

**REFUGE'S ENHANCED WATER QUALITY PROGRAM
MONTHLY SAMPLING**

April 2016 Data Update
Submitted July 12, 2016

by:

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**Everglades National Park
c/o A.R.M. Loxahatchee National Wildlife Refuge**

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FINAL UPDATE

Site	Sample Date	Full(F), Partial(P), None(N), Reanalyzer (R) Units	Depth ¹ meter	Total Depth ² meter	DCS ³ meter	Alkalinity mg/l	Calcium Dissolved mg/l	Carbon, Dissolved Organic mg/l	Carbon, Total Organic mg/l	Chloride mg/l	Conductivity (Field) µMHSO/cm	Nitrate + Nitrite as Nitrogen mg/l	Nitrogen, Total Kjeldahl mg/l	Ortho-phosphate as Phosphorus mg/l	Oxygen, Dissolved (Field) mg/l	pH (Field) pH units	Phosphorus, Total mg/l	Silica mg/l	Solids, Total Dissolv mg/l	Solids, Total Suspended (TSS) mg/l	Sulfate mg/l	Temperature (Field) DEG C	Turbidity NTU
A101	04/12/16	P	0.07	0.15	0.21					135	890				3.3	7.2	0.013			U	32.7	21.5	
A102	04/13/16	P	0.50	0.11	0.13					45	301				U	7.8	0.015			U	1.5	22.5	
A103	04/13/16	P	0.50	0.11	0.13					46	247				0.8	6.7	0.012			U	1.1	21.3	
A104	04/11/16	F	>1M	>1M	>1M		63		23	118	825	U	1.3	0.008	5.3	7.5	0.023				39.9	24.2	
A105	04/13/16	P	0.80	0.16	0.19					51	398				1.6	6.9	0.012			U	2.9	22.6	
A106	04/13/16	P	0.60	0.13	0.15					21	309				0.4	6.8	0.010			U	U	21.9	
A107		N																					
A108	04/13/16	P	0.60	0.12	0.14					44	172				1.0	6.3	0.010			U	2.1	23.1	
A109	04/13/16	F	0.10	0.21	0.30		9		19	17	119	U	1.0	0.003	1.5	6.3	0.010				0.6	24.1	
A110	04/13/16	P	0.50	0.11	0.20					33	137				1.5	6.2	0.009			U	U	24.0	
A111	04/13/16	F	0.12	0.25	0.37		9		20	22	136	U	1.1	0.003	5.3	6.3	0.007				U	25.5	
A112	04/13/16	F	0.10	0.20	0.30		10		17	21	139	U	0.9	0.003	0.2	6.4	0.008				0.7	24.8	
A113	04/13/16	F	0.10	0.21	0.27		8		22	24	132	U	1.3	0.004	0.1	6.4	0.009				U	26.5	
A114	04/14/16	P	0.08	0.17	0.28					25	132				4.9	6.1	0.009			U	U	24.9	
A115	04/11/16	F	>1M	>1M	>1M		63		27	139	925	0.004	1.5	0.007	0.5	7.4	0.025				52.1	24.1	
A117	04/14/16	F	0.10	0.20	0.25		17		17	27	222	U	1.0	U	2.8	6.5	0.014				2.8	24.9	
A118	04/14/16	F	0.12	0.24	0.33		14		16	22	174	0.004	0.9	U	1.9	6.4	0.009				1	25.0	
A119	04/14/16	F	0.11	0.22	0.32		7		17	20	116	U	1.1	U	3.7	6.3	0.009				U	25.8	
A120	04/14/16	F	0.14	0.28	0.35		6		17	22	118	U	1.2	U	3.4	6.2	0.009				U	24.7	
A122	04/14/16	F	0.12	0.24	0.28		20		20	36	241	U	1.0	0.003	1.7	6.3	0.015				2.1	25.1	
A124	04/14/16	F	0.11	0.22	0.36		10		18	24	142	U	0.6	U	0.6	6.0	0.015				0.5	23.1	
A126	04/14/16	F	0.14	0.29	0.33		13		19	23	145	U	1.3	U	3.2	6.6	0.008				0.8	23.9	
A127	04/14/16	F	0.11	0.22	0.29		9		23	27	136	U	1.5	0.002	1.6	6.1	0.009				U	23.1	
A128	04/14/16	P	0.08	0.16	0.23					26	134				1.6	6.0	0.008			U	U	23.0	
A129	04/11/16	F	>1M	>1M	>1M		66		21	108	791	0.012	1.2	0.008	3.3	7.2	0.018				39.6	23.4	
A130	04/12/16	F	0.12	0.24	0.31		48		23	96	645	U	1.2	0.005	0.8	7.0	0.010				11.3	20.8	
A131	04/12/16	F	0.11	0.22	0.25		41		25	100	606	U	1.5	0.007	3.1	7.1	0.012				6.6	21.1	
A132	04/11/16	F	>1M	>1M	>1M		67		21	104	785	0.013	1.1	0.006	5.1	7.1	0.020				43.9	24.2	
A133	04/12/16	F	0.10	0.20	0.32		64		25	109	769	U	1.4	0.005	0.6	7.0	0.014				20.9	20.5	
A134	04/12/16	F	0.11	0.22	0.29		59		25	101	708	U	1.4	0.004	2.3	7.2	0.010				16.6	21.9	
A135	04/11/16	F	>1M	>1M	>1M		69		21	103	787	0.009	1.1	0.008	5.6	7.4	0.018				45.5	23.2	
A136	04/12/16	F	0.13	0.26	0.30		66		26	116	801	0.004	1.4	0.004	0.5	7.1	0.016				21.8	22.0	
A137	04/12/16	F	0.10	0.21	0.26		53		26	97	676	U	1.5	0.005	1.8	7.2	0.010				12.5	22.2	
A138	04/12/16	P	0.09	0.18	0.23					98	609				4.6	7.3	0.010			U	6.4	22.8	
A139	04/12/16	P	0.09	0.18	0.23					79	393				3.3	6.8	0.008			U	1.1	21.9	
A140	04/12/16	P	0.08	0.16	0.21					97	578				1.9	7.0	0.009			U	8.3	20.9	
A141	04/14/16	F	>1M	>1M	>1M		12		14	20	149	0.002	0.8	0.002	2.0	6.3	0.016				1.8	24.1	
Total			37																				
Full			24																				
Partial			12																				
None			1																				

