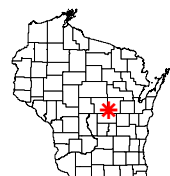


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Sources:
 Roads and Hydro: WDNR
 Map Date: November 3, 2015
 Filename: WaupacaChain_Location.mxd



Project Location in Wisconsin

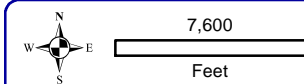
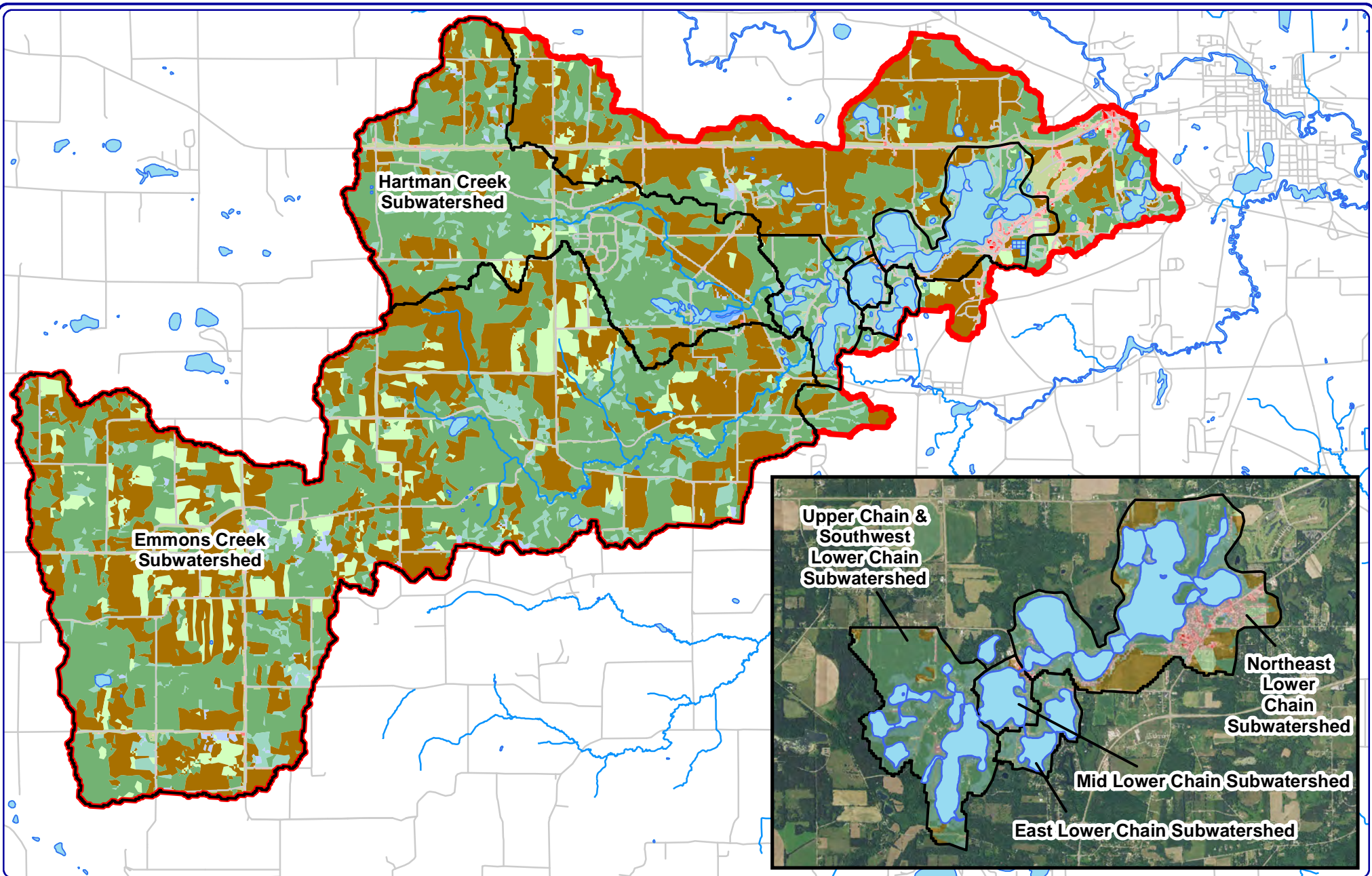
Legend

- Waupaca Chain ~ 839 acres
WDNR Definition
- WDNR Managed Lands
- Boat Landing
- Carry-In Access
- Water Quality Sampling Location
- Point-Intercept Survey Locations

Map 1

Waupaca Chain O' Lakes
 Waupaca County, Wisconsin

**Project Location
 & Lake Boundaries**



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Sources:
 Hydro & Roads: WDNR
 Bathymetry: WDNR, Onterra digitized
 Orthophotography: NAIP 2015
 Land Cover: NLCD 2011
 Watershed Boundaries: Onterra, 2016
 Map Date: March 1, 2017
 Filename: WaupacaChain_Entire-WS.mxd



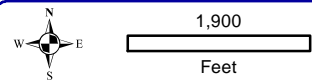
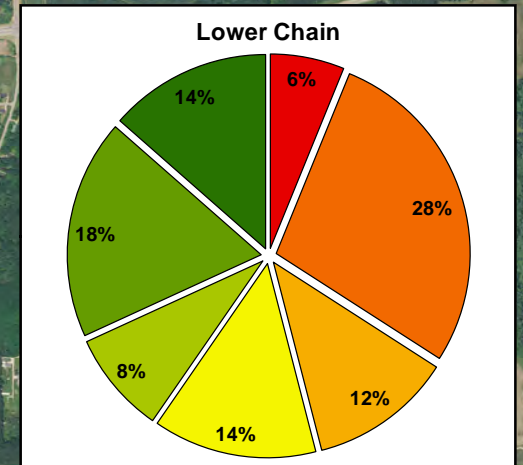
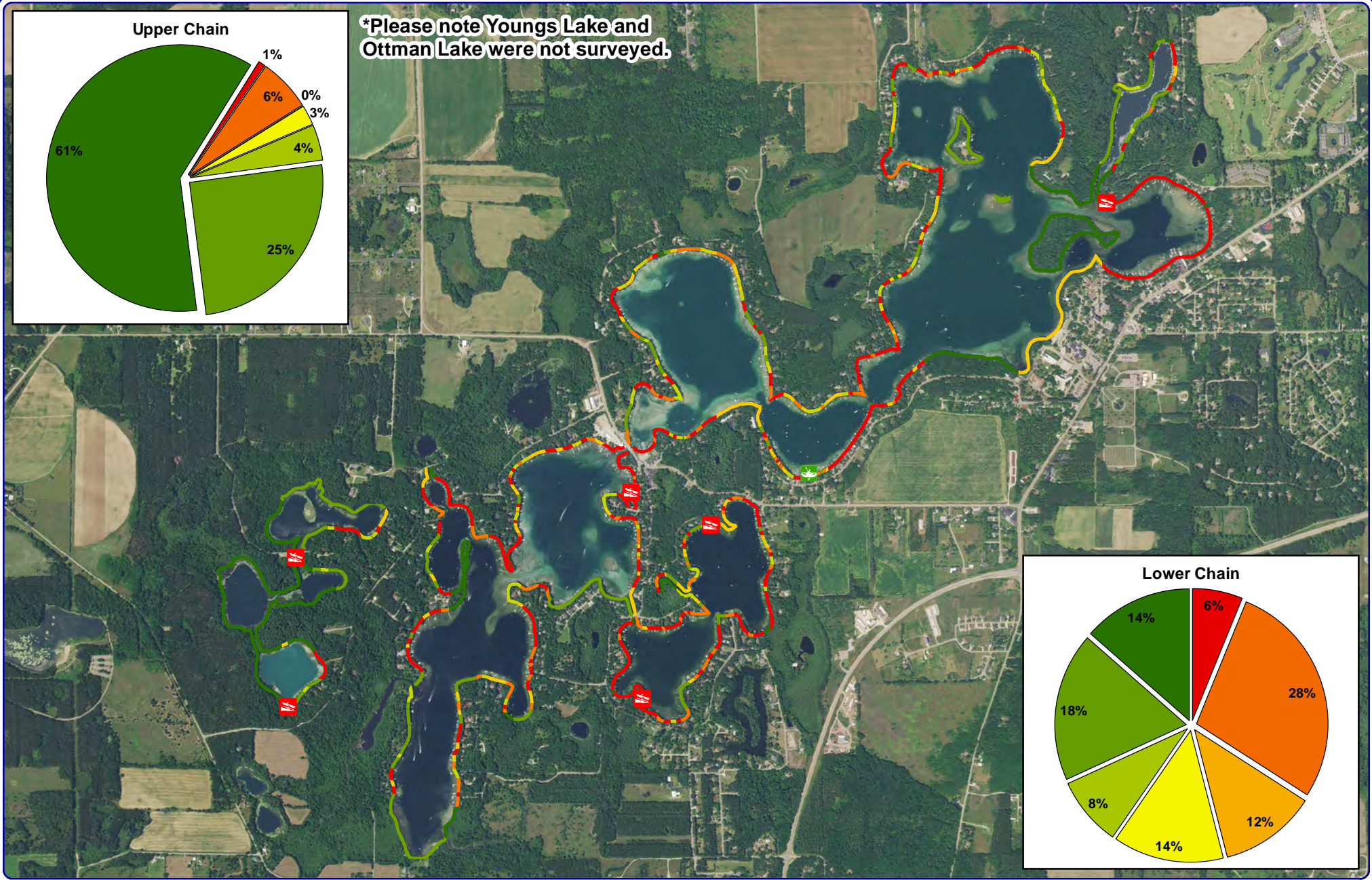
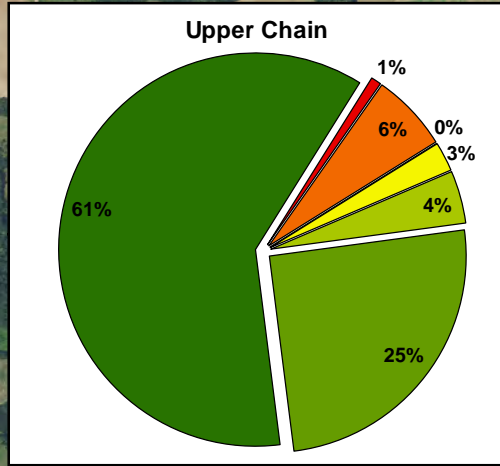
Project Location in Wisconsin

