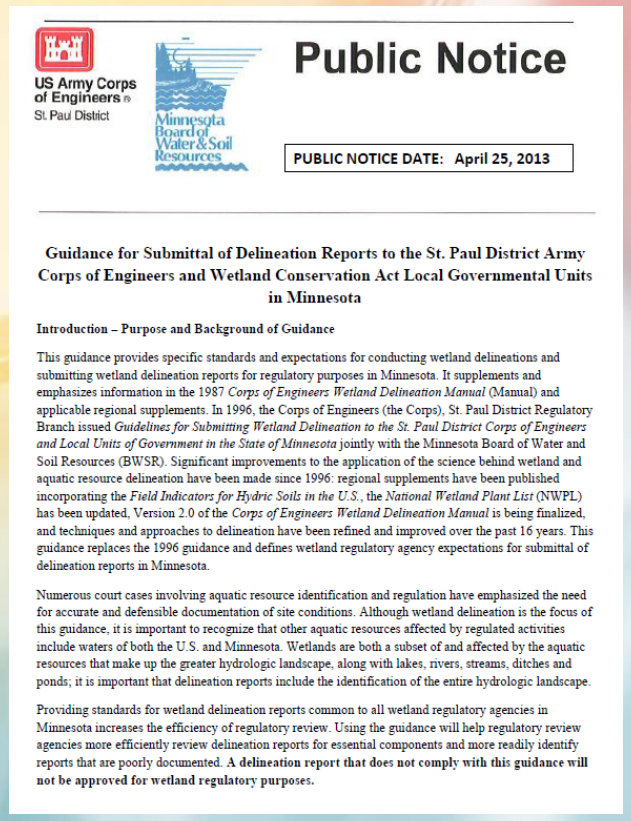
NEW WETLAND DELINEATION GUIDANCE FOR MINNESOTA

BWSR ACADEMY – OCT. 30

April 25, 2013 Joint Public Notice – BWSR and St. Paul District Corps of Engineers



US Army Corps of Engineers
St. Paul District

Minnesota Board of Water & Soil Resources

Public Notice

PUBLIC NOTICE DATE: April 25, 2013

Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and Wetland Conservation Act Local Governmental Units in Minnesota

Introduction – Purpose and Background of Guidance

This guidance provides specific standards and expectations for conducting wetland delineations and submitting wetland delineation reports for regulatory purposes in Minnesota. It supplements and emphasizes information in the 1987 *Corps of Engineers Wetland Delineation Manual* (Manual) and applicable regional supplements. In 1996, the Corps of Engineers (the Corps), St. Paul District Regulatory Branch issued *Guidelines for Submitting Wetland Delineation to the St. Paul District Corps of Engineers and Local Units of Government in the State of Minnesota* jointly with the Minnesota Board of Water and Soil Resources (BWSR). Significant improvements to the application of the science behind wetland and aquatic resource delineation have been made since 1996: regional supplements have been published incorporating the *Field Indicators for Hydric Soils in the U.S.*, the *National Wetland Plant List* (NWPL) has been updated, Version 2.0 of the *Corps of Engineers Wetland Delineation Manual* is being finalized, and techniques and approaches to delineation have been refined and improved over the past 16 years. This guidance replaces the 1996 guidance and defines wetland regulatory agency expectations for submittal of delineation reports in Minnesota.

Numerous court cases involving aquatic resource identification and regulation have emphasized the need for accurate and defensible documentation of site conditions. Although wetland delineation is the focus of this guidance, it is important to recognize that other aquatic resources affected by regulated activities include waters of both the U.S. and Minnesota. Wetlands are both a subset of and affected by the aquatic resources that make up the greater hydrologic landscape, along with lakes, rivers, streams, ditches and ponds; it is important that delineation reports include the identification of the entire hydrologic landscape.

Providing standards for wetland delineation reports common to all wetland regulatory agencies in Minnesota increases the efficiency of regulatory review. Using the guidance will help regulatory review agencies more efficiently review delineation reports for essential components and more readily identify reports that are poorly documented. **A delineation report that does not comply with this guidance will not be approved for wetland regulatory purposes.**

Reports and Delineations conducted in MN for regulatory purposes must follow this guidance!

SESSION OUTLINE

- Why the new guidance?
- What does it say?
- Corps jurisdictional determinations

WHY NEW GUIDANCE NOW?

- Previous version was 1996, we have learned a few things since.
- Changes since 1996
  - Greatly expanded hydric soil indicators
  - Regional Supplements issued
  - New plant list
  - Greatly expanded hydrology indicators
  - New technology and resources

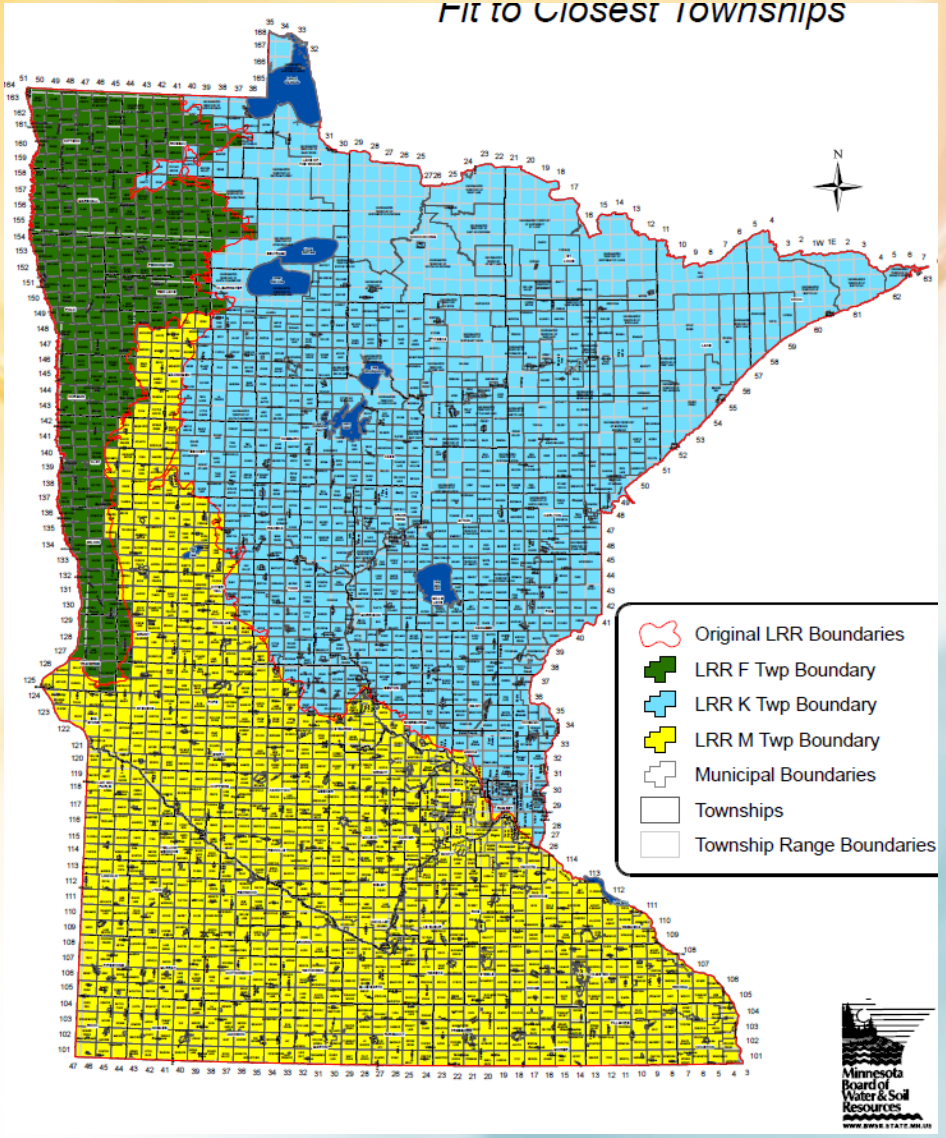
WHY NEW GUIDANCE NOW?

