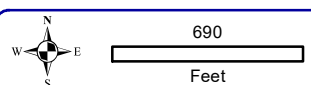


Kettle Moraine State Forest



Onterra LLC
Lake Management Planning
135 South Broadway Suite C
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

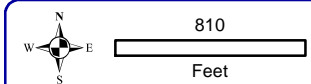
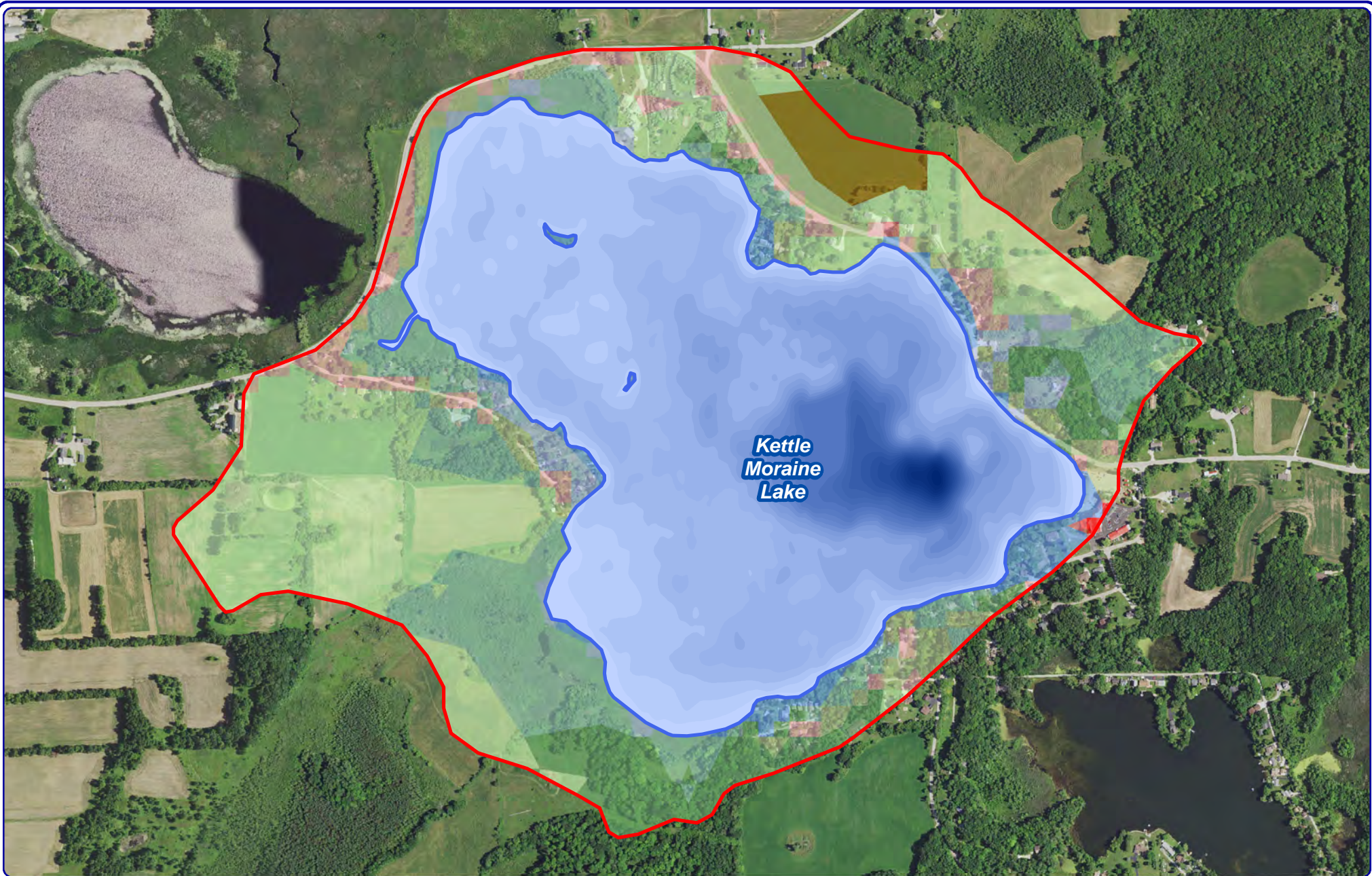
Sources:
Roads & Hydro: WDNR
Map Date: Dec 8, 2016
Filename: KML_FDL_AIS-EPP_Dec16_Map1.mxd

- Public Access
- Swimming Beach
- Water Quality Sampling Location

Legend

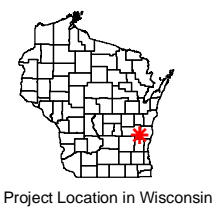
- Kettle Moraine Lake ~ 227 total acres
WDNR Definition
- Point-intercept Sample Location
54 meter points
- WDNR Managed Lands

Map 1
Kettle Moraine Lake
Fond du Lac County, Wisconsin
Project Location & Lake Boundaries



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 Lake Management Planning
 815 Prosper Road
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

