LVI

Proficiency testing

Site Name Halfmoon Lake Sample Date 6/27/19

WBID 2781A WIN ID 6ICE0106 RQ 2019-06-~~24~~-03-43

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	KWM JUL 03 2019	~~LB~~ 07/12/19
Create SBIO station visit	KWM JUL 03 2019	n/a
Vascular Entry (add LIMS ID)	KWM JUL 03 2019	~~LB~~ 07/12/19
Lake Observation Sheet Entry	KWM JUL 03 2019	~~LB~~ 07/12/19
Authorize SBIO data	~~LB~~ 07/12/19	n/a
Scan all sheets to 21FLCEN folder	~~LB~~ 08/12/19	n/a
LIMS/WIN migration	LMD 8/23/19	n/a
File in cabinet		n/a

Comments/notes:

Enter as reference lake ★

648 14146

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
~~STRATEGIC MONITORING PROGRAM~~ FIELD SHEET
LVI Proficiency

January 2019

Data Qualified? Yes / ~~No~~

WIN Station Name: Halfmoon Lake @ Center **Date:** 06/27/2019 (mm/dd/yyyy)

WIN/ Field ID: G1CE0106 **WBID:** 2781A **Latitude:** 29.151985 (Decimal Degrees)

County: Marion **ORG ID:** 21FLCEN **Longitude:** -81.830106 (Decimal Degrees)

Receiving Body of Water: _____ **RQ-2019-** 06-03-43

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Kathryn March	✓		✓		
Leif Boman		✓		✓	✓
Kalina Warren					

Sampling Equipment
- ☐ Sample Container ☐ Van Dorn ☐ Pole
- ☐ Carboy ☑ Syringe
- ☐ Dipper ☐ Other
- Depth Measured with ~~Secchi Disk~~ Line / Meter
- Equipment ID Leadfoot, Knothead, Crusty/Bucket, Mucky/Trap

Collection Method
- ☐ Wading ☐ Canoe/Kayak
- ☐ From Shore ☐ Electric Motor
- ☐ Other _____ ☑ Gasoline Motor

Water Level: Dry/ Pooled/ Low / ~~Normal~~ / High / Flooded **Meter ID#** **Matrix:** Fresh / Marine / DI

Photos: ~~Yes~~ / No **Flow:** No Flow / Intestitial / Flowing / ~~NA~~ **Tide:** Rising/ Falling/ Slack/ ~~NA~~ **Tide Times:** High Low

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPTh)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1215	5.5	0.3	1.0	7.60	104.1	8.77	0.04	35	32.00
~~EEN~~			5.0		0.33	4.2	5.89	0.04	88	27.73

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

SBIO ID Numbers: SBIO-ID: 79903 HA-ID: RPS-ID: — Macrophyte-ID: 11403 LIMS#: 2099352

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_2SO_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-Cl-IC / 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-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-E8321-DI ☐ W-E8321-MS	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-E8321-DI ☐ W-PCL-SQ-R ☐ WE8321-MS ☐ W-CARB-AA	☐ Ice ☐ Other			
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C	☐ Ice			

H2SO4
LOT# SA7163030
EXP: 10/30/2019
Place Preservative Sticker(s) Here (If Available)

Notes:

Signature: KMarch **Date:** 6/27/19

WIN ID / Field ID → Halfmoon Lake @ Center

G1CE0106

LIMS EVENT ID: CENT-DIST-2019- 06-28-01

Enter Field Parameters, Verify Station ID in LIMS DMT: KWM JUL 03 2019 (Initials/Date) QC Station ID, Field Parameters in LIMS DMT: ~~LB 08/12/19~~ 07/12/19 (LB) (Initials/Date)

Scan/Save Field Sheets LB 08/12/19 (Initials/Date) Migrate Data to WIN: CMD 8/27/19 (Initials/Date) Verify Data in WIN: _____ (Initials/Date)

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYTE ID: _____ LATITUDE: _____

COUNTY: _____ STORET #: GLEE0195 LONGITUDE: _____

DATE: _____ TIME: _____ SAMPLING AGENCY: _____

SITE NAME: Halfmoon 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)
65				35			

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 18	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 18	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:	0.3						
Mid-Depth:							
Bottom :	5.0						

Meter ID: Bettyer

Clarity: ☑ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid

Color: ☐ Clear ☑ Tannic ☐ Green

SECCHI (M) 1.0 VOB ☐

Total Station Depth (M) 5.5

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 : hot, sunny, breezy

SAMPLING TEAM: Katie March, Leif Boman, Katina Warren

SIGNATURE: K March

DATE: 6/27/19

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Lake, Halfmoon | County: Marion | Date: 6/27/19

Analyst: Kalina Warren, Katie March | Signature: KMarch | STORET: 21FLCEO106

Except where noted as "sp." species level identification required. *Genera that may require lab verification*
Plants in bold= FLEPPC invasive exotic. Leif Boman