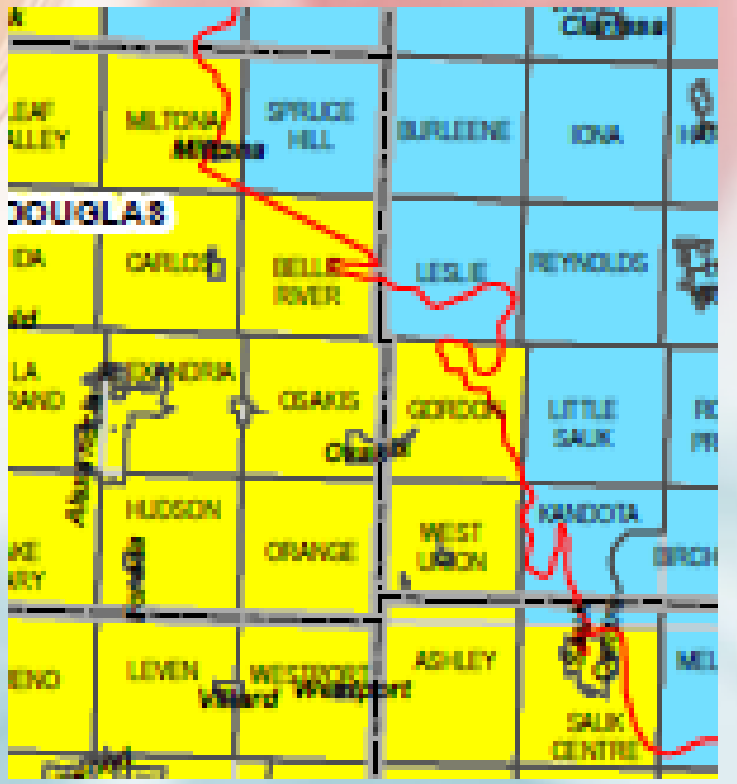
- Fairness/Equity
  - Quality of delineations and reports is highly variable.
  - Good quality delineations and reports are easier to review and approve.
  - Why should we equally accept good and bad report? What incentive is there to do a good job?
- The new standards provide a firm basis to reject substandard delineations from substandard delineators.

WHAT THE GUIDANCE SAYS

- General delineation guidance
- Vegetation guidance
- Soils guidance
- Hydrology guidance
- Report requirements

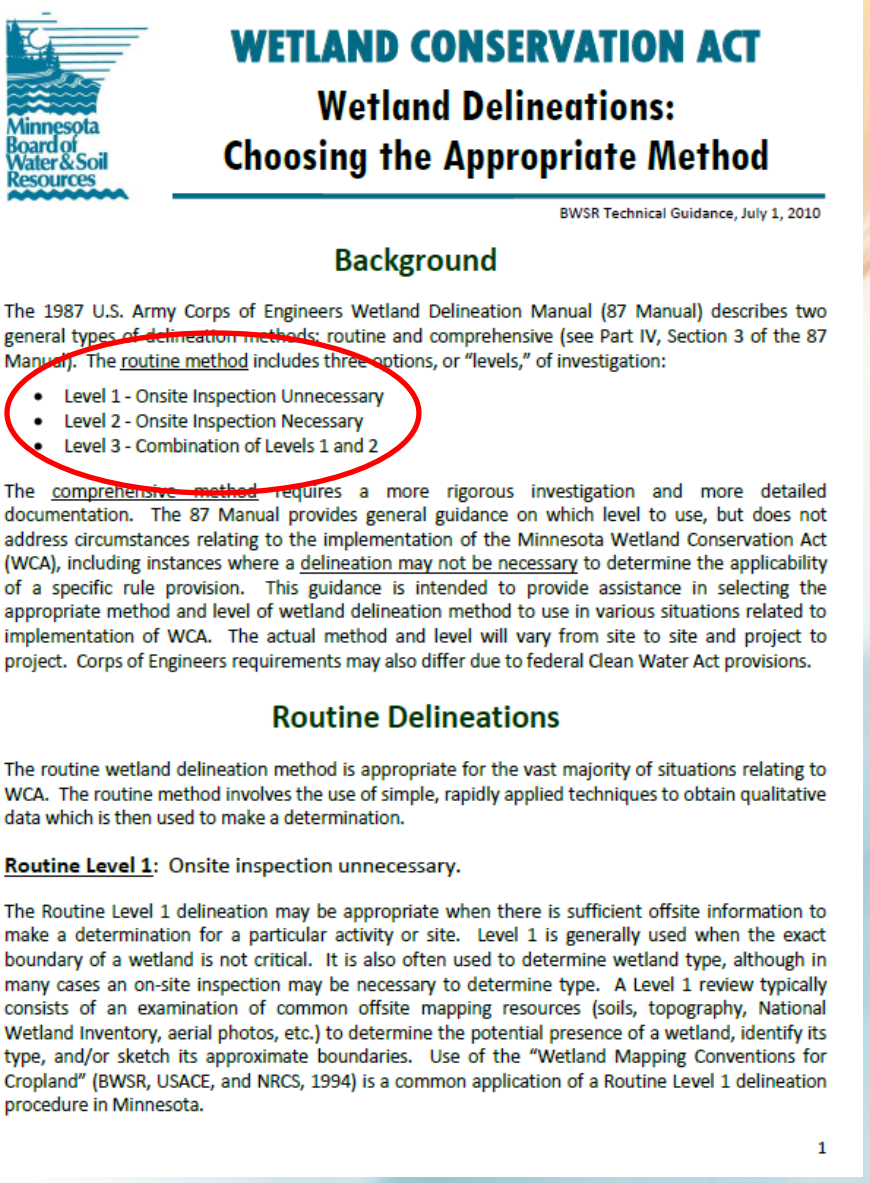
GENERAL WETLAND DELINEATION GUIDANCE





In general, use map boundaries, but can use professional judgment in transition areas.

