Table 1.1. Station Names and Positions

Station Name	Lat (N)	Long (W)	Comments
S77			Moore Haven Locks, upstream
S78			Ortona Locks, upstream
S79			Franklin Locks, upstream
Site1	26.6815	81.8340	Marker 27, CES04
Site2	26.6365	81.8887	Marker 54, CES05
Site3	26.5307	81.9657	Marker 83, CES07
Site4	26.4858	82.0238	Marker 5, CES11
GOM01	26.4183	82.0189	since Sep08
GOM02	26.5549	82.2376	since Jun08
GOM03	26.4158	82.0963	since Jun08
GOM04	26.4811	82.2060	since Jun08
GOM05	26.3038	81.9540	since Sep08
GOM06	26.4361	81.9691	since Jun08
GOM07	26.3469	81.8778	since Jun08
GOM08	26.3612	82.1630	since Sep08
GOM10	26.4835	82.2711	since Sep08
GOM11	26.3086	82.0963	since Jun08
GOM12	26.5545	82.2858	since Sep08
GOM16	26.4796	82.0720	Jun08 (old GOM12), since Jan08
GOM09	26.2525	82.2376	Jun08-Nov08 only
GOM13	26.4048	82.0128	Jun08 only (old GOM05)
GOM14	26.3978	81.9304	Jun08 only (old GOM08)
GOM15	26.2216	81.8552	Jun08 only (old GOM10)

Table 1.2. Nutrient Analytical Parameters and Methods.

Parameter	Analytical Method
Dissolved Oxygen	YSI Sonde
Specific Conductance	YSI Sonde
Temperature	YSI Sonde
Dissolved Nitrite	automated colorimetric method (Koroleff, 1983)
Dissolved Nitrate + nitrite	automated colorimetric method (Koroleff, 1983)
Dissolved Ammonia	automated colorimetric method (Koroleff, 1983)
Total Dissolved Nitrogen	persulfate oxidation followed by automated colorimetric method (Koroleff, 1983)
Dissolved Orthophosphate	automated colorimetric method (Koroleff, 1983)
Total Dissolved Phosphorus	persulfate oxidation followed by automated colorimetric method (Koroleff, 1983)
Dissolved Organic Carbon	automated catalytic combustion (Benner and Strom, 1993)
Particulate Organic Carbon	high temperature combustion and/or isotope-ratio mass spectrometry (Loh et al., 2006)
Particulate Nitrogen	high temperature combustion and/or isotope-ratio mass spectrometry (Loh et al., 2006)
Particulate Phosphorus	high temperature ashing followed by colorimetric method (Aspila et al., 1976)
Sedimentary Organic Carbon	high temperature combustion and/or isotope-ratio mass spectrometry (Loh et al., 2006)
Sedimentary Nitrogen	high temperature combustion and/or isotope-ratio mass spectrometry (Loh et al., 2006)
Sedimentary Phosphorus	high temperature ashing followed by colorimetric method (Aspila et al., 1976)

Table 1.3: Hydrographic Data for Caloosahatchee River Estuary and Gulf of Mexico

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
May 2008						
Site 1	23.23	23.51	26.90	27.91	5.05	3.86
Site 2	27.65	30.43	27.06	27.18	5.26	4.70
Site 3	39.68	39.75	28.26	28.00	3.92	3.93
Site 4	41.97	42.49	28.01	27.56	4.65	4.92
June 2008						
Site 1	23.97	26.93	28.72	29.30	4.04	2.31
Site 2	28.95	29.89	29.31	29.20	3.44	2.77
Site 3	37.29	37.43	29.80	29.74	2.84	2.35
Site 4	42.55	42.64	29.86	29.74	3.34	3.40
GOM01	42.63	42.95	31.50	29.80	3.08	3.85
GOM02	42.69	42.71	30.37	29.85	3.14	3.23
GOM03	42.86	42.84	29.64	29.74	3.03	3.10
GOM04	42.99	42.94	30.03	30.00	3.04	2.98
GOM06	43.49	43.94	29.98	29.80	7.87	2.76
GOM07	41.98	42.08	29.50	29.43	2.80	3.05
GOM09	41.77	41.73	29.25	29.32	4.28	3.70
GOM13	42.78	42.81	29.93	29.73	4.24	3.52
GOM14	42.62	42.91	29.95	29.88	2.96	3.02
GOM15	42.10	42.11	29.24	29.15	2.94	2.98
GOM16	41.65	42.01	28.95	29.06	3.21	3.18
July 2008						
Site 1	3.59	4.02	28.70	28.82	2.63	2.14
Site 2	8.78	11.24	28.47	28.67	1.21	0.80
Site 3	20.12	24.05	27.70	28.54	0.85	0.52
Site 4	35.72	35.98	27.67	28.99	0.35	0.29
August 2008						
Site 1	0.30	0.30	29.76	29.83	4.30	4.13
Site 2	2.15	5.57	29.97	30.46	6.35	2.46
Site 3	16.80	21.66	31.68	30.61	7.29	6.13
Site 4	31.37	31.59	30.37	30.12	6.53	6.07
September 2008						
Site 1	0.20	0.21	28.46	28.04	3.89	2.09
Site 2	0.21	0.21	27.32	27.13	6.90	6.90
Site 3	5.58	18.56	28.61	27.98	6.72	5.82
Site 4	19.67	32.06	29.25	27.94	6.62	5.73
GOM01	34.04	35.52	29.20	28.90	6.30	5.51
GOM02	35.59	37.55	30.57	29.18	6.22	4.22
GOM03	35.80	35.97	30.00	28.98	5.71	5.16
GOM04	38.47	38.45	29.75	29.35	6.07	5.91

Table 1.3 continued

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
GOM05	39.51	39.52	28.74	28.75	6.82	7.15
GOM06	44.23	46.46	29.05	29.16	5.77	5.16
GOM07	34.70	36.03	29.06	28.71	6.21	4.90
GOM08	39.79	40.08	29.49	29.11	6.83	6.40
GOM09	40.65	40.64	29.20	29.10	5.41	5.42
GOM10	37.86	38.34	29.41	28.92	6.14	5.04
GOM11	39.51	39.74	28.97	28.98	4.44	4.40
GOM12	37.22	38.15	28.82	28.72	5.16	4.29
October 2008						
Site 1	2.09	9.10	25.38	25.23	5.03	4.13
Site 2	6.14	13.55	24.56	25.04	4.85	4.17
Site 3	13.86	16.45	23.74	24.06	4.83	4.78
Site 4	26.18	26.30	22.83	22.85	4.87	5.02
November 2008						
Site 1	7.35	7.35	26.70	26.56	4.31	4.36
Site 2	10.99	13.76	24.32	23.21	4.09	3.86
Site 3	17.86	19.85	23.28	22.84	3.79	3.47
Site 4	29.82	30.37	23.17	22.83	3.50	3.44
GOM01	32.92	39.94	21.76	21.84	8.18	7.20
GOM02	36.39	36.32	20.20	20.72	9.10	9.16
GOM03	36.66	36.66	21.49	21.39	8.13	7.76
GOM04	36.55	36.55	20.87	20.86	9.85	9.28
GOM05	36.73	37.03	21.45	21.46	8.23	7.14
GOM06	32.84	35.02	21.61	21.46	7.98	8.33
GOM07	35.85	36.45	21.93	21.31	7.80	7.83
GOM08	36.67	36.66	21.56	21.50	8.85	7.57
GOM09	47.70	47.66	22.80	22.88	0.91	0.54
GOM10	31.80	36.81	21.43	21.43	8.74	8.17
GOM11	36.07	36.87	21.58	22.42	8.65	7.49
GOM12	36.65	36.65	21.31	21.31	9.03	8.10
December 2008						
Site 1	6.74	11.67	22.59	19.71	7.05	6.85
Site 2	10.77	19.36	21.72	19.72	10.40	8.47
Site 3	23.35	30.86	19.43	19.28	8.96	5.45
Site 4	32.05	32.23	19.92	19.64	8.54	8.36
January 2009						
Site 1	5.86	8.71	24.83	23.21	7.60	6.66
Site 2	14.91	16.84	22.30	22.16	8.42	7.60
Site 3	26.54	28.16	21.77	21.77	7.74	7.58
Site 4	37.28	37.29	21.16	21.18	6.79	6.70
GOM01	36.54	36.52	20.08	20.46	6.43	6.21
GOM02			15.95	15.66	8.10	7.99

Table 1.3 continued

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
GOM03	36.58	36.65	20.26	20.02	6.64	6.38
GOM04	36.27	36.27	15.58	15.58	7.84	7.81
GOM05	40.10	40.17	20.90	20.89	7.42	7.30
GOM06	37.20	37.18	19.27	19.58	7.27	7.05
GOM07	39.85	39.88	20.93	20.93	7.46	6.48
GOM08	36.58	36.65	20.16	20.05	6.62	6.30
GOM10	40.06	40.04	21.05	20.68	8.06	7.31
GOM11	36.73	36.72	20.24	20.11	6.68	6.39
GOM12	40.02	40.11	21.31	20.77	7.37	7.29
GOM16	35.05	35.47	15.78	15.47	8.44	8.37
February 2009						
Site 1	5.97	8.12	21.38	19.53	10.15	9.65
Site 2	15.28	19.07	17.70	16.83	9.92	9.33
Site 3	23.48	30.34	17.83	16.40	9.25	8.48
Site 4	33.65	34.31	16.27	16.04	8.50	8.47
March 2009						
Site 1	10.83		23.29		7.40	
Site 2	16.62		21.33		7.98	
Site 3	39.49		22.54		7.41	
Site 4	35.86		22.15		6.95	
GOM01	40.10	39.97	20.02	19.25	7.16	7.42
GOM02	40.01	40.02	21.21	21.18	6.16	6.71
GOM03	39.95	40.05	18.90	18.24	7.24	7.24
GOM04		40.05		16.39		6.83
GOM05	40.72	40.67	18.03	17.81	8.67	8.94
GOM06	40.11	40.11	19.90	19.82	7.42	7.47
GOM07	40.55	40.49	18.50	18.57	7.88	7.84
GOM08	39.95	40.02	18.62	18.41	7.24	7.36
GOM10	40.18	39.94	21.66	19.57	3.87	4.30
GOM11	39.82	39.86	22.16	21.32	6.56	7.01
GOM12	40.17	39.96	21.22	19.64	6.85	
GOM16	38.67	38.58	20.18	20.59	7.42	7.39
April 2009						
Site 1	10.54		27.89		8.88	
Site 2	21.13		26.13		6.07	
Site 3	33.45		25.59		5.37	
Site 4	39.78		24.53		5.98	
May 2009						
Site 1	15.45		31.73		7.56	
Site 2	23.14		30.23		6.33	
Site 3	35.53		28.85		5.96	
Site 4	41.21		28.24		6.62	

Table 1.3 continued

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
GOM01	41.52	41.32	28.38	28.44	6.26	6.15
GOM02	42.09	42.02	28.83	28.45	5.98	6.08
GOM03	41.90	41.94	27.82	27.75	6.25	6.23
GOM04	42.26	41.91	29.18		5.94	6.10
GOM05	41.56	41.53	25.75	25.82	7.34	7.10
GOM06	42.18	42.30	27.57	27.40	5.92	5.86
GOM07	41.81	41.76	26.42	26.50	5.81	5.94
GOM08	41.76	41.82	27.36	27.27	6.58	6.39
GOM10	41.62	41.60	27.33	27.22	6.16	5.96
GOM11	41.73	41.64	26.85	26.99	7.70	7.59
GOM12	41.95	41.94	27.92	27.91	6.03	6.08
GOM16	38.07	37.99	26.21	26.10	6.00	5.79
June 2009						
Site 1	0.74	3.47	31.54	29.87	5.85	1.18
Site 2	4.01	12.24	30.98	29.78	8.95	1.97
Site 3	16.01	22.73	30.06	29.82	5.15	3.72
Site 4	32.52	36.51	28.95	29.58	3.33	3.80
July 2009						
Site 1	0.21	0.21	33.98	31.32	4.17	3.75
Site 2	0.25	0.25	32.86	30.70	9.21	7.42
Site 3	7.58	16.89	31.56	31.17	8.34	5.40
Site 4	25.51	29.31	31.21	31.15	5.61	5.71
GOM01	41.52	41.47	31.20	31.31	7.46	7.44
GOM02	41.15	41.24	31.34	30.95	6.55	6.13
GOM03						
GOM04	40.50	40.73	31.88	31.78	6.56	6.49
GOM05	41.20	39.43	30.89	30.50	8.34	7.67
GOM06	36.89	37.83	32.07	31.81	7.31	7.44
GOM07	38.88	41.13	31.47	30.64	7.94	6.12
GOM08	41.57	41.46	31.03	31.30	6.74	7.20
GOM10	41.13	41.25	31.08	30.63	7.13	7.16
GOM11	41.30	41.30	30.84	30.84	7.89	7.89
GOM12	41.24	41.20	30.50	30.54	4.94	92.20
GOM16		36.61		31.58		4.72
August 2009						
Site 1	0.23	0.23	31.83	31.15	5.60	5.18
Site 2	0.24	0.23	32.10	30.74	5.50	5.92
Site 3	7.68	12.32	30.08	30.56	6.28	4.64
Site 4	21.83	31.43	30.32	30.49	5.00	5.16

Table 1.3 continued

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
September 2009						
Site 1	0.24	0.25	30.87	29.88	3.98	3.96
Site 2	0.51	0.36	30.33	29.66	5.67	5.02
Site 3	5.81	15.40	29.87	29.96	6.00	4.80
Site 4	23.48	25.65	29.36	29.30	4.88	4.31
GOM01	37.96	38.62	30.43	30.18	6.31	5.36
GOM02	39.69	40.64	30.08	30.05	1.31	0.83
GOM03	40.08	40.12	29.98	29.89	6.37	6.27
GOM04	39.52	40.26	31.87	30.79	1.57	1.26
GOM05	40.70	40.63	29.85	29.97	6.51	6.31
GOM06	37.07	38.07	30.12	30.24	6.54	5.99
GOM07	39.84	40.19	30.25	30.23	6.11	2.91
GOM08	40.53	40.58	29.98	29.92	6.59	6.58
GOM10	38.50	40.67	32.50	31.08	1.18	1.10
GOM11	40.75	40.80	29.88	29.79	6.31	6.40
GOM12	40.12	41.13	29.51	29.96	0.81	0.53
GOM16	30.02	30.07	30.44	30.33	1.25	1.09
October 2009						
Site 1	8.56	12.65	28.00	24.38	7.49	7.18
Site 2	8.55	18.63	25.78	24.23	9.04	8.00
Site 3	23.82	31.09	24.19	24.08	7.74	6.83
Site 4	32.16	33.18	24.03	24.25	6.13	5.87
November 2009						
Site 1	12.89	21.90	22.49	23.08	8.68	5.46
Site 2	17.07	19.30	22.04	21.97	5.52	5.68
Site 3	27.97	27.91	21.73	21.86	7.76	7.39
Site 4	36.06	36.14	20.83	21.24	7.40	6.89
GOM01	39.12	40.26	22.28	22.43	7.37	7.96
GOM02	40.15	40.14	22.66	22.51	6.78	6.67
GOM03	40.90	40.89	22.88	22.81	7.28	7.98
GOM04	40.72	40.87	22.20	22.07	7.61	7.98
GOM05	39.99	41.06	22.34	22.63	7.76	7.82
GOM06	36.70	36.69	21.41	21.45	7.45	7.61
GOM07	39.28	40.44	22.46	22.63	7.42	7.69
GOM08	40.40	40.34	23.40	23.42	7.07	7.13
GOM10	40.39	40.29	22.90	22.94	6.89	6.98
GOM11	41.24	41.30	22.78	22.71	7.43	7.88
GOM12	40.17	40.14	22.65	22.65	6.98	6.98
GOM16	37.55	37.84	21.61	21.66	7.53	8.38

Table 1.3 continued

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
December 2009						
Site 1	8.57	15.35	26.66	24.34	7.66	5.66
Site 2	13.55	19.42	25.23	24.18	9.19	7.30
Site 3	20.13	24.42	23.84	24.02	8.13	7.65
Site 4	33.17	33.14	23.74	23.75	7.14	7.05
January 2010						
Site 1	7.85	16.16	17.86	13.66	10.05	9.71
Site 2	14.90	20.75	14.16	12.30	10.63	10.62
Site 3	22.63	24.00	12.21	11.72	10.77	11.28
Site 4	32.82	32.77	11.80	11.93	9.96	10.06
GOM01	39.18	39.02	16.97	17.20	39.18	39.02
GOM02	35.21	35.41	16.02	15.69	7.85	7.71
GOM03	39.46	39.40	10.50	16.67	8.97	8.30
GOM04	34.97	35.00	16.42	16.08	8.74	7.97
GOM05	40.05	39.97	16.74	16.87	8.10	7.66
GOM06	38.06	38.06	17.80	17.80	7.39	7.03
GOM07	39.39	39.31	17.31	17.38	8.03	7.50
GOM08	35.43	35.50	16.02	15.93	7.77	7.75
GOM10	35.58	35.65	16.05	16.03	7.95	7.91
GOM11	35.58		16.03		7.92	
GOM12	35.69	35.69	15.57	15.58	8.06	7.86
GOM16			12.54	12.65	8.10	8.01
February 2010						
Site 1	6.15	7.05	17.90	17.13	9.80	9.34
Site 2	11.18	15.52	16.80	17.00	10.08	8.67
Site 3	20.36	20.39	16.24	16.40	9.57	9.60
Site 4	30.26	30.80	14.48	14.30	8.51	8.30
March 2010						
Site 1	0.36	0.38	21.43	20.36	8.88	8.19
Site 2	0.42	0.43	19.47	18.97	9.23	8.83
Site 3	7.31	17.41	18.29	18.94	9.47	9.51
Site 4	28.08	32.44	16.45	16.95	7.81	7.71
GOM01	40.29	40.55	14.80	14.33	8.95	8.82
GOM02			15.93	15.87	7.85	7.87
GOM03	40.64	40.52	13.99	13.97	8.72	8.79
GOM04			16.82	16.37	7.75	7.87
GOM05			14.64	14.52	8.80	8.77
GOM06	39.84	39.91	15.87	16.05	8.76	8.84
GOM07	40.30	40.71	15.31	14.43	8.79	8.34
GOM08	41.09	41.10	14.05	13.85	8.81	8.88
GOM10			16.00	15.93	8.08	8.16
GOM11	41.15	41.17	13.88	13.82	8.65	8.67