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	/				
Amaranthus australis					
Andropogon sp.					
Azolla filiculoides (A. caroliniana)					
Baccharis sp.	/	/			
Bacopa caroliniana					
Bacopa monnieri					
Bidens alba	/				
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi	/	/	/		
Cabomba caroliniana					
Canna					
Centella asiatica					
Cephalanthus occidentalis	/	/	/	C	
Ceratophyllum demersum					
Chara sp.					
Cicuta maculata					
Cinnamomum camphora					
Cladium jamaicense	/	/	/	/	
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)					
Eichhornia crassipes					
*Eleocharis					
Eleocharis cellulosa					
*Eleocharis elongata					
Eleocharis equisetoides					
Eleocharis interstincta					
Eleocharis submersed viviparous		/		/	
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium	/		/	/	
Fraxinus					
Fuirena scirpoides					
Gordonia lasianthus					
Habenaria repens					
Hibiscus coccineus					
Hibiscus grandiflora	/	/	/	/	
Hydrilla verticillata					
Hydrocotyle sp.	/	/	/		
Hygrophila polysperma					
Hymenocallis sp.					
*Hypericum fasciculatum	/	/	/	/	3
*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 grandiflora					
*Ludwigia hexapetala					
*Ludwigia leptocarpa		/	/	/	
Ludwigia (native)					
*Ludwigia octovalvis					
***Ludwigia peruviana**					
*Ludwigia repens					
Ludwigia suffruticosa					
Luziola fluitans (Hydrochloa carolinensis)					
Magnolia virginiana					
Mayaca fluviatilis					
Melaleuca quinquenervia					
Micranthemum glomeratum					
Micranthemum umbrosum					
Mikania scandens			/	/	
Mimosa pigra					
Myrica cerifera	/	/	/	/	

Amended August 2018 for 21FLCEN

* No clear dominant for Section 6

Halfmoon

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

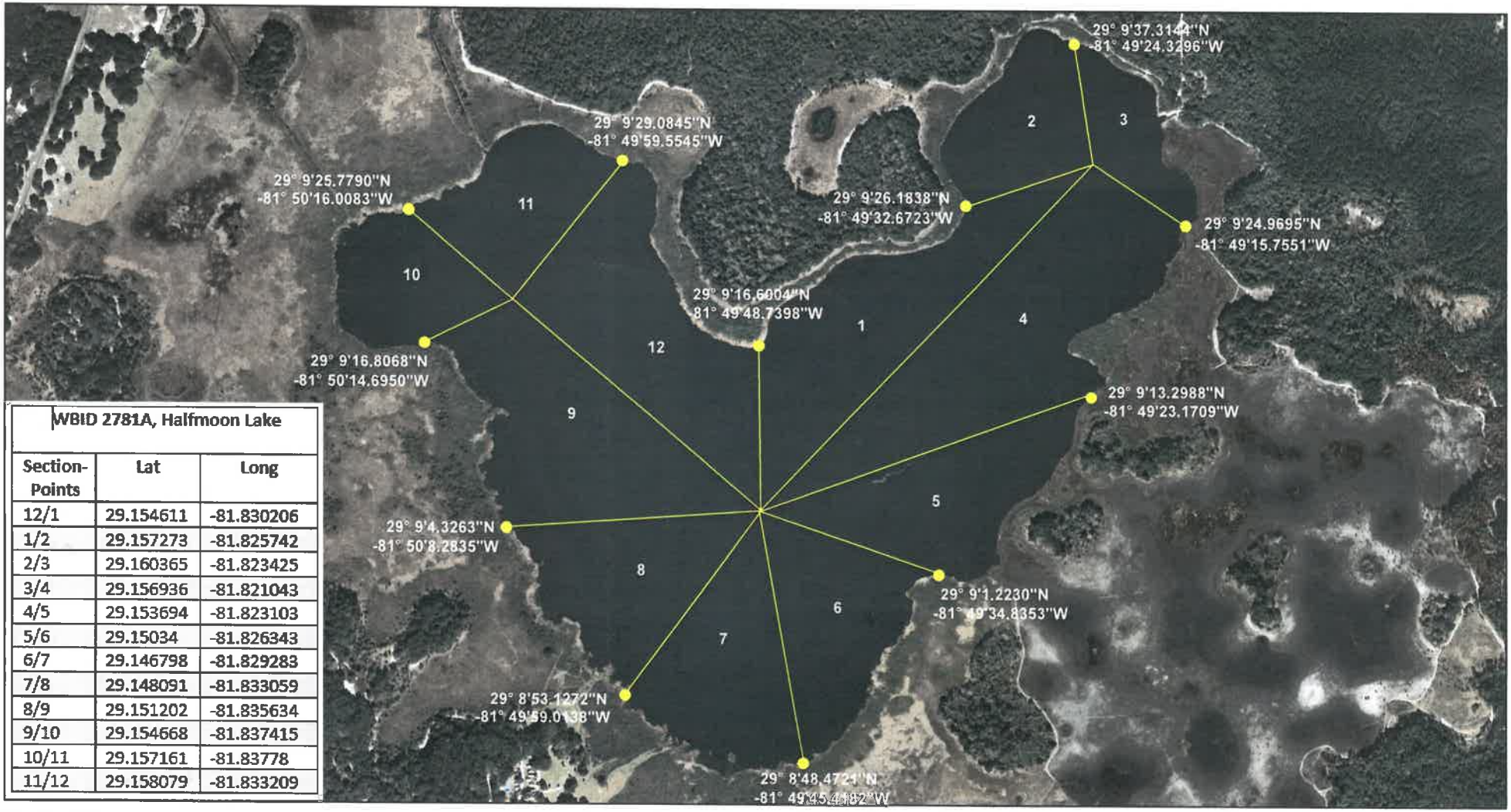
Site: Lake

Date: Ma 127 12019

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

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

Halfmoon Lake, WBID 2781A (Marion Co.)



WBID 2781A, Halfmoon Lake		
Section-Points	Lat	Long
12/1	29.154611	-81.830206
1/2	29.157273	-81.825742
2/3	29.160365	-81.823425
3/4	29.156936	-81.821043
4/5	29.153694	-81.823103
5/6	29.15034	-81.826343
6/7	29.146798	-81.829283
7/8	29.148091	-81.833059
8/9	29.151202	-81.835634
9/10	29.154668	-81.837415
10/11	29.157161	-81.83778
11/12	29.158079	-81.833209

May 10, 2019

1:9,028

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, FREAC

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