

LVI

Site Name Lake Nan Sample Date 7/9/2018

WBID 3009H WIN ID GZCE0091 RQ 2018-07-09-45

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	<u>JK 7/18/18</u>	KWM JUL 24 2018
Create SBIO station visit	<u>JK 7/18/18</u>	n/a
Vascular Entry (add LIMS ID)	<u>JK 7/18/18</u>	KWM JUL 24 2018
Lake Observation Sheet Entry	<u>JK 7/18/18</u>	KWM JUL 24 2018
Authorize SBIO data	KWM JUL 24 2018	n/a
Scan all sheets to 21FLCEN folder		n/a
LIMS/WIN migration		n/a
File in cabinet		n/a

Comments/ notes:



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

April 2018

Data Qualified?

Yes / No

Lake Nan @ Center

WIN Station Name:

Date: 7/9/2018

WIN ID/ Field ID G2CE0091

WBID: 3009H

Latitude: 28.60742847

County: Orange

ORG ID: 21FL CEN

Longitude: -81.28057304

Receiving Body of Water:

RQ - 2018-07-09-45

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Duplicate Collection	Blank Collection	Sampling Equipment		
								Sample Container	Van Dorn	Pole
TERRY RIORDAN								☒ Carboy	☒ Syringe	
MIKE DRENNAN <i>Katie March</i>								☐ Dipper	☐ Other	
LIZ BATES										
Water Level: Dry/ Pooled/ Low/ <u>Normal</u> / High/ Flooded								Meter ID# <u>Betty / 67</u>		Matrix: <u>Fresh</u> / Marine / DI
Photos: <u>Yes</u> / No		Flow: No Flow / Intestinal / Flowing <u>NA</u>		Tide: Rising/ Falling/ Slack/ <u>NA</u>		Tide Times: High Low				

Field Sample (Bracket Sample Time)										
Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Sp COND (µmhos/cm)	Temp. (C°)
EST	10:00	6.8	.3	1.9	6.69	88.4	7.19	0.06	140	29.88
CEN	10:05 <i>10:05 pm</i>	6.8 <i>6.3</i>	6.3		.40	5.2	6.55 <i>6.55</i>	0.09	193	26.90

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

SBIO ID Numbers: SBIO-ID: 78611 HA-ID: RPS-ID: Macrophyte-ID: 10992 LIMS#: 2005818

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / ☒ W-NO2NO3 / ☒ W-TKN / ☒ W-TOC / ☒ W-S-A-TP	☒ Ice ☒ H2SO4			☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO3			☒ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	13615055		
Chlorophyll	☒ CHLSUTE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity W-F / W-TSS / TURBIDITY / W-CHC / 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	☒ Ice			
Molecular	☐ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-E3821-MS ☐ W-E3821-DI	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-E3821-MS ☐ W-CT-CL-R ☐ W-PCL-SQ-R ☐ W-E3821-DI ☐ W-CARB-AA	☐ Ice ☐ Other			

H2SO4
LOT# SA8885178
EXP: 03/26/19

Place Preservative Sticker(s) Here
(If Available)

HNO3
LOT# NA8067020
EXP: 03/08/2019

Duplicate

Time Zone: <u>EST</u> CEN		Time: <u>10:05</u>		Field ID: <u>G2CE0091_DUP</u>	
(WIN ID + DUP)					
Parameter Suite	Parameter Methods	Preservation	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	13615055		
Chlorophyll	☐ CHLSUITE-W	☐ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CH-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Microbiology	☒ E Coli ☐ F Coli ☐ Enterococci	☒ Ice			
Molecular	☐ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-E3821-MS ☐ W-E3821-DI				
Pesticides	☐ W-PSNP-TQ ☐ W-E3821-DI ☐ W-CT-CL-R ☐ W-PCL-SQ-R ☐ W-E-3821-MS ☐ W-CARB-AA				