Legend

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

Map 2
 Waupaca Chain O' Lakes
 Waupaca County, Wisconsin
**Watershed Boundaries
 & Land Cover Types**

***Please note Youngs Lake and Ottman Lake were not surveyed.**

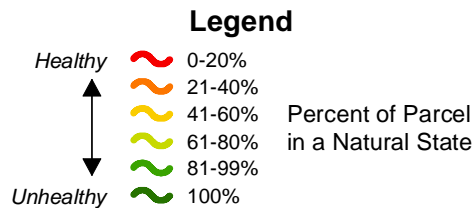


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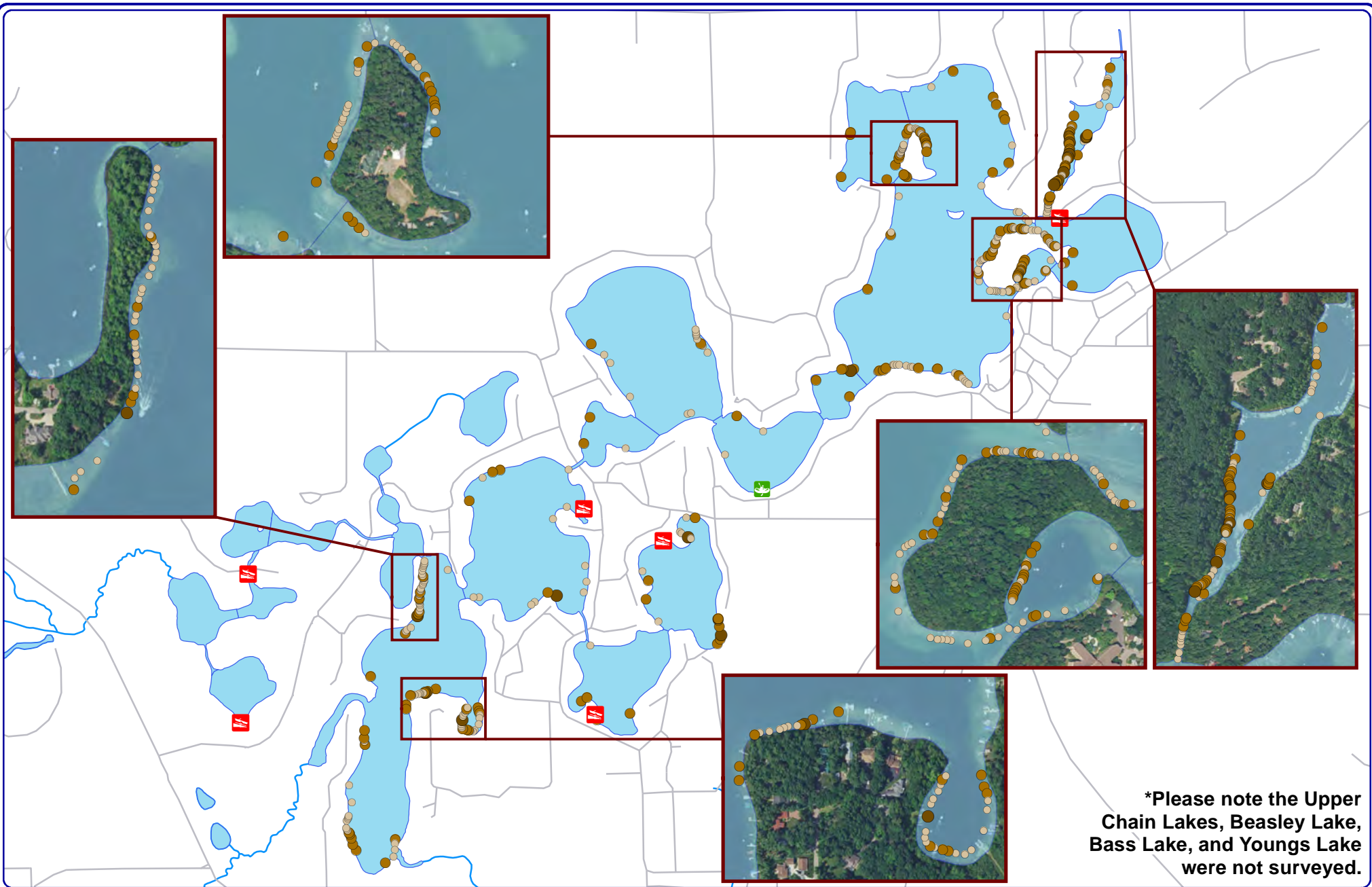
Sources:
 Hydro and Roads: WDNR
 Shoreland Survey: Waupaca County LWCD, 2014
 Orthophotography: NAIP 2015
 Map Date: March 16, 2017
 Filename: WaupacaChain_ShorelandCondition_2014.mxd



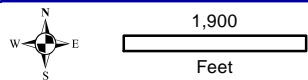
Project Location in Wisconsin



Map 3
 Waupaca Chain O' Lakes
 Waupaca County, Wisconsin
**2014 Waupaca County LWCD
 Shoreland Condition Survey Results**



***Please note the Upper Chain Lakes, Beasley Lake, Bass Lake, and Youngs Lake were not surveyed.**



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Sources:
 Hydro and Roads: WDNR
 CWH Survey: Waupaca County LWCD, 2014
 Orthophotography: NAIP, 2015
 Map Date: March 16, 2017
 Filename: WaupacaChain_CWH_2016.mxd



Project Location in Wisconsin

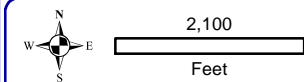
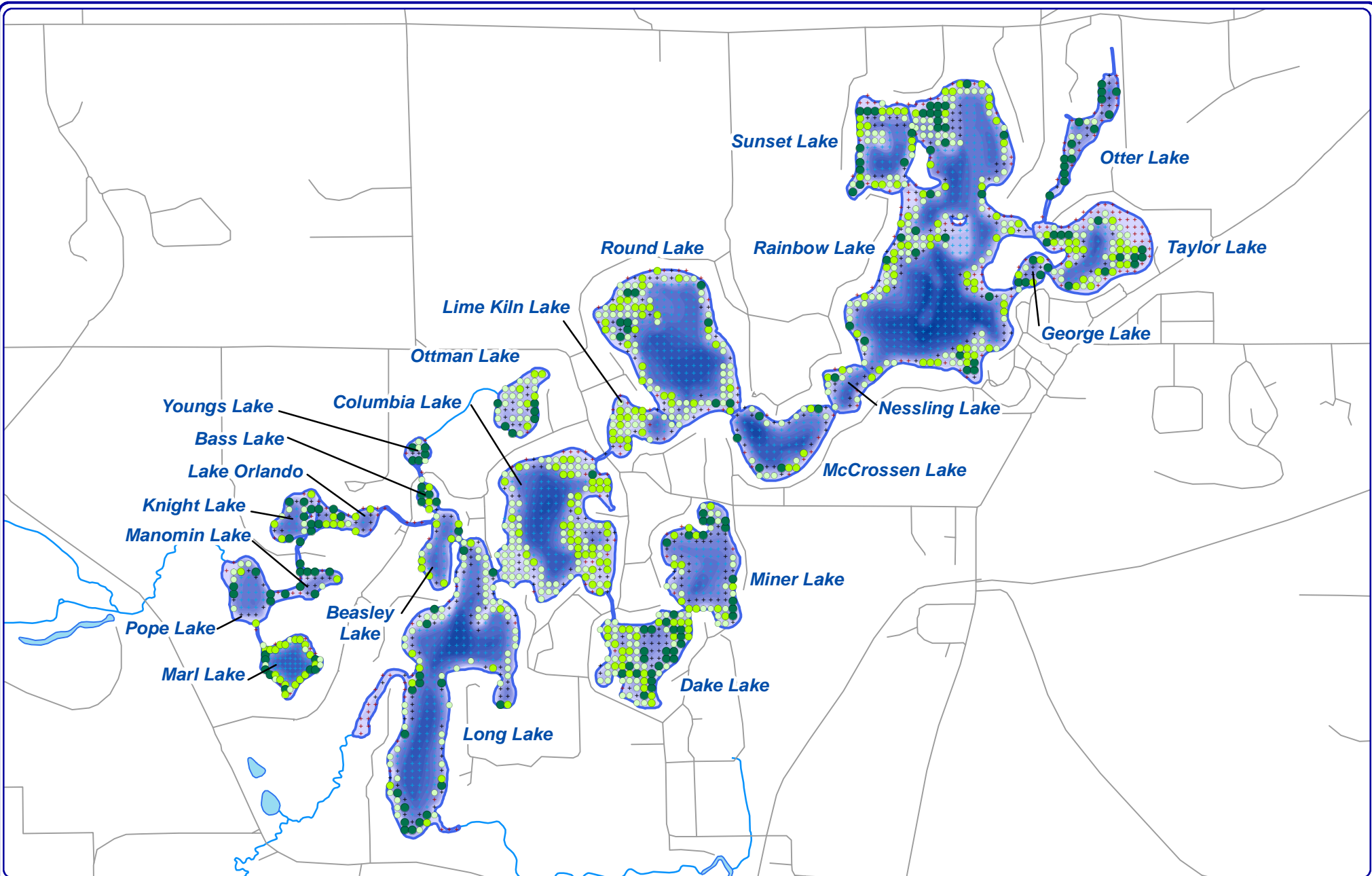
Legend

- No branches
- A few branches
- Tree trunk has a full crown

Map 4

Waupaca Chain O' Lakes
 Waupaca County, Wisconsin

**2016 Waupaca County LWCD
 Coarse Woody Habitat Survey Results**



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Sources:
 Data: Hydro & Bathymetry: WDNR
 Aquatic Plants: Onterra, 2016
 Orthophotography: NAIP, 2015
 Map Date: November 28, 2016
 Filename: WaupacaChain_TRFPI_2016.mxd

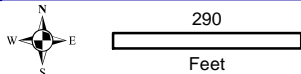
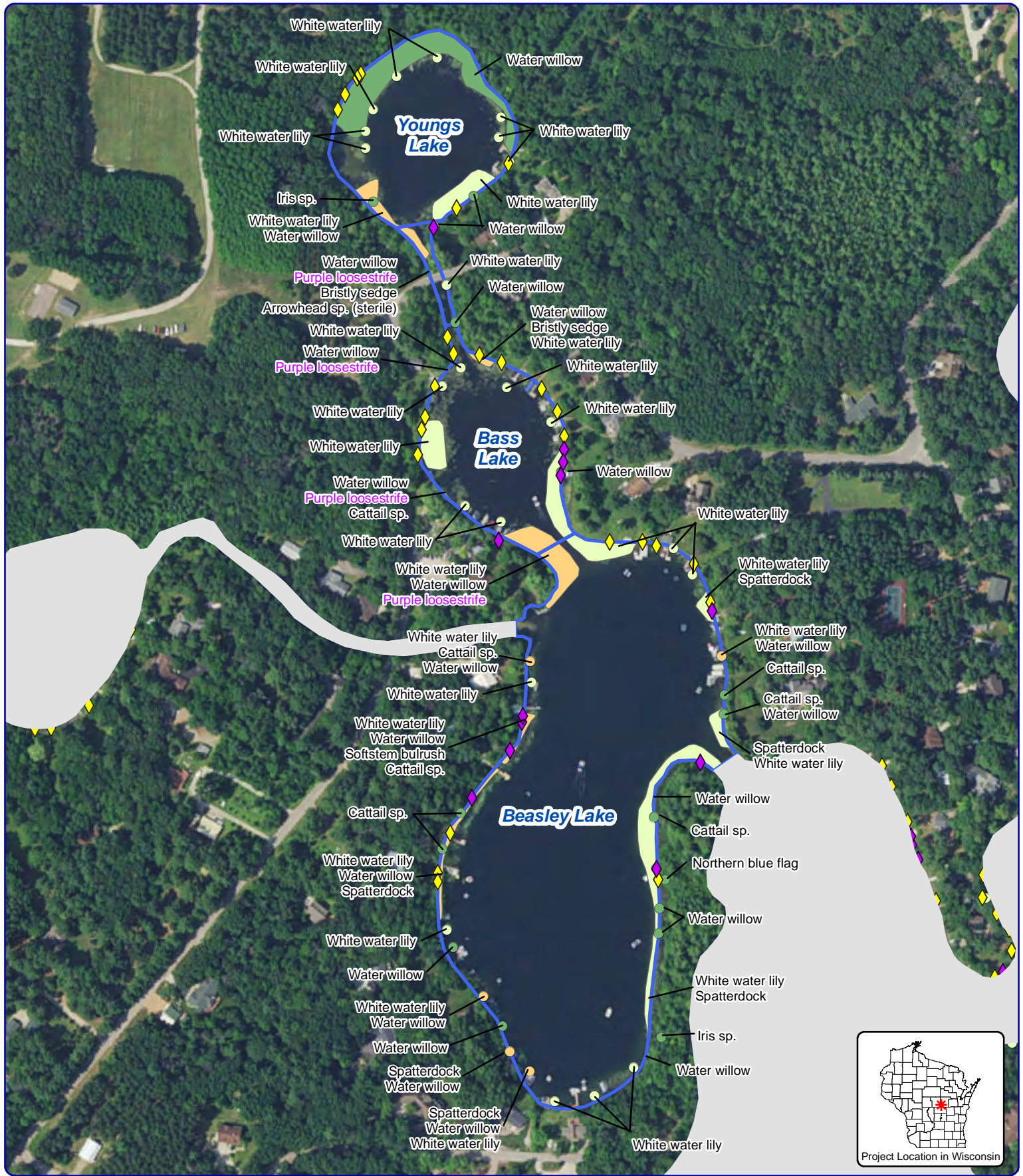


Legend

2016 Point-Intercept Survey

- Total Rake Fullness = 1
- Total Rake Fullness = 2
- Total Rake Fullness = 3
- + No Vegetation
- + Non-navigable
- + Greater than max depth of plants

Map 5
 Waupaca Chain of Lakes
 Waupaca County, Wisconsin
**2016 Point-Intercept Survey:
 Vegetation Distribution**

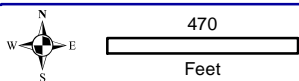
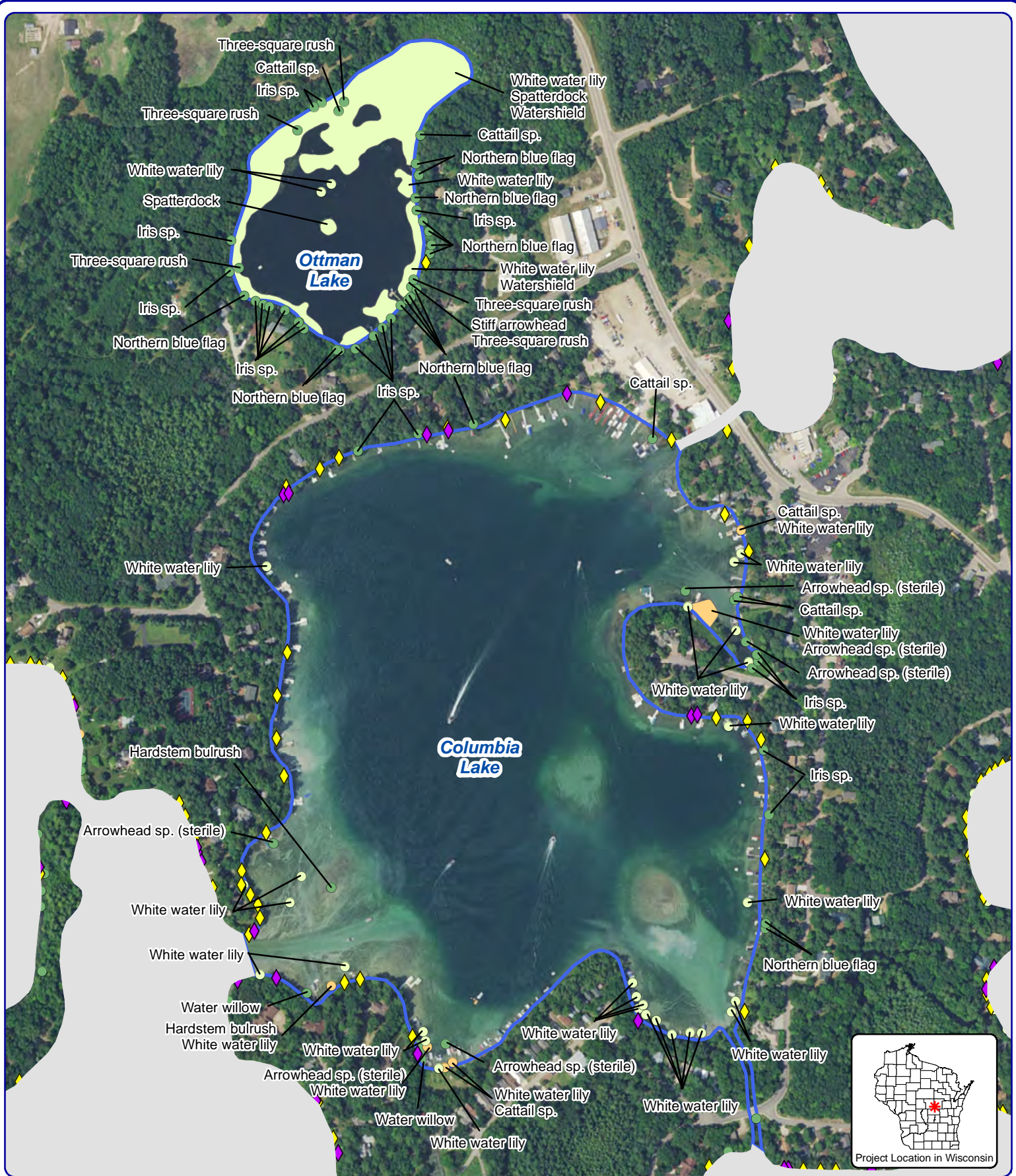


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Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 8, 2016
 Filename: Beasley-Youngs_Comm_2016.mxd

Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
◆ Purple loosestrife	● Emergent	● Emergent
◆ Pale yellow iris	● Floating-leaf	● Floating-leaf
	● Mixed Floating-leaf & Emergent	● Mixed Floating-leaf & Emergent

Map 6
 Beasley, Bass & Youngs Lakes
 Waupaca County, Wisconsin
 2016 Emergent & Floating-Leaf Aquatic Plant Communities



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Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 28, 2016
 Filename: Columbia-Ottman_Comm_2016.mxd

Exotic Plant Communities

- ◆ Purple loosestrife
- ◆ Pale yellow iris

Legend

Small Plant Communities

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

Large Plant Communities

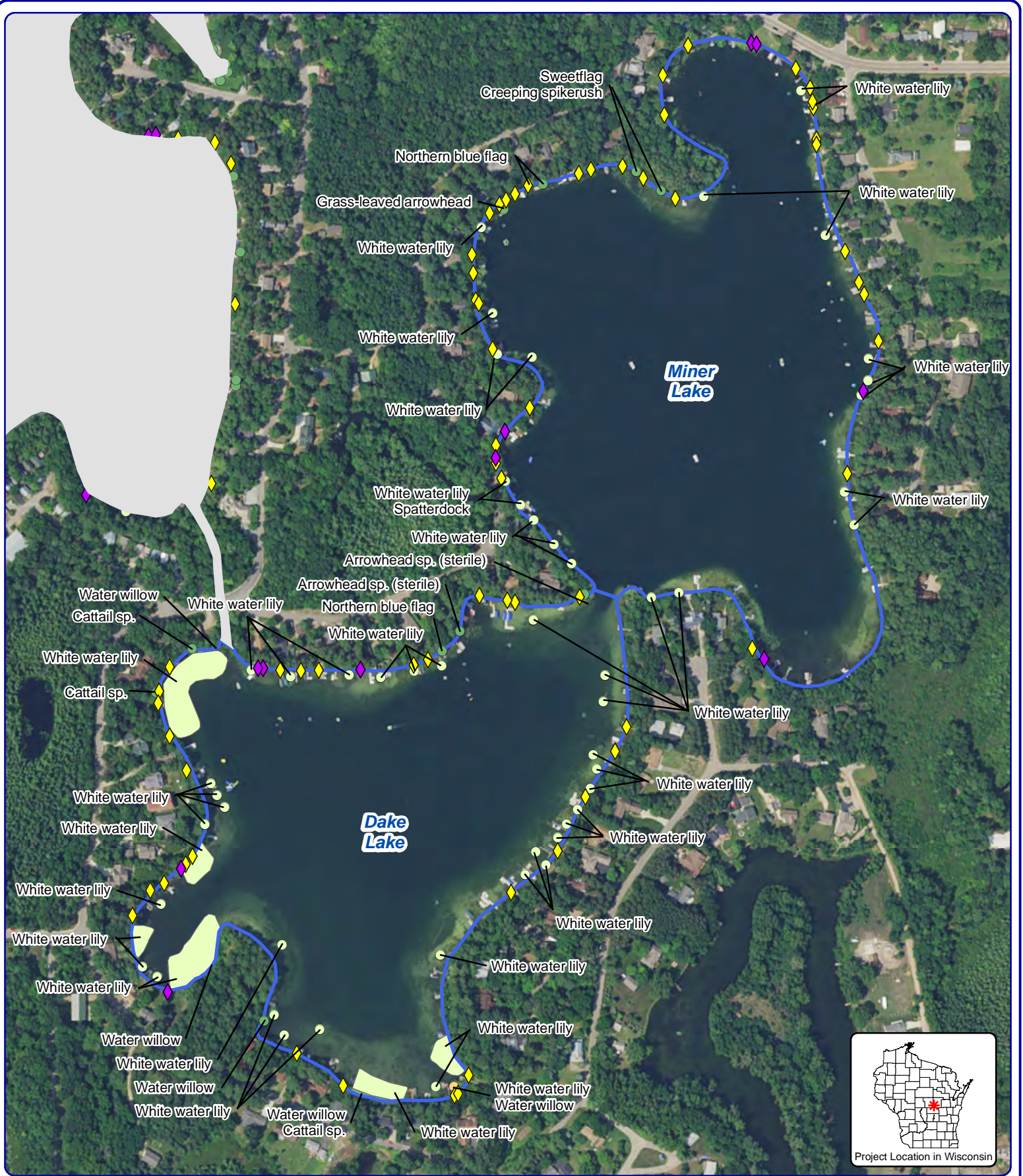
- ✿ Emergent
- ✿ Floating-leaf
- ✿ Mixed Floating-leaf & Emergent

Map 7

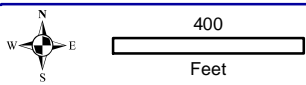
Columbia & Ottman Lakes

Waupaca County, Wisconsin

2016 Emergent & Floating-Leaf Aquatic Plant Communities



Project Location in Wisconsin



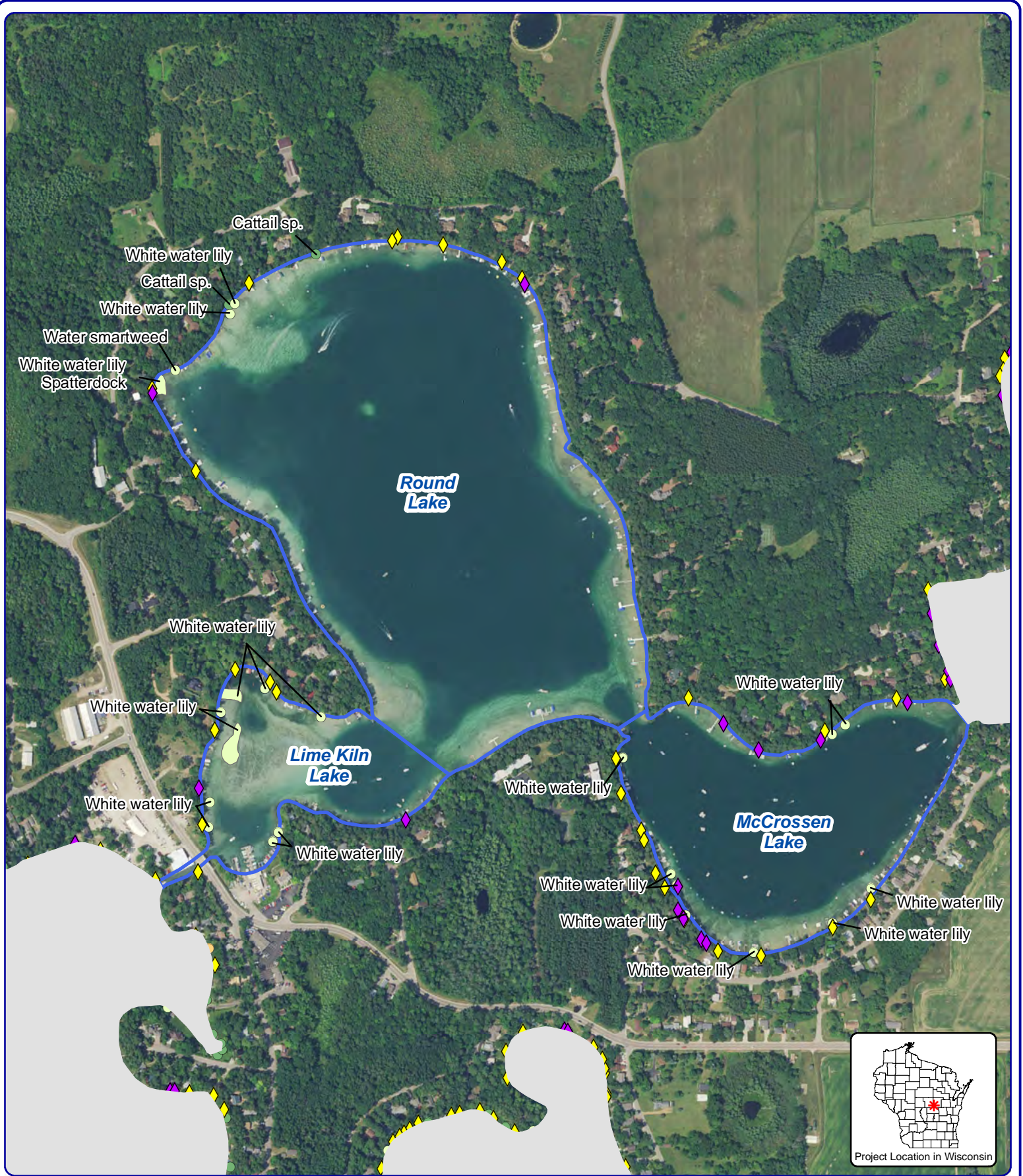
Onterra LLC
 Lake Management Planning
 815 Prosper Rd
 De Pere, WI 54115
 920.338.8860
 www.onterra-eco.com

Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 28, 2016
 Filename: Dake-Miner_Comm_2016.mxd

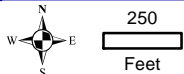
Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
Purple loosestrife	Emergent	Emergent
Pale yellow iris	Floating-leaf	Floating-leaf
	Mixed Floating-leaf & Emergent	Mixed Floating-leaf & Emergent

Map 8

Dake & Miner Lakes
 Waupaca County, Wisconsin
**2016 Emergent & Floating-Leaf
 Aquatic Plant Communities**



Project Location in Wisconsin

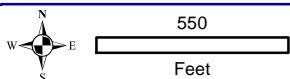
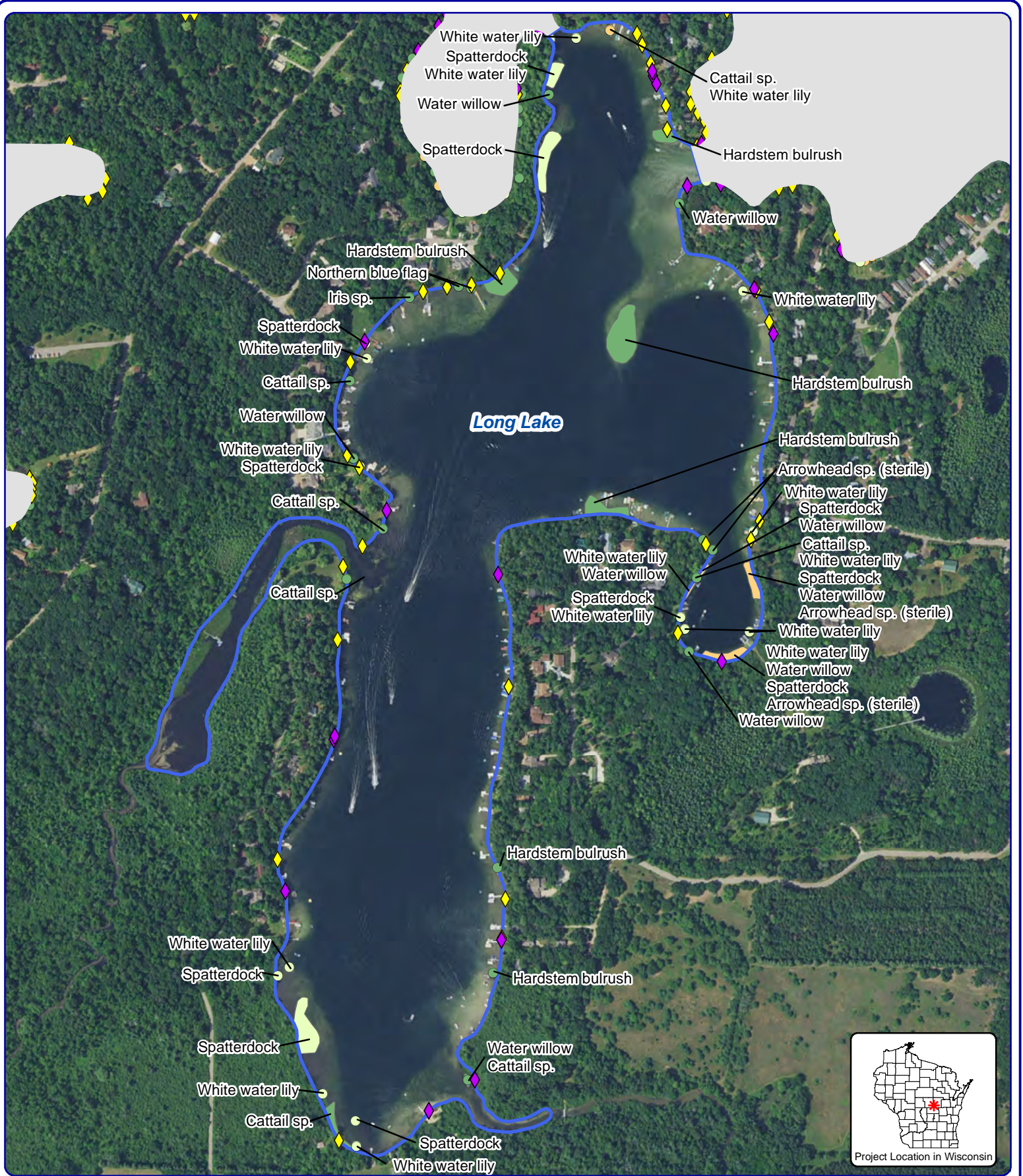


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Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 28, 2016
 Filename: Lime Kiln-McCrossen_Comm_2016.mxd

Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
Purple loosestrife	Emergent	Emergent
Pale yellow iris	Floating-leaf	Floating-leaf
	Mixed Floating-leaf & Emergent	Mixed Floating-leaf & Emergent

Map 9
 Lime Kiln, Round, &
 McCrossen Lakes
 Waupaca County, Wisconsin
**2016 Emergent & Floating-Leaf
 Aquatic Plant Communities**

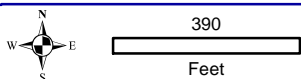


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Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 8, 2016
 Filename: Long_Comm_2016.mxd

Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
Purple loosestrife	Emergent	Emergent
Pale yellow iris	Floating-leaf	Floating-leaf
	Mixed Floating-leaf & Emergent	Mixed Floating-leaf & Emergent

Map 10
 Long Lake
 Waupaca County, Wisconsin
**2016 Emergent & Floating-Leaf
 Aquatic Plant Communities**



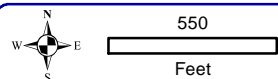
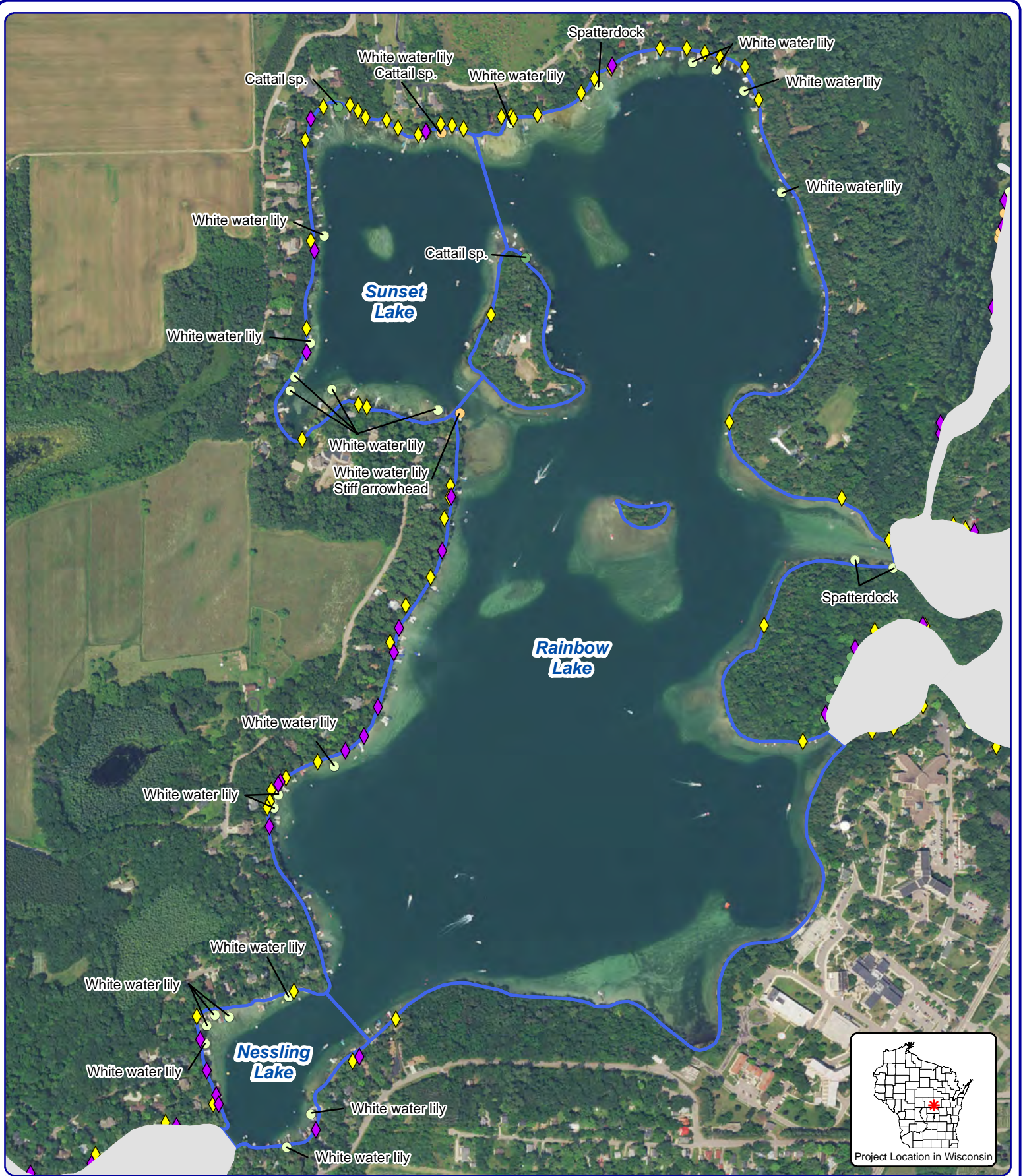
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Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 28, 2016
 Filename: Marl-Orlando_Comm_2016.mxd

Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
Purple loosestrife	Emergent	Emergent
Pale yellow iris	Floating-leaf	Floating-leaf
	Mixed Floating-leaf & Emergent	Mixed Floating-leaf & Emergent



Map 11
 Lake Orlando, Marl, Pope,
 Manomin, & Knight Lakes
 Waupaca County, Wisconsin
**2016 Emergent & Floating-Leaf
 Aquatic Plant Communities**

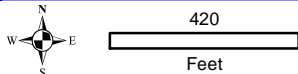
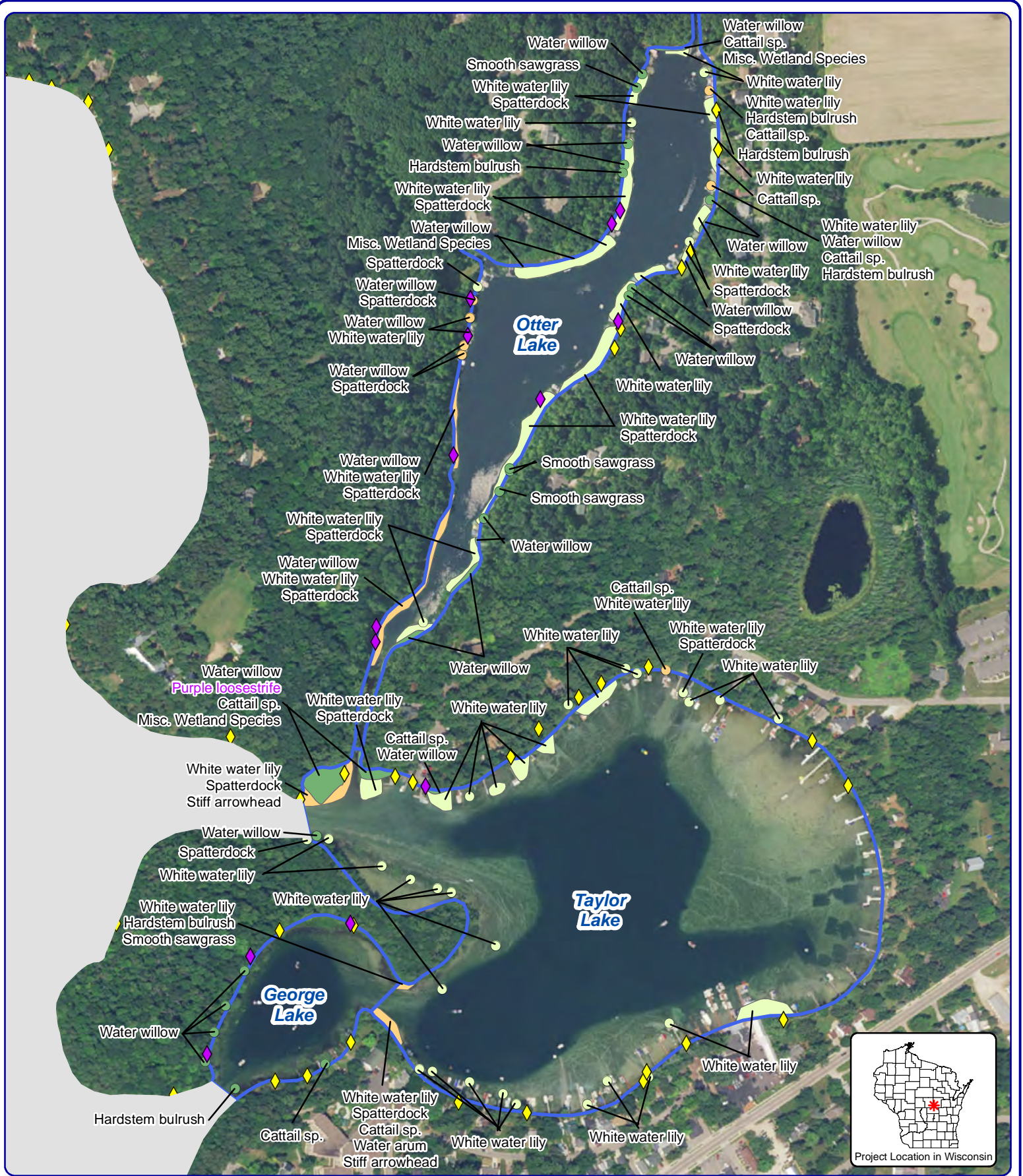


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Sources:
 Roads and Hyrdo: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 28, 2016
 Filename: Nessling-Sunset_Comm_2016.mxd

Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
Purple loosestrife	Emergent	Emergent
Pale yellow iris	Floating-leaf	Floating-leaf
	Mixed Floating-leaf & Emergent	Mixed Floating-leaf & Emergent

Map 12
 Nessling, Rainbow, &
 Sunset Lakes
 Waupaca County, Wisconsin
**2016 Emergent & Floating-Leaf
 Aquatic Plant Communities**

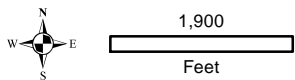
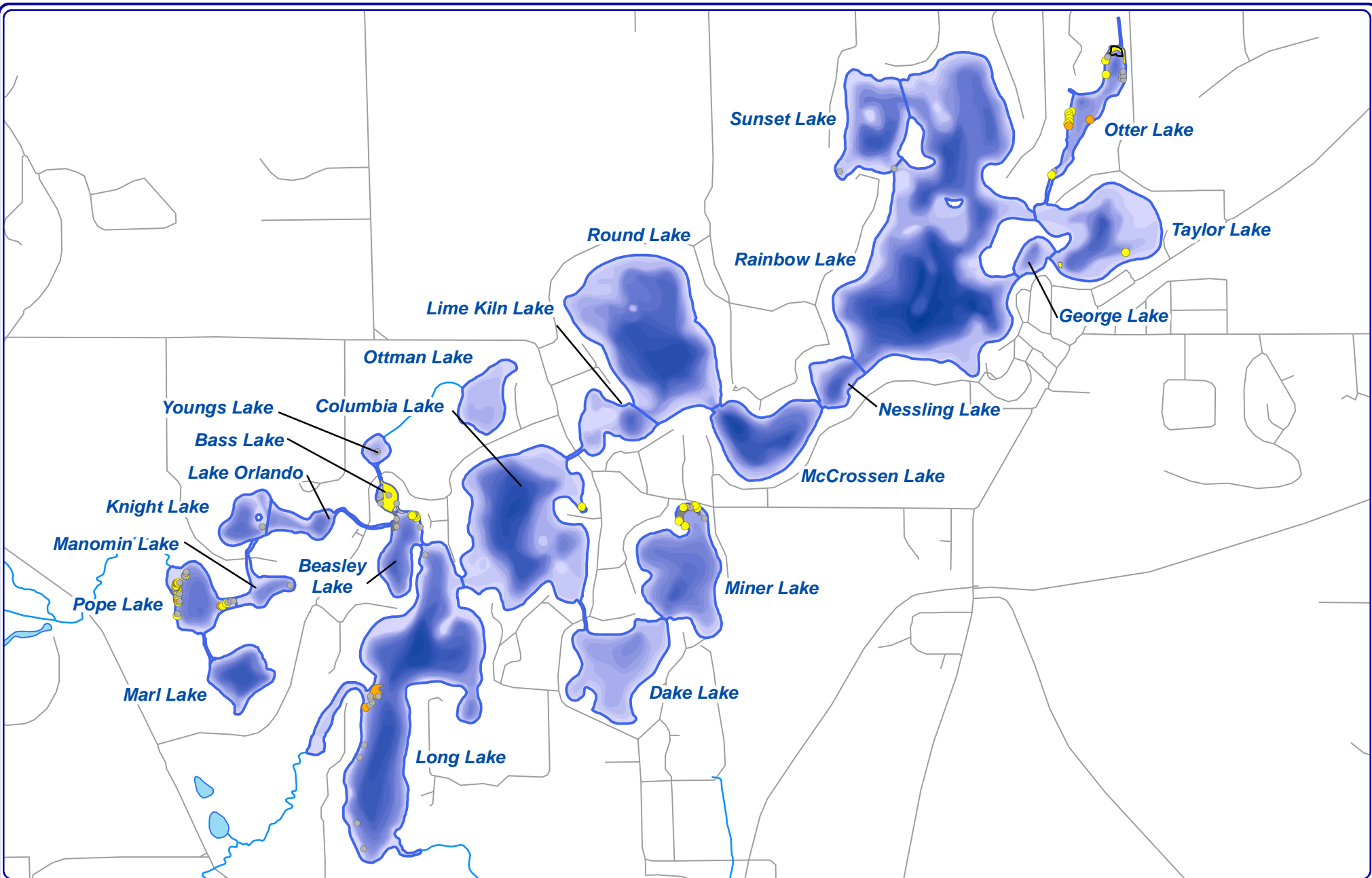


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Sources:
 Roads and Hydr: WDNR
 Aquatic Plants: Onterra, 2016
 Map Date: November 28, 2016
 Filename: George-Otter_Comm_2016.mxd

Legend		
Exotic Plant Communities	Small Plant Communities	Large Plant Communities
◆ Purple loosestrife	● Emergent	● Emergent
◆ Pale yellow iris	● Floating-leaf	● Floating-leaf
	● Mixed Floating-leaf & Emergent	● Mixed Floating-leaf & Emergent

Map 13
 Otter, Taylor, &
 George Lakes
 Waupaca County, Wisconsin
**2016 Emergent & Floating-Leaf
 Aquatic Plant Communities**



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Sources:
 Roads and Hydro: WDNR
 Bathymetry: WDNR, Onterra digitized
 EWM Survey: Onterra, 2016
 Map Date: June 10, 2016
 Filename: Map14_WaupacaChain_CLP_ESAIS_June16.mxd



Project Location in Wisconsin

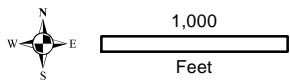
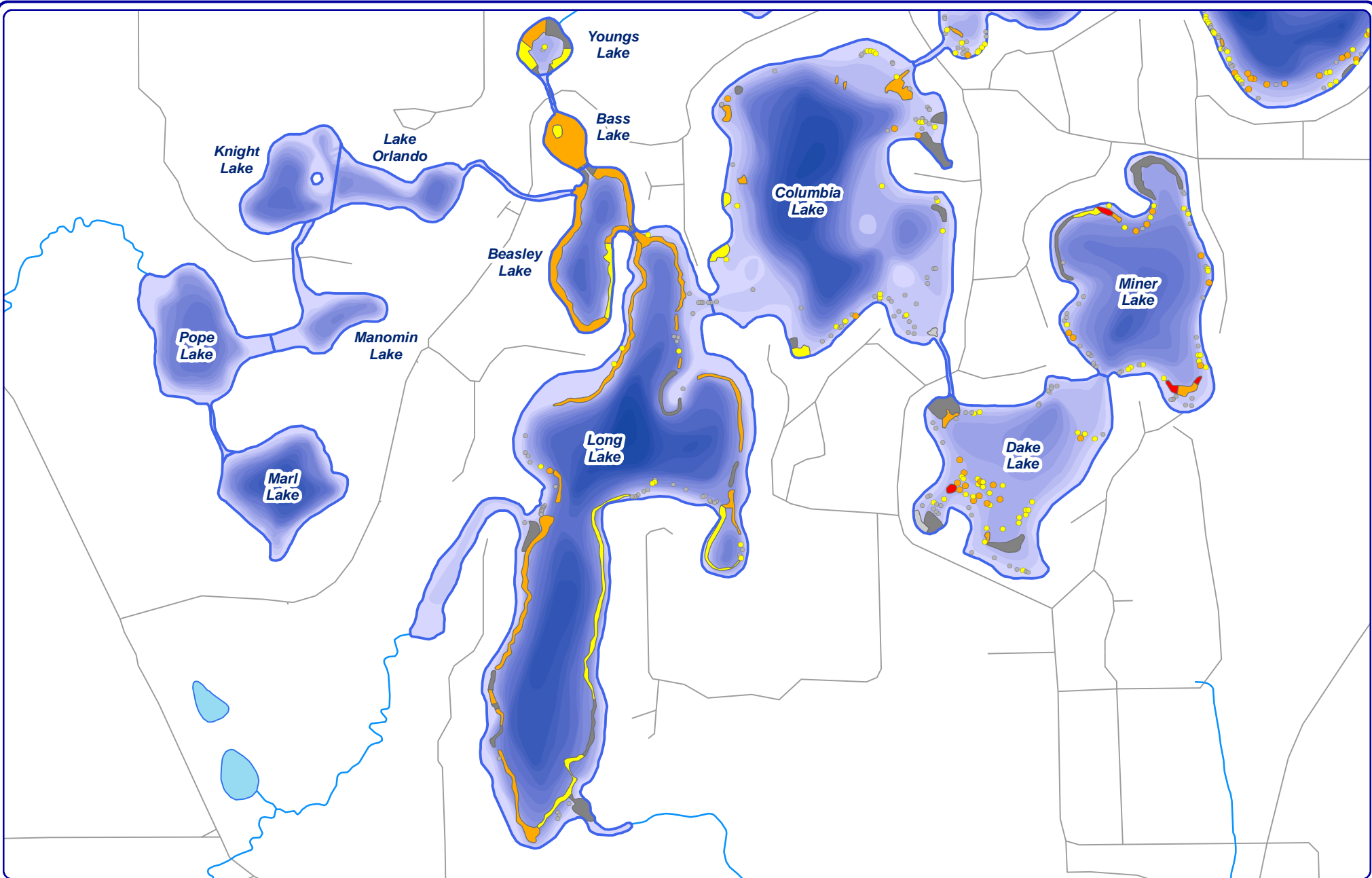
Legend

- | | | | |
|--|-----------------------------|--|----------------------|
| | Highly Scattered | | Single or Few Plants |
| | Scattered | | Clump of Plants |
| | Dominant | | Small Plant Colony |
| | Highly Dominant | | |
| | Surface Matted (None found) | | |

Map 14

Waupaca Chain
 Waupaca County, Wisconsin

**June 2016 Curly-leaf
 Pondweed Locations**



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Sources:
 Roads and Hydro: WDNR
 Bathymetry: WDNR, Onterra digitized
 EWM Survey: Onterra, 2016
 Map Date: October 5, 2016
 Filename: Map15_WaupacaChain_EWM_Sept16_South.mxd

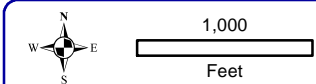


Project Location in Wisconsin

Legend

- | | | | |
|--|------------------|--|----------------------|
| | Highly Scattered | | Single or Few Plants |
| | Scattered | | Clump of Plants |
| | Dominant | | Small Plant Colony |
| | Highly Dominant | | |
| | Surface Matted | | |

Map 15
Waupaca Chain - South
 Waupaca County, Wisconsin
September 2016
EWM Locations



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Sources:
 Roads and Hydro: WDNR
 Bathymetry: WDNR, Onterra digitized
 EWM Survey: Onterra, 2016
 Map Date: October 5, 2016
 Filename: Map16_WaupacaChain_EWM_Sept16_North.mxd



Legend

- | | | | |
|--|------------------|--|----------------------|
| | Highly Scattered | | Single or Few Plants |
| | Scattered | | Clump of Plants |
| | Dominant | | Small Plant Colony |
| | Highly Dominant | | |
| | Surface Matted | | |

Map 16
Waupaca Chain - North
 Waupaca County, Wisconsin
September 2016
EWM Locations