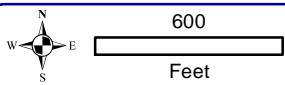
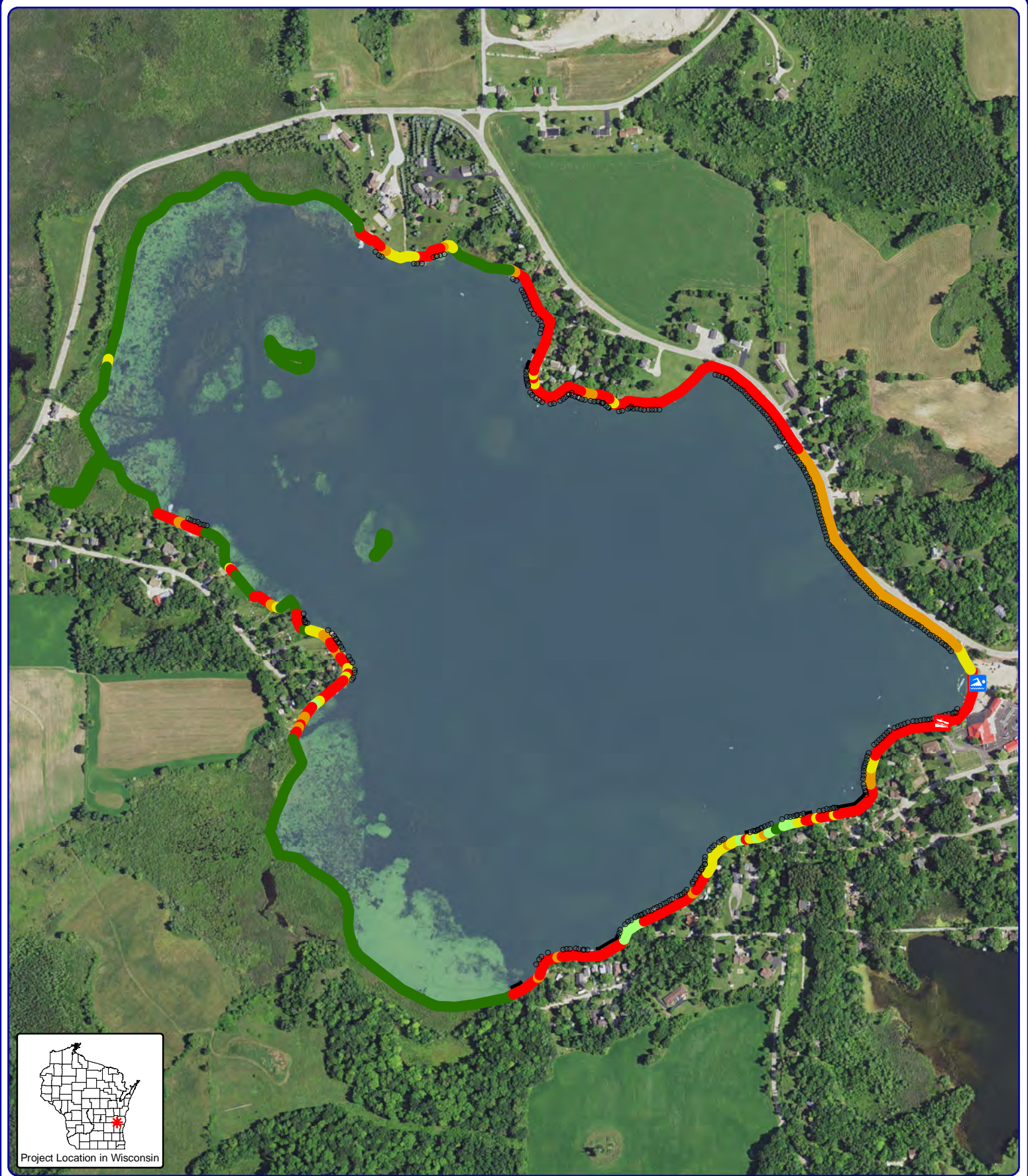
Sources:
 Hydro: WDNR
 Bathymetry: WDNR
 Orthophotography: NAIP 2015
 Land Cover: NLCD 2011
 Watershed Boundaries: Onterra 2017
 Map Date: December 4, 2017
 Filename: KM_WS.mxd



- Legend**
- Land Cover Types**
- Forest
 - Forested Wetlands
 - Wetlands
 - Open Water
 - Rural Open Space
 - Pasture/Grass
 - Row Crops
 - Rural Residential
 - Urban - Medium Density
 - Urban - High Density

Kettle Moraine Lake Watershed Boundary

Map 2
 Kettle Moraine Lake
 Fond du Lac County, Wisconsin
**Watershed Boundaries
 & Land Cover Types**



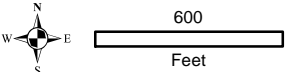
Onterra LLC
 Lake Management Planning
 815 Prosper Rd
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

Sources:
 Roads and Hyrdo: WDNR
 Shoreline Assessment: Onterra, 2017
 Map Date: November 3, 2017
 Filename: KM_ShorelandCondition_2017.mxd

Legend

- Natural/Undeveloped
- Developed-Natural
- Developed-Semi-Natural
- Developed-Unnatural
- Urbanized
- Seawall
- Rip-Rap
- Masonry/Wood/Metal

