APPENDIX 7A. SYNOPTIC SOIL SURVEY MAPS, DATA, AND SUMMARY

Table 7A-1. Metadata for wetland soil synoptic survey tables listed below.

ID	Description
Station	Collection site
UTM N	UTM_N
UTM E	UTM_E
BD	Dry Bulk Density in g cm^{-3}
pH	Soil pH
MC	Moisture Content, %
OM	Loss on Ignition or Soil Organic Matter, %
TC	Total Carbon, g kg^{-1}
TN	Total Nitrogen, g kg^{-1}
TKN	Total Kjeldahl Nitrogen, g kg^{-1}
DOC	Dissolved Organic Carbon, mg kg^{-1}
MBC	Microbial Biomass Carbon, mg kg^{-1}
TP	Total Phosphorus, mg kg^{-1}
Inorg. P	Inorganic Phosphorus, Extracted with 1 M HCl, mg kg^{-1}
Meh. P	Mehlich III Phosphorus, mg kg^{-1}
ICP P	Mehlich III Phosphorus analyzed on an inductively coupled plasma mass spectrometry (ICP), mg kg^{-1}
ICP K	Mehlich III Potassium analyzed on an ICP, mg kg^{-1}
ICP Ca	Mehlich III Calcium analyzed on an ICP, mg kg^{-1}
ICP Mg	Mehlich III Magnesium analyzed on an ICP, mg kg^{-1}
ICP Al	Mehlich III Aluminum analyzed on an ICP, mg kg^{-1}
ICP S	Mehlich III Sulfur analyzed on an ICP, mg kg^{-1}
ICP Cu	Mehlich III Copper analyzed on an ICP, mg kg^{-1}
ICP Mn	Mehlich III Manganese analyzed on an ICP, mg kg^{-1}
ICP Fe	Mehlich III Iron analyzed on an ICP, mg kg^{-1}
ICP Zn	Mehlich III Zinc analyzed on an ICP, mg kg^{-1}

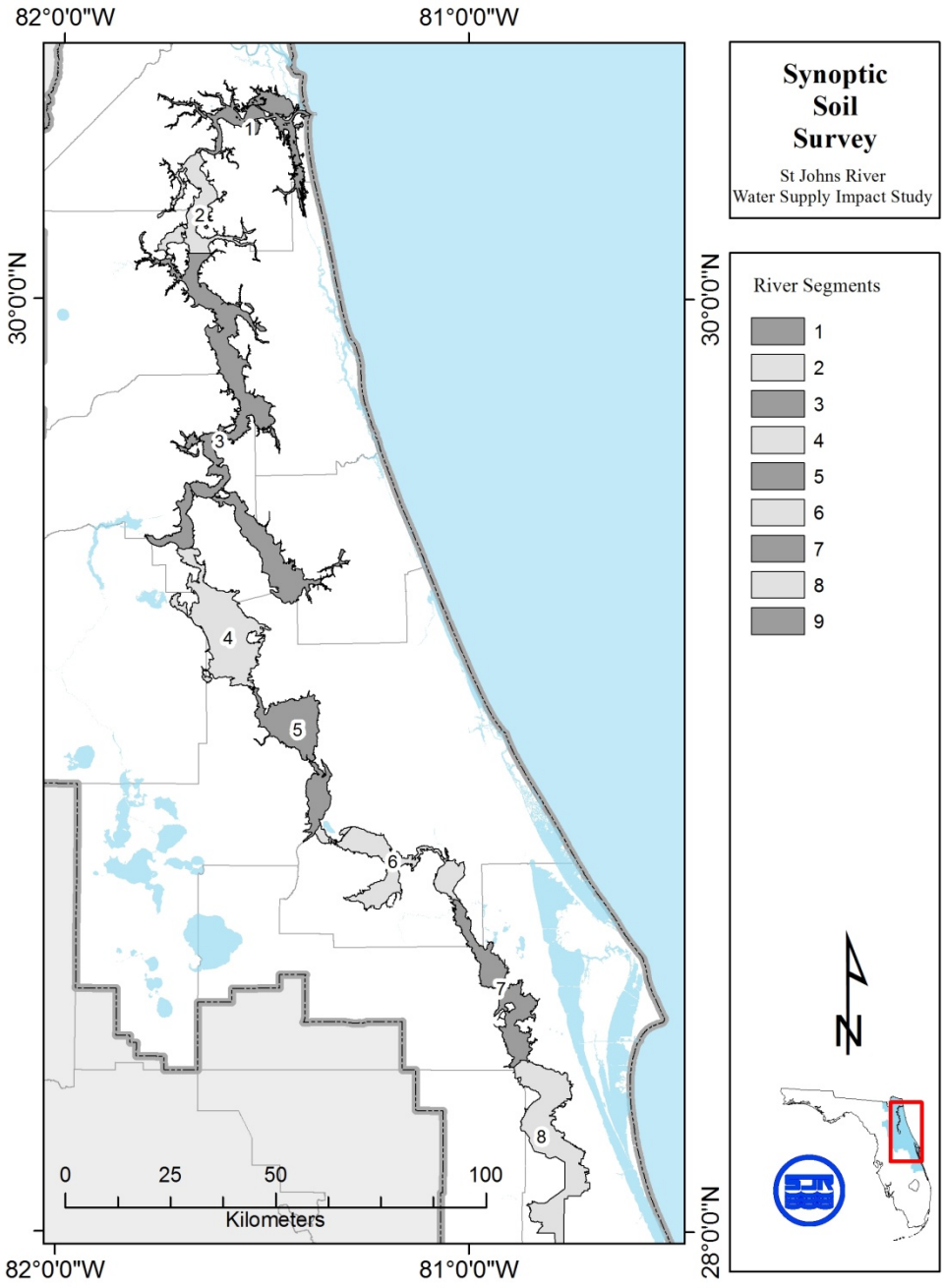

Figure 7A-1. River segment reference map.

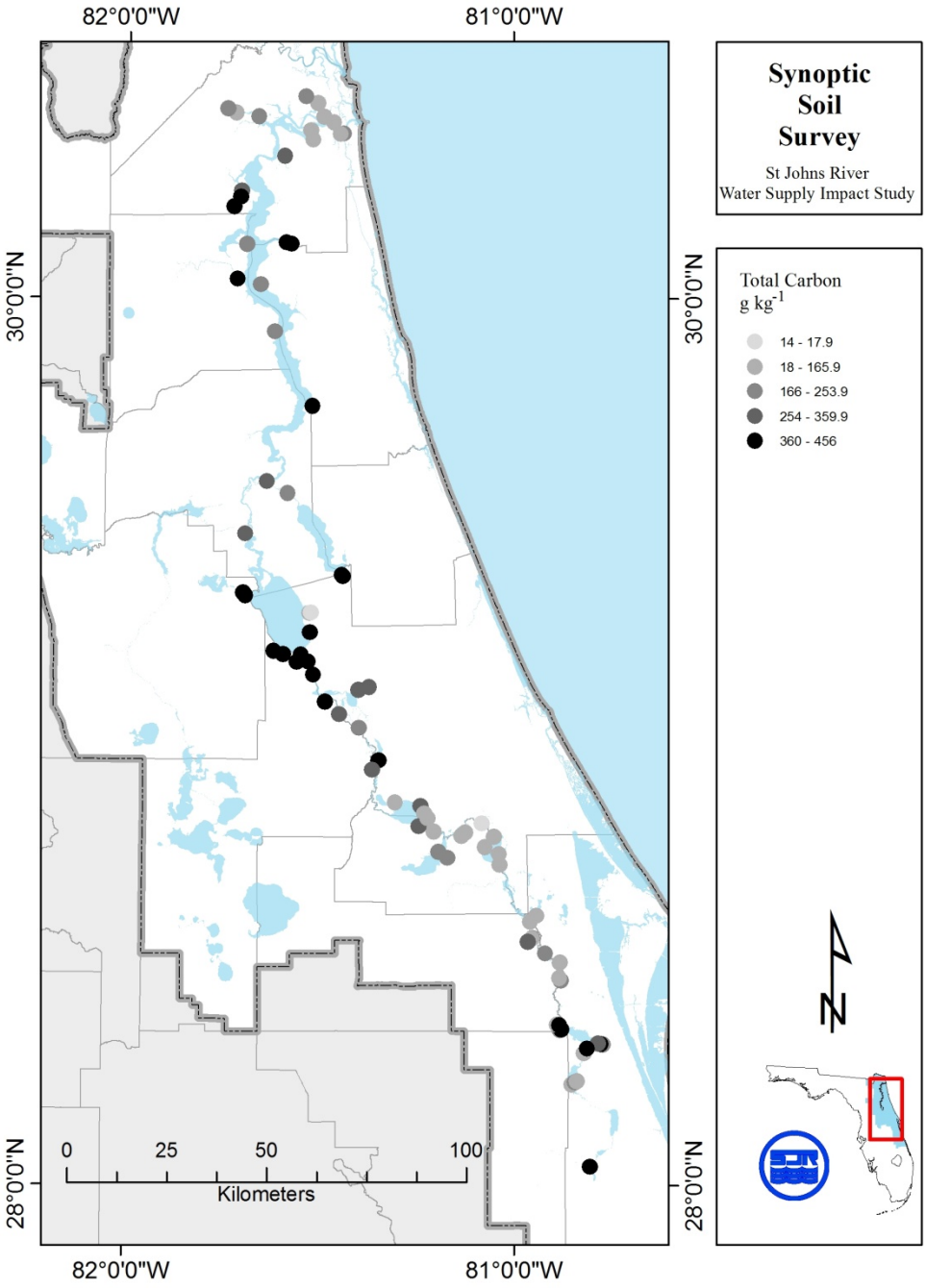

Figure 7A-2. Summary map of results of synoptic survey for total carbon.

