WETLAND RESTORATION THROUGH THE USDA NATURAL RESOURCES CONSERVATION SERVICE IN THE ROCK RIVER BASIN

BY
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NRCS AGRICULTURAL ENGINEER

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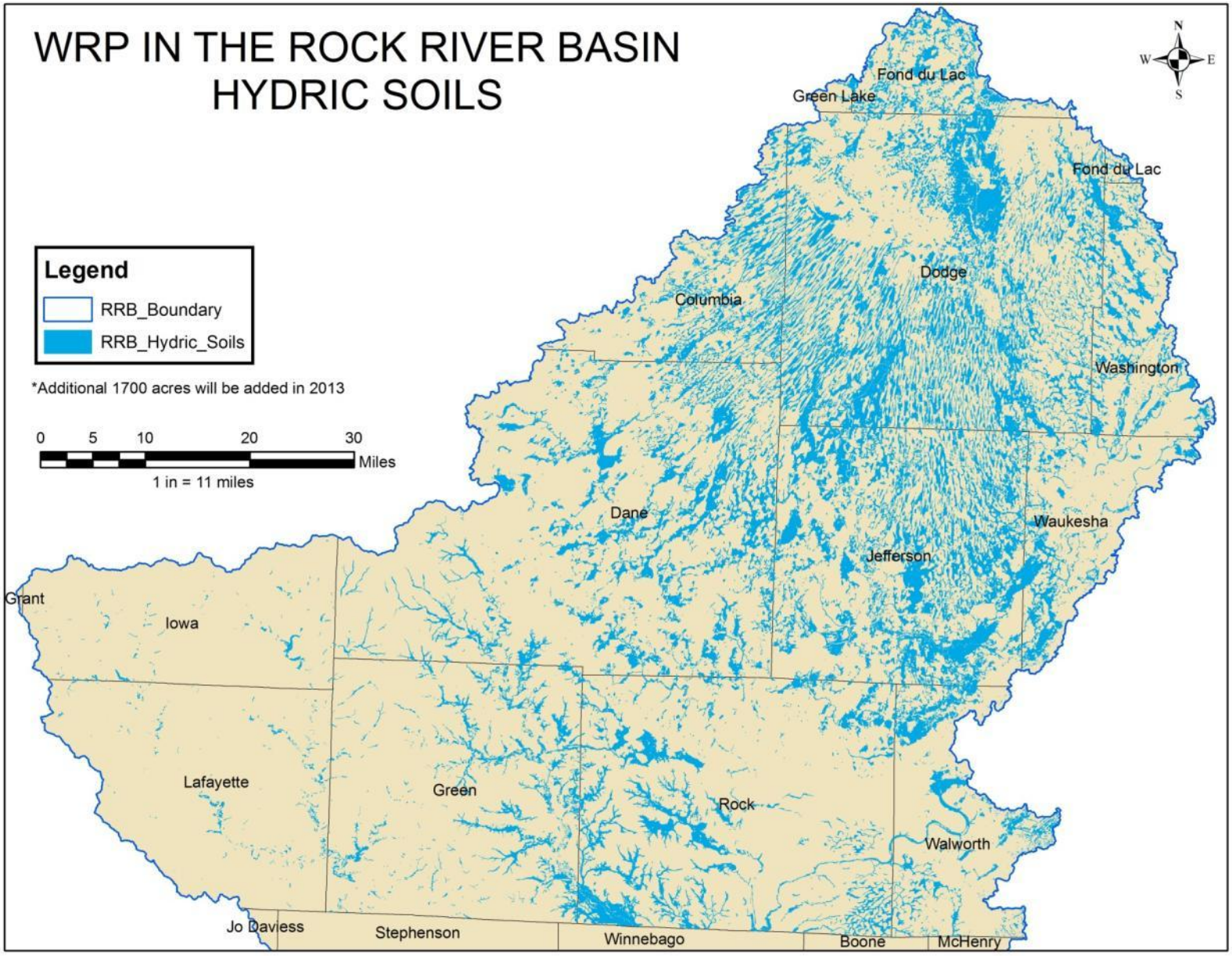
U.S. Department of Agriculture

Natural Resources Conservation Service



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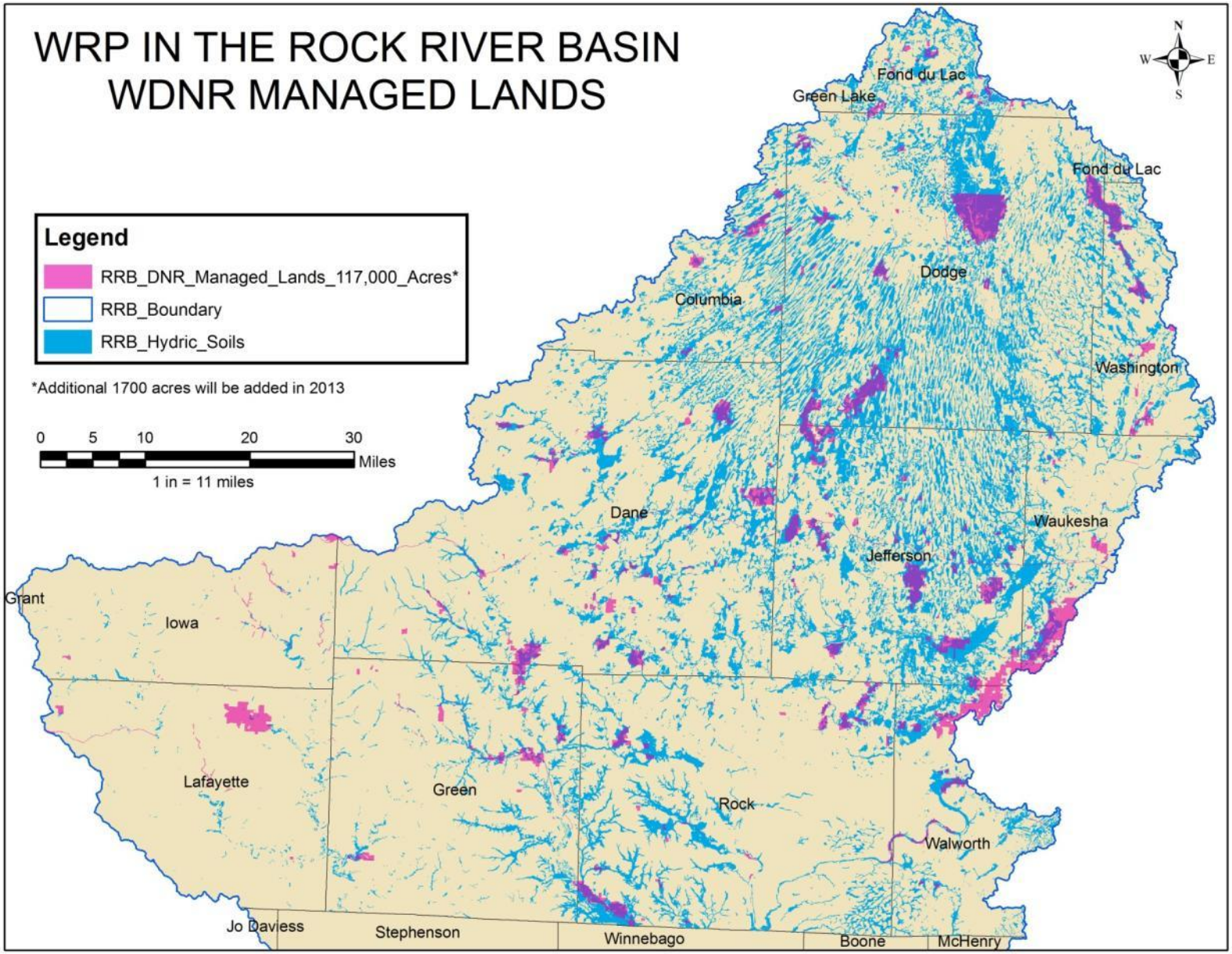

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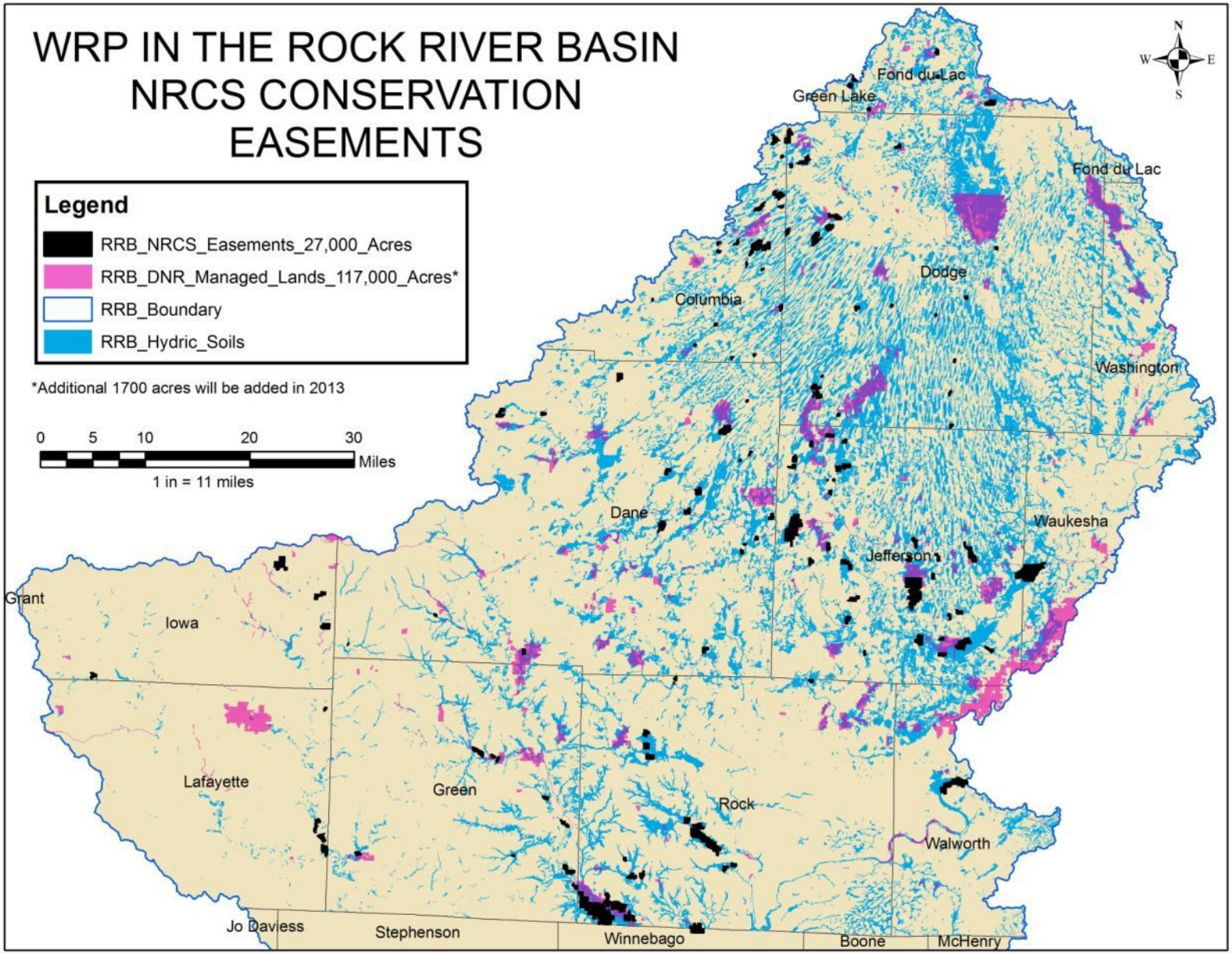
WRP IN THE ROCK RIVER BASIN NRCS CONSERVATION EASEMENTS



