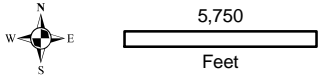


Project Location in Wisconsin



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

Sources:  
 Roads and Hydro: WDNR  
 Bathymetry: WDNR - digitized by Onterra  
 Map Date: September 24, 2013  
 Filename: Map1\_Manitowish\_Location.mxd

- Phase Ia Waterbodies
- Phase Ib Waterbodies
- Phase II Waterbodies
- Phase III Waterbodies

- Legend**
- Phase IV Waterbodies
  - Phase V Waterbodies
  - 2012 Water Quality Sampling Location

- Public Access - Carry-in
- Public Access - Ramp
- Private Access - Ramp
- Dam Location

**Map 1**  
**Manitowish Waters**  
 Chain of Lakes  
 Vilas County, Wisconsin  
**Project Location &**  
**Lake Boundaries**



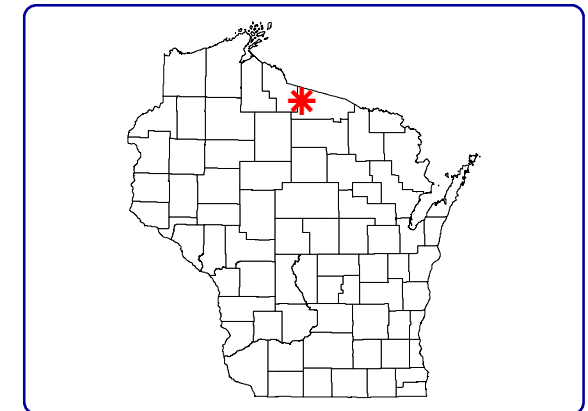
# Map 2

## Manitowish Waters

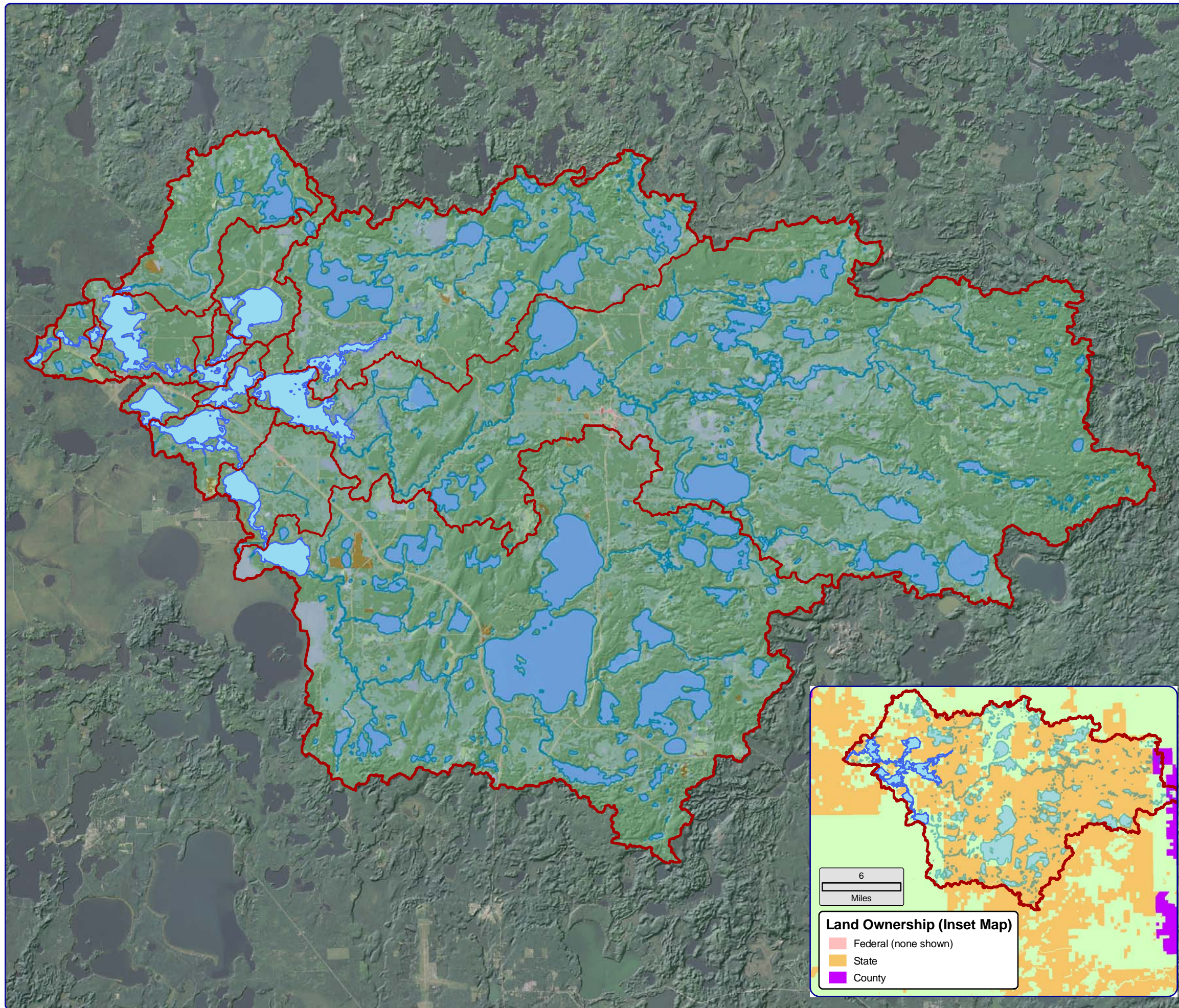
