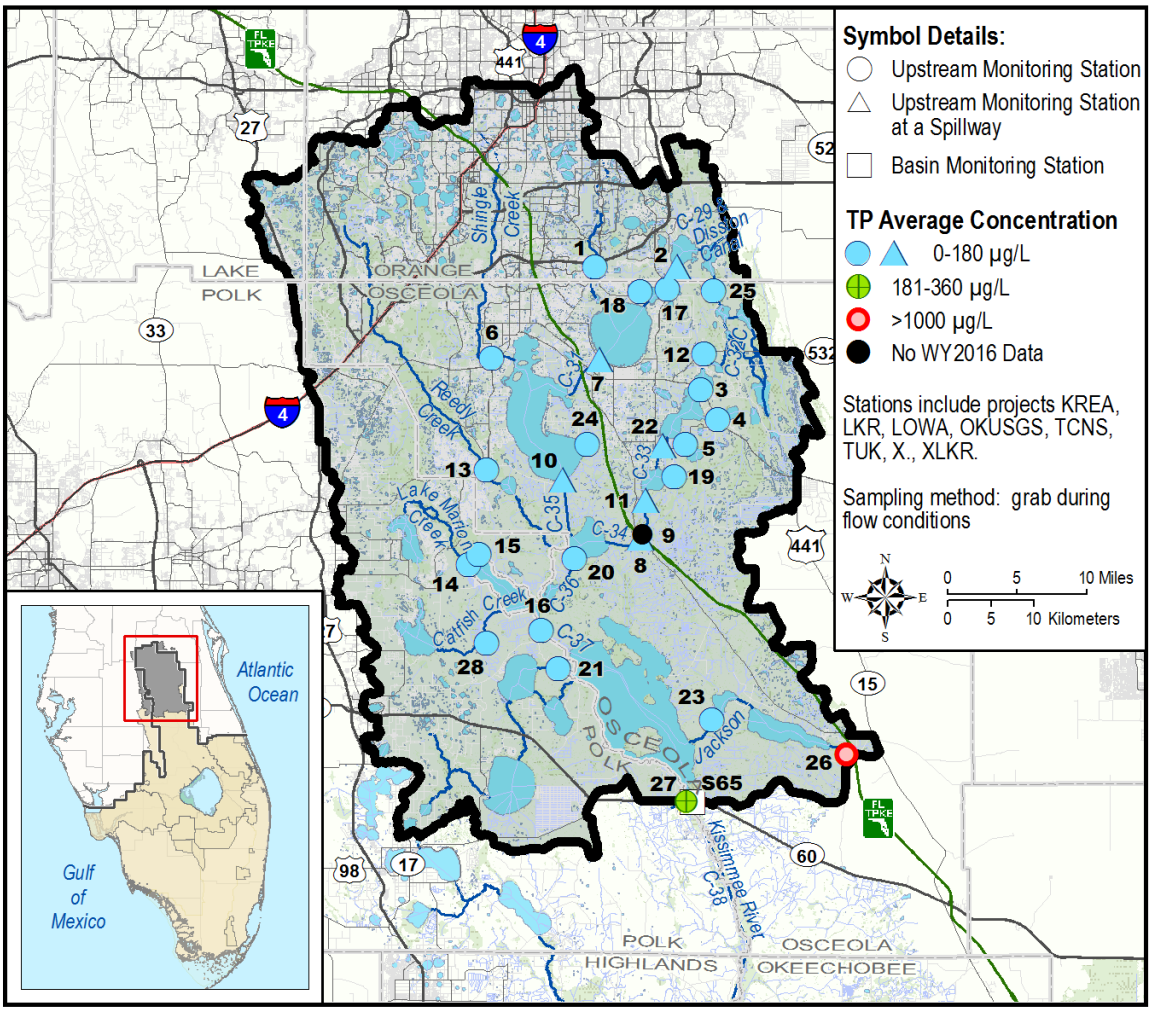
Appendix 8B-1: WY2016 Supplemental Lake Okeechobee Watershed Phosphorus Concentration Data by Subwatershed