Map 3
 Kettle Moraine Lake
 Fond du Lac County, Wisconsin
**2017 Shoreline
 Condition Assessment**



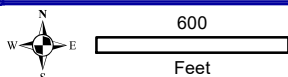
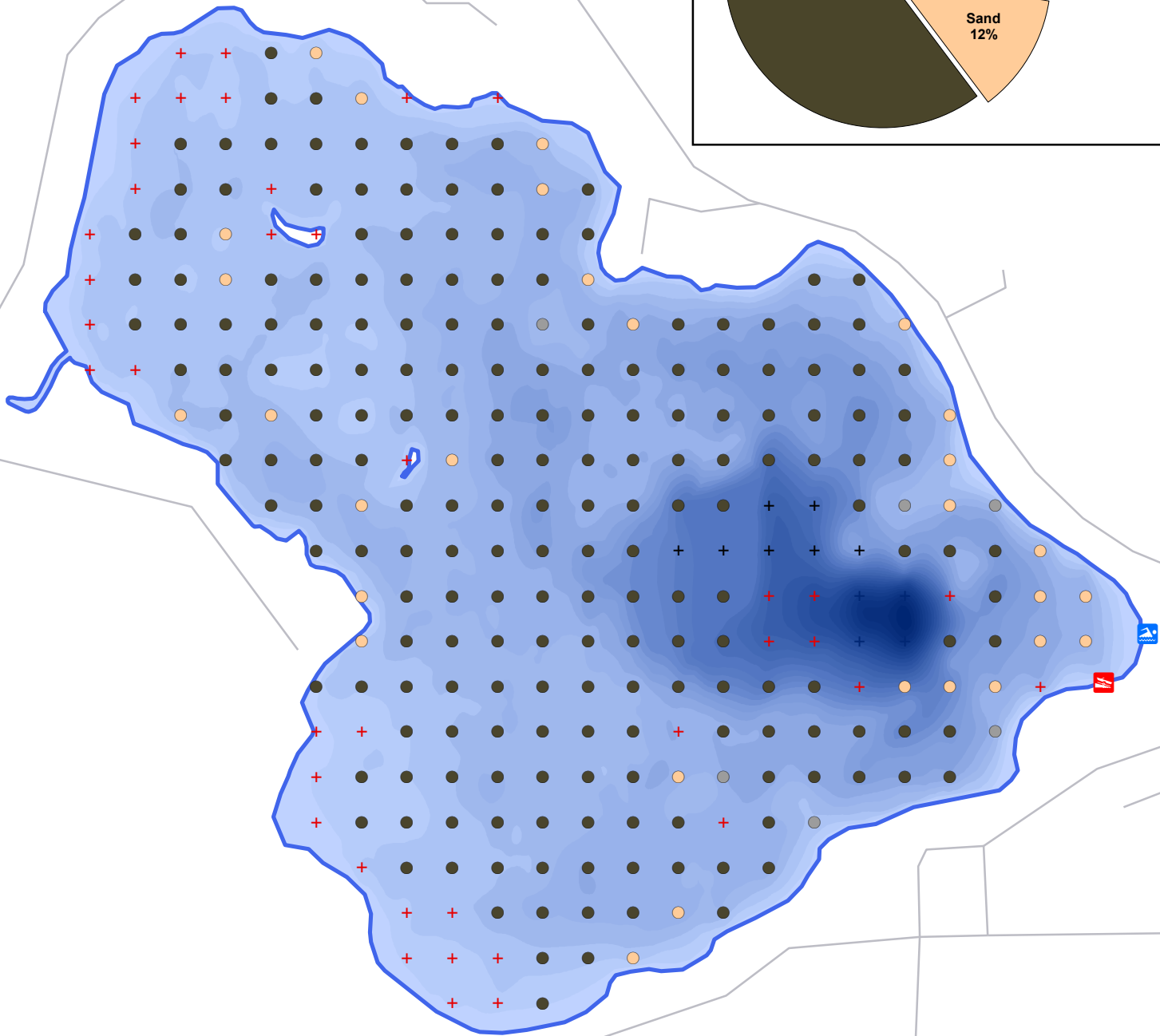
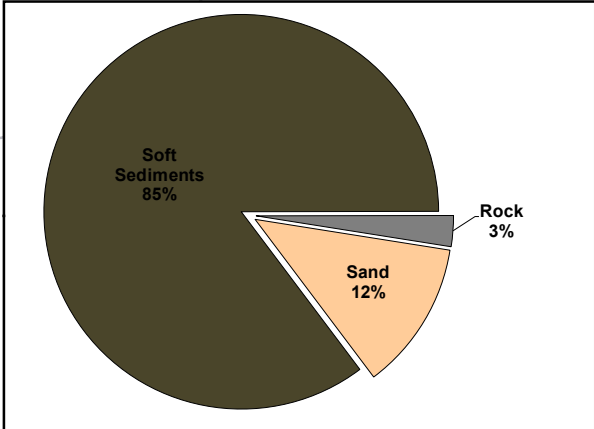
Onterra LLC
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 815 Prosper Rd
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

Sources:
 Roads and Hyrd: WDNR
 CWH Survey: Onterra, 2017
 Map Date: November 3, 2017
 Filename: KM_CWH_2017.mxd