### Chain of Lakes

Vilas County, Wisconsin

## Watershed Boundaries & Land Cover Types



Project Location in Wisconsin



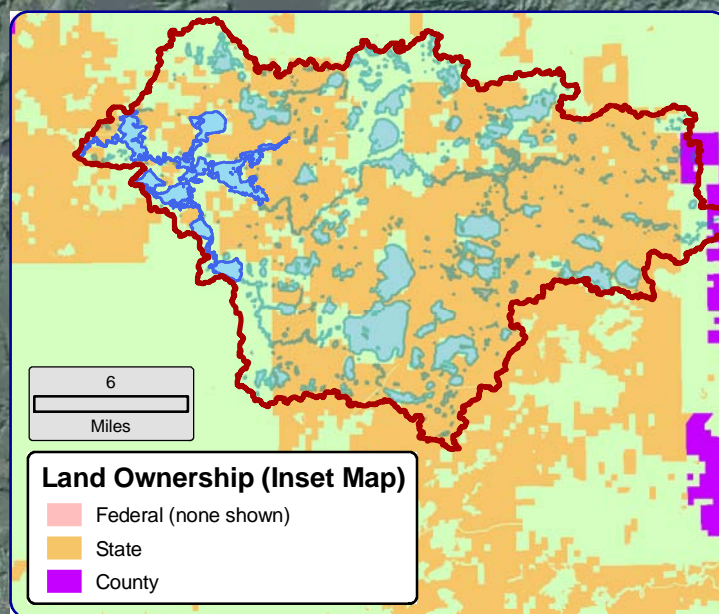
### Legend

- Watershed Boundary
- Land Cover Types**
- Forest
- Forested Wetlands
- Wetlands
- Manitowish Chain of Lakes
- Open Water
- River/Stream
- Pasture/Grass
- Rural Open Space
- Row Crops
- Rural Residential
- Urban - Medium Density
- Urban - High Density



**Sources:**  
 Watershed: WDNR and Onterra  
 Landcover: NCLD, 2006  
 Hydro: WDNR  
 Orthophotography: NAIP, 2010  
**Map Date:** September 24, 2013  
 Filename: Map2\_Manitowish\_WS.mxd

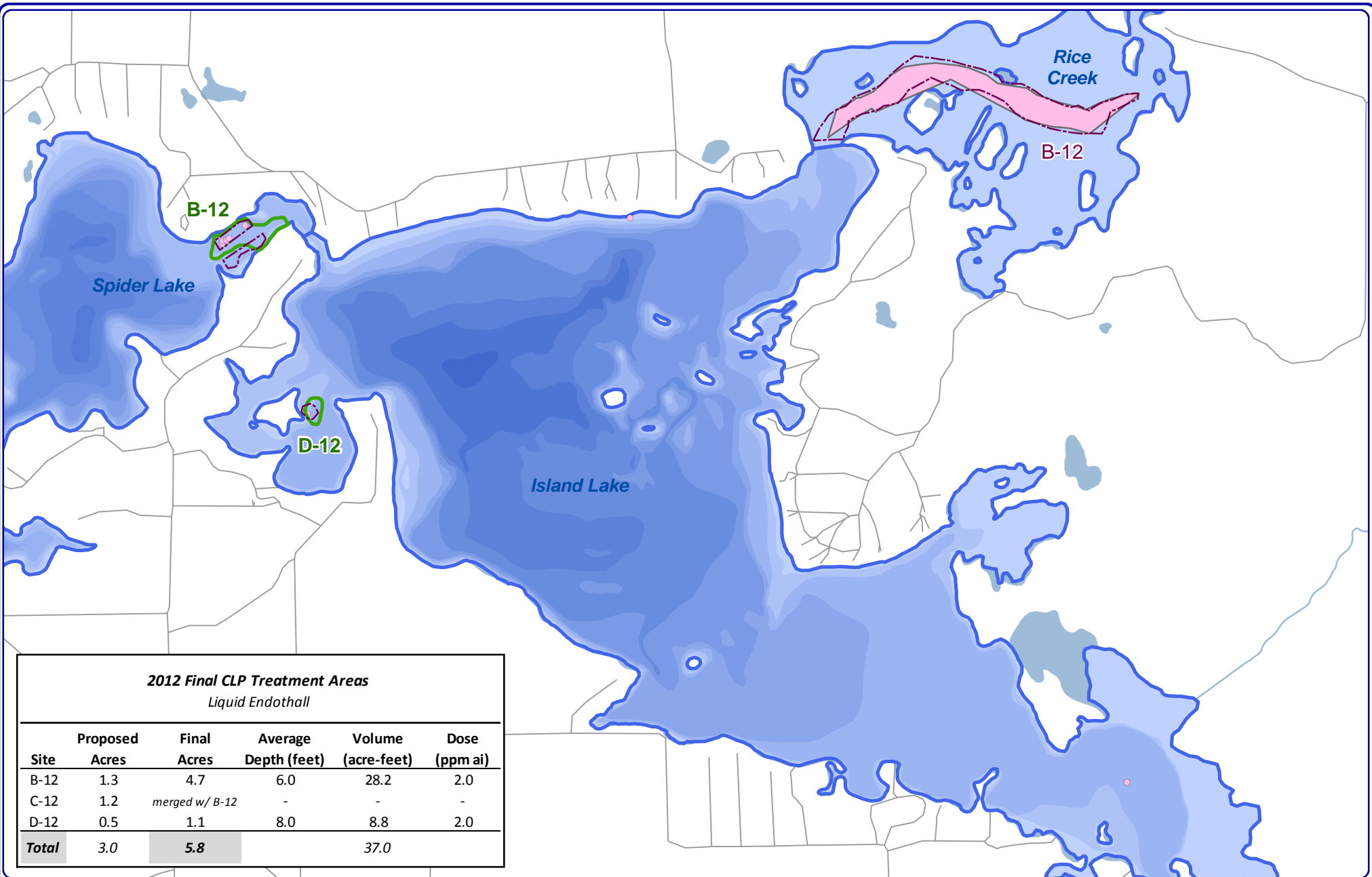
**Onterra LLC**  
 Lake Management Planning  
 815 Prosper Road  
 De Pere, WI 54115  
 920.338.8860  
 www.onterra-eco.com



