



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SURFACE WATER FIELD SHEET
Watershed Monitoring Section
January 2016

STATION INFORMATION

Station Name (Random ID for Status): 24-SL-11025 Date: 9/20/17 (MM/DD/YYYY)
Waterbody Name: Starvation Lake (if known) All Times Are: (circle one) ETZ or CTZ
Daylight Savings Time Observed (mid Mar. - early Nov.)? Yes / No
Waterbody Type: (Circle One) Small Lake (≥ 4 and < 10 hectares) Large Lake (≥ 10 hectares)
(collect samples in middle of open water) (collect samples at selected location point)
Stream Canal River
(collect samples in representative area) (collect samples in representative area) (collect samples in representative area)
Field Sheet Completed by: CO WQ Sample Collected by: DH

WATER CHARACTERISTICS

Total Water Depth: 4.1 (meters) (Average of 2 measurements) Secchi Depth: 1.0 (meters) (from SHADED side) Stage: - (feet) (if applicable)
Stream/River/Canal Flow: (Circle One) N/A No Flow Flow within Banks Flow Above Banks
(waterbody not stream / river / canal) (please comment if avg. velocity is < 0.05 m/s) (For Status sites, DO NOT sample if flooded above banks.)
Water Level: (Circle One) Low Normal High
Water Sample Collection Device: (Circle One) Direct Grab with Sample Bottle Van Dorn # of grabs Dipper Other
Equipment ID (if applicable):

FIELD MEASUREMENTS

Meter ID# <u>Busta</u> Read by: <u>CO</u>						
Time (24 hr.) <u>1000</u>	Surface Depth Collected (meters) <u>0.3</u>	Temperature ($^{\circ}\text{C}$) <u>28.2</u>	Specific Conductance ($\mu\text{mhos/cm}$) <u>128</u>	D.O. (%) <u>40</u>	D.O. (mg/L) <u>3.1</u>	pH (SU) <u>6.6</u>
Time (24 hr.) <u>1002</u>	Bottom Depth Collected (meters) <u>3.6</u>	Temperature ($^{\circ}\text{C}$) <u>26.0</u>	Specific Conductance ($\mu\text{mhos/cm}$) <u>121</u>	D.O. (%) <u>9</u>	D.O. (mg/L) <u>0.7</u>	pH (SU) <u>6.3</u>

PRESERVATION INFORMATION

☐ N/A (No samples collected; please state why in comments.)

Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? Yes / No
1 vial sulfuric acid added to nutrients sample(s)? Yes / No Sulfuric acid info: (circle one) Chem ID / Lot # 7093018
1 vial nitric acid added to metals sample(s)? Yes / No Nitric acid info: (circle one) Chem ID / Lot # 7082060
pH of all acidified samples verified to be < 2 ? Yes / No SCI samples preserved with buffered formalin? Yes / No / NA
All water & sediment samples placed in wet ice ($\leq 6^{\circ}\text{C}$)? Yes / No
(Please describe any variations to this preservation protocol in the comments section below.) Preserved By: DH

QA/QC SAMPLE INFORMATION

QA/QC Sample: (Circle One) N/A Field Blank Equipment Blank
(Field-cleaned) (Lab-cleaned)
Equipment Used: Time: (24 hr.)
Collected by:

Photos Taken? Yes / No / Not Due
(Required for all Status sites. Required annually for Trend sites.)

Fuel Powered Equipment Used? (e.g. boat motor) Yes No

Weather Conditions: Cloudy 90's

Personnel/Visitors On Site: N/A


24-SL-11025
24SL1709 24-SL-11025 STARVATION LAKE
Place QA/QC Label Here
(if applicable)

Station Name (Random ID for Status): 24-SL-11025Date: 9/19/17**SEDIMENT INFORMATION** (for Lakes only)☐ N/A (Site not a lake or no samples collected. If no samples collected, please state why in comments.)Collection Depth: 4.1 (meters)
(Total Water Depth)Collection Time: 1005 (24 hr.)
(Different than surface and bottom time in Field Measurements section)

Collection Interval: (Circle)

Top 3-5 cmOther: _____ (cm)
(If top 3-5 is too flocculent)General Sample Collection Area: Center of lake
(Describe-- near shore, central, north side near dock, etc.)

Sample Collection Device: (Circle One)

Corer

Ekman

Petite PonarEquipment ID: Po Boy

Sediment Type: (Circle All That Apply)

Clay/Silt

Sand

Gravel/Shell Rubble

*Organic Muck

(very fine-grained flocculent organic material)

Sediment Odors: (Circle One)

Normal

Sewage

Petroleum

Hydrogen Sulfide

Other: _____

Sediment Color: Dark brownNumber of Grabs Collected (3 minimum): 3Collected by: DH**BIOASSESSMENT INFORMATION****Stream Condition Index Information** (Appropriate Trend sites)Was the SCI sample collected? Yes / No / Not Due / NA (not an appropriate Trend site)
(Circle One)Collection Time: _____ (24 hr.)
(Different than surface and bottom time in Field Measurements section)

If site was an appropriate Trend stream or river but "NO" was selected, why was the SCI not collected (flooded, < 0.05 m/s velocity, etc.)?

Collected by: _____

Habitat Assessment Information (All Status Streams, Rivers, & Canals; Trend sites appropriate for SCI)Was the HA performed? (Circle One) Yes / No / Not Due / NA (site not a Status Stream/River/Canal or appropriate Trend site)

If site was a stream, river or canal but "NO" was selected, why was the HA not performed (dangerous site conditions, etc.)?

Performed by: _____

Rapid Periphyton Survey Information (Trend sites appropriate for SCI)Was the RPS performed? (Circle One) Yes / No / Not Due / NA (not an appropriate Trend site)

ALGAL-ID sample collected? (circle one) Yes No

If site was an appropriate Trend stream or river but "NO" was selected, why was the RPS not performed (dangerous site conditions, etc.)?

Performed by: _____

Linear Vegetation Survey Information (Trend sites appropriate for SCI) / **Lake Vegetation Index Information** (Status Lakes)Was the LVS performed? (Circle One) Yes / No / Not Due / NA (not an appropriate Trend site)

Number of Plant ID specimens collected: _____

Was the LVI performed? (Circle One) Yes / No / Not Due (LVI performed previous year) / NA (not a Status Lake)If site was an appropriate Trend stream or river but "NO" was selected, why was LVS not performed (< 2 m² aquatic vegetation, dangerous site conditions, etc.)?

If site was a Status Lake but "NO" was selected, why was LVI not performed (LVI will be performed at later date, dangerous site conditions, etc.)?

Performed by: CO/DH

Comments: Include information such as: estimated level of impact to the system (ex. obvious pollution, etc.), any variations from normal preservation protocols (ex. adding more than 1 vial acid, etc.), any problems experienced with collecting samples (ex. sediment grab 1 lost due to fall-out, etc.), any site specifics (ex. dense submerged vegetation, etc.), any site conditions (ex. recent heavy rains, etc.), description of any photos taken, etc., any qualifiers needed (ex. "J" for failed calibration verification, etc.), etc.

Invasive Exotic Apple Snail eggs present:Yes

No

(pink, clustered, small, numerous eggs)

Sampler Names: (PLEASE PRINT)

Catie OrrDylan Horning

Sampler Signatures:

[Signature][Signature]**OFFICE USE ONLY**

Reviewed for completion by: _____

Date: _____

SAMPLE ID: 24-SL-11025 MACROPHYTE ID: 10745
 COUNTY: Hillsborough STORET #: G1SW0067
 DATE: 9/19/17 TIME: 1000
 SITE NAME: Starvation Lake
 FIELD ID/NAME: _____

LATITUDE: 28° 7' 22.961" N
 LONGITUDE: 82° 30' 19.827" W
 SAMPLING AGENCY: SWROC
 WBID: 1498A
 LAKE SIZE: Small RQ: 2017-09-11-07

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)	LDI:				
<u>100%</u>								Land Use Source & Year:				
Local Watershed Erosion (select one): ☐ None ☒ Slight ☐ Moderate ☐ Heavy								Artificially Impounded ☐ Yes ☒ No				
Local Watershed NPS Pollution: ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy												
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>18</u>		20 19 <u>18</u> 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>16</u>		20 19 18 17 <u>16</u>		15 14 13 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>19</u>		20 <u>19</u> 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 ☐ 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 ☐ Sheen/Slick ☐ Glob ☐ Other _____					
Meter Readings: Top: Depth (M) <u>0.3</u> Temp. (°C) <u>28.2</u> pH (SU) <u>7.6</u> D.O. (MG/L) <u>3.1</u> D.O. Sat. (%) <u>40</u> Cond. (UMHO/CM) <u>120</u> Salinity (PPT) _____ Mid-Depth: _____ Bottom: <u>3.6</u> <u>26.0</u> <u>6.3</u> <u>0.7</u> <u>9</u> <u>121</u> _____ Meter ID: <u>Busta</u>						Clarity: ☐ Clear ☐ Opaque ☐ Turbid ☒ Slightly Turbid Color: ☐ Clear ☒ Tannic ☐ Green SECCHI (M) <u>1.0</u> Total Station Depth (M) <u>4.1</u> VOB ☐					
Sediment Type: (may check more than one) ☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Sand/Silt ☒ Organic smooth (muck) Sample Taken? ☒ Yes ☐ No Vegetated ☐ 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 ☒ Don't Know Active Vegetation Mgmt? ☐ Yes ☒ No ☒ Don't Know						Abundance: Absent Rare Common Abundant Periphyton ☐ ☒ ☐ ☐ Nuisance Plants ☐ ☐ ☒ ☒ Submersed Plants ☐ ☐ ☒ ☐ Exotic Apple Snails ☐ ☒ ☐ ☐					
Weather Conditions: <u>Cloudy; 90s</u>						Additional Notes:					
SAMPLING TEAM: <u>Dylan Hanning</u> <u>Catie Orr</u>						SIGNATURE: <u>Dylan Hanning</u>					
						DATE: <u>9/19/17</u>					

DEP Form FD 9000-6: Lake Habitat Assessment Field Sheet

STORET STATION NUMBER: GISW0067	DATE (M/D/Y) 9/19/17	LAKE NAME Starvation Lake		FIELD ID / NAME: 24-SL-11025
ECO-REGION:	COUNTY: Hillsborough	SAMPLING LOCATION/DESCRIPTION: Center of Lake		LAKE SIZE: Small
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 ☐
	Optimal	Suboptimal	Marginal	Poor
Secchi	Secchi > 3 m Or VOB	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
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Vegetation Quality	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa 9	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants 20 19 18 17 16	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	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation 18	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place 20 19 18 17 16	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	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present 6	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present 20 19 18 17 16	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	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%) 16	Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected 20 19 18 17 16	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	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18m buffer 19	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer 20 19 18 17 16	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	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 16	20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1		

TOTAL SCORE

94

COMMENTS:

ANALYSIS DATE:

09/19/17

ANALYST:

Catie Orr

SIGNATURE:

Dylan Horning

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: <u>24-SL-11025 Starvation Lake</u>				County: <u>Hillsborough</u>				Date: <u>9/19/17</u>			
Analyst: <u>C. Orr</u>				Signature: <u>C. Orr</u>				STORET: <u>GISW00067</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			X			Habenaria repens					
Alternanthera philoxeroides		X				Hydrilla verticillata		X			
Andropogon sp.						Hydrocotyle sp.		X			
Azolla filiculoides (A. caroliniana)						Hrdolea quadrivalis					
Baccharis sp.						Hygrophila polysperma					
Bacopa caroliniana						*Hypericum fasciculatum					
Bacopa monnieri						*Hypericum hypericoides					
Bidens laevis						*Hypericum myrtifolium					
Bidens mitis						Ilex cassine					
Blechnum serrulatum				X		Ipomoea aquatica					
Boehmeria cylindrica						Ipomoea sagittata					
Brasenia schreberi						Iris pseudacorus					
Cabomba caroliniana						Itea virginica					
Casuarina equisetifolia						Juncus effusus					
Centella asiatica						*Juncus marginatus					
Cephalanthus occidentalis				X		*Juncus megacephalus					
Ceratophyllum demersum						Juncus repens					
Chara sp.						*Juncus scirpoides					
Cladium jamaicense						Lachnanthes caroliniana					
Cliftonia monophylla						Leersia hexandra					
Colocasia esculenta						Landoltia punctata (Spirodela punctata)					
*Commelina						Lemna sp.				X	
Crinum americanum						Leucothoe racemosa (Eubotrys racemosa)					
*Cyperus alternifolius (C. involucratus)						Limnium spongia					
Cyperus articulatus						Limnophila sessiliflora					
Cyperus haspan						Liquidambar styraciflua					
*Cyperus lecontei						*Ludwigia arcuata					
*Cyperus polystachyos						*Ludwigia leptocarpa	X	X	X	X	
*Cyperus odoratus	X					*Ludwigia linearis					
*Cyperus surinamensis						*Ludwigia octovalvis					
Cyrtilla racemiflora						*Ludwigia peruviana					
Decodon verticillatus						*Ludwigia repens					
Diodia virginiana						*Ludwigia					
*Echinochloa crus-galli						Luziola fluitans (Hydrochloa carolinensis)					
*Echinochloa muricatum						Lycopus virginicus					
Echinochloa walteri						Lyonia lucida					
Eclipta prostrata (E. alba)						Magnolia virginiana					
Egeria densa						Mayaca fluviatilis					
Eichhornia crassipes						Melaleuca quinquenervia					
*Eleocharis baldwinii		X				Micranthemum glomeratum					
*Eleocharis						Micranthemum umbrosum					
Eleocharis cellulosa						Mikania scandens					
Eleocharis equisetoides						Mimosa pigra					
Eleocharis interstincta						Myrica cerifera					
*Eriocaulon compressum						Eriocaulon				X	
*Eriocaulon decangulare											
Eupatorium capillifolium											
*Fuirena											
Fuirena scirpoidea											
Gordonia lasianthus											

