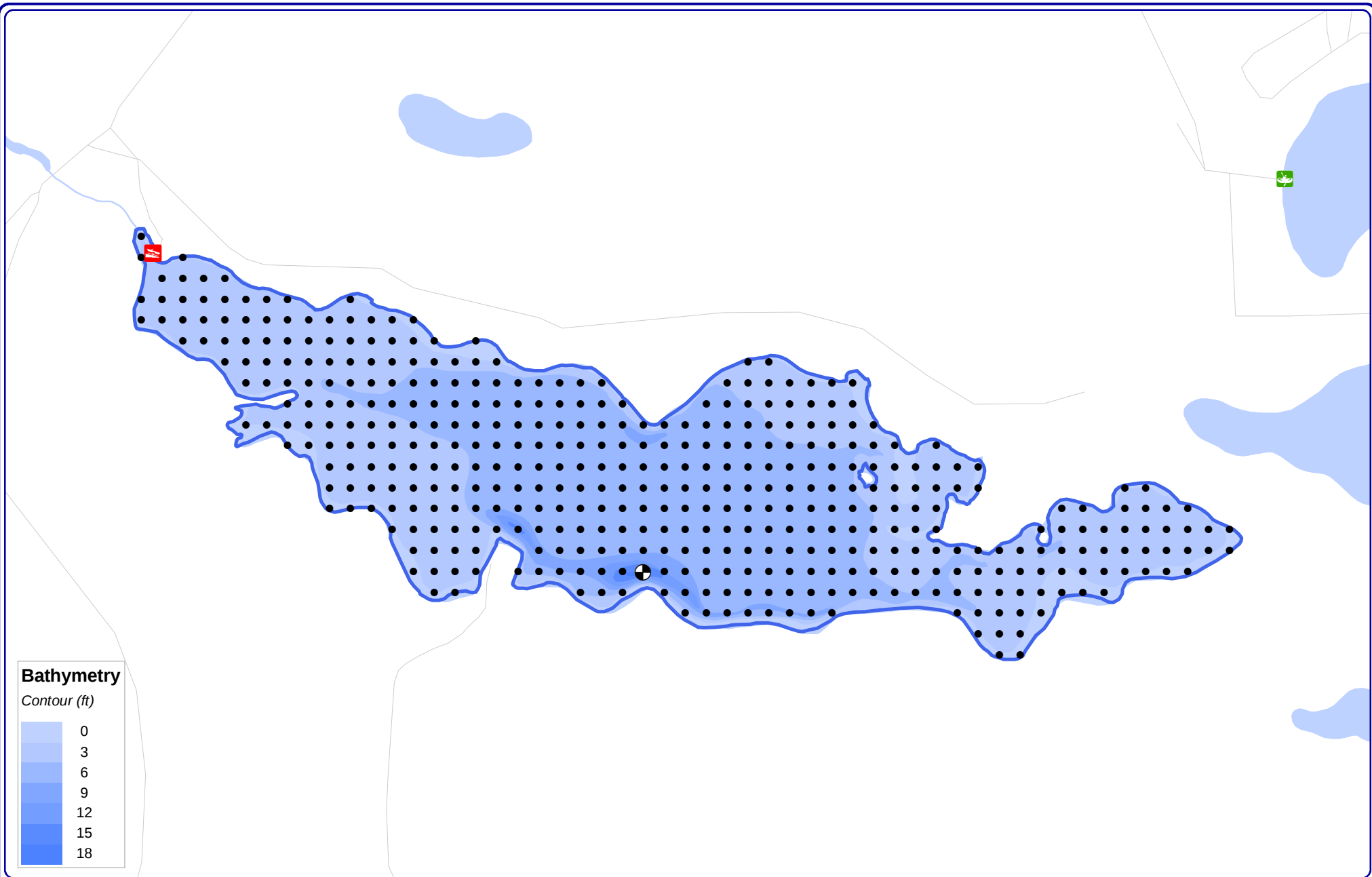
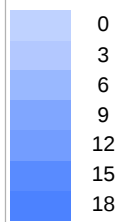




Bathymetry

Contour (ft)



1,000

Feet

Onterra LLC
Lake Management Planning

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

Sources:
Roads and Hydro: WDNR
Map Date: October 2, 2013
Filename: MannVilas_location_proposal.mxd