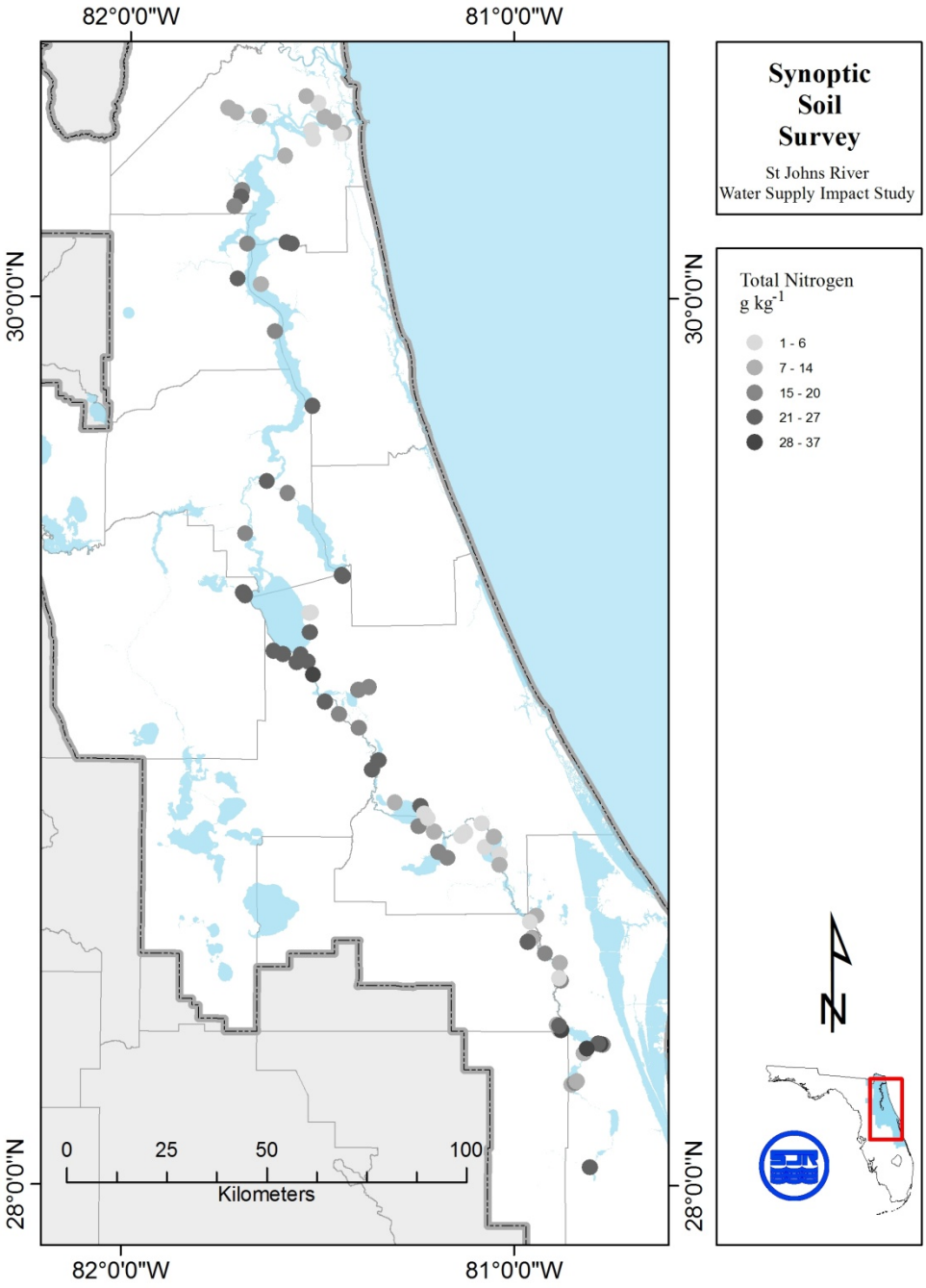

Figure 7A-3. Summary map of results of synoptic survey for total nitrogen.

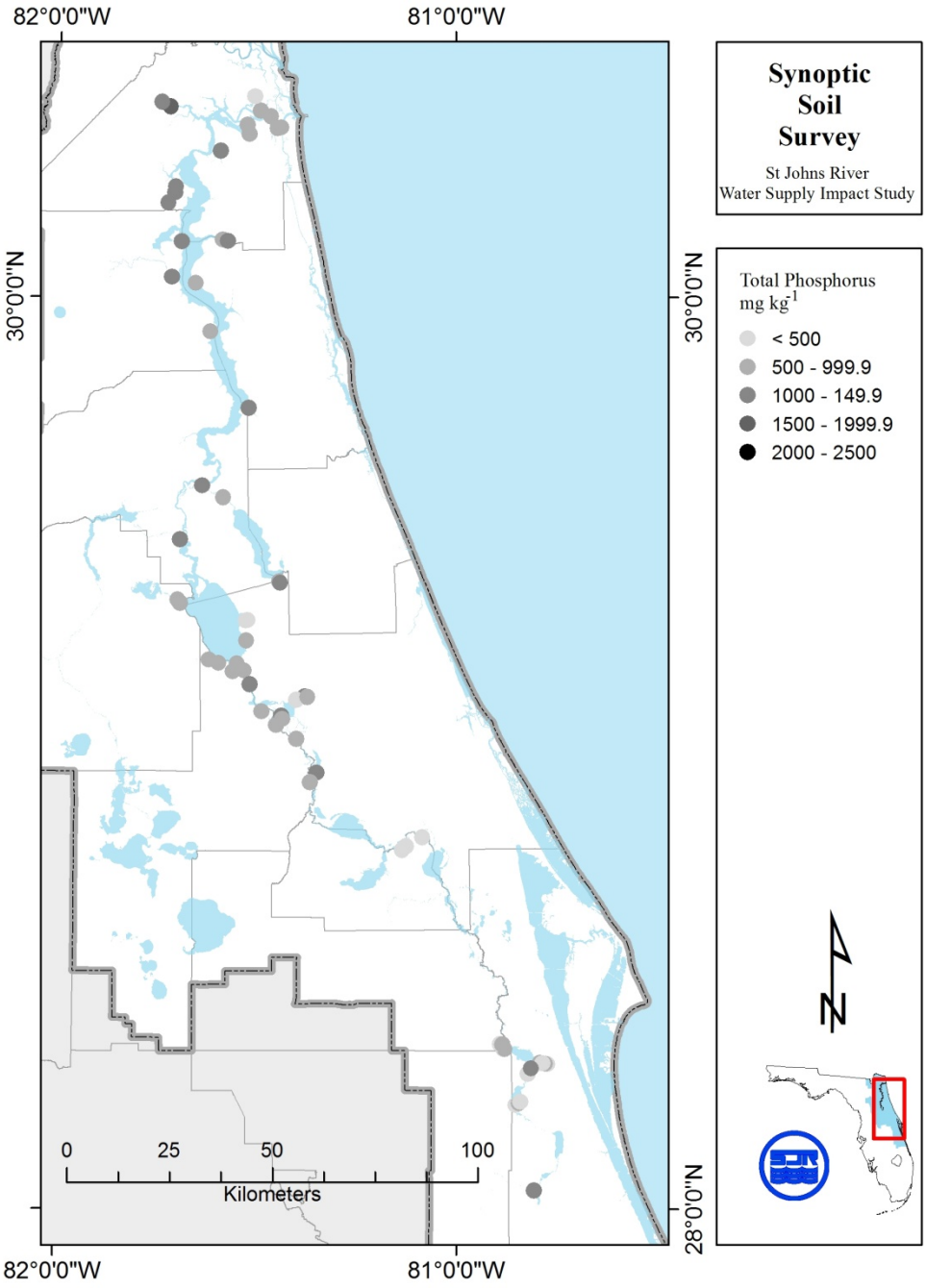

Figure 7A-4. Summary map of results of synoptic survey for total phosphorus.

