Totals					**21,456**

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena	1		90,000	w,v	90,000
Totals					**90,000**

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Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	608		350	w	212,800
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella			300	f	0
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.14	200,000	(1mm), v,w	28,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	3		90,000	m	270,000
Synedra	14		50	w	700
Tabellaria			2,540	f	0
Totals					**511,500**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	60	0.03222	1,130	(1mm), f	2,185
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**2,185**
threads			500	e	0
All Phyla Totals					***625,141***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

2011 Loon North Site (mid) Phytoplankton Biovolume

5/25/2011

Mid **N**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	1		716	f	716	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**2,685**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	6	0.01	100,000	(1mm), e	6,000
Uroglena			90,000	w,v	0
Totals					**6,000**

5/25/2011

Mid	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	12		350	w	4,200
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	47		300	f	14,100
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra	2		50	w	100
Tabellaria			2,540	f	0
Totals					**110,400**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***119,085***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/7/2011

Mid **N**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	5		716	f	3,580	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	3		5,000	f	15,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	1		250	w	250	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**19,546**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	4		1,272	f	5,088
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**45,088**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

6/7/2011
Mid

Bacillariophyta	N Number	Length	Cell Volume	Reference	Biovolume
Asterionella	11		350	w	3,850
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	2		300	f	600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	2	0.02	200,000	(1mm), v,w	8,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**12,450**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***77,084***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/27/2011
Mid

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	10		716	f	7,160	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	4		5,000	f	20,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	1		250	w	250	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**28,126**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	1		1,272	f	1,272
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**1,272**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	13		200	f	2,600
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**2,600**

6/27/2011
Mid

Bacillariophyta	N Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	30		300	f	9,000
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	5	0.06	200,000	(1mm), v,w	60,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**69,050**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	4	0.1025	1,130	(1mm), f	463
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**463**
threads			500	e	0
All Phyla Totals					***101,511***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/12/2011
Mid

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	10		716	f	7,160	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	5		5,000	f	25,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	3		250	w	750	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**34,879**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	3		1,272	f	3,816
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**3,816**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	91		200	f	18,200
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**18,200**

7/12/2011
Mid

Bacillariophyta	N Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	9		300	f	2,700
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	2	0.02	200,000	(1mm), v,w	8,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula	2		625	j	1,250
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**101,950**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	5	0.048	1,130	(1mm), f	271
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			600	e	0
Totals					**271**
threads			500	e	0
All Phyla Totals					***159,116***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/26/2011

Mid

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	9		716	f	6,444	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	39		716	f	27,924	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	6		5,000	f	30,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**64,905**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**40,000**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	12		200	f	2,400
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**2,400**

7/26/2011

Mid	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	5		300	f	1,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.02	200,000	(1mm), v,w	4,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula	1		625	j	625
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	2		90,000	m	180,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**186,125**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	4	0.0525	1,130	(1mm), f	237
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			540	e	0
Totals					**237**
threads			500	e	0
All Phyla Totals					***293,667***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/9/2011

Mid

N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	4		716	f	2,864	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum	1		20	m	20	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	58		716	f	41,528	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**44,412**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	1		200	f	200
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**200**

8/9/2011

Mid	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	9		300	f	2,700
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**92,700**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.11	1,130	(1mm), f	124
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**124**
threads	1		500	e	500
All Phyla Totals					***137,436***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/25/2011
Mid

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium	2	0.06	700	f	84	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	3		716	f	2,148	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	32		716	f	22,912	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	2		5,000	f	10,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**35,681**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	4		1,272	f	5,088
Peridinium	2		40,000	v	80,000
Glenodinium			38,485	f	0
Totals					**85,088**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena	1		90,000	w,v	90,000
Totals					**90,000**

8/25/2011

Mid

Bacillariophyta	**N** *Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	15		350	w	5,250
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	14		300	f	4,200
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula	1		625	j	625
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**10,075**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	3	0.0533333	1,130	(1mm), f	181
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphärium			600	e	0
Totals					**181**
threads	1		500	e	500
All Phyla Totals					***221,025***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/15/2011
Mid

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	6		716	f	4,296	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula	2		65,000	m	130,000	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**134,296**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium	1		50,000	f	50,000
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**50,000**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