Project Location in Wisconsin

Legend



Mann Lake ~ 255 acres



Point-Intercept Survey Location
38-meter spacing, 431 total points



Public Access

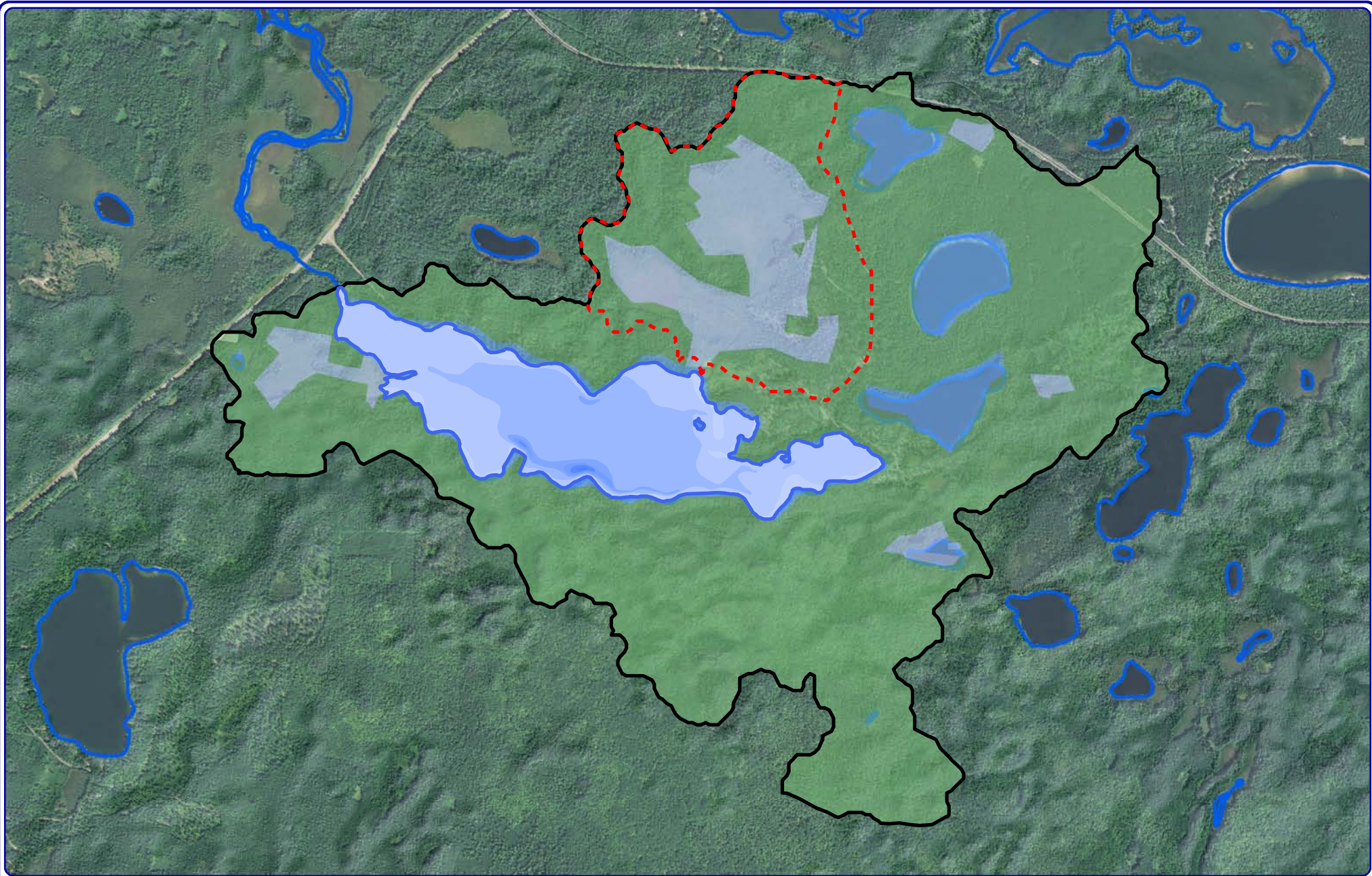


Water Quality Sampling Location

Map 1

Mann Lake
Vilas County, Wisconsin

**Project Location
& Lake Boundary**



2,000

Feet



Project Location in Wisconsin

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

Sources:

Hydro: WDNR
Orthophotography: NAIP, 2013
Watershed: WDNR & Onterra
Land Cover: NLCD 2006
Map date: April 1, 2015
Filename: Map2_MannVilas_Watershed.mxd

Forest

Forested Wetlands

Pasture/Grass

Rural Open Space

Wetland

Open Water

Legend



Watershed Boundary



Tributary Watershed

Map 2

Mann Lake

Vilas County, Wisconsin

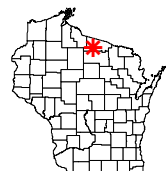
**Watershed and
Land Cover Types**



1,000
Feet

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

Sources:
Hydro and Roads: WDNR
Bathymetry: WDNR, digitized by Onterra
Aquatic Plant Survey: Onterra, 2014
Map Date: October 15, 2014
Filename: Mann_ShorelandCondition_2014.mxd