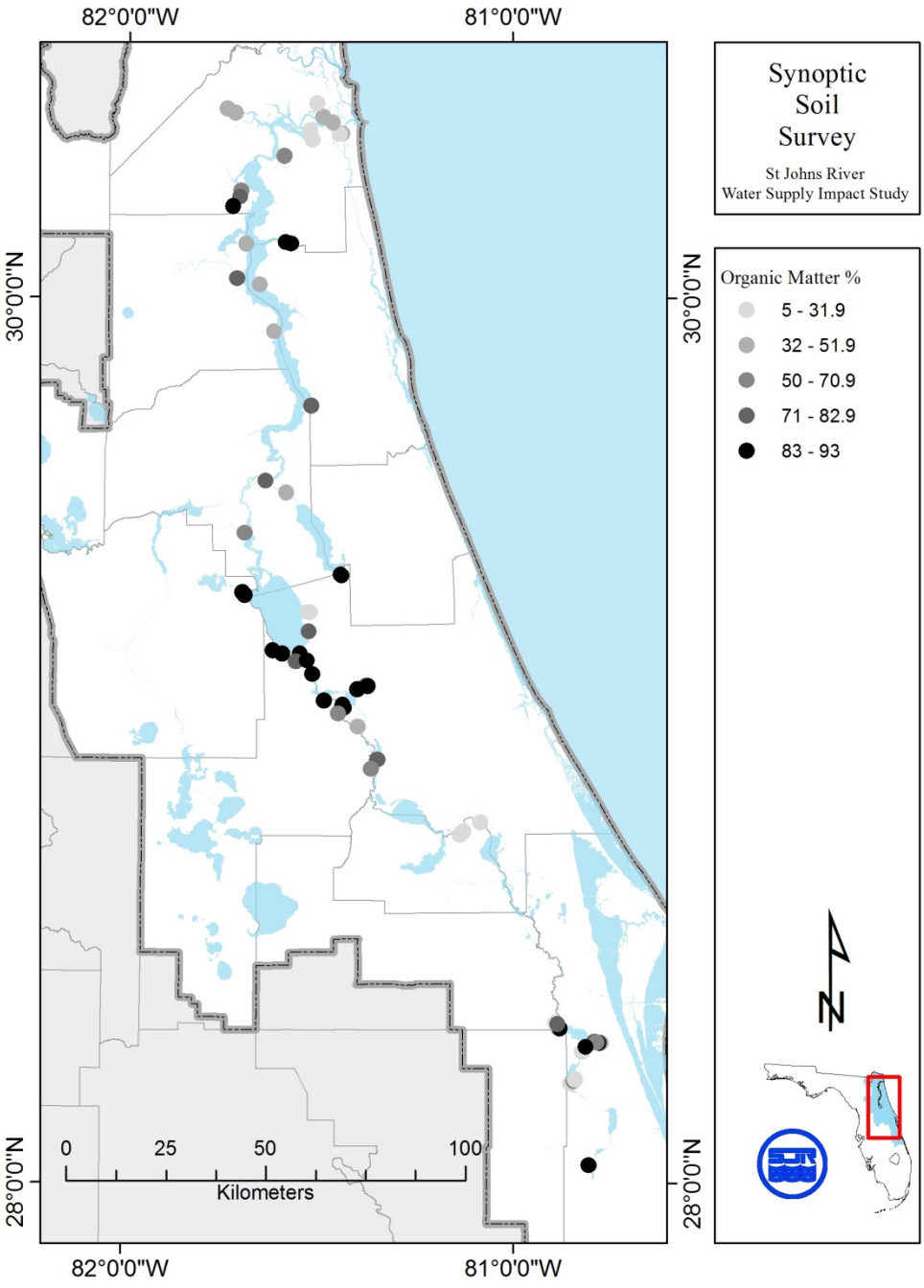

Figure 7A-5. Summary map of results of synoptic survey for percent organic matter.

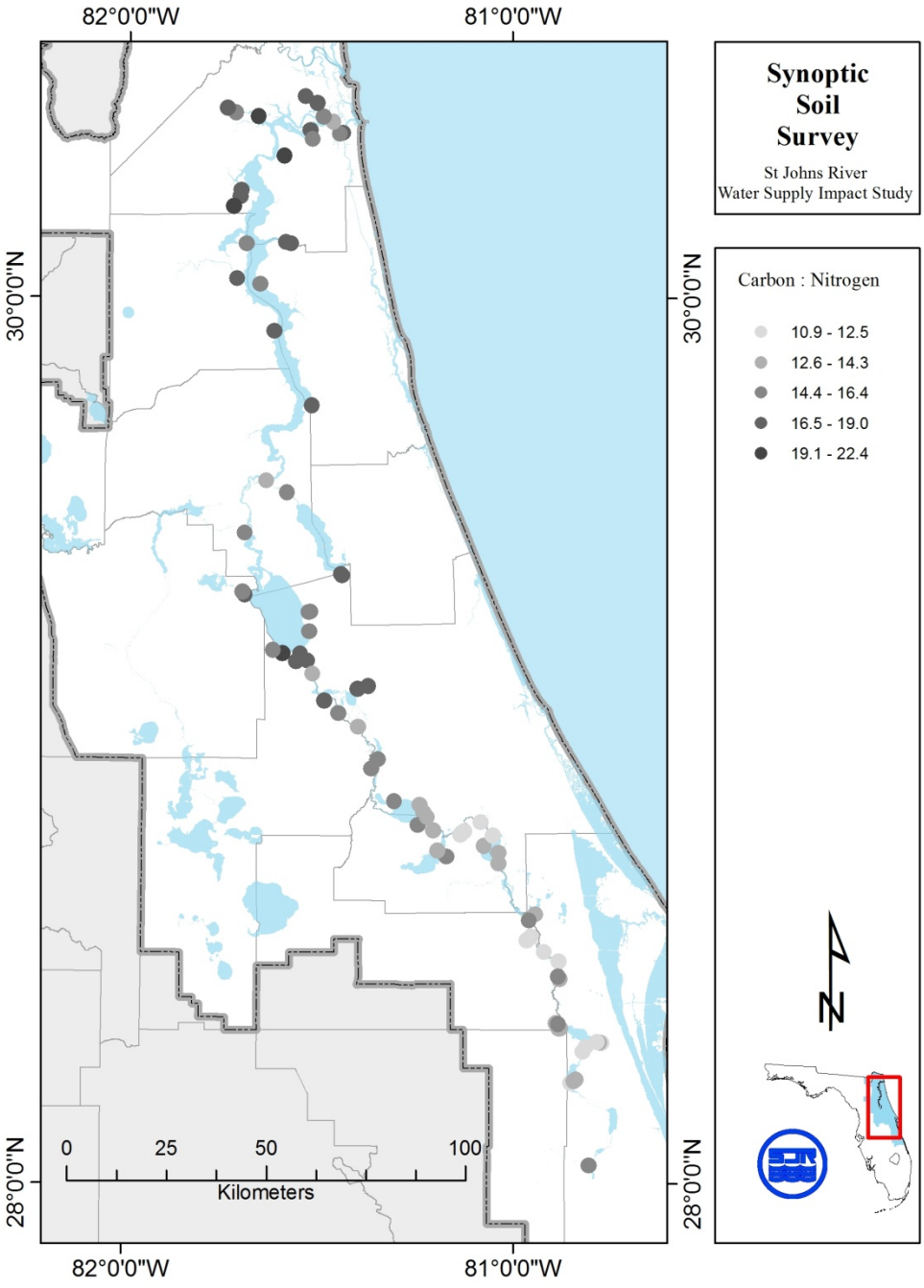

Figure 7A-6. Summary map of results of synoptic survey Carbon to Nitrogen ratio.