H2SO4
 LOT# SA8085170
 EXP: 03/26/19

HNO3
 LOT# NA8067020
 EXP: 03/08/2019

Place Preservative Sticker(s) Here

Field ID → G2CE0091_DUP
 WIN → G2CE0091
 Location → Lake Nan @ Center (3009H)

Blank

Time Zone: EST CEN		Time: <u>10:18</u>		Field ID: <u>Blank 07092018</u>	
DI Source: <u>WASHROOM</u>		Location: <u>Lake Nan Boat Ramp</u> (Blank_MMDDYYYY)			
☒ Field Blank ☐ Equipment Blank ☐ Field Cleaned Equipment Blank		Equipment ID: _____			
WIN DMT Blank Batch ID: _____					
Parameter Suite	Parameter Methods	Preservation	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	13615055		
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CH-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Tracers		☐ Ice			
Pesticide		☐ Other			

HNO3
 LOT# NA8067020
 EXP: 03/08/2019

H2SO4
 LOT# SA8085170
 EXP: 03/26/19

Field ID → 
 BLANK_07092018

Field Blank
 Location/DI source
 Washroom

Notes:
 Access possibly at 28.60810283 x -81.28226071. Amber Lakes Apartment complex ramp. 407-678-2987 might be a number to try
 BOTTLE GROUPS:
 A - NAN
 B - DUP
 C - Blank

WIN ID / Field ID → 
 Lake Nan @ Center (3009H)

G2CE0091

Signature: 

Date: 7/18/18

Enter Field Parameters, Verify Station ID In LIMS DMT: 7/18/18 (Initials/Date) QC Station ID, Field Parameters In LIMS DMT: KWM JUL 24 2018 (Initials/Date)

Scan/Save Field Sheets (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: <u>Lake Nan</u>		County: <u>Orange</u>		Date: <u>7/9/18</u>							
Analyst: <u>Terry Riordan, Katie March, Elizabeth Bates</u>		Signature: <u>[Signature]</u>		STORET: <u>G2CE0091</u>							
Except where noted as "sp." species level identification required. *Genera that may require lab verification* Plants in bold= FLEPPC invasive exotic.				Lake units sampled (circle one group): 1, 4, 7, 10 2, 5, 8, 11 3, 6, 9, 12							
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.											
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
Acer rubrum						Fraxinus					
Alternanthera philoxeroides	/			/		Fuirena scirpoides					
Amaranthus australis						Gordonia lasianthus					
Andropogon sp.						Habenaria repens					
Azolla filiculoides (A. caroliniana)						Hibiscus coccineus					
Baccharis sp.						Hibiscus grandiflora					
Bacopa caroliniana						Hydrilla verticillata					
Bacopa monnieri				/		Hydrocotyle sp.				/	
Bidens alba				/		Hygrophila polysperma					
Bidens laevis						Hymenocallis sp.					
Bidens mitis						*Hypericum fasciculatum					
Blechnum serrulatum						*Hypericum hypericoides					
Boehmeria cylindrica						*Hypericum myrtifolium					
Brasenia schreberi						Ilex cassine					
Cabomba caroliniana						Ipomoea aquatica					
Canna						Ipomoea sagittata					
Centella asiatica						Itea virginica					
Cephalanthus occidentalis	/					Juncus effusus					
Ceratophyllum demersum						*Juncus marginatus					
Chara sp.						*Juncus megacephalus					
Cicuta maculata						Juncus repens					
Cinnamomum camphora		/	/	/		*Juncus scirpoides					
Cladium jamaicense						Lachnanthes caroliniana					
Colocasia esculenta	/	/	/	/		Leersia hexandra					
*Commelina						Landoltia punctata (Spirodela punctata)					
Crinum americanum						Lemna sp.					
*Cyperus alternifolius (C. involucratus)						Leucothoe racemosa (Eubotrys racemosa)					
Cyperus articulatus						Limnobia spongia					
Cyperus haspan						Limnophila sessiliflora					
*Cyperus lecontei						Liquidambar styraciflua					
*Cyperus polystachyos						*Ludwigia arcuata					
*Cyperus odoratus				/		*Ludwigia grandiflora					
*Cyperus surinamensis						*Ludwigia hexapetala					
Cyrtilla racemiflora						*Ludwigia leptocarpa					
Decodon verticillatus						Ludwigia (native)					
Diodia virginiana						*Ludwigia octovalvis					
*Echinochloa crus-galli						*Ludwigia peruviana	/	/		/	
*Echinochloa muricatum						*Ludwigia repens					
Echinochloa walteri						Ludwigia suffruticosa					
Eclipta prostrata (E. alba)						Luziola fluitans (Hydrochloa carolinensis)					
Eichhornia crassipes						Magnolia virginiana	/				
*Eleocharis						Mayaca fluviatilis					
Eleocharis cellulosa						Melaleuca quinquenervia					
*Eleocharis elongata						Micranthemum glomeratum					
Eleocharis equisetoides						Micranthemum umbrosum					
Eleocharis interstincta						Mikania scandens				/	
Eleocharis submersed viviparous						Mimosa pigra					
*Eriocaulon compressum						Myrica cerifera	/			/	
*Eriocaulon decangulare											
Eupatorium capillifolium											