Project Location in Wisconsin

Legend

- ~ Natural/Undeveloped
- ~ Developed-Natural
- ~ Developed-Semi-Natural
- ~ Developed-Unnatural
- ~ Urbanized

- Seawall**
- Masonry/Wood
- Rip-Rap

Map 3

Mann Lake

Vilas County, Wisconsin

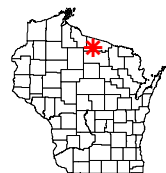
**2014 Shoreland
Condition Assessment**



1,000
Feet

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

Sources:
Hydro and Roads: WDNR
Bathymetry: WDNR, digitized by Onterra
Aquatic Plant Survey: Onterra, 2014
Map Date: October 15, 2014
Filename: Mann_CWH_2014.mxd



Project Location in Wisconsin

Legend

2-8 Inches

- No Branches
- Minimal Branches
- Moderate Branches
- Full Canopy

>8 Inches

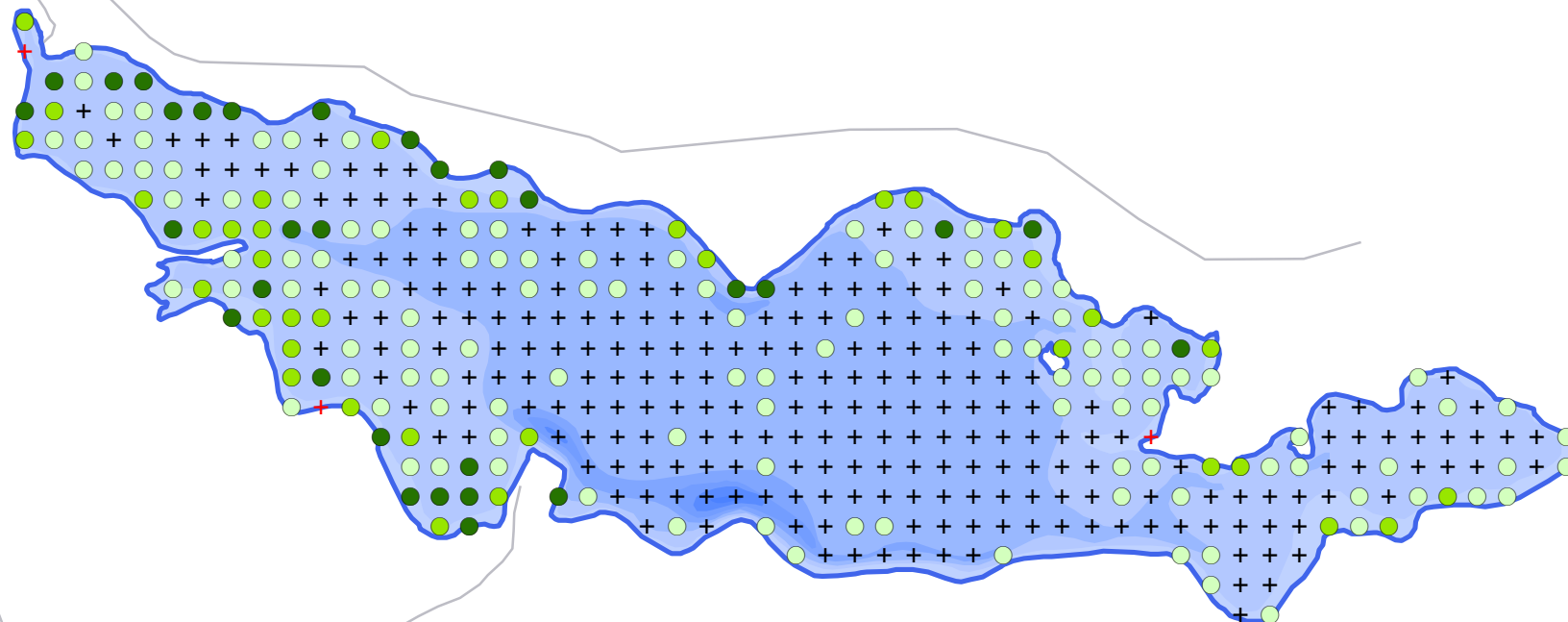
- No Branches
- Minimal Branches
- Moderate Branches
- Full Canopy (None)

Map 4

Mann Lake

Vilas County, Wisconsin

2014 Coarse Woody Habitat Survey Results



1,000
Feet

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

Sources:
Hydro and Roads: WDNR
Bathymetry: WDNR, digitized by Onterra
Aquatic Plant Survey: Onterra, 2014
Map Date: December 15 2014
Filename: Mann_TRFPI_2014.mxd



