Adaptive Management & Wetland Restoration

Rock River Basin TMDL

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Rock River Basin

Total Daily Maximum Load (TMDL)

Overview

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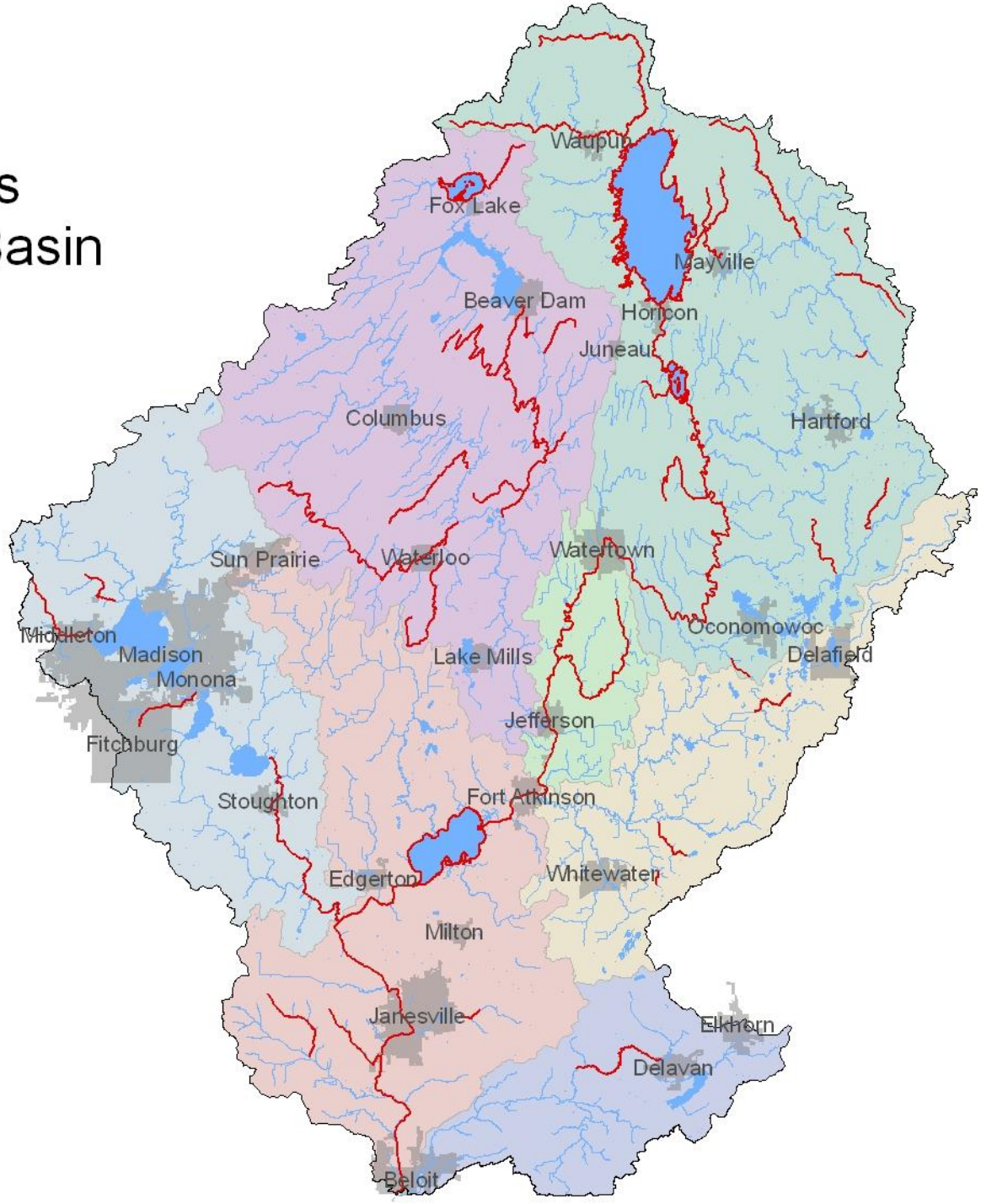
Impaired Waters in the Rock River Basin



Impaired Waters

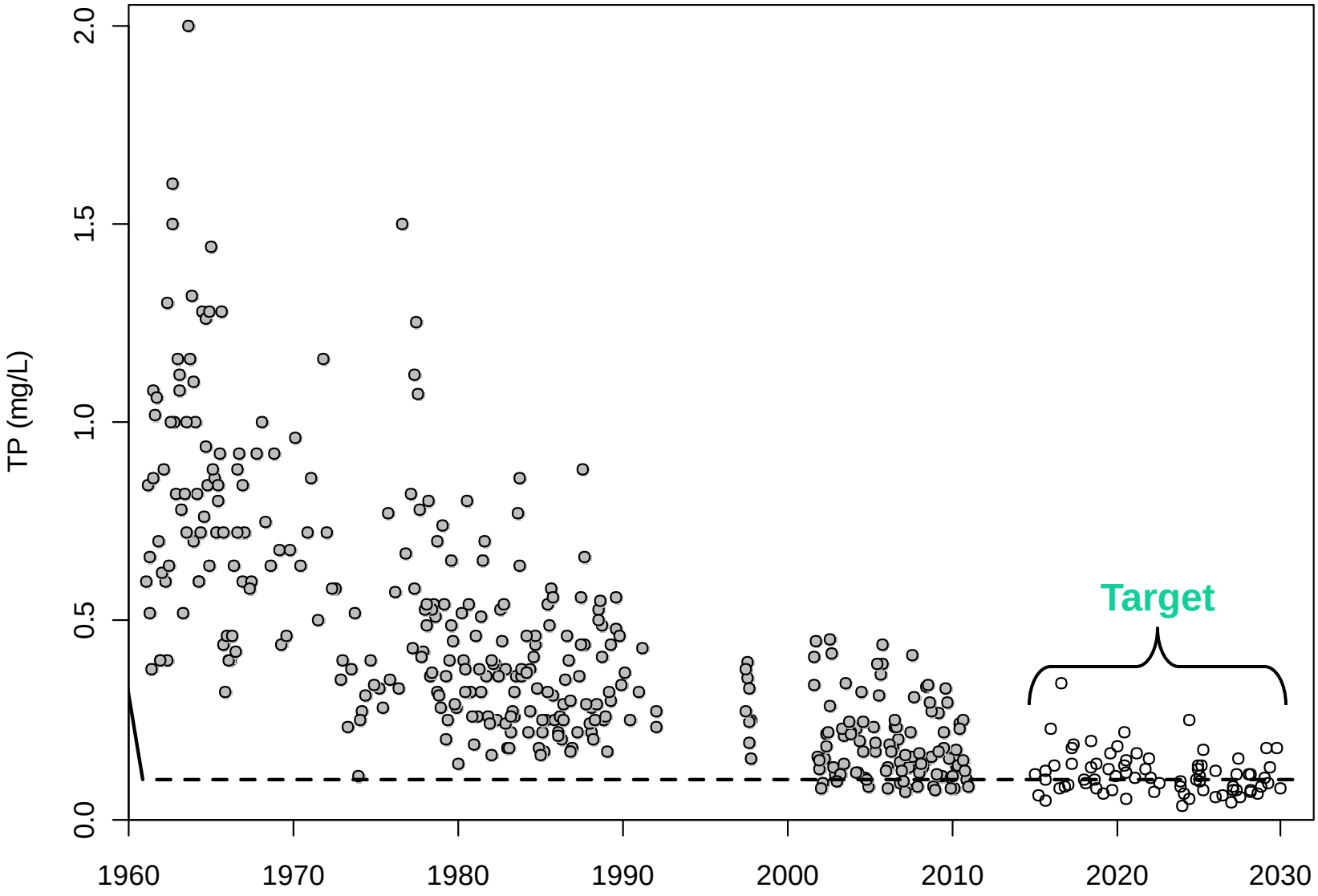
0 5 10 20 Miles

Pollutants of Concern

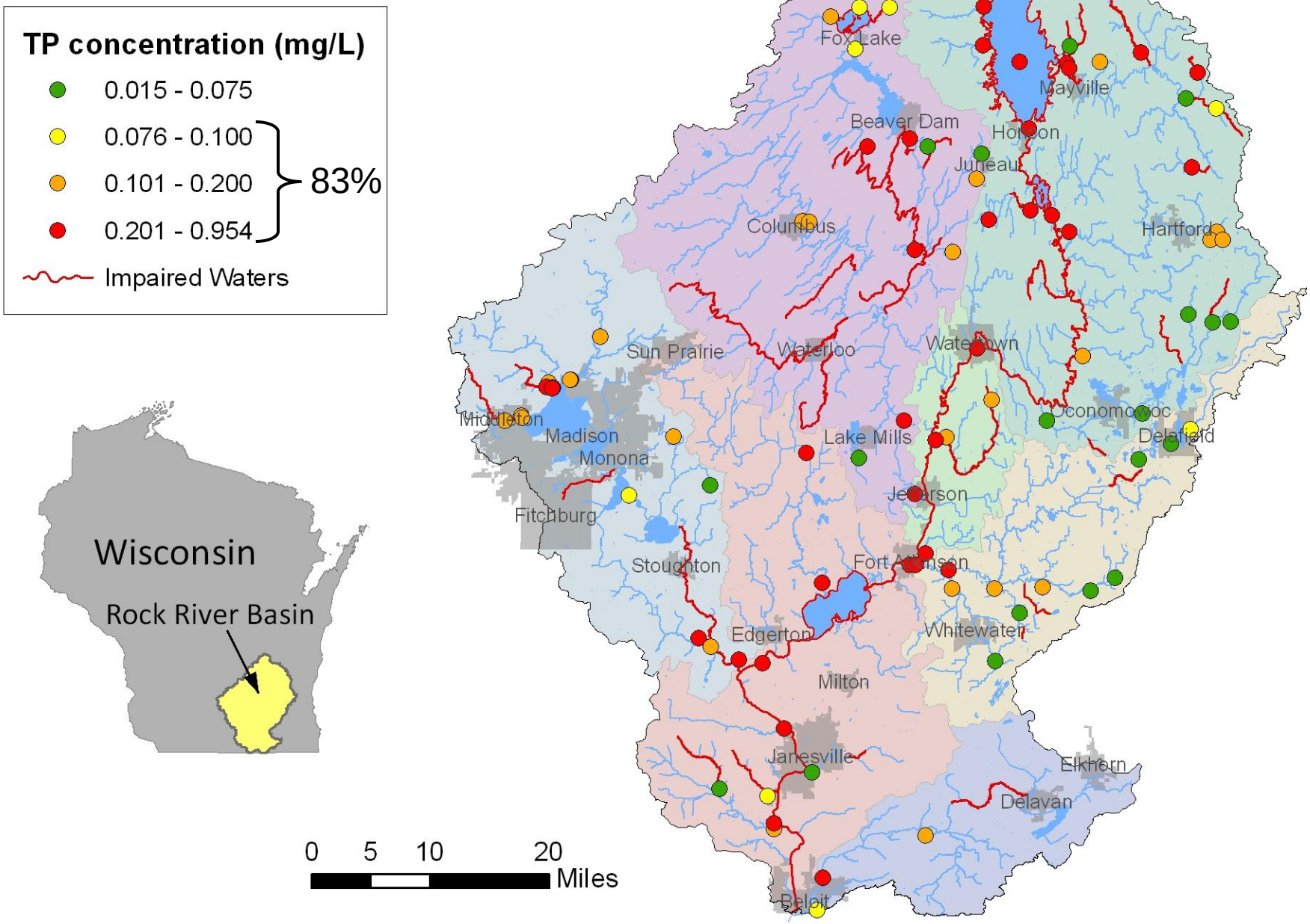
The Rock River TMDL addresses 62 impaired waters

- 20 impaired by sediment only
- 3 impaired by phosphorus only
- 39 impaired by both sediment and phosphorus

Rock River at Afton, WI



Water Quality Monitoring



What are TMDLs?