GENERAL WETLAND DELINEATION GUIDANCE



Minnesota Board of Water & Soil Resources

WETLAND CONSERVATION ACT

Wetland Delineations: Choosing the Appropriate Method

BWSR Technical Guidance, July 1, 2010

Background

The 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (87 Manual) describes two general types of delineation methods: routine and comprehensive (see Part IV, Section 3 of the 87 Manual). The routine method includes three options, or "levels," of investigation:

- Level 1 - Onsite Inspection Unnecessary
- Level 2 - Onsite Inspection Necessary
- Level 3 - Combination of Levels 1 and 2

The comprehensive method requires a more rigorous investigation and more detailed documentation. The 87 Manual provides general guidance on which level to use, but does not address circumstances relating to the implementation of the Minnesota Wetland Conservation Act (WCA), including instances where a delineation may not be necessary to determine the applicability of a specific rule provision. This guidance is intended to provide assistance in selecting the appropriate method and level of wetland delineation method to use in various situations related to implementation of WCA. The actual method and level will vary from site to site and project to project. Corps of Engineers requirements may also differ due to federal Clean Water Act provisions.

Routine Delineations

The routine wetland delineation method is appropriate for the vast majority of situations relating to WCA. The routine method involves the use of simple, rapidly applied techniques to obtain qualitative data which is then used to make a determination.

Routine Level 1: Onsite inspection unnecessary.

The Routine Level 1 delineation may be appropriate when there is sufficient offsite information to make a determination for a particular activity or site. Level 1 is generally used when the exact boundary of a wetland is not critical. It is also often used to determine wetland type, although in many cases an on-site inspection may be necessary to determine type. A Level 1 review typically consists of an examination of common offsite mapping resources (soils, topography, National Wetland Inventory, aerial photos, etc.) to determine the potential presence of a wetland, identify its type, and/or sketch its approximate boundaries. Use of the "Wetland Mapping Conventions for Cropland" (BWSR, USACE, and NRCS, 1994) is a common application of a Routine Level 1 delineation procedure in Minnesota.

1

Describes methods and gives examples of when to use them.

GENERAL WETLAND DELINEATION GUIDANCE

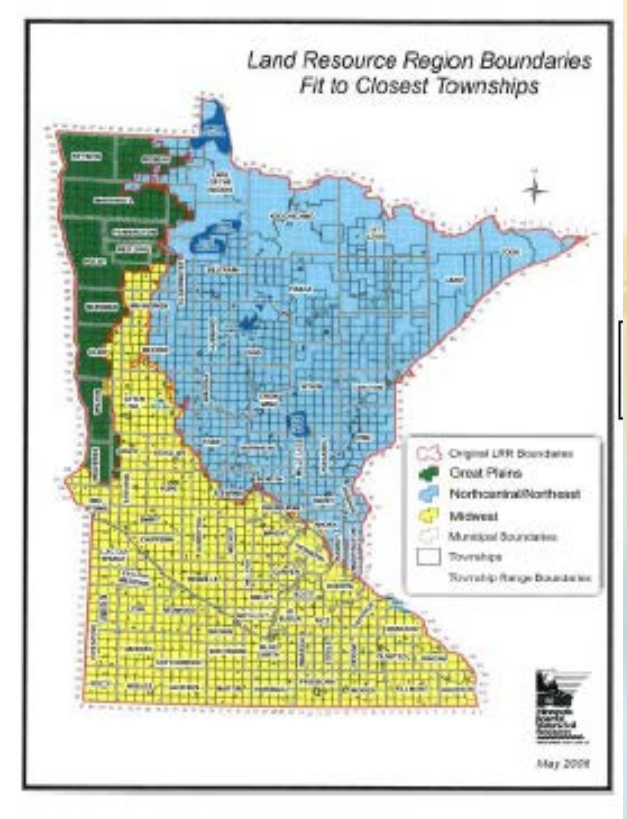
- Delineations outside the growing season.
- Allowed? – yes, but……
  - May have limited utility for regulatory purposes
  - May be subject to field verification later
  - May not be possible on some sites/situations
  - Should absolutely consult with approving agencies/authorities prior to conducting them.

GENERAL WETLAND DELINEATION GUIDANCE

Marking Wetland Boundaries

- Mark with flags, lath, whatever works. Will vary depending on situation.
- Locate via GPS or land survey methods (find out local requirements).
- Wetland boundaries must be usable for the intended regulatory purposes (grading plans, plat maps, etc.).

WETLAND PLANT LIST



Plant lists now based on ecological regions like supplements.

WETLAND PLANT LIST

New nomenclature.

Polyganum → *Polyganum*

Polyganum → *Persicaria*

Aster → *Symphyotrichum*

Rhamnus frangula → *Frangula alnus*

Infra 2714 Families 251
Syn 19097 Genera 1843
Total 29748 Species 7937
RESET

US Army Corps of Engineers
2013 NWPL Website Version 3.1
National Wetland Plant List

enter search text
Scientific Name
Starting with
Syn
Infra

NWPL Home Page | Home Page | User Help | Create Plant List | Partner Links

Whats New?
NWPL Documents
Info About Plants

Wetland Plant Lists

NWPL 2013 Wetland Ratings
(Phytoneuron 2013-49: 1-241.)
2013 Plant List Citation
2013 NWPL National List (PDF)
2013 NWPL National List (XLS)
2013 USACE Regional Lists
2013 States / US Territories

Historic Plant Lists

2012 NWPL Plant Lists (v3.0)
(Previous version of our Website)
Historic Voting Records (v2.4)
FWS 1988 / 1996 NWI Lists
Propose a New Species

Contact us via Email

Biological Questions
NWPL@usace.army.mil
Website Issues / Feedback
richard.bates@usace.army.mil

Stiff Blue Eyed Grass

Images courtesy of BONAP et. al.