Legend

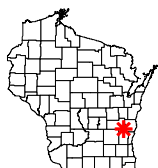
- | | | |
|-------------------------------|-------------------------------|-------------------------------------|
| 2-8 Inch Pieces | 8+ Inch Pieces | Cluster of Pieces |
| ● No Branches | ● No Branches | ● No Branches (<i>None</i>) |
| ● Minimal Branches | ● Minimal Branches | ● Minimal Branches (<i>None</i>) |
| ● Moderate Branches | ● Moderate Branches | ● Moderate Branches (<i>None</i>) |
| ● Full Canopy (<i>None</i>) | ● Full Canopy (<i>None</i>) | ● Full Canopy (<i>None</i>) |

Map 4
 Kettle Moraine Lake
 Fond du Lac County, Wisconsin
**2017 Coarse Woody
 Habitat Survey Results**



Onterra LLC
 Lake Management Planning
 815 Prosper Rd
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: WDNR, 2018
 Map Date: November 14, 2018 JMB
 Filename: Horsehead_SedimentPI_2018.mxd

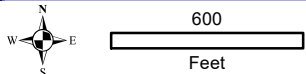
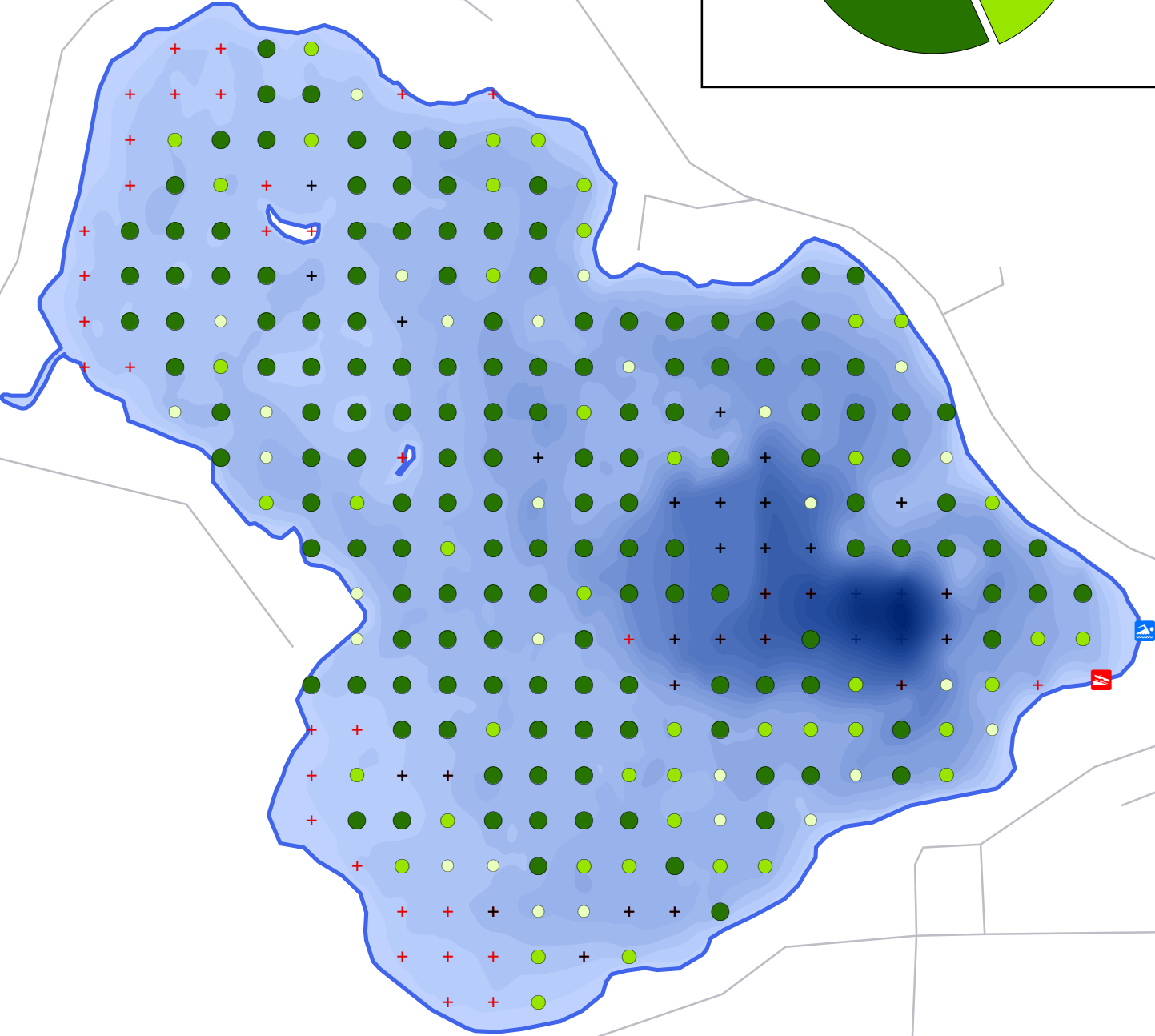
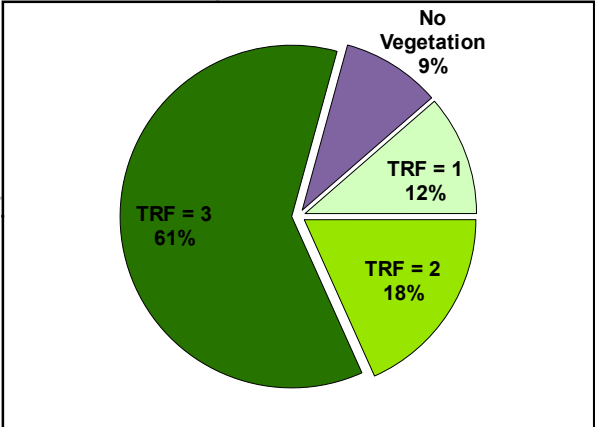