9/15/2011

Mid

Bacillariophyta	**N** *Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	2		300	f	600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**600**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	4	0.1175	1,130	(1mm), f	531
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			600	e	0
Totals					**531**
threads			500	e	0
All Phyla Totals					***186,427***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/26/2011

Mid N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	5		716	f	3,580	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**4,117**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

9/26/2011

Mid	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	31		300	f	9,300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**9,300**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.04	1,130	(1mm), f	45
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**45**
threads			500	e	0
All Phyla Totals					***13,462***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

10/11/2011
Mid N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium	1	0.05	700	f	35	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	4		716	f	2,864	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**3,615**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

10/11/2011

Mid	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	4		350	w	1,400
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	12		300	f	3,600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.01	200,000	(1mm), v,w	2,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella	1		870	j	870
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**97,870**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.01	1,130	(1mm), f	11
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			600	e	0
Totals					**11**
threads			500	e	0
All Phyla Totals					***102,496***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

11/3/2011
Mid NW

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	10		716	f	7,160	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	1		250	w	250	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**7,410**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	1		3,292	f	3,292
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena	2		90,000	w,v	180,000
Totals					**183,292**

11/3/2011
Mid NW

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella	642		350	w	224,700
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	5		300	f	1,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella	1		870	j	870
Stauroneis	4		90,000	m	360,000
Synedra	10		50	w	500
Tabellaria			2,540	f	0
Totals					**589,570**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	1	0.07	1,130	(1mm), f	79
Celospharium			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**79**
threads			500	e	0
All Phyla Totals					***780,351***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

2011 Loon North Site (Bottom) Phytoplankton Biovolume

5/25/2011

Bot	**N**					
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

5/25/2011

Bot N

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella			300	f	0
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**0**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***0***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/7/2011
Bot

Chlorophyta	N Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	1		716	f	716	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**716**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

6/7/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	7		350	w	2,450
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	23		300	f	6,900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	2		50	w	100
Tabellaria			2,540	f	0
Totals					**9,450**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	12	0.14	1,130	(1mm), f	1,898
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**1,898**
threads			500	e	0
All Phyla Totals					***12,064***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/27/2011

Bot N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	3		716	f	2,148	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**2,148**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

6/27/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	4		300	f	1,200
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**1,250**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.03	1,130	(1mm), f	34
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**34**
threads			500	e	0
All Phyla Totals					***3,432***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/12/2011

Bot **N**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena	1		7,775	f	7,775
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**7,775**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	2	0.01	100,000	(1mm), e	2,000
Uroglena			90,000	w,v	0
Totals					**2,000**

7/12/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	8		300	f	2,400
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**2,400**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***12,175***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/26/2011

Bot N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	5		716	f	3,580	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**3,580**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	2		3,292	f	6,584
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	3	0.0233333	100,000	(1mm), e	7,000
Uroglena			90,000	w,v	0
Totals					**13,584**

7/26/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	18		300	f	5,400
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**5,400**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***22,564***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/9/2011

Bot

N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	1		537	e	537	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**1,253**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena	1		7,775	f	7,775
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**7,775**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

8/9/2011

Bot **N**

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	10		300	f	3,000
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.03	200,000	(1mm), v,w	6,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**99,000**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	5	0.118	1,130	(1mm), f	667
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			600	e	0
Totals					**667**
threads			500	e	0
All Phyla Totals					***109,695***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/25/2011

Bot

N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	3		716	f	2,148	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**2,864**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	2		3,292	f	6,584
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	4	0.01	100,000	(1mm), e	4,000
Uroglena			90,000	w,v	0
Totals					**10,584**

8/25/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	3		300	f	900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.04	200,000	(1mm), v,w	8,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**98,900**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***112,348***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/15/2011

Bot N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**716**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

9/15/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	3		350	w	1,050
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	2		300	f	600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**1,700**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	2	0.21	1,130	(1mm), f	475
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**475**
threads			500	e	0
All Phyla Totals					***2,891***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/26/2011

Bot N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	1		716	f	716	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**716**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

9/26/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	5		350	w	1,750
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	6		300	f	1,800
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	3		50	w	150
Tabellaria			2,540	f	0
Totals					**3,700**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***5,416***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

10/11/2011

Bot

N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**5,716**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

10/11/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	6		350	w	2,100
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella			300	f	0
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**2,150**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Celeospharium			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***7,866***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

11/3/2011

Bot

N

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	5		100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