The amount of a pollutant a waterbody can receive and still meet water quality standards

(Essentially, a water pollution budget)

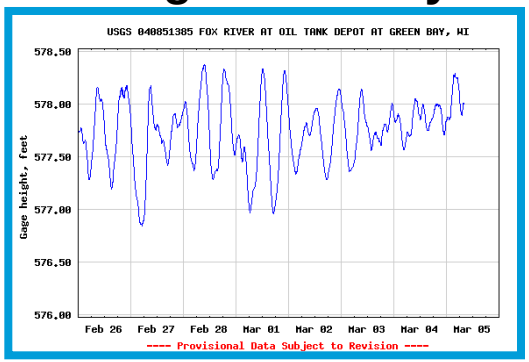
Load Allocation

+

Waste Load Allocation

+

Margin of Safety



TMDL Allocations

Waste Load Allocation

- WWTPs / POTWs
- Industries
- MS4s
- Non-Metallic Mines
- Construction Sites
- CAFOs

Load Allocation

- Agricultural
- Non-permitted Urban
- Background

Phosphorus Water Quality Targets

NR 102 Phosphorus Criteria

- 0.100 mg/L for rivers named in statute
- 0.075 mg/L for all other streams and rivers
- 0.100 mg/L for impoundments *(Koshkonong & Sinissippi)*
- 0.040 mg/L for shallow lakes *(Fox)*

Poll and Q&A

Adaptive Management

One of two alternative compliance options

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AM as a compliance tool

- Between a permitee or group of permitees and the community – ag or urban stormwater
  - Must meet certain eligibility criteria:
    - Receiving waterbody must exceed water quality criterion
    - Non-point source P loading must be at least 50%
    - Permitee must require filtration to meet discharge limit

Adaptive Management

- Aspects of AM plan must be placed in permit
  - Time frame
  - Proposed practices
  - Identified Action Area
- Generally require less information from agriculture than trades
- Success based on meeting in-stream WQ criteria at reach discharge point
  - Monitoring, not accounting

Phosphorus Water Quality Targets

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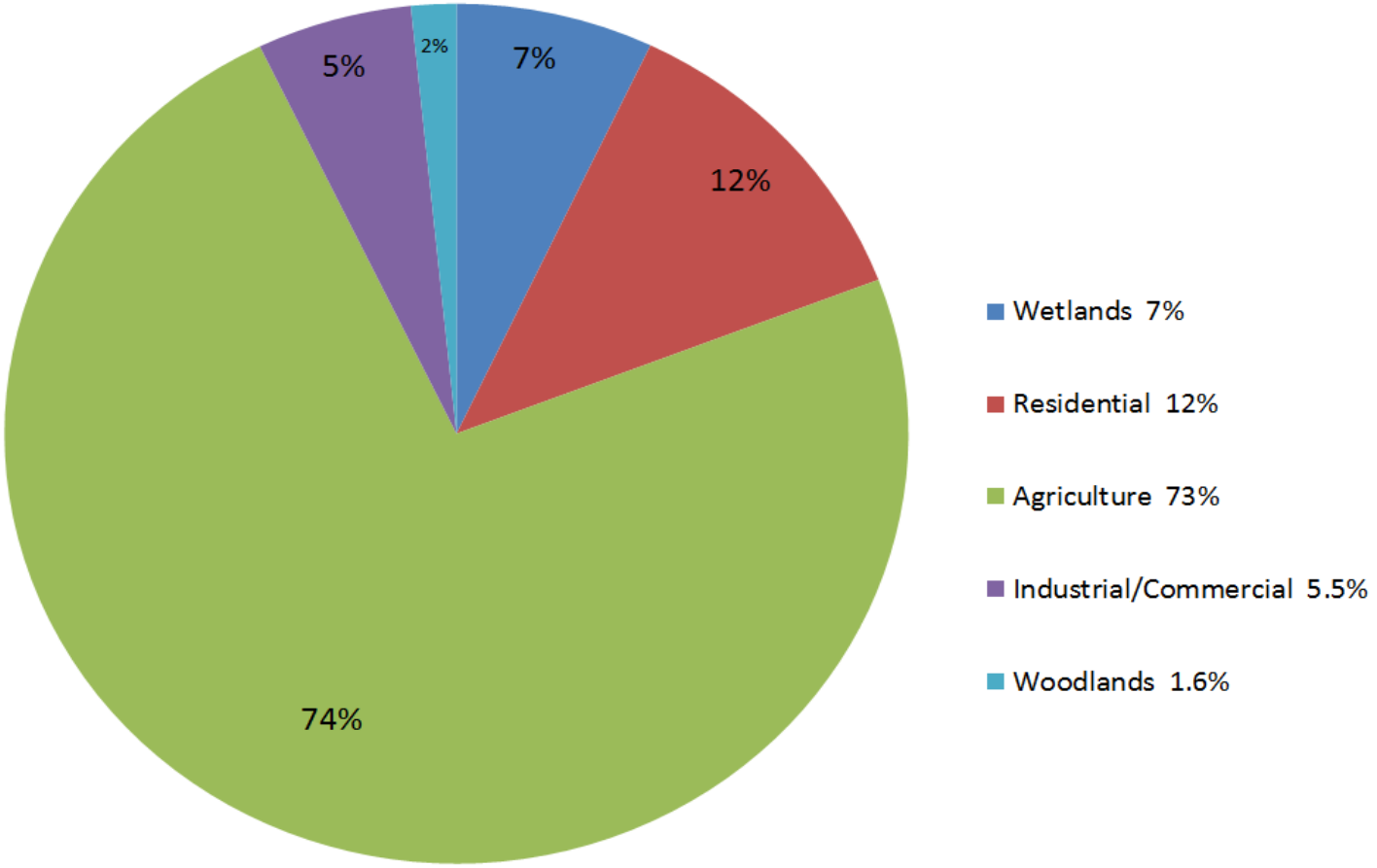
Likely Practices

- Nutrient management
- Conservation tillage
- Cover crops
- Buffers
- Barnyard controls
- Streambank restoration
- ***Wetland restoration***
- Many others…