Project Location in Wisconsin

Legend

- Soft Sediments
- Rock
- Sand
- + No Data
- + Non-Navigable

Map 5
Kettle Moraine Lake
 Fond du Lac County, Wisconsin
2018 PI Survey:
Substrate Types



Project Location in Wisconsin

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 Lake Management Planning
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 920.338.8860
 www.onterra-eco.com

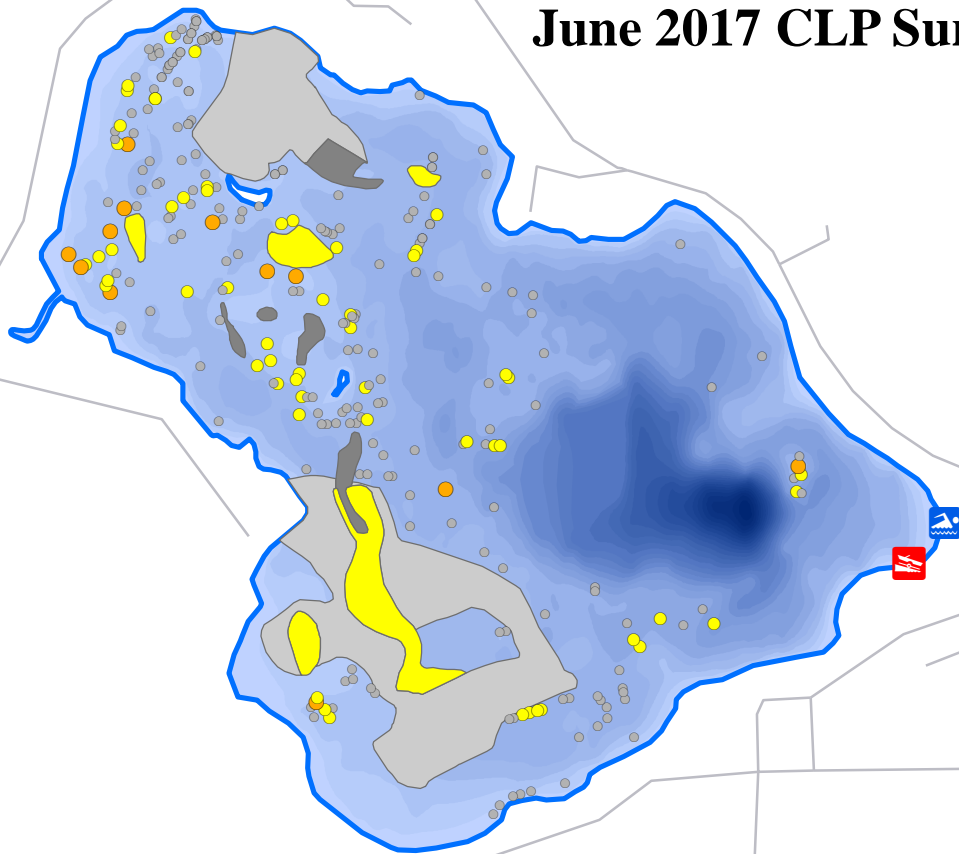
Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2018
 Map Date: November 14, 2018 JMB
 Filename: KM_TRFPI_2018.mxd