**Land Ownership (Inset Map)**

- Federal (none shown)
- State
- County





**2012 Final CLP Treatment Areas**  
Liquid Endothall

Site	Proposed Acres	Final Acres	Average Depth (feet)	Volume (acre-feet)	Dose (ppm ai)
B-12	1.3	4.7	6.0	28.2	2.0
C-12	1.2	merged w/ B-12	-	-	-
D-12	0.5	1.1	8.0	8.8	2.0
<b>Total</b>	<b>3.0</b>	<b>5.8</b>		<b>37.0</b>	



1,500  
Feet

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

Sources:  
Roads & Hydro: WDNR  
Aquatic Plants: Vilas County LWCD, 2011;  
Onterra 2012  
Map Date: October 4, 2013  
Filename: Map3\_Manitowish\_T2012\_CLP\_Perm1.mxd

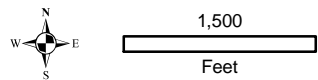
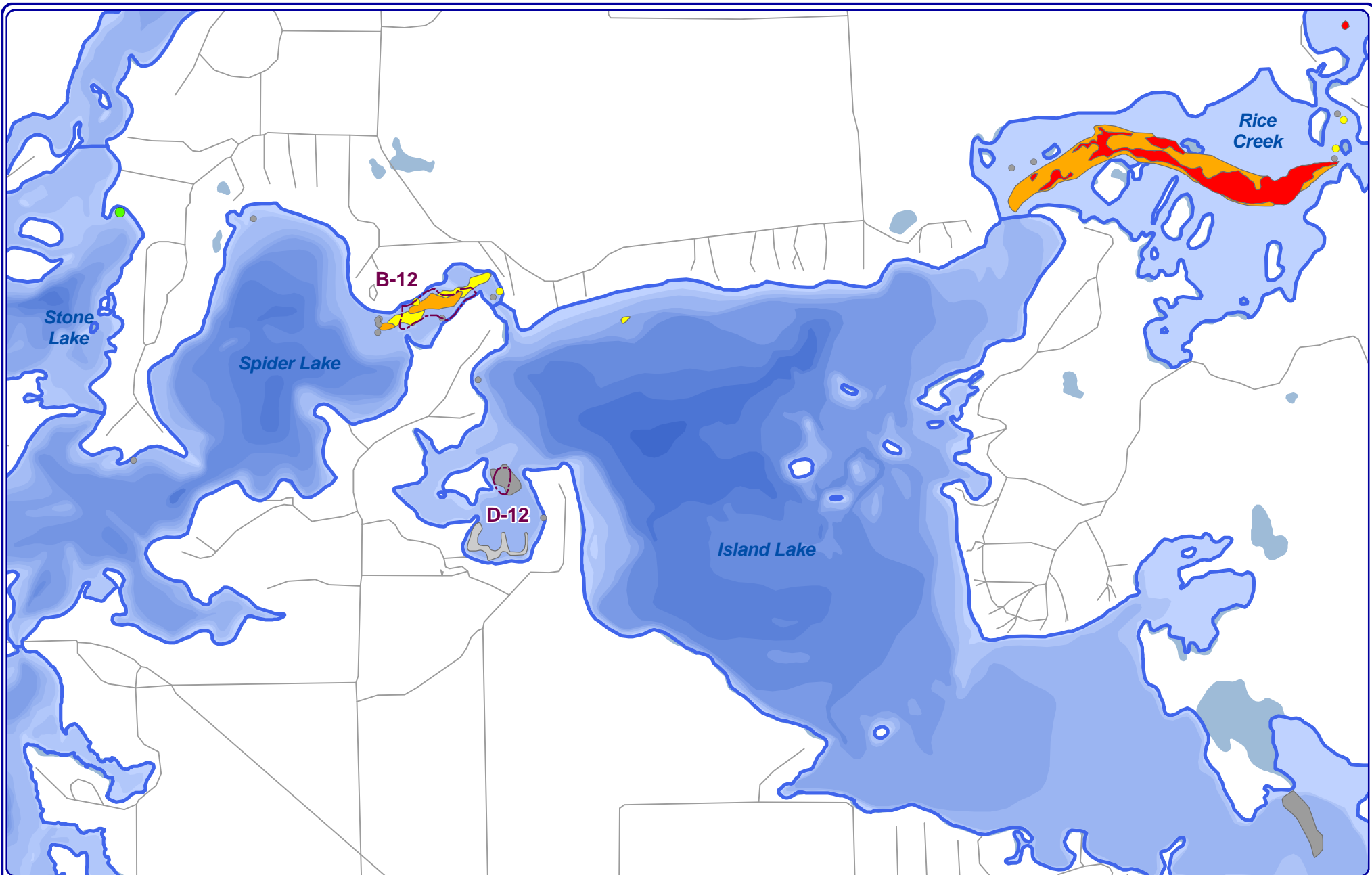


Project Location in Wisconsin

**Legend**

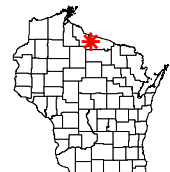
-  2012 CLP Proposed Treatment Area
-  2012 CLP Final Treatment Area
-  Curly-leaf Pondweed Occurrence (June 24, 2011, Vilas County LWCD)
-  Curly-leaf Pondweed Colony (June 24, 2011, Vilas County LWCD)

**Map 3**  
Manitowish Waters  
Chain of Lakes  
Vilas County, Wisconsin  
**2012 Final CLP Treatment Areas**



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

Sources:  
 Roads & Hydro: WDNR  
 Aquatic Plants: Onterra 2012  
 Map Date: October 4, 2013  
 Filename: Map4\_Manitowish\_CLPPB\_June12.mxd



