

Outcomes Estimation Tools Training Webinar Series

Featuring:

Agricultural Conservation
Planning Framework (ACPF)

July 10, 2024

Noon to 1:30 pm eastern

Aysha Tapp Ross
Water & Soil
Health Scientist

Jen Tillman
Research Scientist

Agenda



- Welcome, Poll (10 min)
- Introduction to ACPF (Anne) (15 min)
- ACPF demonstration (Haleigh) (35 min)
- How NRCS uses ACPF (Gregg) (15 min)
- Q&A (15 min)



Zoom Webinar Reminders

- Use Q&A Box - last 15 minutes (Vote up!)
- Use Zoom Direct Message feature to Jen if having technical difficulties
- Email with resources to follow each webinar
- Recordings posted on the webinar series site the following Monday
- **Evaluation survey in the Chat Box**
 - **Complete to be entered to win a \$25 gift card!!**



Time for 3 polls!

Webinar Stats

- Average attendance: 74 (57-113)
 - 45 poll responses per webinar
 - Government agency: 28 (62%)
 - Current user of OETs: 14 (31%)
 - Potential Future User: 15 (33%)
 - Had not heard of: 18 (40%)
 - Heard of but never used: 21 (47%)
- Survey: 17 respondents (5-30)
 - Likely to very likely to use the tool (65%)
 - Not currently using the tool (57%)
 - Professionally (20%)



[Back to Media](#)

Outcomes Estimation Tools Training Webinar Series

American Farmland Trust (AFT) researches tools and methods to help farmers and conservation professionals estimate and report on outcomes associated with farm conservation practice adoption. In 2020, AFT released an **Outcomes Estimation Tools Guide** to help farm conservation project managers identify user-friendly tools and methods to quantify the water quality, climate, social, and economic outcomes of farm practices.

American Farmland Trust's Outcomes Estimation Tools Training Webinar Series (2023-2024) provides farm conservation project managers with information about the different tools that are available. Each webinar features a developer of an outcomes estimation tool who provides extensive training and guidance in the usage and application of their tool. See the links below to watch previous webinars





Agricultural Conservation PLANNING FRAMEWORK

Housed at the National Hub

Prioritizing Practice Locations with Agricultural Conservation Planning Framework

ANNE NARDI

DR. HALEIGH SUMMERS

GREGG HADISH



IOWA STATE UNIVERSITY

Water Resources Center
UNIVERSITY OF MINNESOTA



acpf4watersheds.org

ANNE NARDI

Marketing Manager and Project Manager at University of Wisconsin-Madison, Division of Extension

Education:

- M.S. Life Sciences Communication, UW-Madison, 2017
- B.S. Biology and Sociology, William and May 2009

Projects:

- Agricultural Conservation Planning Framework
- North Central Region Water Network
- Soil Health Nexus
- Conservation Professional Training Program



