Site Name Z1-SL-11017. UnNamed Oxbow Lake

Date 10/20/2017

Field ID Z1SL11017

Storet 52005

Visit ID 78218

RQ: N/A

RPS ID N/A

VPDB ID 10809

HA ID 15014

☑ Sample Site Created in SBIO FB 02/15/2018

☑ Phys/Chem entered in SBIO FB 02/15/2018

☑ HA entered in SBIO Initial FB 02/15/2018 ☑ Date and Initial QA: BB 2/19/18

☑ LVI entered in SBIO Initial FB 02/15/2018 ☑ Date and Initial QA: JL 2/19/18

☐ < 2 m^2 vegetation

☐ Plants getting verified Date submitted: _____

☑ Plants verified Date returned: Identified at lab.

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 78218 **MACROPHYTE ID:** _____ LATITUDE: N 30.935722

COUNTY: Escambia STORET #: 52005 LONGITUDE: W 87.274186

DATE: 10/20/2017 TIME: 11:00 CST SAMPLING AGENCY: FL DEP - NWROC

SITE NAME: Z1-SL-11017. Un-Named Oxbow Lake WBID: 25

FIELD ID/NAME: Z1-SL-11017 LAKE SIZE: 9 RQ: _____

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)

LDI:

Land Use Source & Year:

Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy

Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy

Artificially Impounded ☒ Yes ☐ No

STORMWATER INPUTS 14	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation					Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place					Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place					Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place				
	20	19	18	17	16	15	(14)	13	12	11	10	9	8	7	6	5	4	3	2	1
LAKESIDE ALTERATIONS 11	Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected)					Moderate disturbance visible - structures, roads or other (10%-49% lakeside affected)					Many structures, roads or other human disturbance visible (50%-70% lakeside affected)					Highly developed or disturbed (>70% of lakeside affected)				
	20	19	18	17	16	15	14	13	12	(11)	10	9	8	7	6	5	4	3	2	1
BUFFER ZONE 13	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer					89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer					50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer					< 29% of shoreline with >18m buffer				
	20	19	18	17	16	15	14	(13)	12	11	10	9	8	7	6	5	4	3	2	1

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water:

Nutrient Sample Taken? ☐ Yes ☒ No Preserved? ☐ Yes ☐ pH<2 ☐ No

Color Sample Taken? ☐ Yes ☒ No Lot # _____ Exp. Date: _____

Alkalinity Sample Taken? ☐ Yes ☒ No

Water Level ☒ Low ☐ Normal ☐ High

Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other _____

Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☒ Other CLAY

Meter Readings:	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat. (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top:	0.3	23.5	6.4	2.9	34	55	0.0
Mid-Depth:							
Bottom :	2.5	22.6	6.0	2.2	26	54	0.0

Meter ID: 132237

Clarity: ☐ Clear ☐ Opaque ☒ Turbid ☐ Slightly Turbid

Color: ☐ Clear ☐ Tannic ☐ Green ☒ RED/Brown CLAY

SECCHI (M) 1.0 VOB ☐

Total Station Depth (M) 3.0

Sediment Type: (may check more than one)

☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☒ Vegetated

☒ Sand/Silt ☒ Organic smooth (muck) ☒ Other (Specify): GRAVEL

Sample Taken? ☐ Yes ☒ No

Sediment Odors:

☒ Normal ☐ Other (Specify):

☐ Anaerobic

Biological Communities:

LVI Conducted? ☒ Yes ☐ No

Phytoplankton Sample Taken? ☐ Yes ☒ No

Sample Preserved? ☒ N/A ☐ Yes ☐ No

Lot #: _____ Exp Date: _____

Algal Bloom/Algal ID Sample Taken? Yes (No)

Active Vegetation Mgmt? ☐ Yes ☐ No ☒ Don't Know

Abundance:

	Absent	Rare	Common	Abundant
Periphyton	☐	☐	☐	☒
Nuisance Plants	☐	☐	☒	☐
Submersed Plants	☐	☐	☐	☒
Exotic Apple Snails	☒	☐	☐	☐

Additional Notes:

D.O. DEPRESSED SINCE 2015 SAMPLING (87.8% bottom '15). Lots of Clay in WATER. 6' Rock line above Water mark. (cont.)