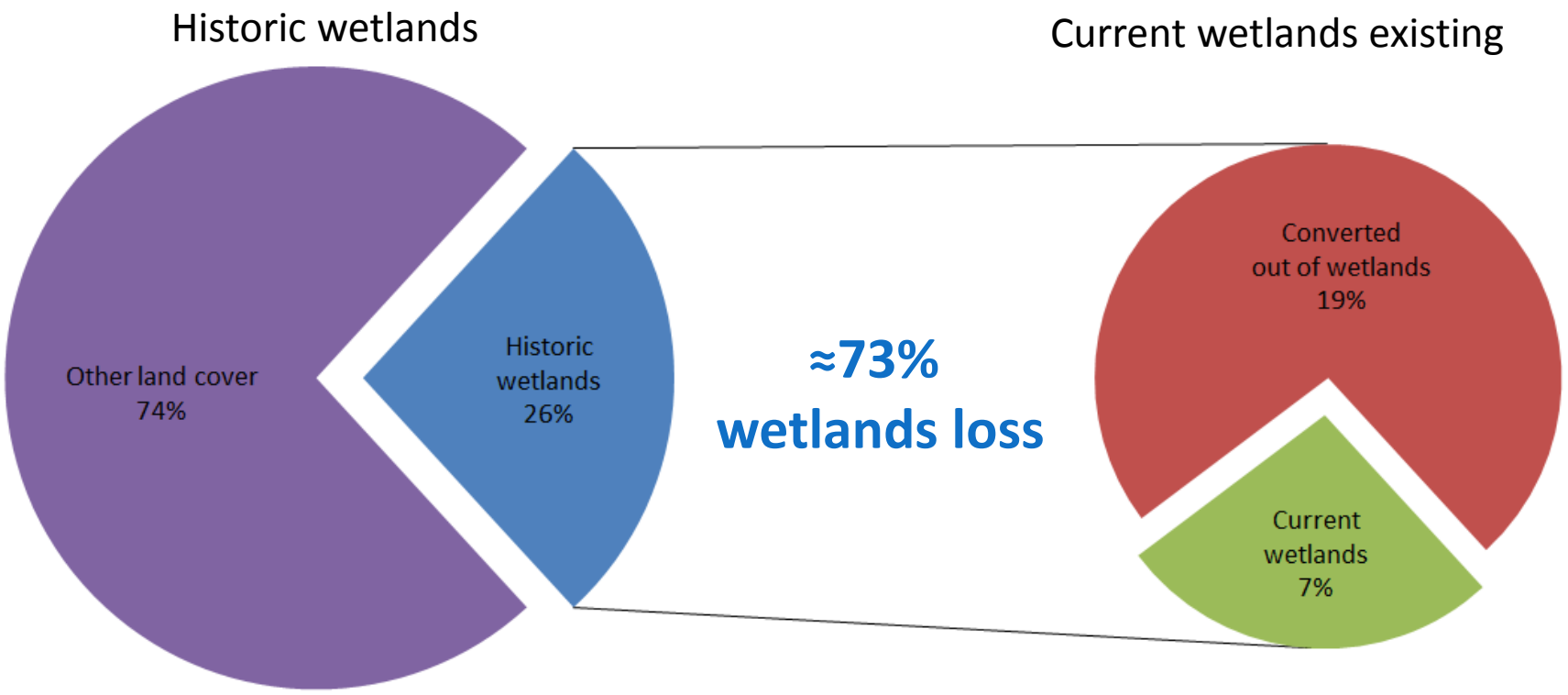
Current Land Use

in the Rock River Basin



**Data from Rock River TMDL (2011)*

Wetland Area
in the Rock River Basin



**Data from Rock River TMDL (2011)*

Poll and Q&A

Using WDNR Surface Water Data Viewer

A method for identifying potential wetland restoration projects

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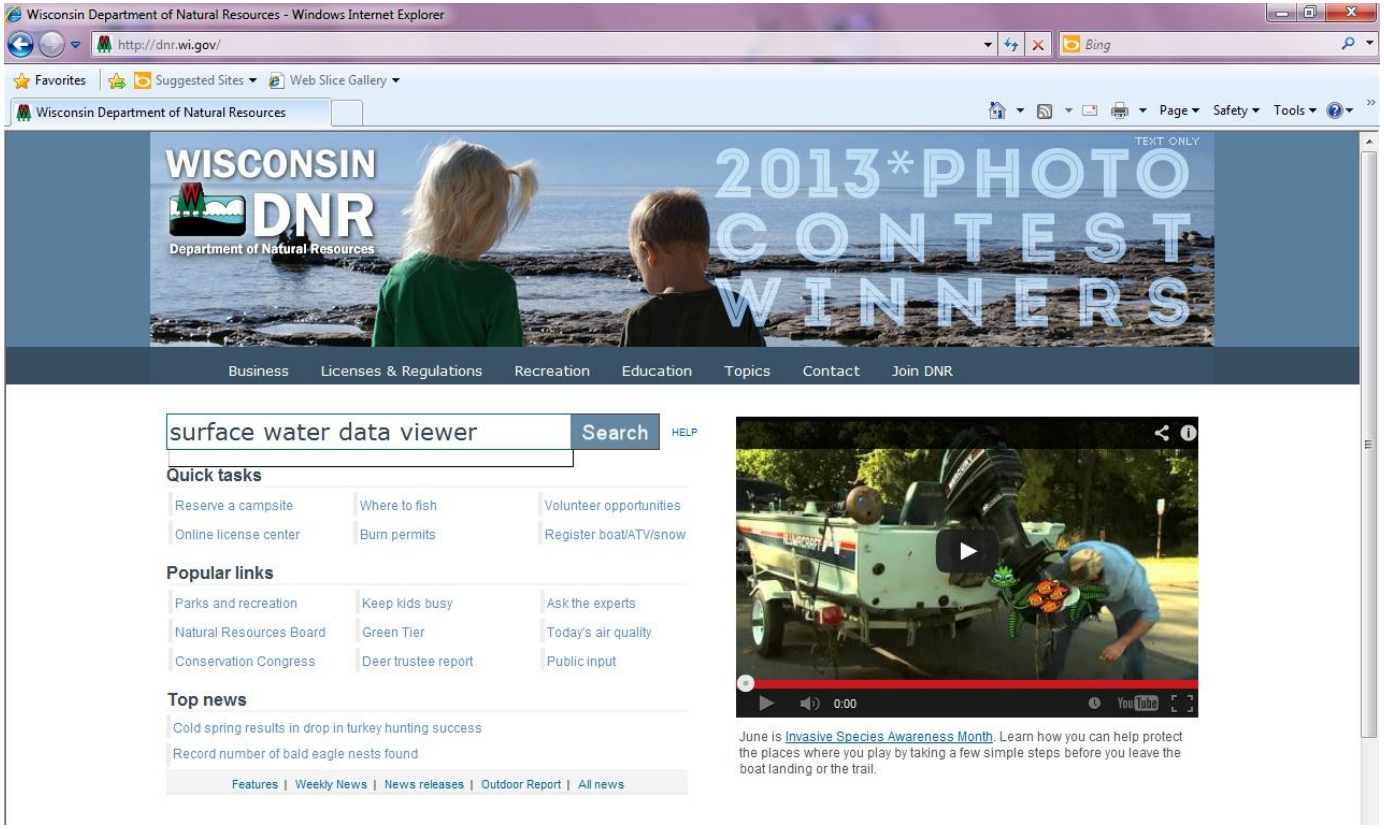
What is it?

- A WDNR interactive web-mapping tool

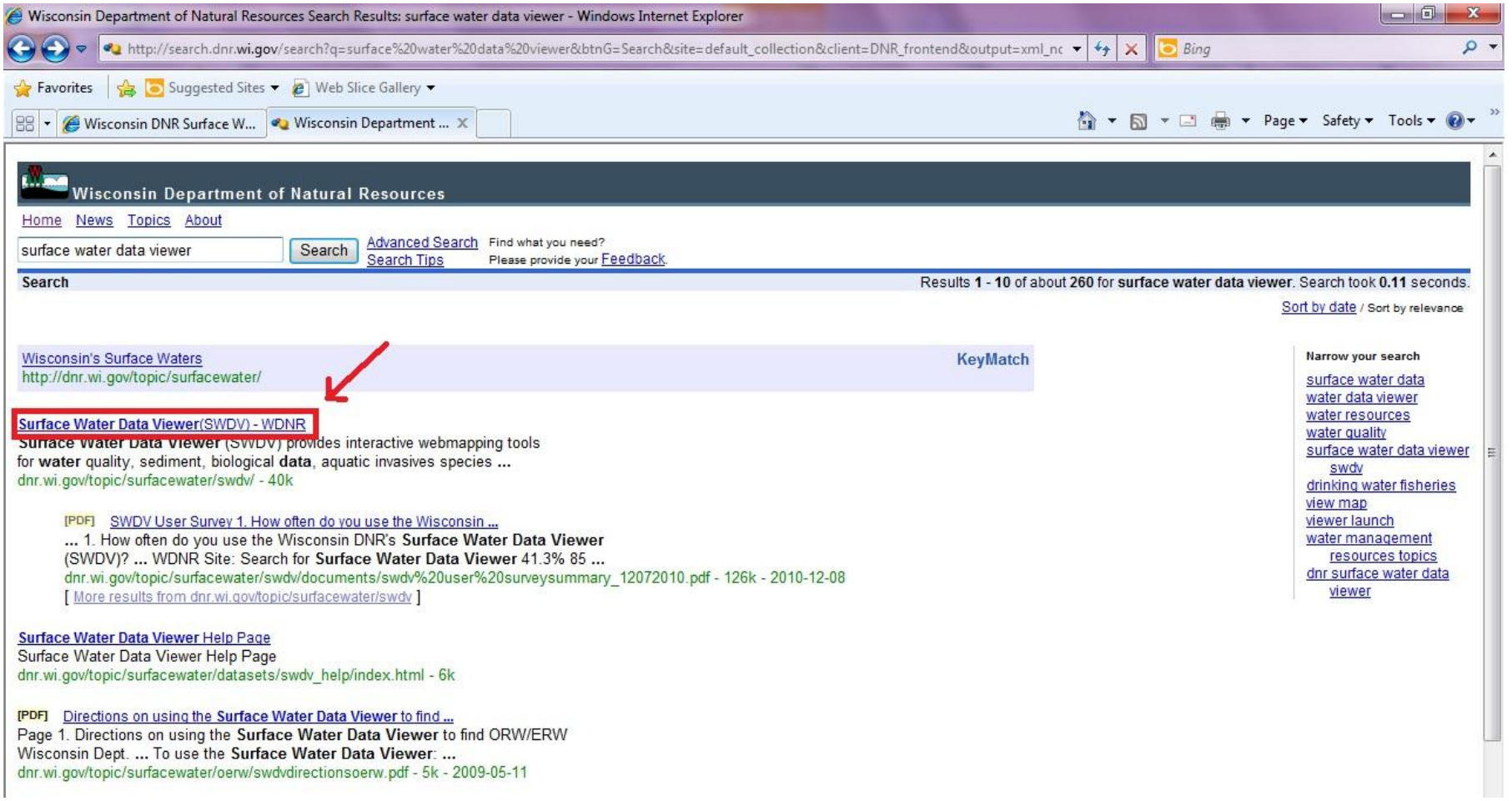
- Provides primarily statewide water-related datasets, including:
  - Chemistry data (water, sediment)
  - Physical data
  - Biological data (macroinvertebrate, aquatic invasives)

Step 1: Navigate to the SWDV

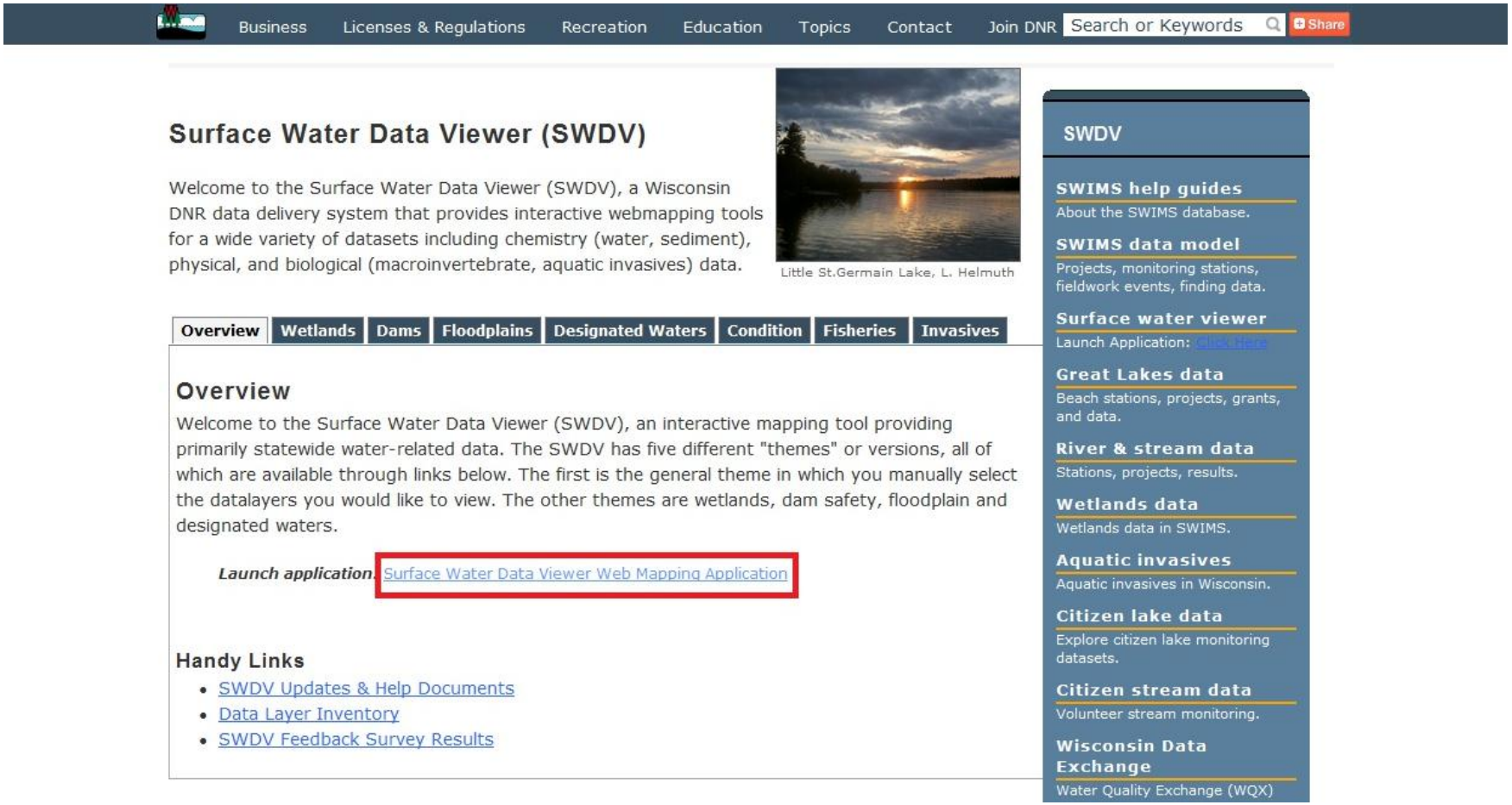
Go to http://dnr.wi.gov and type in “Surface water data viewer” into the search bar