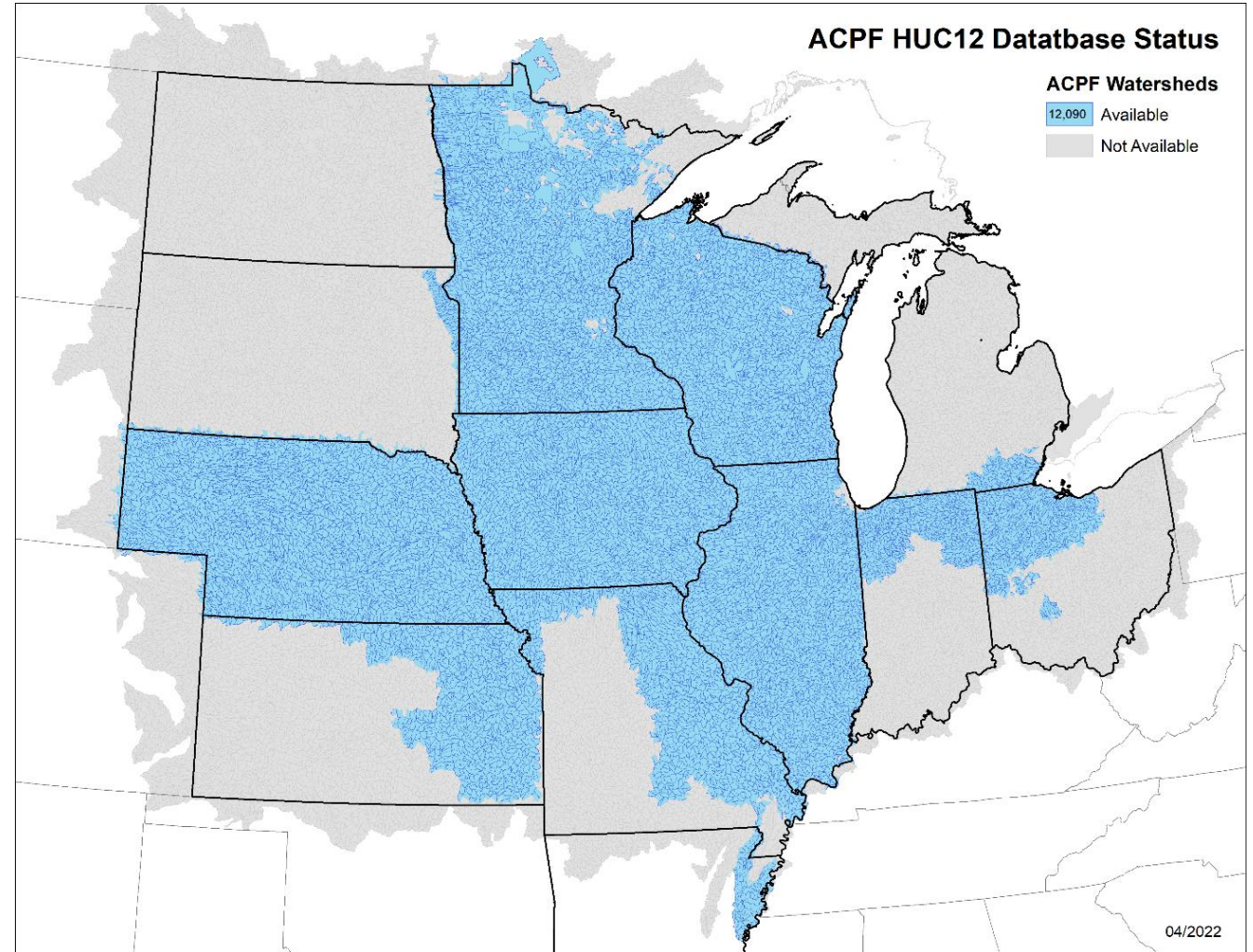
Objectives

1. Explain the requirements for using ACPF and where to find training - Anne
2. Provide a basic overview of how to use the ACPF and where to find input data - Haleigh
3. Show examples of ACPF data and demonstrate how ACPF data can be used in various ways - Haleigh
4. Provide guidance on using the ACPF Utilities Suite to create your own ACPF core data - Haleigh
5. Describe how USDA-NRCS is incorporating ACPF Results into conservation planning workflows - Gregg

The Agricultural Conservation Planning Framework

- Allows you to leverage the power of geo-spatial data to make targeted field-scale conservation decisions
- Facilitates watershed planning at landscape, community and field scale
- Allows farmers and landowners to visualize how their actions impact the watershed
- Core data is currently available for all watersheds in Illinois, Iowa, Minnesota, and Wisconsin and portions of IN, KS, MO, NE, ND, OH and SD
- Core data can also be created for all watersheds using the utilities suite

ACPF Core Data



Who can use the ACPF?

- Conservation planners and resource managers across government, industries, and non-profit organizations
- Landowners and farmers
- Watershed organizations and other stakeholder groups
- Researchers and scientists

Who can run the ACPF?

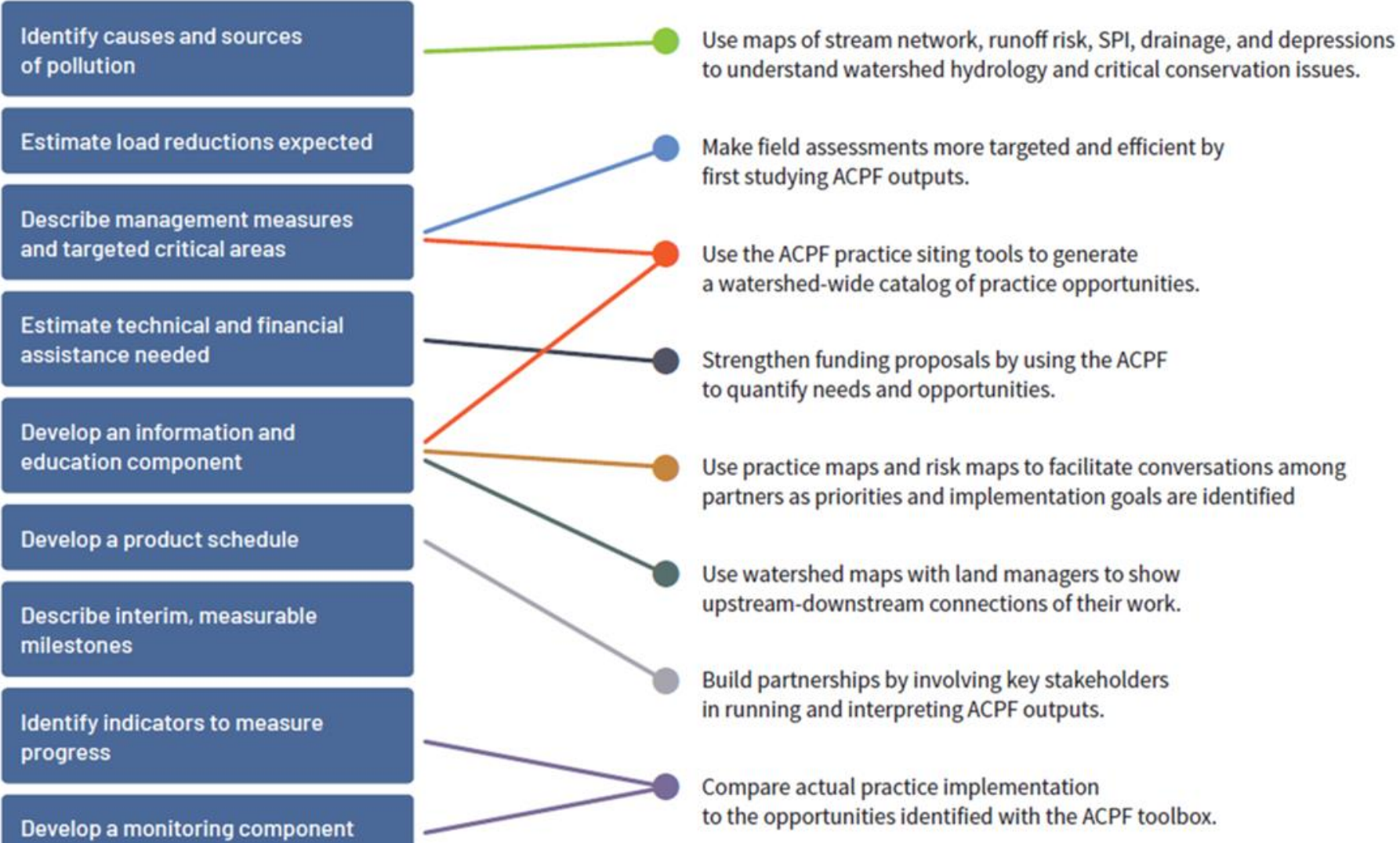
- Intermediate to advanced GIS users who are familiar with Esri's ArcGIS platform
- There are also a number of technical consultants who can run the ACPF for those without an in-house GIS Specialist