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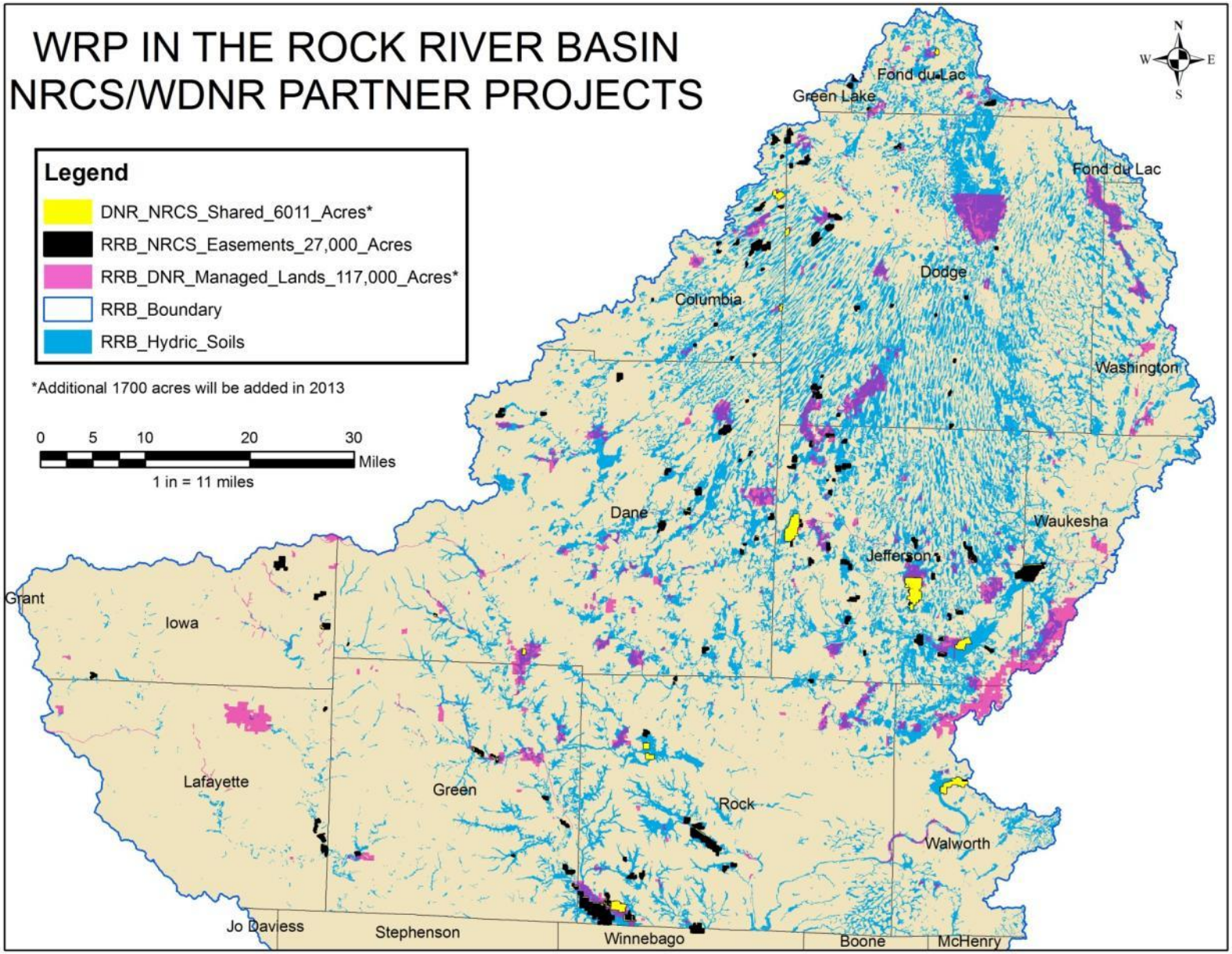
WRP IN THE ROCK RIVER BASIN
NRCS/WDNR PARTNER PROJECTS



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What is the Wetland Reserve Program (WRP)?

The Wetlands Reserve Program (WRP) is a voluntary program to restore, protect and enhance wetlands on private property. It is an opportunity for landowners to receive financial incentives to restore wetlands that have been drained for agriculture production or have been altered by multiple flood events.

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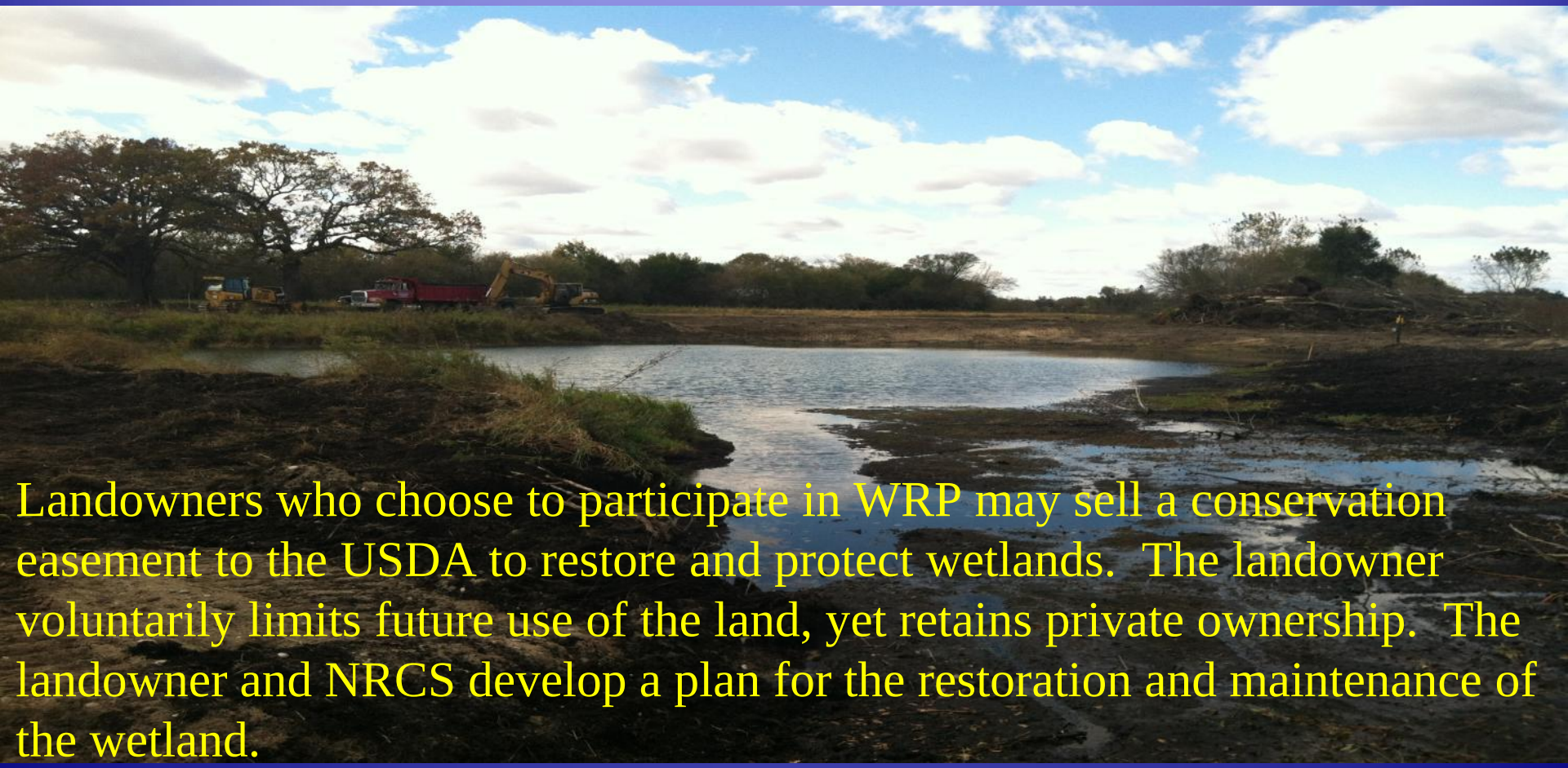
How Does the WRP Work?



Landowners who choose to participate in WRP may sell a conservation easement to the USDA to restore and protect wetlands. The landowner voluntarily limits future use of the land, yet retains private ownership. The landowner and NRCS develop a plan for the restoration and maintenance of the wetland.

Easement Options

The program offers landowners two options:

- Permanent easements-Pays 100 percent of the easement value and restoration costs.
- 30-year easements-Pays 75 percent of the easement values and restoration costs.

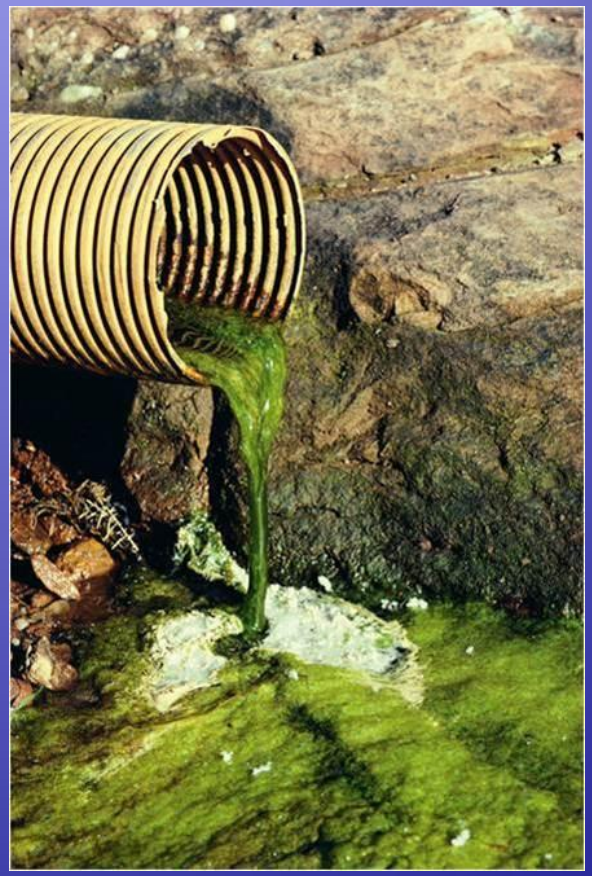
Landowner Eligibility

- Ownership of the land for the last seven years
- Must be in compliance with highly erodible land and wetland conservation provisions
- Must meet adjusted gross income (AGI) limitation

Land Eligibility Requirements

- Farmed wetlands, drained wetlands, farmed wetland pastures etc.
- Adjacent lands that contribute to wetland functions and value
- Upland buffer areas for ecological benefits
- Riparian areas that can be restored that link wetland areas
- Lands significantly altered by flooding

Probably not Eligible



Probably not Eligible

Restoration Planning

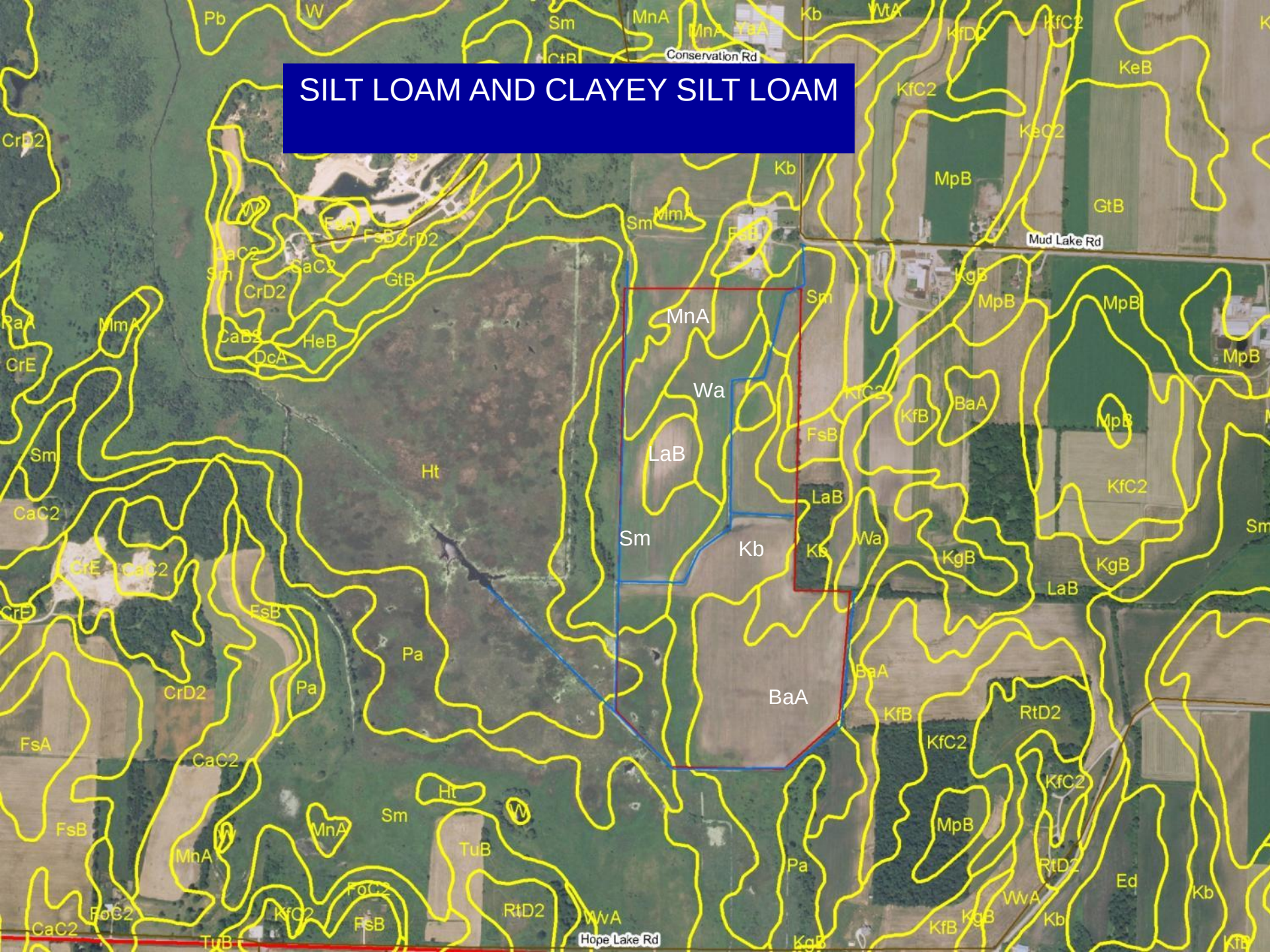
- Analyze all relevant GIS Data including soils, topography, current and historical aerial photos, proximity to floodplain, rivers, lakes, and utilities.