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: 24-56-11005					Date: 9/9/17						
SPECIES	3	6	9	12	Collected? (✓)	SPECIES	3	6	9	12	Collected? (✓)
Myriophyllum aquaticum						Salix caroliniana	X	X	X		
*Myriophyllum heterophyllum						Salvinia minima			X	X	
*Myriophyllum laxum						Sambucus canadensis				X	
*Myriophyllum pinnatum						Sapium sebiferum					
Myriophyllum spicatum						Saururus cernuus					
*Najas filifolia						Schinus terebinthifolius					
*Najas guadalupensis						*Schoenoplectus californicus					
*Najas minor						*Schoenoplectus pungens					
Nelumbo lutea						*Schoenoplectus tabernaemontani (Scirpus validus)					
Nitella spp.						Scirpus cubensis (Oxycaryon cubense)	X		X	X	
Nuphar sp.	X	X	X	X		Scirpus cyperinus					
Nymphaea odorata	X	X	X	X		*Sesbania					
Nymphoides aquatica						Solidago sp.					
Nyssa sylvatica var. biflora						Sparganium americanum					
Orontium aquaticum						Spartina bakeri					
Osmunda cinnamomea						Spirodela polyrhiza					
Osmunda regalis						Taxodium sp.	X	X	X	X	
Panicum hemitomon		X		X		Thalia geniculata					
Panicum repens		X				Thelypteris palustris					
Paspalidium geminatum						Triadenum virginicum					
*Paspalum repens						Typha sp.	X	D	D	D	
Paspalum urvillei						Urochloa mutica (Brachiaria mutica)		D			
Peltandra sp.						*Utricularia gibba (U. biflora)	X				
Persea sp.						*Utricularia floridana					
Pennisetum purpureum						*Utricularia foliosa				X	
Phragmites australis						*Utricularia inflata					
Pinus elliotii sp.		X				*Utricularia purpurea					
Pistia stratioides						*Utricularia cornuta					
Pluchea sp.						*Utricularia radiata				X	
*Polygonum glabrum (densiflorum)						Vallisneria americana					
*Polygonum hydropiperoides						*Websteria confervoides					
*Polygonum punctatum		X		X		Wedelia trilobata (Sphagneticola trilobata)					
*Polygonum						Wolffiella spp.					
Pontederia cordata		X		X		Woodwardia virginica					
*Potamogeton diversifolius						Xyris sp.					
*Potamogeton illinoensis						Zizania aquatica					
*Potamogeton pusillus						Zizaniopsis milacea					
*Potamogeton pectinatus (Stuckenia pectinatus)						Vitis		X		X	
Proserpinaca pectinata						SAN H CO		X			
*Rhexia											
*Rhynchospora corniculata											
*Rhynchospora inundata											
Rhynchospora tracyi											
Ricciocarpus natans											
Sabal palmetto											
Sacciolepis striata											
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia		X									
Sagittaria latifolia											