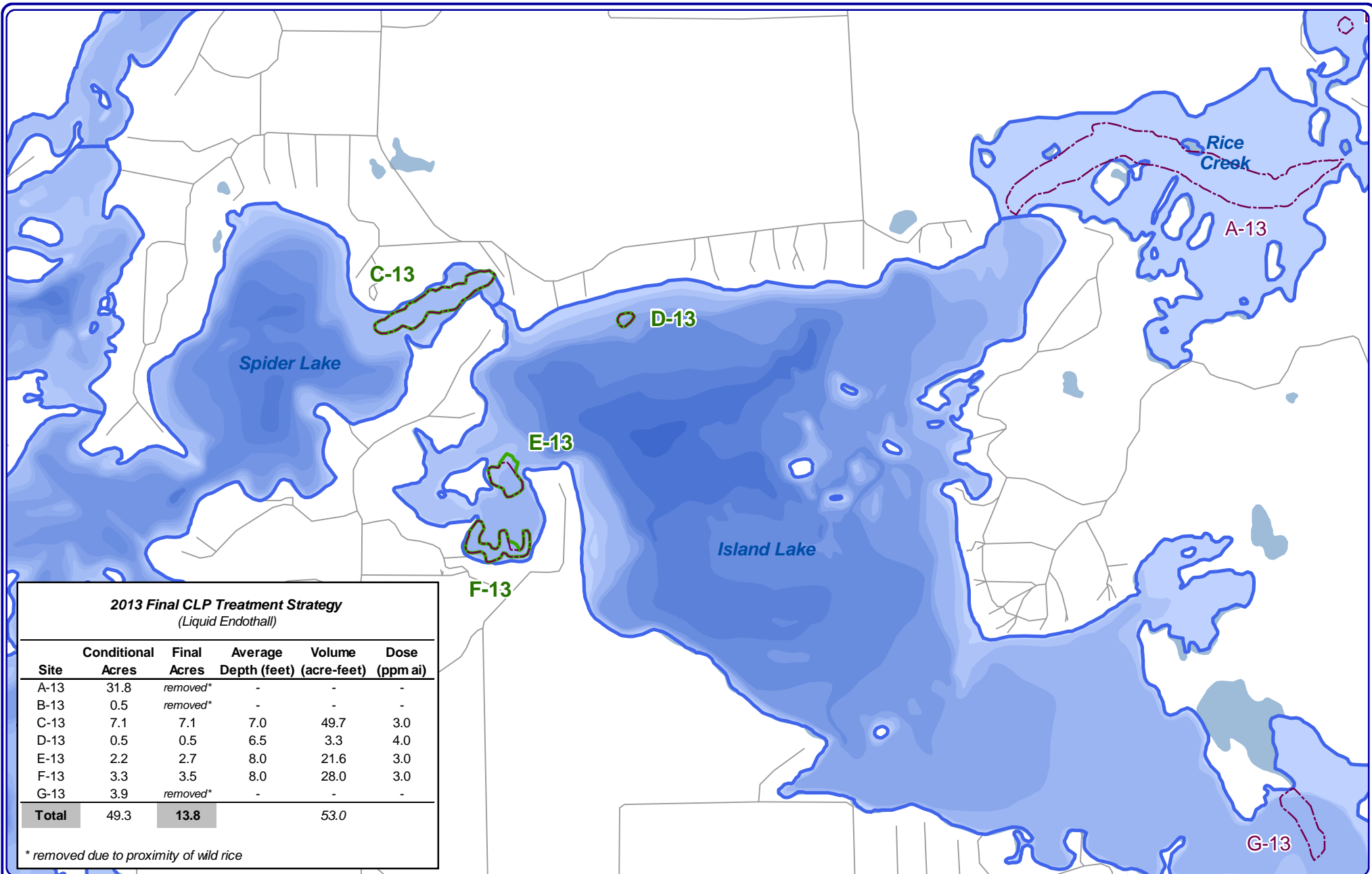
Project Location in Wisconsin

- Large CLP Community**
- Highly Scattered
  - Scattered
  - Dominant
  - Highly Dominant
  - Surface Matting

- Small CLP Community**
- Single or Few Plants
  - Clumps of Plants
  - Small Plant Colony
  - CLP Location (NLDC: June 21, 2012)

- Legend**
- 2012 Final CLP Treatment Area

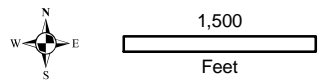
**Map 4**  
 Manitowish Waters  
 Chain of Lakes  
 Vilas County, Wisconsin  
**June 2012**  
**CLP Locations**



**2013 Final CLP Treatment Strategy**  
(Liquid Endothall)

Site	Conditional Acres	Final Acres	Average Depth (feet)	Volume (acre-feet)	Dose (ppm ai)
A-13	31.8	removed*	-	-	-
B-13	0.5	removed*	-	-	-
C-13	7.1	7.1	7.0	49.7	3.0
D-13	0.5	0.5	6.5	3.3	4.0
E-13	2.2	2.7	8.0	21.6	3.0
F-13	3.3	3.5	8.0	28.0	3.0
G-13	3.9	removed*	-	-	-
<b>Total</b>	<b>49.3</b>	<b>13.8</b>		<b>53.0</b>	

\* removed due to proximity of wild rice





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

Sources:  
Roads & Hydro: WDNR  
Aquatic Plants: Onterra 2012  
Map Date: October 4, 2013  
Filename: Maps\_Manitowish\_T2013\_CLP\_Perm1.mxd