- Thoroughly interview landowner
- Evaluate existing plant communities
- Locate tile, pumps, ditches and any other drainage features


Conservation Rd
Mud Lake Rd
County Highway G
Hoge Lake Rd


Conservation Rd
Mud Lake Rd
County Highway G
Hope Lake Rd


DITCH LOCATIONS
PUMP
Conservation Rd
Mud Lake Rd
Hope Lake Rd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Conservation Rd
Mud Lake Rd
Hope Lake Rd
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CaC2
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KfC2
KeB
KgB
RtD2
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W
MmA
CrE
RaA
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KeC2
Ed
VvA


HYDRIC SOILS
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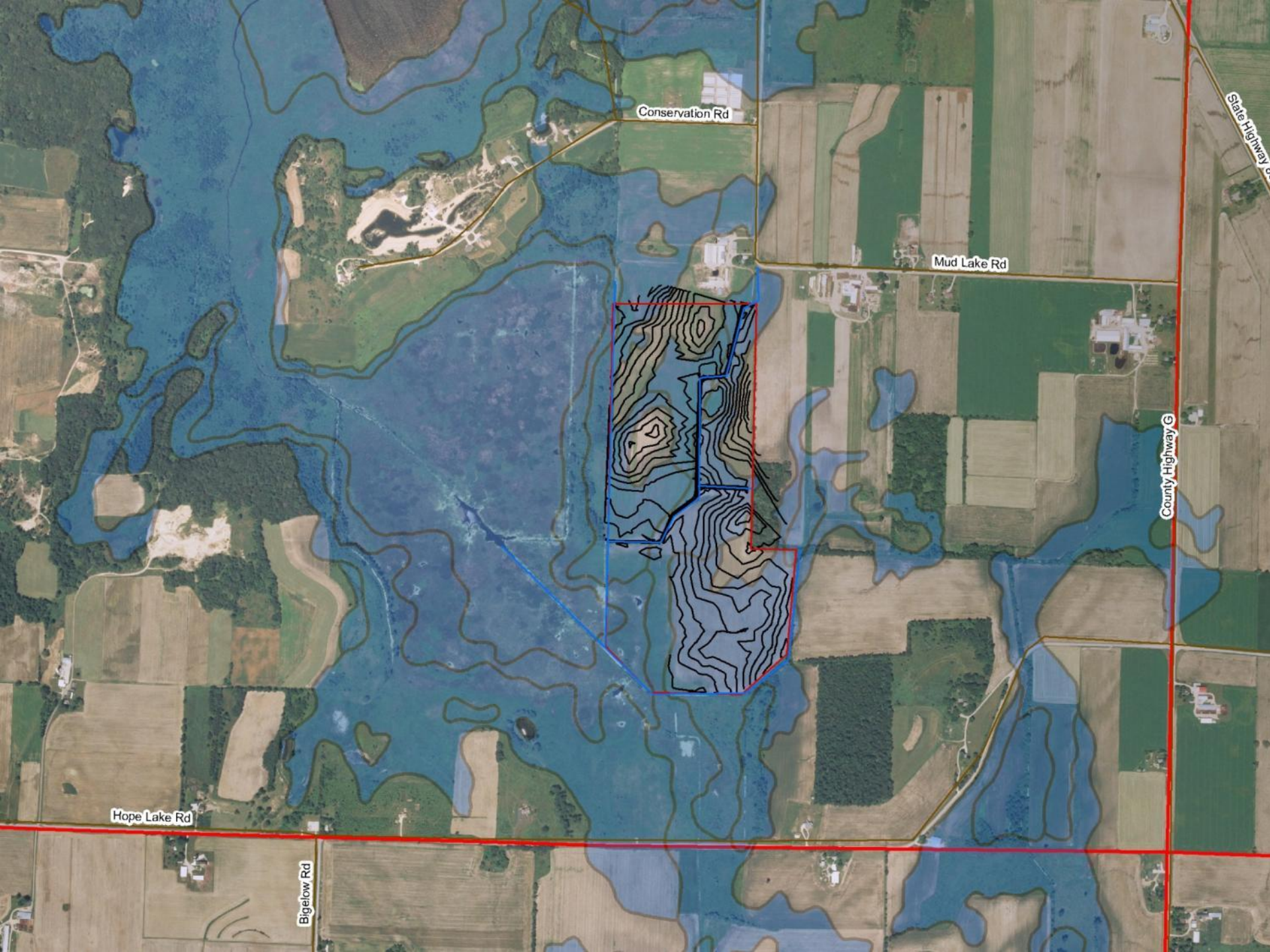
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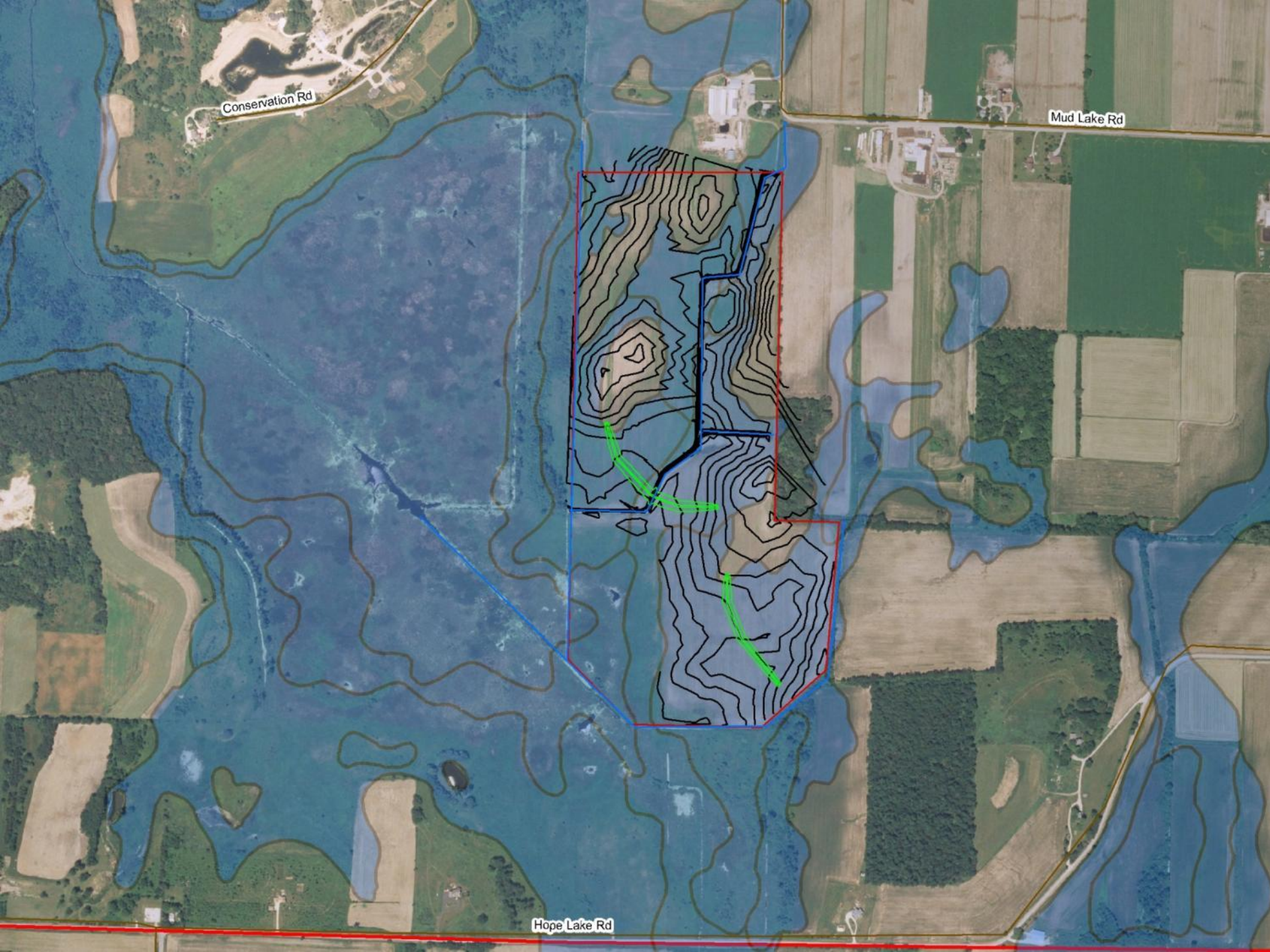
Hope Lake Rd
Bigelow Rd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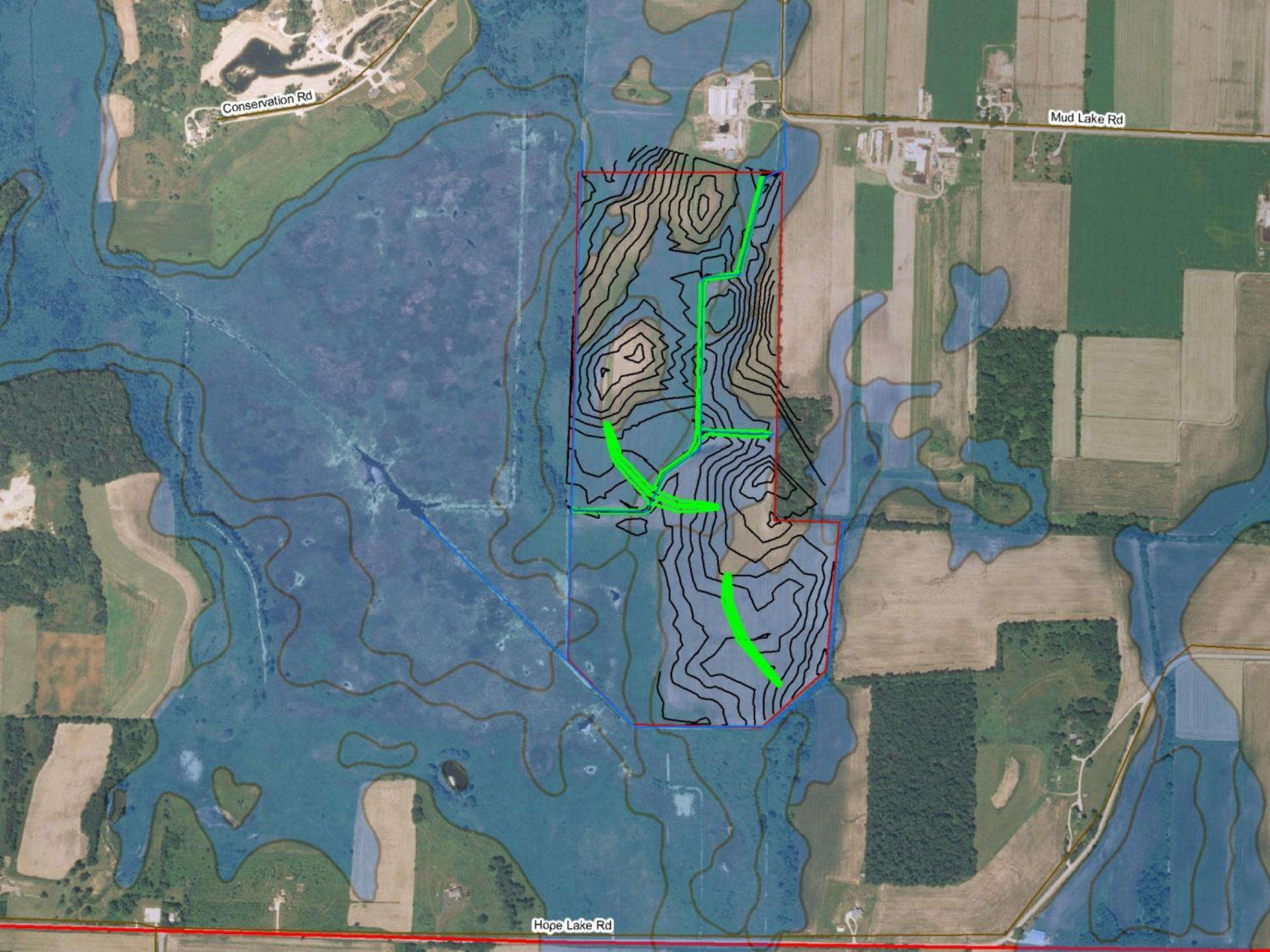
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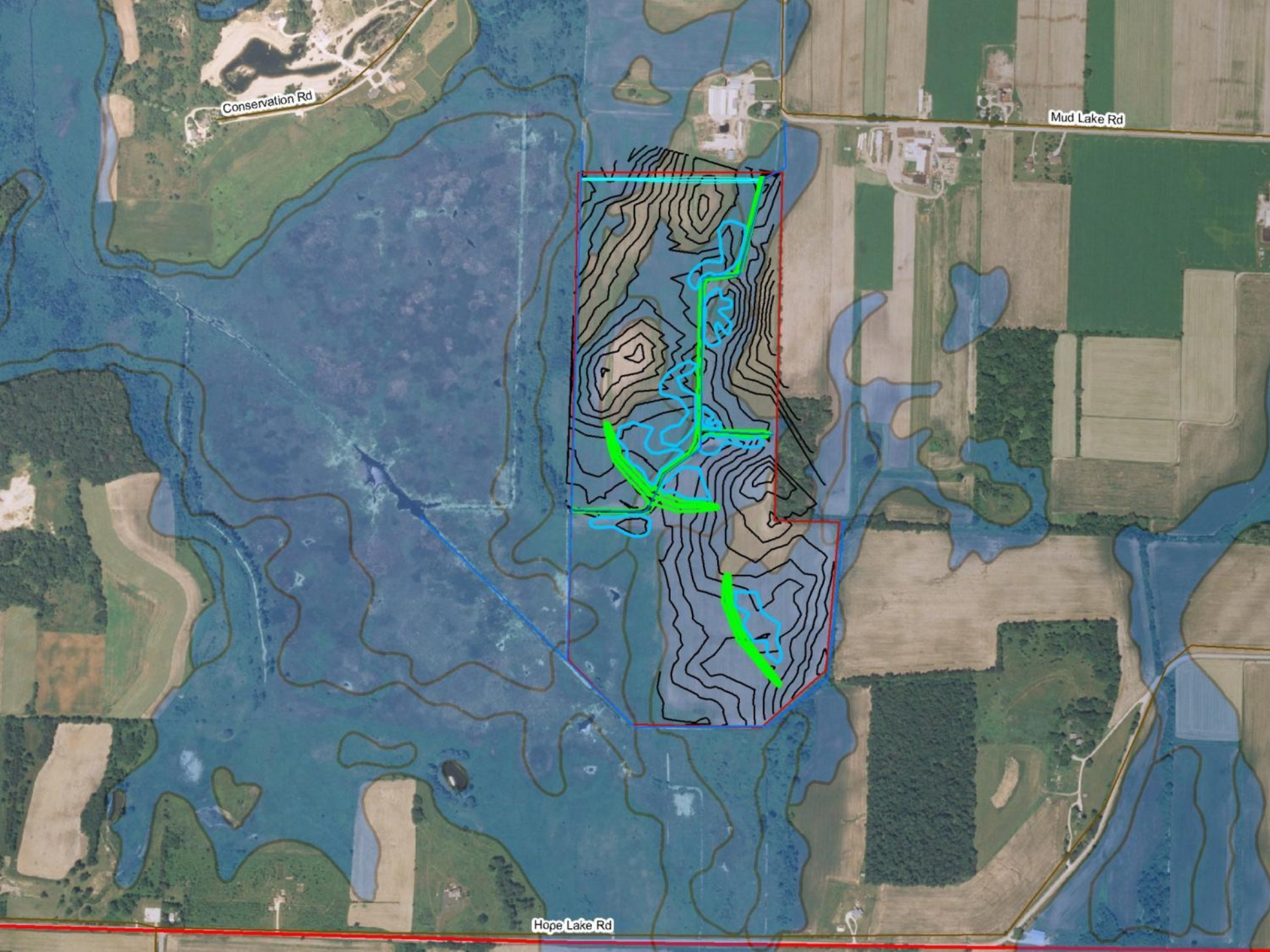
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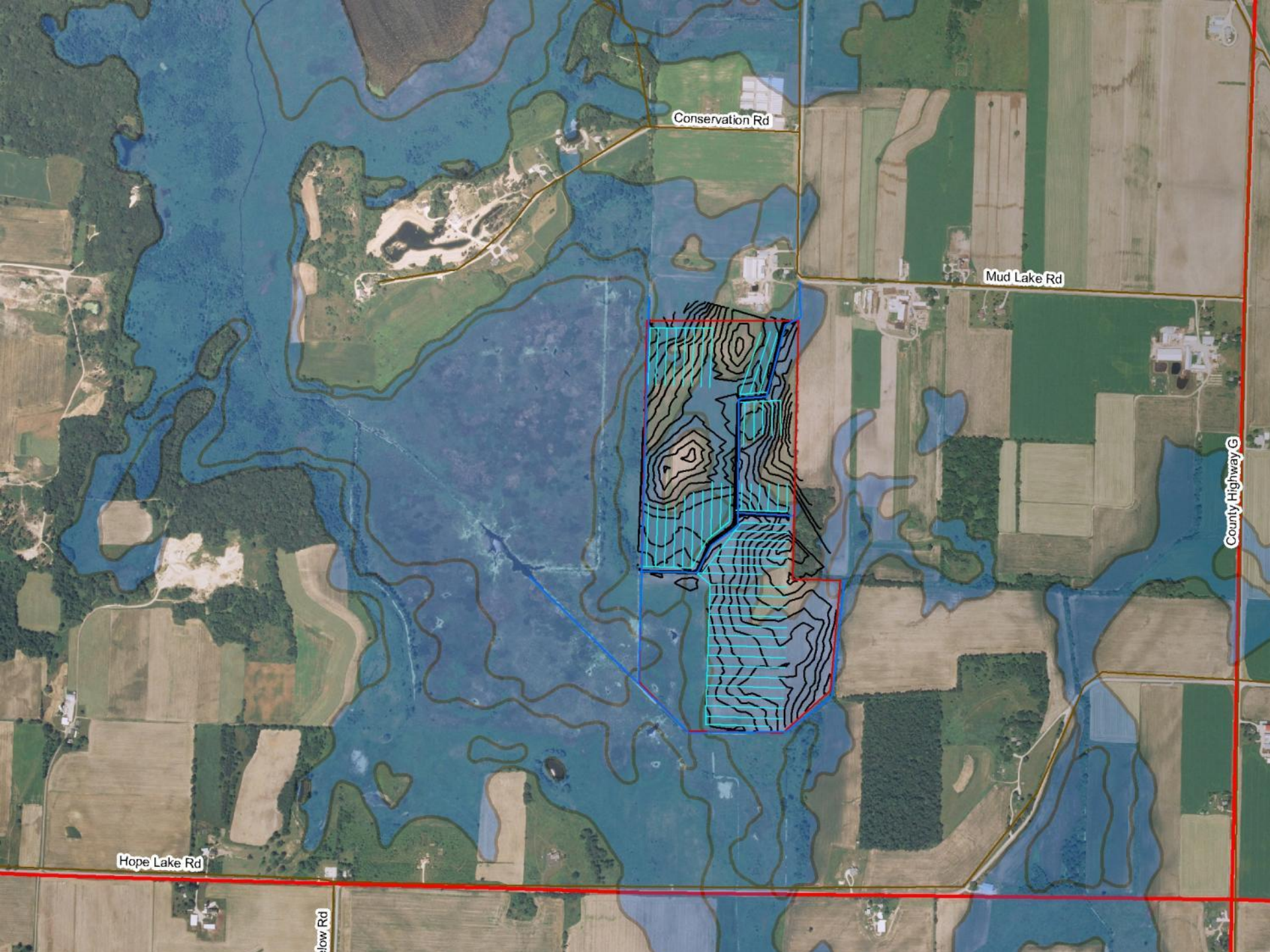
Hope Lake Rd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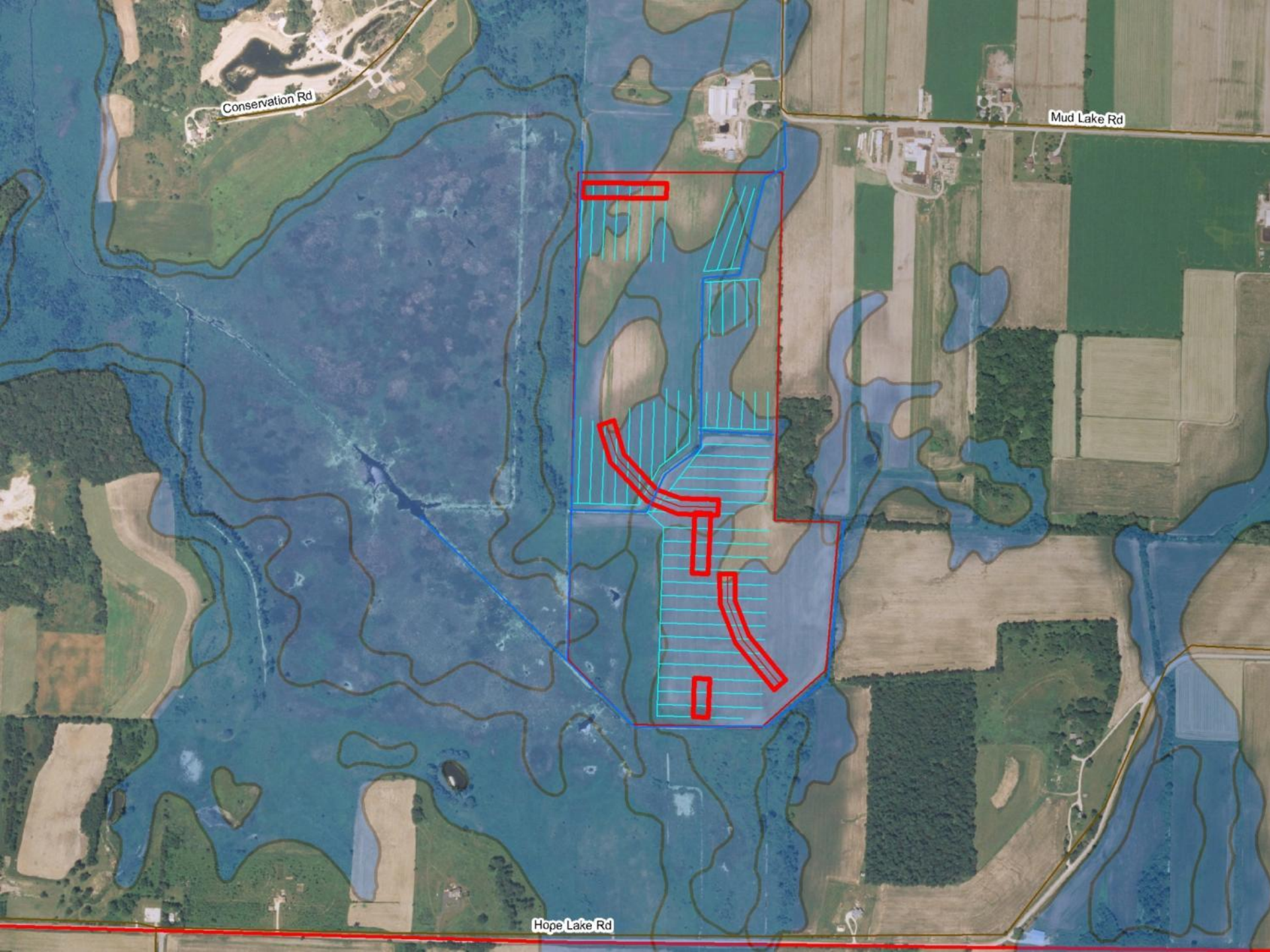
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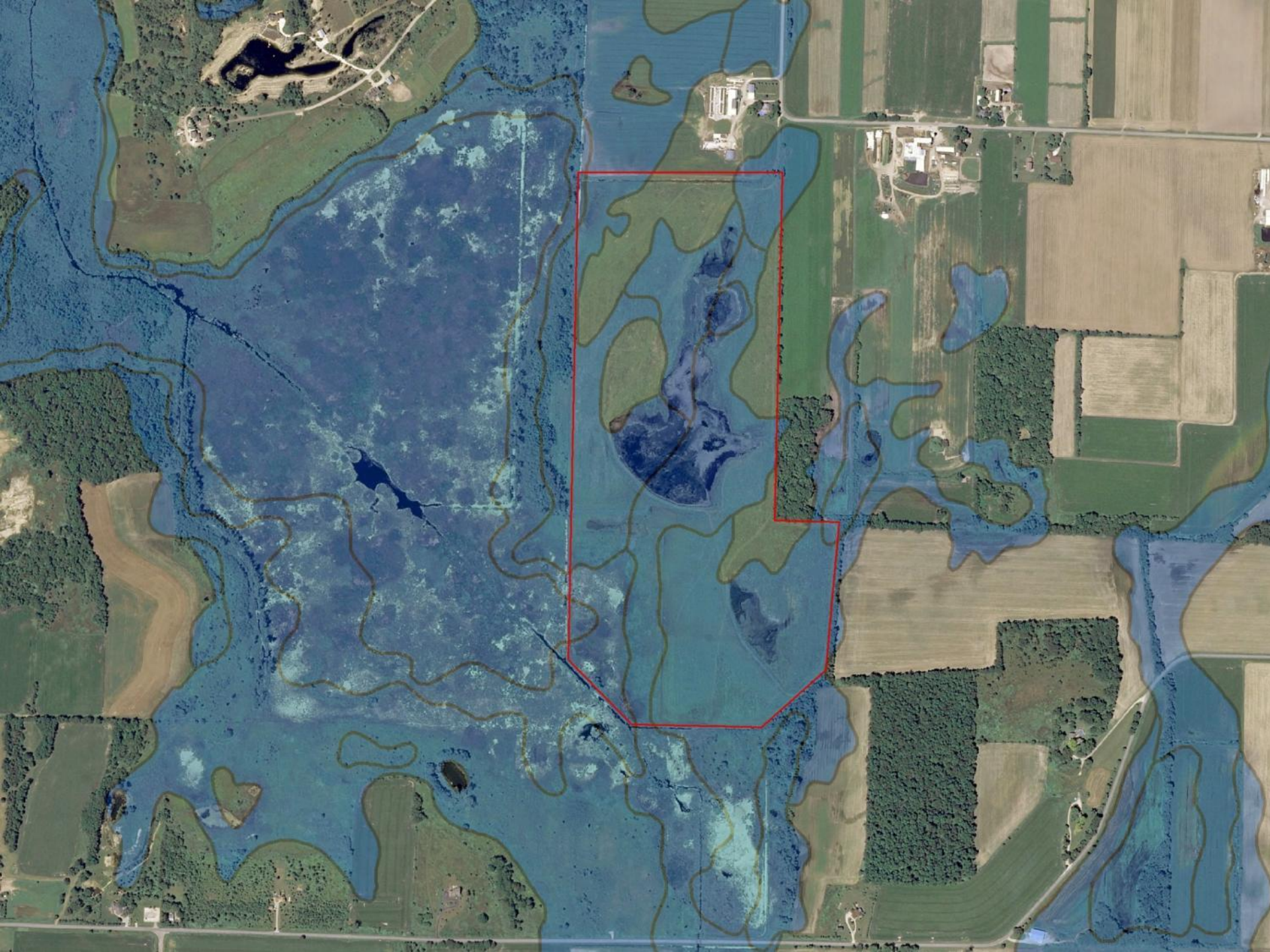
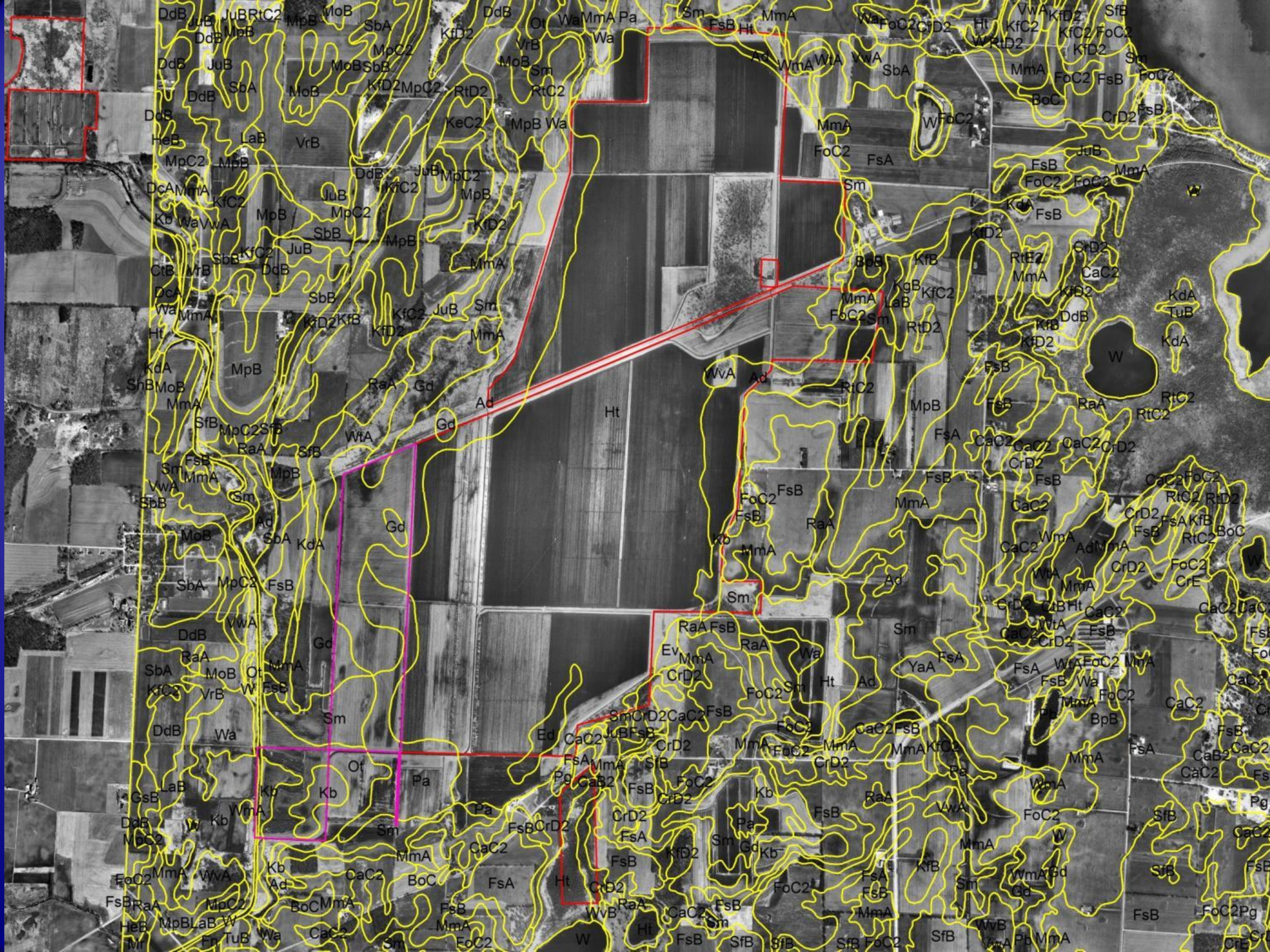


Tile connectors - 2 feet above soil

Deep ditches


DdB
JuB
JuBRtC2
MoB
DdB
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Wa
MmA
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Ht
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FoC2
CrD2
VwA
KfD2
SfB
SbA
KfD2
MpC2
VrB
MoB
SbB
MoB
Sm
RtC2
RtD2
KfD2
MpC2
WmA
WtA
VwA
SbA
MmA
FoC2
FsB
BoC
KeC2
MpB
Wa
FoC2
FsA
JuB
MmA
VrB
LaB
HeB
MpC2
DcA
KfC2
MpB
Sm
KdA
FsB
KfD2
RtE2
CrD2
CaC2
KdA
TuB
W
MmA
FoC2
Sm
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WvA
Ad
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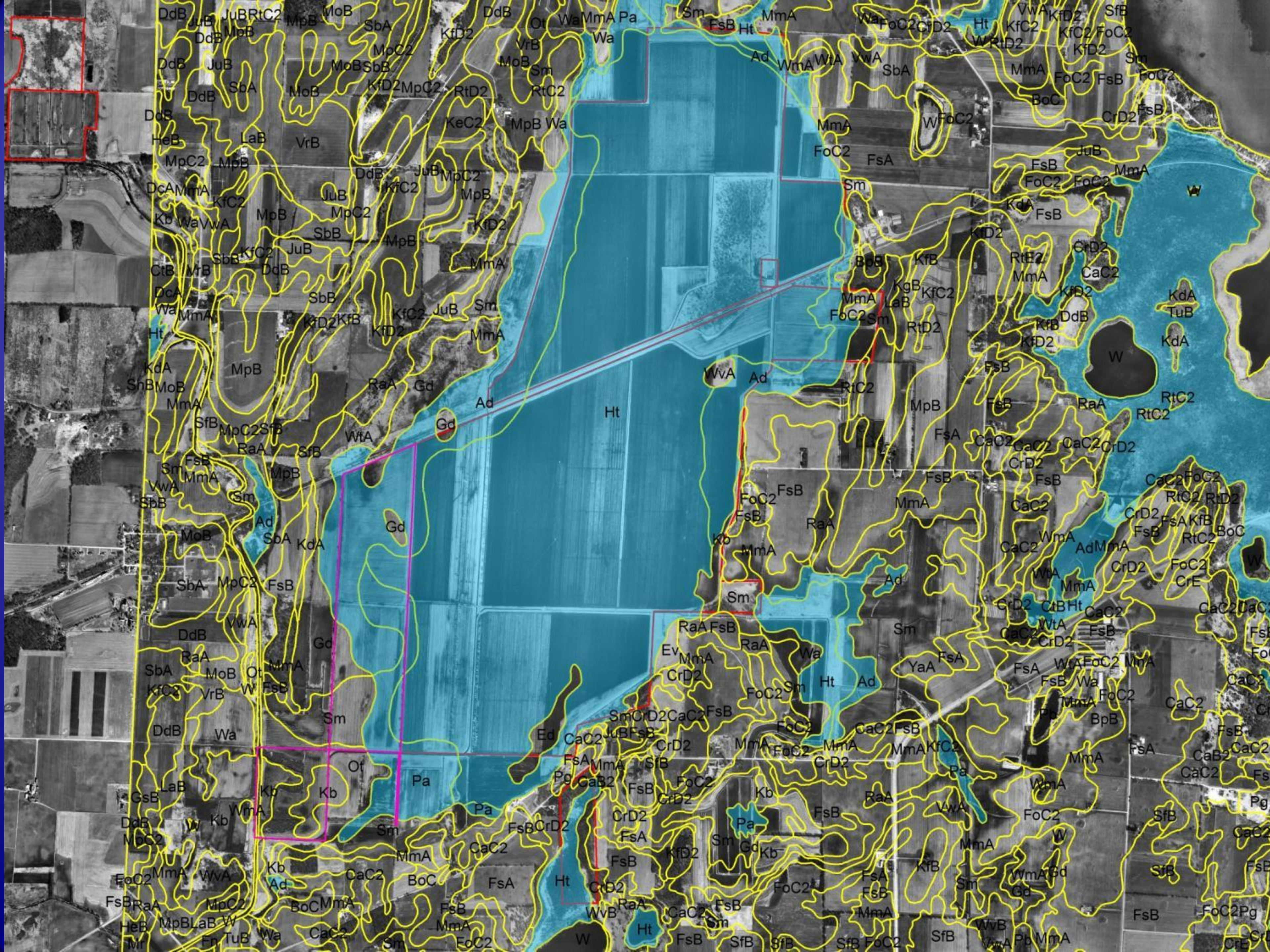

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DdB MpB JuB MoB SbB MpC2 KfD2 MpC2 RtD2 RtC2 Sm MoB Wa Ad WmA WtA VwA SbA W RtD2 KfC2 FoC2 KfD2
DdB SbA MoB DdB MmA FoC2 FsB FoC2 BoC
DdB LaB VrB HeB KeC2 MpB Wa MmA FoC2 FsA W FoC2 CrD2 FsB
MpC2 MpB DdB JuB MpC2 KfC2 MpB FsB JuB FoC2 FoC2 MmA Sm
DcA MmA JuB KfC2 MpB MpC2 KfD2 KdA FsB
Kb Wa VwA SbB MpB KfD2 BpB KfB RtE2 CrD2 MmA CaC2
CtB VrB SbB KfC2 JuB DdB MmA MmA LaB KgB KfC2 KfD2 KdA
DcA Wa MmA SbB FoC2 Sm RtD2 KfB DdB TuB
Ht KfD2 KfB KfC2 JuB Sm KfD2 KfD2 KdA
KdA MpB MmA WvA Ad FsB W
ShB MoB RaA Gd RtC2 MpB
MmA SfB Ad FsB RaA RtC2
Gd Ht
MpC2 SfB RaA MpB WtA FsA CaC2 CaC2 CaC2 CrD2
Sm FsB MmA MpB CrD2 FsB
VwA SbB Sm FoC2 FsB MmA CaC2 CaC2 FoC2
MoB Ad SbA KdA Gd FsB RaA CrD2 RtC2 RtD2 FsA KfB
MmA CaC2 WmA AdMmA FsB RtC2 BoC
SbA MpC2 FsB Ad WtA CrD2 FoC2 CrE
Sm MmA CrD2 CtB Ht CaC2 CaC2 CaC2
VwA RaA FsB Sm WtA CrD2 FsB
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SbA MoB Ot MmA CrD2 Ht Ad FsB Wa CaC2
KfC2 VrB W FsB FoC2 Sm MmA FoC2
Sm SmCrD2 CaC2 FsB BpB CaC2
DdB Wa Ed CaC2 JuB FsB FoC2 CaC2 FsB FsB
CrD2 MmA FoC2 MmA MmA KfC2 FsA CaB2 CaC2
Ot FsA MmA SfB CrD2 CaC2
GsB LaB Kb Kb Pa Pg CaB2 FsB FoC2 Kb Pa WmA Pg
WmA FsB CrD2 CrD2 RaA
DdB W Kb Pa CrD2 FsB VwA FoC2
MpC2 Sm CaC2 FsA Pa SfB W
Sm KfD2 Gd Kb CaC2
FoC2 MmA VvA MmA FsB Kb KfB Sm MmA Gd
Kb CaC2 BoC FsA Ht FsA
FsB Ad MpC2 BoC MmA CrD2 FoC2 Gd
RaA FsB RaA FsB FsB
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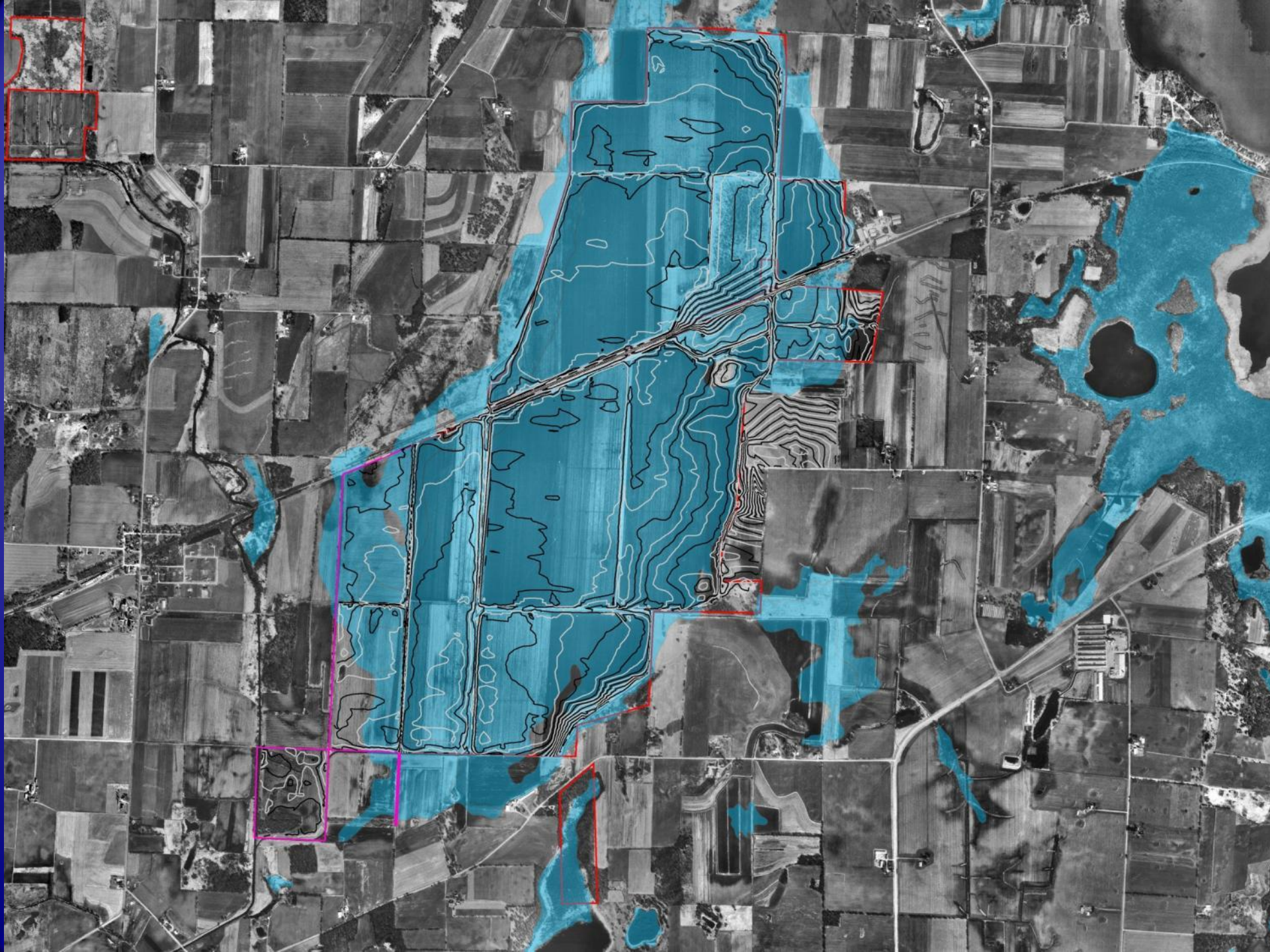
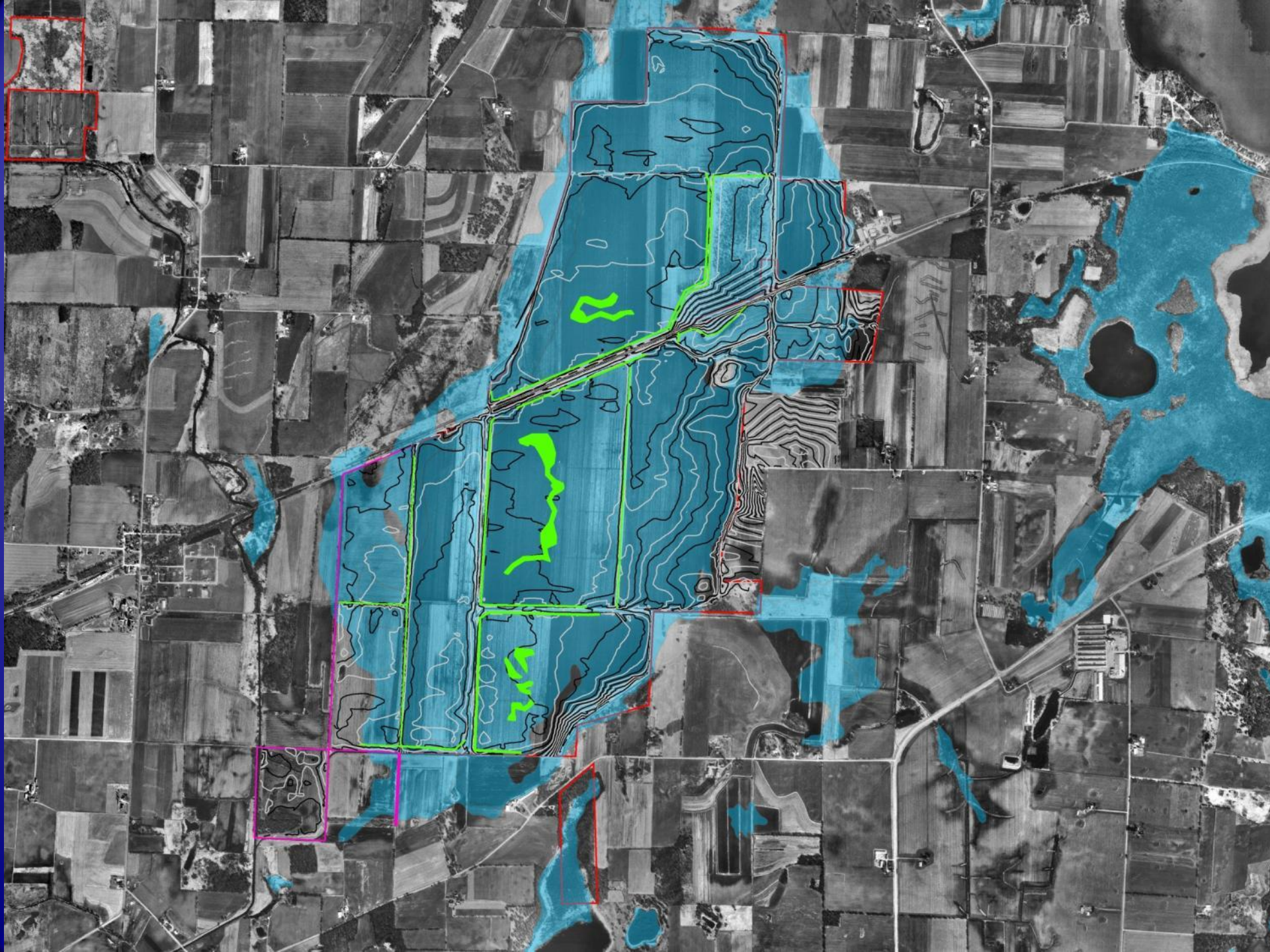
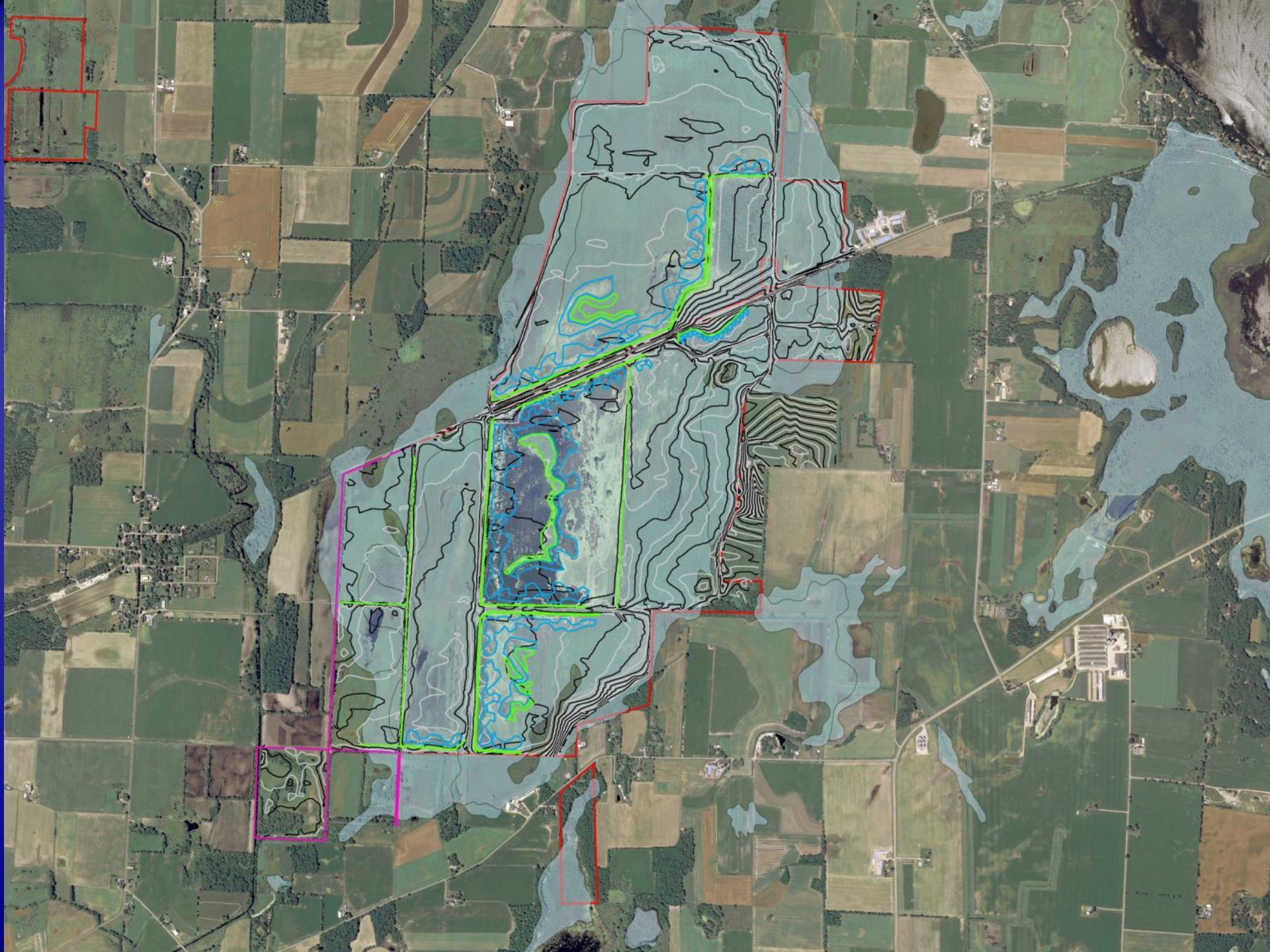




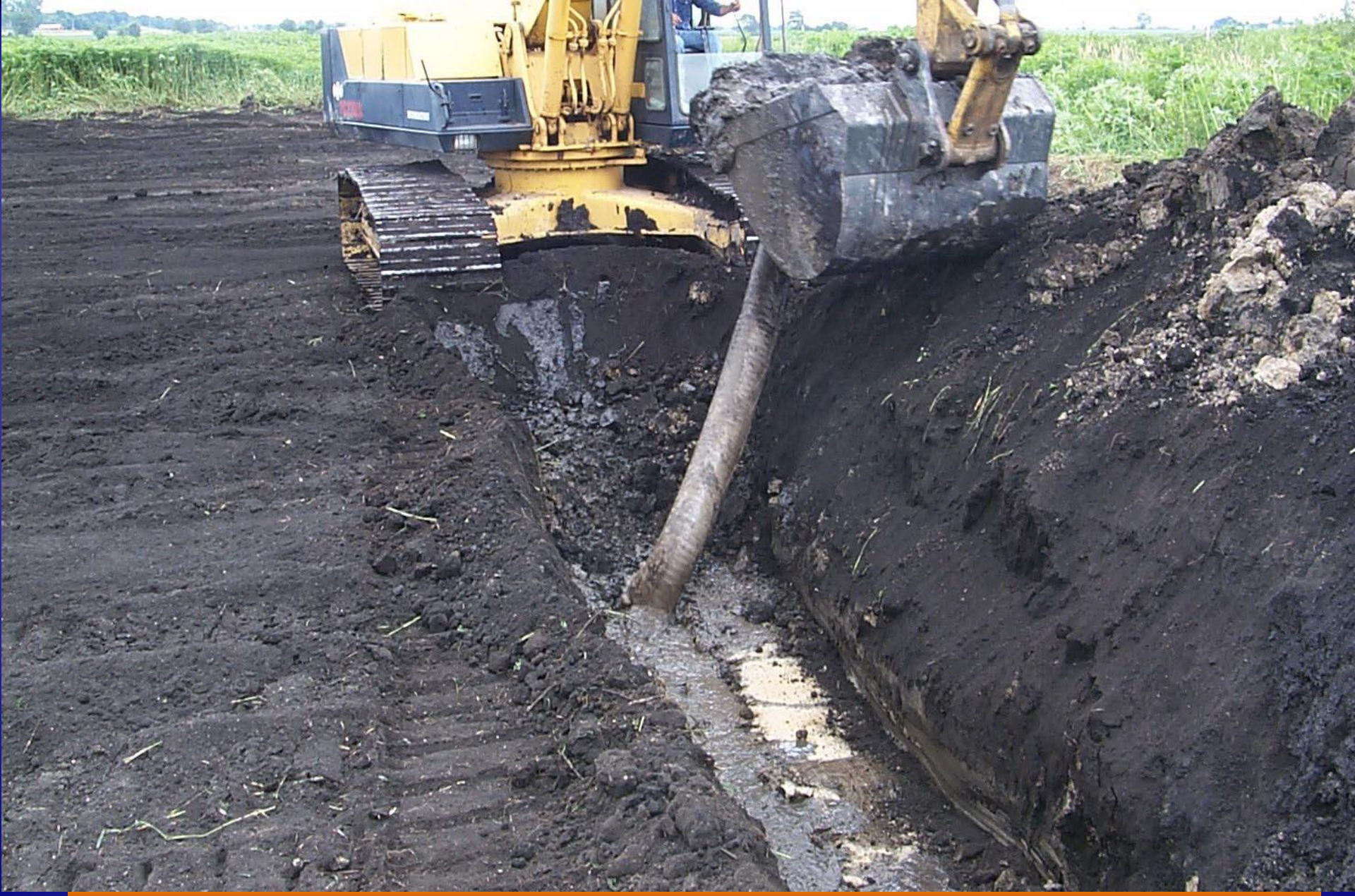


Wetland Restoration

- Filled two miles of ditches
- Disabled 12 miles of drainage tiles
- Moved 151,000 cubic yards of soil
- Constructed 4 miles of berms
- Placed 7 water control structures
- Constructed 6 islands - 19 acres
- 800 acres of open water

