



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

March 2017

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Data Qualified?
Yes / No

Location/STORET Station Name: Biven Arm Lake Date: 6/6/17

STORET # 20020097 WBID: 2718B Latitude: 29.625042

County: Alachua RQ - 2017-06-05-20 ORG ID: 21FLA Longitude: 82.344813

Receiving Body of Water: _____ Field ID: See Label

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
J. Parrish					✓	✓	✓	✓	✓
P. Comor					✓	✓	✓	✓	✓

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Equipment ID OrthoKit # <u>2</u>		

Collection Method	
☐ Wading	☐ Via Boat
☐ From Shore	☒ Canoe/Kayak
☐ Other (note below)	☐ Electric Motor
<u>Ortho # 2</u>	☐ Gasoline Motor

Water Level: Dry / Pooled / Low / Normal / High / Flooded Matrix: Fresh Marine / DI

Meter ID# HydroLab Photos: Yes / No Tide Falling: Yes / No / NA

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
EST	925	0.3	0.8	8.08	103.0	8.1	0.09	0.2	181	27.8
CEN										

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other _____

SBIO ID Numbers: SBIO-ID: _____ RPS-ID: _____ Macrophyte-ID: _____ LIMS#: _____

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4	6302030	10/17	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Periphyton	☐ ALGAE-ID	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococci ☐ qPCR	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R	☐ Ice			
	☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Other			

Notes: _____

field ID Biven arm lake storet ID 20020097

Signature: [Signature] Date: 6/6/17

Field Parameters Entered into LIMS: 6/9/17 Field Parameters QC in LIMS: _____
Date Migrated to STORET: _____ Field Sheets Scanned/Saved: _____

Duplicate

QA/QC Sample Information

Time Zone: EST CENSample Depth (m): 0.3

Field ID: _____

Time: 0301030Total Depth (m): 0.8

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☐ H ₂ SO ₄	6302030	6/17	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ PCR-FILTER	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Place Preservative Sticker(s) Here
(If Available)

Blank

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☐ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☐ Ice ☐ H ₂ SO ₄			☐ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ <2
Filtered Nutrients	☐ W-PO4-F ☐ Field Filtered 0.45 µm Filter	☐ Ice			
Chlorophyll	☐ CHLSUITE-W	☐ Ice			
Physical/Aggregate (Fresh)	☐ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS	☐ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ PCR-FILTER	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH	☐ Other			

Place Preservative Sticker(s) Here
(If Available)

Notes:

Field ID:



G1NE007106062017D

Biven arm lake duplicate

STORET:

20020097

Signature: Jeremy AnnDate: 6/6/17Field Parameters Entered into LIMS: 6/6/17

(Initials/Date)

Field Parameters QC in LIMS: _____

(Initials/Date)

Date Migrated to STORET: _____

(Initials/Date)

Field Sheets Scanned/Saved: _____

(Initials/Date)

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
Lake Habitat Assessment Field Sheet

STORET STATION NUMBER:	DATE (M/D/Y) 6/6/17	LAKE NAME Buen Arm		FIELD ID / NAME:
ECO-REGION:	COUNTY: Alachua	SAMPLING LOCATION/DESCRIPTION: 20020097		LAKE SIZE:
PARAMETER	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 ☐
HYDROLOGY				
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 ☒
	Optimal	Suboptimal	Marginal	Poor
Secchi 2	Secchi > 3 m Or VOB 20 19 18 17 16	3 2.6 2.2 1.8 1.4 15 14 13 12 11	1.0 0.9 0.8 0.7 0.6 10 9 8 7 6	0.5 0.4 0.3 0.2 0.1 5 4 3 2 1
Vegetation Quality 16	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa 20 19 18 17 16	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants 15 14 13 12 11	Large masses (21%-40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats 10 9 8 7 6	Lake choked (>40%) with nuisance macrophytes (duckweed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed) 5 4 3 2 1
Stormwater Inputs 10	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation 20 19 18 17 16	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place 15 14 13 12 11	Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place 10 9 8 7 6	Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place 5 4 3 2 1
Bottom Substrate Quality 5	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present 20 19 18 17 16	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present 15 14 13 12 11	Moderate layer of CPOM/mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom 10 9 8 7 6	Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom 5 4 3 2 1
Lakeside Adverse Human Alterations 13	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%) 20 19 18 17 16	Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected 15 14 13 12 11	Many structures, roads or other human disturbance visible (50%-70%) lakeside affected 10 9 8 7 6	Highly developed or disturbed (>70% of lakeside affected) 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 20 19 18 17 16	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer 15 14 13 12 11	50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer 10 9 8 7 6	<29% of shoreline with >18m buffer 5 4 3 2 1
Adverse Watershed Land Use 10	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 69	COMMENTS:			