Table 1.3 continued

	Salinity		Temp		DO (mg/L)	
Station	Surface	Bottom	Surface	Bottom	Surface	Bottom
GOM12			15.47	15.45	8.17	8.04
GOM16	33.92	33.92	15.20	15.20	7.75	7.78
April 2010						
Site 1	0.33	0.33	25.10	25.03	9.04	9.19
Site 2	1.09	1.08	23.57	23.79	10.04	10.40
Site 3	10.56	15.99	22.29	22.28	7.75	7.32
Site 4	22.96	27.82	21.63	21.99	7.64	7.86
May 2010						
Site 1	0.27	0.27	29.60	29.17	5.56	1.19
Site 2	0.28	0.28	28.16	27.93	5.75	5.70
Site 3	5.02	10.20	27.35	27.44	4.53	3.87
Site 4	17.10	30.87	26.24	27.34	5.11	3.74
May 2010						
Site 1.5	0.25		29.05		9.03	
Site 3	10.39	19.40	31.07	29.67	3.18	2.26
Site 4	30.03	31.72	30.28	29.86	3.42	3.59

**Site 1.5 is the half-way point between Sites 1 and 2 at Centennial Park.*

June 2010						
Site 1	0.25	0.25	30.20	29.68	5.22	4.93
Site 2	0.26	0.26	30.32	29.98	6.54	6.34
Site 3	11.00	23.14	30.92	30.81	5.84	4.70
Site 4	33.43	35.53	31.77	31.58	4.98	4.51
GOM01	38.71	39.66	30.93	29.97	3.11	2.82
GOM02	34.45	35.17	30.59	30.12	5.25	5.41
GOM03	59.84	59.20	31.59	30.96	6.42	5.99
GOM04	39.96	40.35	27.54	26.95	3.21	2.59
GOM05	40.60	40.62	29.17	29.02	2.63	2.53
GOM06	38.25	38.47	28.29	28.21	2.41	2.17
GOM07	39.87	40.20	30.07	29.67	3.11	2.83
GOM08	35.15	35.17	30.72	30.30	5.99	6.00
GOM10	34.82	35.10	30.82	29.95	5.47	6.12
GOM11	40.48	40.51	28.73	28.33	4.56	4.04
GOM12	34.39	35.15	30.69	29.71	5.61	5.70
GOM16	28.33	28.39	29.82	29.24	2.83	2.80
June 2010						
Site 1	0.23	0.23	31.11	30.85	6.47	6.22
Site 2	0.25	0.25	29.88	29.76	7.27	7.23
Site 3	8.51	10.48	30.50	30.32	5.96	5.53
Site 4	27.45	28.57	30.92	30.63	5.61	4.98

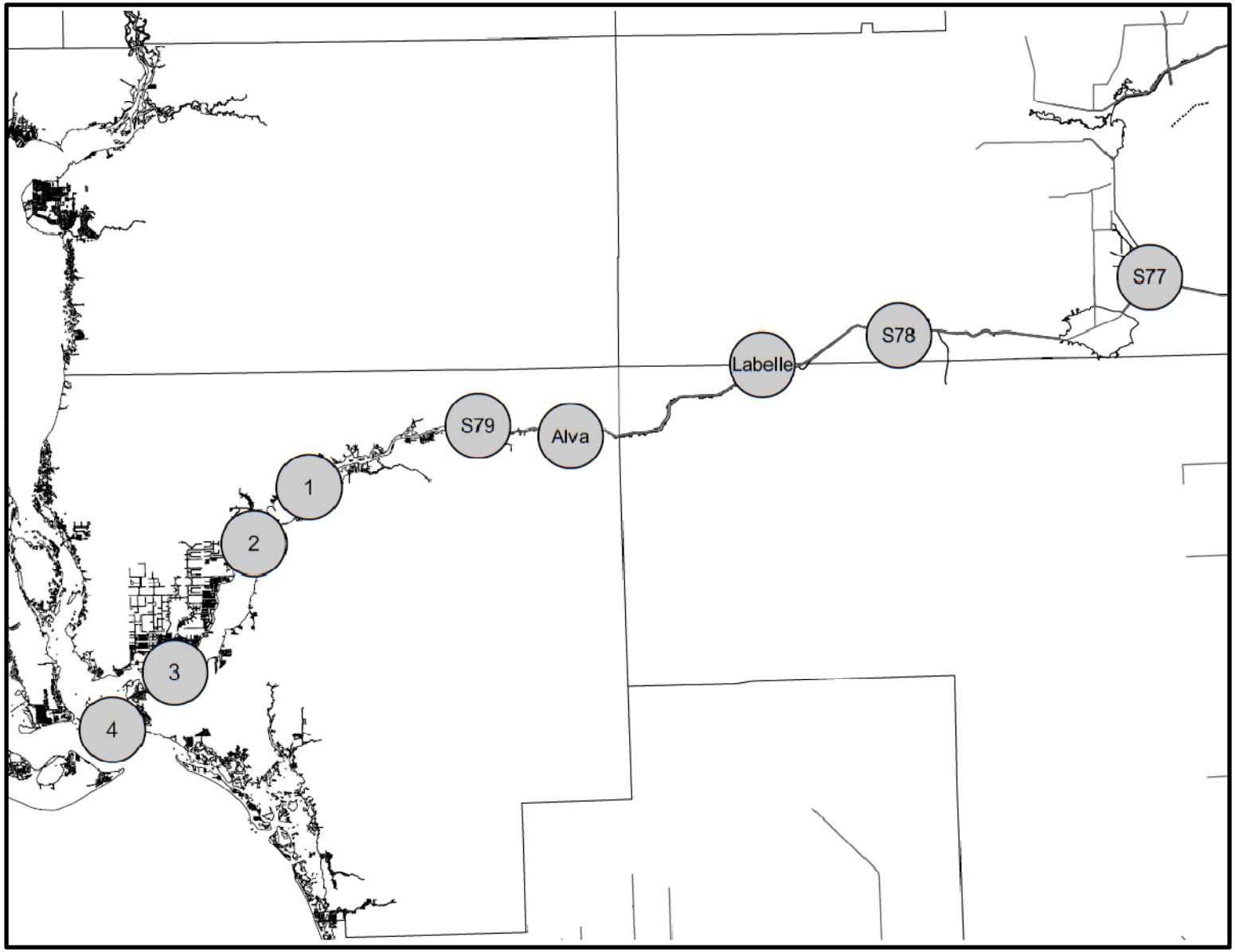

Figure 1.1a. Stations along the C-43 canal and the Caloosahatchee River Estuary (for Figures 1.7 and 1.8).

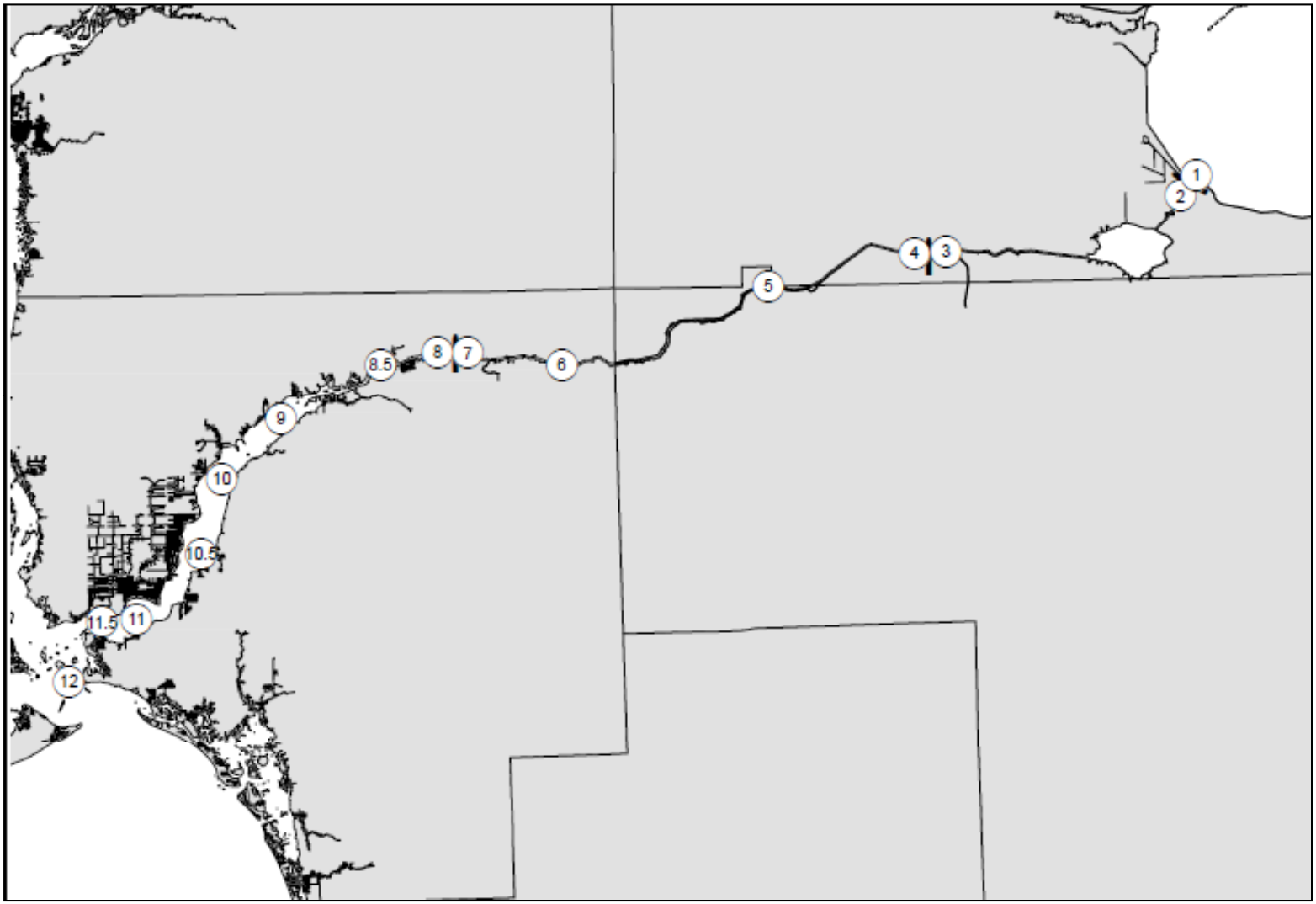

Figure 1.1b. Stations along the C-43 canal and the Caloosahatchee River Estuary (for Figures 1.11 to 1.19).

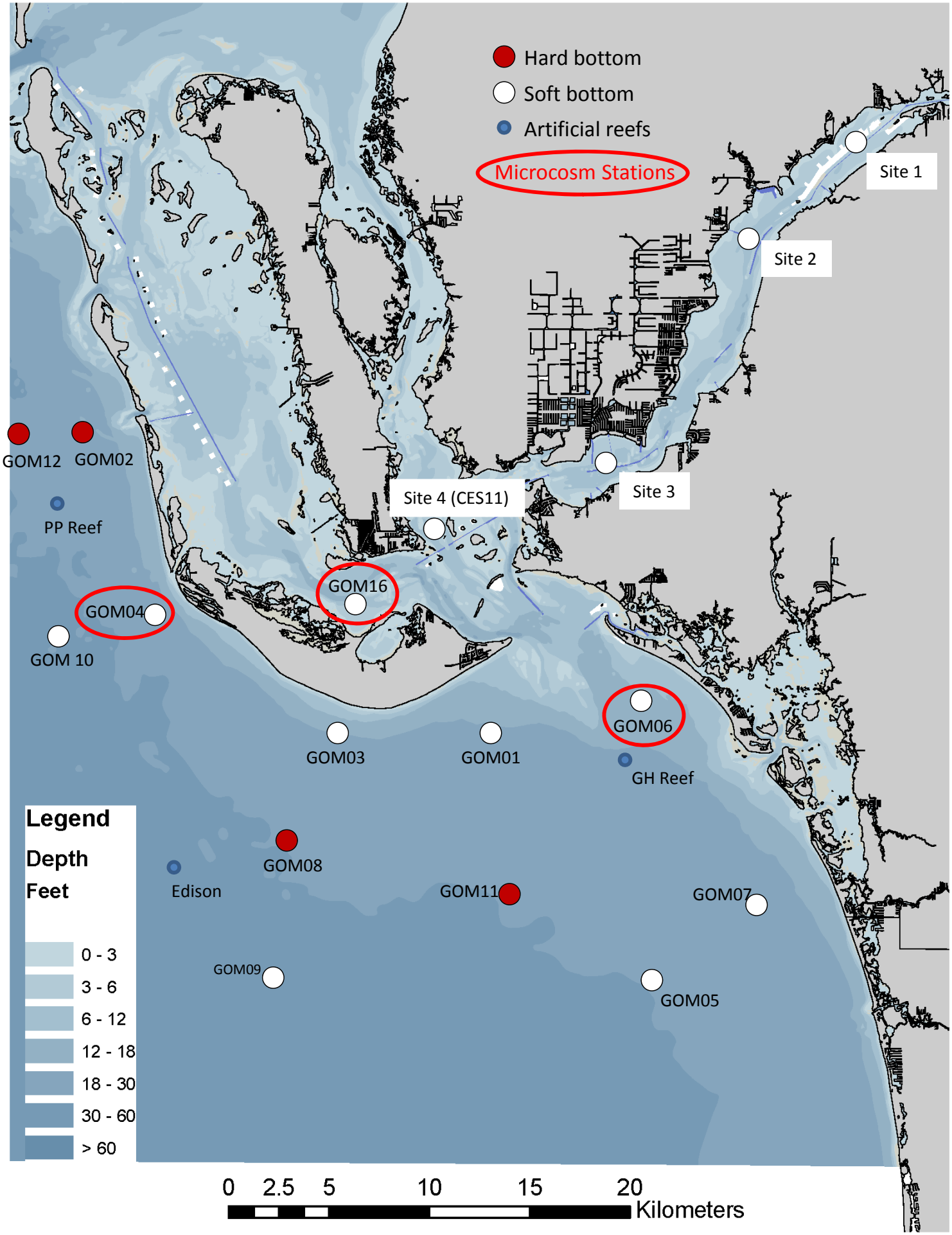

Figure 1.2. Map of sampling stations in the Caloosahatchee River Estuary and Gulf of Mexico.

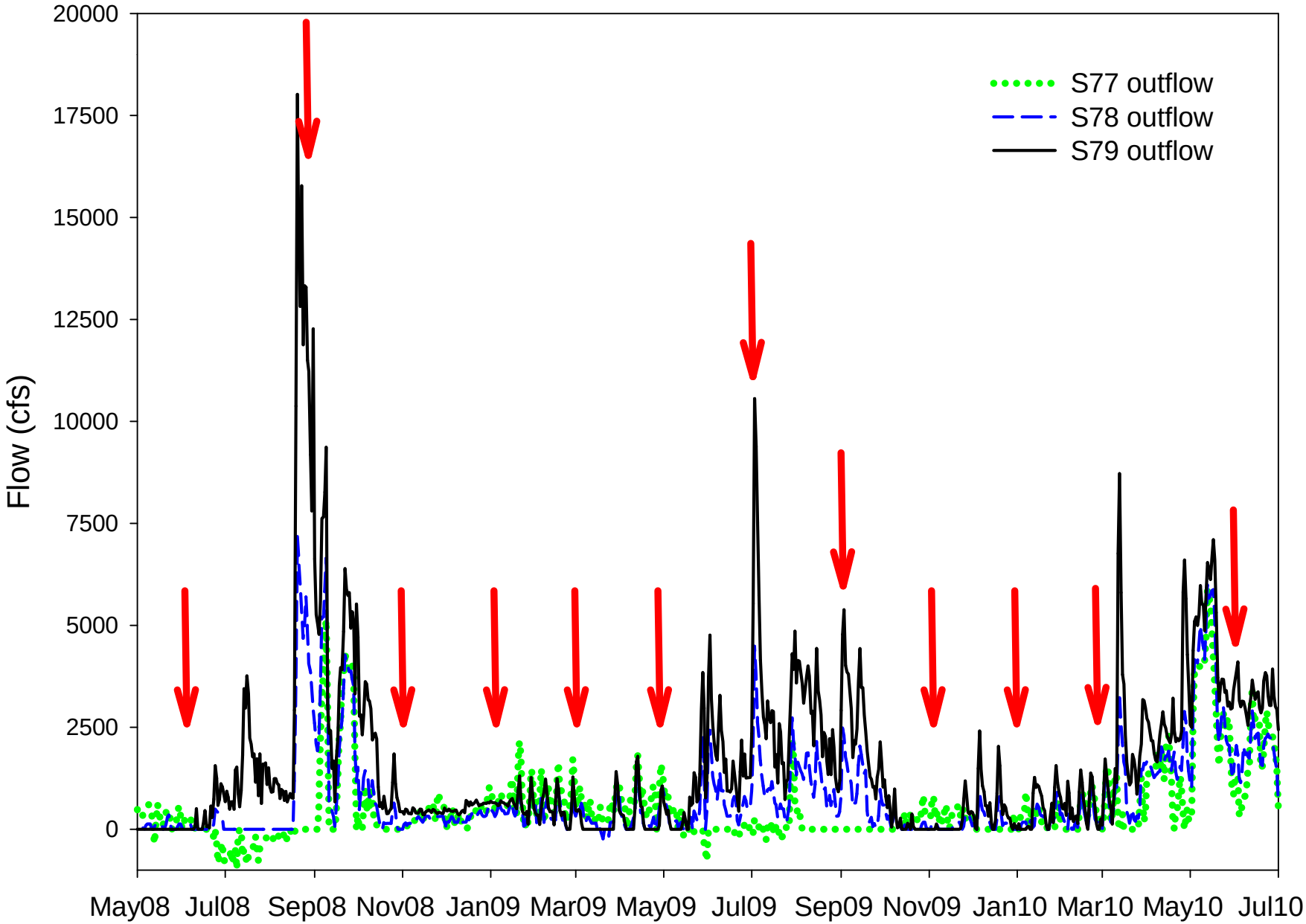

Figure 1.3. Caloosahatchee River flows through S77, S78 and S79 control structures from May 2008 – June 2009. Red arrows indicate actual bi-monthly Gulf of Mexico synoptic surveys for Objectives 1, 2 and 5.

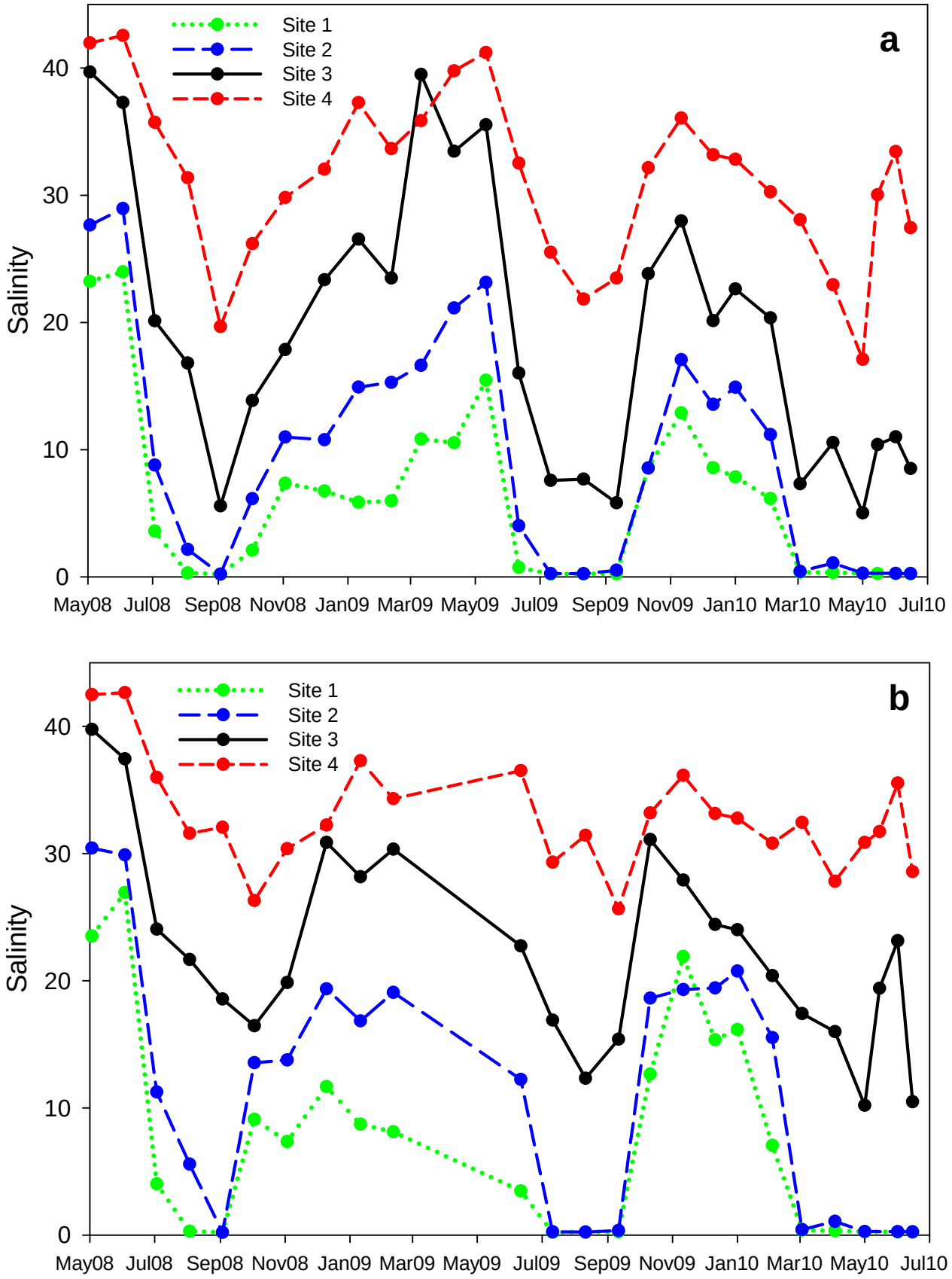

Figure 1.4. (a) Surface and (b) bottom salinity in the Caloosahatchee River Estuary from May 2008 – June 2010.

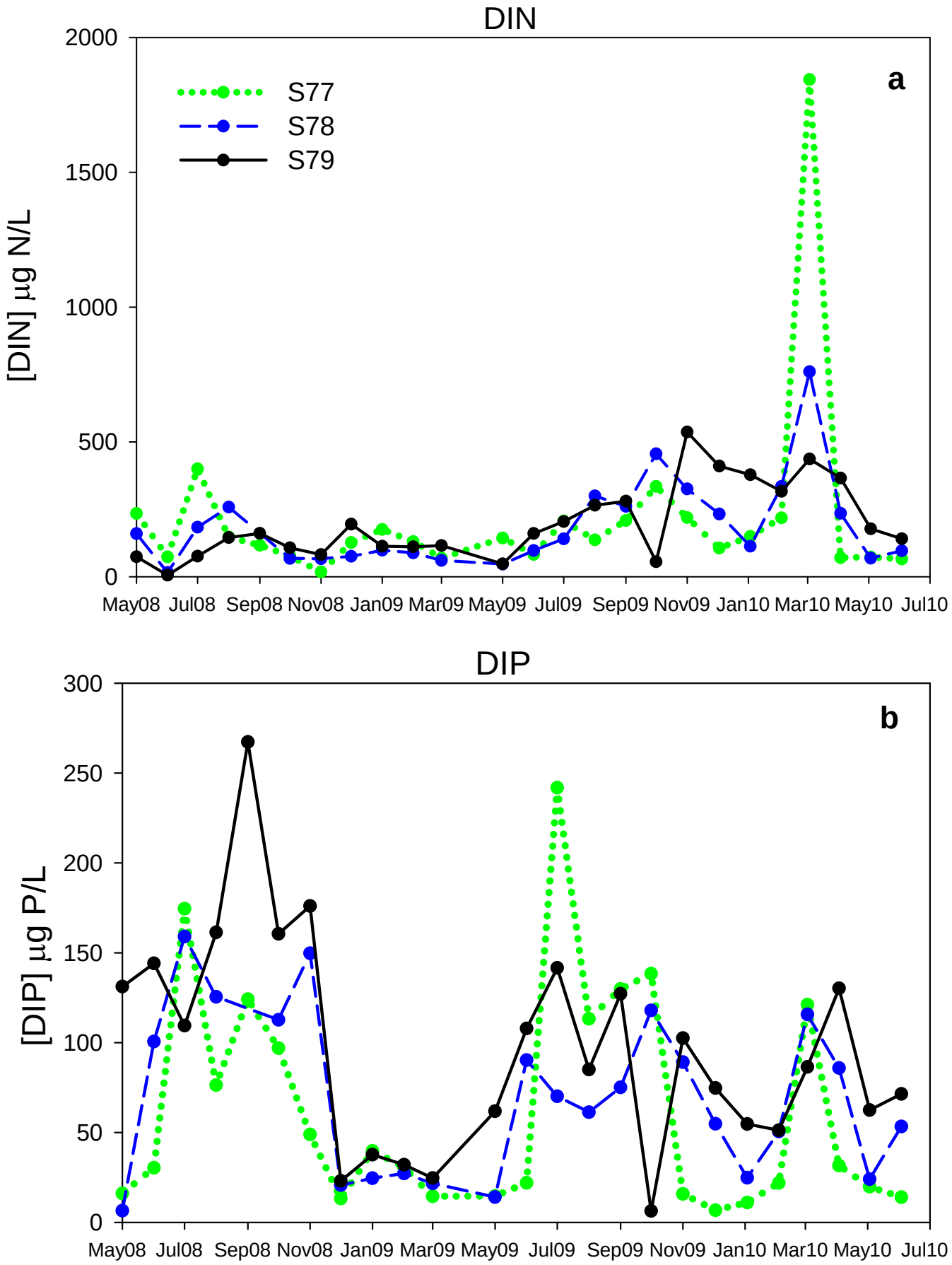

Figure 1.5. Concentrations of dissolved inorganic nitrogen and phosphorus at the S77, S78 and S79 control structures from May 2008 – June 2010.

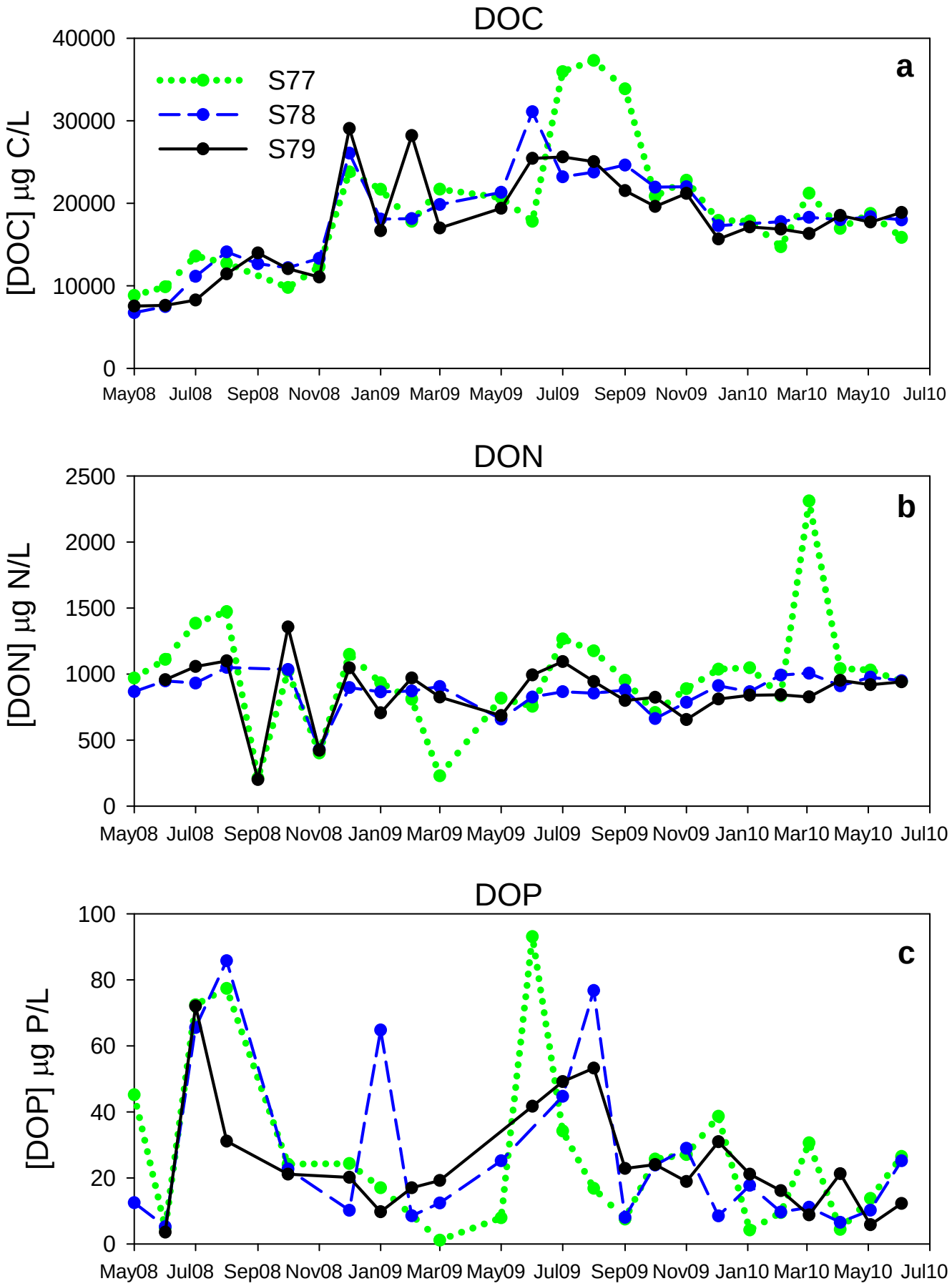

Figure 1.6. Concentrations of dissolved organic carbon, nitrogen and phosphorus at the S77, S78 and S79 control structures from May 2008 – June 2010.

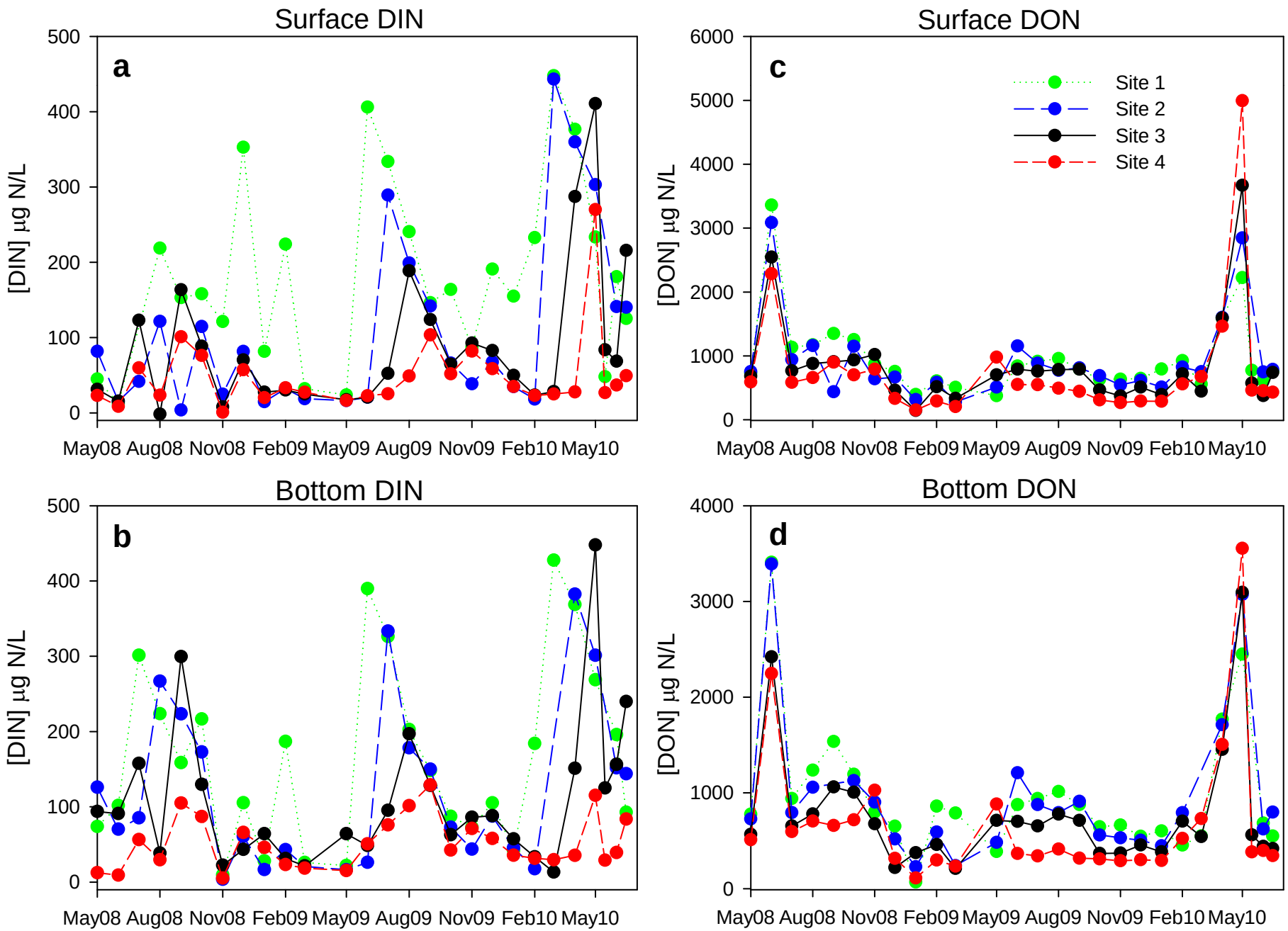

Figure 1.7. Concentrations of a) surface and b) bottom dissolved inorganic nitrogen and, c) surface and d) bottom dissolved organic nitrogen along the Caloosahatchee River Estuary from May 2008 – June 2010.

