

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

*October through December, 2013 Data Update*  
Submitted March 26, 2014

*by:*

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

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Note: Only a partial set of samples were collected for the October 2013 sample event and the samples were collected on September 30, 2013 in an attempt to collect representative samples in advance of the Federal Government Shutdown initiated in October 2013.

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

Oct-13

Site	Sample Date	Full(F), Partial(P), None(N), Reanalyzer (R)	Depth <sup>1</sup> meter	Total Depth <sup>2</sup> meter	DCS <sup>3</sup> 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		N																					
A102		N																					
A103		N																					
A104	09/30/13	F	>1M	>1M	1.30	215	77	26	26	126	905	U	1.5	0.0098	4.4	7.7	0.028	17.2	577	U	67.3	29.2	1.4
A105	09/30/13	F	0.17	0.36	0.44	196	58	27	25	109	767	U	1.5	0.0064	1.1	7.2	0.014	20.1	483	U	40	25.9	0.5
A106	09/30/13	F	0.15	0.31	0.43	164	50	23	23	93	668	0.004	1.3	0.0049	2.5	7.5	0.011	15.4	409	U	32.8	27.4	0.4
A107	09/30/13	F	0.11	0.23	0.32	55	15	20	21	24	195	U	1.0	0.0029	2.5	7.1	0.009	7.4	143	U	0.87	26.7	0.5
A108	09/30/13	P	0.09	0.19	0.30					19	114				12.8	7.0	0.002			U	U	28.9	
A109		N																					
A110		N																					
A111		N																					
A112		N																					
A113		N																					
A114		N																					
A115	09/30/13	F	>1M	>1M	1.30	232	81	32	31	133	986	0.026	1.9	0.0105	4.8	7.8	0.023	24.4	638	U	86.1	29.1	1.4
A117	09/30/13	F	0.16	0.32	0.54	135	42	23	24	93	605	0.003	1.3	0.0055	0.3	7.2	0.016	17.0	394	U	30.6	26.0	0.7
A118	09/30/13	F	0.17	0.37	0.58	38	12	14	14	22	195	0.004	0.9	0.0028	4.0	6.9	0.008	5.9	114	U	1.92	27.5	0.4
A119	09/30/13	F	0.24	0.48	0.59	25	6	12	12	10	83	0.002	0.9	U	5.5	7.0	0.006	2.8	70	U	0.66	29.2	0.6
A120	09/30/13	F	0.22	0.44	0.56	15	5	13	13	14	91	0.006	1.0	0.0028	6.9	6.9	0.004	6.5	79	U	U	29.2	0.7
A122		N																					
A124		N																					
A126		N																					
A127		N																					
A128		N																					
A129		N																					
A130		N																					
A131		N																					
A132		N																					
A133		N																					
A134		N																					
A135	09/30/13	F	>1M	>1M	1.30	237	85	29	27	134	991	0.024	1.8	0.021	2.4	7.5	0.037	18.9	632	U	82	28.0	2.4
A136	09/30/13	F	0.16	0.32	0.75	202	71	25	24	117	832	U	1.4	0.005	0.1	7.1	0.018	15.7	514	U	49.7	26.1	2.8
A137	09/30/13	F	0.21	0.43	0.55	134	45	22	22	81	555	0.003	1.2	0.005	0.5	7.0	0.009	13.7	341	U	19.3	26.8	0.9
A138	09/30/13	F	0.18	0.37	0.43	47	14	17	17	16	155	0.003	1.0	0.003	2.6	7.0	0.003	4.2	114	U	0.93	27.0	0.5
A139	09/30/13	F	0.12	0.24	0.41	24	7	20	19	13	103	U	1.4	0.003	3.6	6.7	0.003	4.4	92	U	0.58	26.9	0.6
A140		N																					
A141		N																					
Total		37																					
Full		14																					
Partial		1																					
None		22																					

(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](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**