11/3/2011

Bot	N				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	2		350	w	700
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	3		300	f	900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**1,600**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	2	0.11	1,130	(1mm), f	249
Celeospharium			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**249**
threads			500	e	0
All Phyla Totals					***1,849***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL
w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

2011 Loon Mid Site (Top) Phytoplankton Biovolume

5/25/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**6,432**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	3		1,272	f	3,816
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**43,816**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

5/25/2011
Top M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	45		300	f	13,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**103,500**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***153,748***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/7/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	18		716	f	12,888	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm	1		537	e	537	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	7		716	f	5,012	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**23,437**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	2		1,272	f	2,544
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**2,544**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	2	0.01	100,000	(1mm), e	2,000
Uroglena			90,000	w,v	0
Totals					**2,000**

6/7/2011

Top	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	27		350	w	9,450
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	53		300	f	15,900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**27,350**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.02	1,130	(1mm), f	23
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**23**
threads			500	e	0
All Phyla Totals					***55,354***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/27/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	4		716	f	2,864	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	12		716	f	8,592	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	6		5,000	f	30,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	4		250	w	1,000	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**42,456**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	2		1,272	f	2,544
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**2,544**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	54		200	f	10,800
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	39	0.01	100,000	(1mm), e	39,000
Uroglena			90,000	w,v	0
Totals					**49,800**

6/27/2011

Top M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	11		300	f	3,300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	4	0.055	200,000	(1mm), v,w	44,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	3		2,000	v,w	6,000
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**53,300**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	1	0.1	1,130	(1mm), f	113
Celeospharium			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**113**
threads			500	e	0
All Phyla Totals					***148,213***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/12/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	4		716	f	2,864	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula	3		65,000	m	195,000	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**199,296**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	44		200	f	8,800
Gymnodinium			38,485	f	0
Mallomonas	1		3,292	f	3,292
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	14	0.01	100,000	(1mm), e	14,000
Uroglena			90,000	w,v	0
Totals					**26,092**

7/12/2011

Top

M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria	1		2,540	f	2,540
Totals					**92,840**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***318,228***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/26/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	4		716	f	2,864	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	13		716	f	9,308	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula	1		65,000	m	65,000	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**82,172**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	1		200	f	200
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**200**

7/26/2011

Top M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	2		300	f	600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.02	200,000	(1mm), v,w	4,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**94,600**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***176,972***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/9/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium	1		111	f	111	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	30		716	f	21,480	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**26,591**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

8/9/2011
Top

Bacillariophyta	M Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	4		300	f	1,200
Cymbella	1		225	f	225
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula	1		625	j	625
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**2,050**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	2	0.34	1,130	(1mm), f	768
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphaerium			540	e	0
Totals					**768**
threads			500	e	0
All Phyla Totals					***29,409***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/25/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	2		716	f	1,432	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	21		716	f	15,036	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**16,468**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	4	0.01	100,000	(1mm), e	4,000
Uroglena			90,000	w,v	0
Totals					**4,000**

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Top	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	5		300	f	1,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**1,500**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads	1		500	e	500
All Phyla Totals					***21,968***

]

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/15/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	13		716	f	9,308	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**9,308**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena		·	90,000	w,v	0
Totals					**1,000**

9/15/2011

Top

Bacillariophyta	M Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	5		300	f	1,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**3,500**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			540	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***13,808***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/26/2011	Top	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	4		716	f	2,864	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	14		716	f	10,024	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**12,888**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	1		3,292	f	3,292
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	4	0.01	100,000	(1mm), e	4,000
Uroglena			90,000	w,v	0
Totals					**7,292**

9/26/2011

Top M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella	8		350	w	2,800
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	10		300	f	3,000
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**5,800**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	6	0.31667	1,130	(1mm), f	2,147
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**2,147**
threads			500	e	0
All Phyla Totals					***28,127***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

10/11/2011 **Top** **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	1		716	f	716	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**5,716**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Top M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella	13		350	w	4,550
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	6		300	f	1,800
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**6,350**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	2	0.06	1,130	(1mm), f	136
Celeospharium			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			600	e	0
Totals					**136**
threads	1		500	e	500
All Phyla Totals					***12,202***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

11/3/2011 **Top** **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocyctis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	12		716	f	8,592	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**8,592**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	5		1,272	f	6,360
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**6,360**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	1		200	f	200
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**200**