US Army Corps of Engineers
BONAP
U.S. Fish & Wildlife Service
United States Environmental Protection Agency
NRCS

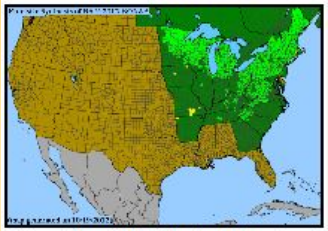
Infra 1 Families 0
Syn 6 Genera 0
Total 7 Species 0

US Army Corps of Engineers
2013 NWPL Website Version 3.1
National Wetland Plant List

Aster macrophyllus
Scientific Name
Starting with
Syn
Infra

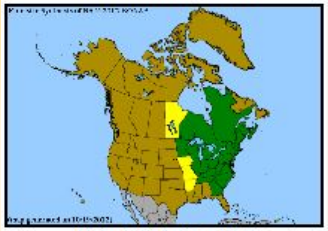
BONAP Distribution Maps | Home Page | User Help | Create Plant List | Display Plant List | Species Detail | NWPL Species List

Eurybia macrophylla



County Distribution Map

County / State Legend



State Distribution Map

Link to Google Images

Print Species Detail | WikipediA Window | Google Image Window | Species Detail Window

Eurybia macrophylla *L.* (Large-Leaf Wood-Aster) **ASTERACEAE** Family

AGCP	AW	CB	EMP	GP	HI	MW	NCNE	WMVC	AK
UPL			UPL	FACU		FACU	UPL		

Credit : Jessie Harris
Photographed by : Jessie Harris
Used with permission: Further use requires written permission from the photographer.

Eurybia macrophylla **L.**
Aster ianthinus Burgess
Aster macrophyllus L.
Aster macrophyllus var. apricensis Burgess
Aster macrophyllus var. excelsior Burgess
Aster macrophyllus var. ianthinus (Burgess) Fern.

Aster macrophyllus
Aster macrophyllus var. apricensis
Aster macrophyllus var. excelsior
Aster macrophyllus var. ianthinus
Aster macrophyllus var. pinguifolius
Aster macrophyllus var. sejunctus
Aster macrophyllus var. velutinus

WETLAND PLANT LIST

No more implied precision with % occurrences.

Wetland Indicator Status	Definition
Obligate Wetland (OBL)	Almost always occur in wetlands
Facultative Wetland (FACW)	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Occur in wetlands and non-wetlands
Facultative Upland (FACU)	Usually occur in non-wetlands, but may occur in wetlands
Obligate Upland (UPL)	Almost never occur in wetlands

WETLAND PLANT LIST

No more FACW+, FACW-, etc.

Stellaria borealis	Bigelow	FACW	OBL	FACW	Boreal Starwort
Stellaria crassifolia	Ehrh.	FACW	FACW	OBL	Fleshy Starwort
Stellaria graminea	L.	UPL	UPL	FACU	Grass-Leaf Starwort
Stellaria longifolia	Muhl. ex Willd.	FACW	FACW	FACW	Long-Leaf Starwort
Stellaria longipes	Goldie	FACU	OBL	OBL	Long-Stalk Starwort
Stellaria media	(L.) Vill.	FACU	FACU	FACU	Common Chickweed
Streptopus amplexifolius	(L.) DC.	FAC	FAC	FACW	Clasping Twistedstalk
Streptopus lanceolatus	(Ait.) Reveal	FACU	FAC	FAC	Lance-Leaf Twistedstalk
Strophostyles helvola	(L.) Ell.	FAC	FAC	FACU	Trailing Fuzzy-Bean
Stuckenia filiformis	(Pers.) Börner	OBL	OBL	OBL	Slender-Leaf False Pondweed
Stuckenia pectinata	(L.)Böerner	OBL	OBL	OBL	Sago False Pondweed
Stuckenia vaginata	(Turcz.) Holub	OBL	OBL	OBL	Sheathed False Pondweed
Suaeda calceoliformis	(Hook.) Moq.	FACW	FACW	FACW	Paiuteweed
Subularia aquatica	L.	OBL	OBL	OBL	American Water-Awlwort

WETLAND PLANT LIST

No differentiation of subspecies

For example,

Alnus incana ssp *rugosa*

Alnus incana ssp *incana*

Alnus incana.