EXCAVATION

Removed 1.5 miles of Willows



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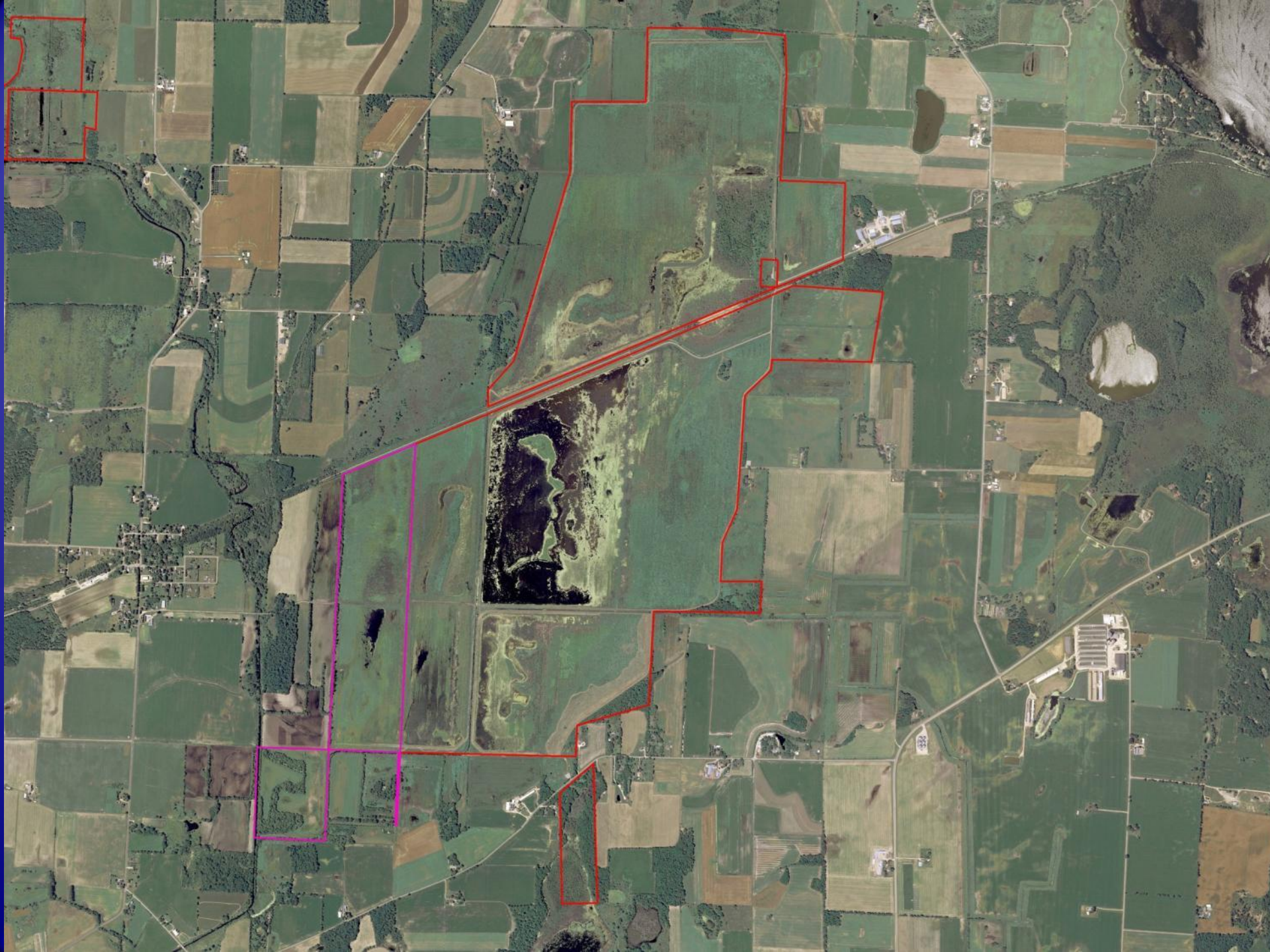

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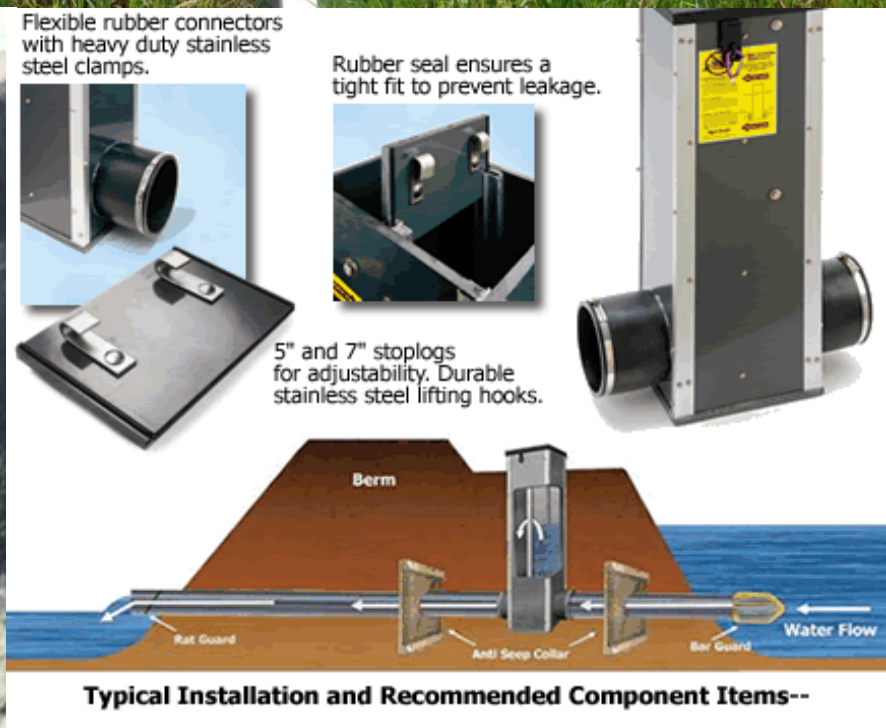


Typical Installation and Recommended Component Items--

QUESTIONS?

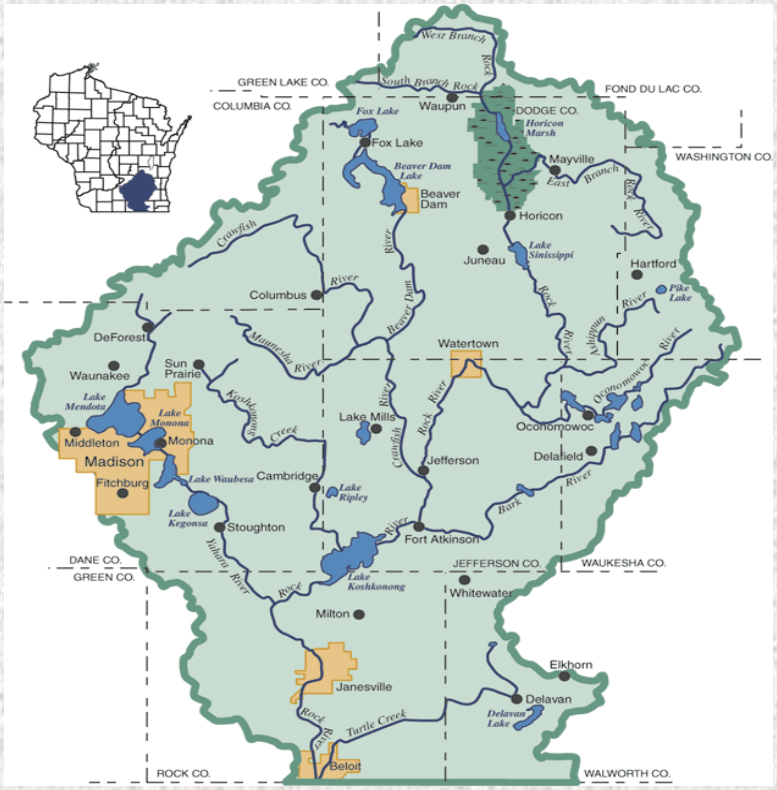
Wetland Monitoring at Zeloski Marsh

Jeanne Scherer
Wetland Monitoring Coordinator
July 15, 2013

Rock River Coalition

The Rock River Coalition:
Our Mission

- The Rock River Coalition (RRC) is a local, non-profit organization with a mission to educate and provide opportunities for people of diverse interests to work together to improve the environmental, recreational, cultural and economic resources of the Rock River Basin.



A History of Partnerships Brings Citizen Scientists to Wetlands

- Prior to 2004-The Rock River Coalition forms a partnership for monitoring wetland restorations in the Rock River Basin with NRCS
- 2004 - 2005 Rock River Basin Wetland Restoration Volunteer Monitoring- $10,000
- 2005 - 2006 Rock River Basin Wetland Restoration Volunteer Monitoring Project- $7,000
- 2010-2011 Developing a Volunteer Wetland Monitoring Guidance Manual- $4,475
- 2012-2013 Lake Mills State Wildlife Area: Zeloksi Marsh--Year Six Post-restoration Assessment-$4967

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Madison Audubon Society
Making time for birds
222 S.Hamilton St. - Suite #1, Madison, WI 53703
Phone: 608.255.2473 Email:masoffice@mailbag.com

WISCONSIN DEPT. OF NATURAL RESOURCES

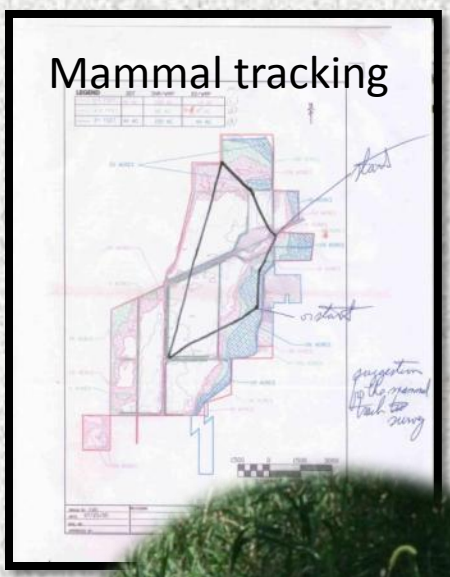
Zeloski Wetland Monitoring Program

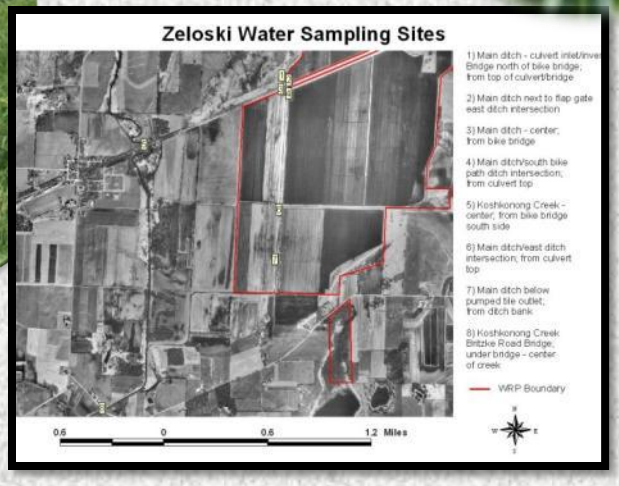
- Hiring a professional monitoring team not financially feasible
- Bryan Huberty is hired in 2004 to develop a monitoring program and coordinate pre-restoration surveys with citizen volunteers 2005
- Ed Grunden managed volunteers from 2006-2011
- Jeanne Scherer managed the program during 2012-2013

Photos-B.Huberty presentation 2005

Pre-restoration photos Huberty

Pre-restoration Monitoring





Post-Restoration Monitoring

2012-2013 Citizen-based Monitoring Partnership Grant from the WDNR

Birding

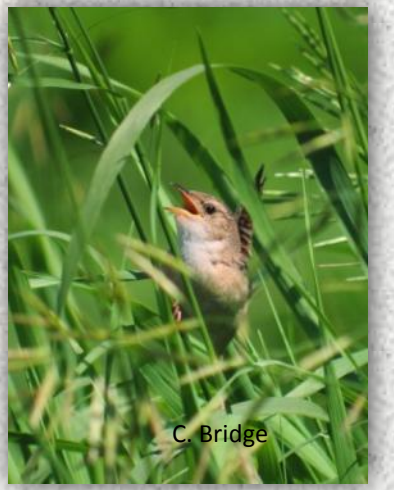
Photo permission from A. Wentz

K.Etter Hale

Clearly a Success

Initial Response:
Over 160 species sighted in 2007

Total species sighted since 2006: Over 220!