11/3/2011

Top

M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella	343		350	w	120,050
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	8		300	f	2,400
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.14	200,000	(1mm), v,w	28,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	2		50	w	100
Tabellaria			2,540	f	0
Totals					**150,550**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Celeospharium			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis	1	0.02	100,000	(1mm), w	2,000
Oscillatoria	1	1.25	30,000	(1mm), v	37,500
Coelosphanium			600	e	0
Totals					**39,500**
threads			500	e	0
All Phyla Totals					***205,202***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

2011 Loon Mid Site (Mid) Phytoplankton Biovolume

5/25/2011 Mid M

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium	1		1,000	f	1,000	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm	2		537	e	1,074	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	1		716	f	716	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**3,506**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	1		1,272	f	1,272
Peridinium	2		40,000	v	80,000
Glenodinium			38,485	f	0
Totals					**81,272**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

5/25/2011

Mid	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	43		300	f	12,900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**14,900**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads		0	500	e	0
All Phyla Totals					***100,678***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/7/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	8		716	f	5,728	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	2		5,000	f	10,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**15,728**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium	1		1,000	f	1,000
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**1,000**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

6/7/2011

Mid M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella	8		350	w	2,800
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	37		300	f	11,100
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**13,900**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	1	0.02	1,130	(1mm), f	23
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**23**
threads			500	e	0
All Phyla Totals					***30,651***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/27/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium	1	0.04	700	f	28	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	3		537	e	1,611	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	9		716	f	6,444	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	12		5,000	f	60,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**68,083**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	1		1,272	f	1,272
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**1,272**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	16	0.01	100,000	(1mm), e	16,000
Uroglena			90,000	w,v	0
Totals					**16,000**

6/27/2011

Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	5		350	w	1,750
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	31		300	f	9,300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	7	0.06286	200,000	(1mm), v,w	88,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**99,050**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	33	0.07867	1,130	(1mm), f	2,933
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**2,933**
threads			500	e	0
All Phyla Totals					***187,338***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/12/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	12		716	f	8,592	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn	3		537	e	1,611	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	17		716	f	12,172	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	7		5,000	f	35,000	
Synechocystis			537	e	0	
Quadrigula	1		65,000	m	65,000	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**122,375**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix	9		1,272	f	11,448
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**11,448**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	135		200	f	27,000
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	23	0.01	100,000	(1mm), e	23,000
Uroglena			90,000	w,v	0
Totals					**50,000**

7/12/2011
Mid

Bacillariophyta	M *Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	18		300	f	5,400
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	7	0.02857	200,000	(1mm), v,w	40,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	3		90,000	m	270,000
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**315,450**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	50	0.07143	1,130	(1mm), f	4,036
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**4,036**
threads			500	e	0
All Phyla Totals					***503,309***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/26/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	6		716	f	4,296	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	29		716	f	20,764	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	2		5,000	f	10,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**35,060**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	2		200	f	400
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**400**

7/26/2011
Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	6		300	f	1,800
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	2	0.15	200,000	(1mm), v,w	60,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	4		90,000	m	360,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**421,800**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.1	1,130	(1mm), f	113
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**113**
threads			500	e	0
All Phyla Totals					***457,373***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/9/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium	3		1,000	f	3,000	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	4		716	f	2,864	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	48		716	f	34,368	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**45,232**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**40,000**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	1		3,292	f	3,292
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**3,292**

8/9/2011
Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	6		350	w	2,100
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	18		300	f	5,400
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**9,500**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.14	1,130	(1mm), f	158
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**158**
threads			500	e	0
All Phyla Totals					***98,182***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/25/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium	1	0.03	700	f	21	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	40		716	f	28,640	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**33,661**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena	1		7,775	f	7,775
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**7,775**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**40,000**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

8/25/2011

Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	19		300	f	5,700
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella	1		870	j	870
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**96,570**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	15	0.278	1,130	(1mm), f	4,712
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**4,712**
threads			500	e	0
All Phyla Totals					***182,718***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/15/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium	1	0.12	700	f	84	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	5		716	f	3,580	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula	2		65,000	m	130,000	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**133,664**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

