FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

STRATEGIC MONITORING PLAN Field Sheet

July 2022

Meter Passed End of Day CCV

Yes / No

WIN Station Name:	GAP LAKE MIDDLE					**Sample Date:**	7/25/2023
WIN / Field ID:	G3TLHR0020	**ORG ID:**	21FLTLHR	**ENR:**	-	**Latitude:**	30.5506
County:	WASHINGTON	**WBID:**	555	LAKE		**Longitude:**	-85.5697
Receiving Body of Water:	-					**RQ-**	2023-01-09-50

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Jade Burtchett	x		x		
Chris Green		x		x	x

Sampling Equipment					
x	Sample Container			Carboy	
	Dipper			Van Dorn	
	Syringe			Pole	
Syringe Lot#	*1091364*		**Filter Lot#**	*17347262*	
Secchi Equipment ID:	*#2*				

Collection Method			
	Wading		**Canoe/Kayak**
	From Shore		**Electric Motor**
		x	**Gasoline Motor**
Depth Measured With	*Sonar*		

Water Level:	*Normal*
Flow:	*NA*
Matrix:	*Fresh*
Tide Stage:	
High Tide:	
Low Tide:	
Photos:	*Yes*
Meter ID:	*154177*
Depth Gauge ID:	**depth_gauge**

Time Zone	Time	Total Depth (m)	Sample Depth (m)	DO (mg/L)	DO (%SAT)	Temp. (°C)	pH	Secchi Disk (m)	Sp COND (µmhos/cm)	Salinity (PPTh)
EST	1215	6	0.3	6.05	94.1	31.6	4.75	4.2	14.3	0
	1212		2	6.76	90.6	30.7	4.68		14.3	0.01
	1215		5.5	3.85	50.7	29.7	4.54		15.8	0.01

Biological Samples Collected: HA LVI

SBIO Visit ID: **HA ID:** **RPS ID:** **Macrophyte ID:** **LIMS Sample ID In The Macrophyte Module:**

Parameter Suite	Parameter Methods (LIMS Test Codes)			Preservation Type		Lot#	Expiration Date	pH Check
Microbiology	**E. coli**			**ICE**				
Chlorophyll	**CHLSUITE-W**			**ICE**				
Physical/Aggregate Nutrients	**ALKALINITY, TURBIDITY, W-F, W-TSS**			**ICE**				
	W-CL-IC, W-COLOR, W-SO4-IC, W-TDS			**ICE**				
Filtered Nutrients	**W-PO4-F**	**Field Filtered 0.45 µm Filter**		**ICE**		Syring Lot#:1091364; Filter Lot#:17347262		
Acid Preserved Nutrients	**W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP**			**ICE**	**H2SO4***	*SA3013020*	*01/25/2024*	*H2SO4 pH<2*
Metals	**W-ICPMS**	**W-ICP**	**W-HARD**	**ICE**		NA2230040	09/01/2024	
Organics (LC)	**W-E8321-DI**	**W-E8321-MS**			**MCAA*** **			
Macroinvertebrates								
Organics (GC)				**Ice**				
	W-PSNP-TQ	**W-TR-SQ-R**						
Molecular								
Periphyton								
Phytoplankton								
BOD								
DOC								
Other(s)								

*2.0 ml of H2SO4 Used Unless Noted Otherwise

SyringLot# **FilterLot#**

Field Comments:	Clear		
Comments on COC:			
Relinquish Date:	07/25/2023	**Signature:**	

LIMS EVENT ID: _____ **WIN Import ID:** _____

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ (Initials/Date)

QC Station ID, Field Parameters In LIMS DMT: _____ (Initials/Date)

Save Field Sheets on Network: _____ (Initials/Date)

Migrate Data to WIN: _____ (Initials/Date)

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ **MACROPHYTE ID:** _____ LATITUDE: _____

COUNTY: Washington STORET #: _____ LONGITUDE: _____

DATE: 07/25/23 TIME: _____ SAMPLING AGENCY: 21FLTLAR

LAKE NAME: Gap Lake WBID: _____

FIELD ID/NAME: _____ LAKE SIZE: _____ 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)
60				25	15		

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)

LDI: _____

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 18	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 16	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 16	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:							
Mid-Depth:							
Bottom :							

Meter ID: _____

Clarity: ☐ Clear ☐ Opaque ☐ Turbid ☑ Slightly Turbid

Color: ☑ Clear ☐ Tannic ☐ Green

SECCHI (M) _____ Total Station Depth (M) _____

VOB ☐

Sediment Type: (may check more than one)

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

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

Sample Taken? ☑ Yes ☐ No

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: J. Burfchett **SIGNATURE:** _____ **DATE:** 07/25/23

LIMS ID 2426542

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Gap Lake	County: Washington	Date: 07/25/23
Analyst: M. J. Burchett	Signature:	STORET:

Except where noted as "sp." species level identification required. *Genera that may require lab verification* lants 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					
Alternanthera philoxeroides					
Andropogon sp.					
Azolla filiculoides (A. caroliniana)					
Baccharis sp.					
Bacopa caroliniana		✓	✓	✓	
Bacopa monnieri					
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi			✓		
Cabomba caroliniana					
Casuarina equisitifolia					
Centella asiatica					
Cephalanthus occidentalis					
Ceratophyllum demersum					
Chara sp.					
Cladium jamaicense					
Cliftonia monophylla					
Colocasia esculenta					
Commelina					
Crinum americanum					
***Cyperus alternifolius** (C. involucratus)					
Cyperus articulatus					
Cyperus haspan					
*Cyperus lecontei					
*Cyperus polystachyos					
*Cyperus odoratus					
*Cyperus surinamensis					
Cyrilla racemiflora					
Decodon verticillatus					
Diodia virginiana					
*Echinochloa crus-galli					
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Egeria densa					
Eichhornia crassipes					
*Eleocharis baldwinii					
*Eleocharis					
Eleocharis cellulosa					
Eleocharis equisetoides					
Eleocharis interstincta					
*Eriocaulon compressum			✓		✓
*Eriocaulon decangulare					
Eupatorium capillifolium					
*Fuirena					
Fuirena scirpoidea					
Gordonia lasianthus					