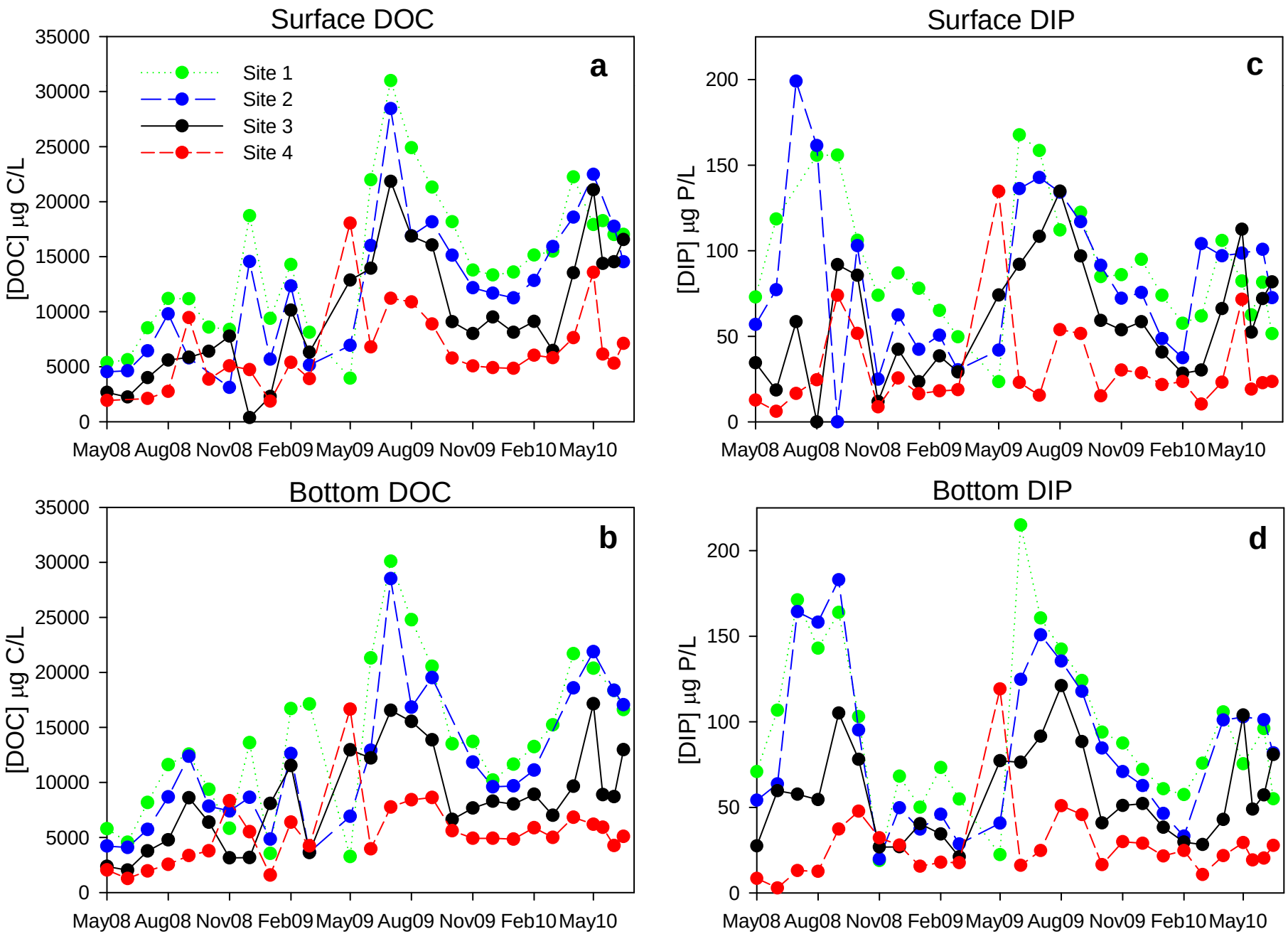

Figure 1.8. Concentrations of a) surface and b) bottom dissolved organic carbon and, c) surface and d) bottom dissolved inorganic phosphorus along the Caloosahatchee River Estuary from May 2008 – June 2010.

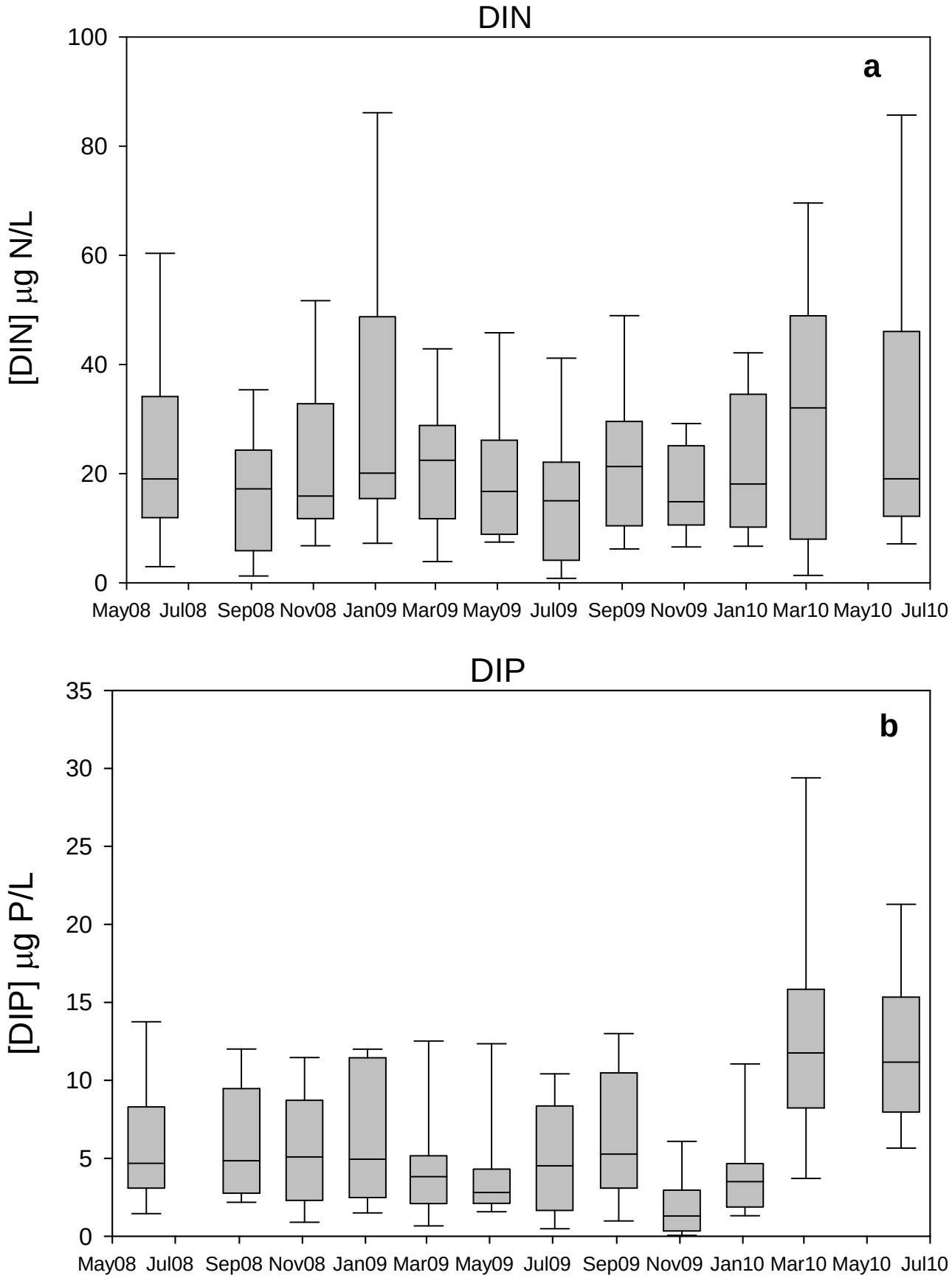

Figure 1.9. Concentrations of dissolved inorganic nitrogen and phosphorus for coastal Gulf of Mexico from May 2008 – June 2010. Boxes represents 25th to 75th percentile of the concentrations from all GOM sites with the line within the box marking the median value. Error bars indicate the 10th and 90th percentiles of the data.

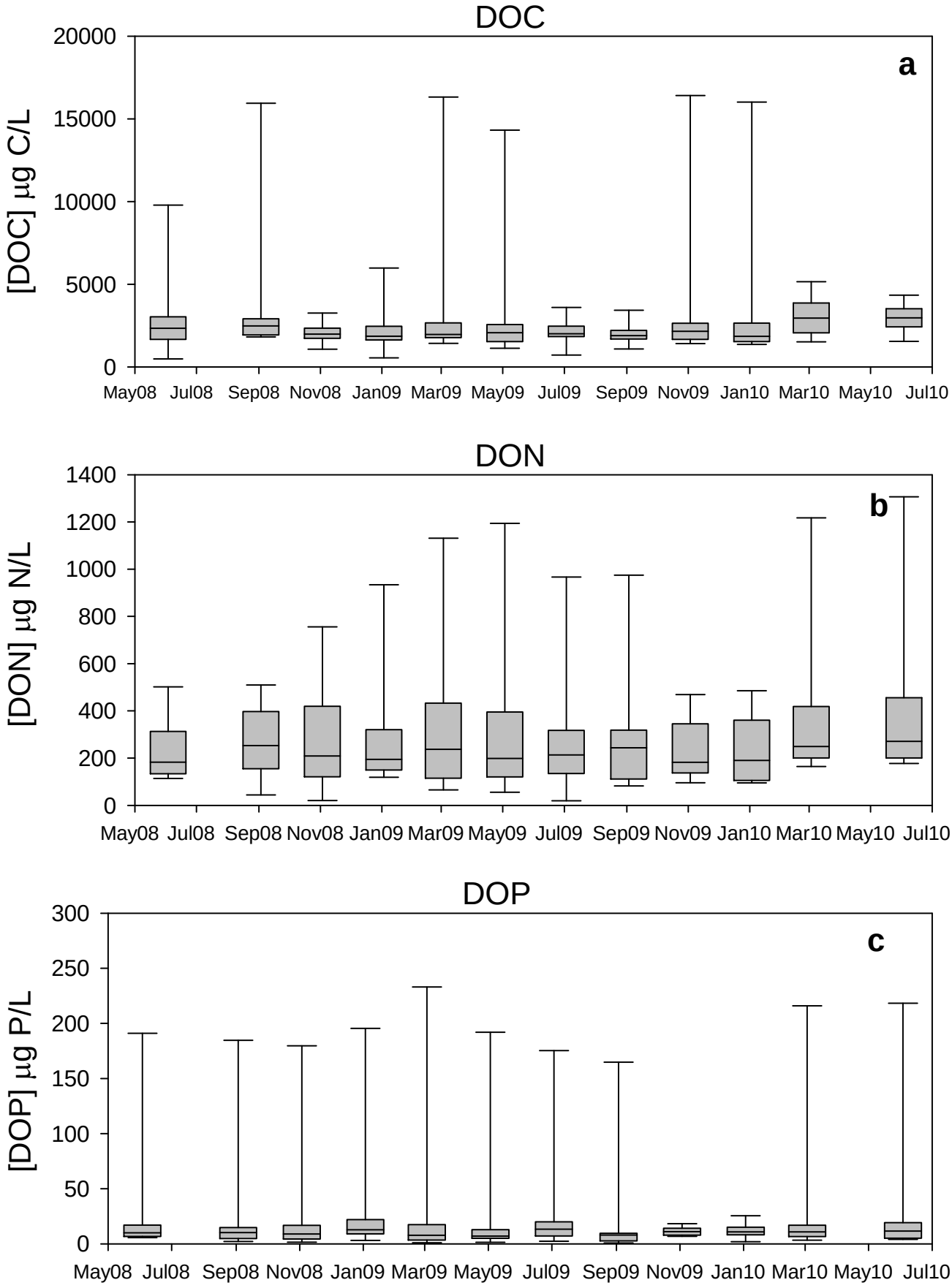

Figure 1.10. Concentrations of dissolved organic carbon, nitrogen and phosphorus for coastal Gulf of Mexico from May 2008 – June 2010. Boxes represents 25th to 75th percentile of the concentrations from all GOM sites with the line within the box marking the median value. Error bars indicate the 10th and 90th percentiles of the data.

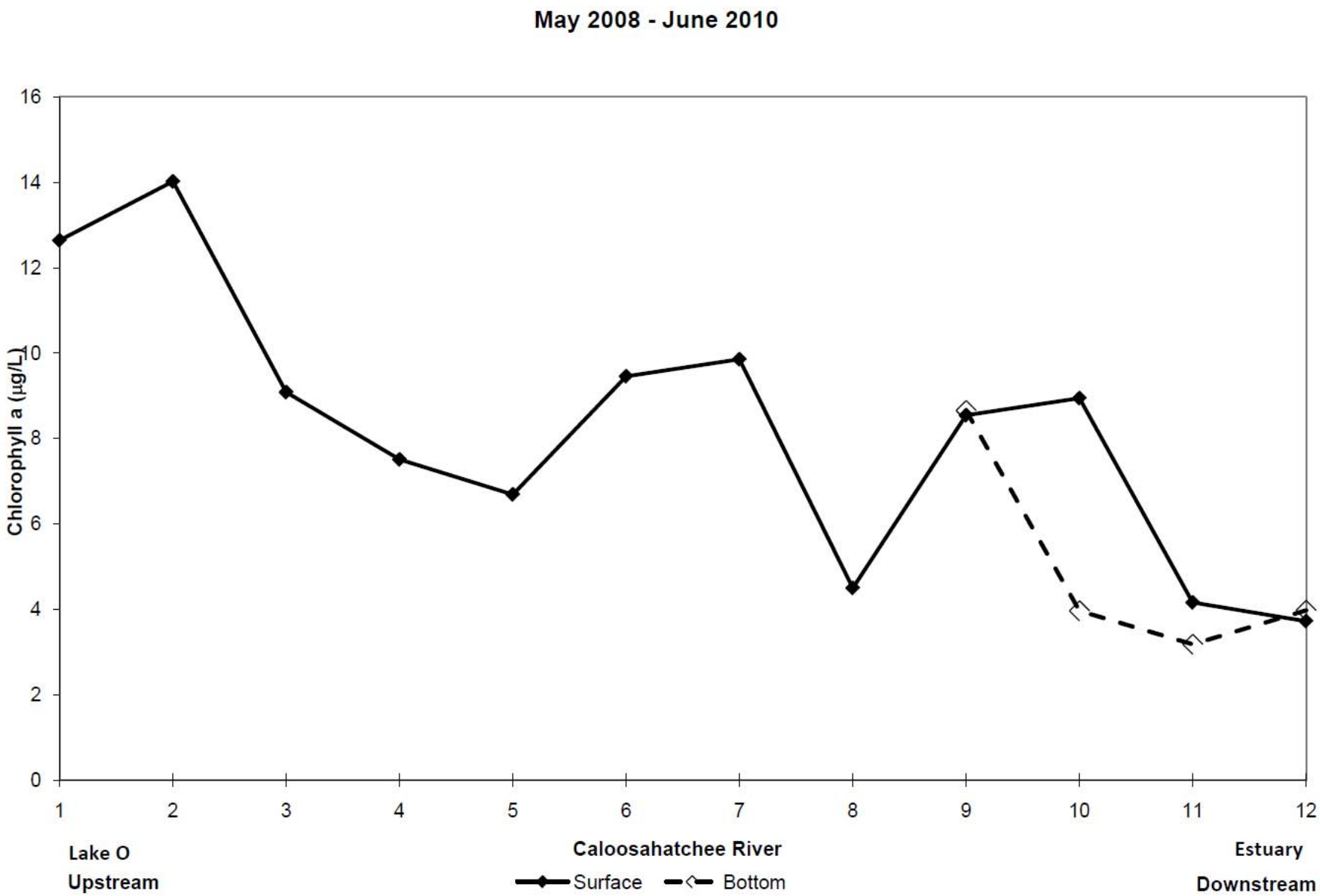

Figure 1.11. Average concentrations of chlorophyll a as an indication of algal abundance along the Caloosahatchee River and estuary. Average of 2 years of monthly data. Solid line is surface samples and dashed line is bottom samples.

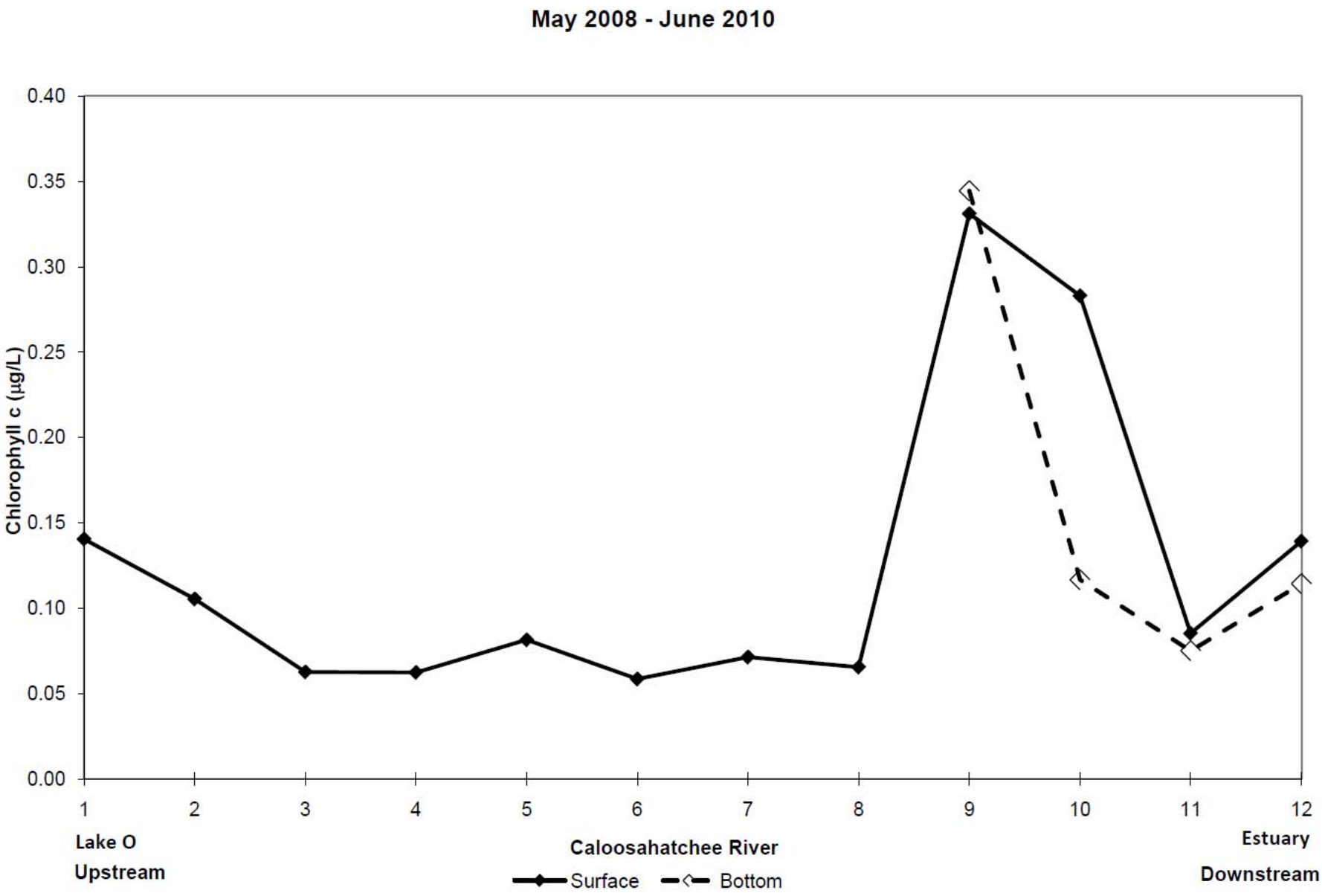

Figure 1.12. Average concentrations of chlorophyll c as an indication of chromoophyte algal abundance along the Caloosahatchee River and estuary. Average of 2 years of monthly data. Solid line is surface samples and dashed line is bottom samples.

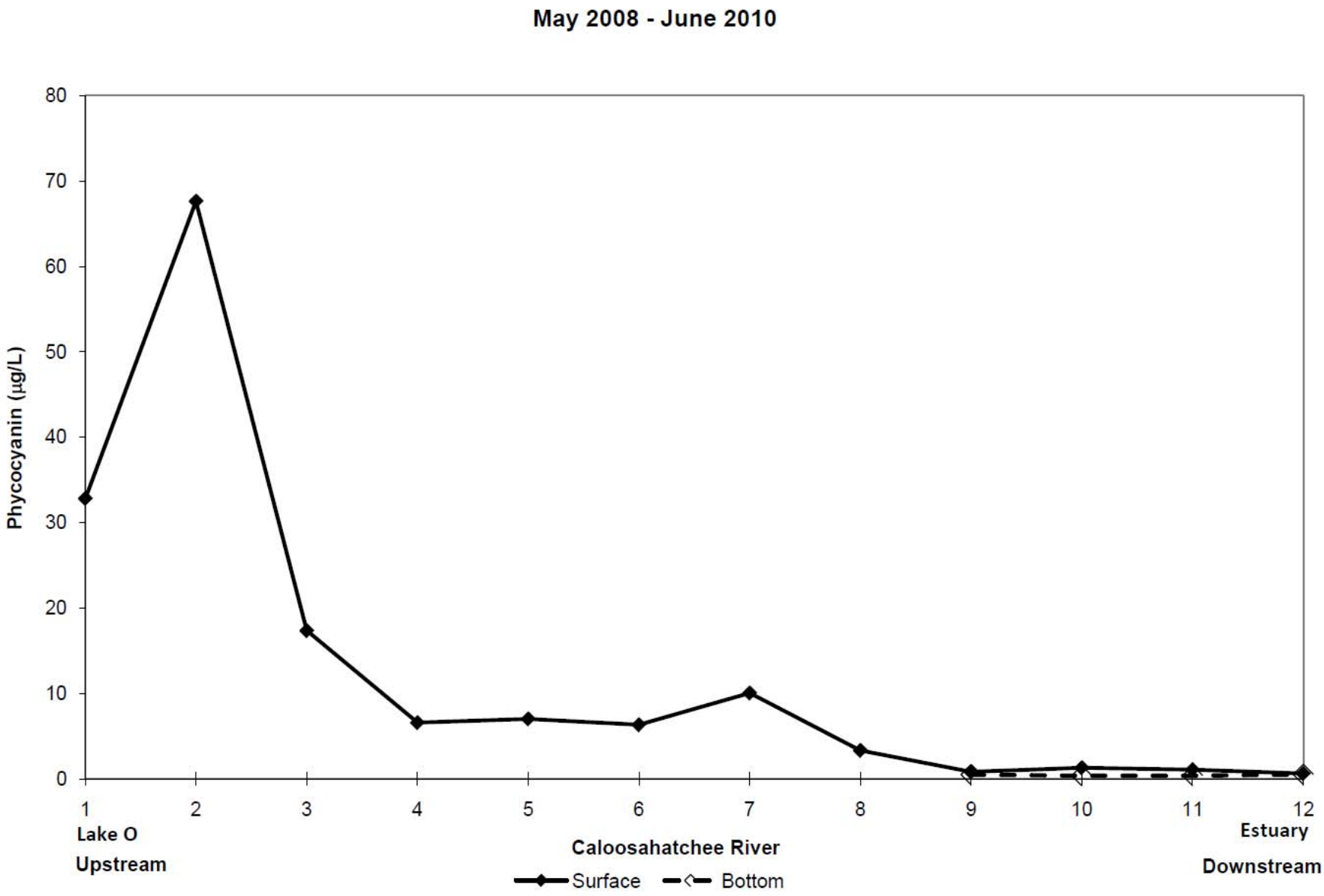

Figure 1.13. Average concentrations of phycocyanin as an indication of cyanobacterial abundance along the Caloosahatchee River and estuary. Average of 2 years of monthly data. Solid line is surface samples and dashed line is bottom samples.

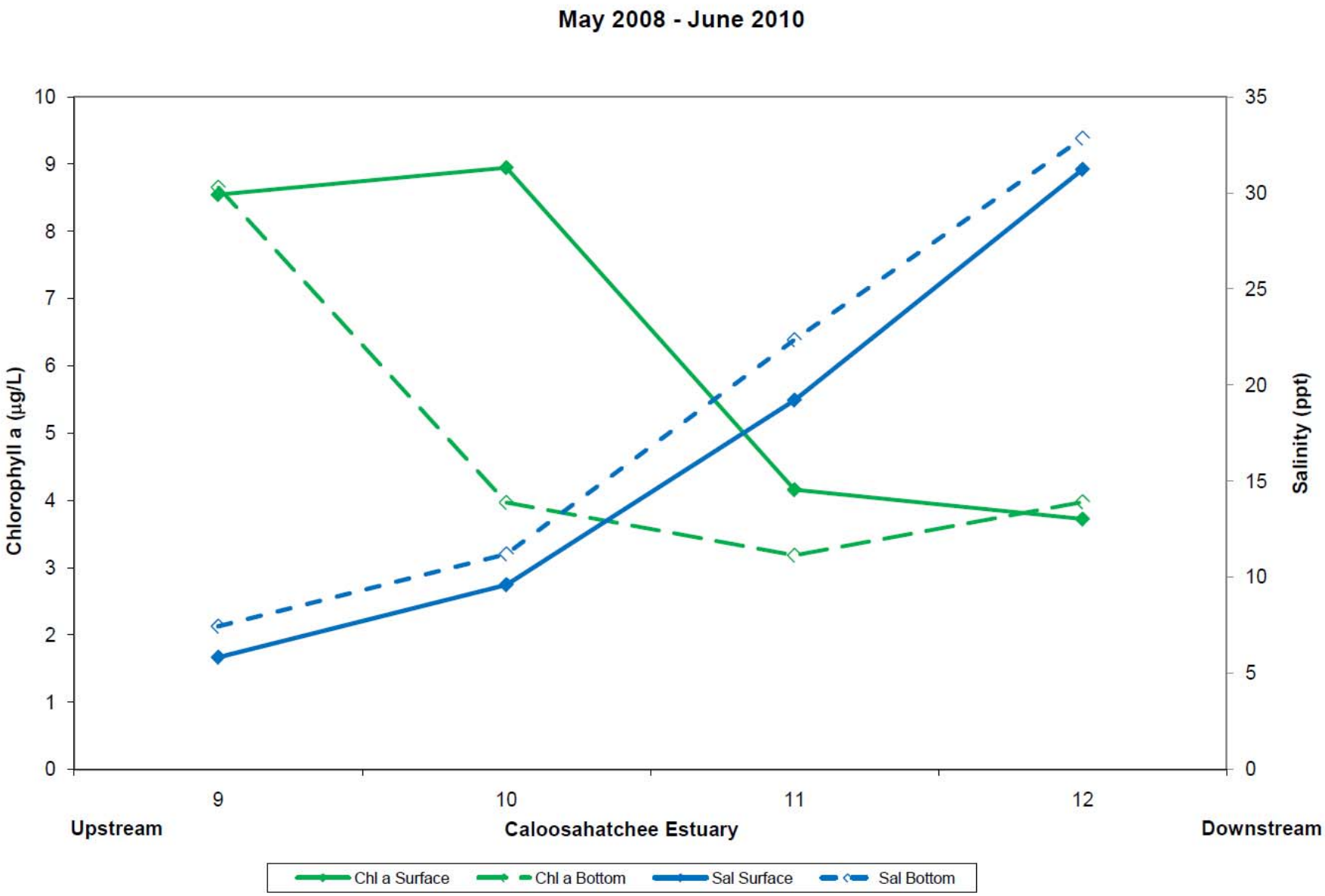

Figure 1.14. Plot of chlorophyll a and salinity along the Caloosahatchee estuary.

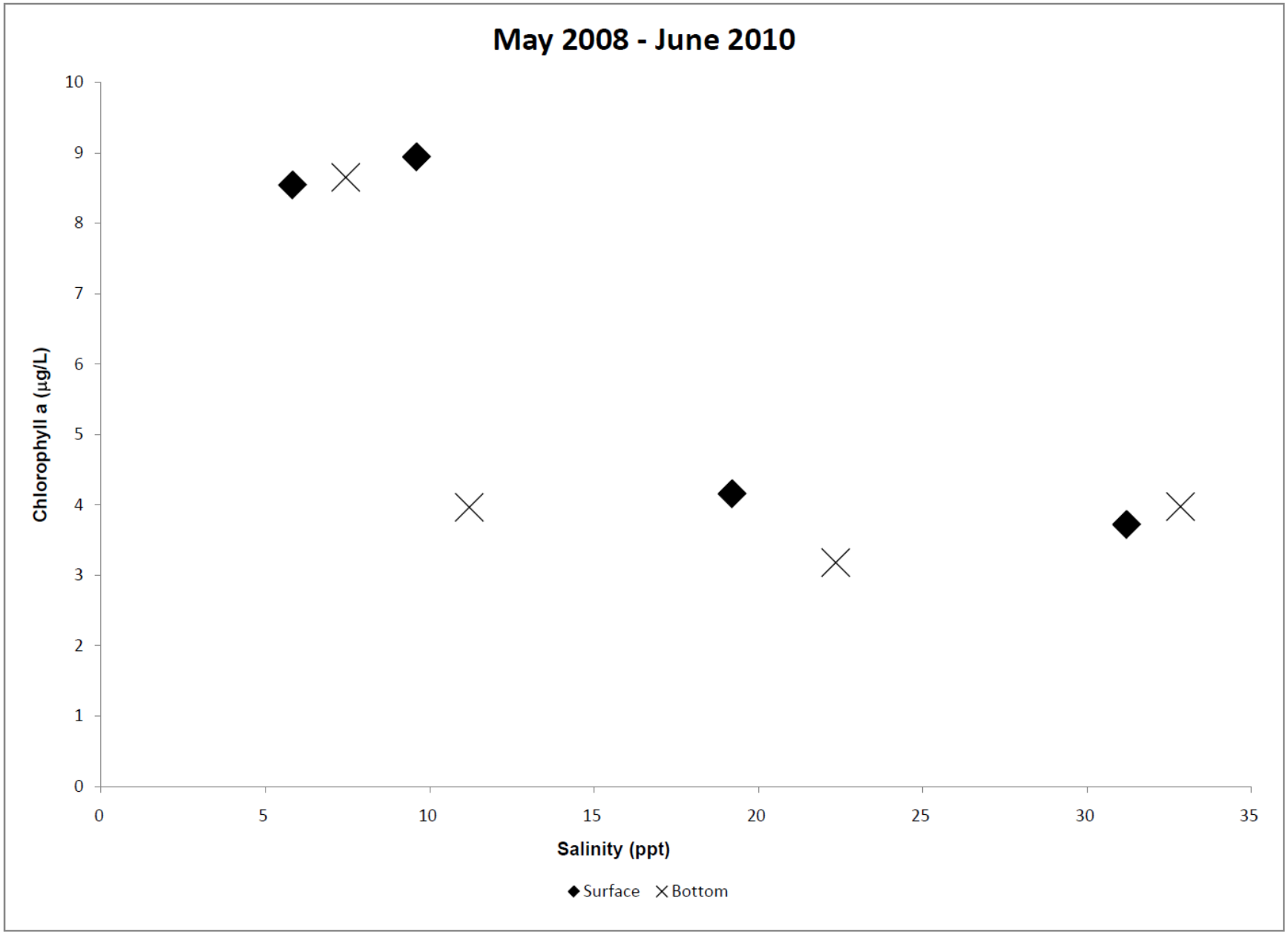

Figure 1.15. Correlation between chlorophyll a and salinity in the Caloosahatchee estuary.

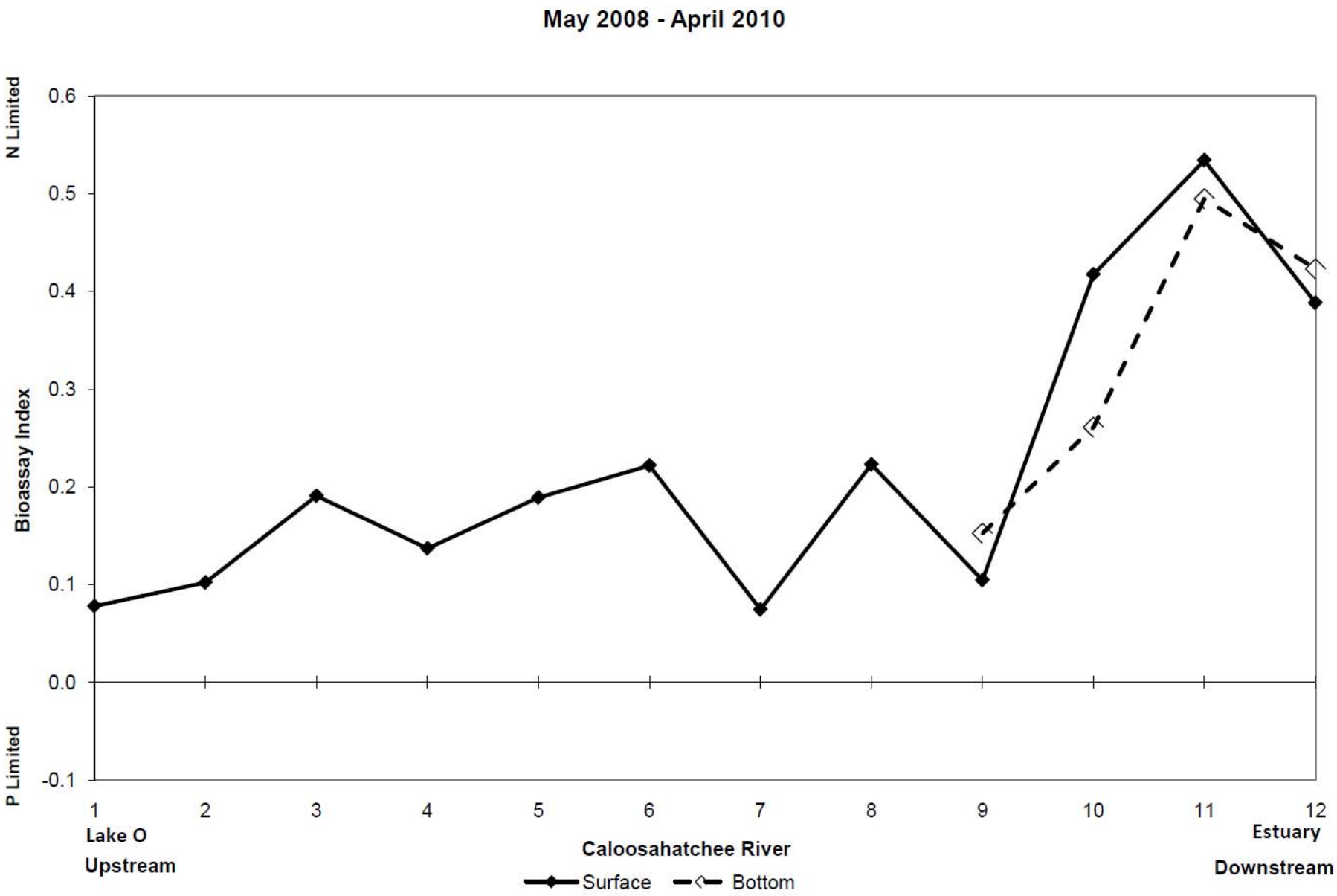

Figure 1.16. Average nutrient bioassay index along the Caloosahatchee River and estuary. Positive numbers indicate nitrogen limitation and negative numbers indicate phosphorus limitation.

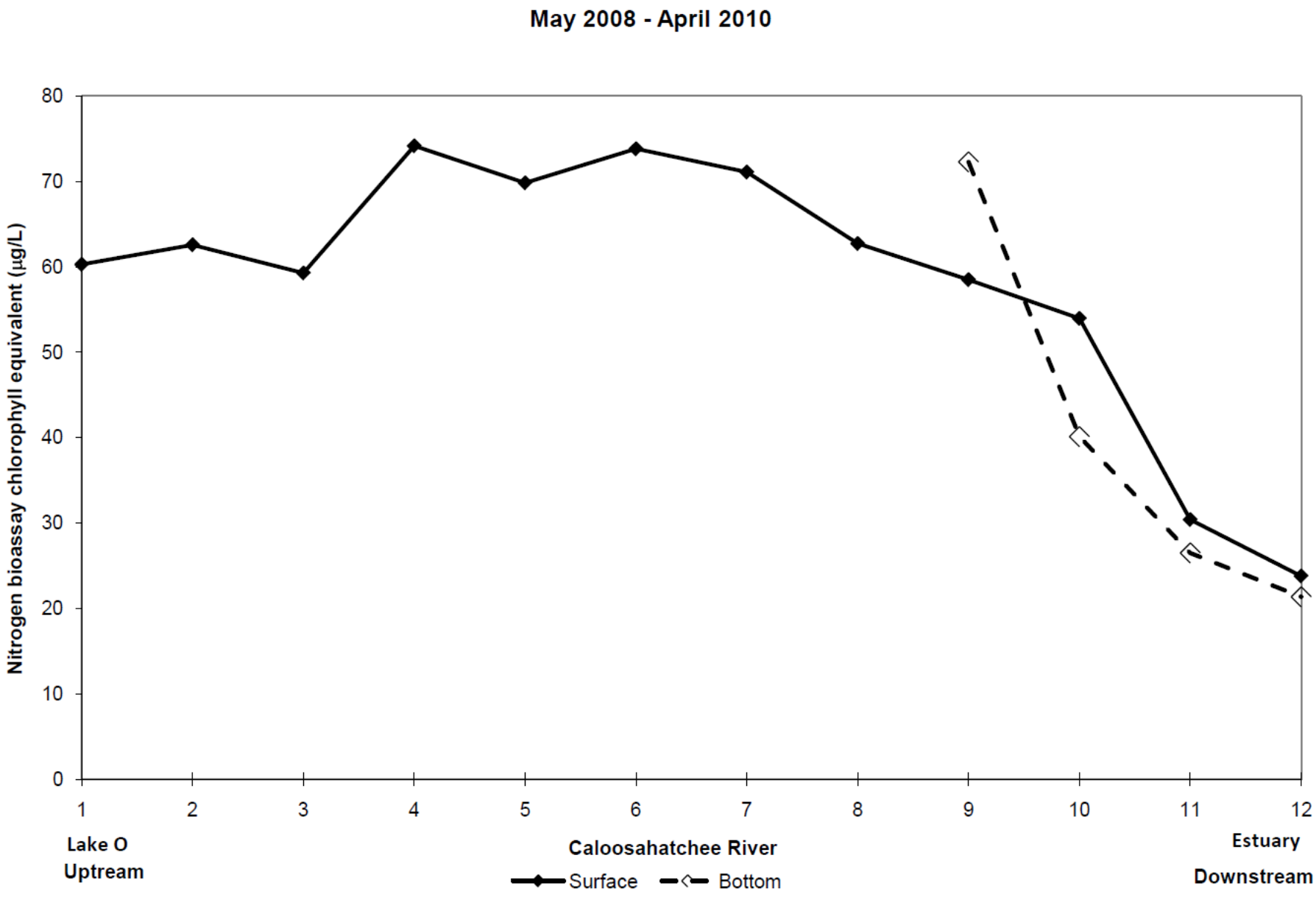

Figure 1.17. Average potential algal abundance produced from bioavailable nitrogen along the Caloosahatchee River and estuary.

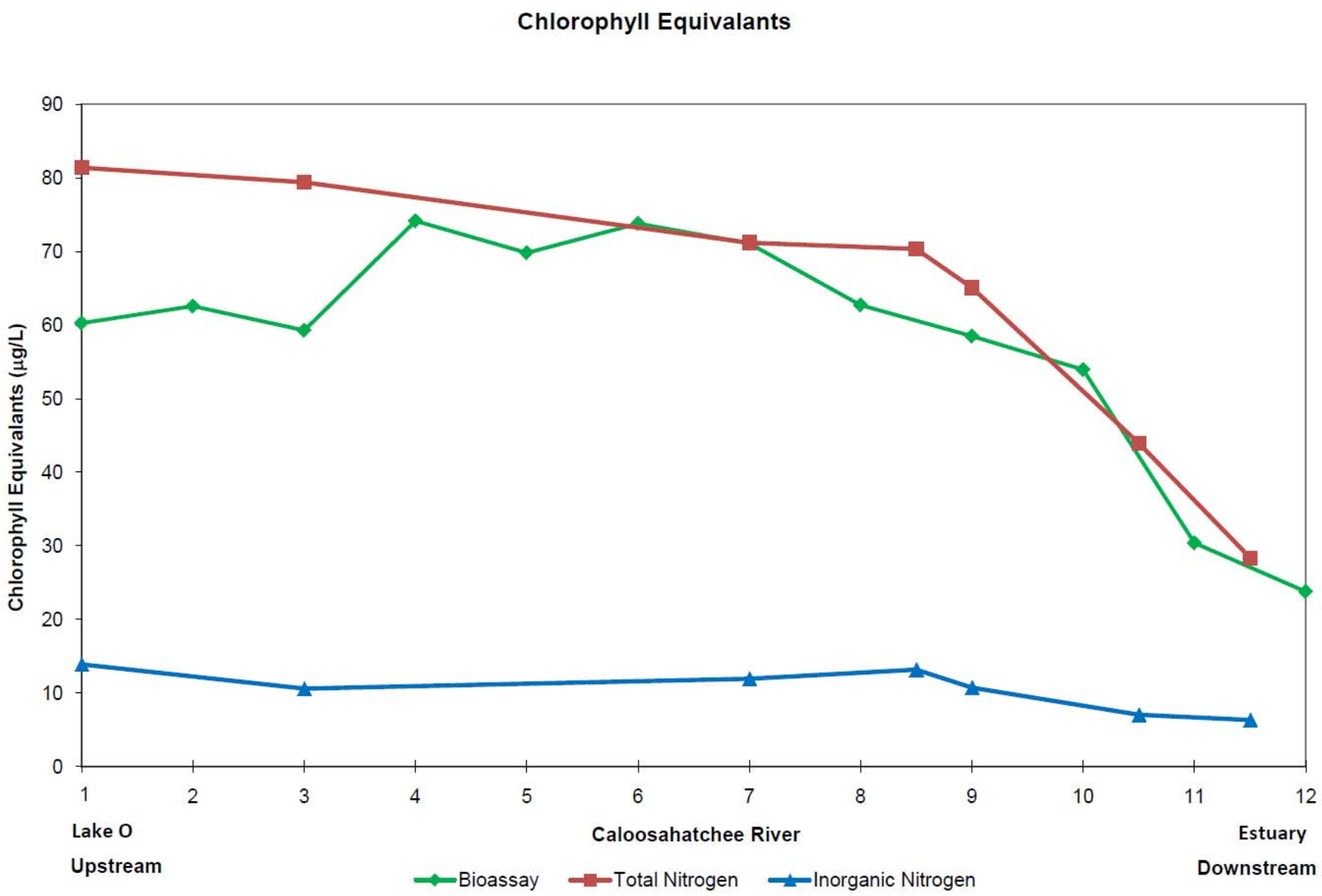

Figure 1.18. Average potential algal abundance produced from bioavailable nitrogen along the Caloosahatchee River and estuary in comparison to potential algal abundance produced from inorganic and total nitrogen as measured by the South Florida Water Management District.

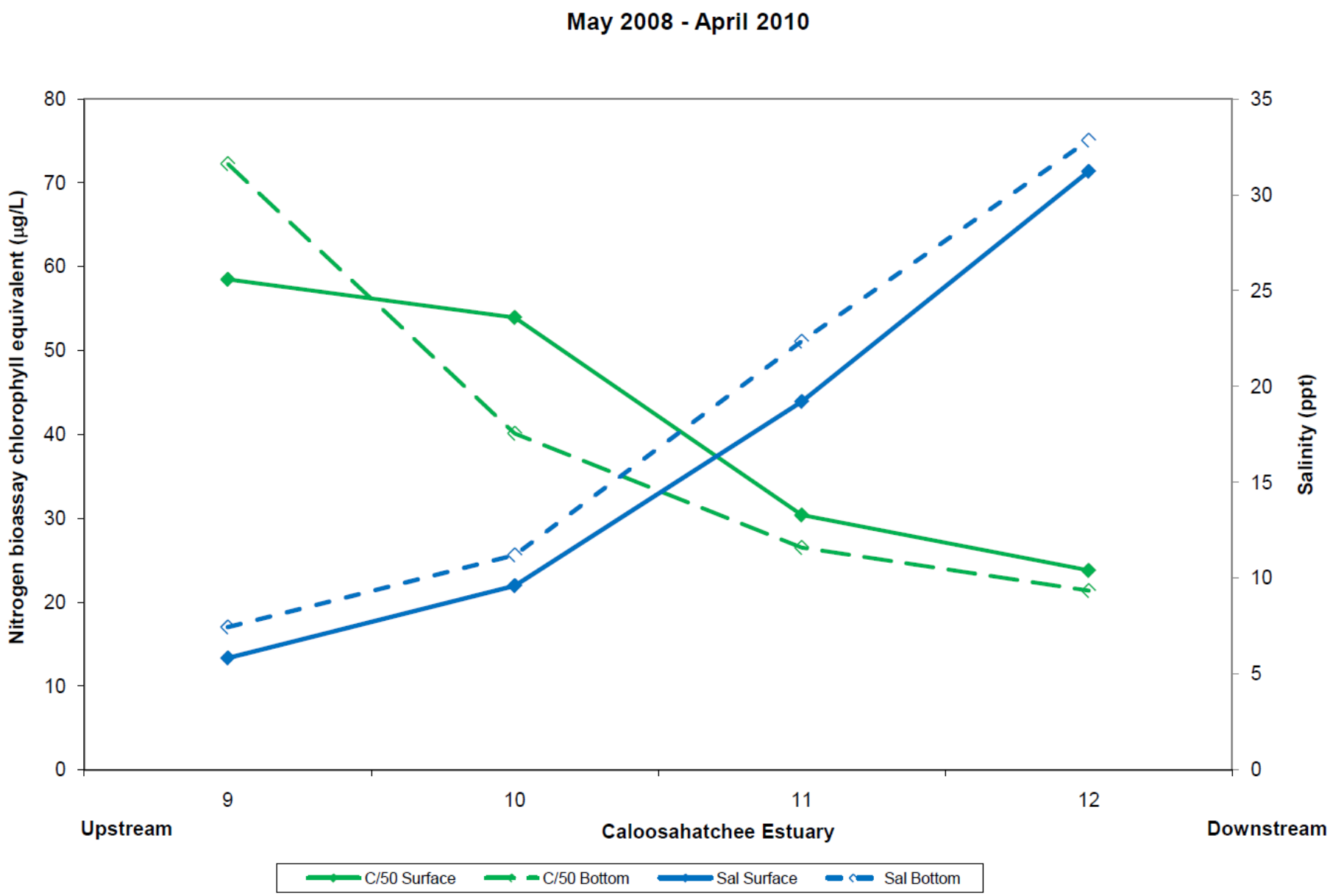

Figure 1.19. Plot of potential algal abundance produced from bioavailable nitrogen and salinity along the Caloosahatchee estuary.

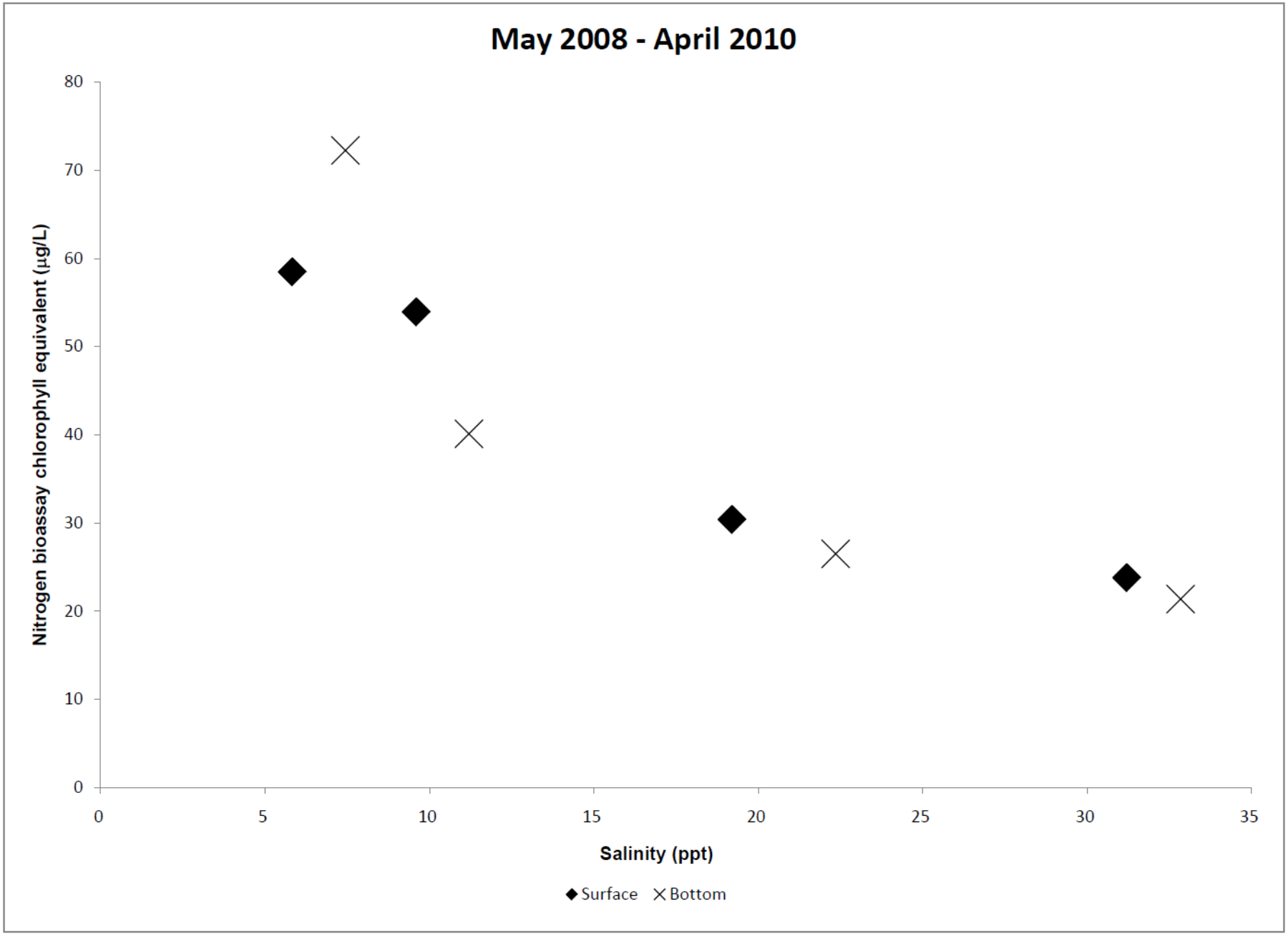

Figure 1.20. Correlation between potential algal abundance produced from bioavailable nitrogen and salinity in the Caloosahatchee estuary.

