



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

March 2017

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Data Qualified?

Yes / No

Location/STORET Station Name: Elder Springs Run DS of Myrtle St - Sanford Date: 07/19/17
(mm/dd/yyyy)

STORET # 20010294 WBID: 2984 Latitude: 28.73461
(Decimal Degrees)

County: Seminole RQ - 2017-07-17-43 ORG ID: 21FLCEN Longitude: -81.26625
(Decimal Degrees)

Receiving Body of Water: Lk Jessup Field ID: 20010294

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Linger					/	/	/	/	/
Mike Drennan					/	/	/	/	/

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☒ Syringe	
☐ Dipper	☐ Other	
Equipment ID		

Collection Method		
☒ Wading	Via Boat	
☐ From Shore	☐ Canoe/Kayak	
☐ Other (note below)	☐ Electric Motor	
	☐ Gasoline Motor	

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

Meter ID# Ropp/Non 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	1117	0.2	0.3	6.5	80	7.2	0.2	0.3(s)	452	25.4
CEN										

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other 1914987

SBIO ID Numbers: SBIO-ID: 77764 RPS-ID: 8723 Macrophyte-ID: N/A < 2m² LIMS#: 1914987 NA

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	<u>7093010</u>	<u>4/3/18</u>	☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO3	<u>6253070</u>	<u>9/9/17</u>	☒ <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-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 ☒ 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 ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

Notes: On 2017 SMP + a Reference SCI MKL

Elder Springs Run DS of Myrtle St - Sanford.

Date: 07/19/2017
RQ-2017-07-17-43

Signature: [Signature] Date: 7/19/17

Field Parameters Entered into LIMS: NA 7/19/17 Field Parameters QC in LIMS: NA 7/19/17

Date Migrated to STORET: 7/19/17 Field Sheets Scanned/Saved: 7/19/17

20010294
Field ID ↑
STORET ↓
20010294

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 77764 ORG ID 2IFLCEN LATITUDE 28.73461
COUNTY Seminole STORET # 20010294 LONGITUDE -81.26625
DATE 7/19/17 TIME 1117 SAMPLING AGENCY FDEP CE-Roc
SITE NAME Elder Springs Run DS of Myrtle St - Sanford
FIELD ID/NAME 20010294 RECEIVING BODY OF WATER Lake Jesup

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):								Landscape Development Intensity Index (LDI)
Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)	
<u>50</u>	<u>5</u>	<u>15</u>	<u>10</u>	<u>20</u>				
Local Watershed Erosion (select one): ☐ None ☒ Slight ☐ Moderate ☐ Heavy						Typical Width (m) Depth (m)/Velocity (m/sec) Transect		
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy						<u>2.3</u> m wide		
Width of Riparian Vegetation (m) on Each Buffer Side				Hydrologic Modification Score (per FT 3101)				
Left Bank: <u>>18</u>		Right Bank: <u><6m</u>		<u>5</u>				
High Water Mark: <u>0.5</u> + <u>0.4</u> = <u>0.9</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				
Artificially ☒ No ☐ Yes				Channelized: ☐ Some recovery ☐ Recent, severe		Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☒ Moderate Shaded (46-80%)		

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☒ Anaerobic ☐ Other (Specify):		Smothering of Substrates Sand Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐ Silt Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐ Algae Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐						
SUBSTRATE TYPE Assessment Tool: ☒ SCI ☒ RPS ☐ LVS ☐ LCI ☐ BioRecon			WATER QUALITY							
			Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Woody Debris (Snags)			<u>0.9</u>	<u>7</u>	<u>7.2</u>	<u>6.5</u>	<u>80</u>	<u>452</u>	<u>0.2</u>	<u>0.3 (s)</u>
Undercut Banks / Roots			<u>1.4</u>	<u>7</u>						☒ VOB
Leaf Packs or Mat			<u>0.06</u>	<u>2</u>						
Aquatic Vegetation				<u>12th</u>						
Rock or Shell Rubble										
Sand				<u>B2</u>						
Mud / Muck / Silt										
Other				<u>1</u>						
Other										
ABUNDANCE Not Obs. Rare Common Abundant			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐							
Periphyton: ☐ ☒ ☐ ☐			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐							
Fish: ☐ ☐ ☒ ☐			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐							
Aquatic Plants: ☐ ☒ ☐ ☐			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐							
Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐							
			AMBIENT FIELD CONDITIONS / NOTES: <u>90's Humid</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.							