Jeffrey Iudicello and Steffany Olson

Contributor: Cordella Miessau

INTRODUCTION

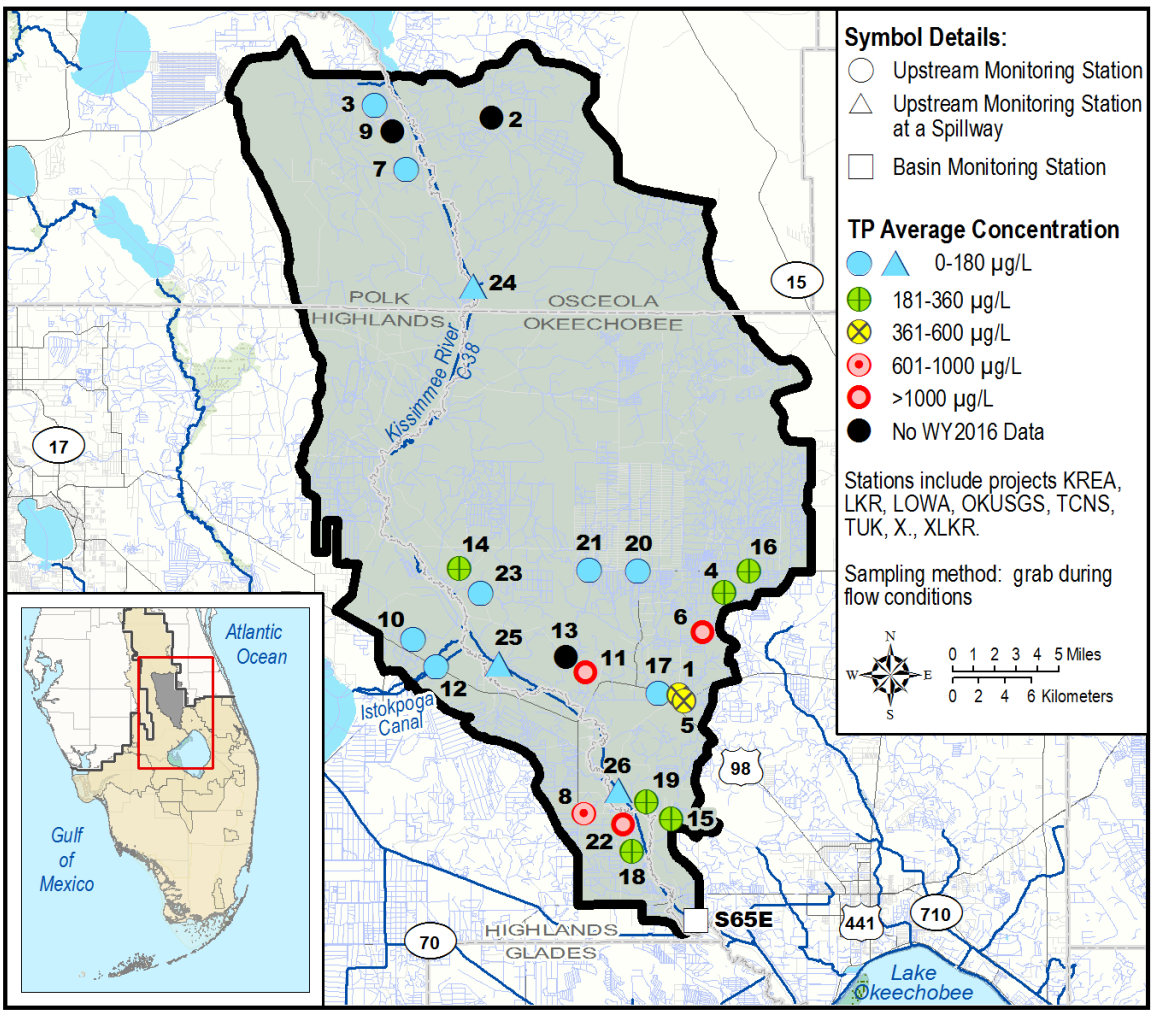
The information in this appendix is intended to supplement the data summaries provided in Chapter 8B. Section 373.4595(3)(a)2.a., Florida Statutes, requires the evaluation of all available existing water quality data concerning total phosphorus (TP) in the Lake Okeechobee Watershed (LOW). Surface water quality monitoring networks have been in place in the LOW since the early 1980s. The purpose of the networks has been to collect ambient data and track changes in water quality over time within the watershed. As mentioned in Chapter 8B, the District's current monitoring networks include sampling locations at two hydrologic levels within the LOW: (1) subwatershed and drainage basin level (basin monitoring stations for which flow and TP concentration data are collected and TP load is calculated), and (2) subbasin level (upstream ambient/tributary stations). The locations of the Level 1 sites are shown on the maps in this appendix for reference only, while the Level 1 data can be found in Table 8B-3. The Level 2 tributary sites on the maps indicate locations where grab samples are collected during flow conditions for analysis of phosphorus concentrations. The data presented in this appendix is the Water Year 2016 (WY2016) (May 1, 2015–April 30, 2016) TP results for the six subwatersheds north of Lake Okeechobee (Fisheating Creek, Indian Prairie, Lake Istokpoga, Upper Kissimmee, Lower Kissimmee, and Taylor Creek/Nubbin Slough). Note that the concentrations presented in **Figures 1** through **8** are not flow-weighted because flow measurements are not available at most stations. The ranges of the concentrations in the figures are grouped for reference.