Weather Conditions : BERM for Road on South end of Lake. Clay turbidity from road coloring lake

SAMPLING TEAM: Frank Butera, Stopher Slade **SIGNATURE:** Frank Butera **DATE:** 10/20/2017

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

Lake Habitat Assessment Field Sheet

STORET STATION NUMBER: 52005	DATE (M/D/Y): 10/20/2017	LAKE NAME: Z1-SL-11017. (UnNamed Oxbow Lake)		FIELD ID / NAME: Z1-SL-11017
WBID: 25	COUNTY: Escambia	SAMPLING LOCATION/DESCRIPTION: Century		LAKE SIZE: 9.3 ACRES
PARAMETER				
HYDROLOGY	No surface inflow or outflow present, very long water residence time, groundwater seepage dominates ☐	Surface water inflow present, but flow is rare, moderate to long water residence time ☐	Surface water inflow and outflow present (or outflow only), sometimes with visible flow, short water residence time ☐	Impounded, hydrology of system artificially controlled ☒
Color	Very clear, uncolored water (benthic sampling appropriate) ☐	Water somewhat tannin stained (benthic sampling appropriate) ☐	Dark, discolored water (water color 20 PCU or higher) ☐	Visibility extremely reduced due to high color CLAY ☒

	Optimal					Suboptimal					Marginal					Poor				
Secchi 10	Secchi >3 m				Secchi(m)	3	2.6	2.2	1.8	1.4	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
	Or VOB 20	19	18	17	16	15	14	13	12	11	(10)	9	8	7	6	5	4	3	2	1
Vegetation Quality 12	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa					Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants					Large masses (21%- 40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats					Lake choked (>40%) with nuisance macrophytes (duck-weed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed)				
	20	19	18	17	16	15	14	13	(12)	11	10	9	8	7	6	5	4	3	2	1
Stormwater Inputs 14	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation					Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place					Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place					Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place				
	20	19	18	17	16	15	(14)	13	12	11	10	9	8	7	6	5	4	3	2	1
Bottom Substrate Quality 18	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present					Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present					Moderate layer of CPOM/ mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom					Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom				
	20	(19)	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Lakeside Adverse Human Alternations 11	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%)					Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected					Many structures, roads or other human disturbance visible (50%-70%) lakeside affected)					Highly developed or disturbed (>70% of lakeside affected)				
	20	19	18	17	16	15	14	13	12	(11)	10	9	8	7	6	5	4	3	2	1
Upland Buffer Zone 13	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer					89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer					50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer					< 29% of shoreline with >18m buffer				
	20	19	18	17	16	15	14	(13)	12	11	10	9	8	7	6	5	4	3	2	1
Adverse Watershed Land Use 13	Score the potential effects from adverse human land uses, based on a continuum of amount and type, with least to most adverse as follows: Native vegetation, Silviculture, Pasture or Citrus, Low Density Residential, Row Crops, Commercial, High Density Residential, Urban, Industrial																			
	20	19	18	17	16	15	14	(13)	12	11	10	9	8	7	6	5	4	3	2	1

TOTAL SCORE 91	COMMENTS:

ANALYSIS DATE: 10/20/2017	ANALYST: Frank Butera, Stopher Slade	SIGNATURE: Frank Butera

SBIO ID. 78218 HA ID. 15014

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Z1-SL-110017. Un-Named Oxbow Lake	County: Okaloosa	Date: 10/20/17
Analyst: F. Butera	Signature: Frank Butera	STORET: 52005

Except where noted as "sp." species level identification required. *Genera that may require lab verification*
Plants in bold= FLEPPC invasive exotic.
It is important to note dominant or co-dominant taxa (by areal extent) for each unit. Use "D" to denote dominant taxon, or "C" for the 2 co-dominant taxa.