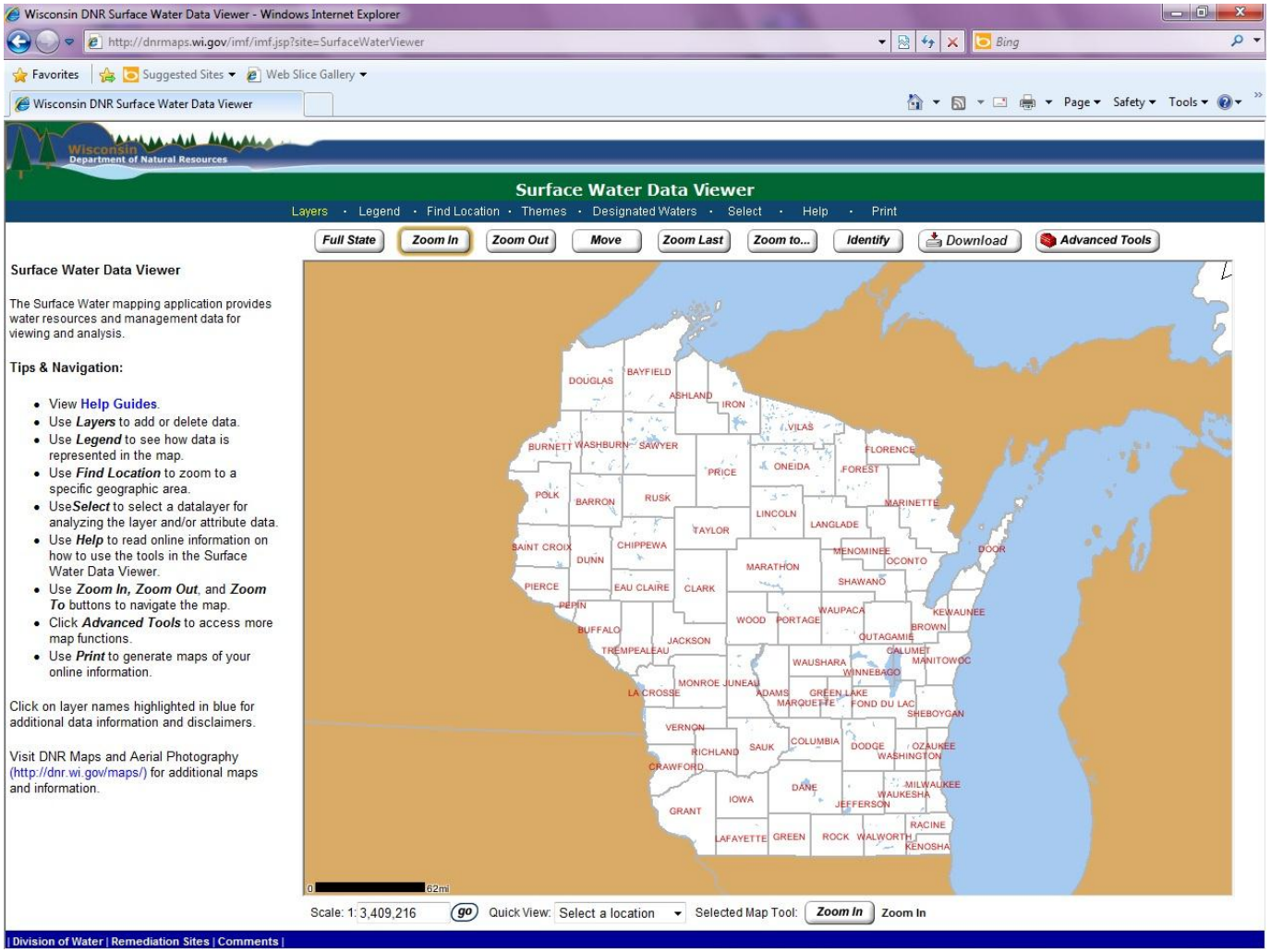
Click the first link



This will take you to the Surface Water Data Viewer webpage. Click the “launch application” link

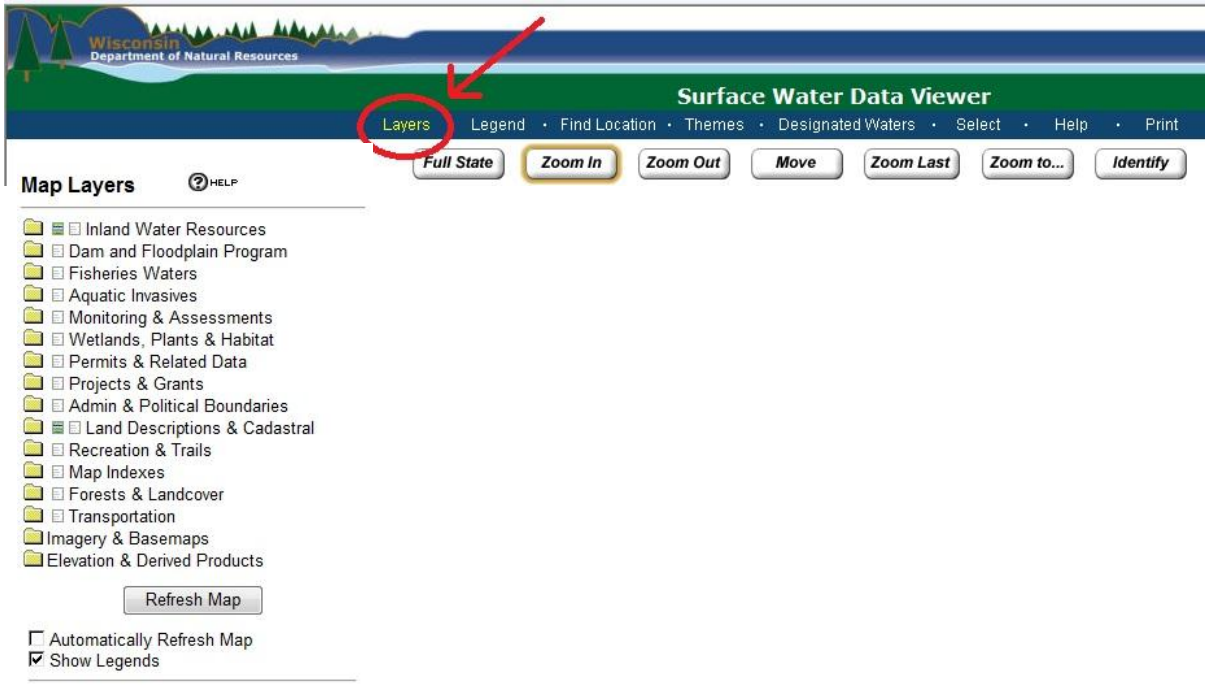


This will open the Surface Water Data Viewer application



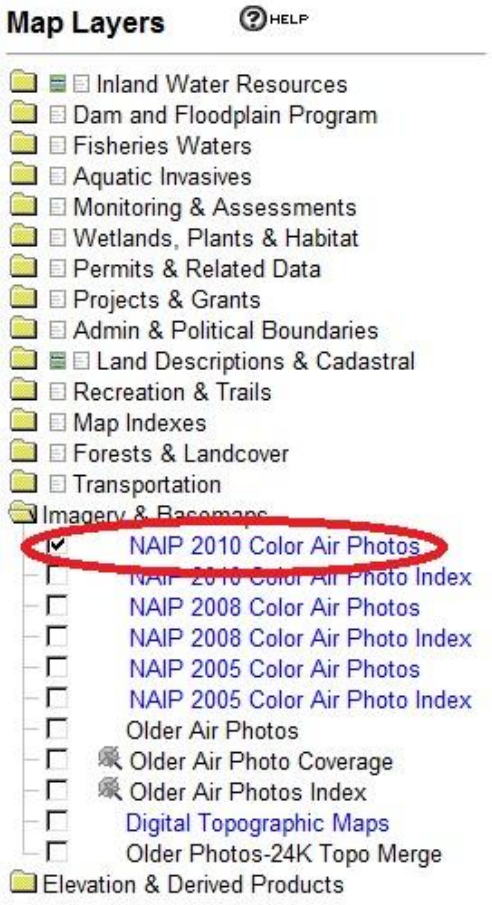
Step 2: Activate layers

First, click on the “Layers” tab. To activate a layer, click on the box next to the layer name. When the layer has loaded, you will see a check mark appear in the box.

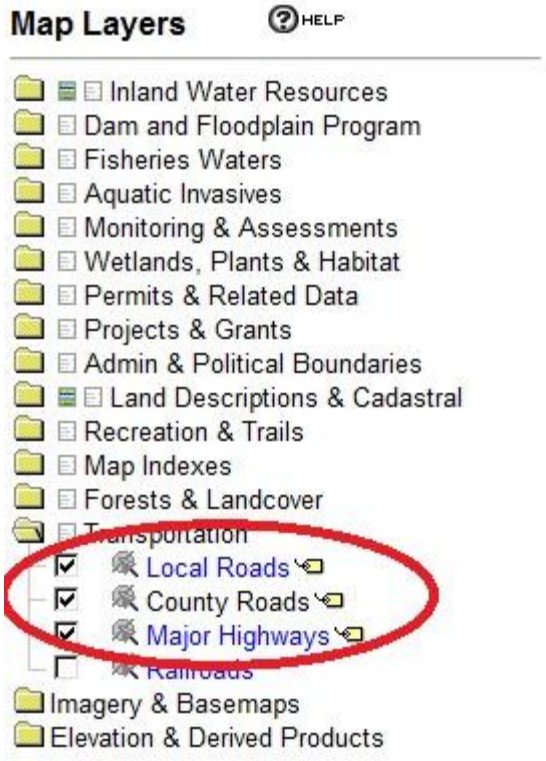


Useful Layers – Geographic markers

Aerial landscape view

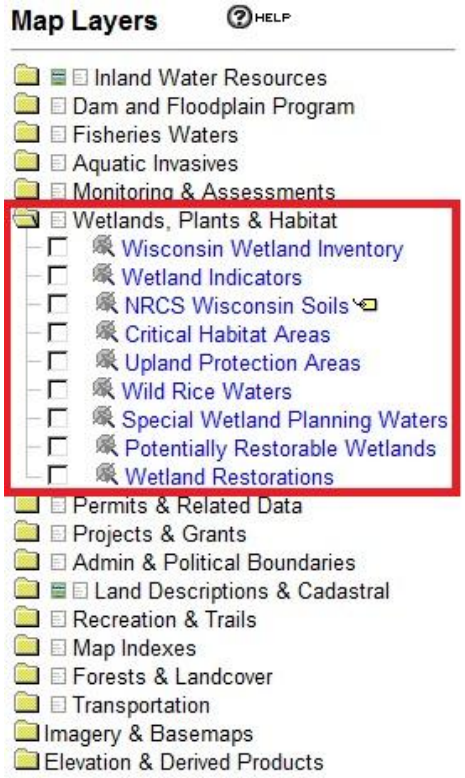


Roads



Useful Layers - Wetlands

For identifying potential wetland restoration areas, the most useful set of layers is in the “Wetlands, Plant & Habitat” folder



Useful Layers – Wetlands

WI Wetland Inventory

- Maps likely existing wetlands

Wetland indicators

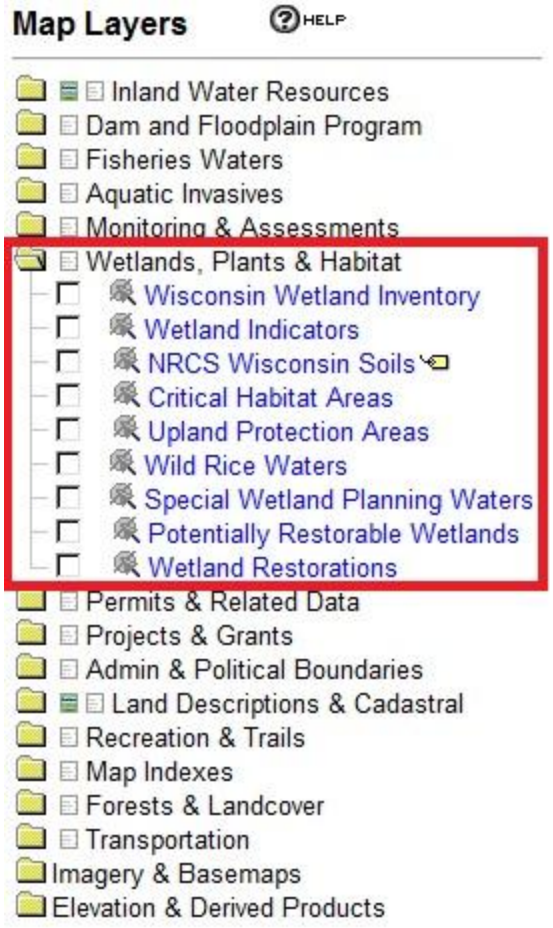
- Uses soil type to estimate historic wetlands

Critical Habitat Areas

- Areas of aquatic vegetation identified as offering critical or unique fish and wildlife habitat, including seasonal or lifestage requirements, or offering water quality or erosion control benefits to the body of water

Potentially Restorable Wetlands

- Areas identified as likely historic wetland and not currently mapped as a wetland.