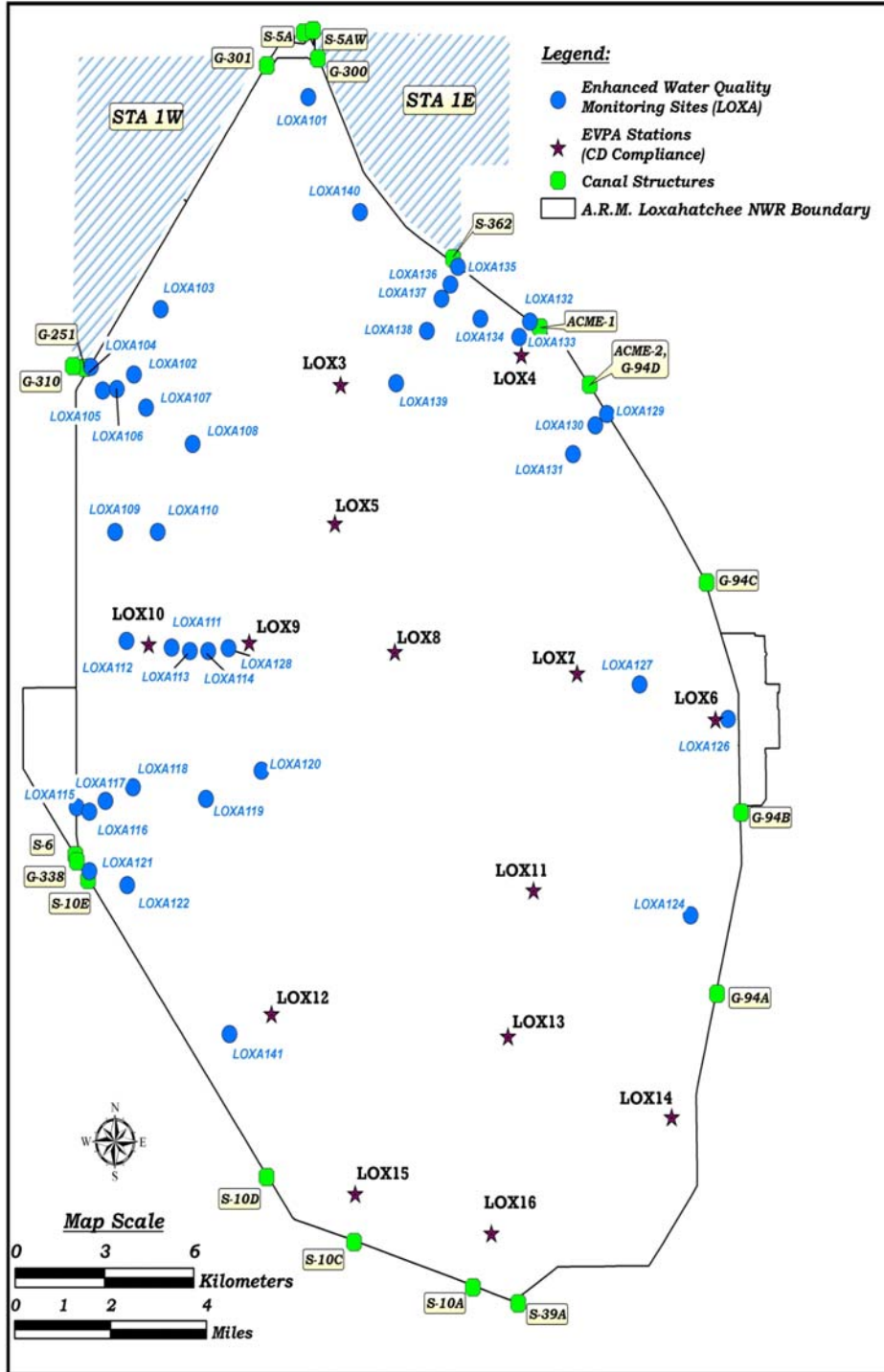
Parameter Information:

<b>Parameter</b>	<b>Units</b>	<b>Analysis Method</b>	<b>MDL</b>
Alkalinity as CaCO <sub>3</sub> , 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](http://sofia.usgs.gov/lox_monitor_model/workplans/EnhancedWQsamplingStations_.pdf)