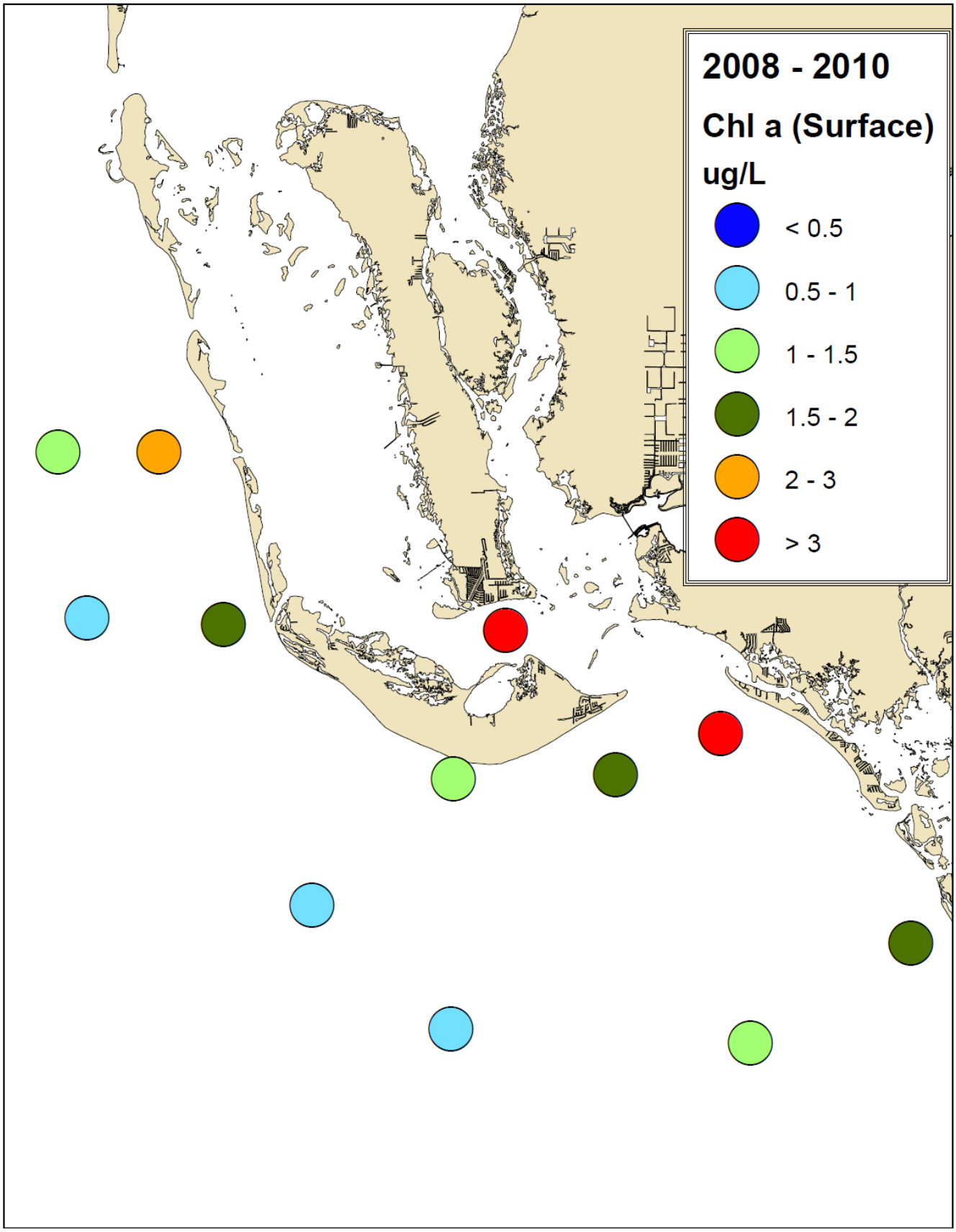

Figure 1.21. Map of average chlorophyll a concentrations in the Gulf of Mexico off Sanibel Island in surface waters.

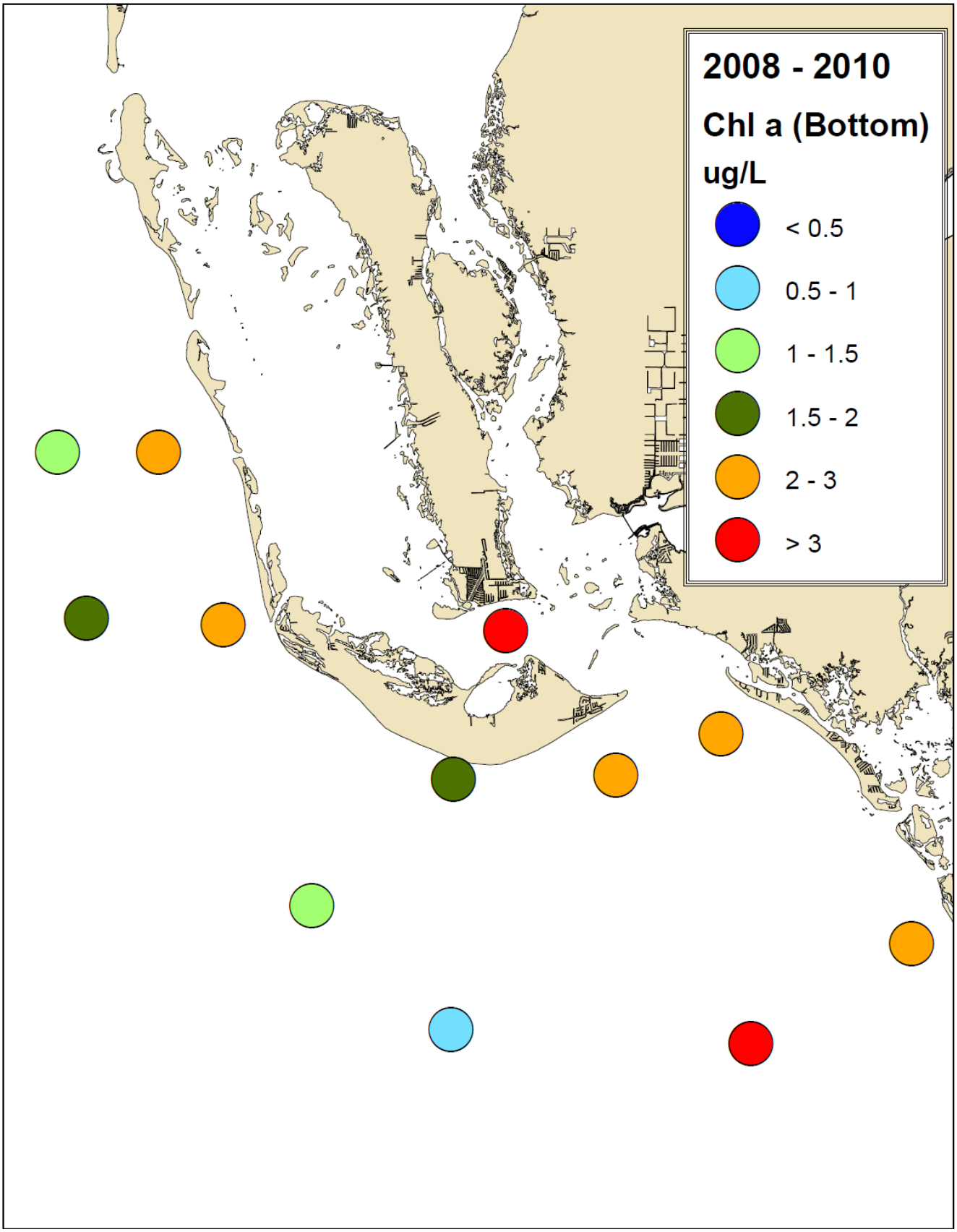

Figure 1.22. Map of average chlorophyll a concentrations in the Gulf of Mexico off Sanibel Island in bottom waters.

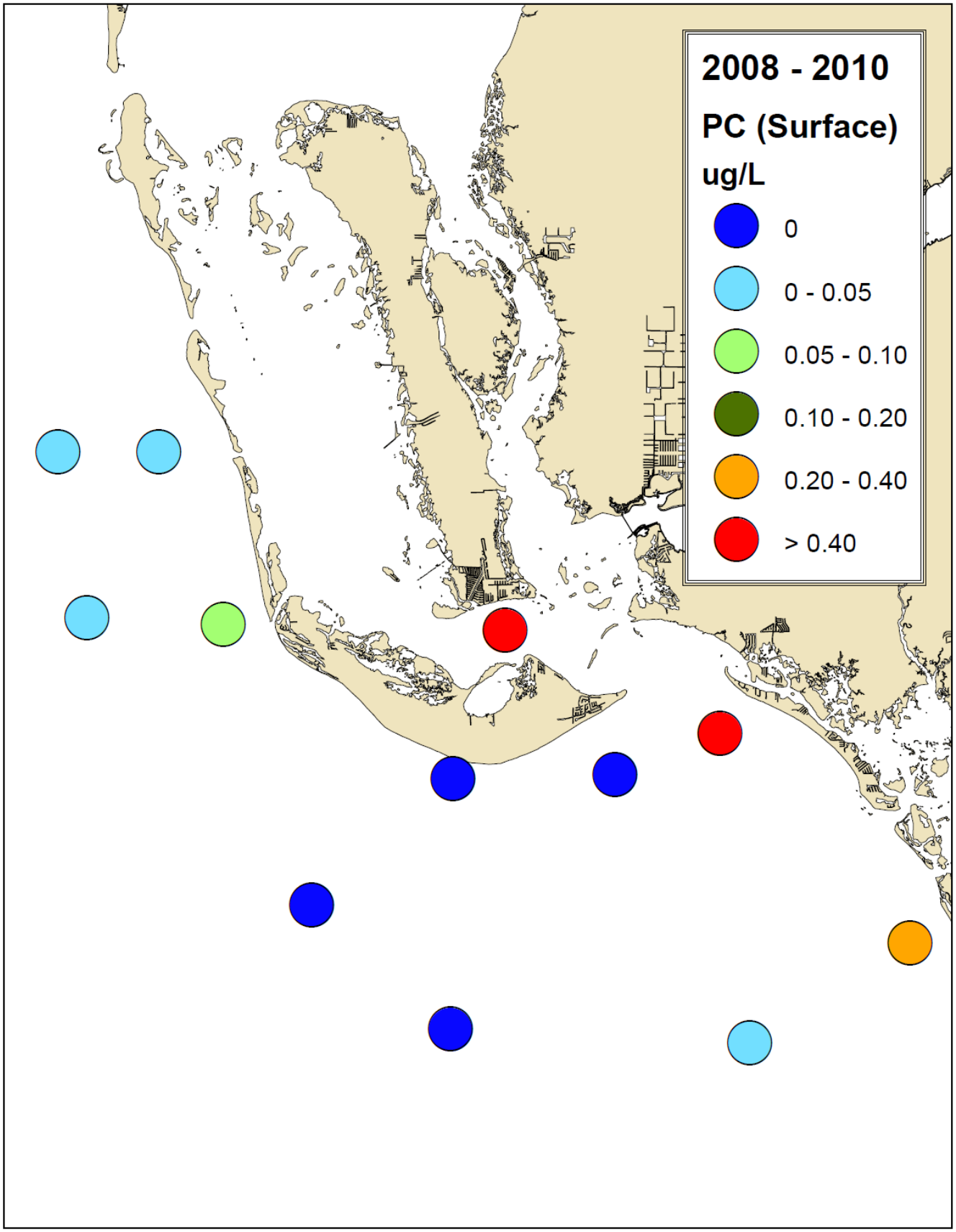

Figure 1.23. Map of average phycocyanin concentrations in the Gulf of Mexico off Sanibel Island in surface waters.

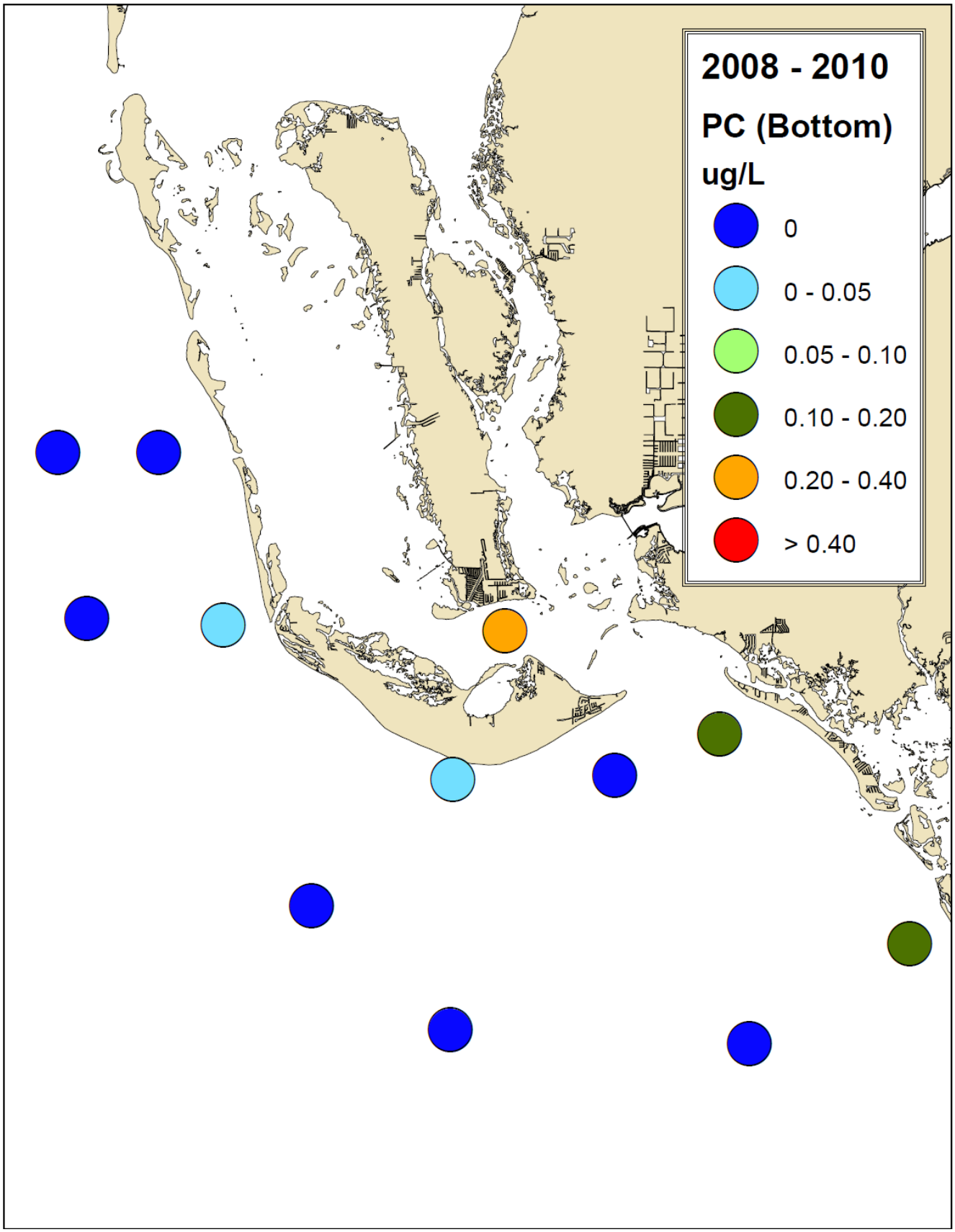

Figure 1.24. Map of average phycocyanin concentrations in the Gulf of Mexico off Sanibel Island in bottom waters.

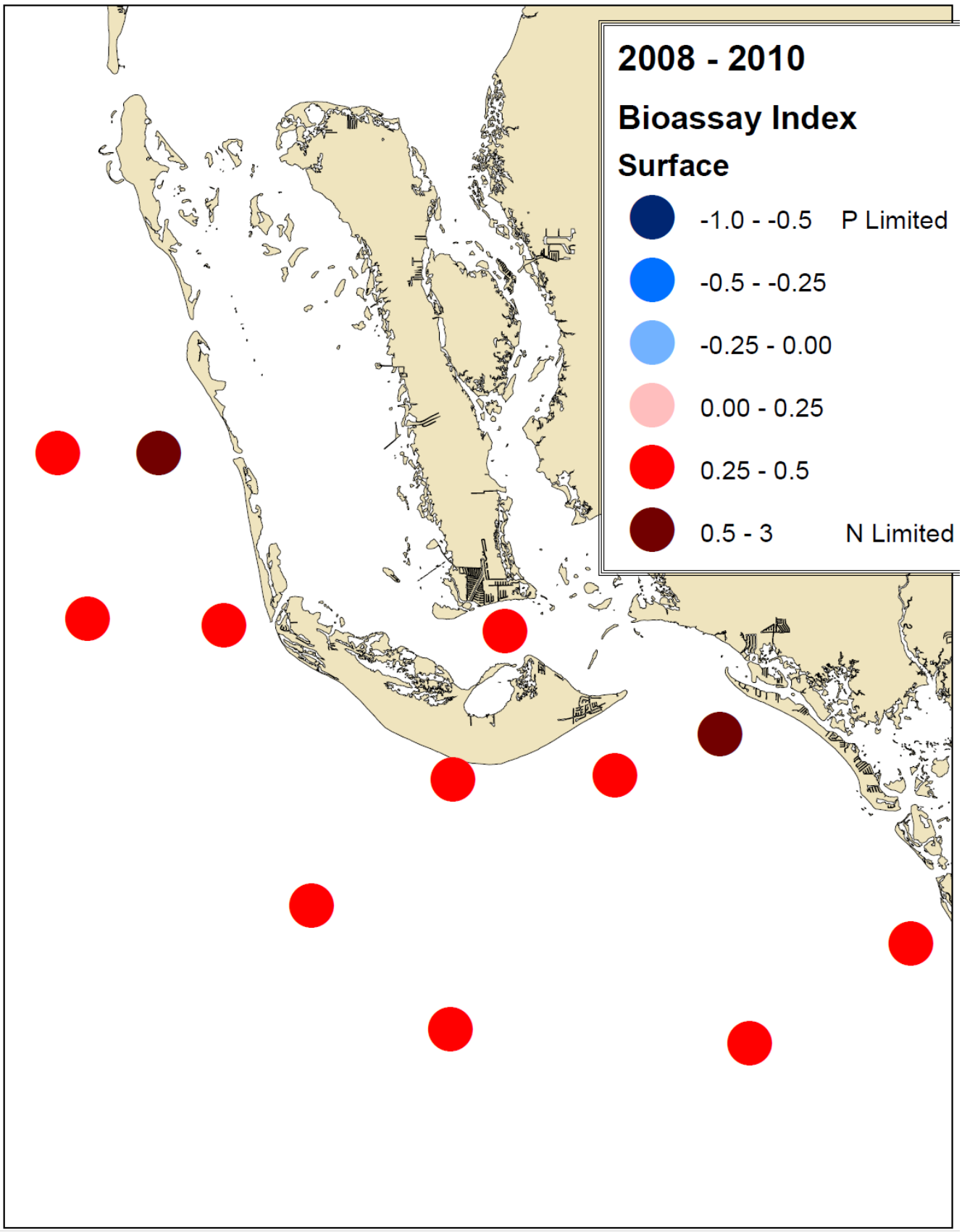

Figure 1.25. Map of average nutrient bioassay index in the Gulf of Mexico off Sanibel Island in surface waters. Positive numbers indicate nitrogen limitation and negative numbers indicate phosphorus limitation.