(1) Sample depth

(2) Total depth is depth of the clear water column

(3) Depth to consolidated substrate

U indicates that the compound was analyzed for but not detected; see "LOXA_Parameter_Info" tab for table of MDLs.

The analyte was detected in both the sample and the associated method blank

Additional information on the Enhanced Water Quality Monitoring Network can be found at:

http://sofia.usgs.gov/lox_monitor_model/wq_network.html

Data from June 2004 to May 2006 available on DBHYDRO:

<http://www.sfwmd.gov/org/ema/dbhydro/>

Field notes are maintained by the Everglades Program Team at the A.R.M. Loxahatchee National Wildlife Refuge.

**AR.M. Loxahatchee National Wildlife Refuge
Enhanced Water Quality Monitoring Network**

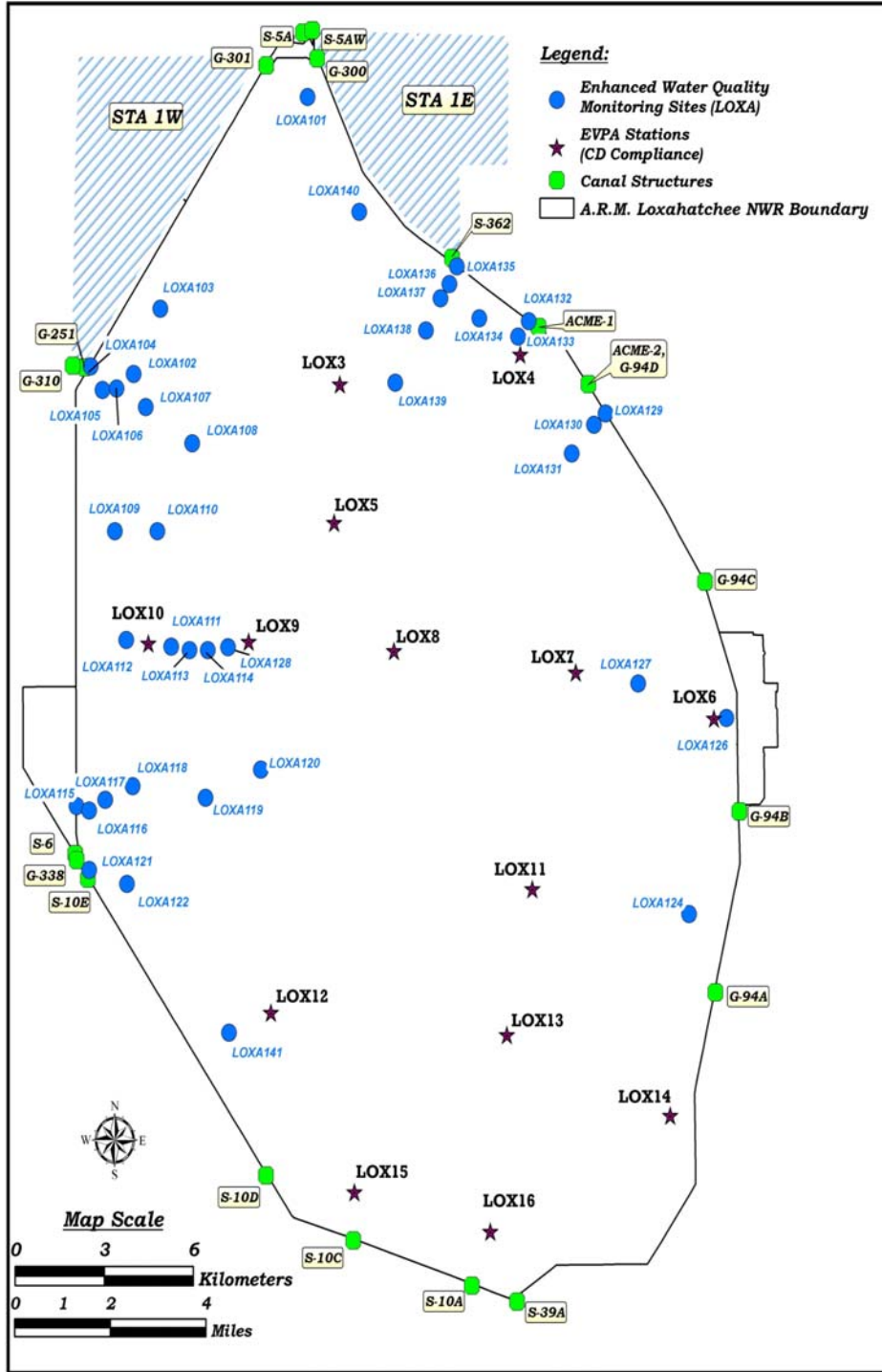
Parameter Information:

Parameter	Units	Analysis Method	MDL
Alkalinity as CaCO ₃ , Total	mg/L	310.1	5
Calcium Dissolved	mg/L	200.7	0.02 - 0.03
Carbon, Dissolved Organic	mg/L	415.1	0.1 - 0.3
Carbon, Total Organic	mg/L	415.1	0.1 - 0.3
Chloride	mg/L	300.0	0.1
Conductivity (field)	μMHOS/cm	120.1 (field)	-
Nitrate + Nitrite as Nitrogen	mg/L	300.0	0.003 - 0.009
Nitrogen, Total Kjeldahl (TKN)	mg/L	351.2	0.06 - 0.07
Ortho-phosphate as Phosphorus	mg/L	365.1	0.002 - 0.003
Oxygen, Dissolved (Field)	mg/L	360.1	1
pH (Field)	pH units	150.1	-
Phosphorus, Total	mg/L	365.3	0.003
Silica	mg/L	370.1	0.14
Solids, Total Dissolved (TDS)	mg/L	160.1	10
Solids, Total Suspended (TSS)	mg/L	160.2	5
Sulfate	mg/L	300.0	0.1
Temperature (Field)	DEG C	170.1	-
Turbidity	NTU	180.1	0.1

Note: Nitrate and Nitrite not analyzed after June 2006

**A.R.M. Loxahatchee National Wildlife Refuge
Enhanced Water Quality Monitoring Network**

Map of sites:



Coordinates of sites:

Name	Latitude	Longitude	X_DMS*	Y_DMS*	X_DM**	Y_DM**
LOXA101	26.66739249	-80.36636475	80° 21' 58.91" W	26° 40' 2.61" N	80° 21.9818333' W	26° 40.0435' N
LOXA102	26.59598877	-80.42553769	80° 25' 31.94" W	26° 35' 45.56" N	80° 25.532333' W	26° 35.7593333333333' N
LOXA103	26.61285142	-80.41643631	80° 24' 59.17" W	26° 36' 46.27" N	80° 24.98616667' W	26° 36.7711666666667' N
LOXA104	26.59798188	-80.44004508	80° 26' 24.16" W	26° 35' 52.73" N	80° 26.4026667' W	26° 35.8788333333333' N
LOXA105	26.59189923	-80.43609407	80° 26' 9.94" W	26° 35' 30.84" N	80° 26.1656667' W	26° 35.514' N
LOXA106	26.59220622	-80.43128096	80° 25' 52.61" W	26° 35' 31.94" N	80° 25.876833' W	26° 35.5323333333333' N
LOXA107	26.58739046	-80.42144468	80° 25' 17.20" W	26° 35' 14.61" N	80° 25.286667' W	26° 35.2435' N
LOXA108	26.5779601	-80.40585344	80° 24' 21.07" W	26° 34' 40.66" N	80° 24.35116667' W	26° 34.6776666666667' N
LOXA109	26.55528865	-80.43205157	80° 25' 55.39" W	26° 33' 19.04" N	80° 25.92316667' W	26° 33.3173333333333' N
LOXA110	26.55523973	-80.41769154	80° 25' 3.69" W	26° 33' 18.86" N	80° 25.0615' W	26° 33.3143333333333' N
LOXA111	26.52533583	-80.41314705	80° 24' 47.33" W	26° 31' 31.21" N	80° 24.7888333' W	26° 31.5201666666667' N
LOXA112	26.52712473	-80.42837332	80° 25' 42.14" W	26° 31' 37.65" N	80° 25.702333' W	26° 31.6275' N
LOXA113	26.52442784	-80.40699875	80° 24' 25.20" W	26° 31' 27.94" N	80° 24.42' W	26° 31.4656666666667' N
LOXA114	26.52439258	-80.40083965	80° 24' 3.02" W	26° 31' 27.81" N	80° 24.050333' W	26° 31.4635' N
LOXA115	26.48422578	-80.44533675	80° 26' 43.21" W	26° 29' 3.21" N	80° 26.7201667' W	26° 29.0535' N
LOXA116	26.4830586	-80.441098	80° 26' 27.95" W	26° 28' 59.01" N	80° 26.4658333' W	26° 28.9835' N
LOXA117	26.48580427	-80.4356858	80° 26' 8.47" W	26° 29' 8.90" N	80° 26.14116667' W	26° 29.1483333333333' N
LOXA118	26.48928924	-80.42639091	80° 25' 35.01" W	26° 29' 21.44" N	80° 25.5835' W	26° 29.3573333333333' N
LOXA119	26.48621462	-80.40180845	80° 24' 6.51" W	26° 29' 10.37" N	80° 24.1085' W	26° 29.1728333333333' N
LOXA120	26.49341054	-80.38307987	80° 22' 59.09" W	26° 29' 36.28" N	80° 22.9848333' W	26° 29.6046666666667' N
LOXA121	26.46767673	-80.44113231	80° 26' 28.08" W	26° 28' 3.64" N	80° 26.468' W	26° 28.0606666666667' N