9/15/2011

Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	13		300	f	3,900
Cymbella	1		225	f	225
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**4,125**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	21	0.12	1,130	(1mm), f	2,848
Anacystis			1,130	(1mm), e	h
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphanium			600	e	0
Totals					**2,848**
threads			500	e	0
All Phyla Totals					***140,637***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/26/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	6		716	f	4,296	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	3		5,000	f	15,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon	2					
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**20,012**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

9/26/2011
Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	8		350	w	2,800
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	32		300	f	9,600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis	1		90,000	m	90,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**102,400**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads	1		500	e	500
All Phyla Totals					***122,412***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

10/11/2011	Mid	M				
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis	3		716	f	2,148	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula	2		65,000	m	130,000	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**132,148**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

10/11/2011
Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	12		350	w	4,200
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**4,500**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	4	0.065	1,130	(1mm), f	294
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**294**
threads			500	e	0
All Phyla Totals					***136,942***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

11/3/2011 Mid M

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	1		716	f	716	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum	1		5,000	f	5,000	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Tetraodon			250	w	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**5,716**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**40,000**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	8	0.01	100,000	(1mm), e	8,000
Uroglena	1		90,000	w,v	90,000
Totals					**98,000**

11/3/2011

Mid M

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	103		350	w	36,050
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	5		300	f	1,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**37,550**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	2	0.12	1,130	(1mm), f	271
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**271**
threads			500	e	0
All Phyla Totals					***181,537***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

2011 Loon Mid Site (Bottom) Phytoplankton Biovolume

5/25/2011

Bot	**M**					
Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena	1		7,775	f	7,775
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**7,775**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

5/25/2011

Bot	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	39		350	w	13,650
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	14		300	f	4,200
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria	1	0.17	200,000	(1mm), v,w	34,000
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus	4		2,000	v,w	8,000
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	11		50	w	550
Tabellaria			2,540	f	0
Totals					**60,400**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***68,175***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/7/2011

Bot M

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis	2		716	f	1,432	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**1,432**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas	1		3,292	f	3,292
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**3,292**

6/7/2011
Bot
M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella	14		350	w	4,900
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	5		300	f	1,500
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula	1		625	j	625
Pinnularia			7,872	f	0
Stephanodiscus	1		2,000	v,w	2,000
Surirella			870	j	0
Stauroneis	2		90,000	m	180,000
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**189,025**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***193,749***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

6/27/2011

Bot M

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	11		716	f	7,876	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**7,876**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon	1		200	f	200
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**200**

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Bot M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	2		300	f	600
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria	1		2,540	f	2,540
Totals					**3,140**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena	56	0.145	1,130	(1mm), f	9,176
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Spirulina					
Totals					**9,176**
threads			500	e	0
All Phyla Totals					***20,392***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

7/12/2011

Bot M

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	5		716	f	3,580	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**3,580**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Bot **M**

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	2		350	w	700
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	10		300	f	3,000
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra	1		50	w	50
Tabellaria			2,540	f	0
Totals					**3,750**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***7,330***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

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Bot **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**716**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Bot **M**

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	3		300	f	900
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**900**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***1,616***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/9/2011

Bot **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	84		100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Bot **M**

Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**300**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	3	0.02	1,130	(1mm), f	68
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**68**
threads			500	e	0
All Phyla Totals					***368***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

8/25/2011

Bot M

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**716**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm bm colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	1	0.01	100,000	(1mm), e	1,000
Uroglena			90,000	w,v	0
Totals					**1,000**

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Bot	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella			300	f	0
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**0**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena	1	0.02	1,130	(1mm), f	23
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**23**
threads			500	e	0
All Phyla Totals					***1,739***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/15/2011

Bot **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"	21	0.01	100,000	(1mm), e	21,000
Uroglena			90,000	w,v	0
Totals					**21,000**

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Bot M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**300**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***21,300***

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

9/26/2011

Bot **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**0**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium	1		40,000	v	40,000
Glenodinium			38,485	f	0
Totals					**40,000**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

9/26/2011

Bot	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**300**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelosphaerium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***40,300***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate
Estimates:
Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

10/11/2011

Bot **M**

Chlorophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium			111	f	0	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis	1		716	f	716	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small gm			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm gm colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**716**	

Euglenophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

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Bot M

Bacillariophyta	Number	Length	Cell Volume	Reference	Biovolume
Asterionella			350	w	0
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella	1		300	f	300
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**300**

Cyanophyta	Number	Length	Cell Volume	Reference	Biovolume
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***1,016***