Upper Kissimmee		Number of Samples	TP Concentration (µg/L)			Upper Kissimmee		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max	Map ID	Station		Avg	Min	Max
1	ABOGGN	9	37	18	91	15	DLONDNCR	14	69	31	98
2	AJ33243122[a] (S62)	6	28	25	32	16	EC-37	15	65	35	111
3	AL11263113[a]	4	27	25	30	17	ET05253114	8	33	29	39
4	AL24263113[a]	7	25	18	42	18	ET06253113	20	54	35	83
5	AL34263113[a]	10	19	15	22	19	GENTRYDTCH	18	56	36	82
6	BNSHINGLE	10	50	36	65	20	HL08283014*	7	56	28	110
7	BS-59 (S59)	5	19	18	21	21	KUB009	19	65	45	87
8	CL06283111 (S63A)	11	39	28	64	22	LG32263124 (S60)	8	26	21	34
9	CL06283112	0	-	-	-	23	LJACKDSCH	15	44	18	141
10	CL18273011 (S61)	11	45	28	80	24	LT32263013	6	177	124	207
11	CL19273123[a] (S63)	7	27	21	35	25	MJ01253123	7	14	8	19
12	CO35253112[a]	6	45	38	53	26	ML22303313	11	1360	771	1820
13	CREEDYBR	9	61	23	150	27	PA10313112	11	299	52	825
14	DLMARNCR	19	56	23	125	28	ROMIN	17	33	23	51

a. Data collection was suspended during part of WY2016.

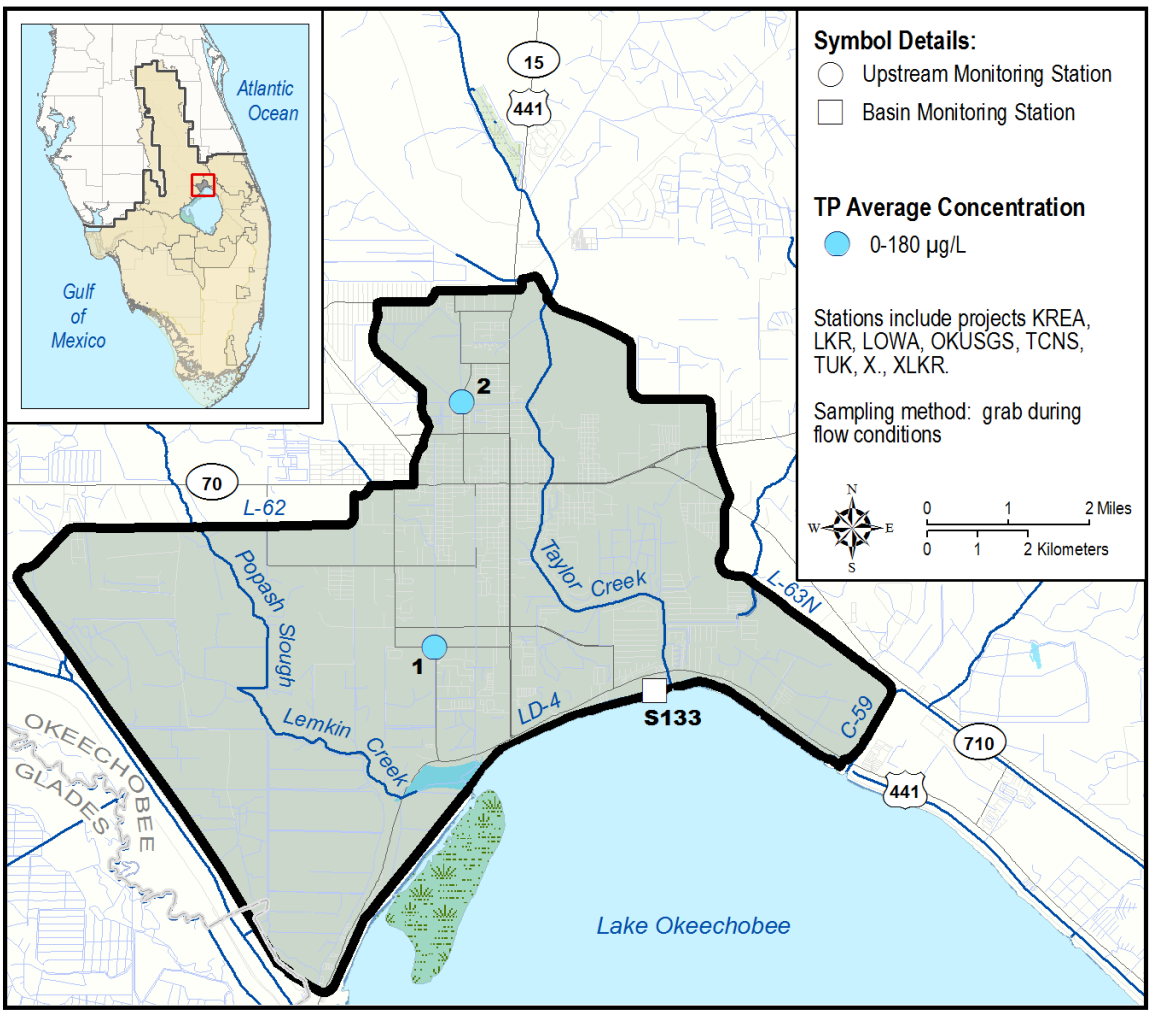
Figure 1. Upper Kissimmee Subwatershed upstream tributary average TP concentrations for WY2016. (Note: µg/L – micrograms per liter, Avg – Average, ID – Identification, Max – Maximum, and Min – minimum.)