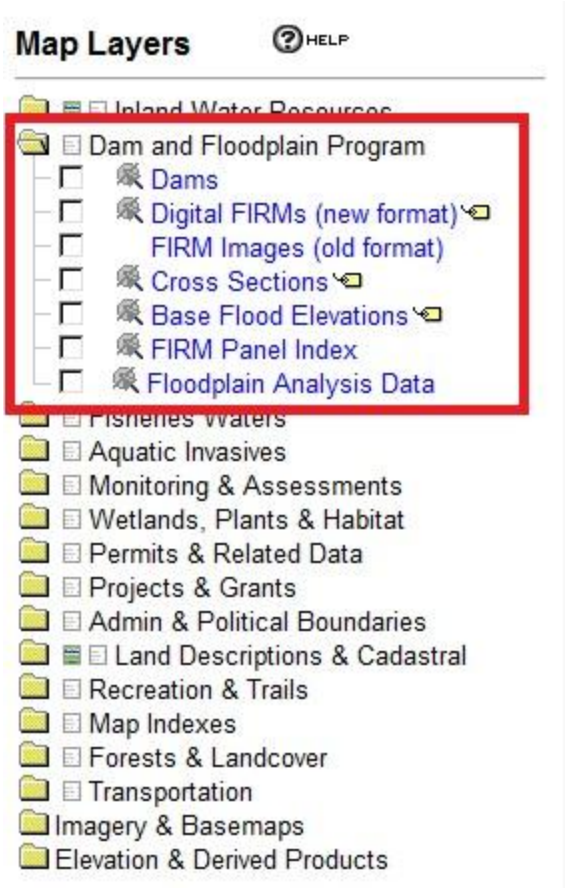
Useful Layers – Floodplain

FIRMs – Digital Flood Insurance Rate Maps

- Data from FEMA
- Delineated of special hazard areas and risk premium zones

Two formats

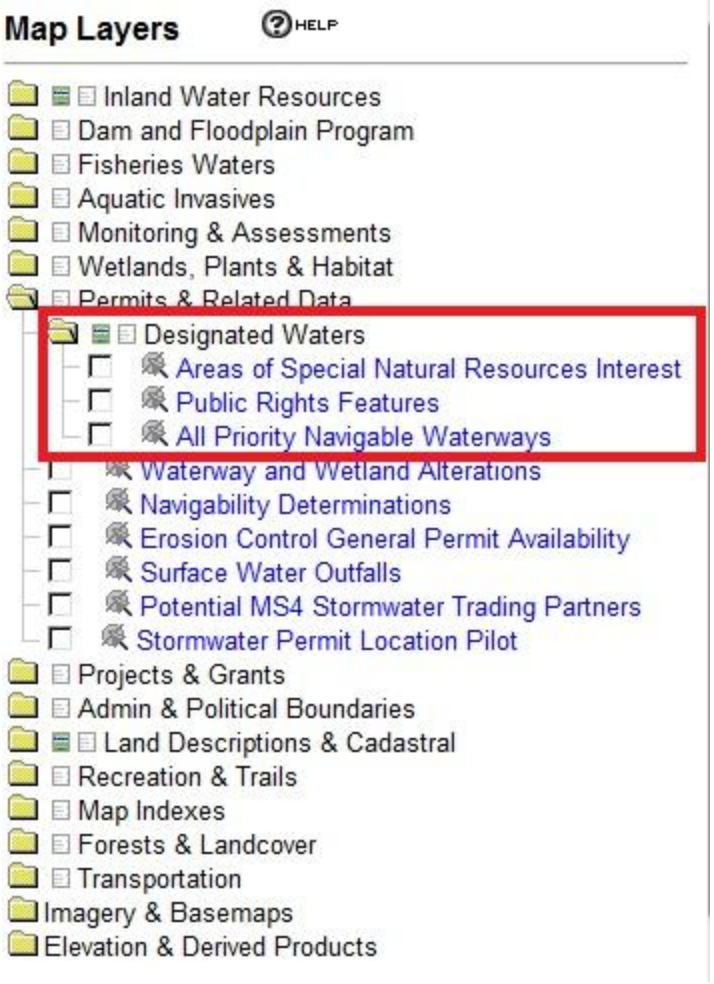
- In the process of converting from old to new, county by county basis



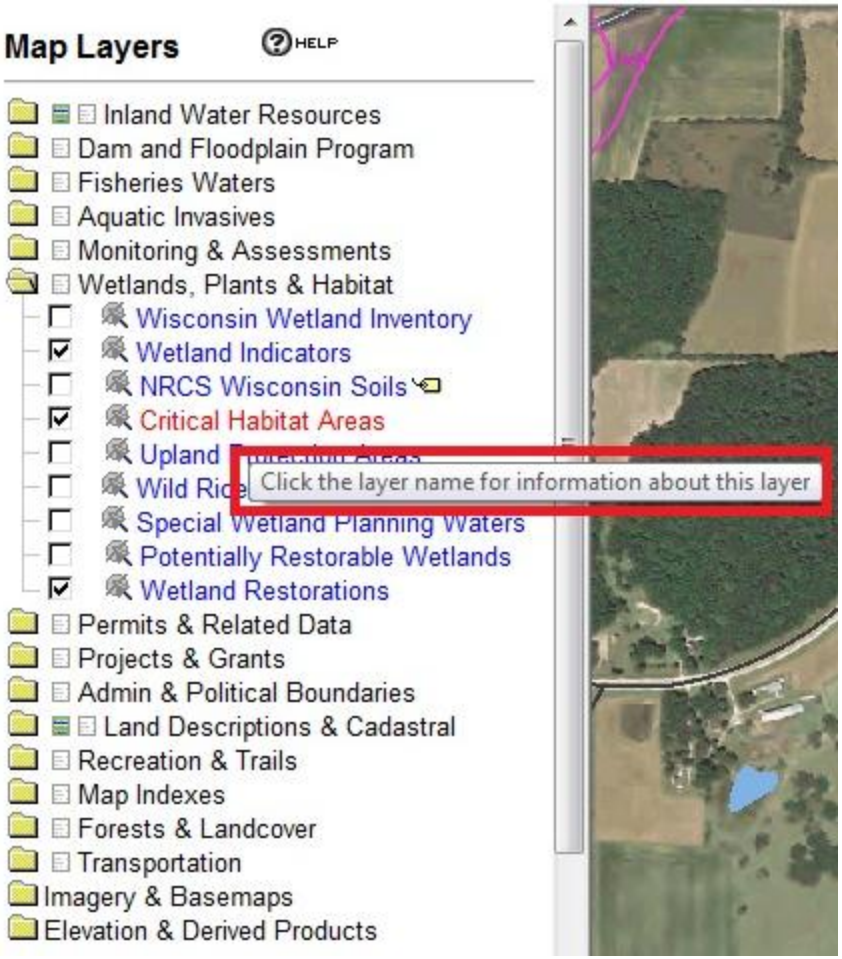
Useful Layers – Designated Waters

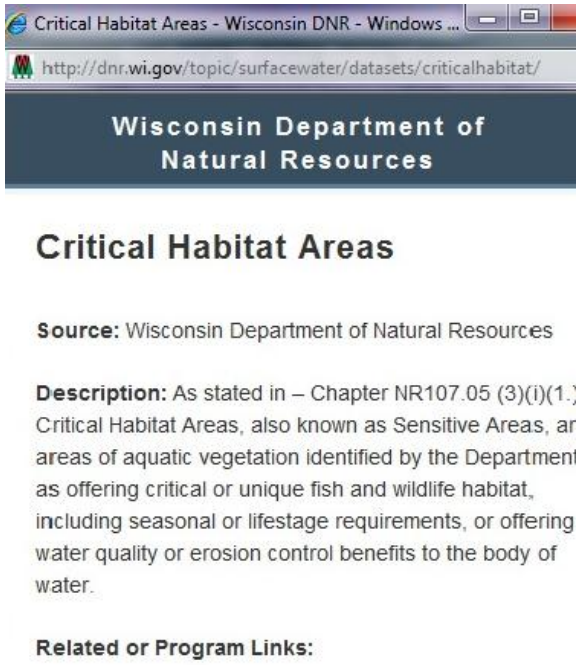
Subfolder under “Permits & Related Data”

- Areas of Special Natural Resource Interest (ASNARI)
- Public Rights Features
- All Priority Navigable Waterways

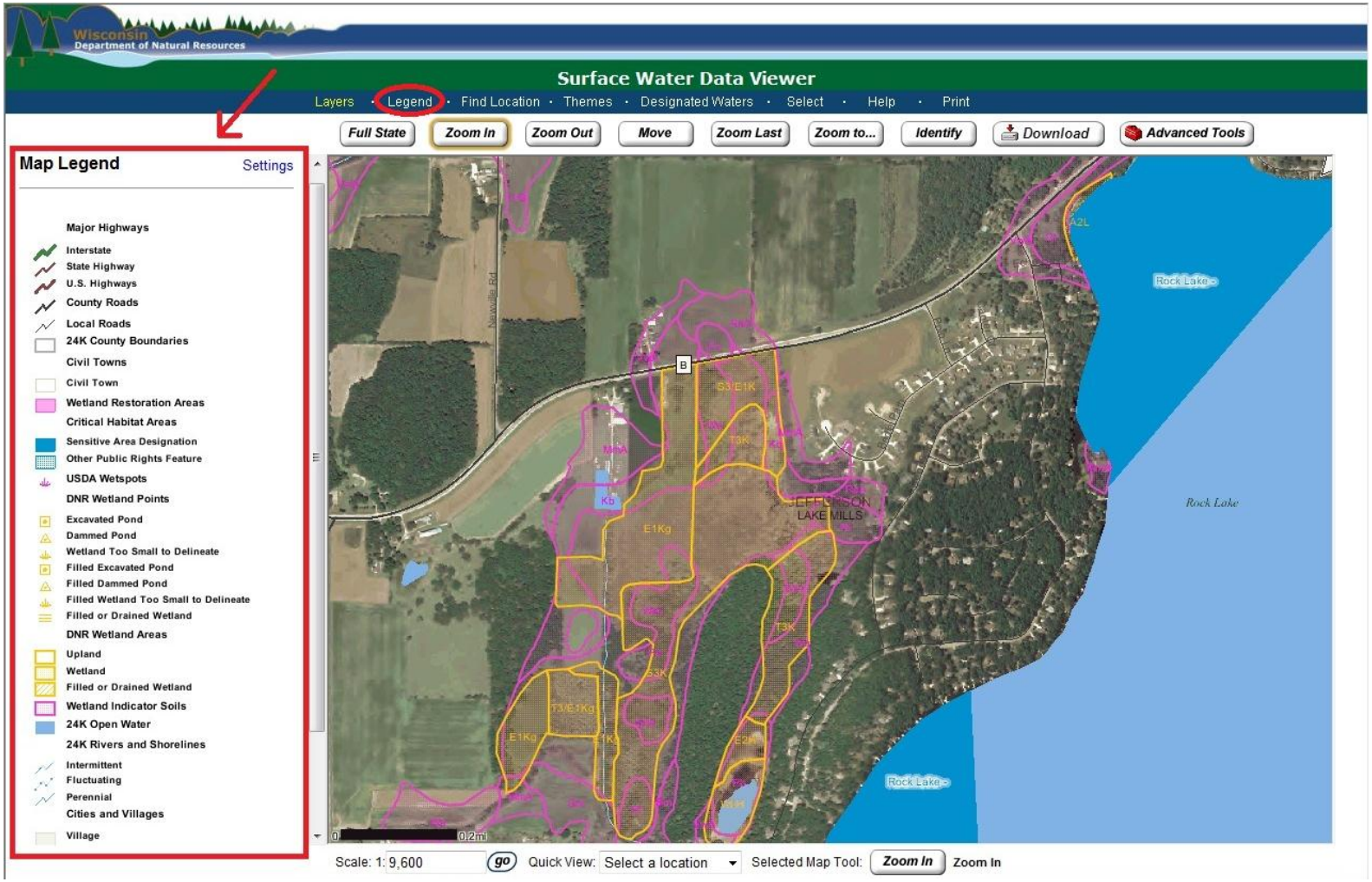


If you would like a description of a layer, click on the layer name and a description box will pop up.

