Appendix 8.F. Dominant Phytoplankton Taxa at Lake George and Racy Point and Dinoflagellate Taxa in the Lower St. Johns River

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Table 1. Dominant Phytoplankton at Lake George by Month 1994 – 2009. Dominance was tabulated by month as the percentage of samples that a taxon ranked among the top three taxa based on biovolume. Samples were not collected every month in every year. Number of samples by month varied from 13-16 during summer to 9 in December. Relative abundance was the biovolume for each taxon as a percent of total biovolume averaged for the samples where the taxon occurred. *Oscillatoria*-type species include *Limnothrix* spp. and *Planktothrix* spp.

Month	Taxa	Division	Percent Dominant	Relative Abundance
Jan	Other Biddulphiales spp.	Bacillariophyta	67%	15%
	Planktolyngbya spp.	Cyanobacteria	50%	14%
	Aulacoseira spp.	Bacillariophyta	42%	17%
Feb	Other Biddulphiales spp.	Bacillariophyta	80%	12%
	Aulacoseira spp.	Bacillariophyta	70%	20%
	Microcystis pulverea incerta	Cyanobacteria	40%	25%
Mar	Biddulphiales spp.	Bacillariophyta	43%	21%
	Cryptomonadales spp.	Cryptophyta	36%	16%
	Microcystis pulverea incerta	Cyanobacteria	36%	18%
Apr	*Oscillatoria*-type spp.	Cyanobacteria	71%	32%
	Biddulphiales spp.	Bacillariophyta	50%	22%
	Anabaena spp.	Cyanobacteria	36%	18%
May	*Oscillatoria*-type spp.	Cyanobacteria	73%	38%
	Cylindrospermopsis spp.	Cyanobacteria	60%	28%
	Microcystis pulverea incerta	Cyanobacteria	33%	14%
Jun	*Oscillatoria*-type spp.	Cyanobacteria	86%	34%
	Cylindrospermopsis spp.	Cyanobacteria	50%	22%
	Planktolyngbya spp.	Cyanobacteria	43%	16%
Jul	*Oscillatoria*-type spp.	Cyanobacteria	93%	37%
	Cylindrospermopsis spp.	Cyanobacteria	60%	17%
	Planktolyngbya spp.	Cyanobacteria	53%	16%
Aug	*Oscillatoria*-type spp.	Cyanobacteria	100%	38%
	Cylindrospermopsis spp.	Cyanobacteria	85%	22%
	Planktolyngbya spp.	Cyanobacteria	54%	11%
Sep	*Oscillatoria*-type spp.	Cyanobacteria	81%	34%
	Planktolyngbya spp.	Cyanobacteria	75%	12%

Month	Taxa	Division	Percent Dominant	Relative Abundance
	Biddulphiales spp.	Bacillariophyta	63%	15%
Oct	*Planktolyngbya* spp.	Cyanobacteria	67%	12%
	Oscillatoria-type spp.	Cyanobacteria	60%	40%
	Biddulphiales spp.	Bacillariophyta	40%	16%
Nov	*Oscillatoria*-type spp.	Cyanobacteria	40%	31%
	Biddulphiales spp.	Bacillariophyta	67%	14%
	Planktolyngbya spp.	Cyanobacteria	67%	12%
Dec	*Aulacoseira* spp.	Bacillariophyta	67%	15%
	Other Biddulphiales spp.	Bacillariophyta	56%	11%
	Oscillatoria-type spp.	Cyanobacteria	44%	34%

Table 2. Dominant Phytoplankton Observed at Racy Point 1994 – 2009. Dominance was tabulated by month as the percentage of samples that a taxon ranked among the top three taxa based on biovolume. Samples were not collected every month in every year. Number of samples by month varied from 14-16 during summer to 8 in December. Relative abundance was the biovolume for each taxon as a percent of total biovolume averaged for the samples where the taxon occurred. *Oscillatoria*-type species include *Limnothrix* spp. and *Planktothrix* spp.

Month	Taxa	Division	Percent Dominant	Relative Abundance
Jan	Other Biddulphiales spp.	Bacillariophyta	91%	22%
	Aulacoseira spp.	Bacillariophyta	45%	13%
	Staurosira contruens	Bacillariophyta	45%	13%
Feb	Other Biddulphiales spp.	Bacillariophyta	100%	14%
	Aulacoseira spp.	Bacillariophyta	40%	28%
	Microcystis pulverea incerta	Cyanobacteria	30%	16%
Mar	Other Biddulphiales spp.	Bacillariophyta	100%	26%
	Cryptomonadales spp.	Cryptophyta	33%	16%
	Aulacoseira spp.	Bacillariophyta	33%	13%
Apr	Other Biddulphiales spp.	Bacillariophyta	100%	18%