Lower Kissimmee		Number of Samples	TP Concentration (µg/L)			Lower Kissimmee		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max	Map ID	Station		Avg	Min	Max
1	02272676	15	377	266	618	14	KR32343214 [a]	5	268	161	445
2	BB16313214	0	-	-	-	15	KR36363312	3	296	151	392
3	BM15313111 [a]	2	35	24	45	16	KREA 01	8	258	148	539
4	CY05353444	16	215	118	534	17	KREA 04	15	157	77	268
5	CY06363411	8	422	197	607	18	KREA 14	15	265	79	591
6	CY17353413	3	2681	2221	3075	19	KREA 17A	17	235	38	586
7	IC35313112 [a]	9	30	19	41	20	KREA 22	17	53	28	162
8	KR05373311	3	930	478	1624	21	KREA 23	19	107	47	440
9	KR23313113 [a]	0*	-	-	-	22	KREA 41A	6	2084	785	5192
10	KR24353114	13	145	63	418	23	OK09353212	14	146	80	443
11	KR29353334	5	1195	673	1942	24	S65A	20	50	38	95
12	KR30353214	1	138	138	138	25	S65C	20	66	42	129
13	KR30353312	0	-	-	-	26	S65D	19	81	39	175

a. Data collection was suspended during part of WY2016.

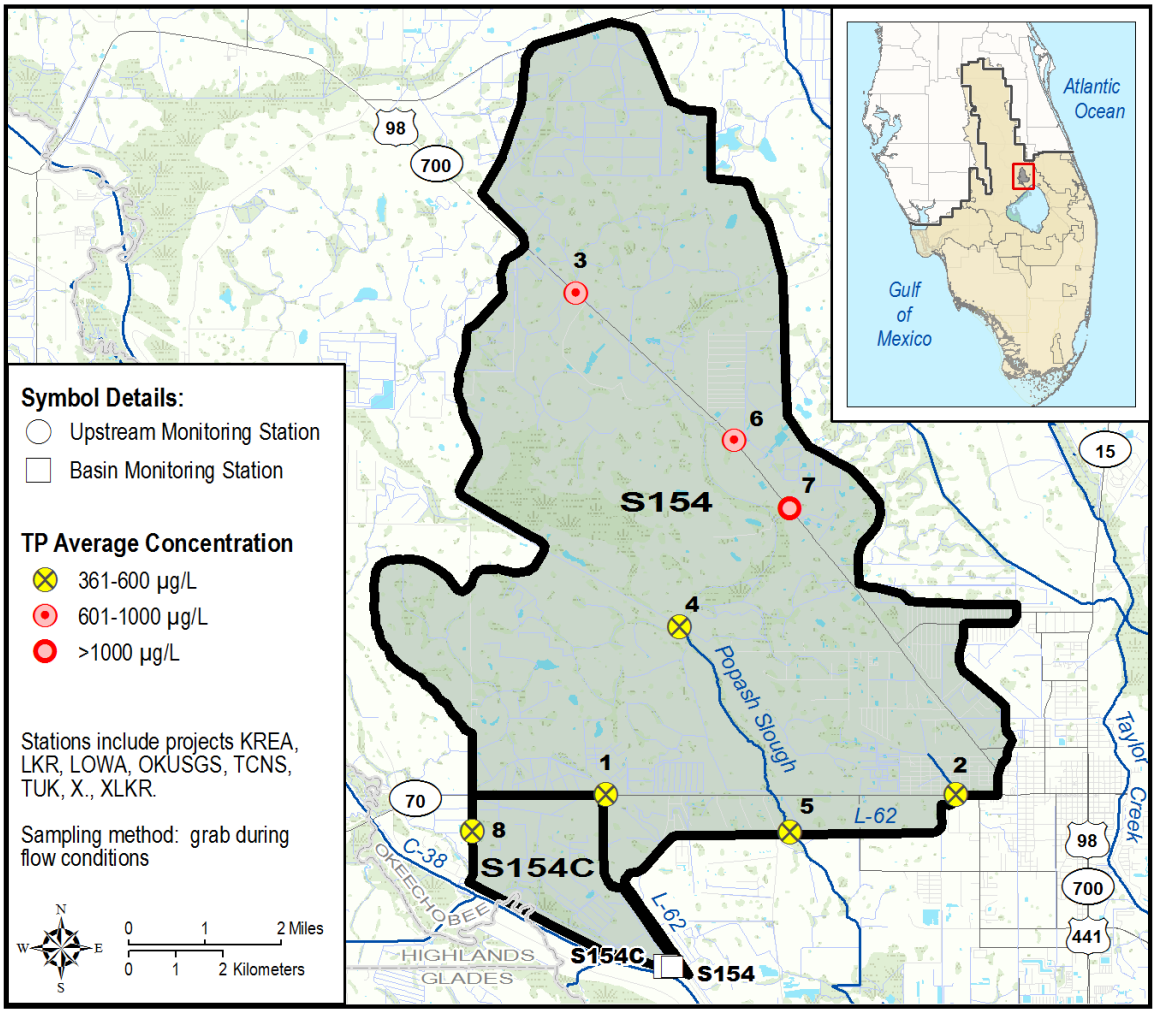
Figure 2. Lower Kissimmee Subwatershed upstream tributary average TP concentrations for WY2016.