We present summary statistics for a range of soil characteristics that were collected during the synoptic soil survey in Table 7A-2. Typically, wetland soils collected along the river were acidic, had low bulk density (mean of 80 samples = 0.23 g cm^{-3}), and high moisture content. Total phosphorus concentrations along with soil pH and moisture content in wetland surface soils were less variable, relative to most other characteristics. The mean concentration of wetland surface soil total phosphorus was 814 mg kg^{-1} (± one standard error; ± 30 mg kg^{-1}). Greatest concentrations occurred near Jacksonville, and lakes Jessup and Monroe. The inorganic fractions of phosphorus, phosphorus extracted with 1 *M* HCl and Mehlich III P accounted for about 11% and 4% of soil total phosphorus, respectively. The concentrations of these fractions were very variable in the 80 surface soils collected from wetland areas along the river. About 75% of soils had organic matter content greater than 81% (Table 7A-2; Figure 7A-5). Wetland surface soil (0-10 cm depth) total nitrogen, total carbon and microbial biomass carbon data distributions along the St. Johns River approximated normality (Figure 7A-8). Soil metals (Ca, Mg, Al and Fe) were also analyzed on the wetland soils and are presented in Table 7A-2.

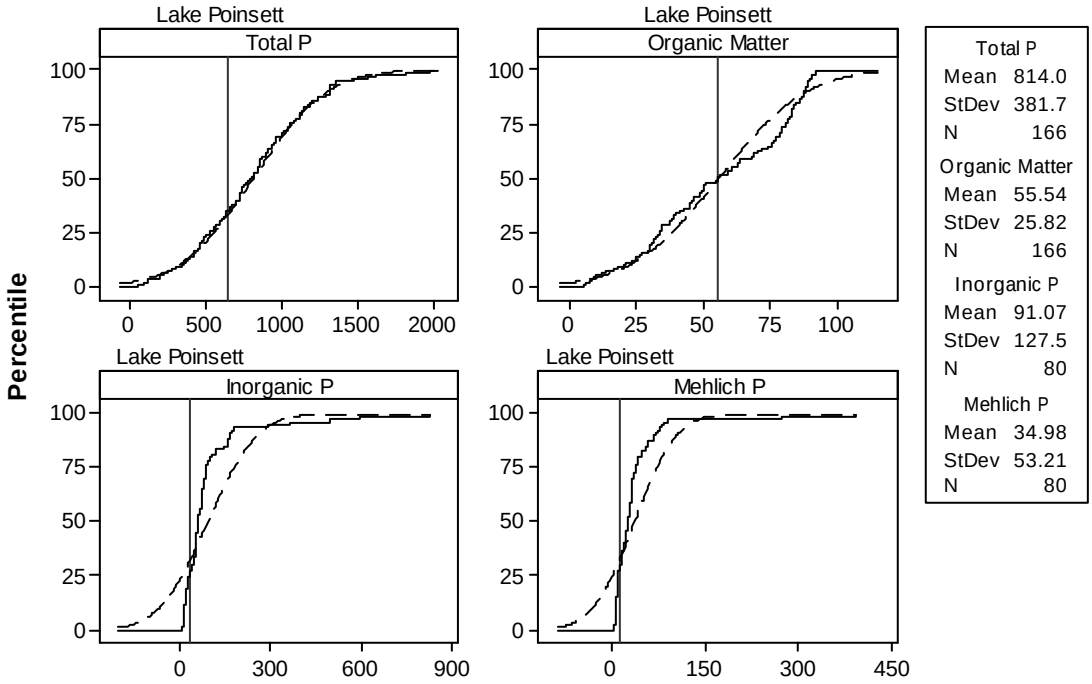

Figure 7A-7. Cumulative distribution functions of wetland surface soil (0-10 cm) phosphorus and organic matter characteristics collected along the St Johns River. Percentiles are represented on the y-axis and nutrient concentrations measured in mg kg^{-1} or percent are on the x-axis. Total phosphorus (TP), inorganic phosphorus, and Mehlich III phosphorus are in mg kg^{-1}; whereas, soil organic matter is in percent (%). The smoothed hatched line represents a normal distribution curve for the data, while the solid stepped line represents actual collected data. The average phosphorus and organic matter concentrations of wetland soils adjacent to Lake Poinsett are represented in each panel using a vertical solid line. Some summary statistics for each respective parameter are shown on the right hand side of the paneled figure.

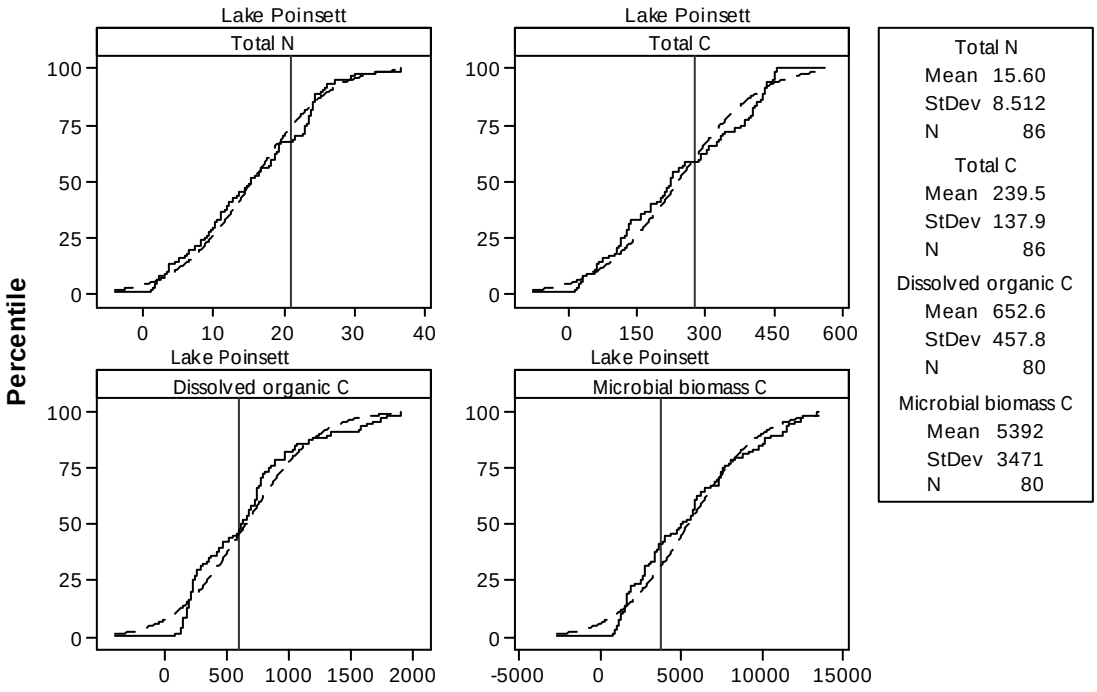

Figure 7A-8. Cumulative distribution functions of wetland surface soil (0-10 cm) characteristics collected along the St Johns River. Percentiles are represented on the y-axis and nutrient concentrations (g kg^{-1} or mg kg^{-1}) are on the x-axis. Total nitrogen (TN) and total carbon (TC) content are in g kg^{-1}; whereas, dissolved organic carbon (DOC) and microbial biomass carbon (MBC) are in mg kg^{-1}. The smoothed hatched line represents a normal distribution curve for the data, while the solid stepped line represents actual collected data. The average nutrient concentrations of wetland soils adjacent to Lake Poinsett are represented in each panel using a vertical solid line. Some summary statistics for respective parameters are shown on the right hand side of the paneled figure.

Table 7A-2. Summary statistics of synoptic soil survey for surface soils (0-10 cm depth) collected in wetland areas along the St Johns River. Soils were collected during June, July, and August 2009. Total sample numbers per parameter are shown in the N entitled column.

Parameters	Units	N	Min	25th percentile	Mean	Standard error of mean	Standard deviation	Median	75th percentile	Range	Interquartile range	Max	Coefficient of variation --%--
Bulk Density	g cm^{-3}	80	0.09	0.12	0.23	0.02	0.14	0.17	0.31	0.78	0.19	0.87	63
pH	pH units	87	4.4	5.3	5.7	0.1	0.6	5.8	6.0	3.2	0.7	7.7	11
Moisture C	%	80	31	70	78	1	12	83	88	60	17	90	15
OM	%	166	5	34	56	2	26	55	81	88	47	93	46
Total C	g kg^{-1}	86	14	118	240	15	138	223	384	442	265	456	58
DOC	mg kg^{-1}	80	74	231	653	51	458	624	857	1843	626	1917	70
MBC	mg kg^{-1}	80	738	2477	5392	388	3471	4994	7601	12629	5124	13367	64
Total N	g kg^{-1}	86	0.9	8.9	15.6	0.9	8.5	15.4	23.4	35.8	14.4	36.7	55
Total P	mg kg^{-1}	166	53	531	814	30	382	797	1058	1986	527	2038	47
Inorganic P	mg kg^{-1}	80	6	28	91	14	128	58	85	823	56	828	140
Mehlich P	mg kg^{-1}	80	2	9	35	6	53	25	37	390	29	392	152
Calcium	mg kg^{-1}	80	1055	4110	7135	415	3711	6678	10537	15414	6427	16469	52
Magnesium	mg kg^{-1}	80	168	801	2163	176	1572	2187	3053	6195	2252	6364	73
Aluminum	mg kg^{-1}	80	164	787	1530	105	936	1372	2022	3686	1235	3849	61
Iron	mg kg^{-1}	80	93	439	1210	93	830	1065	1949	2920	1510	3013	69

Moisture C = moisture content, OM = organic matter, Total C = total carbon, DOC = dissolved organic carbon, MBC = microbial biomass carbon, Total N = total nitrogen, Total P = total phosphorus, Inorganic P = inorganic phosphorus, and Mehlich P = Mehlich III phosphorus.