ANALYSIS DATE: 6/6/17	ANALYST: <i>Jeremy Parnell</i>	SIGNATURE: <i>Jeremy Parnell</i>
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Waterbody: <u>Biven Arm Lake</u>		County: <u>Alachua</u>		Date: <u>6/6/17</u>							
Analyst: <u>J. J. J.</u>		Signature: <u>J. J. J.</u>		STORET: <u>20020097</u>							
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 <u>3, 6, 9, 12</u>							
SPECIES	3	6	9	12	Collected? (✓)	SPECIES	3	6	9	12	Collected? (✓)
Acer rubrum	P	P	P	P		Habenaria repens					
Alternanthera philoxeroides	P	P	P	P		Hydrilla verticillata					
Andropogon sp.						Hydrocotyle sp.	P		P	P	
Azolla filiculoides (A. caroliniana)						Hygrophila polysperma					
Baccharis sp.			P	P		*Hypericum fasciculatum					
Bacopa caroliniana						*Hypericum hypericoides					
Bacopa monnieri						*Hypericum myrtifolium					
Bidens laevis	P			P		Ilex cassine	P				
Bidens mitis			P			Ipomoea aquatica					
Blechnum serrulatum						Ipomoea sagittata					
Boehmeria cylindrica				P		Itea virginica					
Brasenia schreberi						Juncus effusus					
Cabomba caroliniana						*Juncus marginatus					
Casuarina equisetifolia						*Juncus megacephalus					
Centella asiatica						Juncus repens					
Cephalanthus occidentalis	P	P	P	P		*Juncus scirpoides					
Ceratophyllum demersum						Lachnanthes caroliniana					
Chara sp.						Leersia hexandra					
Cladium jamaicense						Landoltia punctata (Spirodela punctata)					
Cliftonia monophylla						Lemna sp.	P				
Colocasia esculenta	P	P	P	P		Leucothoe racemosa (Eubotrys racemosa)					
*Commelina						Limnium spongia					
Crinum americanum	P	P				Limnophila sessiliflora					
*Cyperus alternifolius (C. involutus)						Liquidambar styraciflua	P	P	P	P	
Cyperus articulatus						*Ludwigia arcuata					
Cyperus haspan						*Ludwigia leptocarpa				P	
*Cyperus lecontei						*Ludwigia linearis					
*Cyperus polystachyos						*Ludwigia octovalvis	P	P	P	P	
*Cyperus odoratus						*Ludwigia peruviana	P	P	P	P	
*Cyperus surinamensis						*Ludwigia repens					
Cyrtilla racemiflora						*Ludwigia racemosa				P	✓
Decodon verticillatus						Luziola fluitans (Hydrochloa carolinensis)					
Diodia virginiana						Lyonia lucida					
*Echinochloa crus-galli						Magnolia virginiana			P		
*Echinochloa muricatum						Mayaca fluviatilis					
Echinochloa walteri						Melaleuca quinquenervia					
Eclipta prostrata (E. alba)						Micranthemum glomeratum					
Egeria densa						Micranthemum umbrosum					
Eichhornia crassipes	P	P		P		Mikania scandens					
*Eleocharis baldwinii						Mimosa pigra					
*Eleocharis						Myrica cerifera	P	P	P	P	
Eleocharis cellulosa						<i>Rhynchospora</i>					
Eleocharis equisetoides						<i>Cyperus mexicanus</i>	P	P	P		
Eleocharis interstincta						<i>Sp. coccoloba</i>	P	P	P		
*Eriocaulon compressum						Amaranthus	P	P	P	P	
*Eriocaulon decangulare						<i>Commelina</i>	P	P	P		
Eupatorium capillifolium	P			P		<i>Carex comosa</i>	P				
*Fuirena											
Fuirena scirpoidea											
Gordonia lasianthus											