Church et al. (2019); Gesch et al. (2020), Ranjan et al. (2019, 2020)

Using ACPF in Watershed Planning

EPA's Nine Elements for Successful Watershed Plans



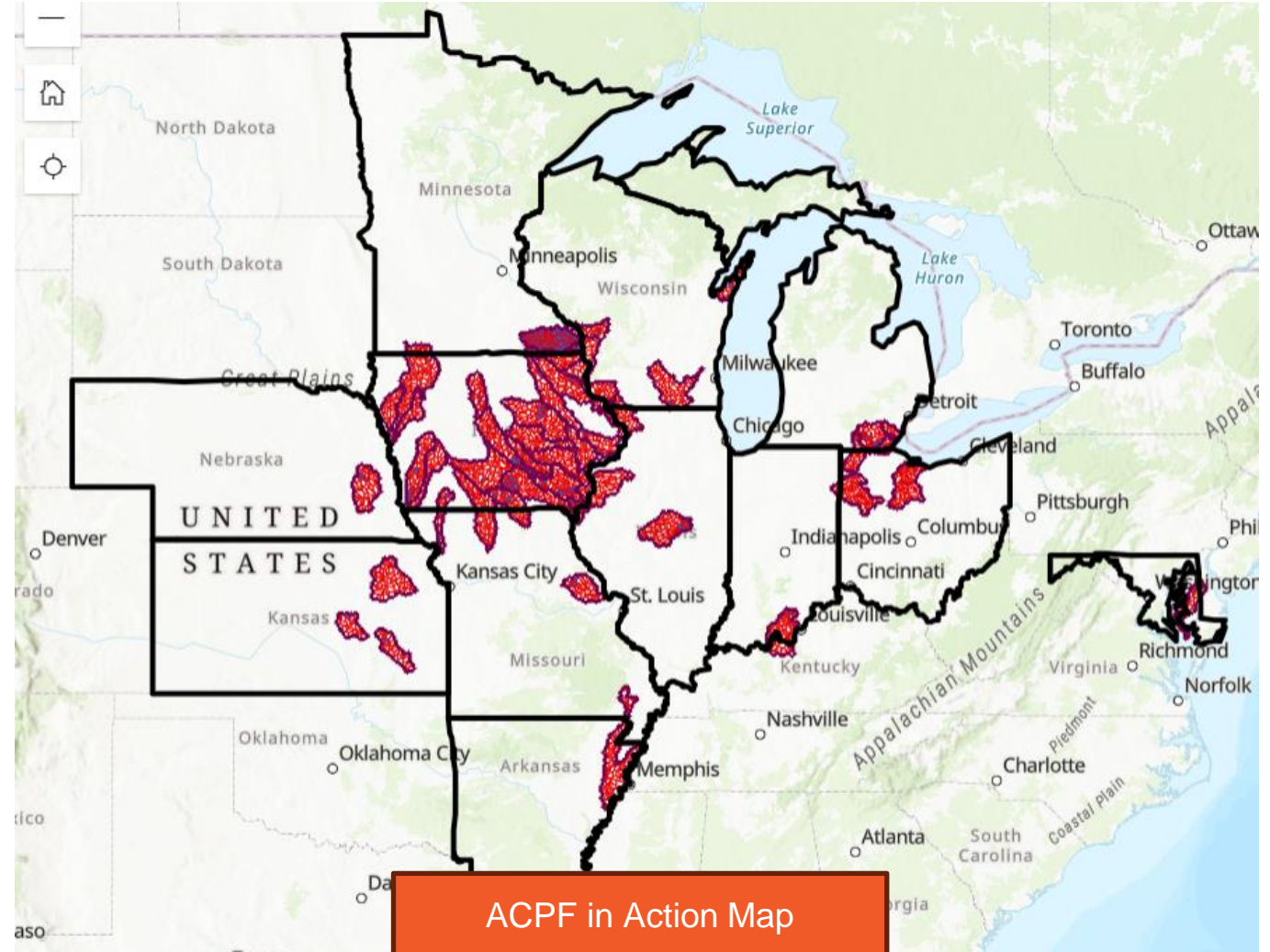
ACPF National Hub

The ACPF National Hub is a multi-institutional collaboration to improve agricultural conservation planning processes and help communities and agencies address soil and water quality goals. We are focused on serving Natural Resources Conservation Service (NRCS) offices and conservation partners across the US to support conservation planning efforts at multiple scales.