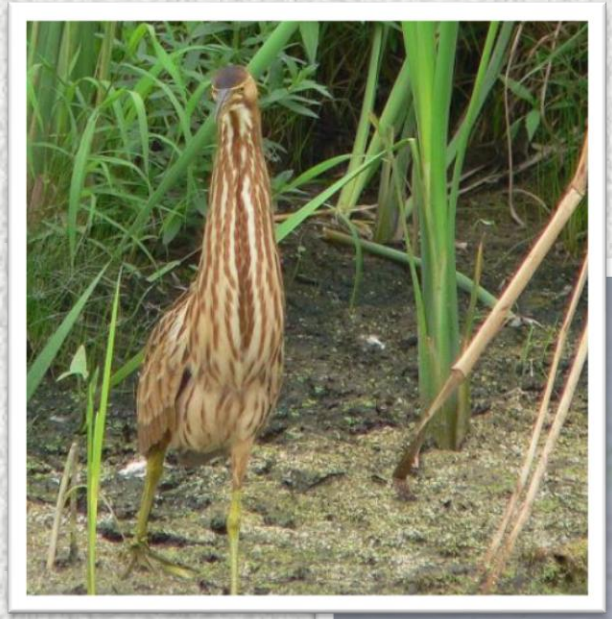


Sandhill Cranes:

- Spring Crane Count 2005 – Zero
- Nolan Kollath's April 2013 count—164
- Quentin Yoerger Nov.2011 count—517!

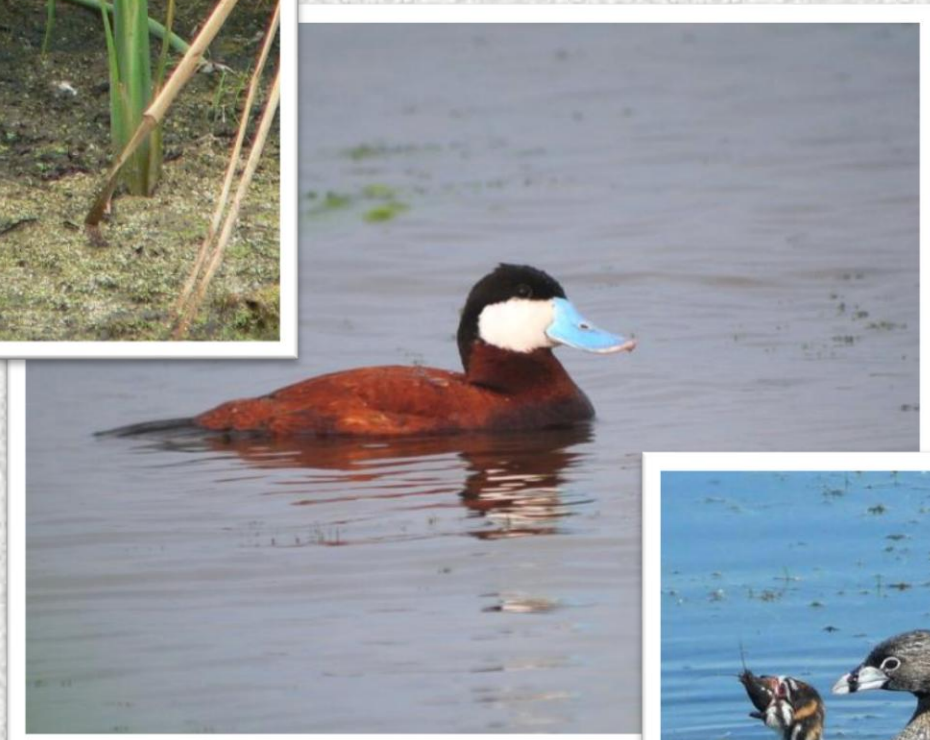
Shorebirds

- Capability to manage water levels allows for periodic drawdowns for shorebirds and vegetation renewal.
- Mudflats in 2007 attracted 24 species of shorebirds and 1000s of individuals.
- Mudflats during spring and summer shorebird migration matured into high-quality duck food for Fall hunting season.



American Bittern-Bradley Webb

The first American Bittern at Zeloski Marsh was sighted by Nolan Kollath in 2007.



Ruddy Duck-
Cynthia Bridge

Pied-billed Grebes-
Royan Webb

Just a Sample!

Bay-breasted Warbler

Olive-sided Flycatcher

Red Knot

Swainson's Thrush

American Pippet

American White Pelican

Black-necked Stilt

Orchard Oriole

Trumpter Swan

Lapland Longspur

Nashville Warbler

Semi-palmated Sandpiper

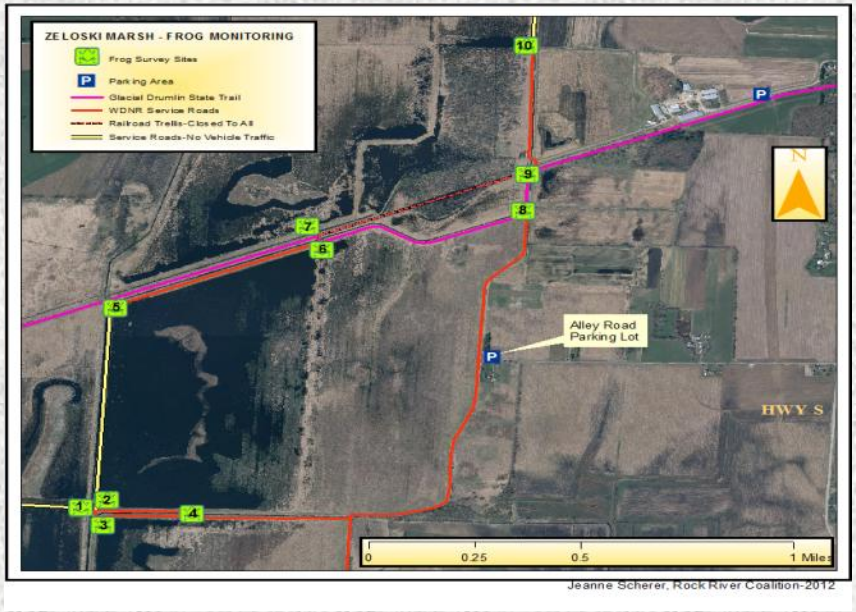
Least Bittern

Ruddy Turnstone

Osprey

Photos : Andy Paulios Presentation, 2007

Frog and Toad Monitoring

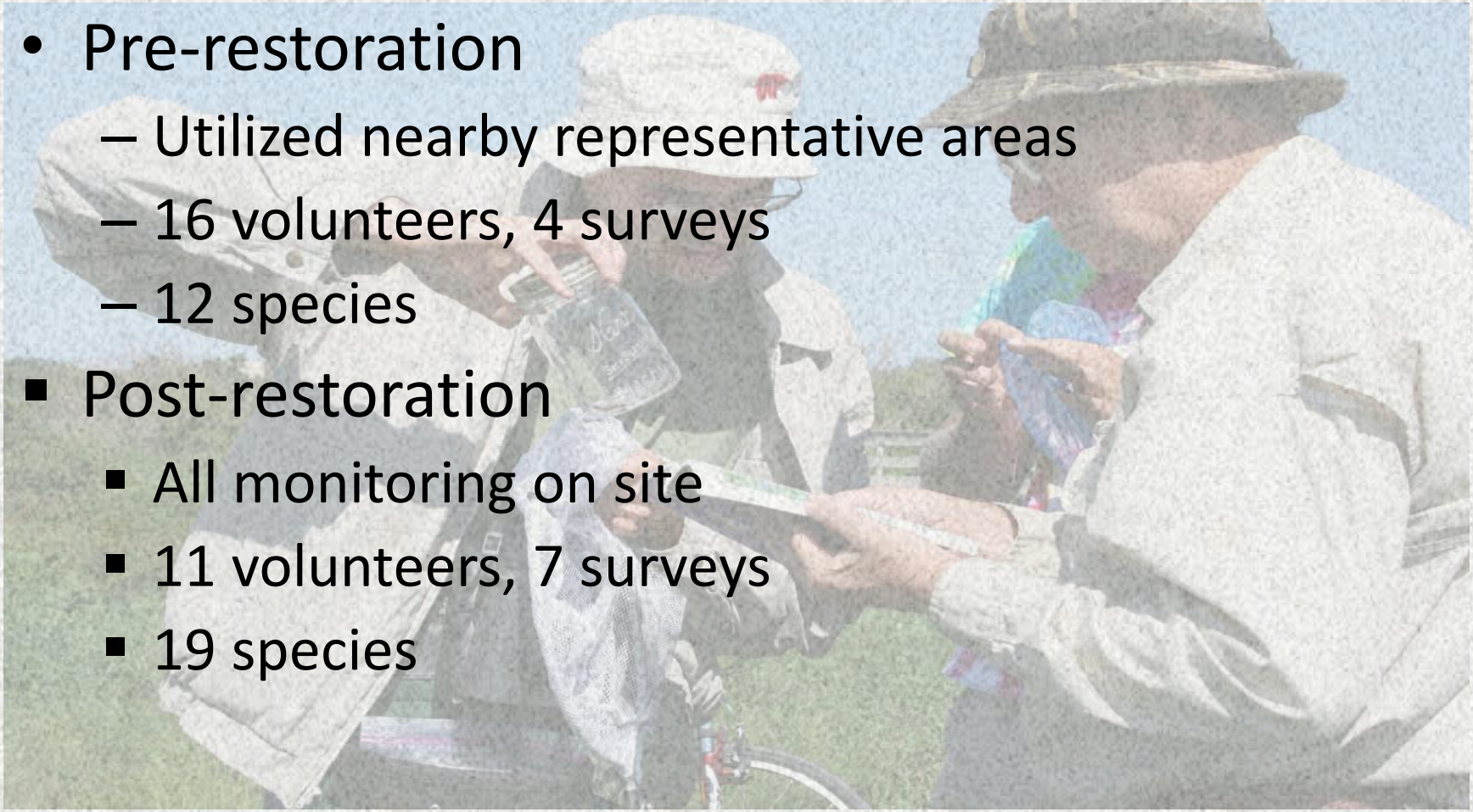


Frogs: Pre- vs. Post-

- Droughts during both years
- The 2012-2013 grant allowed for spring surveys during the much wetter spring of 2013
- **2005**—8 species of 12 found in Wisconsin
  - Surveys took place at several representative sites because the marsh site was still agricultural fields
- **2012-2013**—species; all of the 2005 species except Bullfrogs
- **Species**: Cope's Grey Tree Frog, Spring Peeper, Green Frog, Chorus Frog, Leopard Frog, Wood Frog and American Toad

Odonate Monitoring

Ode what?



- Pre-restoration
  - Utilized nearby representative areas
  - 16 volunteers, 4 surveys
  - 12 species
- Post-restoration
  - All monitoring on site
  - 11 volunteers, 7 surveys
  - 19 species

An indication for furthering habitat diversity work

Botany

N. Tippery

Pre-restoration Floristic Monitoring

- **Floristic Quality Analysis (FQA) conducted on 2 acre oak island at Zeloski Marsh and 20 acre northern bog relict at Hope Lake Bog.**
- **Invasive species mapped in 2004 to help engineers during restoration**
- **15-20 volunteers contributed to 4 surveys in Oct (’04), June & Sept (’05).**

Photos and information from Bryan Huberty presentation-2006

Where to start in 2012?

- Dr. Nic Tippery compiles Huberty data into a single Excel workbook
- Seed lists and best known seeding locations are added to the master workbook
- Surveys conducted from June-October 2012 and May 2013; 10 volunteers
- Voucher specimens are collected and stored at UW-Whitewater






Water Quality

Parameters:
Dissolved oxygen, pH (acidity), conductivity, turbidity, and temperature

Frequency: May, June, July and November, replicating pre-restoration monitoring dates.

Data: entered on the Surface Water Integrated Monitoring System (SWIMS).

Water Quality Monitoring Points

- Water Monitoring Sites
- Parking Areas
- Koshkonong Creek and Primary Ditches
- WDNR Service Roads
- Glacial Drumlin State Trail
- Other Service Roads-Foot traffic only
- Railroad Trellis-Closed to all

2013 BioBlitz

And More!

BioBlitz Highlights

- Approximately 100 participants with a diversity of backgrounds
- 28 plant species added to the master list
- Mycology survey-7 species
- Bat survey-3 species
- Entomology survey-130 species representing 73 families
- Birds-90 species

Issues—
Invasives, Climate Change, Diversity

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