Project Location in Wisconsin

Legend

2014 Point-intercept Survey

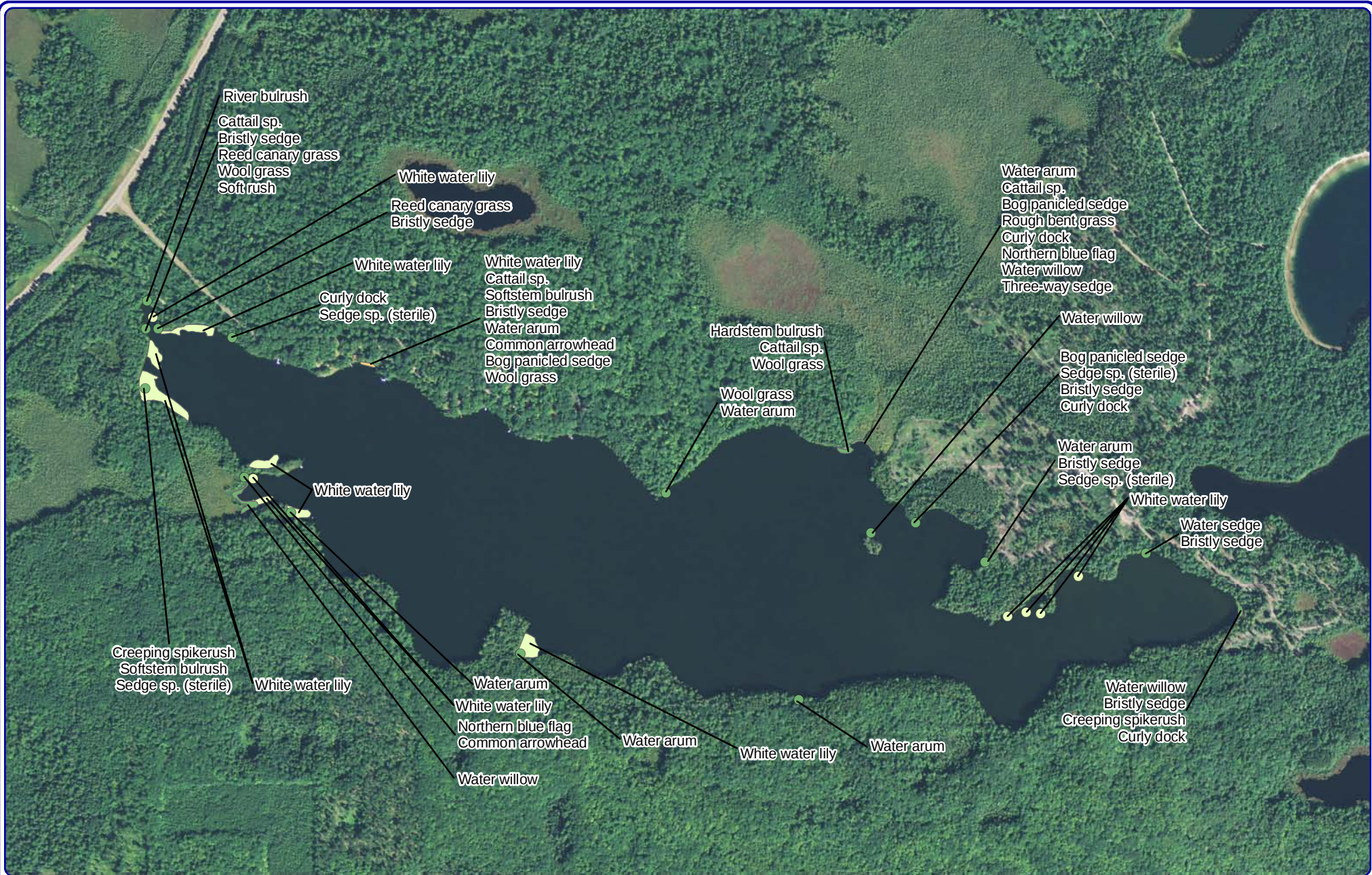
- Total Rake Fullness = 1 + No Vegetation
- Total Rake Fullness = 2 + Non-navigable
- Total Rake Fullness = 3

Map 5

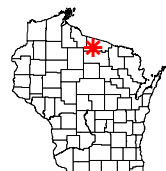
Mann Lake

Vilas County, Wisconsin

**2014 Point-Intercept Survey:
Aquatic Vegetation Distribution**



1,000
Feet



Project Location in Wisconsin

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

Sources:
Hydro and Roads: WDNR
Bathymetry: WDNR, digitized by Onterra
Aquatic Plant Survey: Onterra, 2014
Map Date: October 6, 2014
Filename: Mann_Comm_Summer14.mxd

Legend

Small Plant Communities

- Emergent
- Floating-leaf
- Mixed Floating-leaf & Emergent

Large Plant Communities

- Emergent
- Floating-leaf
- Mixed Floating-leaf & Emergent

Map 6

Mann Lake
Vilas County, Wisconsin

**2014 Community Map
Survey Results**