- **Objective 1:** Create an easily accessible national ACPF geospatial data inventory to support NRCS planning approaches, planning tools, and federal program delivery
- **Objective 2:** Develop, maintain, store, and update vetted ACPF data and toolboxes
- **Objective 3:** Provide outreach and training resources for use and interpretation of ACPF output by GIS and non-GIS practitioners with the NRCS and associated partners
- **Objective 4:** Cultivate a network of ACPF users within the NRCS and partners in conservation

Projects Using the Tool

- ACPF has been incorporated in multiple state-wide projects in Iowa including the state's nutrient reduction strategy.
 - Buckeye Creek Watershed
 - Dubuque County
 - Polk County
 - Southfork Watershed
- Beargrass Creek Watershed in Indiana
- Root River and Elm Creek Watershed in Southeast Minnesota
- Wilson Creek Watershed in Western Wisconsin



HALEIGH SUMMERS, Ph.D.

Agricultural Geospatial Data Scientist at Sand County Foundation

Education:

- Ph.D. Sustainable Agriculture and Environmental Science – Iowa State, 2023
- M.S. Agronomy – Penn State, 2019
- B.S. Agronomy and Seed Science – Iowa State, 2017

Projects:

- RCPP: Advancing Farmer-Led Incentives in the Midwest
- Incorporating Subfield Profitability into ACPF FiNRT
- Leadership for Midwestern Watersheds



Snapshot Summary of Agricultural Conservation Planning Framework (ACPF)



<p>Scale & level of specificity</p>	<p>HUC-12 watershed scale with the potential to combine multiple HUC-12s or focus on one field after the analysis is complete. Site-specific: Each practice is located based on the watershed, land use, soils, and topography in that exact location.</p>
<p>Outcomes</p>	<p>A file geodatabase containing opportunity locations for conservation practices. Run-off risk ratings for each field. Soil vulnerability index for each soil map unit.</p>
<p>Conservation practices</p>	<p>Structural In-field/Edge-of-Field Practices: Grassed waterways, contour buffer strips, bioreactors, nutrient removal wetlands, farm ponds, water and sediment control basins (WASCOBs), riparian buffers, saturated buffers.</p>
<p>Land uses & production systems</p>	<p>All land uses are evaluated (from the Cropland Data Layer), but conservation practices are specifically designed for agricultural row-crop fields.</p>
<p>States & territories</p>	<p>Core ACPF data is available for IL, IA, MN, and WI and parts of IN, KS, MO, NE, and SD. ACPF can be run anywhere, but more time would be needed to create the initial database and evaluate results.</p>
<p>How much time, data, & skills needed to generate an outcome estimate</p>	<p>Requires GIS experience and hydrology knowledge 40-50 hours/HUC-12 watershed where results data do not exist Data provided by user, ACPF National Hub, and state offices</p>

Strengths, Limitations, and Trade-Offs of ACPF

STRENGTHS

- Provides field-scale suggestions in a HUC-12 watershed
- Facilitates targeted conservation
- Supports watershed planning – identifies high risk areas and suggest opportunities
- Free to use
- Built-in file organization
- Not prescriptive
- Visual portray of watershed management
- Provides scientific validity to funding opportunities

LIMITATIONS

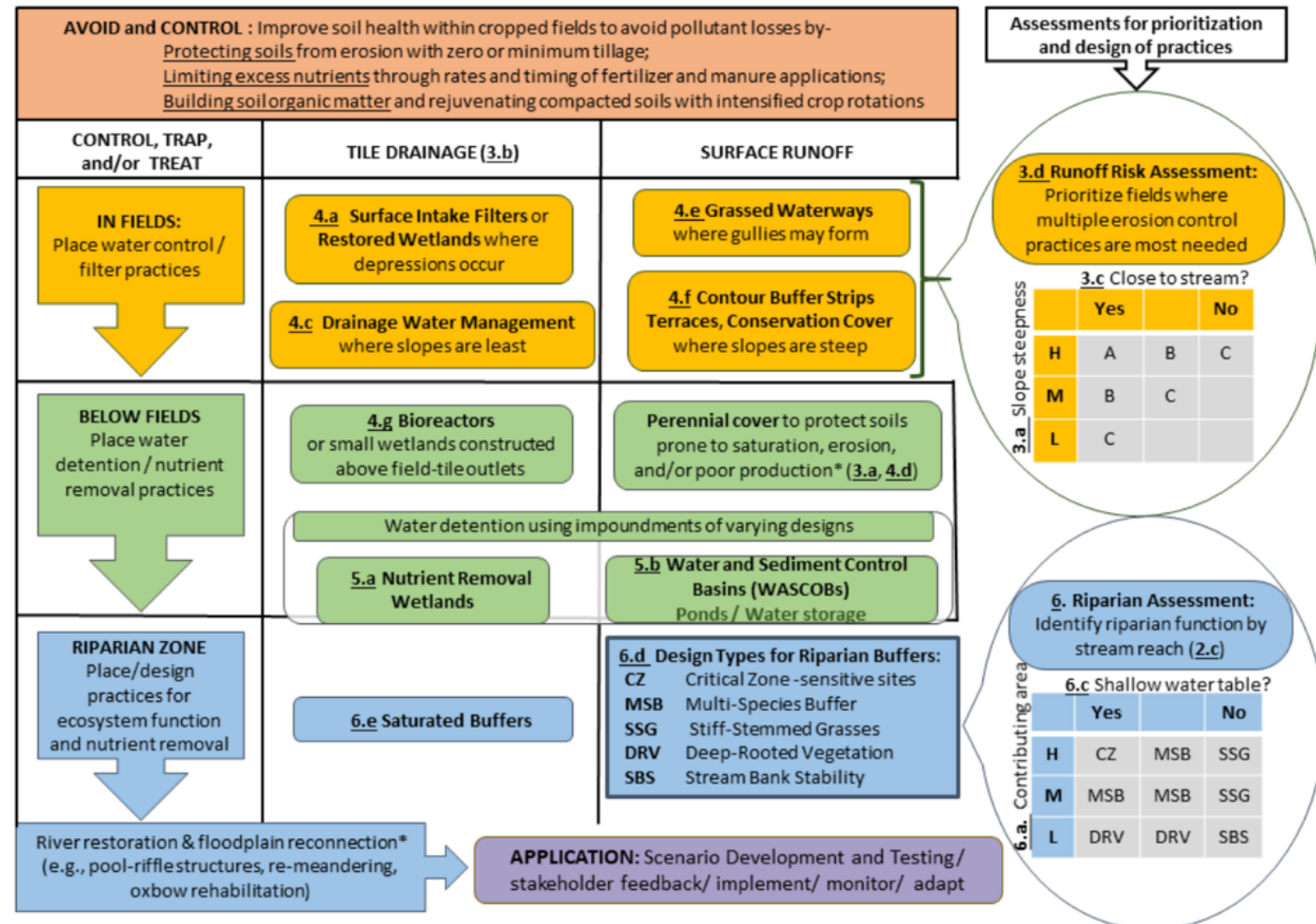
- Requires an ESRI ArcGIS subscription to run
- Not tested in every state – if outside of current data boundaries, users must collect their own data
- Requires GIS and hydrology knowledge
- Time-intensive