2 spirulina

Number = Number of cells or colonies per mL

Length = Mean length or diameter of filaments or colonies (mm)

Cell Volume = Volume of cell or colony (μm^3)

Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)

11/3/2011

Bot M

Chlorophyta	Number	Length	Cell Volume	Reference	Biovolume	Comments:
Coelastrum			89	f	0	
Cosmarium			1,000	f	0	
Desmidium			700	f	0	
Dictyosphaerium	1		111	f	111	
Euastrum			350,000	m	0	
Eudorina			1,767	f	0	
Gloeocystis			716	f	0	
Golenkinia			80	f	0	
Gonium			32,652	e	0	
Mougeotia			1,111	f	0	
Micrasterias			850,000	m	0	
One-celled small grn			537	e	0	
Oocystis			1,000	e	0	
Pandorina			4,000	v	0	
Pediastrum			14,138	f	0	
Scenedesmus			255	f	0	
Selenastrum			20	m	0	
Sm grn colonies			100,000	(1mm), e	0	
Sphaerocystis			716	f	0	
Spirogyra			500,000	(1 mm), m	0	
Spondylosium			950,000	(1mm), m	0	
Staurastrum			5,000	f	0	
Synechocystis			537	e	0	
Quadrigula			65,000	m	0	
Volvox			90,000	m	0	
Xanthidium			1,200	f	0	
Totals					**111**	

Euglenophyta	Number	Length	Cell Volume	Reference	Biovolume
Euglena			7,775	f	0
Phacus			26,000	f	0
Trachelomonas			4,771	f	0
Totals					**0**

Pyrrhophyta	Number	Length	Cell Volume	Reference	Biovolume
Ceratium			50,000	f	0
Closterium			1,000	f	0
Elakatothrix			1,272	f	0
Peridinium			40,000	v	0
Glenodinium			38,485	f	0
Totals					**0**

Chrysophyta	Number	Length	Cell Volume	Reference	Biovolume
Chrysosphaerella			4,000	m	0
Cryptomonas			2,600	f	0
Dinobryon			200	f	0
Gymnodinium			38,485	f	0
Mallomonas			3,292	f	0
Sm brn colonies			100,000	(1mm), e	0
Synura			3,068	f	0
"tiny bubbles"			100,000	(1mm), e	0
Uroglena			90,000	w,v	0
Totals					**0**

11/3/2011

Bot	M				
Bacillariophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Asterionella	1		350	w	350
Cavinula			5,000		0
Craticula			3,000	m	0
Cyclotella			300	f	0
Cymbella			225	f	0
Diatoma			3,506	f	0
Ellerbeckia			300	e	0
Epithemia			4,000	m	0
Fragilaria			200,000	(1mm), v,w	0
Gomphonema			300	f	0
Gyrosigma			1,500	m	0
Melosira (Aulacoseira)			60,000	(1mm), v,w	0
Meridion			160	m	0
Navicula			625	j	0
Pinnularia			7,872	f	0
Stephanodiscus			2,000	v,w	0
Surirella			870	j	0
Stauroneis			90,000	m	0
Synedra			50	w	0
Tabellaria			2,540	f	0
Totals					**350**

Cyanophyta	*Number*	*Length*	*Cell Volume*	*Reference*	*Biovolume*
Anabaena			1,130	(1mm), f	0
Anacystis			1,130	(1mm), e	0
Aphanizomenon			163	f	0
Aphanocapsa			40	(1mm),w	0
Gleotrichia			382	f	0
Gomphosphaeria			2,000	w	0
Merismopeida			80	(1mm),w	0
Microcystis			100,000	(1mm), w	0
Oscillatoria			30,000	(1mm), v	0
Coelospharium			600	e	0
Totals					**0**
threads			500	e	0
All Phyla Totals					***461***

Number = Number of cells or colonies per mL
Length = Mean length or diameter of filaments or colonies (mm)
Cell Volume = Volume of cell or colony (μm^3)
Biovolume = BioVolume (μm^3)/mL

w=Wetzel, 1975
f=Funk, 1974
m=measured (Hillebrand, 1999)
j=juul,
v=vollenweider, 1974
e=estimate

Estimates:

Gonium : measurements from Canter-Lund and Lund (1995), Biovolume calculated using equation for prolate spheriod in Hillebrand (1999)