We also investigated data distributions and summary statistics for surface soils collected from Lake Poinsett only. We did this to gain insights into soil variability at Lake Poinsett because this is where most of our experimental efforts to estimate carbon and nutrient releases were undertaken. Surface soils collected at Lake Poinsett were acidic, had low bulk density, and high moisture content (Table 7A-3). Data distributions of soil total phosphorus, organic matter and inorganic P fractions approximated normality (Figure 7A-9). Average concentrations of total nitrogen, total carbon, and dissolved organic carbon of Lake Poinsett surface soils (N = 29) were higher than the average concentrations of all wetland surface soils (N = ~84) collected along the St. Johns River (Tables 7A-2 and 7A-3). The I95-31 wetland site (site where most experimental data was collected) at Lake Poinsett had relatively low soil total phosphorus (Figure 7A-10). Inorganic P and Mehlich III P, total nitrogen, total carbon, dissolved organic carbon and microbial biomass carbon concentrations were in the mid-range, relative to all other wetland surface soils collected at Lake Poinsett.

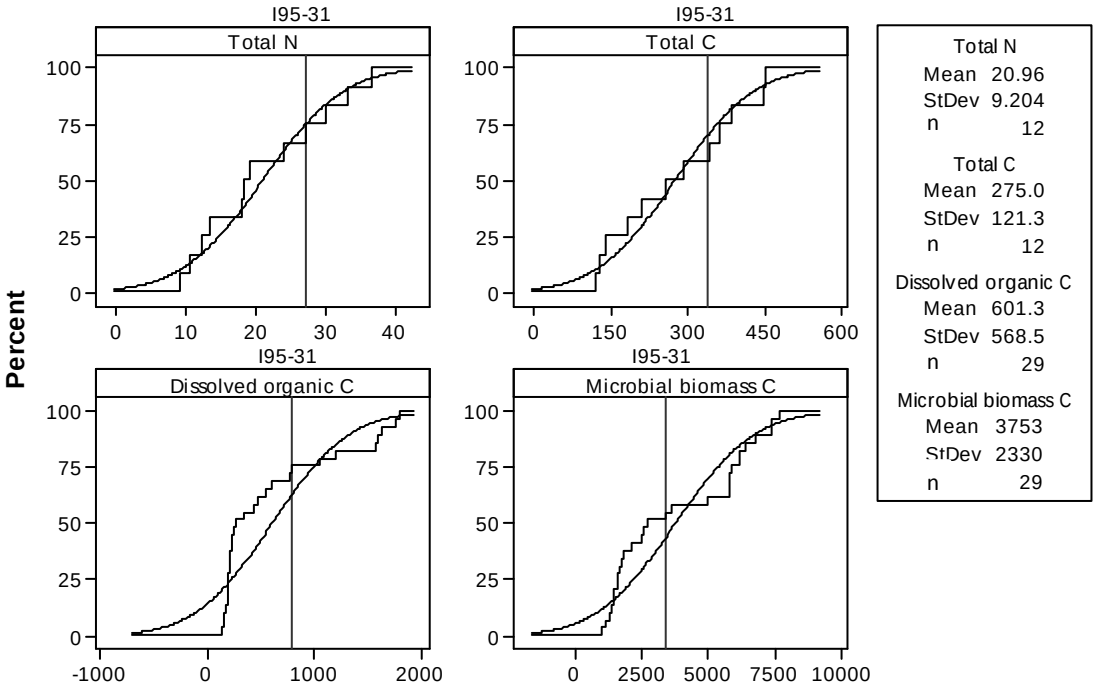

Figure 7A-9. Cumulative distribution functions of wetland surface soil (0 to 10 cm) chemistry collected at Lake Poinsett. Percentiles are represented on the y-axis and nutrient concentrations (g kg-1 or mg kg-1) are on the x-axis. Total nitrogen and total carbon are in g kg-1; whereas, dissolved organic carbon (DOC) and microbial biomass carbon are in mg kg-1. The smoothed hatched line represents a normal distribution curve for the data, while the solid stepped line represents actual collected data. The average nutrient concentration of wetland soils at the intensively sampled I95-31 site is represented in each panel as a vertical solid line. Some summary statistics for each respective parameter are presented on the right hand side of the figure. N = nitrogen, C = carbon, n = number of observations.

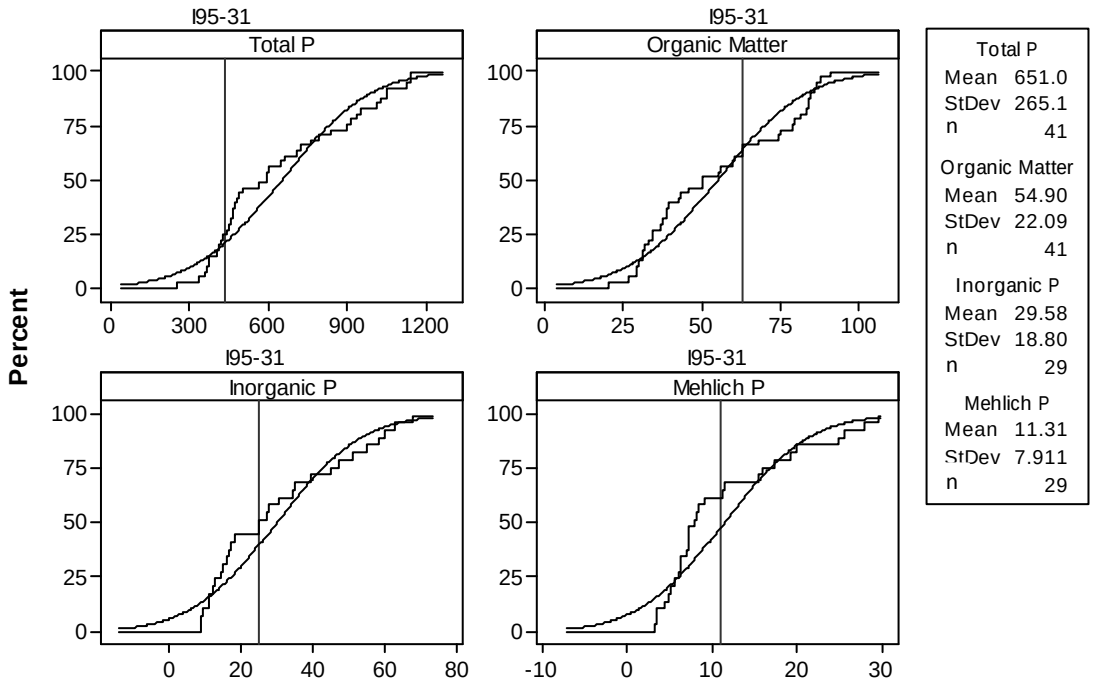

Figure 7A–10. Cumulative distribution functions of wetland surface soil (0 to 10 cm) characteristics collected along entire length of the St. Johns River. Percentiles are represented on the y-axis and nutrient concentrations measured in mg kg^{-1} or percent are on the x-axis. Total phosphorus, inorganic phosphorus, and Mehlich III phosphorus are in mg kg^{-1}; whereas, soil organic matter is in percent (%). The smoothed hatched line represents a normal distribution curve for the data, while the solid stepped line represents the actual collected data. The average phosphorus and organic matter concentrations of wetland soils adjacent to Lake Poinsett are represented by the vertical solid line in each panel. Some summary statistics for each parameter are presented on the right hand side of the figure. P = phosphorus, n = number of observations.

Table 7A-3. Summary statistics for surface soils (0-10 cm depth) collected in wetland areas around Lake Poinsett, which is located in the Upper St Johns River Basin. Soils were collected during June, July, and August 2009. N = the total number of samples collected.