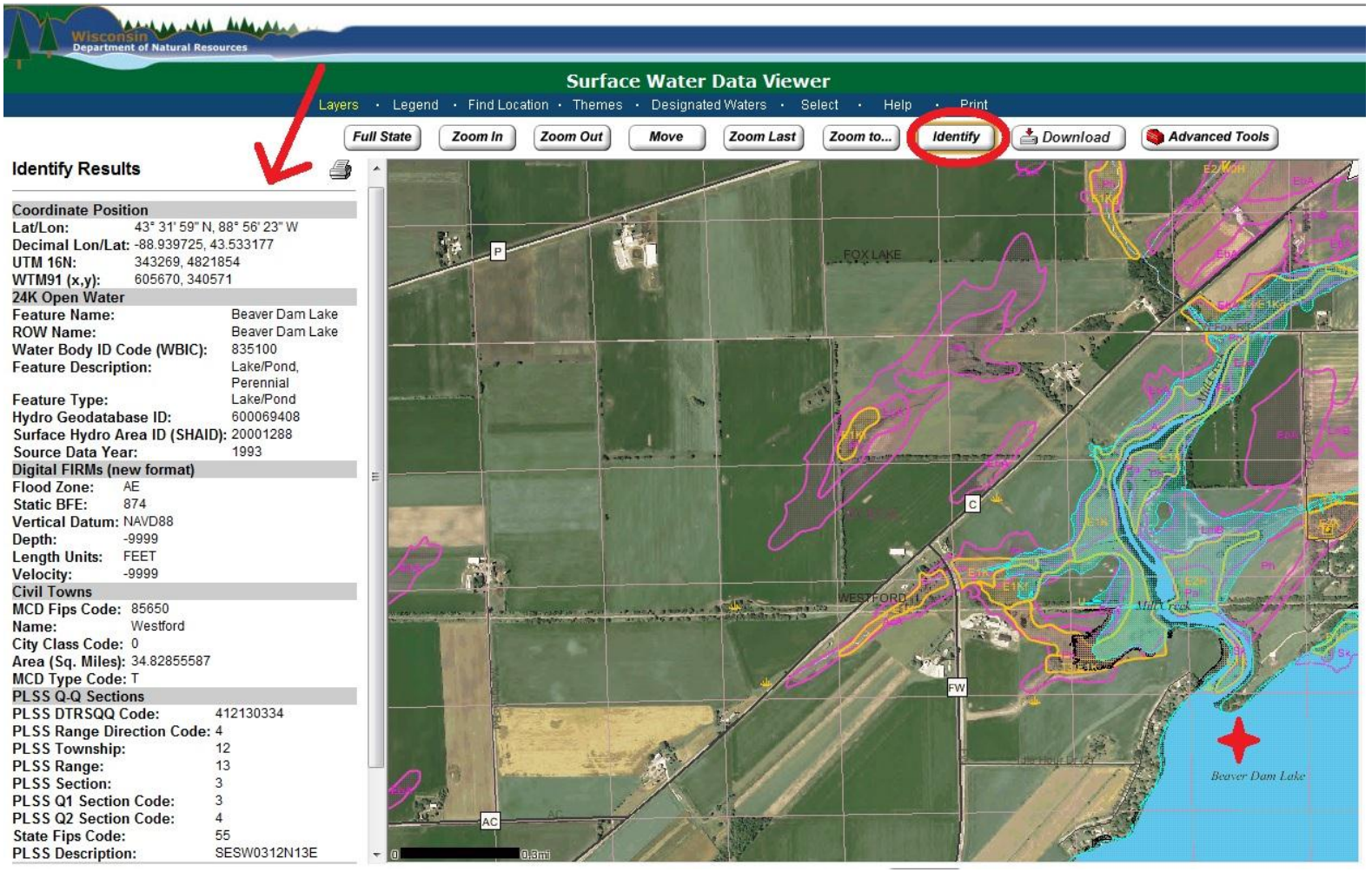




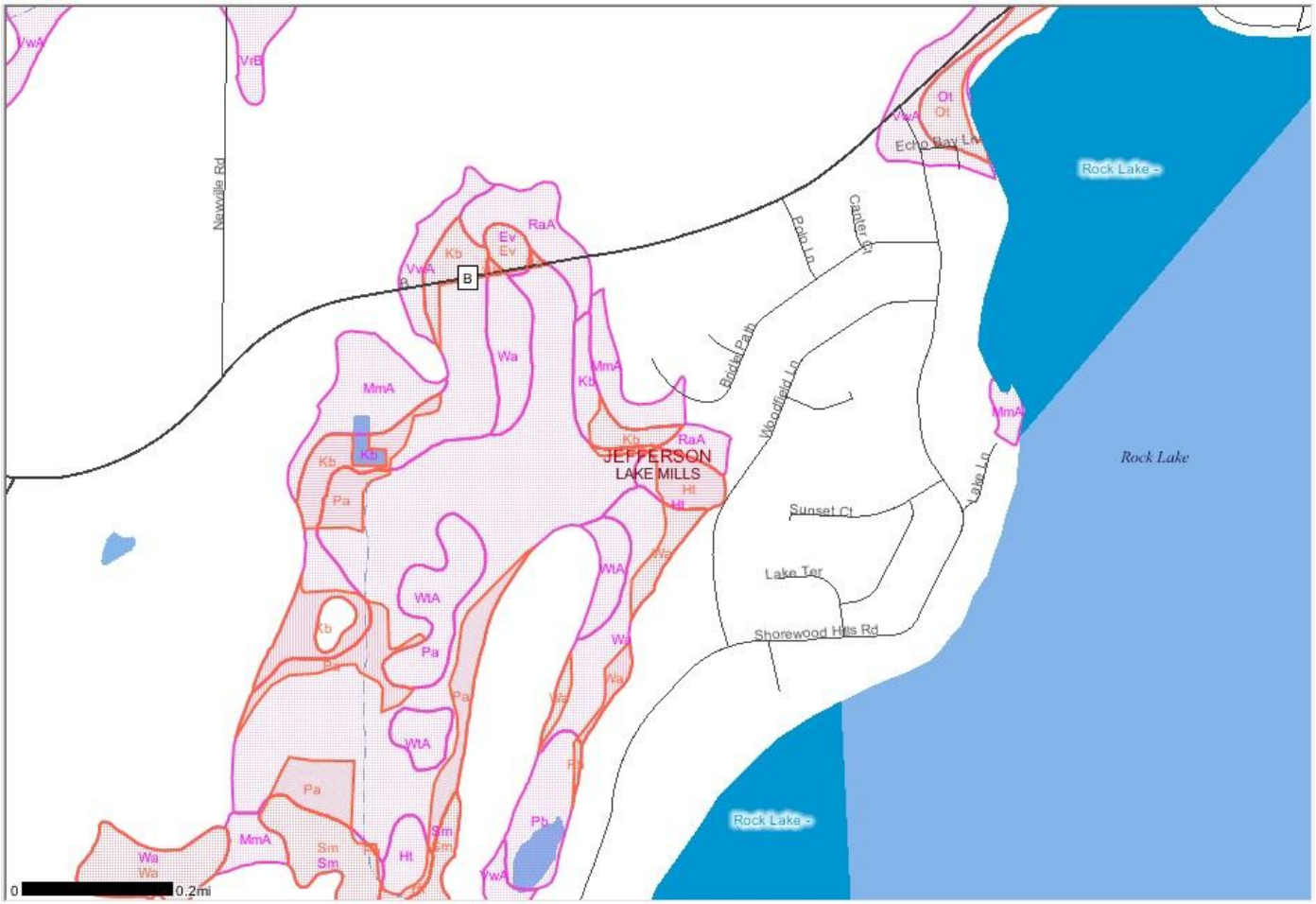
If it is not clear what colors and symbols represent each layer, click on the “Legend” tab



There is also an “Identify” tool that allows you to see the active data layers at a giving location



When distinguishing between multiple layers, it may occasionally be useful to turn off the aerial view layer.



Step 3: Identify potential sites

A good method for identifying areas for wetland restoration is by using the “Potentially Restorable Wetlands” layer.

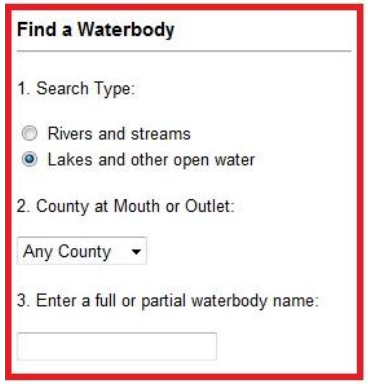
- Currently, this data only exists for the Rock River Basin
- This layer identifies areas that were likely to have been historic wetland (because of the occurrence of hydric soil) but are not currently mapped as a wetland. If the area is in agricultural use, it may be a potential site for wetland restoration

If you already know a location

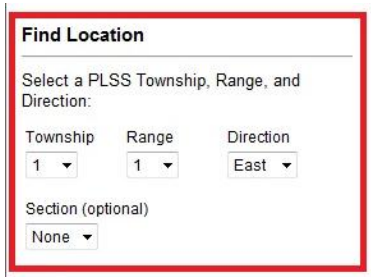
If you already have a location in mind, you can look up and zoom to it using the “Find Location” tab

Look up locations using:

Waterbody Name and County



Township, Range, Section



City or Village

Step 4: Prioritizing sites

It is possible to identify areas with “intersecting interests” which provide additional potential benefits

Examples:

- Fisheries or waterfowl potential
- Flood mitigation potential
- Areas near designated waters

Why prioritize sites?