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site:						Date:					
SPECIES	3	6	9	12	Collected? (✓)	SPECIES	3	6	9	12	Collected? (✓)
Myriophyllum aquaticum						Salix caroliniana	P	P	P	P	
*Myriophyllum heterophyllum						Salvinia minima	P	P	P	P	
*Myriophyllum laxum						Sambucus canadensis	P		P	P	
*Myriophyllum pinnatum						Sapium sebiferum			P	P	
Myriophyllum spicatum						Saururus cernuus				P	
*Najas filifolia						Schinus terebinthifolius					
*Najas guadalupensis						*Schoenoplectus californicus					
*Najas minor						*Schoenoplectus pungens					
Nelumbo lutea		P	P			*Schoenoplectus tabernaemontani (Scirpus validus)				P	
Nitella spp.		P	P			Scirpus cubensis (Oxycaryon cubense)	P				
Nuphar sp.		P	P	P		Scirpus cyperinus					
Nymphaea odorata						*Sesbania					
Nymphoides aquatica						Solidago sp.					
Nyssa sylvatica var. biflora		P				Sparganium americanum					
Orontium aquaticum						Spartina bakeri					
Osmunda cinnamomea						Spirodela polyrhiza					
Osmunda regalis						Taxodium sp.		P			
Panicum hemitomon			P	P		Thalia geniculata					
Panicum repens	P	P	P	P		Thelypteris palustris					
Paspalidium geminatum	P	P	P	P		Triadenum virginicum					
*Paspalum repens						Typha sp.				P	
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 elliotii						*Utricularia purpurea					
Pistia stratioides						*Utricularia cornuta					
Pluchea sp.						*Utricularia radiata					
*Polygonum glabrum (densiflorum)			P	P		Vallisneria americana					
*Polygonum hydropiperoides						*Websteria confervoides					
*Polygonum punctatum						Wedelia trilobata (Sphagneticola trilobata)					
*Polygonum						Wolffiella spp.					
Pontederia cordata	P	P	P	P		Woodwardia virginica					
*Potamogeton diversifolius						Xyris sp.					
*Potamogeton illinoensis						Zizania aquatica	P	P	P	P	✓
*Potamogeton pusillus						Zizaniopsis milacea	P	P	P	P	
*Potamogeton pectinatus (Stuckenia pectinatus)											
Proserpinaca pectinata						sympha carolin	P	P	P		
*Rhexia						Ipomea Purple				P	
*Rhynchospora corniculata											
*Rhynchospora inundata											
Rhynchospora tracyi											
Ricciocarpus natans											
Sabal palmetto				P							
Sacciolepis striata	P										
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia											
Sagittaria latifolia											

LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYE ID: _____ LATITUDE: 29.625092
 COUNTY: Alachua STORET #: 20020097 LONGITUDE: 82.344813
 DATE: 6/6/17 TIME: 925 SAMPLING AGENCY: _____
 SITE NAME: Biven Arm Lake WBID: 2718B
 FIELD ID/NAME: _____ LAKE SIZE: _____ RQ: 2017-06-05-20

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category - from GIS):										LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)											
Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)														
<u>10</u>				<u>20</u>	<u>70</u>																
Local Watershed Erosion (select one): ☐ None ☐ Slight ☒ Moderate ☐ Heavy								Artificially Impounded		LDI: _____											
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy								☐ Yes ☐ No		Land Use Source & Year: _____											
STORMWATER INPUTS		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										
<u>10</u>		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
LAKESIDE ALTERATIONS		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)										
<u>13</u>		20	19	18	17	16	15	14	<u>13</u>	12	11	10	9	8	7	6	5	4	3	2	1
BUFFER ZONE		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										
<u>13</u>		20	19	18	17	16	15	14	<u>13</u>	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 ☐ No 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 <u>Green</u> ☐ Sheen/Slick ☐ Glob ☐ Other _____									
Meter Readings: Top: _____ Mid-Depth: <u>0.3</u> <u>27.8</u> <u>8.1</u> <u>8.08</u> <u>103.0</u> <u>181</u> <u>0.09</u> Bottom: <u>6.8</u> _____ Meter ID: _____										Clarity: ☐ Clear ☒ Opaque ☐ Turbid ☐ Slightly Turbid Color: ☐ Clear ☐ Tannic ☒ Green SECCHI (M) <u>0.2</u> Total Station Depth (M) <u>0.8</u> VOB ☐									
Sediment Type: (may check more than one) ☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Vegetated ☐ Sand/Silt ☒ Organic smooth (muck) ☐ Other (Specify): _____										Sediment Odors: ☒ Normal ☐ Anaerobic ☐ Other (Specify): _____									
Biological Communities: LVI Conducted? ☒ Yes ☐ No Phytoplankton Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ 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 ☐ ☒ ☐ ☐									
Weather Conditions: <u>Light Breeze</u>																			
SAMPLING TEAM: <u>Jeremy Law</u>										SIGNATURE: <u>Jeremy Law</u>					DATE: <u>6/6/17</u>				