2026 Deep Lake Bathymetric Survey Proposal

October 22, 2025

Prepared for:
Vadnais Lake Area Water Management Organization

Prepared by:
Ramsey County Parks & Recreation, Soil and Water Conservation Division

Scope of Services

Macrophyte Surveys

Macrophyte surveys will consist of data sampling at evenly spaced geo-referenced points throughout the lake to characterize the diversity and abundance of aquatic vegetation using a point intercept survey method. RC-SWCD staff members will also use Lowrance unit and transducer to generate data to produce a biovolume map showing concentration of aquatic vegetation growing in the lake.

Bathymetry Surveys

Bathymetric surveys are completed by connecting a Lowrance unit and transducer to the boat and following pre-determined transect lines across the lake to capture lake bottom depth data. This data is then processed, corrected using physically measured field data points where necessary, and then used to create new contour lines with ArcGIS software. It may be completed in conjunction with macrophyte surveys when there is a clear enough sonar signal in the lake.

Soil & Water Conservation
2015 Van Dyke Street
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www.ramseycounty.us

Deep Lake

Bathymetry and Macrophyte Survey

Task	Cost/Hour	Hours	Cost
Boat Use	unit	-	$50
BioBase Upload	unit	-	$300
Lake Survey Prepwork	$85	1	$85
Field Work, 6 hours (2 people)*	$85	12	$1,020
GIS Post-processing and Mapping	$85	3	$255
Report Completion, Contour Generation	$85	3	$255
TOTAL		19	**$1,965**

*Total field work cost would be $510 if VLAWMO staff will be second person in the boat. Total survey cost would then be $1,455.

Deliverables

The Bathymetric Report will include:

- Description of Methods;
- Tables of aquatic, emergent, native, and invasive plants surveyed;
- Bathymetry Map, BioVolume Map, numbered Survey Point map to match with aquatic species tables, and shoreline polygons; and
- Shapefiles including Biovolume, 2026 Contour Lines, and Point Intercept Location layers.

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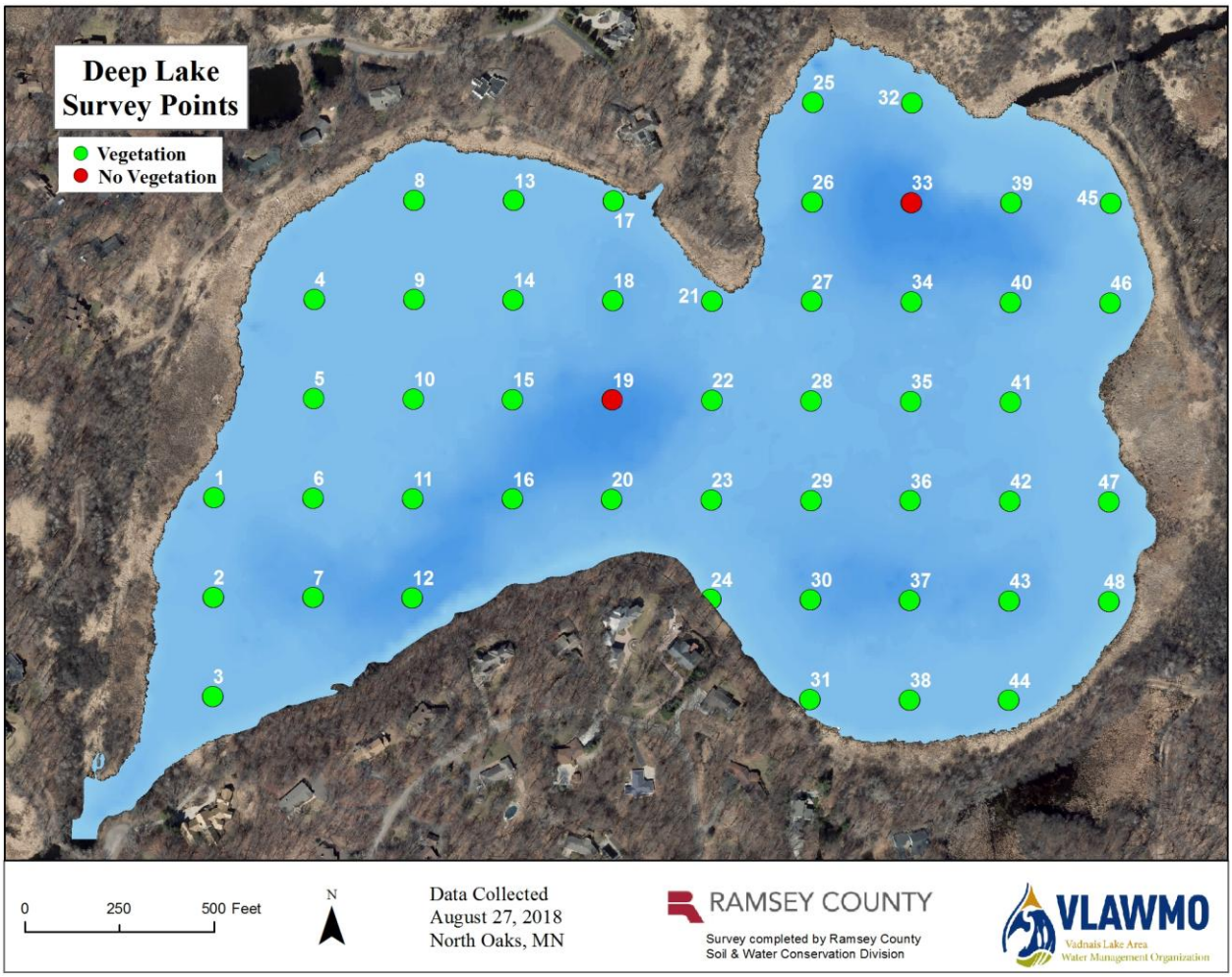
Figure 1 – Project Location Map



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2026 Pleasant Lake Bathymetric Survey Proposal

October 22, 2025

Prepared for:
Vadnais Lake Area Water Management Organization

Prepared by:
Ramsey County Parks & Recreation, Soil and Water Conservation Division

Scope of Services

Macrophyte Surveys

Macrophyte surveys will consist of data sampling at evenly spaced geo-referenced points throughout the lake to characterize the diversity and abundance of aquatic vegetation using a point intercept survey method. RC-SWCD staff members will also use Lowrance unit and transducer to generate data to produce a biovolume map showing concentration of aquatic vegetation growing in the lake.

Bathymetry Surveys

Bathymetric surveys are completed by connecting a Lowrance unit and transducer to the boat and following pre-determined transect lines across the lake to capture lake bottom depth data. This data is then processed, corrected using physically measured field data points where necessary, and then used to create new contour lines with ArcGIS software. It may be completed in conjunction with macrophyte surveys when there is a clear enough sonar signal in the lake.

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Pleasant Lake

Bathymetry and Macrophyte Survey

Task	Cost/Hour	Hours	Cost
Boat Use	unit	-	$50
BioBase Upload	unit	-	$300
Lake Survey Prepwork	$85	1	$85
Field Work, 8 hours (2 people)*	$85	16	$1,360
GIS Post-processing and Mapping	$85	3	$255
Report Completion, Contour Generation	$85	3	$255
TOTAL		23	**$2,305**

*Total field work cost would be $680 if VLAWMO staff will be second person in the boat. Total survey cost would then be $1,625.

Deliverables

The Bathymetric Report will include:

- Description of Methods;
- Tables of aquatic, emergent, native, and invasive plants surveyed;
- Bathymetry Map, BioVolume Map, numbered Survey Point map to match with aquatic species tables, and shoreline polygons; and
- Shapefiles including Biovolume, 2026 Contour Lines, and Point Intercept Location layers.

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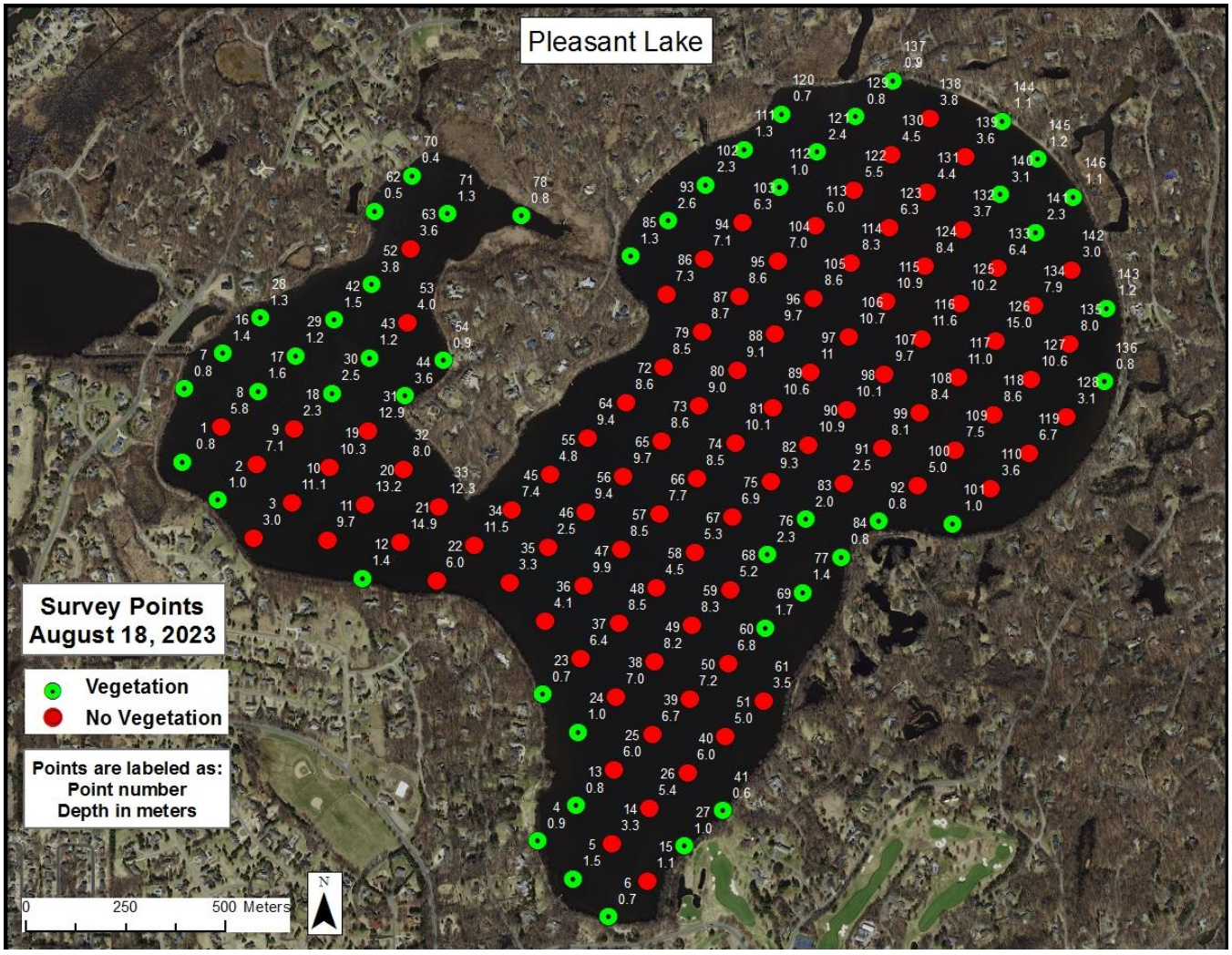

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2026 Tamarack Lake Bathymetric Survey Proposal

October 22, 2025

Prepared for:
Vadnais Lake Area Water Management Organization

Prepared by:
Ramsey County Parks & Recreation, Soil and Water Conservation Division

Scope of Services

Macrophyte Surveys

Macrophyte surveys will consist of data sampling at evenly spaced geo-referenced points throughout the lake to characterize the diversity and abundance of aquatic vegetation using a point intercept survey method. RC-SWCD staff members will also use Lowrance unit and transducer to generate data to produce a biovolume map showing concentration of aquatic vegetation growing in the lake.

Bathymetry Surveys

Bathymetric surveys are completed by connecting a Lowrance unit and transducer to the boat and following pre-determined transect lines across the lake to capture lake bottom depth data. This data is then processed, corrected using physically measured field data points where necessary, and then used to create new contour lines with ArcGIS software. It may be completed in conjunction with macrophyte surveys when there is a clear enough sonar signal in the lake.

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Tamarack Lake

Bathymetry and Macrophyte Survey

Task	Cost/Hour	Hours	Cost
Boat Use	unit	-	$50
BioBase Upload	unit	-	$300
Lake Survey Prepwork	$85	3	$255
Field Work, 5 hours (2 people)*	$85	10	$850
GIS Post-processing and Mapping	$85	3	$255
Report Completion, Contour Generation	$85	3	$255
TOTAL		19	**$1,965**

*Total field work cost would be $425 if VLAWMO staff will be second person in the boat. Total survey cost would then be $1,540.

Deliverables

The Bathymetric Report will include:

- Description of Methods;
- Tables of aquatic, emergent, native, and invasive plants surveyed;
- Bathymetry Map, BioVolume Map, numbered Survey Point map to match with aquatic species tables, and shoreline polygons; and
- Shapefiles including Biovolume, 2026 Contour Lines, and Point Intercept Location layers.

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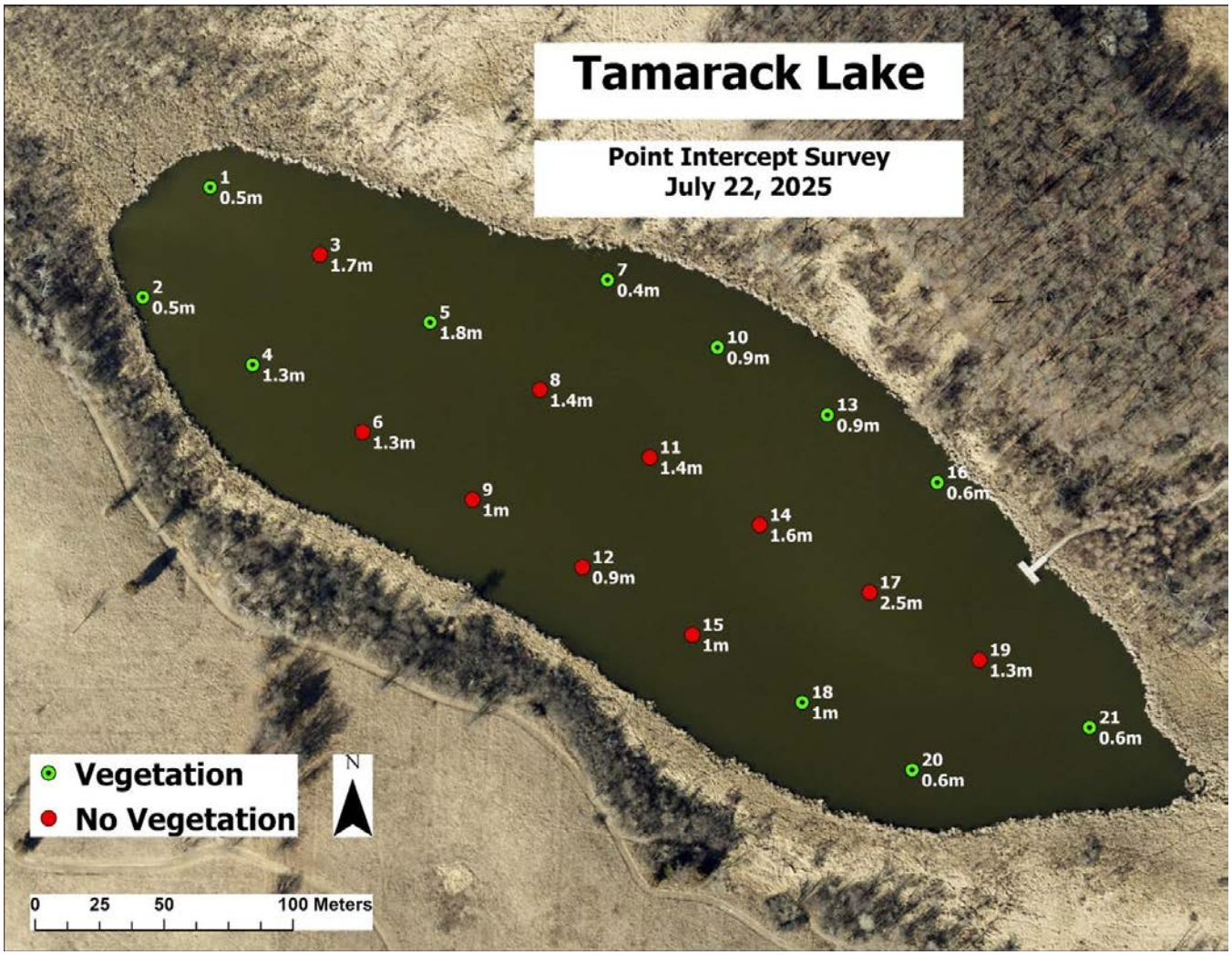

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2026 Wilkinson DWW Bathymetric Survey Proposal

October 22, 2025

Prepared for:
Vadnais Lake Area Water Management Organization

Prepared by:
Ramsey County Parks & Recreation, SWCD

Scope of Services

Macrophyte Surveys for early season (before June 30th, 2026) and late season (after August 1st, before September 4th, 2026)
Macrophyte surveys will consist of data sampling at evenly spaced geo-referenced points throughout the lake to characterize the diversity and abundance of aquatic vegetation using a point intercept survey method. RC-SWCD staff members will also use Lowrance unit and transducer to generate data to produce a biovolume map showing concentration of aquatic vegetation growing in the lake.

Bathymetry Surveys for early season (before June 30th, 2026) and late season (after August 1st, before September 4th, 2026)
Bathymetric surveys are completed by connecting a Lowrance unit and transducer to the boat and following pre-determined transect lines across the lake to capture lake bottom depth data. This data is then processed, corrected using physically measured field data points where necessary, and then used to create new contour lines with ArcGIS software. It may be completed in conjunction with macrophyte surveys when there is a clear enough sonar signal in the lake.

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Wilkinson Deep Water Wetland

Bathymetry and Macrophyte Survey

Task	Cost/Hour	Hours	Cost
Boat Use (2 surveys)*	unit	-	$100
BioBase Upload (2 surveys)*	unit	-	$600
Lake Survey Prepwork (2 surveys)	$85	2	$170
Field Work, 5 hours (2 people)* (2 surveys)	$85	20	$1,700
GIS Post-processing and Mapping (2 surveys)	$85	4	$340
Report Completion (2 surveys)	$85	4	$340
TOTAL		**30**	**$3,250**

*Total field work cost for both surveys would be $850 if VLAWMO staff will be second person in the boat. Total cost for both surveys would then be $2,400.

Deliverables

Both early and late season Bathymetric Reports will include:

- Description of Methods;
- Tables of aquatic, emergent, native, and invasive plants surveyed;
- Bathymetry Map, BioVolume Map, numbered Survey Point map to match with aquatic species tables, and shoreline polygons; and
- Shapefiles including Biovolume, 2026 Contour Lines, and Point Intercept Location layers.

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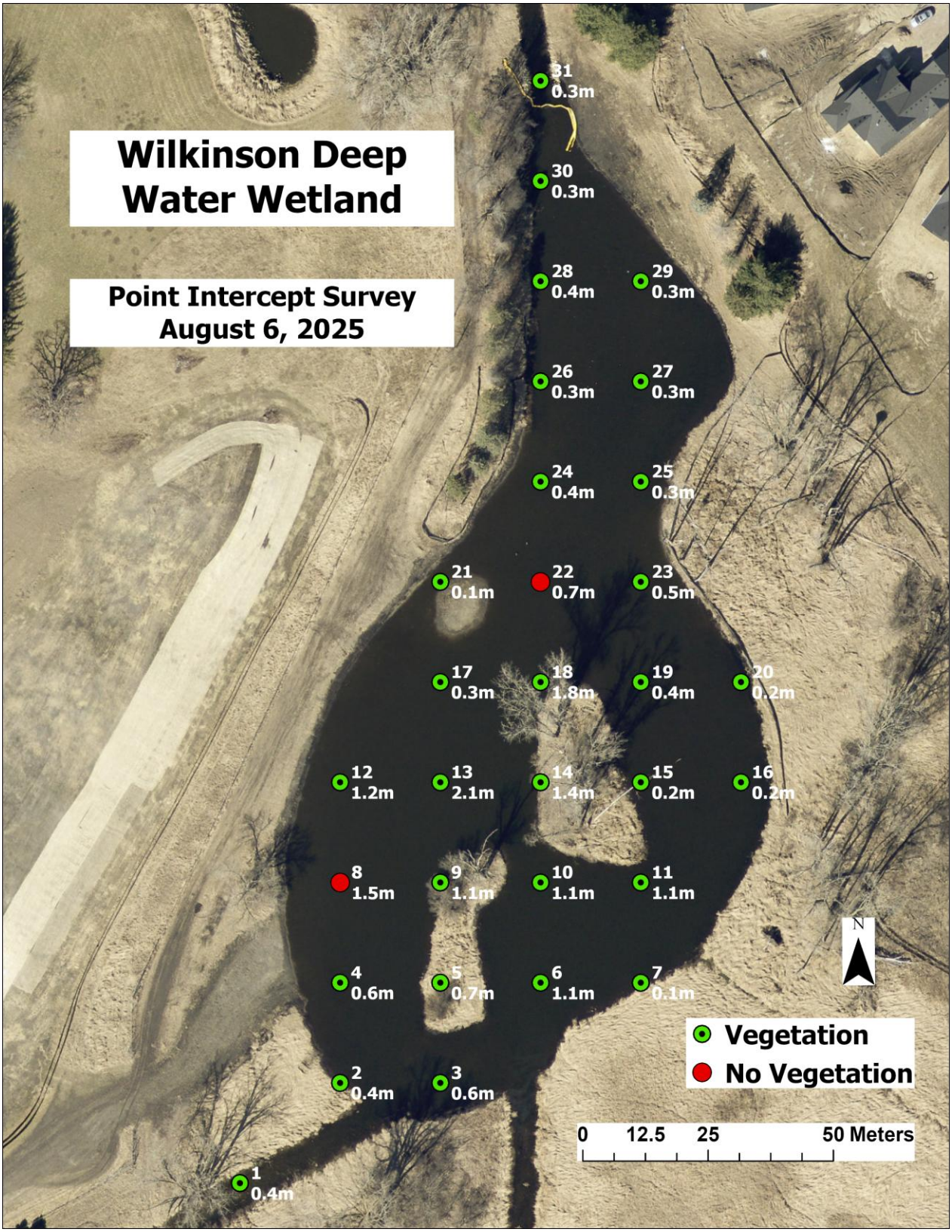

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