WETLAND PLANT LIST

Subregions in NE/NC Region

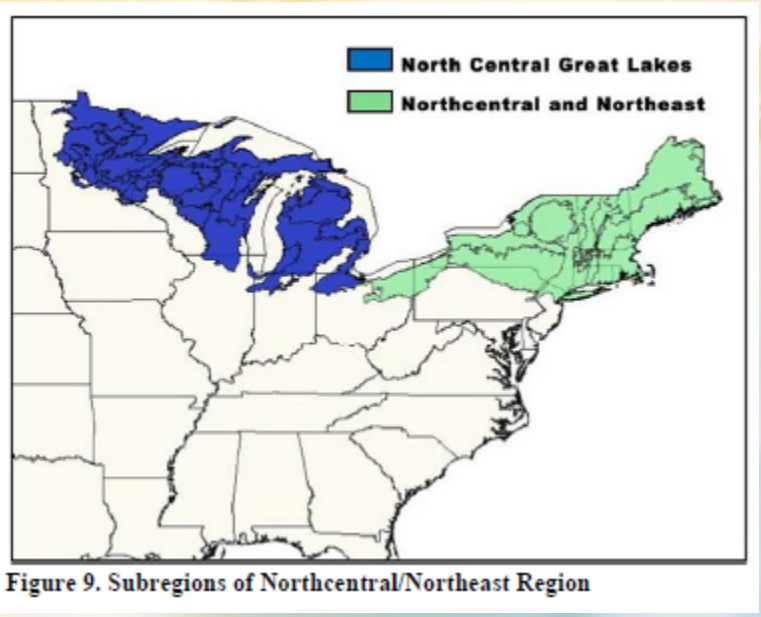


Figure 9. Subregions of Northcentral/Northeast Region

Rubus idaeus

FAC – Great Lakes Subregion

FACU – elsewhere

Populus tremuloides

FAC – Great Lakes Subregion

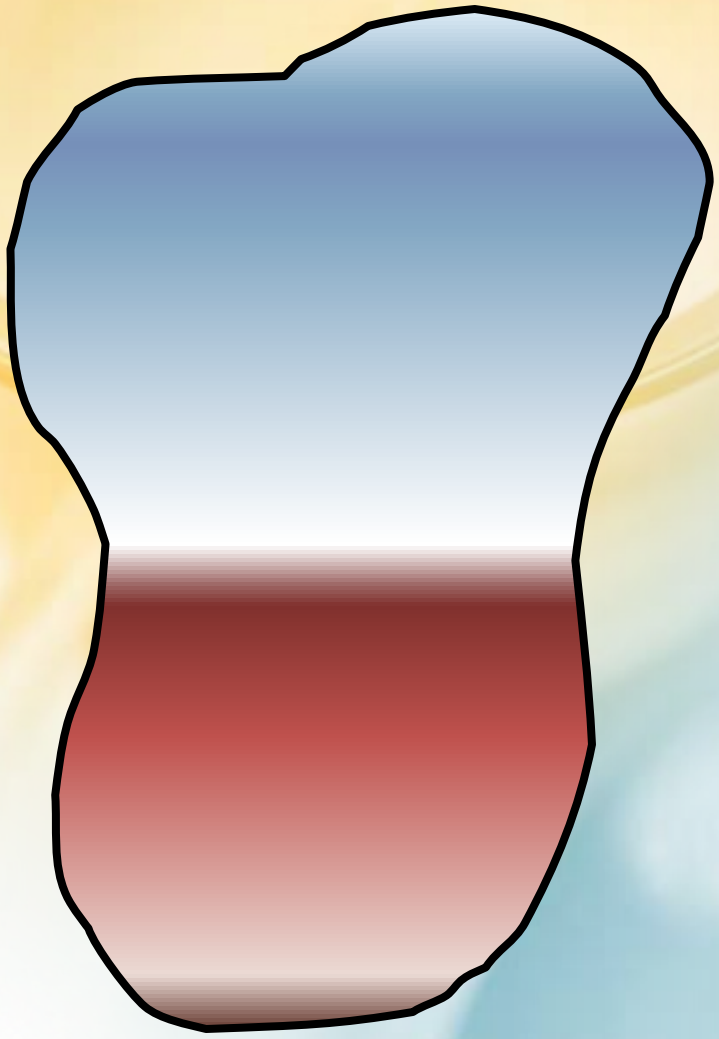
FACU – other subregion

VEGETATION GUIDANCE

- At minimum, identify species that make up 80% of the areal coverage in a plot.

- Record “un-identifiable species” coverage on the data form.

SOILS MAPPING



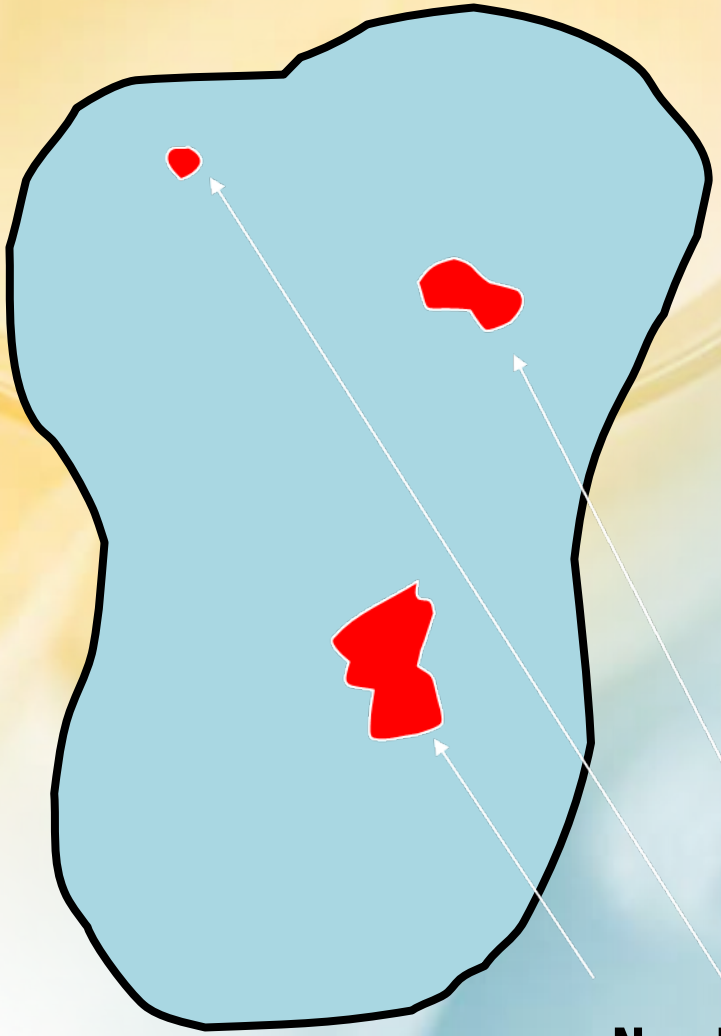
HYDRIC RATING - OLD

1. Hydric
2. Partially Hydric
3. Non-Hydric
4. Unknown Hydric

HYDRIC RATING - NEW

1. All Hydric
2. Predominantly Hydric
3. Partially Hydric
4. Predominantly Non-hydric
5. Not Hydric
6. Unknown Hydric

SOILS MAPPING



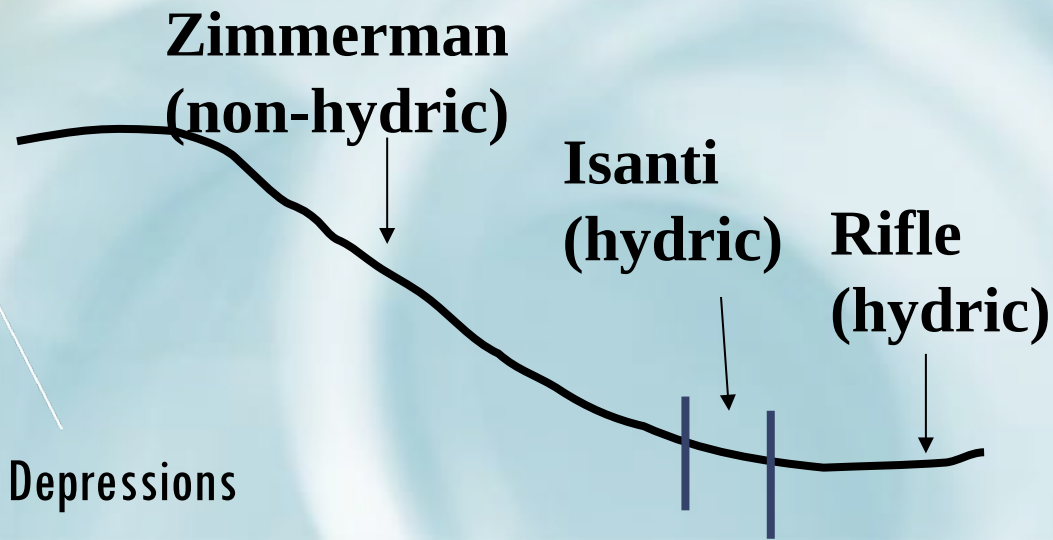
PREDOMINATELY HYDRIC

- 66-99% Hydric
- Small areas of non-hydric components on higher landscape positions