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: Lake NanDate: 7/9/18

SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
Myriophyllum aquaticum						<i>Salix caroliniana</i>	/				
* <i>Myriophyllum heterophyllum</i>						<i>Salvinia minima</i>					
* <i>Myriophyllum laxum</i>						<i>Sambucus canadensis</i>					
* <i>Myriophyllum pinnatum</i>						<i>Sapium sebiferum</i>	/		/		
<i>Myriophyllum spicatum</i>						<i>Saururus cernuus</i>					
* <i>Najas filifolia</i>						<i>Schinus terebinthifolius</i>					
* <i>Najas guadalupensis</i>						* <i>Schoenoplectus californicus</i>					
* <i>Najas minor</i>						* <i>Schoenoplectus pungens</i>					
<i>Nelumbo lutea</i>						* <i>Schoenoplectus tabernaemontani</i> (<i>Scirpus validus</i>)					
<i>Nitella</i> spp.	/	/	/			<i>Scirpus cubensis</i> (<i>Oxycaryon cubense</i>)					
<i>Nuphar</i> sp.	/	/		/		<i>Scirpus cyperinus</i>					
<i>Nymphaea mexicana</i>						* <i>Sesbania</i>					
<i>Nymphaea odorata</i>						<i>Solidago</i> sp.					
<i>Nymphoides aquatica</i>						<i>Sparganium americanum</i>					
<i>Nyssa sylvatica</i> var. <i>biflora</i>						<i>Spartina bakeri</i>					
<i>Orontium aquaticum</i>						<i>Spirodela polyrhiza</i>					
<i>Osmunda cinnamomea</i>						<i>Taxodium</i> sp.	/	/			
<i>Osmunda regalis</i>						<i>Thalia geniculata</i>					
<i>Panicum hemitomon</i>						<i>Thelypteris interrupta</i>					
<i>Panicum repens</i>				/		<i>Thelypteris palustris</i>					
<i>Paspalidium geminatum</i>						<i>Triadenum virginicum</i>					
* <i>Paspalum repens</i>						<i>Typha</i> sp.				/	
<i>Paspalum urvillei</i>						<i>Urochloa mutica</i> (<i>Brachiaria mutica</i>)					
<i>Peltandra</i> sp.						* <i>Utricularia gibba</i> (<i>U. biflora</i>)					
<i>Persea</i> sp.						* <i>Utricularia foliosa</i>					
<i>Pennisetum purpureum</i>						* <i>Utricularia inflata</i>					
<i>Phragmites australis</i>						* <i>Utricularia purpurea</i>					
<i>Pinus elliotii</i>						* <i>Utricularia radiata</i>					
<i>Pistia stratioides</i>						* <i>Utricularia resupinata</i>					
<i>Pluchea</i> sp.						<i>Vallisneria americana</i>					
* <i>Polygonum glabrum</i> (<i>densiflorum</i>)						<i>Vitis</i> sp.					
<i>Polygonum hirsutum</i>						* <i>Websteria confervoides</i>					
* <i>Polygonum hydropiperoides</i>						<i>Wedelia trilobata</i> (<i>Sphagneticola trilobata</i>)	/	/	/	/	
* <i>Polygonum punctatum</i>						<i>Wolffiella</i> spp.					
* <i>Polygonum</i>						<i>Woodwardia virginica</i>					
<i>Pontederia cordata</i>						<i>Xyris</i> sp.					
* <i>Potamogeton diversifolius</i>						<i>Zizania aquatica</i>					
* <i>Potamogeton illinoensis</i>						<i>Zizaniopsis milacea</i>					
* <i>Potamogeton pusillus</i>						<i>Wigna luteola</i>				/	
* <i>Potamogeton pectinatus</i> (<i>Stuckenia pectinatus</i>)											
<i>Proserpinaca pectinata</i>											
* <i>Rhexia</i>											
* <i>Rhynchospora corniculata</i>											
* <i>Rhynchospora inundata</i>											
<i>Rhynchospora nitens</i>											
<i>Ricciocarpus natans</i>											
<i>Sabal palmetto</i>	/	/									
<i>Sacciolepis striata</i>	/	/									
* <i>Sagittaria filiformis</i>											
* <i>Sagittaria graminea</i>											
* <i>Sagittaria isoetiformis</i>											
<i>Sagittaria lancifolia</i>											
<i>Sagittaria latifolia</i>											