Legend

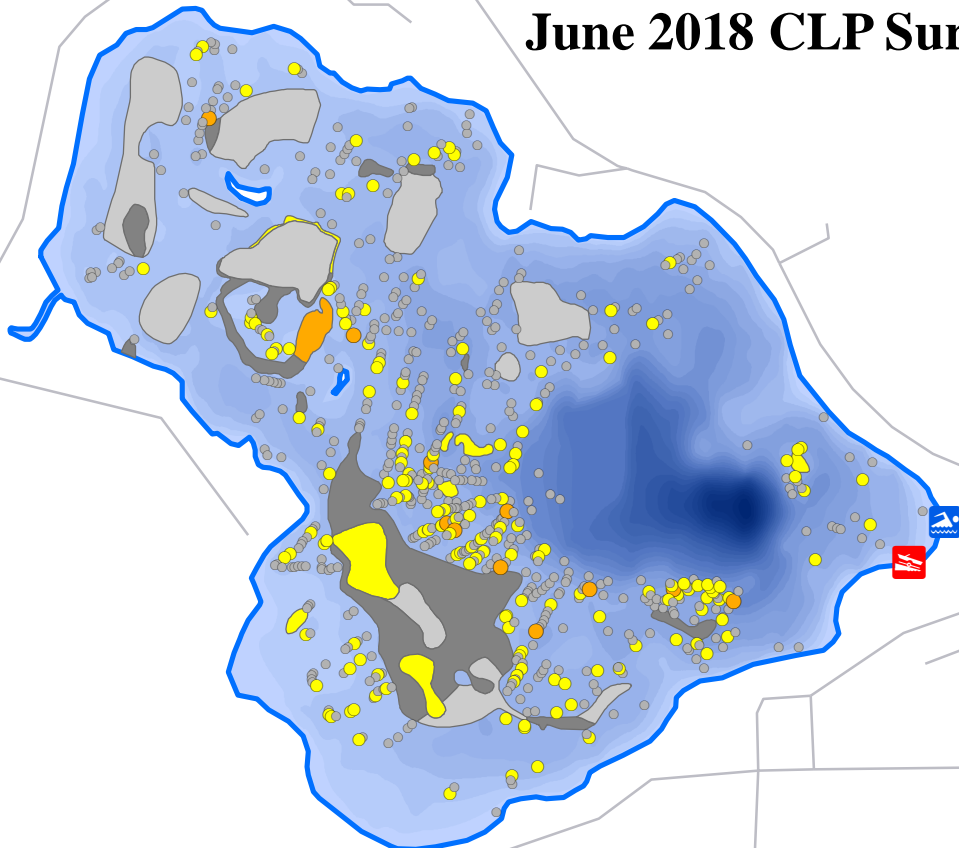
- Total Rake Fullness = 1
- Total Rake Fullness = 2
- Total Rake Fullness = 3
- + No Vegetation
- + Non-Navigable

Map 6
Kettle Moraine Lake
 Fond du Lac County, Wisconsin
2018 PI Survey:
Aquatic Plant Distribution

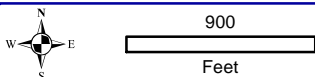
June 2017 CLP Survey Results



June 2018 CLP Survey Results



Project Location in Wisconsin



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 Lake Management Planning
 815 Prosper Rd
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

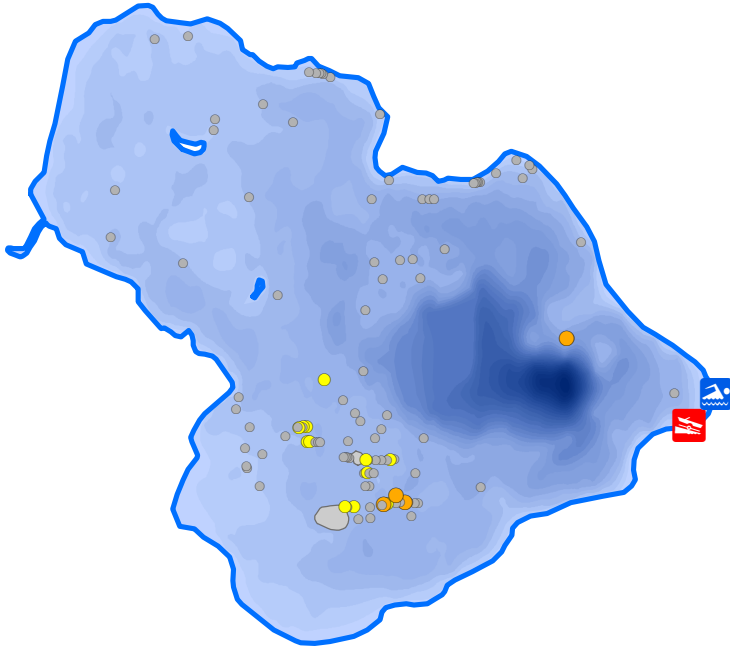
Sources:
 Roads and Hydro: WDNR
 Bathymetry: WDNR - Digitized by Onterra
 Plant Survey: Onterra, 2017-2018
 Map Date: November 14, 2018 JMB
 Filename: KM_CLP_2017-2018.mxd

Legend

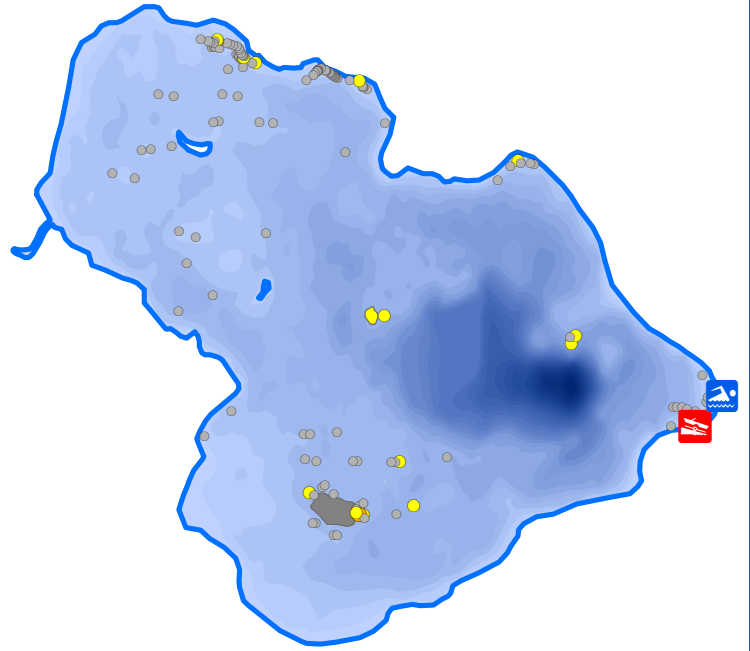
- | | |
|------------------------|----------------------|
| Highly Scattered | Single or Few Plants |
| Scattered | Clumps of Plants |
| Dominant | Small Plant Colony |
| Highly Dominant | |
| Surface Matting (None) | |