Lake units sampled (circle one group): (1, 4, 7, 10) 2, 5, 8, 11 3, 6, 9, 12

SBIO ID 78218 SPECIES	1	4	7	10	Collected? (√)	Macro ID 10809 SPECIES	1	4	7	10	Collected? (√)
Acer rubrum						Habenaria repens					
Alternanthera philoxeroides						**Hydrilla verticillata**					
Andropogon sp.						Hydrocotyle sp.					
Azolla filiculoides (A. caroliniana)						**Hygrophila polysperma**					
Baccharis sp.						*Hypericum fasciculatum					
Bacopa caroliniana						*Hypericum hypericoides					
Bacopa monnieri						*Hypericum myrtifolium					
Bidens laevis						Ilex cassine					
Bidens mitis						**Ipomoea aquatica**					
Blechnum serrulatum						Ipomoea sagittata					
Boehmeria cylindrica						Itea virginica					
Brasenia schreberi						Juncus effusus					
Cabomba caroliniana						*Juncus marginatus					
Casuarina equisitifolia						*Juncus megacephalus					
Centella asiatica						Juncus repens					
Cephalanthus occidentalis						*Juncus scirpoides					
Ceratophyllum demersum						Lachnanthes caroliniana					
Chara sp.	D		D	D		Leersia hexandra					
Cladium jamaicense						**Landoltia punctata (Spiro. punctata)**					
Cliftonia monophylla						Lemna sp.					
Colocasia esculenta						Leucothoe racemosa (Eubotrys racemosa)					
*Commelina _____						Limnobium spongia					
Crinum americanum						**Limnophila sessiliflora**					
***Cyperus alternifolius** (C. involucratus)						Liquidamber styraciflua					
Cyperus articulatus						*Ludwigia arcuata					
Cyperus haspan						*Ludwigia leptocarpa					
*Cyperus lecontei						*Ludwigia linearis					
*Cyperus polystachyos						*Ludwigia octovalvis					
*Cyperus odoratus						***Ludwigia peruviana**					
*Cyperus surinamensis						*Ludwigia repens					
Cyrilla racemiflora						*Ludwigia _____					
Decodon verticillatus						Luziola fluitans (Hydrochloa carolinensis)					
Diodia virginiana						Lyonia lucida					
*Echinochloa crus-galli						Magnolia virginiana					
*Echinochloa muricatum						Mayaca fluviatilis					
Echinochloa walteri						**Melaleuca quinquenervia**					
Eclipta prostrata (E. alba)						Micranthemum glomeratum					
Egeria densa						Micranthemum umbrosum					
Eichhornia crassipes						Mikania scandens					
*Eleocharis baldwinii						**Mimosa pigra**					
*Eleocharis _____						Myrica cerifera					
Eleocharis cellulosa						CAREX glaucescens					
Eleocharis equisetoides						ALNUS serrulata					
Eleocharis interstincta						Liquidambar styr...					
*Eriocaulon compressum											
*Eriocaulon decangulare						Leptochloa fascicularis					
Eupatorium capillifolium						Lycopus					
*Fuirena _____						Hypericum galoides					✓ FIELD
Fuirena scirpoidea											
Gordonia lasianthus											

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: Z1-SL-11017 Un-Named Oxbow Lake Storet. 52005 Date: 10/20/2017 SBIO ID 78218 Macro ID 10809