SAMPLING TEAM

Mike Linger, Natalie Ayala, Katie Williams

SIGNATURE:

DATE:

07/19/17

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDEP CE-ROC</u>		STORET STATION NUMBER: <u>20010294</u>	DATE (MM/DD/YYYY): <u>07/19/2017</u>	RECEIVING BODY OF WATER: <u>Lake Jessup</u>
REMARKS:	COUNTY: <u>Seminole</u>	LOCATION: <u>Elder Springs Run</u>	FIELD ID/NAME: <u>20010294</u>	

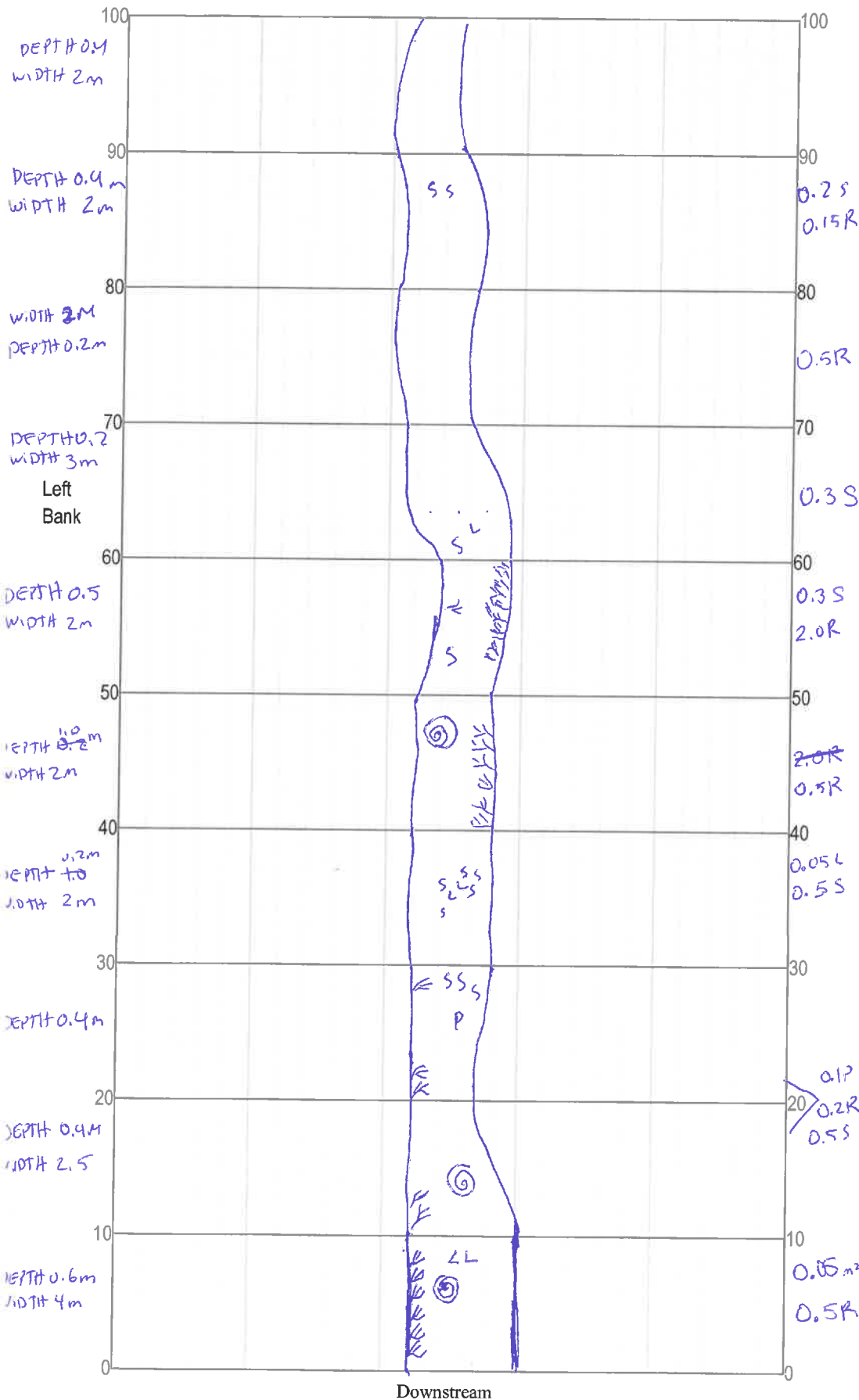
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>6</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>2</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>14</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering <u>18</u> ----- Primary Score <u>40</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>19</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>5</u> Left Bank <u>3</u> <u>LR</u> <u>5</u> <u>3</u> <u>+</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. <u>R</u> 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. <u>L</u> 3 2 1
Riparian Buffer Zone Width Right Bank <u>3</u> Left Bank <u>9</u>	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>3</u> Left Bank <u>5</u> ----- Secondary Score <u>47</u>	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

87

TOTAL SCORE

Date: <u>7/19/17</u>	Analyst: <u>Natalie Ayala</u>	Signature: <u>Natalie Ayala</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Location: GIPER Springs

Date: 07/19/17

Sampler: M. Linger/N. Ayala/J. Williams

100 m: Latitude 28.73456
Longitude -81.2666

0 m: Latitude 28.73413
Longitude -81.26574

Substrates: Code key, draw proportionate habitat abundance. %

S Snags 0.9

F Roots/undercut banks 1.4

L Leaf Packs (or mats) 0.06

P Aquatic Macrophytes

 total # observed = 4
range expected = 3-6

Average width 2.3 m

Average depth 0.4 m

Velocity measured at 30 meter mark.