Map 8
 Kettle Moraine Lake
 Fond du Lac County, Wisconsin
June 2017 & 2018
CLP Survey Results

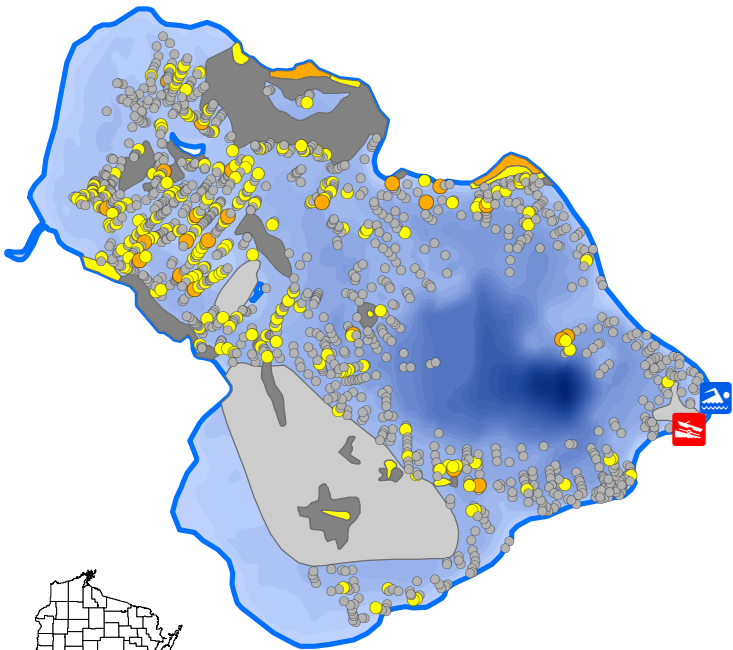
2015 EWMPB



2016 EWMPB

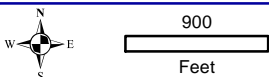
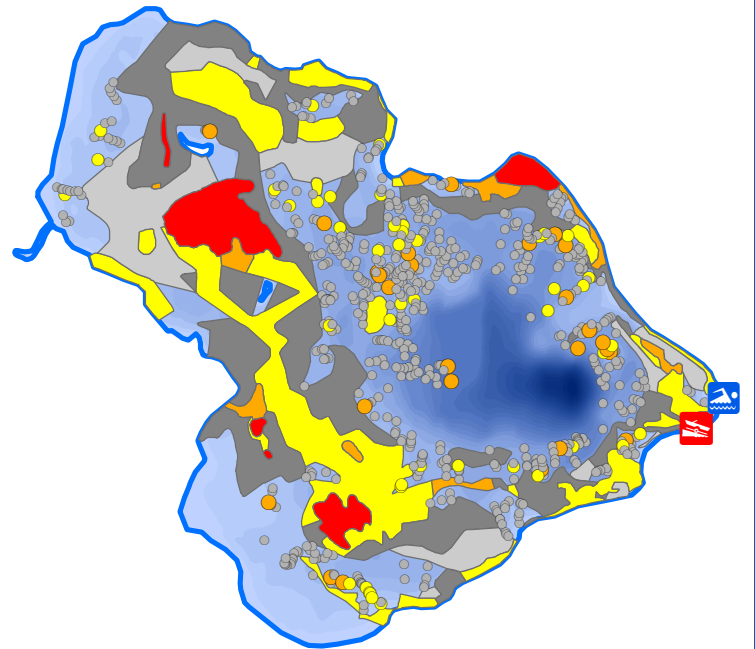


2017 EWMPB



Project Location in Wisconsin

2018 EWMPB



Onterra LLC
 Lake Management Planning
 815 Prosper Rd
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

Sources:
 Roads and Hydro: WDNR
 Bathymetry: WDNR - Digitized by Onterra
 Plant Survey: Onterra, 2015-2018
 Map Date: November 14, 2018 JMB
 Filename: KM_EWMPB_2015-2018.mxd