SPECIES	1	4	7	10	Collected? (√)	SPECIES	1	4	7	10	Collected? (√)
Myriophyllum aquaticum						Salix caroliniana					
*Myriophyllum heterophyllum						**Salvinia minima**					
*Myriophyllum laxum						Sambucus canadensis					
*Myriophyllum pinnatum						**Sapium sebiferum**	1				
Myriophyllum spicatum						Saururus cernuus	1			1	
*Najas filifolia						**Schinus terebinthifolius**					
*Najas guadalupensis						*Schoenoplectus californicus					
*Najas minor						*Schoenoplectus pungens					
Nelumbo lutea						*Schoenoplectus tabernaemontani (Scirpus validus)					
Nitella spp.						Scirpus cubensis (Oxycaryon cubense)					
Nuphar sp.						Scirpus cyperinus					
Nymphaea odorata						*Sesbania					
Nymphoides aquatica						Solidago sp.					
Nyssa sylvatica var. biflora				1		Sparganium americanum					
Orontium aquaticum						Spartina bakeri					
Osmunda cinnamomea						Spirodela polyrhiza					
Osmunda regalis				1		Taxodium sp.	1	1	1	1	
Panicum hemitomon						Thalia geniculata					
Panicum repens						Thelypteris palustris					
Paspalidium geminatum						Triadenum virginicum					
*Paspalum repens						Typha sp.					
Paspalum urvillei						**Urochloa mutica (Brachiaria mutica)**					
Peltandra sp.						*Utricularia gibba (U. biflora)					
Persea sp.						*Utricularia floridana					
Pennisetum purpureum						*Utricularia foliosa					
Phragmites australis						*Utricularia inflata					
Pinus elliottii						*Utricularia purpurea					
Pistia stratioides						*Utricularia cornuta					
Pluchea sp.						*Utricularia radiata					
*Polygonum glabrum (densiflorum)						Vallisneria americana					
*Polygonum hydropiperoides						*Websteria confervoides					
*Polygonum punctatum						**Wedelia trilobata (Sphag. trilobata)**					
*Polygonum						Wolffiella spp.					
Pontederia cordata						Woodwardia ~~virginica~~ areolata				1	
*Potamogeton diversifolius						Xyris sp.					
*Potamogeton illinoensis						Zizania aquatica					
*Potamogeton pusillus						Zizaniopsis milacea					
*Potamogeton pectinatus (Stuck. pectinatus)											
Proserpinaca pectinata			+@			Vaccinium		1	1	1	
*Rhexia											
*Rhynchospora corniculata			1			Toxicodendron vernix	1				
*Rhynchospora inundata											
Rhynochospora tracyi						~~American Sycamore~~		+			
Ricciocarpus natans						Platanus occidentalis		1			
Sabal palmetto											
Sacciolepis striata											
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia											
Sagittaria latifolia											

Form FD 9000-2: COMPOSITE LAKE SAMPLING SHEET (< 1000 ACRES)

Date: 10/20/17	Name of Lake: Z1-SL-11017 UnNamed Oxbow Lake	Gear used: PONAR (Petite)	EKMAN	OTHER
Comments:				

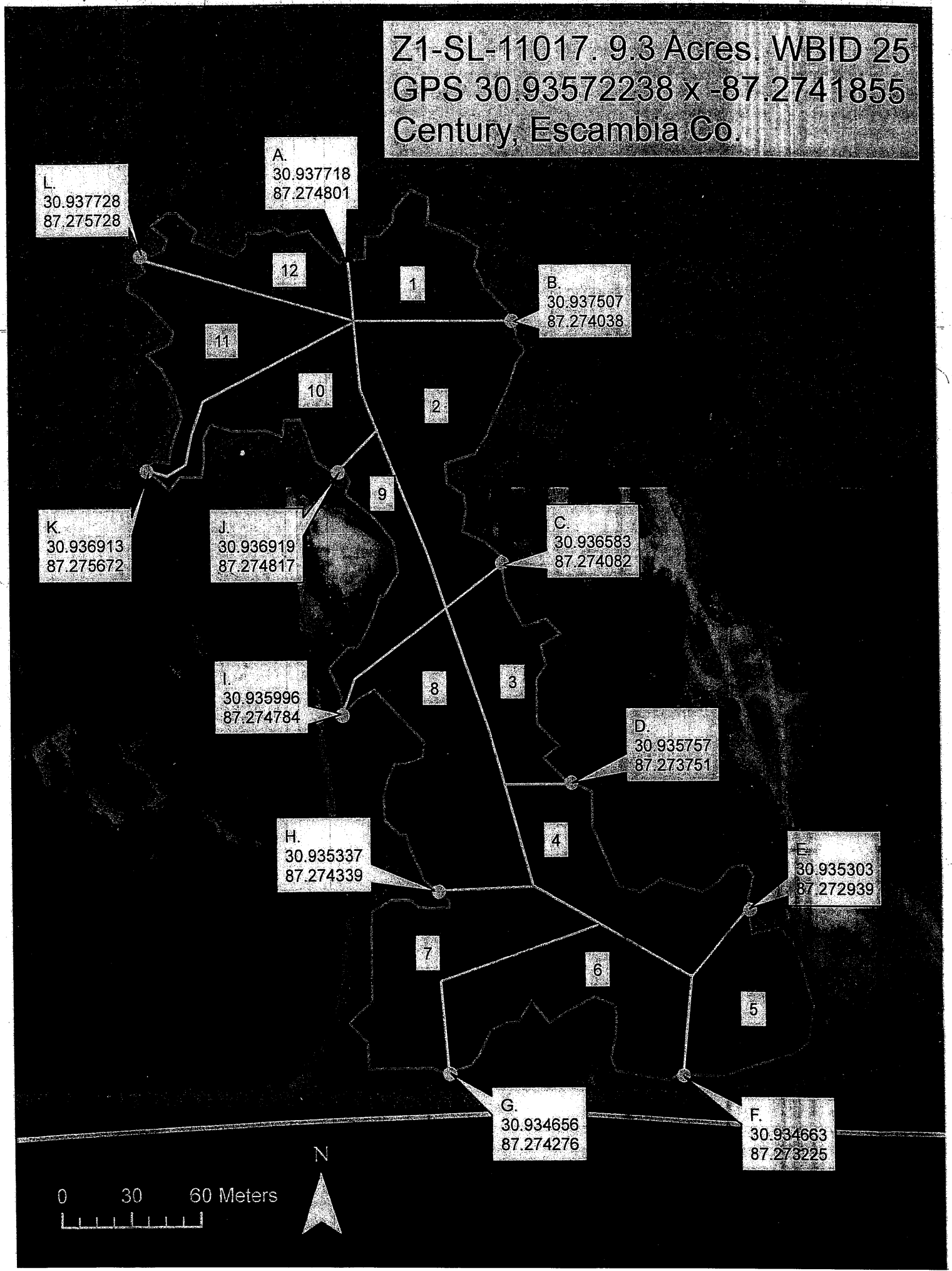
Drop #	Depth (m)	Sediment Type (circle all that apply)	Drop #	Depth (m)	Sediment Type (circle all that apply)
1		sand, silt/clay, CPOM, muck, SAV	7	3.2	2° 3° sand, silt/clay, CPOM, muck, SAV *
2		sand, silt/clay, CPOM, muck, SAV	Storet 8	3.0	* sand, silt/clay, CPOM, muck, SAV GRAVEL
3		sand, silt/clay, CPOM, muck, SAV	9		sand, silt/clay, CPOM, muck, SAV
4	3.7	sand, silt/clay, CPOM, muck, SAV #	10	3.8	* sand, silt/clay, CPOM, muck, SAV GRAVEL
5		sand, silt/clay, CPOM, muck, SAV	11		sand, silt/clay, CPOM, muck, SAV
6		sand, silt/clay, CPOM, muck, SAV	12		sand, silt/clay, CPOM, muck, SAV

CPOM = coarse particulate organic matter; SAV = submerged aquatic vegetation

Storet 51067 Field ID Z1SL11017 Project. Status Small 2017 SBIO ID: 78218
WBID 25

SECCHI MEASUREMENTS
sect. 7 0.9m
(Storet) sect. 8 1.0m

Paste map here and show location of each dredge drop and where water chemistry parameters were collected.


Z1-SL-11017. 9.3 Acres. WBID 25
GPS 30.93572238 x -87.2741855
Century, Escambia Co.
A.
30.937718
87.274801
B.
30.937507
87.274038
C.
30.936583
87.274082
D.
30.935757
87.273751
E.
30.935303
87.272939
F.
30.934663
87.273225
G.
30.934656
87.274276
H.
30.935337
87.274339
I.
30.935996
87.274784
J.
30.936919
87.274817
K.
30.936913
87.275672
L.
30.937728
87.275728
1
2
3
4
5
6
7
8
9
10
11
12
N
0
30
60 Meters

~~Z1-SL-9017~~ (FD) Z1-SL-911017

Storet

Receiving Water Unnamed trib to Baggett Ck.

Basin Escambia River

City, County Century, Escambia Co.