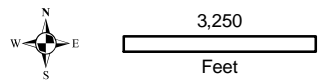
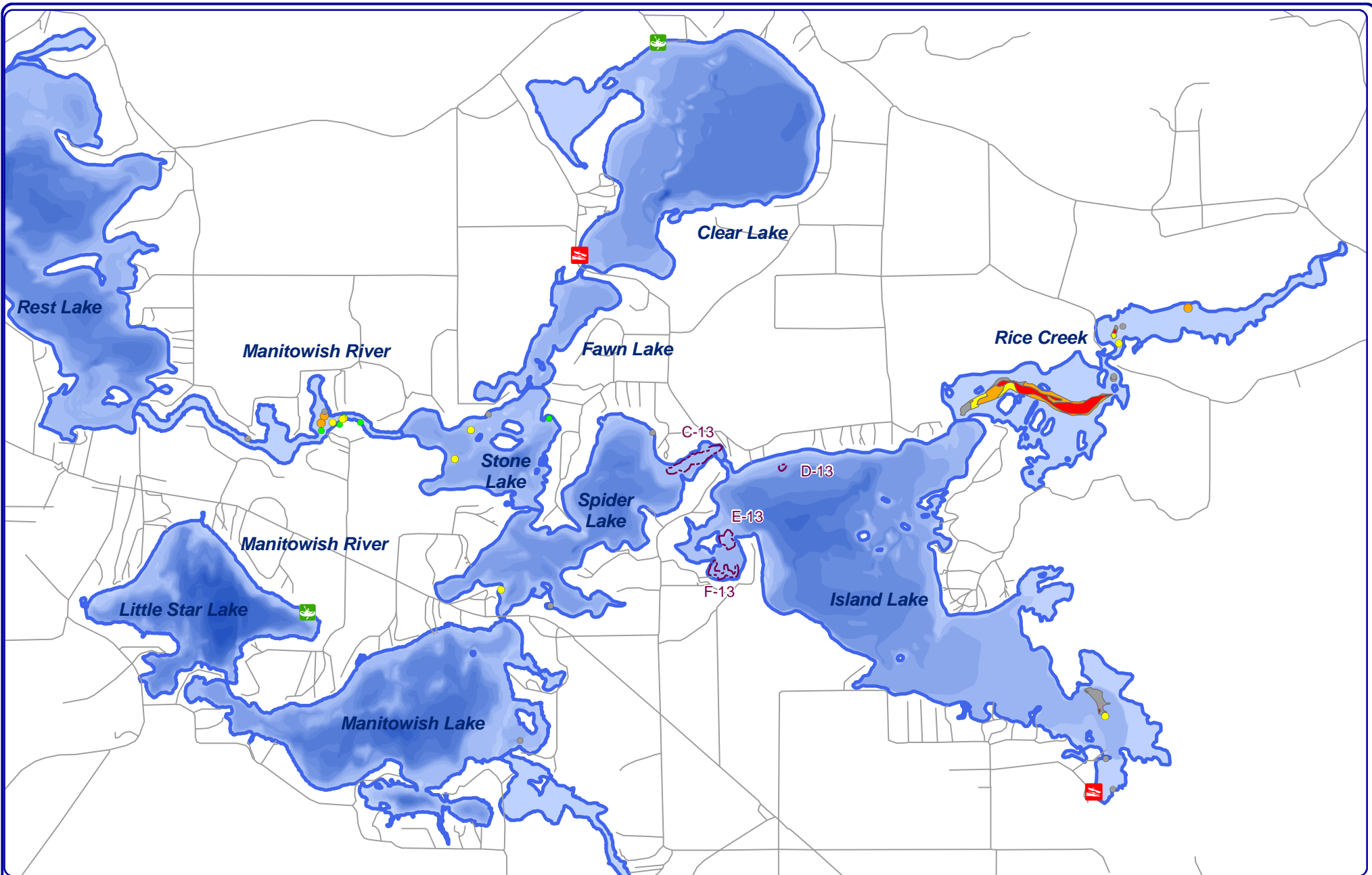


Project Location in Wisconsin

**Legend**

-  2013 Proposed CLP Treatment Area
-  2013 Final CLP Treatment Area

**Map 5**  
Manitowish Waters  
Chain of Lakes  
Vilas County, Wisconsin  
**2013 Final CLP  
Treatment Areas**



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

Sources:  
 Roads & Hydro: WDNR  
 Aquatic Plants: Onterra 2013  
 Map Date: October 4, 2013  
 Filename: Map6\_Manitowish\_CLPPB\_June13.mxd