SPECIES	3	6	9	12	Collected? (√)
Habenaria repens					
Hydrilla verticillata					
Hydrocotyle sp.					
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					
*Ludwigia linearis					
*Ludwigia octovalvis					
***Ludwigia peruviana**					
*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					
Eriocaulon sp.			✓		✓

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	✓	✓	✓		
*Myriophyllum heterophyllum						**Salvinia minima**					
*Myriophyllum laxum						Sambucus canadensis					
*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)					
Nuphar sp.	✓		✓	✓		Scirpus cyperinus					
Nymphaea odorata	✓	✓	✓	E		*Sesbania					
Nymphoides aquatica						Solidago sp.					
Nyssa sylvatica var. biflora						Sparganium americanum					
Orontium aquaticum						Spartina bakeri					
Osmunda cinnamomea						Spirodela polyrhiza					
Osmunda regalis						Taxodium sp.	E ✓	✓	✓	✓	
Panicum hemitomon	✓	E	E	✓		Thalia geniculata					
Panicum repens						Thelypteris palustris					
Paspalidium geminatum						Triadenum virginicum			✓		
*Paspalum repens						Typha sp.					
Paspalum urvillei						**Urochloa mutica (Brachiaria mutica)**					
Peltandra sp.						~~*Utricularia gibba (U. biflora)~~	E ✓			E ✓	
Persea sp.						*Utricularia floridana	✓	E	✓	E ✓	
Pennisetum purpureum						*Utricularia foliosa					
Phragmites australis						*Utricularia inflata					
Pinus elliottii						*Utricularia purpurea					
Pistia stratioides						*Utricularia cornuta					
Pluchea sp.						*Utricularia radiata					
*Polygonum glabrum (densiflorum)						Vallisneria americana					
*Polygonum hydropiperoides						*Websteria confervoides	E ✓	✓		E	
*Polygonum punctatum						**Wedelia trilobata (Sphagneticola trilobata)**					
*Polygonum						Wolffiella spp.					
Pontederia cordata	✓	✓	✓	✓		Woodwardia virginica					
*Potamogeton diversifolius						Xyris sp.					
*Potamogeton illinoensis						Zizania aquatica					
*Potamogeton pusillus						Zizaniopsis milacea					
*Potamogeton pectinatus (Stuckenia pectinatus)						U. gibba			✓	✓	
Proserpinaca pectinata											
*Rhexia											
*Rhynchospora corniculata											
*Rhynchospora inundata											
Rhynochospora tracyi											
Ricciocarpus natans											
Sabal palmetto											
Sacciolepis striata											
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia	✓	✓	✓	✓							
Sagittaria latifolia											

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

STORET STATION NUMBER: 631CHA0020	DATE (M/D/Y): 07/25/23	LAKE NAME: Gap Lake	FIELD ID / NAME:
ECO-REGION:	COUNTY: Washington	SAMPLING LOCATION/DESCRIPTION:	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 20	Secchi >3 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 20	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 (duckweed, 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 18	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 8	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 16	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 16	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 18	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	116	COMMENTS:

ANALYSIS DATE: 7/25/23	ANALYST: J. Burtoft	SIGNATURE:

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: 154177 RQ- 2023-01-09-50 Project: SMP 2023

Notes: (1) Always wait for meter to stabilize before recording any readings.
(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 7/21/23

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro-meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	J.Burtchell	7/25/23	757	21.1	759.6	8.9	8.89	100.0	—	1.00	(P) F	(D) / F
ICV	"	"	808	22.2	759.6	8.7	8.64	99.2	-	-	(P) F	(L) F
CCV	"	"	1430	22.5	759.6	8.7	8.77	101.4	-	-	(P) F	(L) F
CCV											P / F	L / F

DO Acceptance criteria from Table ± 0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	J.Burtchell	7/25/23	800	22b184A	10/23	1000	1000	(P) F	(D) F
ICV	"	"	810	220793	07/24	100	100.7	(P) F	(L) F
CCV	"	"	1432	"	"	100	100.1	(P) F	(L) F
CCV								P / F	L / F

Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	J.Burtchell	7/25/23	802	230309E	09/24	7.01	21.5	7.02	-20.7	(P) F	(D) F
Calibr.	"	"	804	230309D	09/24	4.00	22.0	4.00	156.8	(P) F	(D) F
Calibr.	"	"	806	220604A	12/23	10.03	22.1	10.03	-184.4	(P) F	(D) F
ICV	"	"	812	"	"	10.03	22.0	10.00	-184.8	(P) F	(L) F
CCV	"	"	1435	230309D	09/24	4.00	22.7	4.08	161.4	(P) F	(L) F
CCV										P / F	L / F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50; mV pH 4 Range +180 ± 50; mV pH 10 Range -180 ± 50;
If mV are recorded: slope from 7 to 10 163.7, slope from 4 to 7 177.5 (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? (YES) / NO / NA (not surf. water project)
If **YES**, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 7/21/23
If **NO**, what will be used? (circle one) **Secchi Disk Line / Sonar** Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	J.Burtchell	7/25/23	754	0.000	0.001	(P) F	(D) / F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria ± 5 % or ± 0.05m, whichever is greater.

COMMENTS: