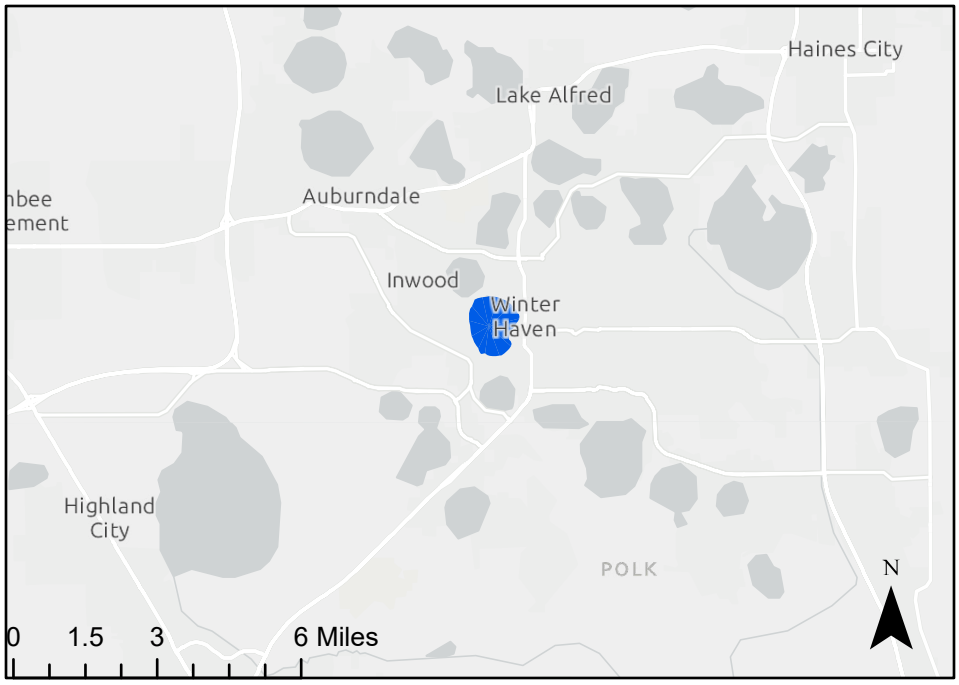
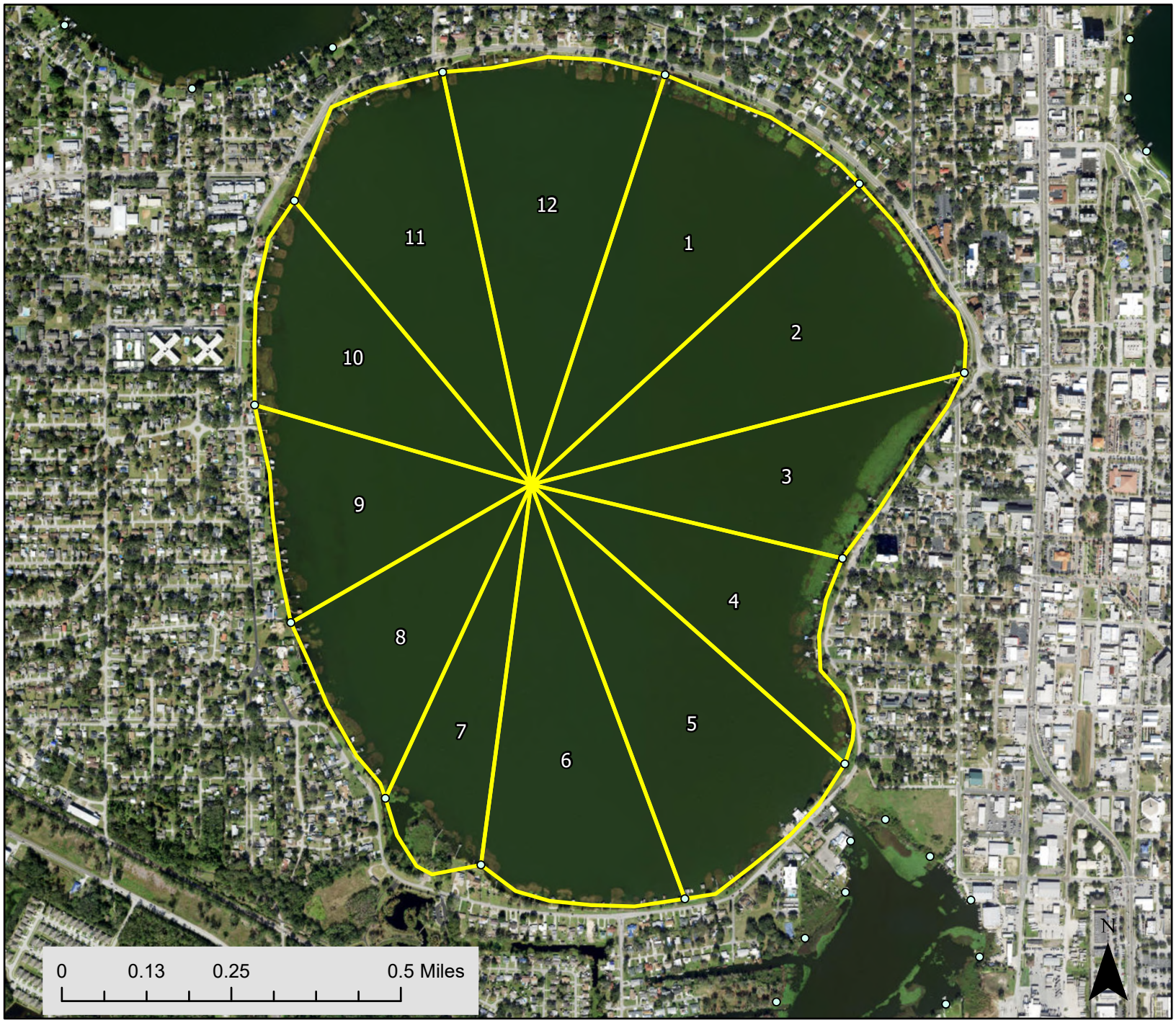


Lake Howard
WBID 1521F

Sample Date - May 18, 2026
Surface Area - 623 acres (27,479,369 sqft)
100m Landscape Development Intensity - 7.38
Dominant Land Use 100m Buffer -
- Residential (77.3%)
- Commercial (14.7%)
- Natural (4%)

Lake Vegetation Index - 71
Lake Habitat Assessment - 51
Water Clarity - 0.5 m (1.6 ft)



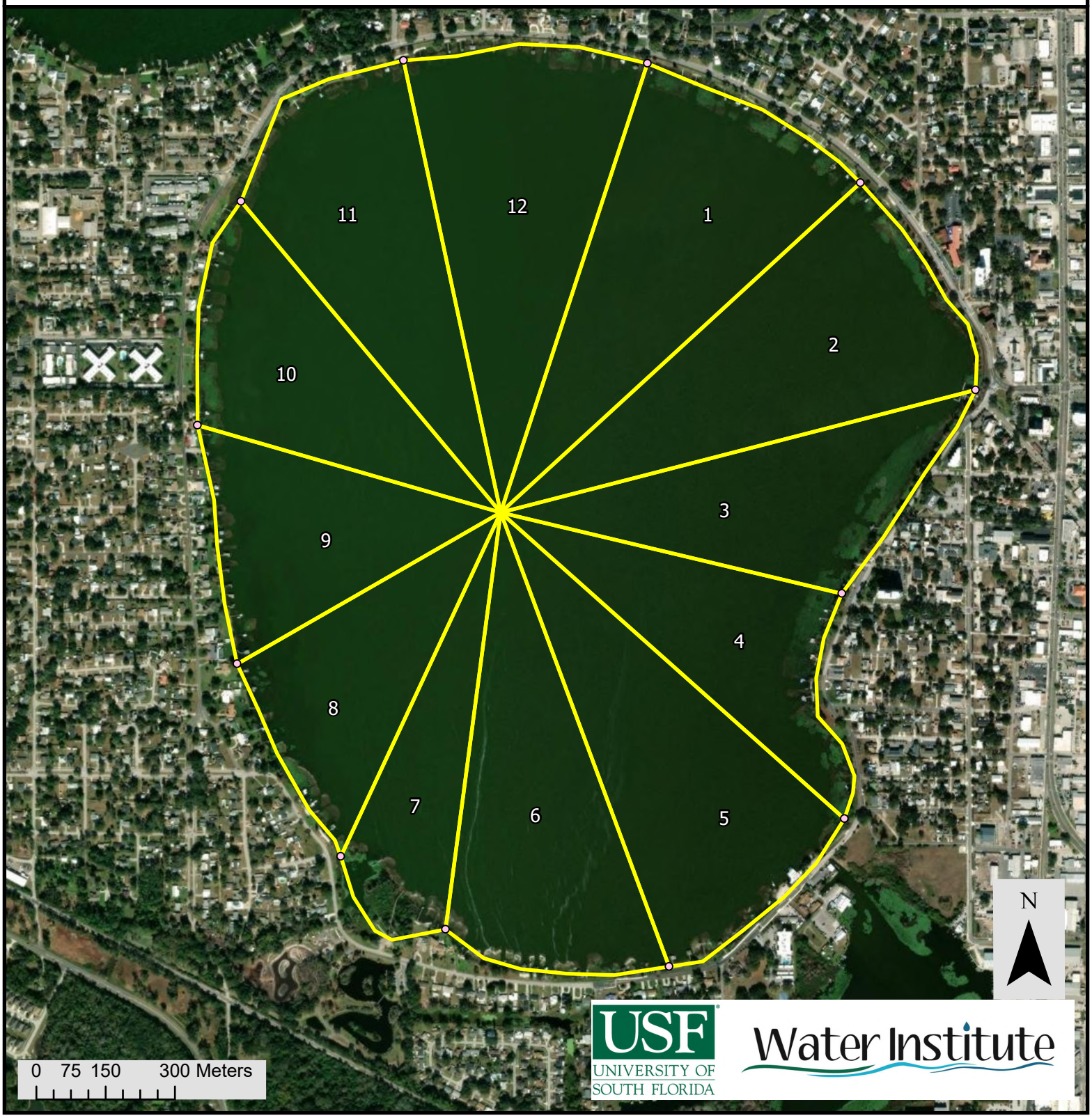
Lake Howard
WBID 1521F

LVI_Points

LVI_Regions

Sample Date - May 18, 2026
Regions Assessed - (3, 6, 9, 12)
Dominant Species Per Region -
3- Nymphaea odorata,
Potamogeton illinoensis
6- Paspalidium geminatum
Potamogeton illinoensis
9 - Paspalidium geminatum
Potamogeton illinoensis
12- Paspalidium geminatum

Lake Description
Water Clarity - 0.5 meters
(1.64 ft)
- Turbid
Color - Green
Sediment Types
Organic Smooth
Vegetated
Lake Vegetation Index - 71



DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: Howard | MACROPHYTE ID: | LATITUDE: 28.0237346
COUNTY: Polk | STORET #: | LONGITUDE: -81.7442784
DATE: 5/18/26 | TIME: 10:00 | SAMPLING AGENCY: USFWS
SITE NAME: Lake Howard | WBID: 1521F
FIELD ID/NAME: Howard | LAKE SIZE: 623 | 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)
4.1.				77.3.1.	14.7.1.		

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) — LDI: 7.38

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 — 5	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 — 5	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 — 5	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 _____

Meter Readings:

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat. (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top:	0.11	31.6	9.67	8.05	108	185	0.09
Mid-Depth:	1.58	29.6	9.35	7.67	99.2	183	0.08
Bottom :	3.06	29.4	8.6	6.33	81.6	183	0.08

Meter ID:

Clarity: ☐ Clear ☐ Opaque ☑ Turbid ☐ Slightly Turbid

Color: ☐ Clear ☐ Tannic ☑ Green

SECCHI (M): 0.5 VOB ☐

Total Station Depth (M): 4.0

Sediment Type: (may check more than one) Sample Taken? ☑ Yes ☐ No

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

☐ Sand/Silt ☑ Organic smooth (muck) ☐ Other (Specify):_____

Sediment Odors:

☐ Normal ☐ Other (Specify): _____

☑ Anaerobic

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	☐	☐	☐	☑

Additional Notes:

Weather Conditions :

SAMPLING TEAM: David Ellers | **SIGNATURE:** | **DATE:** 5/18/26

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

STORET STATION NUMBER:	DATE (M/D/Y): 5/18/26	LAKE NAME: Lake Howard	FIELD ID / NAME: Howard
ECO-REGION:	COUNTY: Polk	SAMPLING LOCATION/DESCRIPTION: Lake Howard	LAKE SIZE:

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 5	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 13	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 5	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 12	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 5	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 5	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 6	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	51	COMMENTS:

ANALYSIS DATE: 5/18/26	ANALYST: David Eilers	SIGNATURE:

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Howard	County: Polk	Date: 5/18/26
Analyst: DEilers	Signature:	STORET:

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

SPECIES	3	6	9	12	Collected? (√)
Acer rubrum		1		1	
Alternanthera philoxeroides		1			
Andropogon sp.					
Azolla filiculoides (A. caroliniana)					
Baccharis sp.		1			
Bacopa caroliniana					
Bacopa monnieri					
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica				1	
Brasenia schreberi					
Cabomba caroliniana					
Casuarina equisitifolia					
Centella asiatica					
Cephalanthus occidentalis	1	1		1	
Ceratophyllum demersum					
Chara sp.	1	1			
Cladium jamaicense					
Cliftonia monophylla					
Colocasia esculenta	1			1	
*Commelina					
Crinum americanum					
***Cyperus alternifolius** (C. involucratus)					
Cyperus articulatus					
Cyperus haspan					
*Cyperus lecontei		1			
*Cyperus polystachyos					
*Cyperus odoratus		1			
*Cyperus surinamensis					
Cyrilla racemiflora					
Decodon verticillatus					
Diodia virginiana					
*Echinochloa crus-galli					
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Egeria densa					
Eichhornia crassipes	1				
*Eleocharis baldwinii					
*Eleocharis					
Eleocharis cellulosa					
Eleocharis equisetoides					
Eleocharis interstincta	1		1		
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium			1		
*Fuirena					
Fuirena scirpoidea		1	1		
Gordonia lasianthus					

SPECIES	3	6	9	12	Collected? (√)
Habenaria repens					
Hydrilla verticillata					
Hydrocotyle sp.	1	1	1	1	
Hygrophila polysperma					
*Hypericum fasciculatum					
*Hypericum hypericoides					
*Hypericum myrtifolium					
Ilex cassine					
Ipomoea aquatica					
Ipomoea sagittata					
Itea virginica					
Juncus effusus					
*Juncus marginatus					
*Juncus megacephalus					
Juncus repens					
*Juncus scirpoides					
Lachnanthes caroliniana					
Leersia hexandra					
Landoltia punctata (Spirodela punctata)					
Lemna sp.					
Leucothoe racemosa (Eubotrys racemosa)					
Limnobium spongia					
Limnophila sessiliflora					
Liquidamber styraciflua					
*Ludwigia arcuata					
*Ludwigia leptocarpa	1	1	1		
*Ludwigia linearis					
*Ludwigia octovalvis		1	1	1	
***Ludwigia peruviana**		1			
*Ludwigia repens					
*Ludwigia					
Luziola fluitans (Hydrochloa carolinensis)					
Lyonia lucida					
Magnolia virginiana					
Mayaca fluviatilis					
Melaleuca quinquenervia					
Micranthemum glomeratum					
Micranthemum umbrosum					
Mikania scandens					
Mimosa pigra					
Myrica cerifera					
Musa	1				

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: Howard

Date: 5/18/22

SPECIES	3	6	9	12	Collected? (√)
Myriophyllum aquaticum					
*Myriophyllum heterophyllum					
*Myriophyllum laxum					
*Myriophyllum pinnatum					
Myriophyllum spicatum					
*Najas filifolia					
*Najas guadalupensis			1		
*Najas minor					
Nelumbo lutea					
Nitella spp.					
Nuphar sp.	1			1	
Nymphaea odorata	C	1	1	1	
Nymphoides aquatica					
Nyssa sylvatica var. biflora					
Orontium aquaticum					
Osmunda cinnamomea					
Osmunda regalis					
Panicum hemitomon					
Panicum repens	1	1	1	1	
Paspalidium geminatum	1	C	C	D	
*Paspalum repens					
Paspalum urvillei					
Peltandra sp.					
Persea sp.					
Pennisetum purpureum					
Phragmites australis					
Pinus elliottii					
Pistia stratioides					
Pluchea sp.					
*Polygonum glabrum (densiflorum)					
*Polygonum hydropiperoides					
*Polygonum punctatum					
*Polygonum _____					
Pontederia cordata	1	1	1	1	
*Potamogeton diversifolius					
*Potamogeton illinoensis	C	C	C	1	
*Potamogeton pusillus					
*Potamogeton pectinatus (Stuckenia pectinatus)					
Proserpinaca pectinata					
*Rhexia _____					
*Rhynchospora corniculata					
*Rhynchospora inundata					
Rhynochospora tracyi					
Ricciocarpus natans					
Sabal palmetto	1				
Sacciolepis striata					
*Sagittaria filiformis					
*Sagittaria graminea					
*Sagittaria isoetiformis					
Sagittaria lancifolia	1	1	1	1	
Sagittaria latifolia					

SPECIES	3	6	9	12	Collected? (√)
Salix caroliniana	1	1	1	1	
Salvinia minima					
Sambucus canadensis				1	
Sapium sebiferum					
Saururus cernuus					
Schinus terebinthifolius					
*Schoenoplectus californicus	1	1	1	1	
*Schoenoplectus pungens					
*Schoenoplectus tabernaemontani (Scirpus validus)					
Scirpus cubensis (Oxycaryon cubense)					
Scirpus cyperinus					
*Sesbania _____					
Solidago sp.					
Sparganium americanum					
Spartina bakeri					
Spirodela polyrhiza					
Taxodium sp.	1	1	1	1	
Thalia geniculata					
Thelypteris palustris					
Triadenum virginicum					
Typha sp.	1		1	1	
Urochloa mutica (Brachiaria mutica)					
*Utricularia gibba (U. biflora)	1	1	1		
*Utricularia floridana					
*Utricularia foliosa	1				
*Utricularia inflata					
*Utricularia purpurea	1				
*Utricularia cornuta					
*Utricularia radiata	1	1	1	1	
Vallisneria americana	1		1	1	
*Websteria confervoides					
Wedelia trilobata (Sphagneticola trilobata)				1	
Wolffiella spp.					
Woodwardia virginica					
Xyris sp.					
Zizania aquatica					
Zizaniopsis milacea					