WQ & chemistry taken at 100 meter mark.

Habitat Smothering: N/A
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Dioscorea bulbifera

Ruellia

0.05m² Wedelia

0.5R Camphor

Sabal Palm

Ulmus

Cephalanthus

Peltandra

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Sixmile Creek/Elder Springs</u>					County: <u>Seminole</u>		Date: <u>7/19/17</u>		Investigators: <u>Katie Williams</u>	
					STORET Station Number: <u>20010294</u>					
Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
0	1	2			60	1	2			
	2	2				2	2			
	3	2				3	2			
	4	2				4	2			
	5	2		95		5	2			
	6	2				6	2			
	7	2				7	2			
	8	2				8	2			
	9	2				9	2			
10	1	2			70	1	2			
	2	2				2	2			
	3	2				3	2			
	4	2				4	2			
	5	2		86		5	2			
	6	2				6	2			
	7	2				7	2			
	8	2				8	2			
	9	2				9	2			
20	1	2			80	1	2			
	2	2				2	2			
	3	2				3	2			
	4	2				4	2			
	5	2		90		5	2			
	6	2				6	2			
	7	2				7	2			
	8	2				8	2			
	9	2				9	2			
30	1	2			90	1	2			
	2	2				2	2			
	3	2				3	2			
	4	2				4	2			
	5	2		93		5	2			
	6	2				6	2			
	7	2				7	2			
	8	2				8	2			
	9	2				9	2			
40	1	2			100	1	2			
	2	2				2	2			
	3	2				3	2			
	4	2				4	2			
	5	2		93		5	2			
	6	2				6	2			
	7	2				7	2			
	8	2				8	2			
	9	2				9	2			
50	1	2				1	2			
	2	2				2	2			
	3	2				3	2			
	4	2				4	2			
	5	2		91		5	2			
	6	2				6	2			
	7	2				7	2			
	8	2				8	2			
	9	2				9	2			

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

Secchi depth 0.3 (s)
Estimated?

points ranked 4-6 85 0
total points assessed 85
% points ranked 4-6 0

Check accompanying data collected at same site/date.

Algal mat sample	
Linear Veg Survey	
Habitat Assessment	✓
SC/Biorecon	✓
Water sample	✓

RQ- 2017-07-17-43

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Waterbody: Elder Springs Run	Date: 7/19/17	County: Seminole	Storet Number: 20010294
Analyst: Mike Linger	Signature: <i>Dr. K. Lin</i>		
Comments: No LVS conducted < 2m ² of vegetation			

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

	Meter Mark										Specimen collected (check)		Meter Mark										Specimen collected (check)
HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100		HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Alternanthera philoxeroides											Micranthemum glomeratum												
Bacopa caroliniana											Micranthemum umbrosum												
Bacopa monneri											Myriophyllum aquaticum												
Bidens mitis											Najas guadelupensis												
Boehmeria cylindrica											Nuphar luteum												
Centella asiatica											Orontium aquaticum												
Ceratophyllum demersum											Panicum hemitomon												
Chara											Panicum repens												
Cicuta maculata											Panicum rigidulum												
Cladium jamaicense											Pistia stratioides												
Colocasia esculenta											Polygonum glabra												
Commelina diffusa											Polygonum hydropiperoides												
Commelina virginica											Polygonum punctatum												
Crinum americanum											Pontedaria cordata												
Diodia virginiana											Potamogeton illinoensis												
Eichhornia crassipes											Ruellia simplex												
Eleocharis (wispy viviparous)											Sacciolepis striata												
Hydrilla verticillata											Sagittaria kurziana												
Hydrocotyle											Sagittaria lancifolia												
Hygrophila polysperma											Sagittaria latifolia												
Hymenocallis											Salvinia minima												
Lachnanthes caroliniana											Samolus parviflora												
Landoltia punctata											Saururus cernuus												
Lemna											Sparganium americanum												
Limnophila sessiflora											Typha												
Ludwigia leptocarpa											Vallisneria americana												
Ludwigia palustris											Zizania aquatica												
Ludwigia peruviana																							
Ludwigia repens																							
Luziola fluitans																							
If no Dominant or Co-Dominant were selected, indicate with "X"																							