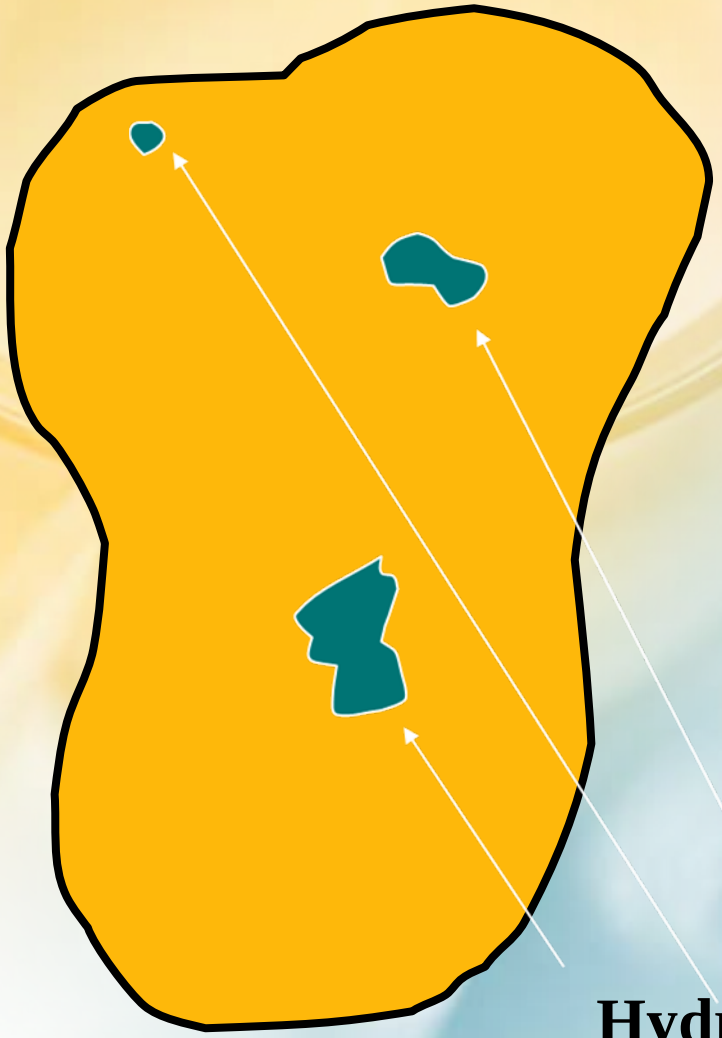
SOILS MAPPING

PARTIALLY HYDRIC SOILS

- 33-66% Hydric
- Hydric Soils as inclusions along map unit boundary or Small Depressions



SOILS MAPPING



PREDOMINATELY NON- HYDRIC

- Up to 33% Hydric Soils
- Usually Small depressions on Landscape

SOILS GUIDANCE

- Field indicators will change, must check for current versions.

- The title of the indicator does not describe the requirements.

  "Thick Dark Surface" does not mean any thick dark surface. There are specific requirements related to the underlying layer.

SOIL Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

PROFILE DESCRIPTION MUST REFLECT ANY CHECKED INDICATORS

Only check an indicator if the soil description meets the requirements.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Use remarks section to justify hydric soil determination if no indicator met.

SOILS GUIDANCE

- Failure to meet an indicator does not mean soil is not hydric. Indicators have not been developed for all soils.

- If veg and hydrology indicator present, refer to Chapter 5 in supplements on problematic hydric soils.

HYDROLOGY GUIDANCE

- If it has indicators, it has wetland hydrology.
- Use professional judgment when recording indicators at specific sample points.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

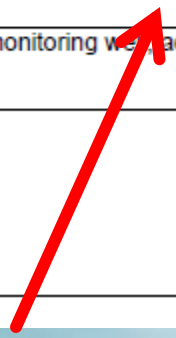
Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Record sampling depth even if "NO"

HYDROLOGY GUIDANCE

Evaluating Antecedent Precipitation Conditions for Assessing Wetland Hydrology

Using Climate Data Available in Minnesota

BWSR Technical Guidance, January 31, 2011

Contents

WETLAND CONSERVATION ACT

Using Aerial Imagery to Assess Wetland Hydrology

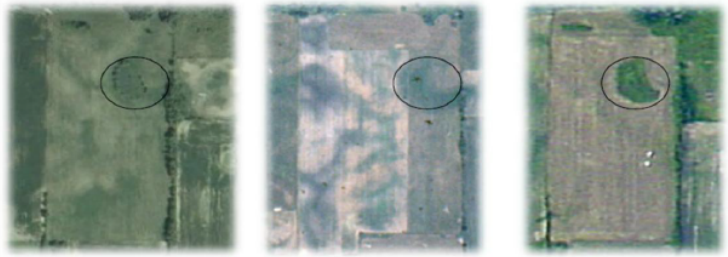
BWSR Technical Guidance, July 1, 2010

Background

In 1994, the Board of Water & Soil Resources (BWSR), the U.S. Army Corps of Engineers (Corps), and the Natural Resource Conservation Service (NRCS) collaborated on the development of wetland mapping conventions (*Offsite Hydrology Determination by Using Rainfall Data with Farm Services Agency Imagery*) to aid in the implementation of the wetland conservation provisions of the Federal Farm Bill and promote consistency between wetland determinations made under the National Food Security Act Manual and the Corps of Engineers 1987 Wetland Delineation Manual (87 Manual). Since 1994, there have been numerous changes in State and Federal wetland regulations as well as advances in the science and practical application of wetland delineation procedures. Most notably, the Corps has developed a series of Regional Supplements to the 87 Manual (regional supplements) to address regional wetland characteristics and improve the accuracy and consistency of wetland delineation procedures. All three regional supplements that are in effect for Minnesota (Great Plains, Midwest, Northcentral/Northeast) incorporate the use of historical aerial photography as a method to assess long-term hydrologic conditions.

This guidance is intended to be used as a supplement to the 1994 mapping conventions document. It incorporates new data sources, clarifies procedures, and provides direction on interpreting results in concert with the 87 Manual and regional supplements.

Example series of aerial images showing changes in wetland hydrology signatures over time:



1980 1989 2006

HYDROLOGY GUIDANCE

Minnesota Board of Water & Soil Resources

BWSR Guidance Concerning NRCS – Developed Drainage Setback Tables

October 2013

Version 2.0

Purpose: Promote consistency among wetland managers when determining the impact of a drainage system on wetland hydrology.

Audience: Wetland managers

Rule reference or statute: Not applicable

Intended use: Guidance intended to complement USDA NRCS Drainage Setback Tables and Corps of Engineers Regional Supplements for wetland delineation.

Contents

REPORT REQUIREMENTS

Clearly Identify Assessment Area

NO

YES

REPORT REQUIREMENTS

Description of Field Conditions (Relevant to Delineation Interpretation) at the time of the field delineation.