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYTE ID: _____ LATITUDE: 28.60742847
 COUNTY: Orange STORET #: G2CE0091 LONGITUDE: -81.28057304
 DATE: 7/9/18 TIME: 1000 SAMPLING AGENCY: FDEP-CEROC
 SITE NAME: Lake Nan WBID: 3009 H
 FIELD ID/NAME: G2CE0091 LAKE SIZE: 10.9 HA RQ: 2018-07-09-45

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) ☐ <u>100</u>							LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) LDI: <u>1.84</u>						
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy Artificially Impounded ☐ Yes ☒ No							Land Use Source & Year: <u>Run 53 2017</u>						
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy													
STORMWATER INPUTS <u>W 4</u>		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		
LAKESIDE ALTERATIONS <u>4</u>		Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected) 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		
BUFFER ZONE <u>1</u>		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		

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water: Nutrient Sample Taken? ☒ Yes ☐ No Preserved? ☒ Yes ☐ No pH < 2 ☐ No Color Sample Taken? ☒ Yes ☐ No Lot # <u>5A8085170</u> Exp. Date: <u>3/26/19</u> Alkalinity Sample Taken? ☒ Yes ☐ No Water Level ☐ Low ☒ Normal ☐ High							Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other _____						
Meter Readings: Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat. (%) Cond. (UMHO/CM) Salinity (PPT) Top: <u>0.3</u> <u>29.88</u> <u>7.19</u> <u>6.69</u> <u>88.4</u> <u>140</u> <u>0.06</u> Mid-Depth: _____ Bottom: <u>6.3</u> <u>26.90</u> <u>6.55</u> <u>5.27</u> <u>5.2</u> <u>193</u> <u>0.09</u>							Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____						
Meter ID: <u>Betty 167</u> <u>0.40</u>							Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid Color: ☐ Clear ☐ Tannic ☒ Green						
Sediment Type: (may check more than one) ☒ Sandy ☐ Organic fibrous (peaty, CPOM) ☒ Vegetated ☐ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____							SECCHI (M) <u>1.9</u> Total Station Depth (M) <u>6.8</u> VOB _____						
Sediment Odors: ☒ Normal ☐ Other (Specify): _____ ☐ Anaerobic							Additional Notes:						
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>90's, pty clouds, light wind</u>													
SAMPLING TEAM: <u>Terry Riordan, Elizabeth Bates, Katie March</u>							SIGNATURE: <u>[Signature]</u> DATE: <u>7/9/18</u>						

Lake Nan 3000H