	Units	N	Min	25th percentile	Mean	Standard error of mean	Standard deviation	Median	75th percentile	Range	Interquartile range	Max	Coefficient of variation ------%------
Bulk Density	g cm^{-3}	29	0.11	0.15	0.28	0.02	0.11	0.26	0.38	0.36	0.24	0.47	41
pH	pH units	29	4.4	4.9	5.3	0.1	0.5	5.2	5.5	1.9	0.6	6.3	9.3
Moisture C	%	29	55	67	73	2	10	70	84	33	17	88	14
OM	%	41	20	34	55	3	22	50	79	71	45	91	40
Total C	g kg^{-1}	12	120	148	275	35	121	272	379	330	231	450	44
DOC	mg kg^{-1}	29	127	191	601	106	569	256	918	1669	727	1796	95
MBC	mg kg^{-1}	29	993	1594	3753	433	2330	2708	5979	6643	4385	7635	62
Total N	g kg^{-1}	12	9.0	12.5	21.0	2.7	9.2	18.7	29.4	27.7	16.9	36.7	44
Total P	mg kg^{-1}	41	254	433	651	41	265	596	906	890	473	1144	41
Inorganic P	mg kg^{-1}	29	8.4	13.2	29.6	3.5	18.8	24.9	45.9	59.5	32.7	68.0	64
Mehlich P	mg kg^{-1}	29	3.2	5.8	11.3	1.5	7.9	7.8	16.7	26.4	10.8	29.6	70
Calcium	mg kg^{-1}	29	1177	3707	6124	597	3216	5426	8415	13125	4708	14302	53
Magnesium	mg kg^{-1}	29	168	259	751	99	534	580	1221	1949	962	2117	71
Aluminum	mg kg^{-1}	29	164	400	819	93	502	714	1121	1910	720	2073	61
Iron	mg kg^{-1}	29	93	286	742	126	676	438	1117	2148	831	2241	91

Moisture C = moisture content, OM = organic matter, Total C = total carbon, DOC = dissolved organic carbon, MBC = microbial biomass carbon, Total N = total nitrogen, Total P = total phosphorus, Inorganic P = inorganic phosphorus, and Mehlich P = Mehlich III phosphorus.

Table 7A-4. Soil physicochemical data for surface soils (0-10 cm) collected during the synoptic soil survey.

Station	BD	pH	MC	OM	TC	TN	TKN	DOC	MBC	TP	Inorg. P	Meh. P	ICP P	ICP K	ICP Ca	ICP Mg	ICP Al	ICP S	ICP Cu	ICP Mn	ICP Fe	ICP Zn
	g cm^{-3}		------%------		----------gkg^{-1}----------				----------mgkg^{-1}----------													
Buzzard Roost 1	0.25	5.16	70.2	45.4			20.2	465	5785	662	27.7	7.8	42.4	71.9	6420	771	604	202	2.8	0.7	686	3.0
Buzzard Roost 1	0.24	5.22	70.4	50.0			22.7	434	6372	722	24.9	5.6	42.9	63.5	6820	817	714	180	1.8	0.7	742	2.3
Buzzard Roost 1	0.44	5.33	62.2	31.6			13.6	338	3620	445	15.7	4.8	26.8	45.6	4712	547	464	138	1.8	0.5	480	1.8
Buzzard Roost 2	0.14	4.91	87.1	86.5			37.3	1641	7348	1130	51.0	25.5	56.8	117.7	8722	1059	848	1164	3.5	1.0	1658	5.6
Buzzard Roost 2	0.14	4.92	87.0	83.8			35.9	1577	6128	1054	54.8	24.9	56.4	119.0	9099	1010	809	1118	7.6	0.9	1665	6.2
Buzzard Roost 2	0.14	5.06	87.8	79.2			40.4	1760	7635	1144	59.9	29.6	80.2	123.4	9943	1181	899	1171	3.2	1.0	1953	4.8
Mulberry Mound	0.31	4.85	67.8	50.0			19.8	547	4986	565	26.8	7.1	60.1	67.9	5426	980	1097	370	1.0	0.5	411	2.8
Mulberry Mound	0.24	4.88	70.1	63.0			27.5	775	6732	506	39.2	8.4	89.7	61.5	7903	1375	2045	570	1.1	0.7	442	2.1
Mulberry Mound	0.26	5.01	68.8	60.1			26.2	603	7398	710	35.0	8.1	77.0	60.4	8107	1445	2073	557	1.9	0.6	553	2.7
Mud 2B	0.40	5.1	53.4	39.6			17.4	443	5002	635	24.4	6.6	163.3	72.0	6535	1303	2571	713	1.4	0.5	390	2.4
Mud 2B	0.87	4.92	30.9	12.0			6.3	169	1866	193	5.8	2.1	29.2	29.8	2221	481	921	259	0.3	0.1	144	1.4
Mud 2B	0.54	4.95	47.9	28.6			12.5	284	3911	417	14.8	4.2	68.3	45.7	4549	908	1768	478	0.7	0.4	328	2.1
JG	0.10	6.03	89.0	77.0			29.5	975	7314	1215	60.7	36.2	183.1	116.7	10971	796	1995	46	11.2	2.5	1090	13.3
JG	0.09	6.09	89.8	82.1			29.9	965	7274	1315	56.7	32.2	191.9	121.8	11482	865	2219	43	14.9	2.9	1160	15.0
JG	0.09	6.05	88.9	82.9			32.5	967	7884	1333	67.7	41.7	183.0	121.3	11520	860	2031	40	12.4	2.7	1129	17.9
Section 8-3	0.43	5.93	63.2	29.4			13.9	256	2144	601	62.7	27.9	74.2	48.0	4671	266	691	78	1.9	0.4	463	2.0
Section 8-3	0.24	6.23	74.7	38.6			17.5	216	1591	764	34.2	16.0	43.1	38.5	3088	175	345	27	5.9	0.3	292	1.5
Section 8-3	0.37	6.05	70.9	33.0			15.6	242	1702	649	30.5	15.5	46.9	30.5	3527	192	431	49	3.2	0.3	343	1.1
Section 8-3.2	0.47	6.27	59.4	20.0			7.4	127	993	338	18.1	9.0	16.5	38.1	4178	294	323	32	1.8	0.3	407	2.2
Section 8-3.2	0.33	6.12	67.4	29.2			12.2	144	1134	461	14.8	7.1	16.9	22.3	4088	252	304	29	1.5	0.2	348	1.8
Section 8-3.2	0.32	6	70.3	37.4			14.6	168	1277	484	13.9	6.9	20.4	31.6	4192	241	369	35	1.5	0.2	438	1.2
Section 8-3.3	0.43	5.41	66.9	34.0			13.9	200	1597	356	8.9	3.4	17.6	28.6	3499	369	515	65	0.7	0.3	325	1.1
Section 8-3.3	0.37	5.43	67.6	36.8			15.6	229	1841	416	11.0	4.3	21.9	32.7	3886	421	653	58	0.9	0.2	350	0.6
Section 8-3.3	0.42	5.43	69.4	34.1			15.2	185	1469	364	8.5	3.2	18.4	28.8	3359	368	529	50	0.8	0.2	279	2.1
County Line 1	0.32	5.46	63.4	42.3			19.3	206	2708	597	17.1	6.1	45.3	32.1	4951	483	958	118	0.9	0.3	214	2.0
County Line 1	0.40	5.45	59.6	39.2			19.1	205	2534	463	11.0	6.1	44.5	32.3	6108	580	1261	135	0.7	0.3	263	1.2
County Line 1	0.45	4.42	54.9	30.8			8.0	190	2458	406	16.3	7.1	47.7	58.6	6345	613	1318	156	0.9	0.4	263	2.4
County Line 2	0.14	4.91	87.6	83.3			33.4	140	1428	1051	8.4	3.3	10.4	24.8	1177	168	164	100	0.5	0.1	93	0.3
County Line	0.11	4.87	86.7	85.8			33.3	178	1376	1143	11.7	5.0	14.1	30.3	1464	206	190	132	0.8	0.1	115	1.0