How does the ACPF work?

The Agricultural Conservation Planning Framework (ACPF):

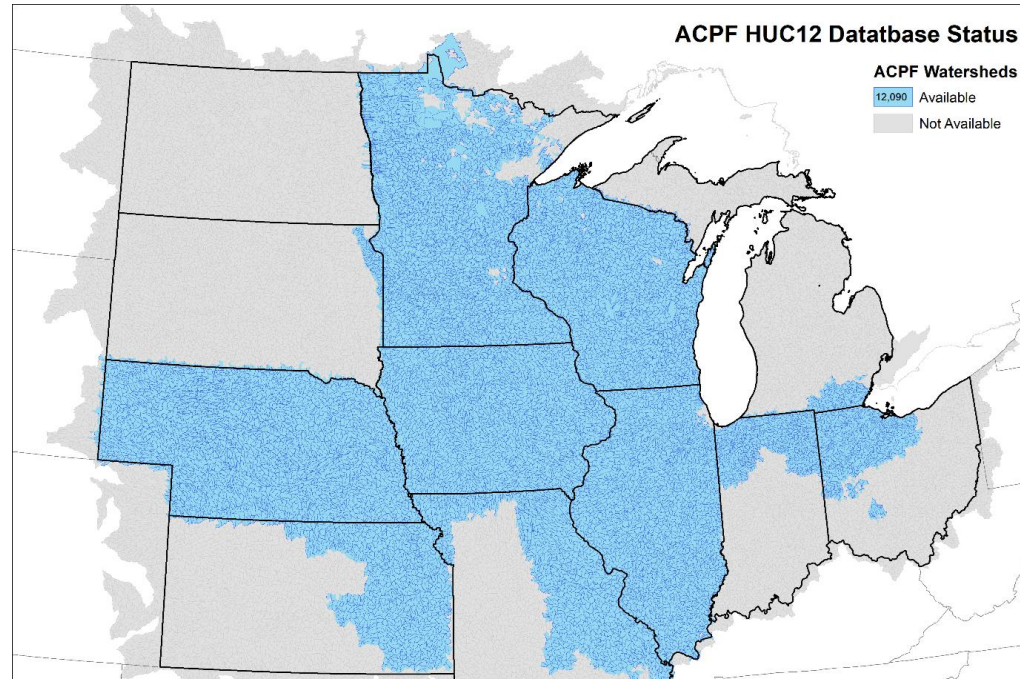
- Based on principles of agricultural watershed management
- Uses publicly available geospatial data (e.g., elevation, soils, land use)
- Operationalizes planning using a GIS-based tool to identify opportunities to install best management practices (BMPs) to address soil and water quality needs

Process for conservation planning to improve water quality in agricultural watersheds using precision technologies
DATA REQUIRED: 1 & 2 high-resolution digital elevation model, Soilsurvey, Field boundaries, Land use



(Tomer et al., 2013; Porter et al., 2018)

How does the ACPF work?