- Short Term Climate Conditions
  - Wet or droughty conditions
  - Antecedent precipitation data
- Land Use
  - Wooded or open space
  - Farmed
  - Mixed use rural/residential
- Landscape

REPORT REQUIREMENTS

Who conducted the review and for what purpose.

- **Why are they doing it?**
  - Identify wetlands on potential development site
  - Identify wetlands in road corridor
  - Identify wetlands for habitat assessment
  - Etc.
- **Who are they doing it for?**
  - Landowner, developer, public entity, etc.
- **When was it done?**
  - Date(s)

REPORT REQUIREMENTS

Methods used

- **87 Manual and Supplement – Well yeah but?**
- **What specifically?**
  - **Level 1 or 2?**
  - **Mapping conventions?**
  - **Mosaic method?**
  - **Monitoring data?**
  - **Reference wetlands?**
  - **Problem area or atypical procedures?**
  - **Etc.**

REQUIRED REPORT FIGURES

Mapping Resources

- Location map
  - Enough detail to provide directions
- Topographic
  - USGS, or LiDAR
- NWI Mapping
  - New NWI from DNR
  - Place over recent aerial photography
- Soil Survey
  - Web soil survey with hydric soils report
  - Placed over recent aerial photography

REQUIRED REPORT FIGURES

- DNR Protected Waters Inventory
- Wetland Boundary Map
  - Over recent aerial photography
  - Data points that correlate to data sheets
  - Include all other aquatic resources

REQUIRED REPORT FIGURES

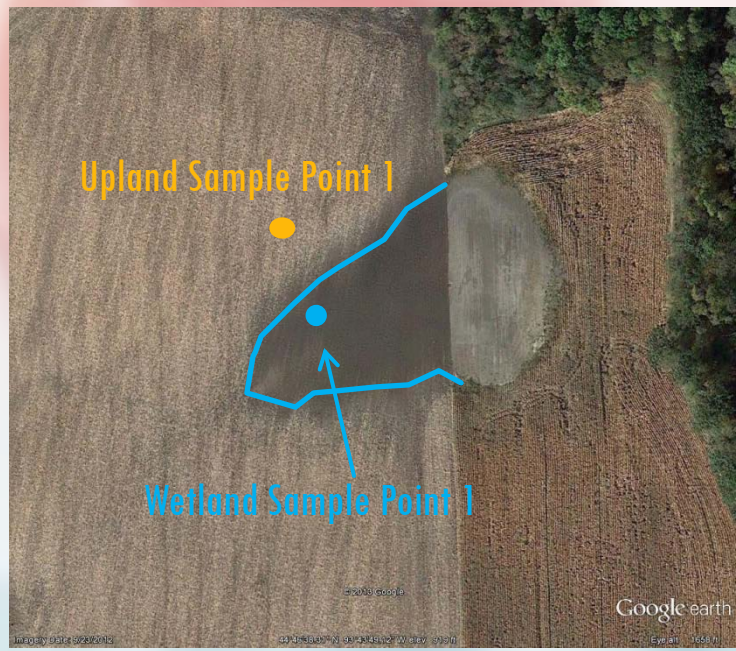
<u>Other Figures</u> (as needed/available)

- **FSA slides and/or summary of mapping conventions review**
- **Local wetland maps (County/City inventories, etc.)**
- **Minnesota County Biological Survey**
- **MLCCS mapping (MN Land Cover Classification System)**
- **Local LiDAR map**

REPORT REQUIREMENTS

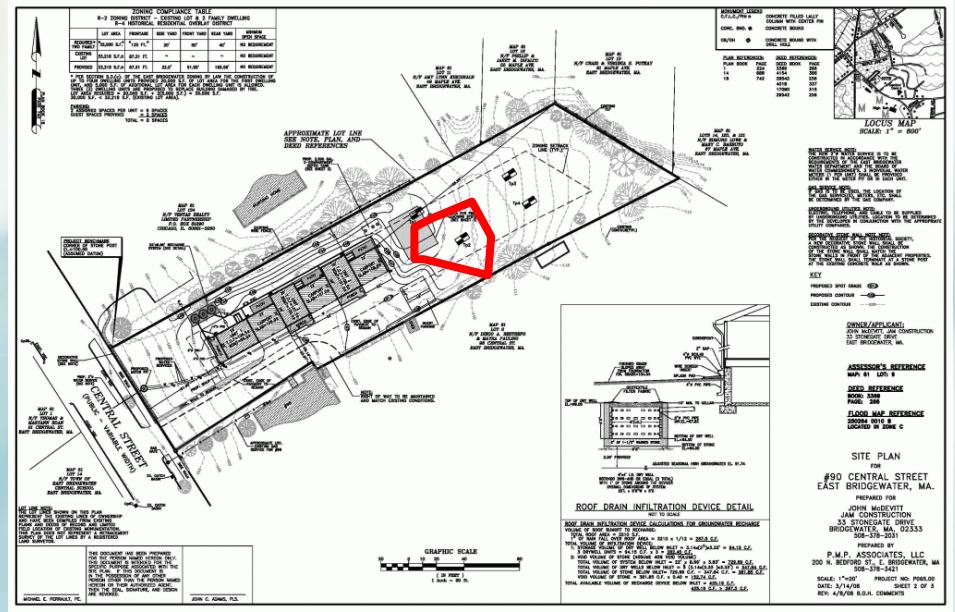
Data Forms

- Completely and correctly filled out
- Correspond to sample locations indicated on a map
- Locations should be representative of site, or placed in the difficult to delineate spots