LOXA122	26.46404297	-80.42843367	80° 25' 42.36" W	26° 27' 50.55" N	80° 25.706' W	26° 27.8425' N
LOXA123	26.42675307	-80.40036372	80° 24' 1.31" W	26° 25' 36.31" N	80° 24.0218333' W	26° 25.6051666666667' N
LOXA124	26.45535397	-80.23875455	80° 14' 19.52" W	26° 27' 19.27" N	80° 14.325333' W	26° 27.3211666666667' N
LOXA126	26.50601148	-80.22585171	80° 13' 33.07" W	26° 30' 21.64" N	80° 13.55116667' W	26° 30.3606666666667' N
LOXA127	26.51513474	-80.25555976	80° 15' 20.02" W	26° 30' 54.49" N	80° 15.3336667' W	26° 30.9081666666667' N
LOXA128	26.52516286	-80.3940121	80° 23' 38.44" W	26° 31' 30.59" N	80° 23.6406667' W	26° 31.5098333333333' N
LOXA129	26.58500726	-80.26608256	80° 15' 57.90" W	26° 35' 6.03" N	80° 15.965' W	26° 35.1005' N
LOXA130	26.58211881	-80.27005531	80° 16' 12.20" W	26° 34' 55.63" N	80° 16.20333' W	26° 34.9271666666667' N
LOXA131	26.57474791	-80.27764653	80° 16' 39.53" W	26° 34' 29.09" N	80° 16.6588333' W	26° 34.4848333333333' N
LOXA132	26.60900561	-80.29189939	80° 17' 30.84" W	26° 36' 32.42" N	80° 17.514' W	26° 36.5403333333333' N
LOXA133	26.6050896	-80.29557491	80° 17' 44.07" W	26° 36' 18.32" N	80° 17.7345' W	26° 36.3053333333333' N
LOXA134	26.60985664	-80.30860325	80° 18' 30.97" W	26° 36' 35.48" N	80° 18.51616667' W	26° 36.5913333333333' N
LOXA135	26.62335538	-80.31612276	80° 18' 58.04" W	26° 37' 24.08" N	80° 18.967333' W	26° 37.4013333333333' N
LOXA136	26.61879302	-80.31866688	80° 19' 7.20" W	26° 37' 7.65" N	80° 19.12' W	26° 37.1275' N
LOXA137	26.61510337	-80.32170327	80° 19' 18.13" W	26° 36' 54.37" N	80° 19.30216667' W	26° 36.9061666666667' N
LOXA138	26.60681693	-80.32666537	80° 19' 36.00" W	26° 36' 24.54" N	80° 19.6' W	26° 36.409' N
LOXA139	26.59332525	-80.33715389	80° 20' 13.75" W	26° 35' 35.97" N	80° 20.22916667' W	26° 35.5995' N
LOXA140	26.63760323	-80.34909432	80° 20' 56.74" W	26° 38' 15.37" N	80° 20.9456667' W	26° 38.2561666666667' N
LOXA141	26.42708333	80.3942	80° 23' 39.12" W	26° 38' 37.5" N	80° 23.652' W	26° 25.625' N

* DMS = Degrees Minutes Seconds

** DM = Degrees Minutes Decimal Minutes

Additional information on the coordinates for the Enhanced Water Quality Monitoring Network can be found at:

http://sofia.usgs.gov/lox_monitor_model/workplans/EnhancedWQsamplingStations_.pdf