Appendices 7A

Station	BD	pH	MC	OM	TC	TN	TKN	DOC	MBC	TP	Inorg. P	Meh. P	ICP P	ICP K	ICP Ca	ICP Mg	ICP Al	ICP S	ICP Cu	ICP Mn	ICP Fe	ICP Zn
	g cm^{-3}		------%------		----------gkg^{-1}----------				----------$mgkg^{-1}$----------													
2																						
County Line 2	0.14	4.9	85.0	78.6			35.4	193	1654	1028	12.6	6.3	18.5	34.7	1659	233	244	132	0.7	0.1	118	1.0
2-1	0.15	6.02	84.3	60.2			16.8	735	3853	1012	161.0	79.2	250.6	812.0	6234	4129	3364	580	9.3	10.5	2058	36.0
2-1	0.16	5.69	84.3	59.1			15.9	734	2967	884	157.7	82.1	204.0	695.4	4685	3447	3505	498	6.0	10.4	2920	29.0
2-1	0.15	6	85.6	61.0			17.7	517	3358	852	159.7	57.3	116.7	270.1	4237	2166	1714	302	5.4	3.2	1319	15.0
2-2	0.09	5.82	90.4	80.5			30.2	895	7498	1325	56.1	28.4	283.3	375.5	7901	3920	2387	297	7.3	3.5	987	19.0
2-2	0.09	5.85	89.5	82.2			6.2	864	5286	1086	58.3	29.4	166.5	405.6	10643	5214	2672	311	25.7	5.0	1840	36.2
2-2	0.10	5.89	89.8	81.3			28.7	888	5899	1257	89.6	39.6	129.1	363.4	10876	5651	2550	377	33.6	4.5	1646	28.6
2-3	0.12	5.94	88.4	68.8			31.4	739	13367	1985	72.2	32.6	298.4	422.9	6304	2787	3849	105	32.3	1.9	2427	17.5
2-3	0.12	5.96	88.3	69.1			31.1	683	12431	2038	105.7	46.7	269.1	404.8	7193	2951	3683	159	25.6	2.0	2652	19.0
2-3	0.12	5.86	87.8	73.2			28.8	674	12343	1824	78.2	32.2	299.6	407.3	6093	2515	3391	143	22.6	1.8	2348	14.7
3-1	0.13	5.69	86.5	79.3			27.3	738	7426	1481	83.6	39.7	248.4	299.2	8075	3107	3364	228	10.0	1.6	2080	9.3
3-1	0.12	5.58	86.0	76.0			28.0	639	9421	1694	82.9	36.4	278.3	336.8	6831	2830	3527	203	6.1	1.6	2256	8.6
3-1	0.10	5.75	87.7	79.6			28.3	703	7970	1625	95.5	46.8	265.2	334.9	8141	2752	3300	184	12.7	1.3	2085	8.7
3-2	0.17	5.86	82.9	56.0			20.6	624	5594	873	69.9	20.0	122.0	315.7	8360	2716	1677	284	8.2	2.0	839	9.1
3-2	0.17	5.92	82.9	55.2			21.3	623	5648	856	50.2	25.0	147.4	303.4	8127	2787	1824	232	6.9	1.9	719	8.3
3-2	0.17	5.95	82.6	54.8			21.5	656	5666	788	51.4	29.1	142.3	322.5	8624	2925	1878	249	8.1	2.0	823	6.8
3-4	0.14	5.63	84.8	76.7			28.4	777	10082	1090	81.5	30.5	91.7	443.2	11975	3037	1506	292	5.7	1.3	2020	9.1
3-4	0.15	5.58	84.6	76.1			27.3	813	10061	1120	78.5	24.4	83.1	392.6	11022	2874	1353	196	3.2	1.1	1939	7.8
3-4	0.16	5.69	83.5	68.0			27.1	769	11535	1096	85.1	21.1	89.5	338.5	9356	2543	1315	215	3.3	0.9	1586	4.4
3-5	0.12	5.46	86.8	79.6			31.3	1693	11519	1314	88.0	29.9	112.1	448.1	13184	2298	1976	308	5.7	3.2	1921	11.8
3-5	0.12	5.44	87.3	80.0			30.0	1917	10454	1321	78.6	27.6	104.9	361.3	12898	2289	1878	318	8.5	3.0	1963	9.3
3-5	0.12	5.41	87.5	79.0			30.3	1353	11210	1319	82.3	32.4	128.0	441.4	12604	2177	1945	270	9.4	2.4	1634	10.9
3-7	0.22	5.24	77.8	44.6			16.5	587	2730	668	52.7	21.8	49.3	124.6	7035	986	1743	174	6.6	2.0	2127	12.6
3-7	0.22	5.16	78.3	44.4			18.5	691	4846	782	42.5	13.3	61.0	104.8	5636	763	1515	97	1.0	1.4	1248	6.4
3-7	0.20	5.3	80.7	48.6			20.0	611	4699	804	53.1	30.3	73.7	297.8	7687	4914	1715	326	29.2	5.1	1619	25.7
I95-12	0.24	5	82.1	63.0			32.3	1195	5830	478	47.0	11.1	43.7	75.9	10602	1304	988	1729	3.7	1.0	1194	0.0
I95-21	0.13	4.56	85.5	84.6			35.1	1591	5772	791	68.0	20.0	53.8	122.8	14302	2117	1464	1858	3.3	1.7	2157	1.8
I95-31	0.29	5.47	73.0	55.7			25.4	788	3381	423	24.9	11.3	44.2	102.1	7928	1261	1197	177	2.1	0.8	1040	0.0
I95-38	0.21	5.08	80.9	75.2			37.0	1049	5774	373	44.8	17.3	38.3	83.8	10849	1629	1113	900	5.9	1.0	2241	0.3
I95-43	0.15	5.29	83.1	81.2			42.7	1796	6158	914	58.5	19.1	70.0	93.9	10586	1418	1128	498	4.9	1.2	1978	6.9
Jones Island	0.12	5.64	88.1	88.0			24.9	1037	3905	631	50.6	9.3	38.8	102.9	16469	3839	324	836	1.7	1.2	701	0.0
W3	0.09	5.68	90.4	89.0			34.4	1065	11957	1151	76.3	26.1	83.9	175.0	12962	2283	698	579	4.0	1.2	467	13.0
M1 (E. Marsh)	0.12	5.99	89.7	82.8			15.9	1171	9114	850	70.7	25.2	66.7	294.7	11894	3417	1025	736	1.7	0.9	245	0.0
W1	0.11	6.13	87.7	78.6			32.8	1312	11606	1006	120.7	29.3	81.3	149.5	15047	3059	994	777	3.7	0.9	299	2.8
W2a S. West Marsh	0.13	5.98	89.8	89.5			35.2	836	9721	967	68.9	22.0	56.1	179.5	12412	2196	648	275	4.1	1.2	595	7.6
1-1	0.24	6.38	79.3	34.1			16.6	261	3549	724	146.4	66.9	96.9	1993.7	3085	5285	1183	2931	16.3	2.5	753	4.5

Appendices 7A

Station	BD	pH	MC	OM	TC	TN	TKN	DOC	MBC	TP	Inorg. P	Meh. P	ICP P	ICP K	ICP Ca	ICP Mg	ICP Al	ICP S	ICP Cu	ICP Mn	ICP Fe	ICP Zn
	g cm^{-3}		------%------		----------gkg^{-1}----------				----------mgkg^{-1}----------													
1-1	0.28	6.64	78.1	31.3			10.2	219	3307	633	167.9	73.5	114.3	1941.2	3087	5233	1016	2654	18.2	2.4	882	15.9
1-2	0.34	7.23	73.6	24.3			6.3	237	2753	531	175.4	74.2	101.7	1716.6	2456	4009	834	1700	1.9	1.4	760	1.9
1-3	0.21	7.01	81.4	33.4			8.9	309	4326	550	116.7	57.0	91.6	2382.5	2842	5573	1390	2483	4.5	1.1	503	1.4
1-4	0.20	6.55	83.1	41.0			12.1	425	3484	763	156.5	66.6	121.7	2457.7	3470	6364	1644	2943	6.1	1.8	503	2.2
1-5	0.69	6.86	53.1	8.9			2.6	74	966	243	67.0	29.0	51.3	653.1	1055	1669	500	728	1.3	0.5	543	0.9
1-7	0.40	7	69.9	18.0			5.5	127	1239	728	498.6	271.9	245.5	1303.1	2818	3071	1209	1433	13.3	1.5	1511	9.0
1-8	0.39	6.56	69.5	22.5			6.3	148	911	623	286.9	54.8	115.1	1088.1	1835	2500	780	740	9.0	4.2	1524	8.9
1-10	0.31	6.45	75.3	27.9			8.4	146	738	1131	828.3	392.5	354.5	960.4	3065	2555	1899	442	31.5	2.4	3013	24.0
1-11	0.31	6.03	73.5	30.6			9.4	226	1146	960	365.7	87.5	187.0	548.1	2918	2353	1986	121	62.8	7.1	2415	22.2
1-12	0.16	6.25	83.9	46.2			13.9	356	1658	1122	598.6	68.8	174.1	630.9	5751	4158	2642	463	31.3	9.7	2485	49.7
2-4	0.22	5.78	81.1	52.1			15.7	474	2651	754	73.6	37.3	86.4	279.4	4672	2446	1973	219	12.4	3.8	1831	13.6
2-5	0.21	5.49	76.1	46.5			17.2	369	3136	964	166.0	52.8	87.2	382.6	4622	2309	1997	387	5.9	5.3	1914	21.4
2-6	0.11	5.82	88.6	87.4			32.4	748	8318	1198	49.0	18.8	90.1	265.6	11002	4210	2403	231	13.1	2.0	1694	12.0
2-7	0.12	6	87.7	86.9			31.5	742	10141	1316	49.8	14.2	56.8	280.0	10392	3974	2295	153	7.6	2.1	2683	7.0
2-7	0.13	5.88	87.9	87.8			28.5	760	8759	1363	49.3	14.1	41.7	244.8	10299	3746	2097	155	7.2	2.0	2626	16.3
1A				91.6	456	23.0				693												
1-1				44.3	178	9.5				558												
1-2				31.0	101	6.3				735												
1-3				37.4	114	8.1				850												
1-4				44.3	155	9.7				846												
1-5				20.5	66	3.7				368												
1-7				20.8	61	3.5				658												
1-8				31.5	106	6.4				738												
1-10				34.5	126	8.3				1572												
1-11				46.1	191	11.1				1238												
1-12				63.6	301	13.8				1038												
2				88.6	430	23.2				740												
2-1				70.0	327	18.8				1188												
2-2				82.8	401	24.1				1120												
2-3				84.0	406	18.1				1237												
2-4				48.5	213	13.8				873												
2-5				50.0	223	14.9				1039												
2-6				90.2	434	24.3				990												
2-7				89.0	426	25.8				1354												
3				80.6	395	21.5				839												
3-1				82.8	398	22.8				1355												
3-2				38.8	177	12.3				593												
3-4				51.0	240	14.6				720												
3-5				82.7	404	23.7				1294												