REPORT FIGURES

Current conditions, not proposed

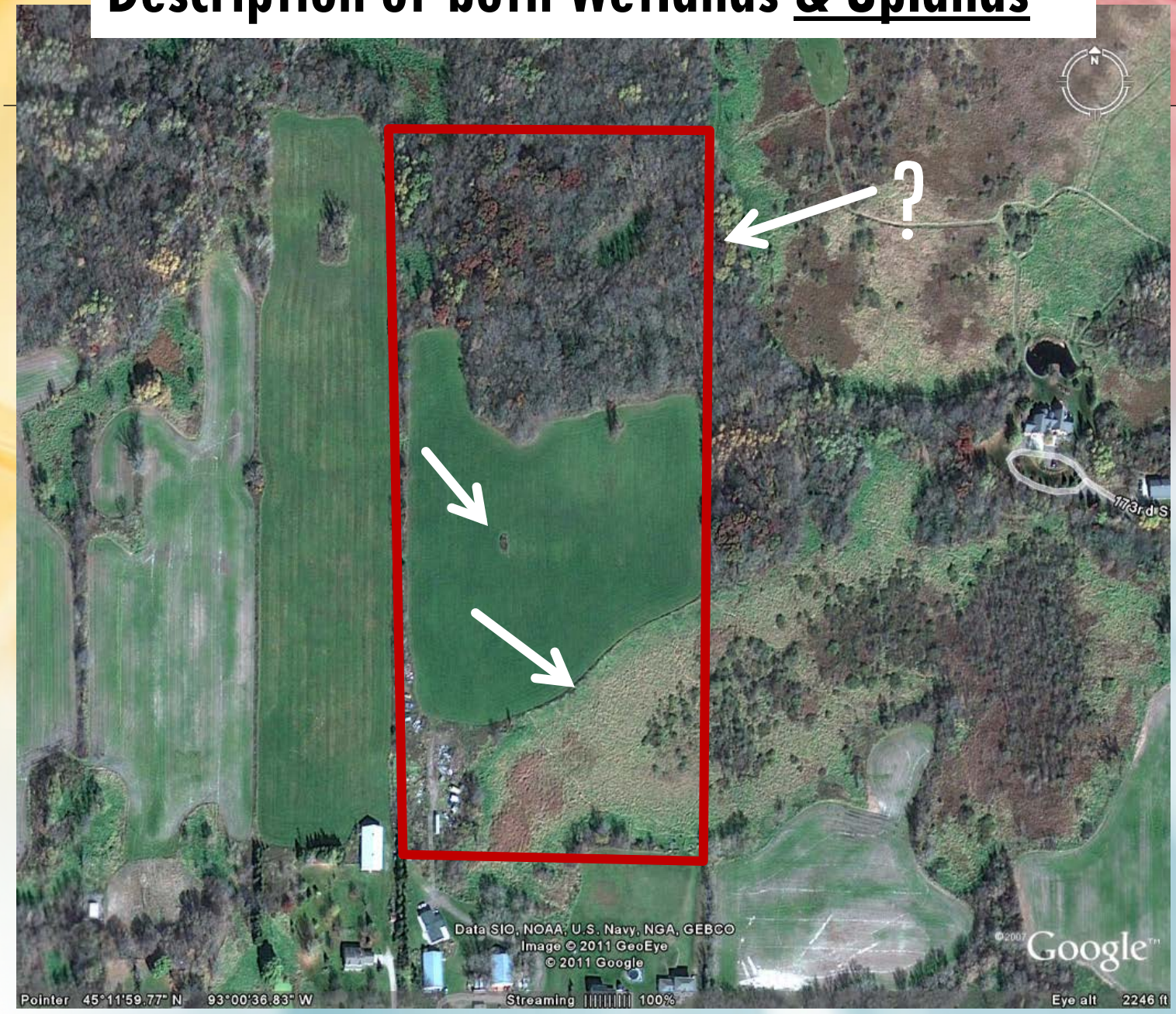


RESULTS AND DISCUSSION

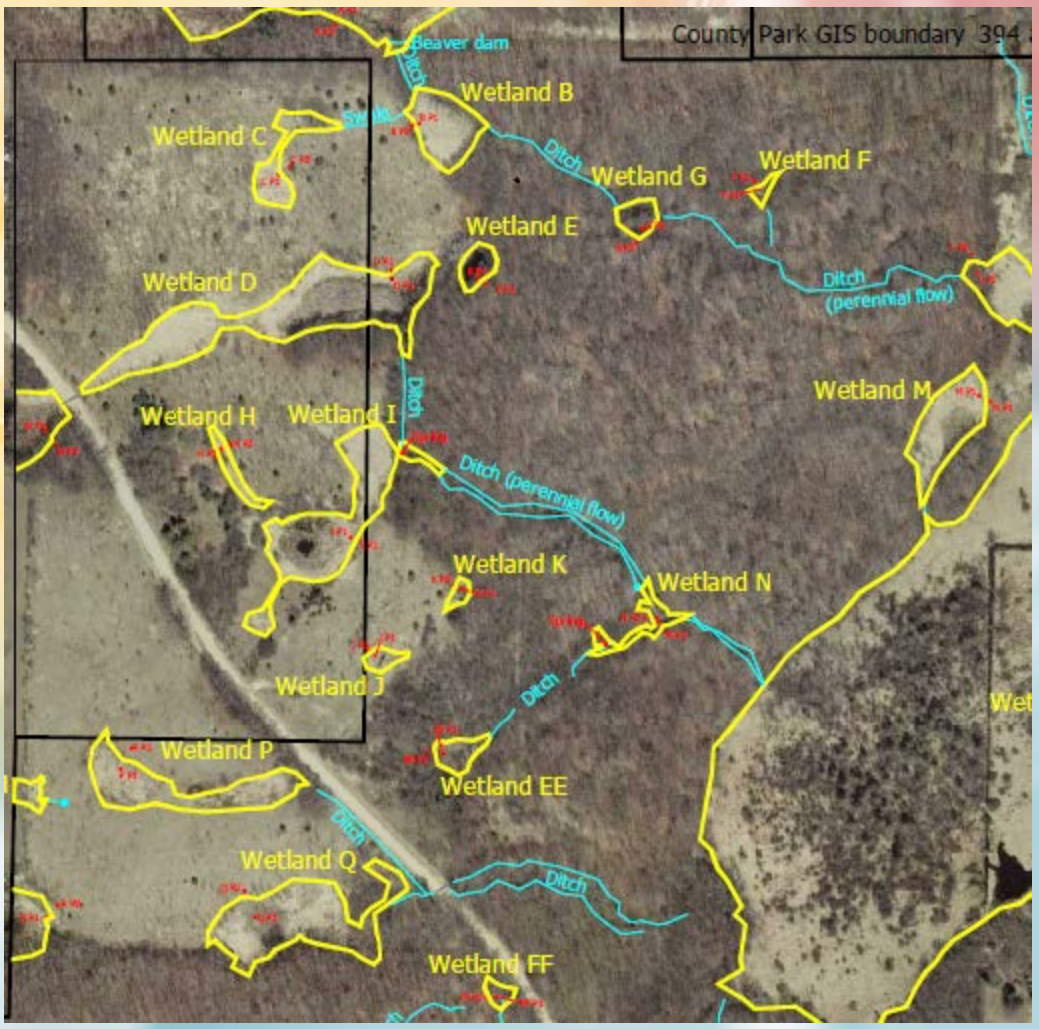
Description of both Wetlands & Uplands

- ✓ Dominant Vegetation for each community/type
- ✓ Wetland Type – Circular 39, Cowardin, Eggers & Reed
- ✓ Description of transition area
- ✓ Other aquatic resources
  - Ditches
  - Ephemeral streams
  - Storm water ponds

Description of both Wetlands & Uplands



IDENTIFY ALL AQUATIC RESOURCES



My Wetland Delineation Report

Justifying Wetland Determinations and Boundaries

My Wetland Delineation Report

Showing My Client How Much I Know and How Hard I Worked

NEXT