S133		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max
1	LM29373514 [a]	9	153	78	355
2	TC09373513 [a]	8	115	63	293

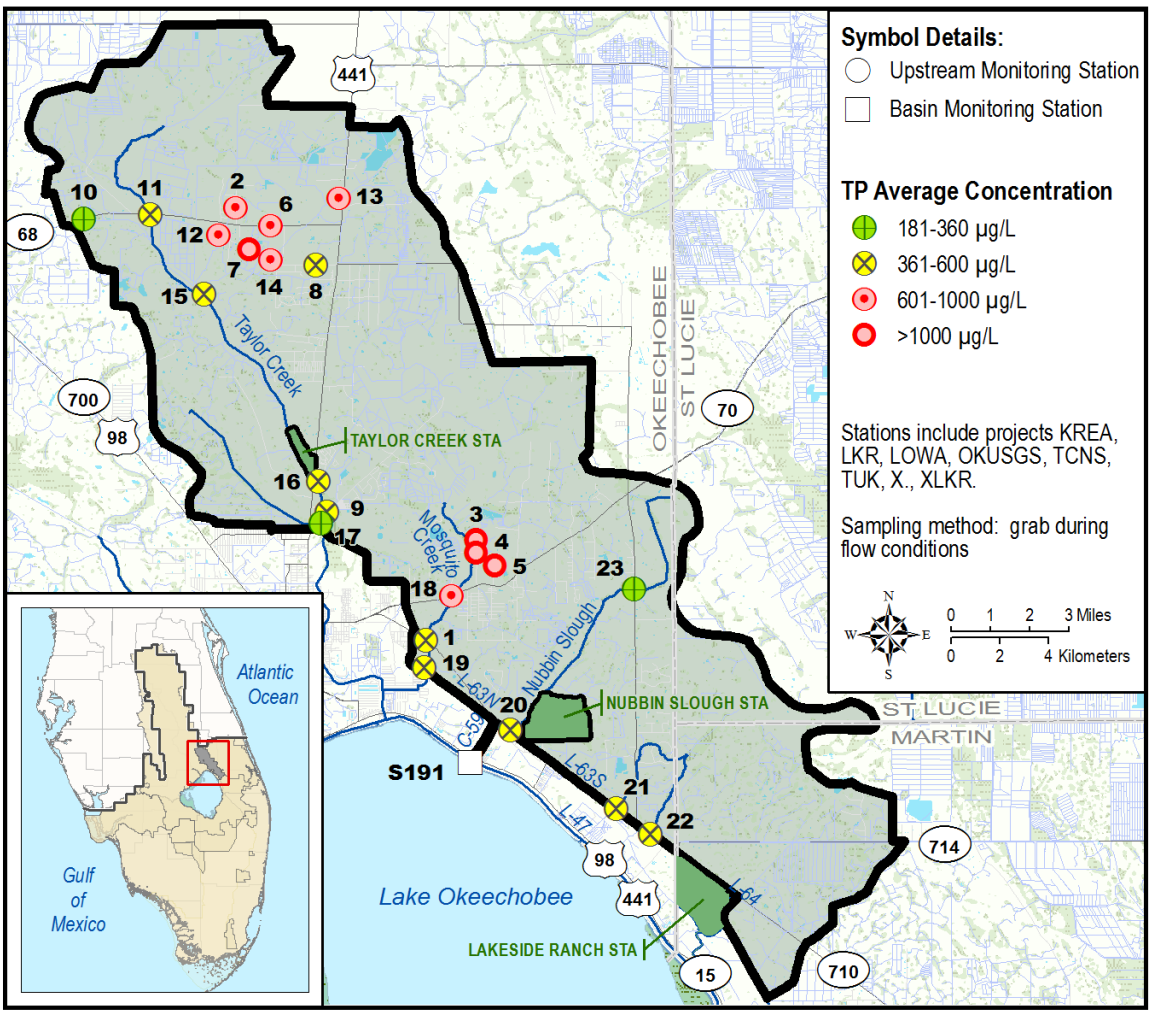
a. Data collection was suspended during part of WY2016.

Figure 3. Taylor Creek/Nubbin Slough Subwatershed, S-133 Basin upstream tributary average TP concentrations for WY2016.