Appendices 7A

Station	BD	pH	MC	OM	TC	TN	TKN	DOC	MBC	TP	Inorg. P	Meh. P	ICP P	ICP K	ICP Ca	ICP Mg	ICP Al	ICP S	ICP Cu	ICP Mn	ICP Fe	ICP Zn
	g cm^{-3}		------%------		----------gkg^{-1}----------				----------						mgkg^{-1}----------							
3-6				72.1	337	24.4				1193												
3-7				49.5	222	15.3				914												
3-8				92.2	452	23.8				843												
3-9				84.8	401	23.3				1056												
3-10				66.5	304	19.3				1180												
4				87.7	423	23.1				915												
4-1B				93.1	450	24.6				503												
4-2				89.2	432	27.5				560												
4-3				17.7	74	5.0				218												
4-4				4.9	14	0.9				53												
4-5				75.1	376	24.4				701												
4-6				90.1	427	26.2				813												
5				89.0	420	29.7				1001												
6-11A				5.6	21	1.7				103												
6-12				8.3	27	2.2				184												
6-13				5.9	16	1.5				90												
7				88.2	422	23.9				694	=											
8				59.9	289	18.2				952												
8-3				30.7	129	10.6				460												
8-3.2				55.2	254	19.1				596												
8-3.3				26.7	120	9.0				254												
9				50.2	219	15.4				925												
10A				78.3	383	23.7				1063												
11				70.4	333	21.2				967												
County Line 1				38.8	180	13.4				473												
County Line 2				84.0	385	30.1				897												
Jones Island				92.3	301	16.9				465												
JG1				85.9	412	26.0				1114												
East Marsh 1				89.1	323	19.3				631												
I-95 (12)				43.2	210	17.9				376												
I-95 (21)				87.7	446	33.1				838												
I-95 (31)				68.1	340	27.3				443												
Mud 2B				22.7	102	7.4				392												
Buzz Roost 1				29.8	137	12.1				414												
Buzz Roost 2				90.8	450	36.7				1014												
Mulberry Mound				74.3	361	23.9				939												

Table 7A-5. Location of soil sample locations for surface soils (0-10 cm) collected during the synoptic soil survey.

Station	UTM_X	UTM_Y	Station	UTM_X	UTM_Y	Station	UTM_X	UTM_Y	Station	UTM_X	UTM_Y
Buzzard Roost 1	517326	3130224	3-1	430821	3323923	1-2	456562	3360042	8-3.2	515168	3123027
Buzzard Roost 1	517326	3130224	3-2	436619	3322457	1-3	455010	3363057	8-3.3	515577	3123346
Buzzard Roost 1	517326	3130224	3-2	436619	3322457	1-4	452487	3364377	9	461034	3211649
Buzzard Roost 2	518168	3131484	3-2	436619	3322457	1-5	451017	3367799	10A	465981	3203440
Buzzard Roost 2	518168	3131484	3-4	440147	3310700	1-7	449194	3360973	11	464351	3201138
Buzzard Roost 2	518168	3131484	3-4	440147	3310700	1-8	449740	3358689	County Line 1	511358	3136192
Mulberry Mound	511208	3137269	3-4	440147	3310700	1-10	430550	3365435	County Line 2	511737	3136208
Mulberry Mound	511208	3137269	3-5	449498	3292118	1-11	428476	3366575	Jones Island	461011	3221094
Mulberry Mound	511208	3137269	3-5	449498	3292118	1-12	442711	3354662	JG1	518871	3101834
Mud 2B	510599	3137477	3-5	449498	3292118	2	446597	3230004	East Marsh 1	463723	3221876
Mud 2B	510599	3137477	3-7	443260	3270331	2-1	431871	3345984	I-95 (12)	522087	3132535
Mud 2B	510599	3137477	3-7	443260	3270331	2-2	431637	3344401	I-95 (21)	521542	3132575
JG	518871	3101835	3-7	443260	3270331	2-3	429957	3342059	I-95 (31)	520952	3132719
JG	518871	3101835	I95-12	522087	3132536	2-4	433173	3332654	Mud 2B	510599	3137477
JG	518871	3101835	I95-21	521542	3132576	2-5	433215	3332559	Buzz Roost 1	517326	3130224
Section 8-3	514340	3122500	I95-31	520952	3132719	2-6	443112	3332977	Buzz Roost 2	518168	3131484
Section 8-3	514340	3122500	I95-38	520583	3132777	2-7	444378	3332654	Mulberry Mound	511208	3137269
Section 8-3	514340	3122500	I95-43	520284	3132824	3	445599	3228033			
Section 8-3.2	515168	3123028	Jones Island	461011	3221094	3-1	430821	3323923			
Section 8-3.2	515168	3123028	W3	457346	3217192	3-2	436619	3322457			
Section 8-3.2	515168	3123028	M1 (E. Marsh)	463723	3221876	3-4	440147	3310700			
Section 8-3.3	515577	3123347	W1	463141	3221930	3-5	449498	3292118			
Section 8-3.3	515577	3123347	W2a S. West Marsh	457554	3216453	3-6	438092	3273251			
Section 8-3.3	515577	3123347	1-1	457376	3360224	3-7	443260	3270331			
County Line 1	511358	3136193	1-1	457376	3360224	3-8	456880	3249843			
County Line	511358	3136193	1-2	456562	3360042	3-9	457111	3249549			

Station	UTM_X	UTM_Y	Station	UTM_X	UTM_Y	Station	UTM_X	UTM_Y	Station	UTM_X	UTM_Y
1											
County Line 1	511358	3136193	1-3	455010	3363057	3-10	432747	3260225			
County Line 2	511737	3136209	1-4	452487	3364377	4	448355	3228217			
County Line 2	511737	3136209	1-5	451017	3367799	4-1B	432728	3244771			
County Line 2	511737	3136209	1-7	449194	3360973	4-2	432166	3245471			
2-1	431871	3345984	1-8	449740	3358689	4-3	448741	3240382			
2-1	431871	3345984	1-10	430550	3365435	4-4	449108	3240429			
2-1	431871	3345984	1-11	428476	3366575	4-5	448874	3235546			
2-2	431637	3344401	1-12	442711	3354662	4-6	439779	3230866			
2-2	431637	3344401	2-4	433173	3332654	5	449676	3224897			
2-2	431637	3344401	2-5	433215	3332559	6-11A	486737	3184607			
2-3	429957	3342059	2-6	443112	3332977	6-12	487657	3185511			
2-3	429957	3342059	2-7	444378	3332654	6-13	491756	3187707			
2-3	429957	3342059	2-7	444378	3332654	7	452564	3218258			
3-1	430821	3323923	1A	442141	3230053	8	456099	3214993			
3-1	430821	3323923	1-1	457376	3360224	8-3	514340	3122499			