Project Location in Wisconsin

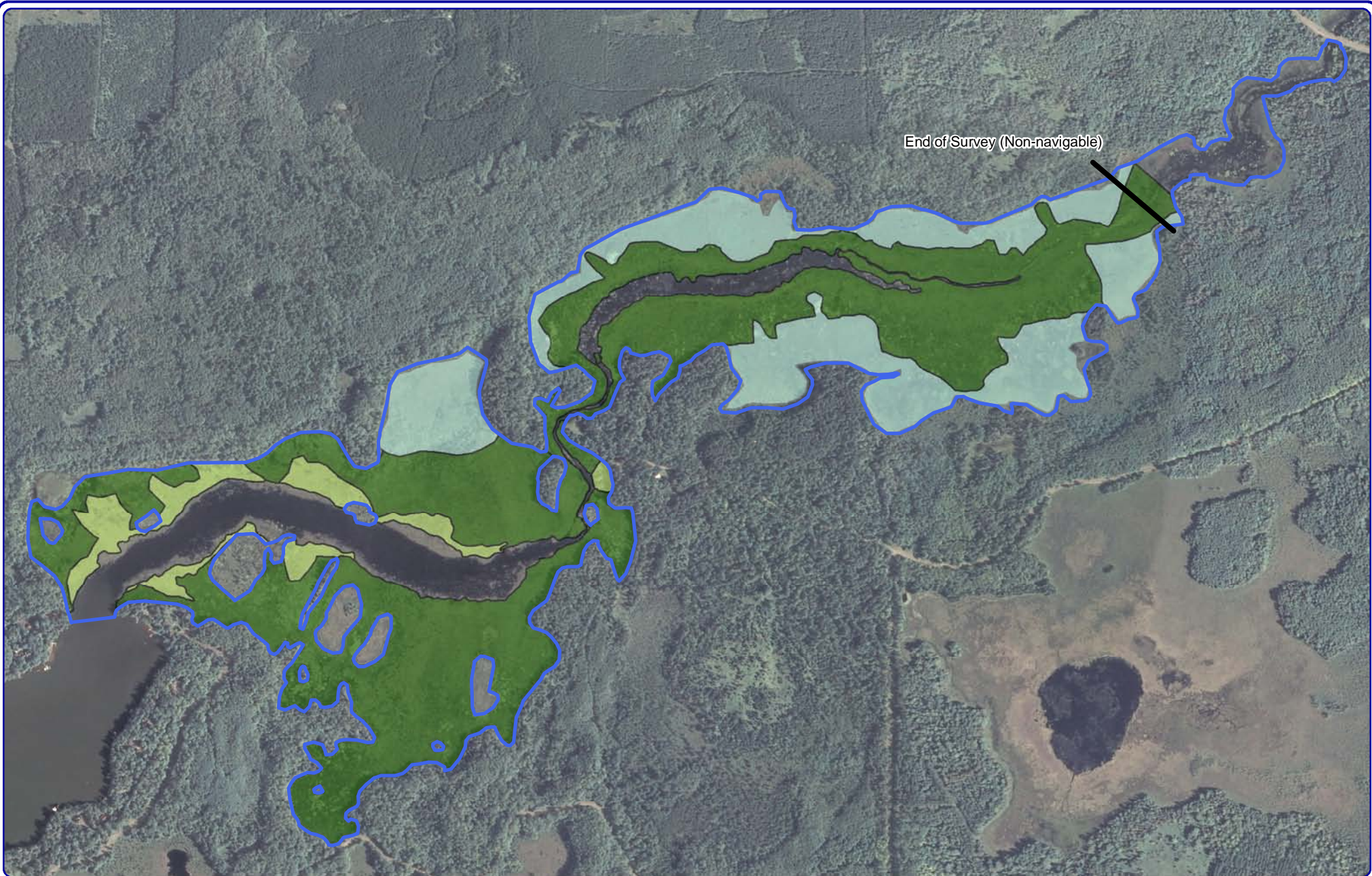
- Large CLP Community**
- Highly Scattered
  - Scattered
  - Dominant
  - Highly Dominant
  - Surface Matting

- Small CLP Community**
- Single or Few Plants
  - Clumps of Plants
  - Small Plant Colony
  - CLP Location (NLDC: June 2013)

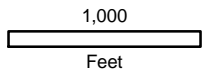
- Legend**
- 2013 Final CLP Treatment Area

**Map 6**  
**Manitowish Waters**  
 Chain of Lakes  
 Vilas County, Wisconsin  
**June 2013**  
**CLP Locations**





End of Survey (Non-navigable)






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

Sources:  
 Wild Rice Survey: Onterra, 2012  
 Orthophotography: NAIP, 2010  
 Map Date: September 24, 2013  
 Filename: Map7\_RiceCreek\_WildRice\_2012.mxd