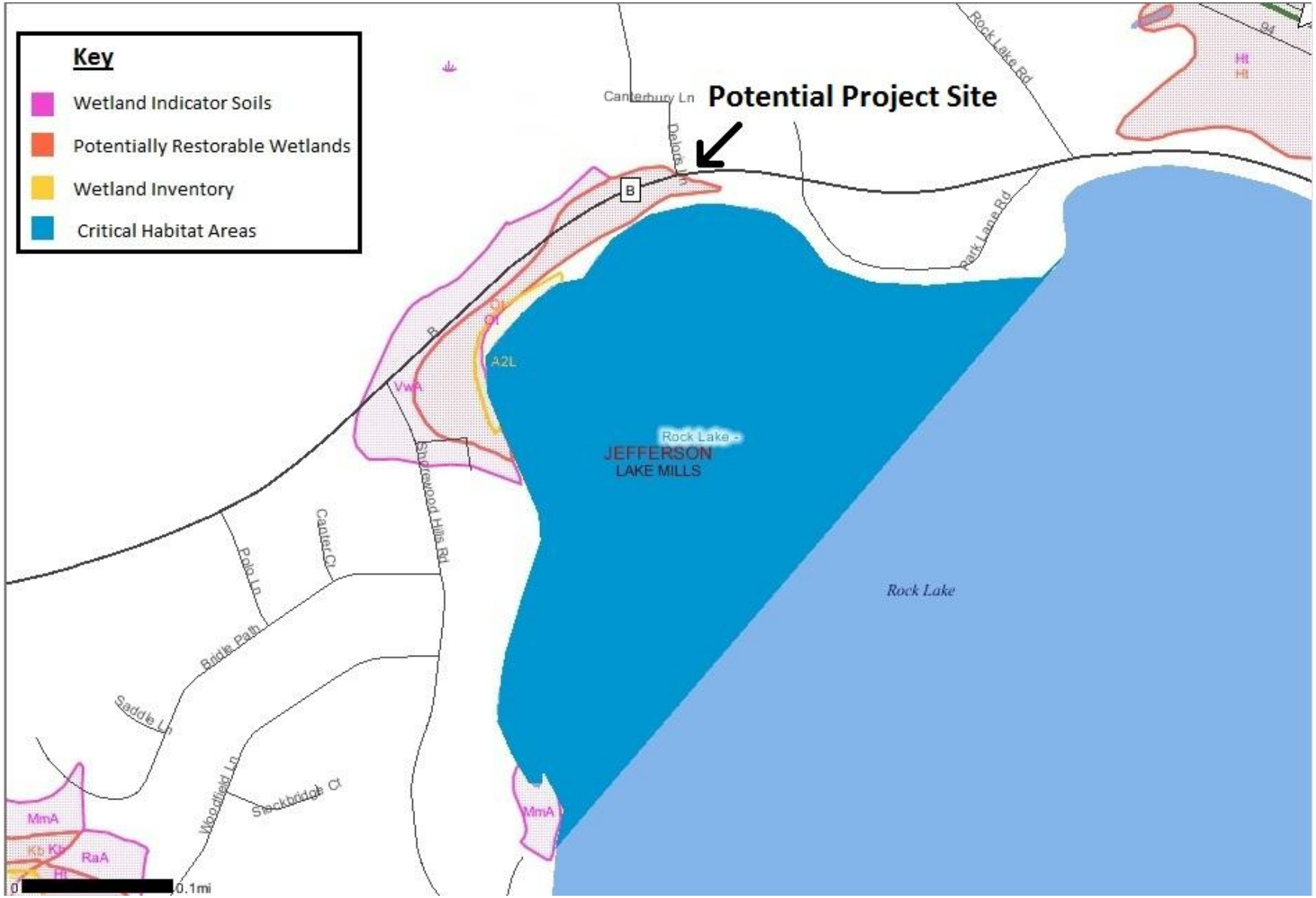
Although the main priority for the project may be wetland restoration and phosphorus reduction, it can be beneficial to consider other criteria:

- Grants
- Other additional funding sources
- Additional partners
- Maximize beneficial impact of project per $

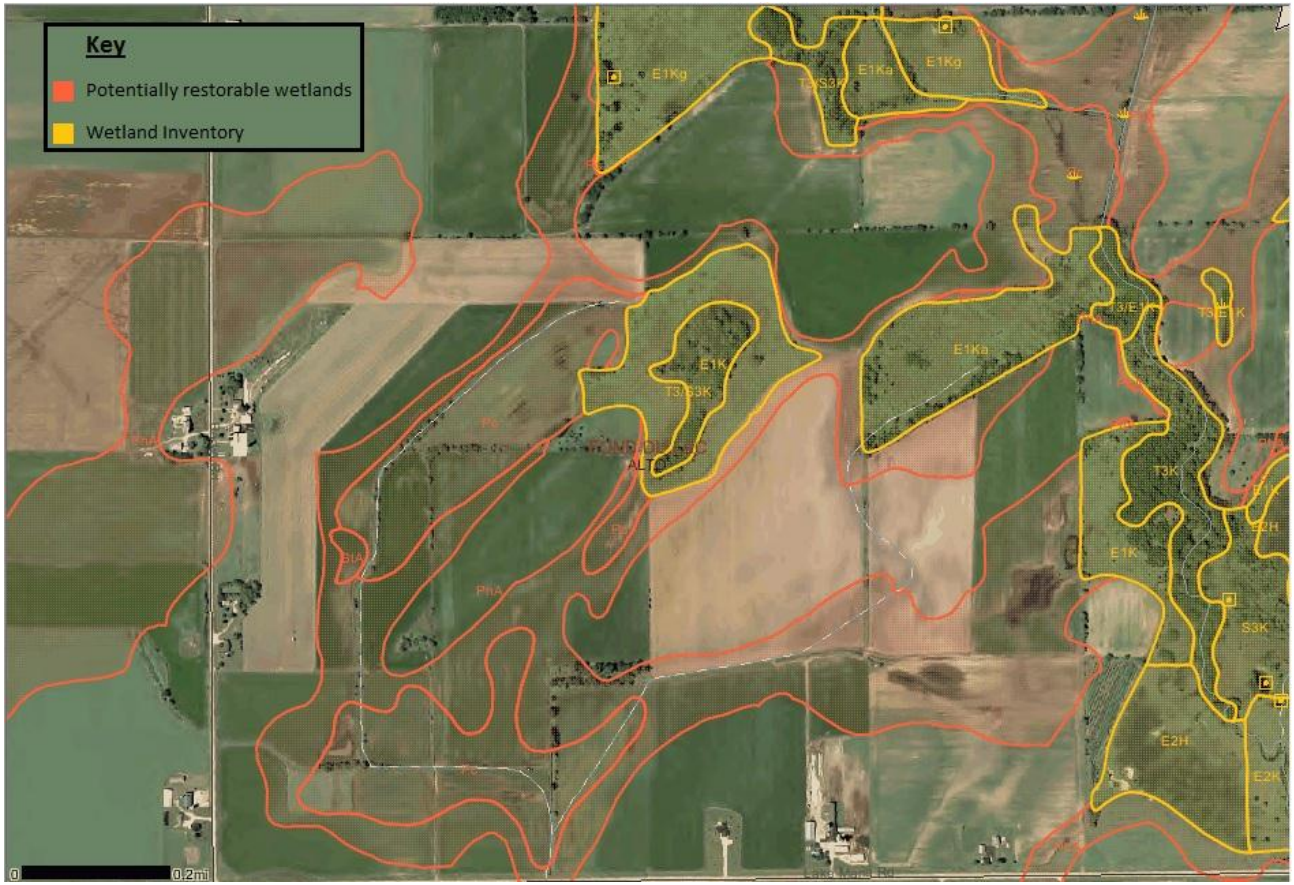
Example 1: Fisheries Potential

Location: Town of Lake Mills, Jefferson Co. (SW, NE, Sec10, T7N, R13E)

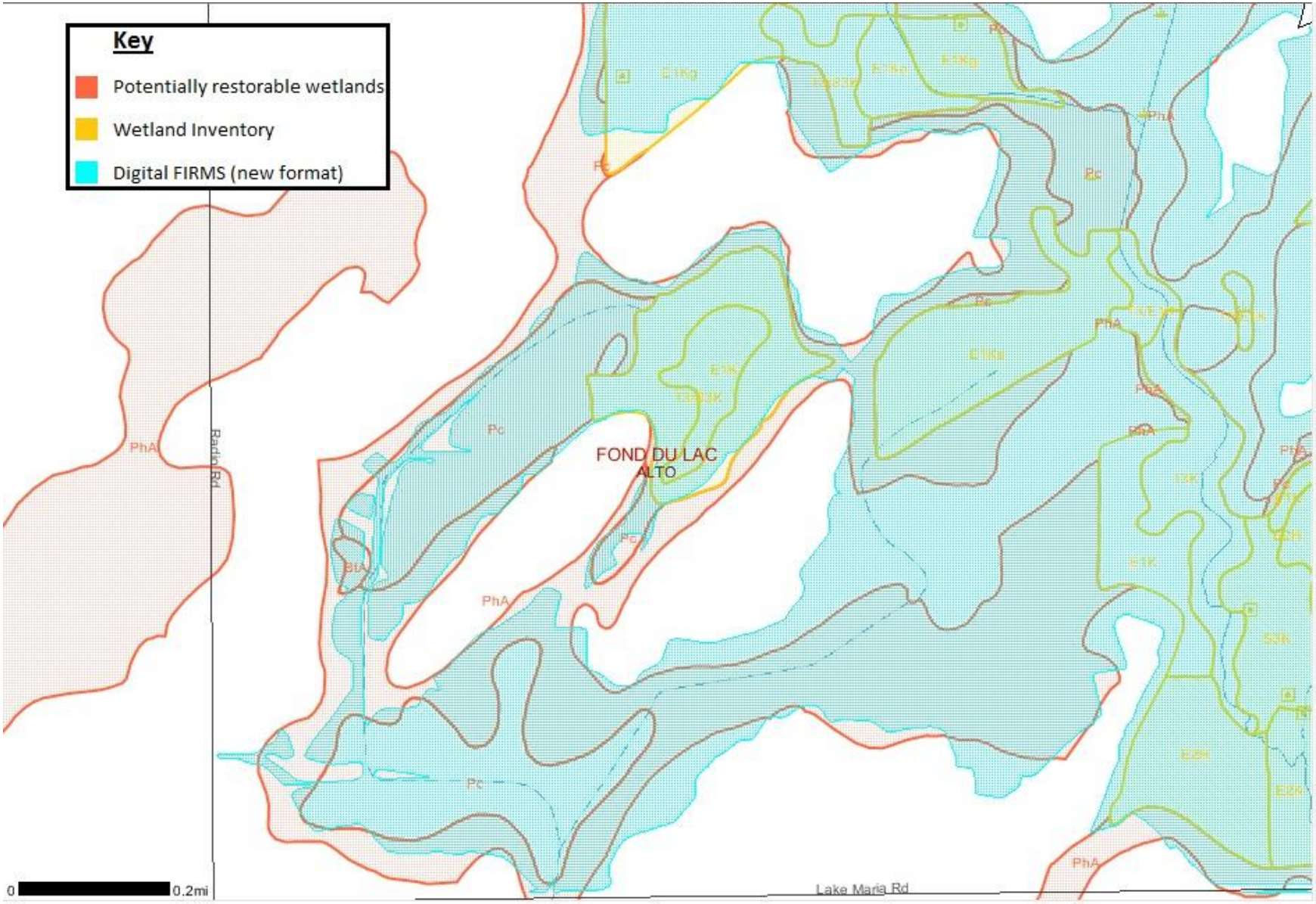

Key
Wetland Indicator Soils
Potentially Restorable Wetlands
Wetland Inventory
Critical Habitat Areas
Canterbury Ln
Lakeview Rd
Rock Lake Rd
Delores Ln
B
Park Lane Rd
VwA
A2L
Rock Lake
JEFFERSON
LAKE MILLS
Rock Lake
Sandalwood Hills Rd
Polo Ln
Canter Ct
Bridle Path
Saddle Ln
Woodfield Ln
Sheckbridge Ct
MmA
RaA
0.1mi