Lake Acreage 9.3

Circumference (M) 1589

Seg. Length (M) 132.4166667

Location	Dec Deg.	DMS
Status Lake	30.935722 x 87.274186	30°56' 08.60"N x 87°16' 27.07"W
A	30.937718 x 87.274801	30°56' 15.783"N x 87°16' 29.282"W
B	30.937507 x 87.274038	30°56' 15.026"N x 87°16' 26.536"W
C	30.936583 x 87.274082	30°56' 11.699"N x 87°16' 26.694"W
D	30.935757 x 87.273751	30°56' 08.724"N x 87°16' 25.502"W
E	30.935303 x 87.272939	30°56' 07.089"N x 87°16' 22.579"W
F	30.934663 x 87.273225	30°56' 04.785"N x 87°16' 23.609"W
G	30.934656 x 87.274276	30°56' 04.763"N x 87°16' 27.394"W
H	30.935337 x 87.274339	30°56' 07.214"N x 87°16' 27.619"W
I	30.935996 x 87.274784	30°56' 09.586"N x 87°16' 29.221"W
J	30.936919 x 87.274817	30°56' 12.907"N x 87°16' 29.342"W
K	30.936913 x 87.275672	30°56' 12.885"N x 87°16' 32.419"W
L	30.937728 x 87.275728	30°56' 15.819"N x 87°16' 32.621"W

Station: Z1-SL-11017. Un-Named Oxbow Lake
GPS Dec. 30.935722 x -87.274186
Storet: 52005 WBID 25
Sample ID : 78218
Macro ID: 10809

Sampled : 10/20/2017
Sampled By. F.Butera, Mike King
Location. Century, Escambia Co. FL
Receiving Waters:

	Taxa	1	4	7	10	C of C	Coll.	Verified
1	*Andropogon* sp.	1	1	1				
2	*Carex glaucescens*	1	1	1	1	4.70		
3	*Eleocharis baldwinii*	1	1	1	1	1.00		
4	*Leptochloa fusca fascicularis*			1	1			
5	*Limnobium spongia*	1				4.79		
6	*Rhynchospora corniculata*			1		4.43		
7	*Alternanthera philoxeroides*	1		1	1	0.00		
8	*Centella asiatica*				1	1.92		
9	*Hypericum galioides*	1	1	1	1			
10	*Ludwigia repens*			1	1	2.50		
11	*Lycopus* sp.	1			1			
12	*Saururus cernuus*	1			1	7.33		
13	*Toxicodendron vernix*	1						
14	*Acer rubrum*	1	1	1	1	4.65		
15	*Alnus serrulata*	1	1	1	1			
16	*Cephalanthus occidentalis*	1	1	1	1	6.99		
17	*Cyrilla racemiflora*	1	1	1	1	5.20		
18	*Liquidambar styraciflua*	1	1	1	1	5.56		
19	*Nyssa sylvatica* var. *biflora*				1	9.04		
20	*Platanus occidentalis*		1			4.36		
21	*Sapium sebiferum*	1				0.00		
22	*Taxodium* sp.	1	1	1	1	7.20		
23	*Toxicodendron vernix*	1				6.64		
24	*Vaccinium* sp.		1	1	1			
25	*Osmunda regalis*				1	8.04		
26	*Woodwardia areolata*				1	7.68		
27	*Chara* sp.	D	1	D	D	3.90		

	Taxa per section	18	13	16	20	Herb. Taxa	13
	Exotic Present	2	0	1	1	Woody Taxa	11
	Avg. taxa per section	17				Ferns	2
	sections with exotics	3				Macro Algae	1
	Exotic Taxa	2	Exotics per Section: 1.0			Total Taxa	27

Metric	Rep. 1	Rep. 2	Rep. 3	Rep. 4	LVI Average
LVI 2012	40	43	39	47	42
LVI 2012 Category	-	-	-	-	
Native Percentage	88.24	100	93.8	95	94.26
FLEPPC Pct (Exotic)	5.88	0	0	0	1.47
Total Taxa	17	13	16	20	16.50
C of C over 7.0	11.76	7.69	6.25	15	10.18
Dominant Taxa	Chara	-	Chara	Chara	Chara
C of C Dominant	3.9	-	3.9	3.9	3.90