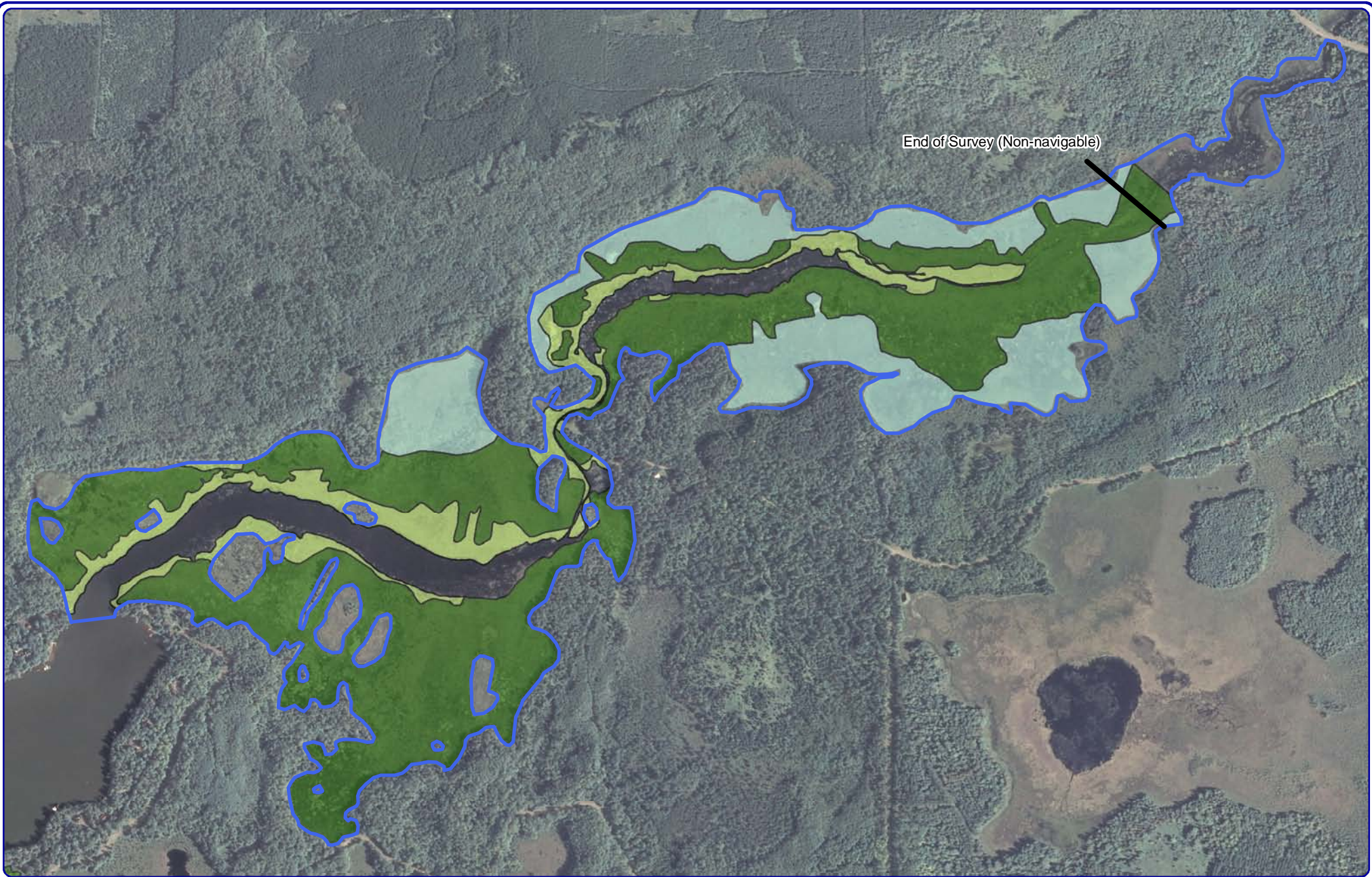
Project Location in Wisconsin

**Legend**

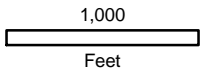
-  Northern wild rice - Dense
-  Northern wild rice - Sparse
-  Cattail-dominated Community

**Map 7**  
 Manitowish Waters  
 Chain of Lakes  
 Vilas County, Wisconsin  
**Rice Creek 2012 Northern  
 Wild Rice Communities**





End of Survey (Non-navigable)






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

Sources:  
 Wild Rice Survey: Onterra, 2013  
 Orthophotography: NAIP, 2010  
 Map Date: September 24, 2013  
 Filename: Map8\_RiceCreek\_WildRice\_2013.mxd



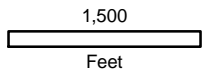
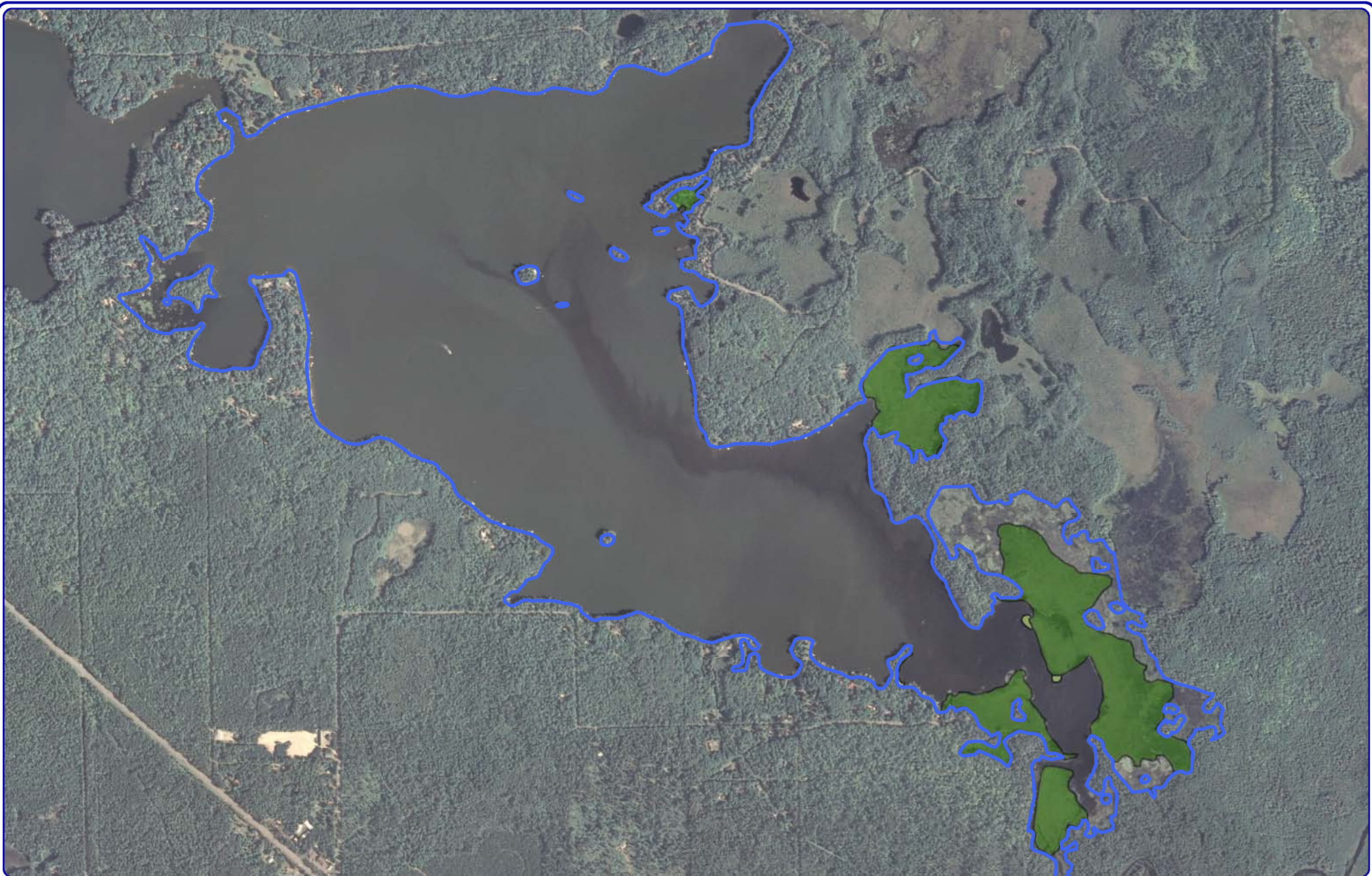
Project Location in Wisconsin