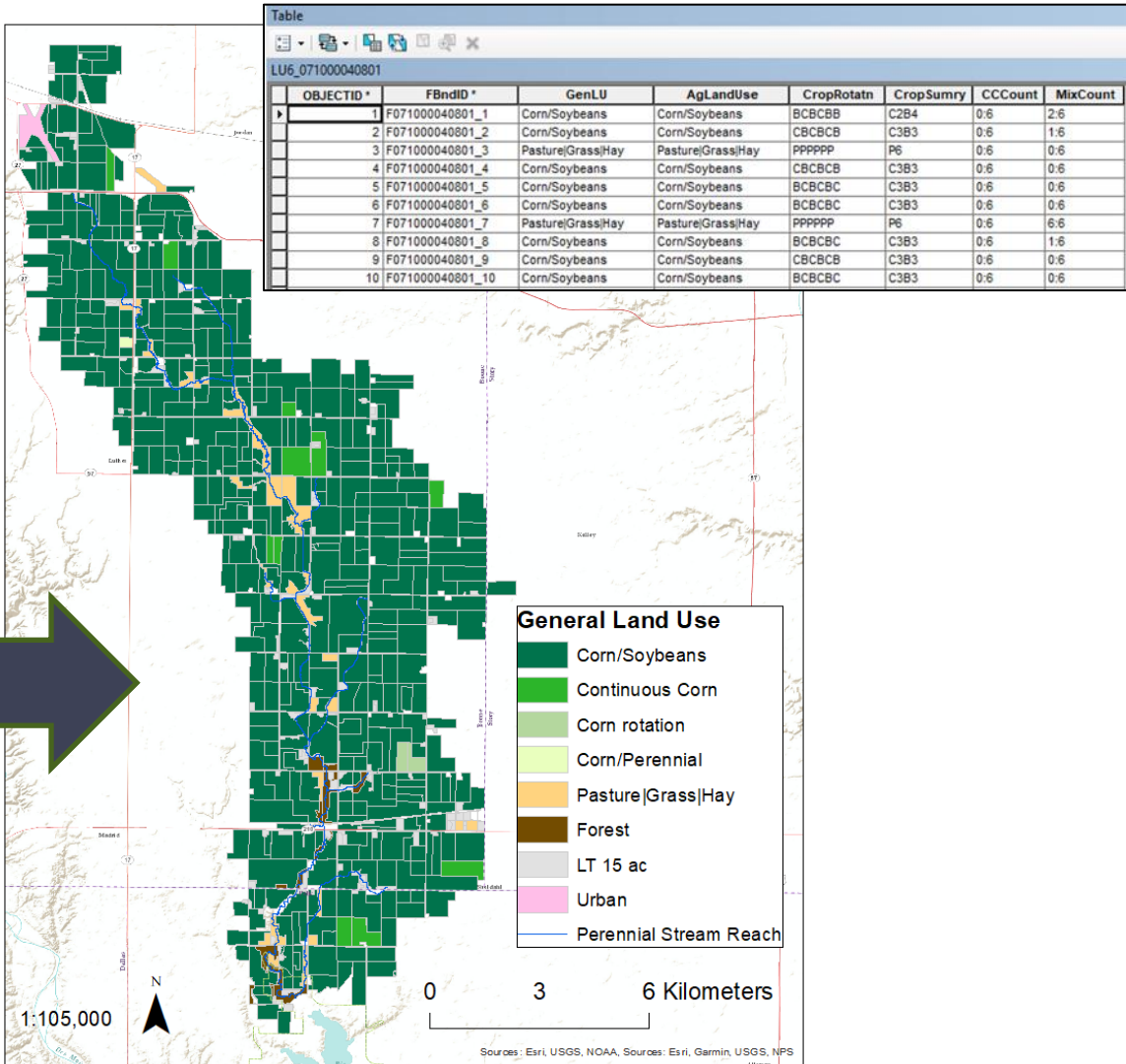
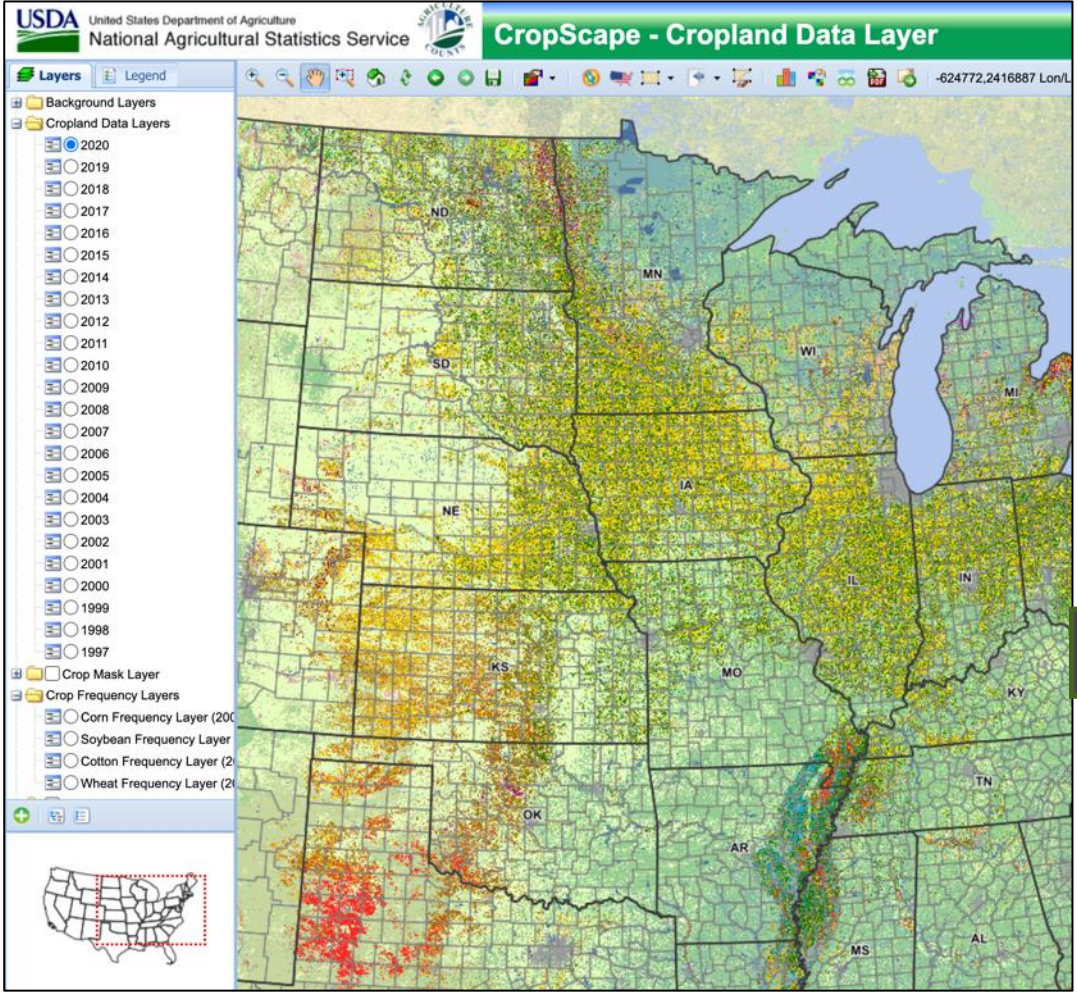
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Base Layers	Source
6-year Land Use + Crop History Data	USDA NASS Cropland Data Layer
gSSURGO Soils Data	USDA NRCS National Soil Survey
Digital Elevation Map (DEM)	User dependent
Field Boundaries	Updated from 2005 USDA/FSA data
HUC 12 Watershed Boundary	USGS WBD derived from NHD