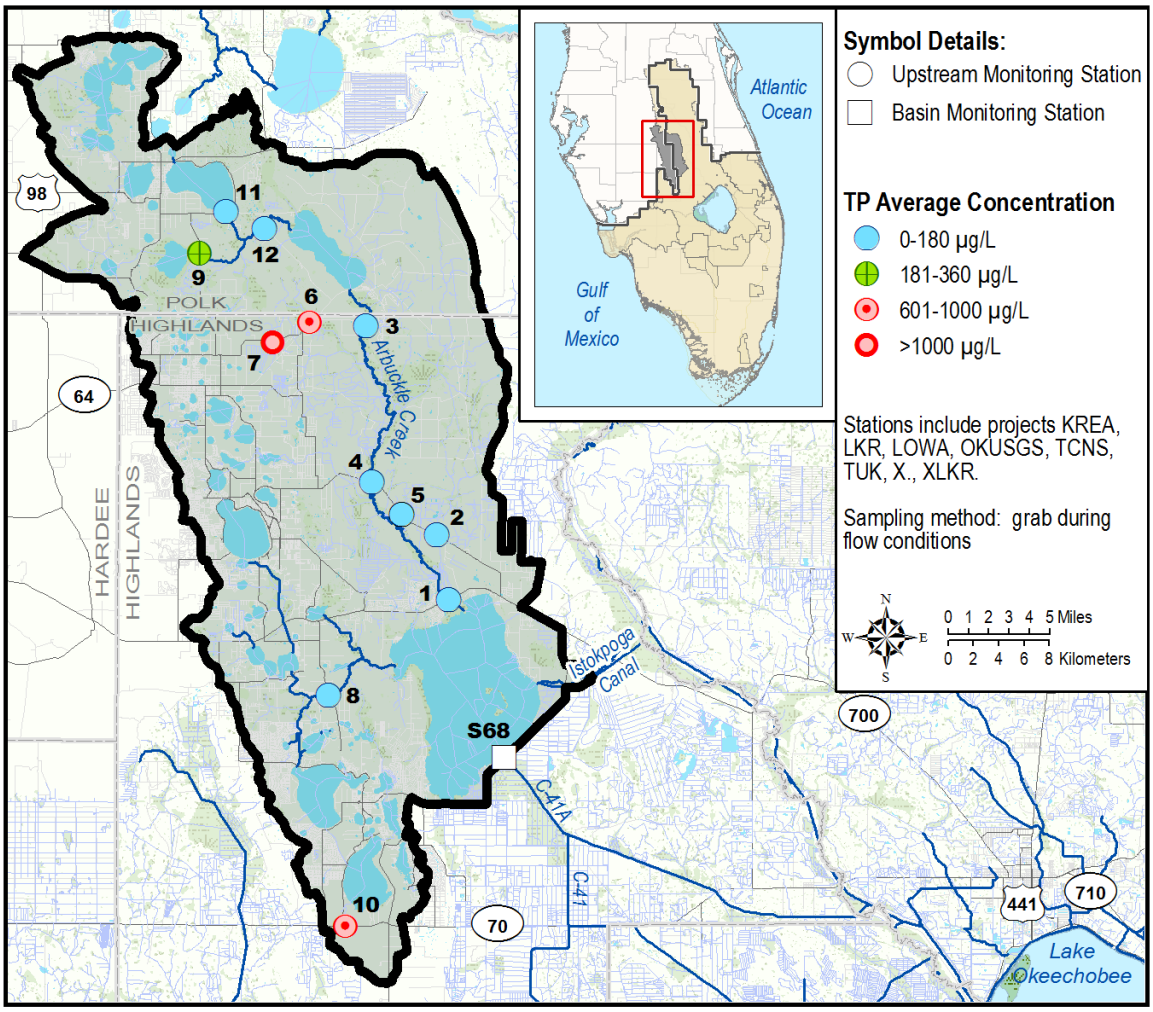
S154 & S154C		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max
1	KR16373414	10	372	165	851
2	KR17373513	8	461	179	1525
3	KREA 20	7	606	447	790
4	KREA 28	12	392	213	1122
5	KREA 30A	1	483	483	483
6	TS26363411	2	710	659	761
7	TS36363411	3	2107	716	4821
8	KR20373413	4	392	226	777

Figure 4. Taylor Creek/Nubbin Slough Subwatershed, S-154 & S-154C Basin upstream tributary average TP concentrations for WY2016.



S191		Number of Samples	TP Concentration (µg/L)			S191		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max	Map ID	Station		Avg	Min	Max
1	02275197	16	486	191	1091	13	TCNS 207	11	675	160	1343
2	LB29353513	11	655	256	1048	14	TCNS 209	5	749	432	1048
3	MS05373613	2	1776	1559	1992	15	TCNS 213	15	430	133	648
4	MS08373611	3	2072	1530	2918	16	TCNS 214	14	565	301	1045
5	MS08373614	2	2176	1960	2392	17	TCNS 217	19	231	94	383
6	OT29353514	9	655	98	1150	18	TCNS 220	8	713	209	1487
7	OT32353511	10	3169	1948	6092	19	TCNS 222	17	454	291	1110
8	OT34353513	8	523	62	1077	20	TCNS 228	4	579	397	839
9	TC03373511	9	388	170	707	21	TCNS 230	2	434	269	599
10	TC27353413	7	233	158	393	22	TCNS 233	5	486	351	687
11	TCNS 201	7	419	241	784	23	TCNS 249	9	200	83	487
12	TCNS 204	11	885	590	1184	-	-	-	-	-	-