**Legend**

-  Northern wild rice - Dense
-  Northern wild rice - Sparse
-  Cattail-dominated Community

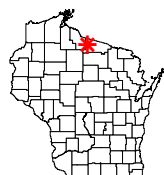
**Map 8**  
 Manitowish Waters  
 Chain of Lakes  
 Vilas County, Wisconsin  
**Rice Creek 2013 Northern  
 Wild Rice Communities**





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

Sources:  
 Wild Rice Survey: Onterra, 2012  
 Orthophotography: NAIP, 2010  
 Map Date: September 24, 2013  
 Filename: Map9\_Island\_WildRice\_2012.mxd



Project Location in Wisconsin

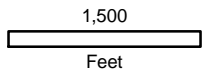
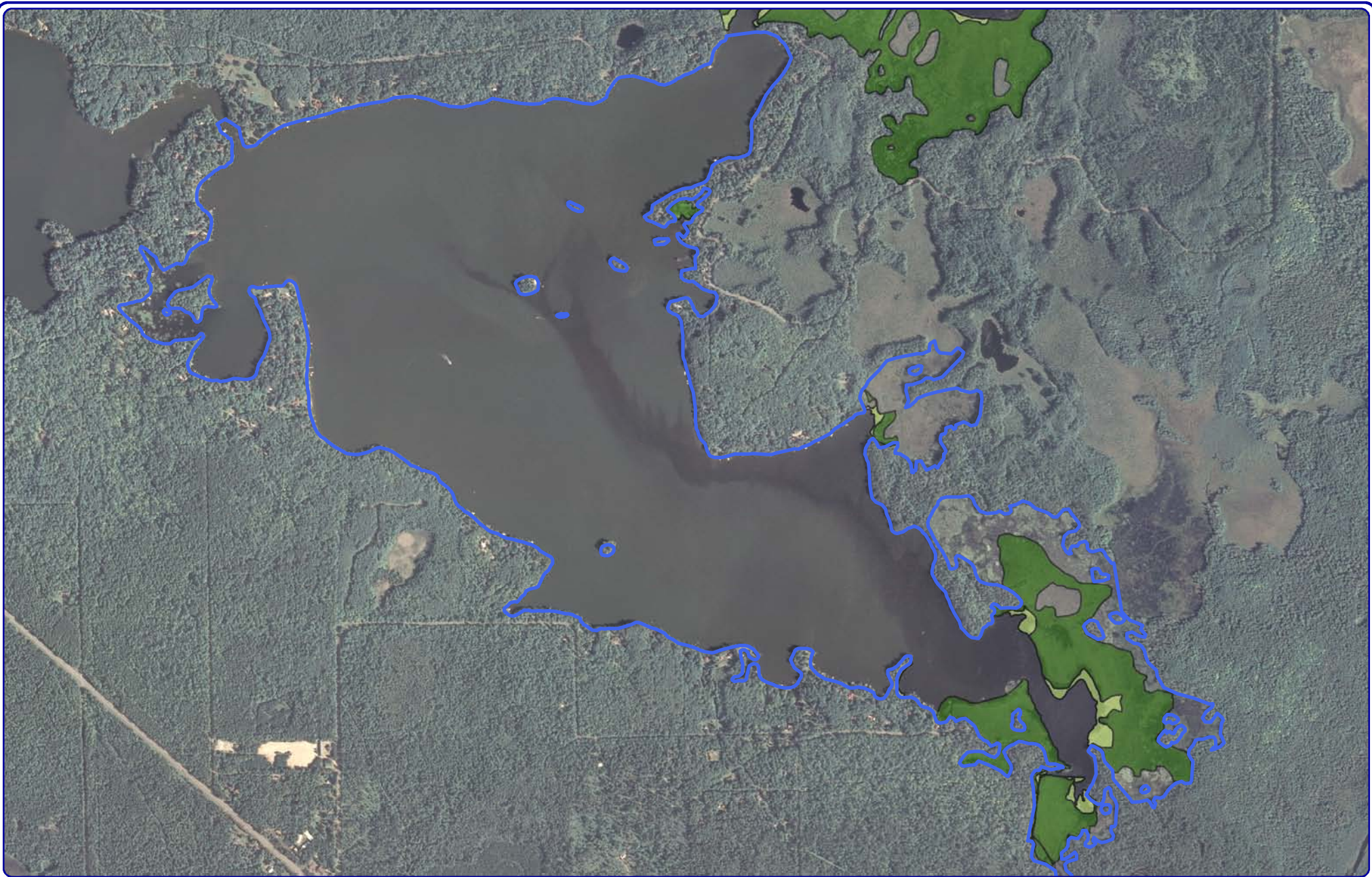
**Legend**

**Northern Wild Rice**

-  Dense
-  Sparse

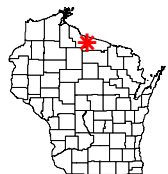
**Map 9**  
 Manitowish Waters  
 Chain of Lakes  
 Vilas County, Wisconsin  
**Island Lake 2012 Northern  
 Wild Rice Communities**





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

Sources:  
 Wild Rice Survey: Onterra, 2013  
 Orthophotography: NAIP, 2010  
 Map Date: September 24, 2013  
 Filename: Map10\_Island\_WildRice\_2013.mxd



Project Location in Wisconsin

**Legend**

**Northern Wild Rice**

-  Dense
-  Sparse

Map 10  
 Manitowish Waters  
 Chain of Lakes  
 Vilas County, Wisconsin  
**Island Lake 2013 Northern  
 Wild Rice Communities**