Tomer et al. (2013); Tomer et al. (2017); Porter et al. (2018)

Land use data from the Cropland Data Layer



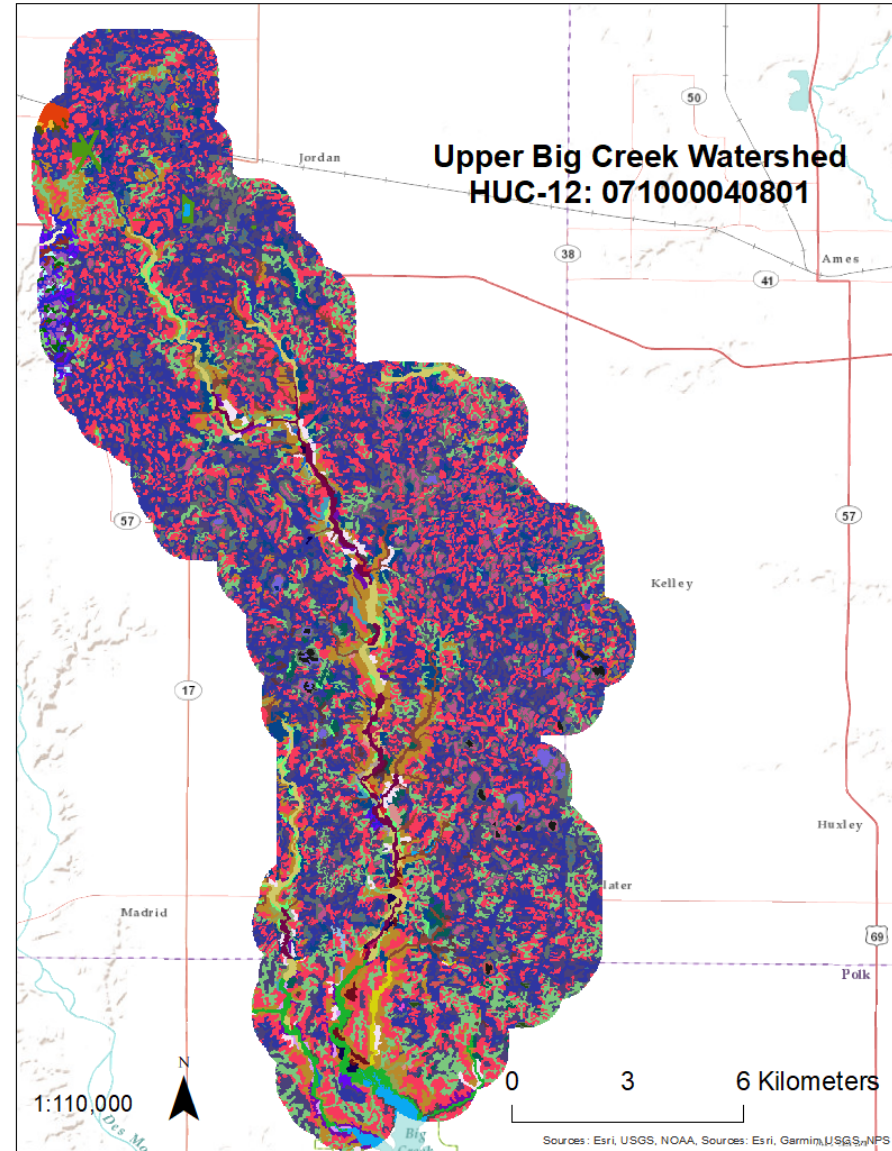
Tomer et al. (2017)

Soils data from the gSSURGO database (10m)