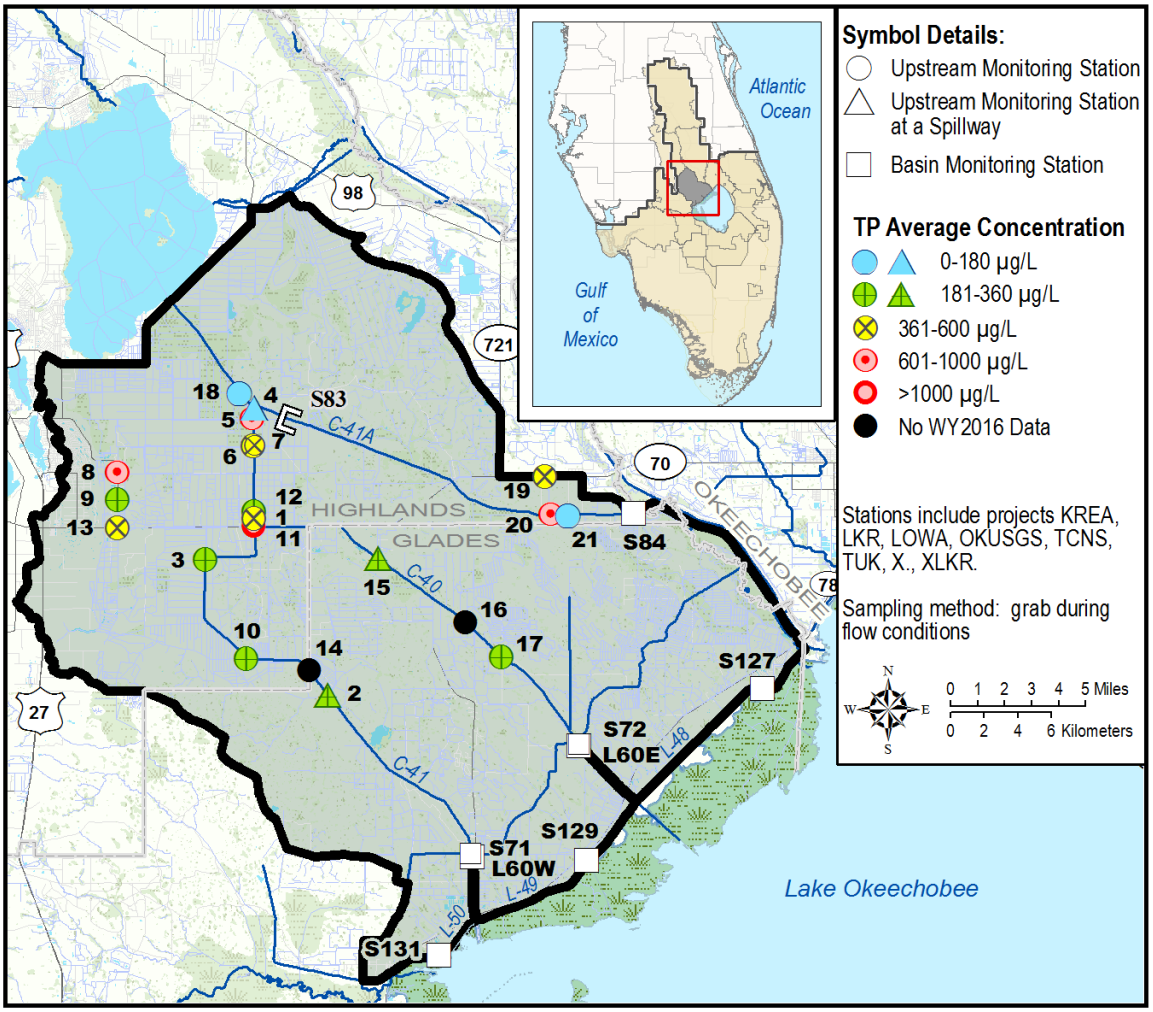
Figure 5. Taylor Creek/Nubbin Slough Subwatershed, S-191 Basin upstream tributary average TP concentrations for WY2016.



Lake Istokpoga		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max
1	02270500	51	115	55	212
2	AB27343014	17	138	27	488
3	AR06333013	19	54	34	66
4	AR18343012	16	120	51	227
5	AR21343013 [a]	1	32	32	32
6	BN03332911	19	762	412	1071
7	BN08332912	14	1063	407	1789
8	LI02362923	20	50	31	75
9	LV14322813	10	216	137	282
10	PL01382911	18	973	624	1422
11	RD01322813 [a]	16	28	18	43
12	RD08322913	19	91	58	227

a. Data collection was suspended during part of WY2016.