Legend

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

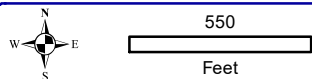
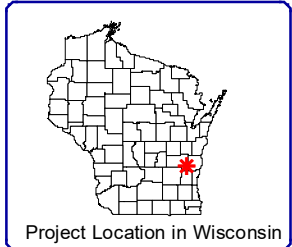
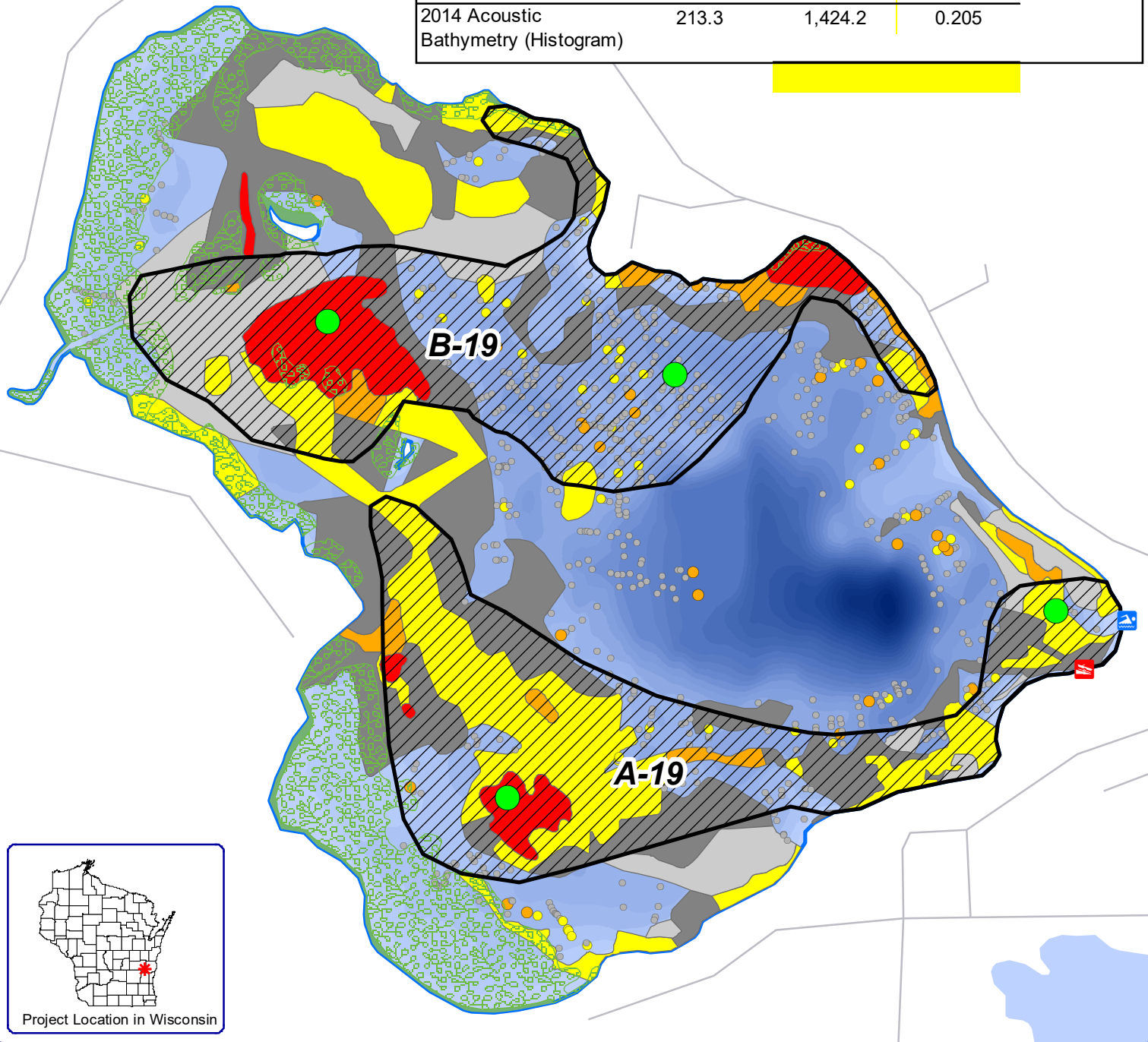
Map 9
 Kettle Moraine Lake
 Fond du Lac County, Wisconsin
2015 - 2018 EWMPB
Survey Results

2019 Preliminary EWM Treatment Areas

Liquid Triclopyr

| Site | Acres | Ave. Depth (feet) | Volume (ac-ft) | Triclopyr PPM ae | Renovate 3 (gallons) |
|------|-------------|-------------------|----------------|------------------|----------------------|
| A-19 | 40.6 | 5.0 | 203.0 | 0.75 | 137 |
| B-19 | 46.7 | 4.0 | 186.8 | 0.75 | 126 |
| | 87.3 | | 389.8 | | 263 |

| Method | Area (acres) | Whole-Lake Volume | Epilimnetic triclopyr (Renovate 3) |
|--------------------------------------|--------------|-------------------|------------------------------------|
| 2014 Acoustic Bathymetry (Histogram) | 213.3 | 1,424.2 | 0.205 |



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 Lake Management Planning
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 www.onterra-eco.com

Sources:
 Roads & Hydro: WDNR
 Bathymetry: Onterra, Spring 2014
 Map Date: January 23, 2019

- Legend**
- Highly Scattered
 - Scattered
 - Dominant
 - Highly Dominant
 - Surface Matting
 - Single or Few Plants
 - Clumps of Plants
 - Small Plant Colony
 - Preliminary Herbicide Application Area
 - Floating-Leaf Plant Community
 - Concentration Sampling Location

Map 10
Kettle Moraine Lake
 Fond du Lac County, Wisconsin

Preliminary 2019 EWM Management Strategy