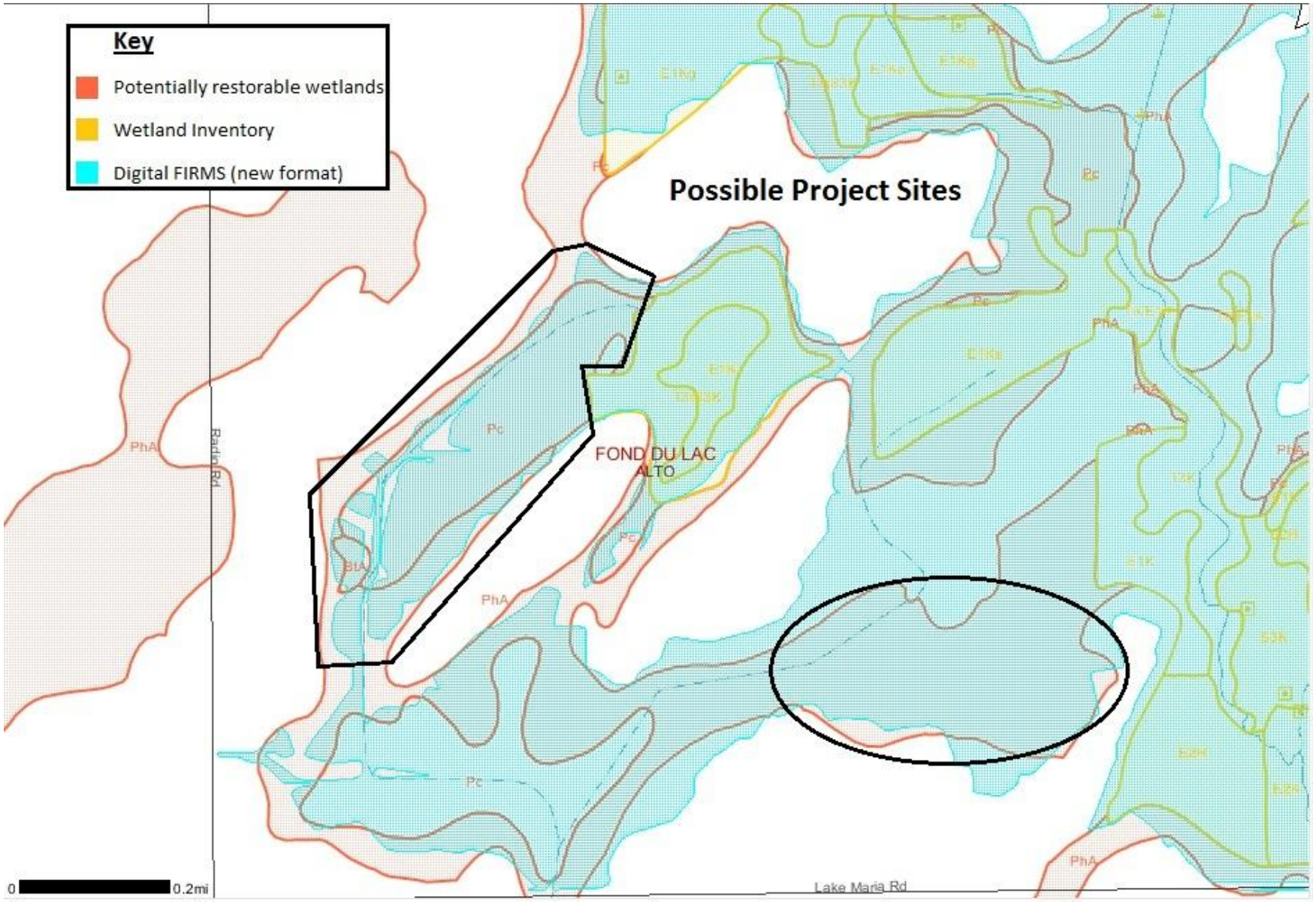

Key
Wetland Indicator Soils
Potentially Restorable Wetlands
Wetland Inventory
Critical Habitat Areas
Potential Project Site
Canterbury Ln
Rock Lake Rd
Park Lane Rd
Delores Ln
B
A2L
VwA
Rock Lake
JEFFERSON
LAKE MILLS
Rock Lake
Shorewood Hills Rd
Polo Ln
Canter Ct
Bridle Path
Saddle Ln
Woodfield Ln
Steckbridge Ct
MmA
RaA
0
0.1mi

Example 2: Flood Mitigation Potential

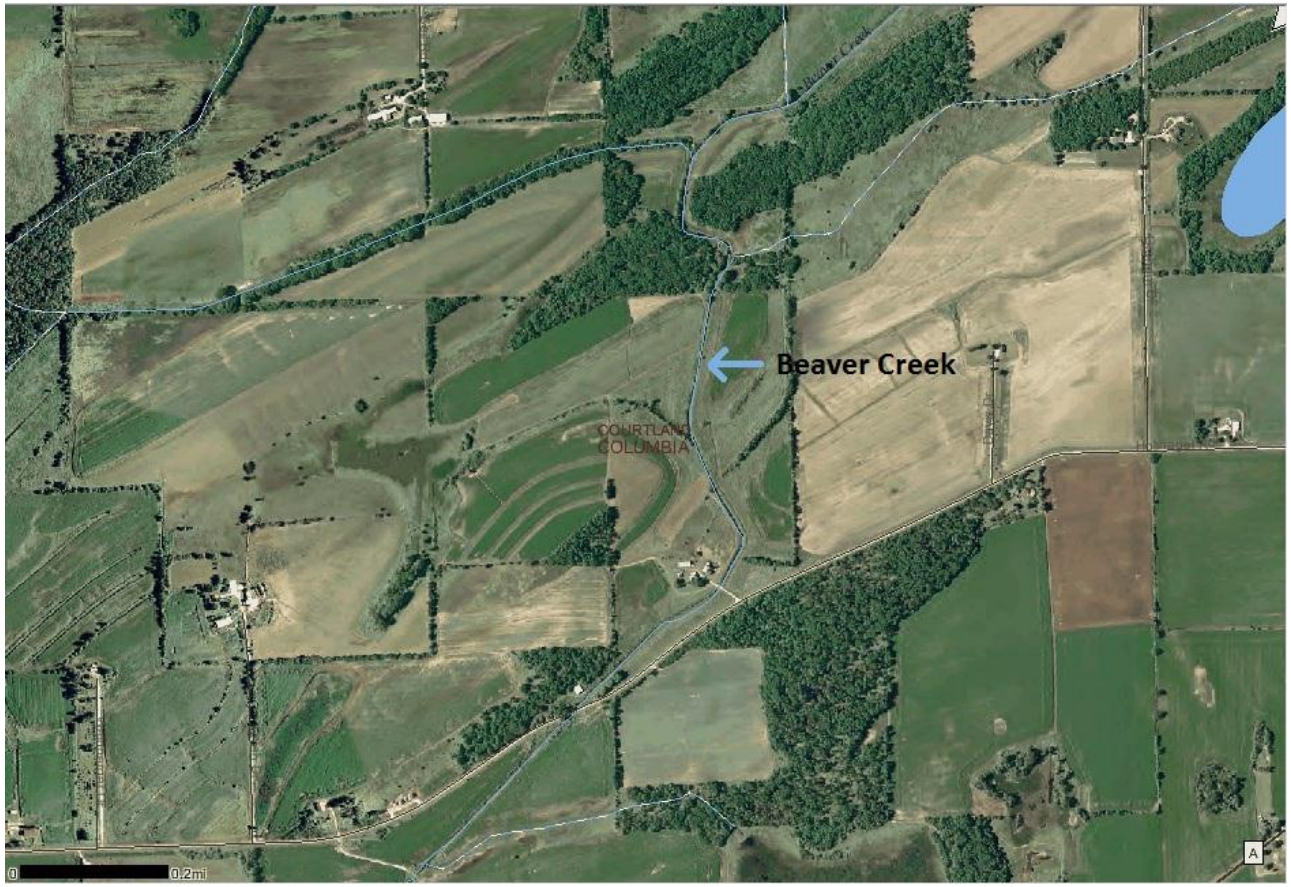


Location: Town of Alto, Fond du Lac Co. (NE, SE, Sec21, 14N, 14E)


Key
Potentially restorable wetlands
Wetland Inventory
Digital FIRMS (new format)
FOND DU LAC ALTO
Pc
PhA
BtA
Rarkin Rd
Lake Maria Rd
0
0.2mi

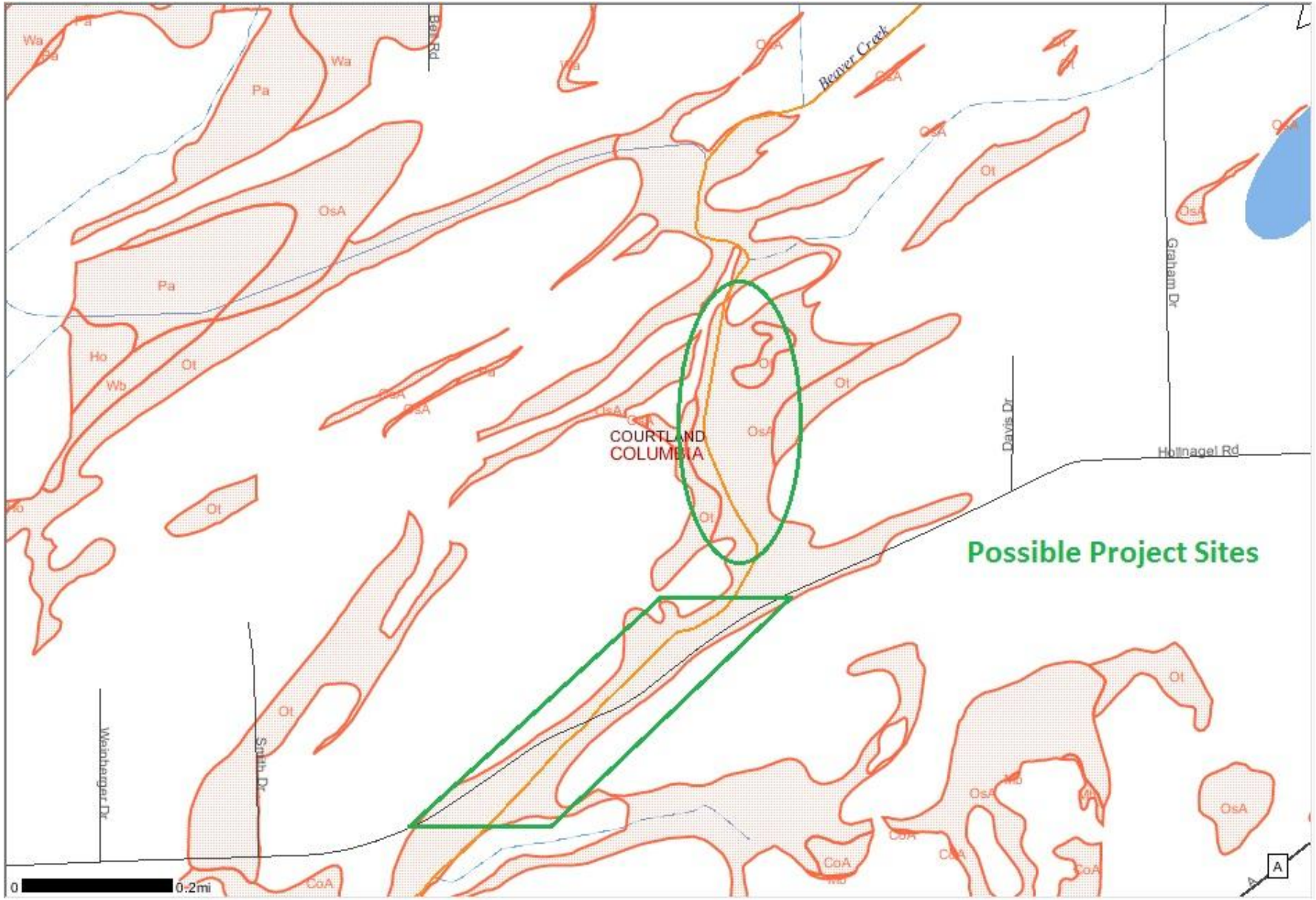

Key
Potentially restorable wetlands
Wetland Inventory
Digital FIRMS (new format)
Possible Project Sites
FOND DU LAC ALTO
Radke Rd
Lake Maria Rd
PhA
Pc
BtA
0
0.2mi

Example 3: Designated Waters Potential



Location: Town of Courtland, Columbia Co. (SE, SE, Sec9, 12N, 12E)


Key
Potentially Restorable Wetlands
Areas of Special Natural Resource Interest (ASNARI)
COURTLAND
COLUMBIA
0
0.2mi
A


Possible Project Sites
COURTLAND
COLUMBIA
Beaver Creek
Graham Dr
Davis Dr
Hollinagel Rd
Weinberger Dr
Smith Dr
Wa
Pa
OsA
Ho
Wb
Ot
CoA
0
0.2mi

Questions?