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Month	Taxa	Division	Percent Dominant	Relative Abundance
	Aulacoseira spp.	Bacillariophyta	36%	23%
	Cryptomonadales spp.	Cryptophyta	29%	20%
May	Biddulphiales spp.	Bacillariophyta	81%	27%
	Oscillatoria-type spp.	Cyanobacteria	63%	36%
	Anabaena spp.	Cyanobacteria	50%	12%
Jun	Biddulphiales spp.	Bacillariophyta	73%	13%
	Oscillatoria-type spp.	Cyanobacteria	67%	28%
	Cylindrospermopsis spp.	Cyanobacteria	40%	41%
Jul	Biddulphiales spp.	Bacillariophyta	73%	11%
	Oscillatoria-type spp.	Cyanobacteria	67%	36%
	Planktolyngbya spp.	Cyanobacteria	33%	10%
Aug	Biddulphiales spp.	Bacillariophyta	94%	15%
	Oscillatoria-type spp.	Cyanobacteria	88%	35%
	Cylindrospermopsis spp.	Cyanobacteria	25%	12%
Sep	Biddulphiales spp.	Bacillariophyta	80%	19%
	Oscillatoria-type spp.	Cyanobacteria	73%	36%
	Planktolyngbya spp.	Cyanobacteria	33%	8%
Oct	Other Biddulphiales spp.	Bacillariophyta	87%	17%
	Oscillatoria-type spp.	Cyanobacteria	53%	29%
	Aulacoseira spp.	Bacillariophyta	47%	14%
Nov	Other Biddulphiales spp.	Bacillariophyta	79%	16%
	Staurosira contruens	Bacillariophyta	43%	18%
	Aulacoseira spp.	Bacillariophyta	36%	23%
Dec	Biddulphiales spp.	Bacillariophyta	63%	14%
	Microcystis pulverea incerta	Cyanobacteria	50%	11%
	Oscillatoria-type spp.	Cyanobacteria	50%	17%

Table 3. Dinoflagellate taxa for the marine reach of the Lower St. Johns River, 1997 – 2007 (data record for SJR at Hibernia Point runs from 2000-05). Percent dinoflagellate biovolume represents the biovolume for each taxon as a percent of total dinoflagellate biovolume averaged for the samples where the taxon occurred.

SJR at Hibernia Point (percent dinoflagellates of total enumerated biovolume = 9.4)	**% Dinoflagellate Biovolume**
Gymnodiniales	
Other Gymnoid-type spp. (one I.D. of *Akashiwo sanguinea*)	25.9
Katodinium spp.	12.1
Peridiniales	
Protoperidinium spp.	3.4
Prorocentrales	
Prorocentrum spp.	5.2
Unidentified armored dinoflagellate spp.	53.4
Doctor's Lake (percent dinoflagellates of total enumerated biovolume = 7.9)	**% Dinoflagellate Biovolume**
Gymnodiniales	
Other Gymnoid spp. (14 I.D. of *Akashiwo sanguinea*)	30.0
Katodinium spp.	10.1
Peridiniales	
Protoperidinium spp.	8.8
Prorocentrales	
Prorocentrum minimum	4.6
Unidentified armored dinoflagellate spp.	42.9
Other unidentified dinoflagellate spp.	3.7
SJR at Mandarin Point (percent dinoflagellates of total enumerated biovolume = 4.3)	**% Dinoflagellate Biovolume**
Gymnodiniales	
Other Gymnoid spp. (4 I.D. of *Akashiwo sanguinea*)	29.1
Katodinium spp.	6.1
Peridiniales	
Protoperidinium spp.	4.5
Prorocentrales	
Prorocentrum minimum	4.5
Unidentified armored dinoflagellate spp.	53.7
Other unidentified dinoflagellate spp.	2.0

SJR at Piney Point (percent dinoflagellates of total enumerated biovolume = 4.5)	**% Dinoflagellate Biovolume**
Gymnodiniales	
Other Gymnoid spp. (7 I.D. of *Akashiwo sanguinea*)	31.7
Gyrodinium spp.	2.2
Katodinium spp.	5.5
Peridiniales	
Protoperidinium spp.	2.2
Prorocentrales	
Prorocentrum minimum	12.0
Prorocentrum maximum	3.8
Prorocentrum gracile	2.2
Unidentified armored dinoflagellate spp.	37.2
Other unidentified dinoflagellate spp.	3.3

SJR at Talleyrand (percent dinoflagellates of total enumerated biovolume = 4.1)	**% Dinoflagellate Biovolume**
Dinophysiales	
Oxyphysis spp.	4.3
Dinophysis caudata	0.8
Gonyaulacales	
Ceratium hircus	1.4
C. furca, C. fusus, C. hirundinella, C. kofoidii, C. pentagonum	1.8
Gymnodiniales	
Katodinium spp.	7.3
Other Gymnoid spp. (13 I.D. of *Akashiwo sanguinea*)	26.7
Peridiniales	
Protoperidinium spp.	4.7
Other Peridiniales spp.	0.8
Prorocentrales	
Prorocentrum minimum	6.5
Prorocentrum micans	4.7
Prorocentrum maximum	8.0
Prorocentrum gracile	4.8
Unidentified armored dinoflagellate spp.	25.8
Other unidentified dinoflagellate spp.	2.3

SJR at Fulton Point (percent dinoflagellates of total enumerated biovolume = 4.1)	**% Dinoflagellate Biovolume**
Dinophysiales	
Dinophysis caudata	1.0
Unidentified *Oxyphysis* spp.	7.3
Gonyaulacales	
Ceratium hircus	3.6
Ceratium kofoidii	1.7
Ceratium furca, C. fusus, C. horridum, C. macroceros, C. pentagonum, C. trichoceros, C. tripos	3.4
Unidentified Gonyaulax spp.	0.8
Unidentified Pyrocystis spp.	1.5
Unidentified Pyrophacus spp	0.5
Gymnodiniales	
Gymnodinium spp. (29 I.D. of G. sanguineum)	23.2
Katodinium spp. (18% K. glaucum)	2.6
Peridiniales	
Unidentified Podolampas spp.	1.7
Protoperidinium unidentified spp.	6.8
Prorocentrales	
Prorocentrum gracile	7.2
Prorocentrum maximum	8.7
Prorocentrum micans	5.7
Prorocentrum minimum	3.7
Other Prorocentrum spp.	0.5
Unidentified Armored Dinoflagellates	19.3
Other	1.0