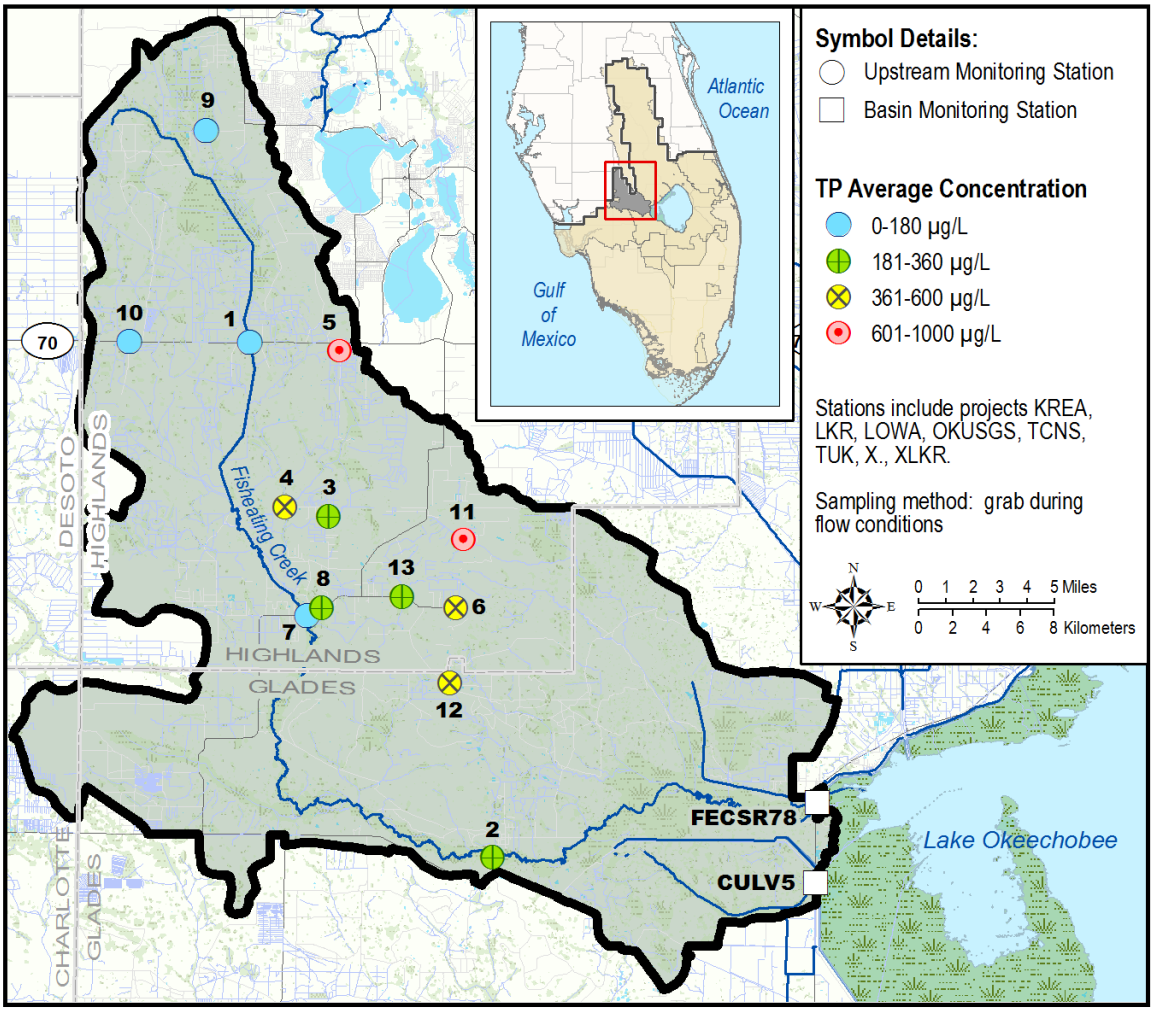
Figure 6. Lake Istokpoga Subwatershed upstream tributary average TP concentrations for WY2016.



Indian Prairie		Number of Samples	TP Concentration (µg/L)			Indian Prairie		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Avg	Min	Max	Map ID	Station		Avg	Min	Max
1	02273230	14	417	94	913	12	HP35373113	1	305	305	305
2	HP06393242 (S70)	14	271	70	459	13	HP36373013	4	524	195	1022
3	HP09383151 [a]	5	196	115	227	14	HP36383112 [a]	0	-	-	-
4	HP11373132 (S82)	8	71	46	99	15	IP09383232 (S75)	13	275	109	685
5	HP15373112	9	869	258	1207	16	IP24383214	0	-	-	-
6	HP22373112	9	397	262	502	17	IP29383313 [a]	6	247	99	385
7	HP23373111	4	426	131	663	18	SD10373111 [a]	2	106	102	109
8	HP24373013	4	755	665	917	19	SD28373312	3	412	186	659
9	HP25373013	20	310	109	877	20	SD33373314	1	861	861	861
10	HP27383124 [a]	5	280	199	384	21	SD34373313	2	76	72	80
11	HP34373124	1	1094	1094	1094	-	-	-	-	-	-

a. Data collection was suspended during part of WY2016.

Figure 7. Indian Prairie Subwatershed upstream tributary average TP concentrations for WY2016.



Fisheating Creek		Number of Samples	TP Concentration (µg/L)		
Map ID	Station		Ave	Min	Max
1	02255600	14	166	98	239
2	02256500	10	184	109	390
3	BH04392912	17	283	102	727
4	BH32382914	8	542	269	696
5	FE03382911	9	737	596	865
6	FE20393013	6	541	351	713
7	FE21392913	9	178	134	230
8	FE21392914	11	301	124	988
9	FE26362812	18	176	110	314
10	FE32372814	7	144	64	397
11	GA09393011	11	634	262	1427
12	GG05403011	7	575	314	1052
13	PB24392912	18	315	228	479

Figure 8. Fisheating Creek Subwatershed upstream tributary average TP concentrations for WY2016.