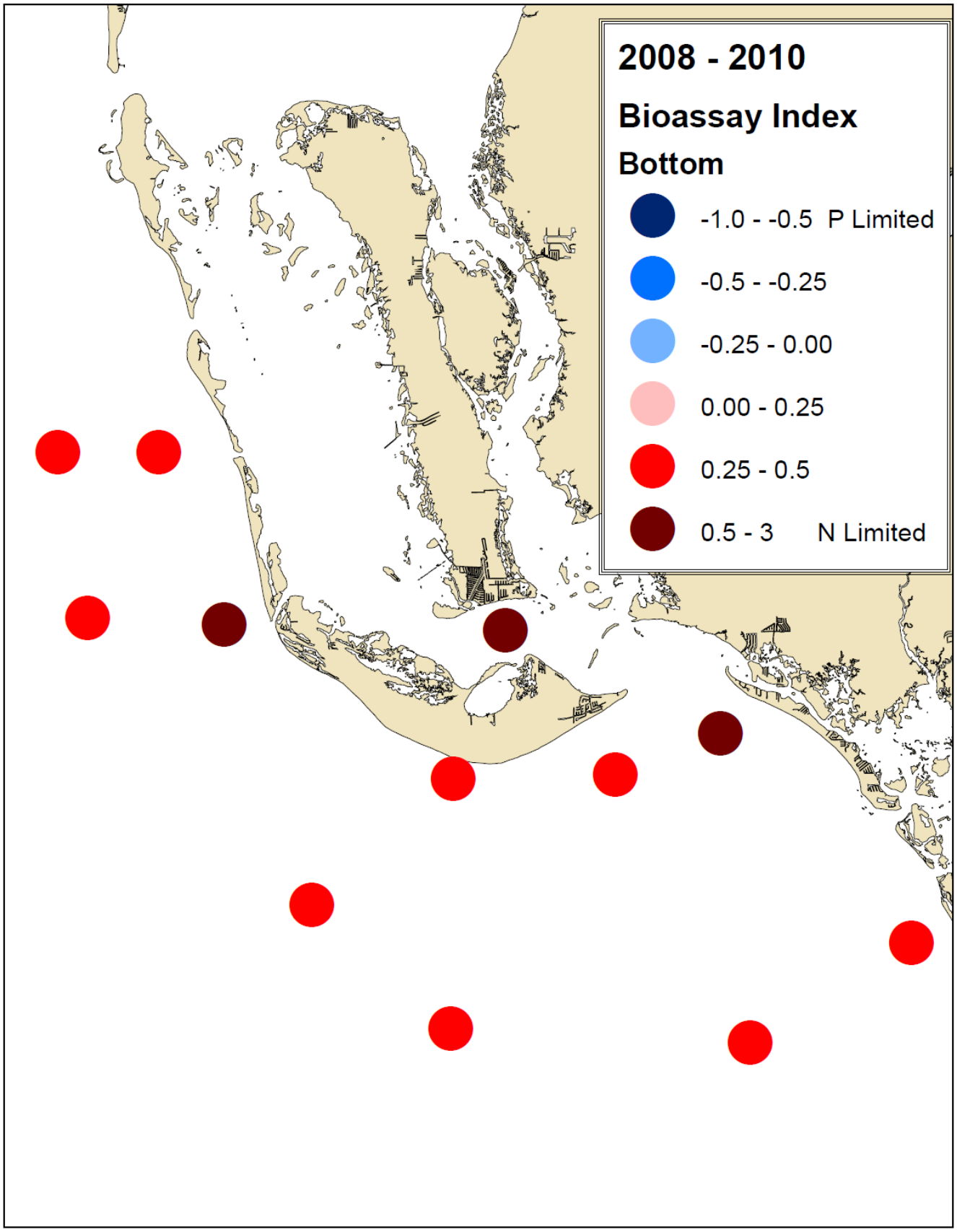

Figure 1.26. Map of average nutrient bioassay index in the Gulf of Mexico off Sanibel Island in bottom waters. Positive numbers indicate nitrogen limitation and negative numbers indicate phosphorus limitation.

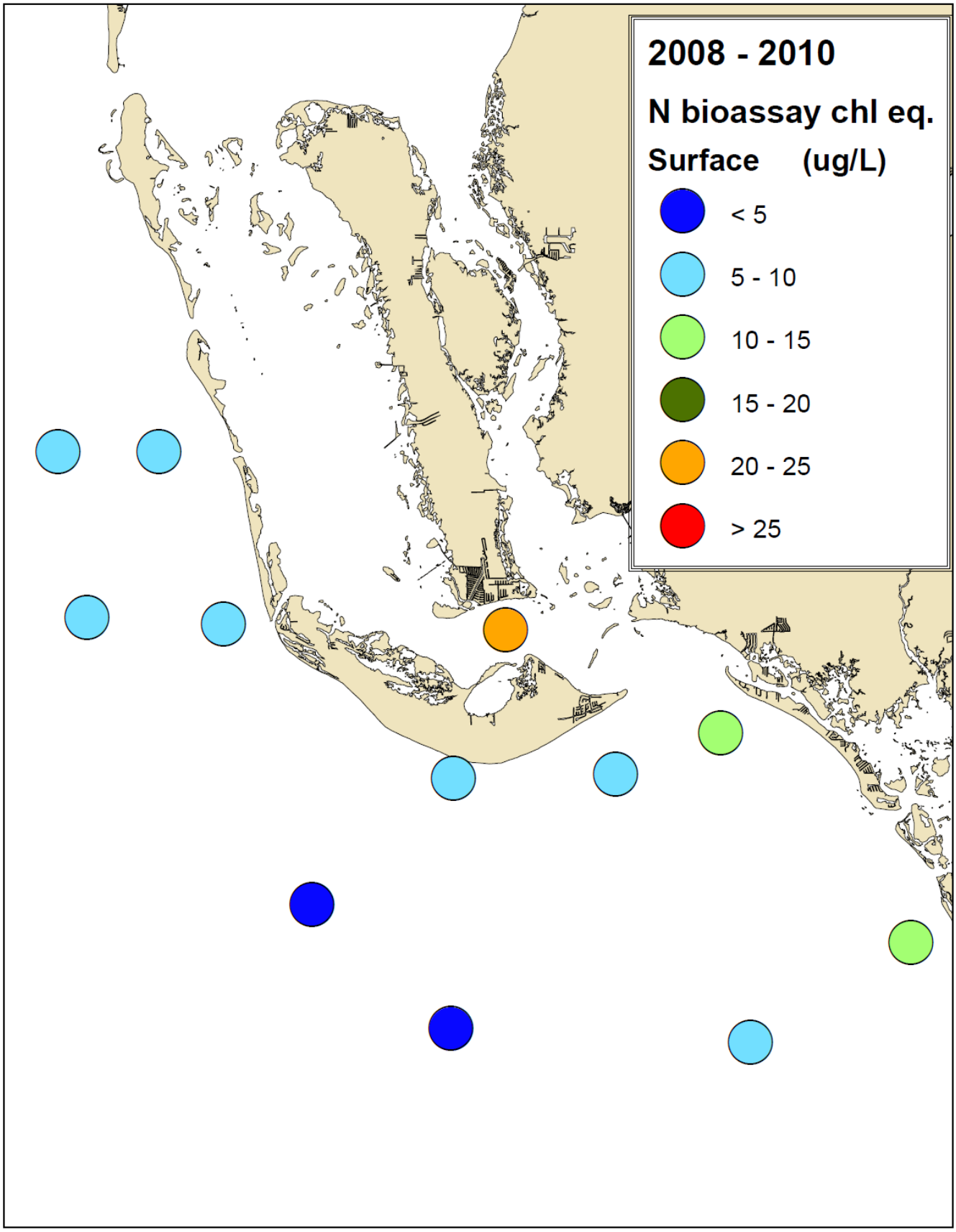

Figure 1.27. Map of average potential algal abundance produced from bioavailable nitrogen in the Gulf of Mexico off Sanibel Island in surface waters.

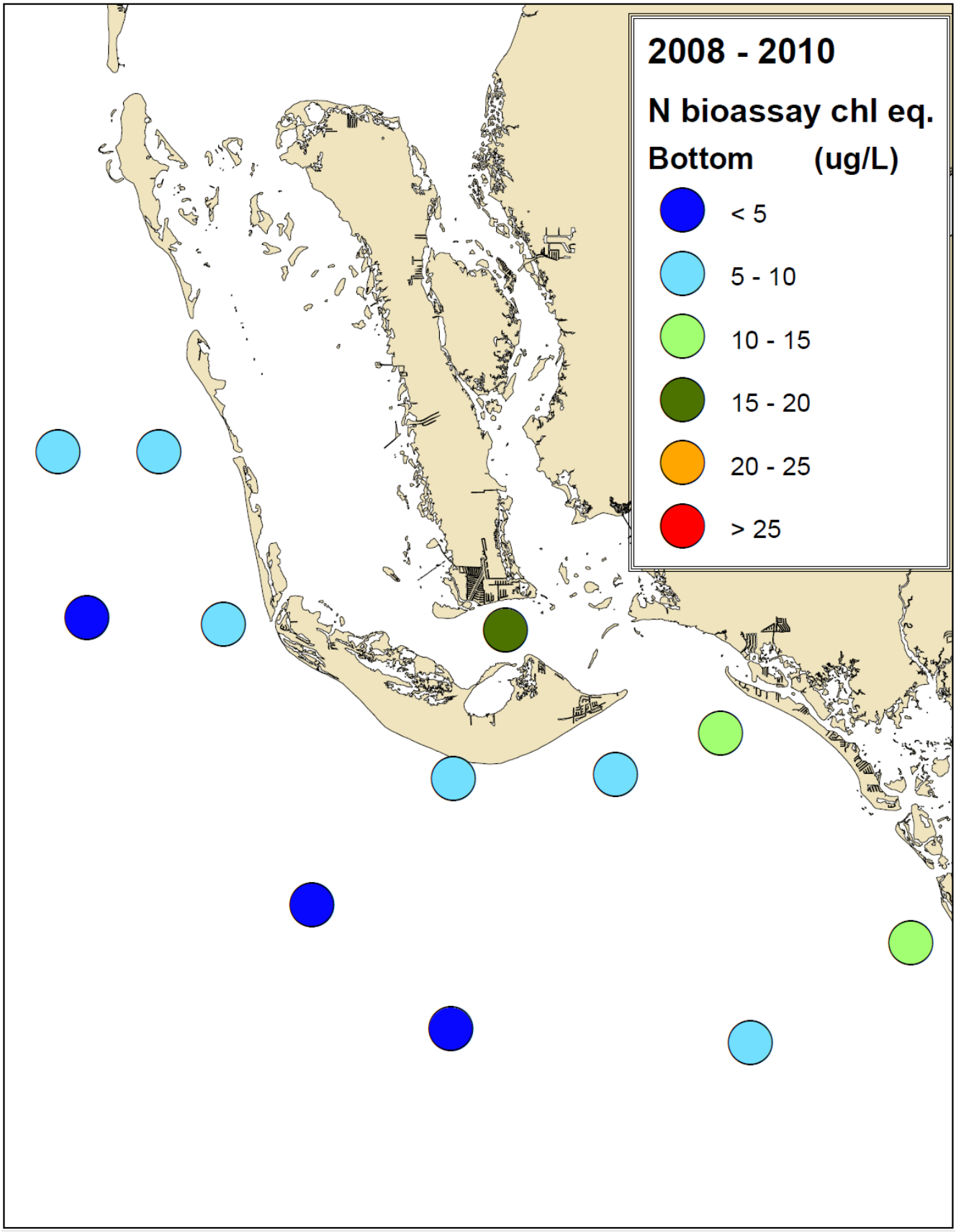

Figure 1.28. Map of average potential algal abundance produced from bioavailable nitrogen in the Gulf of Mexico off Sanibel Island in bottom waters.

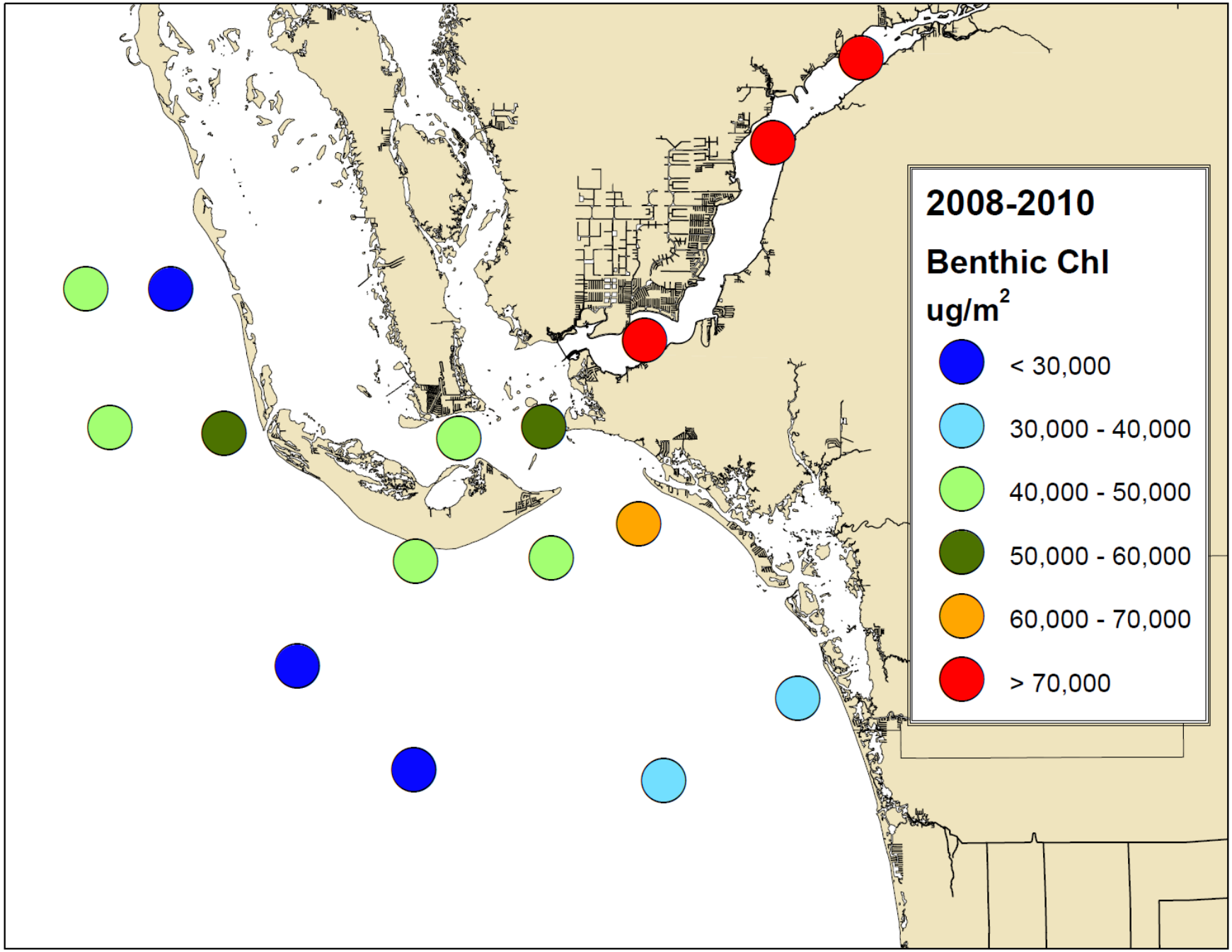

Figure 1.29. Map of average benthic chlorophyll a concentrations as an indication of benthic microalgae in the Gulf of Mexico off Sanibel Island.