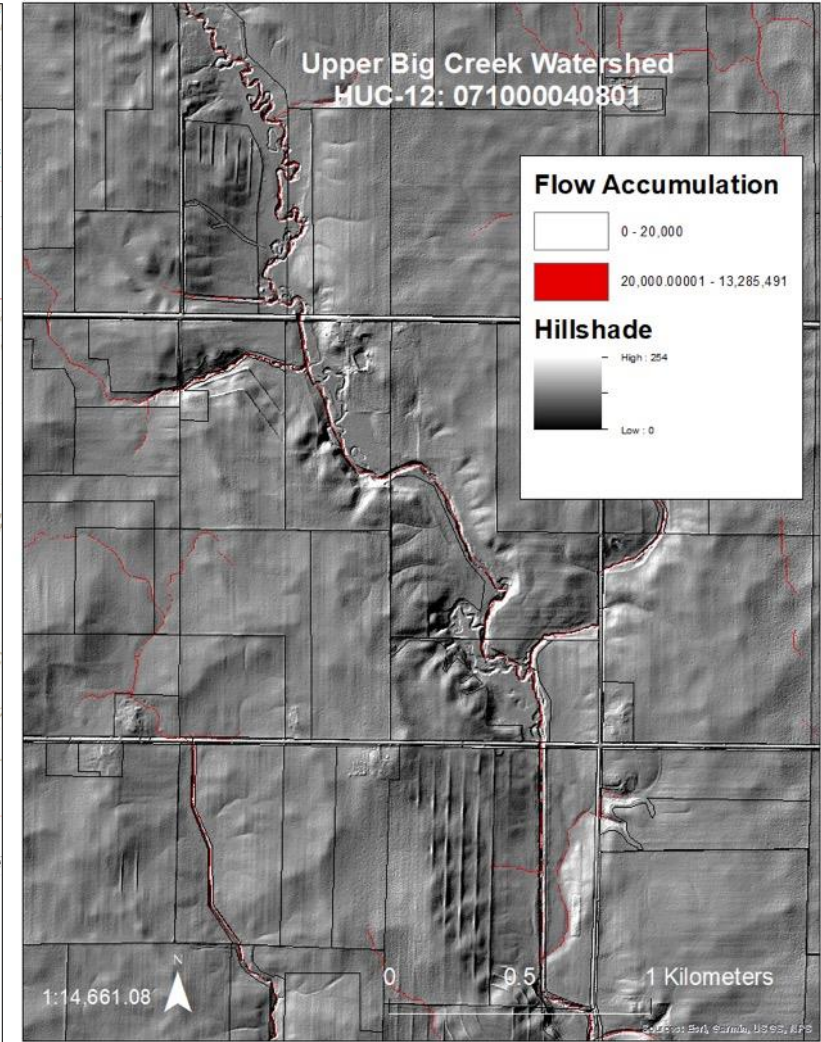
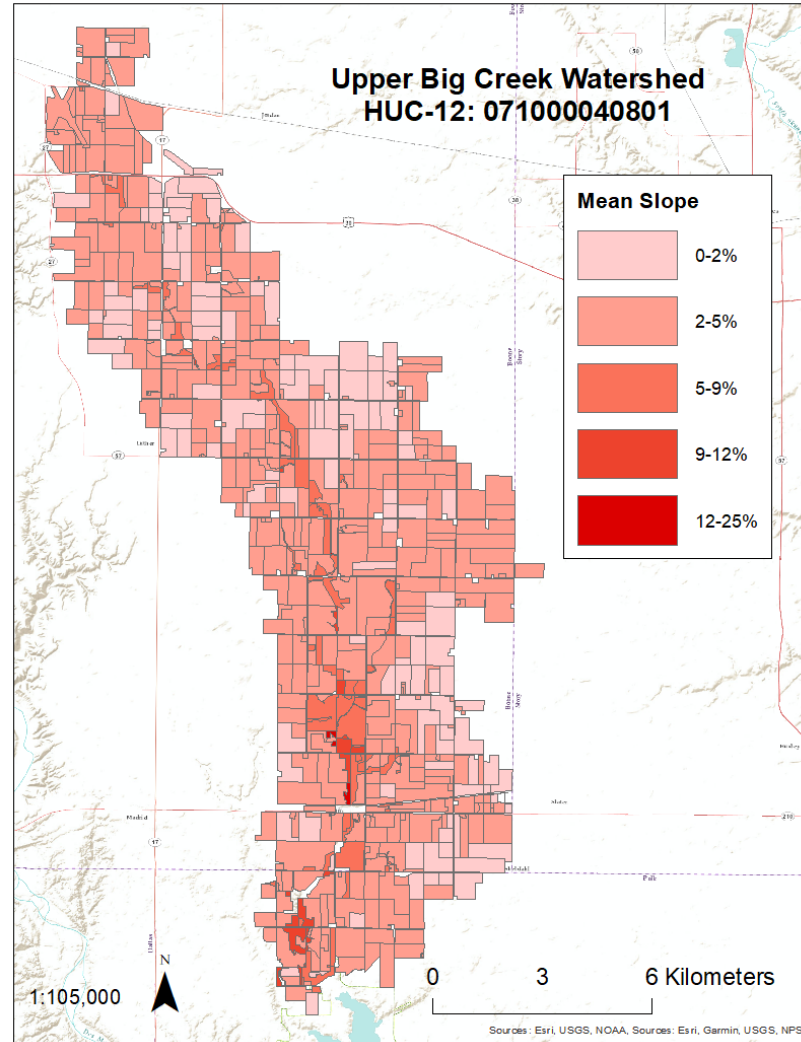
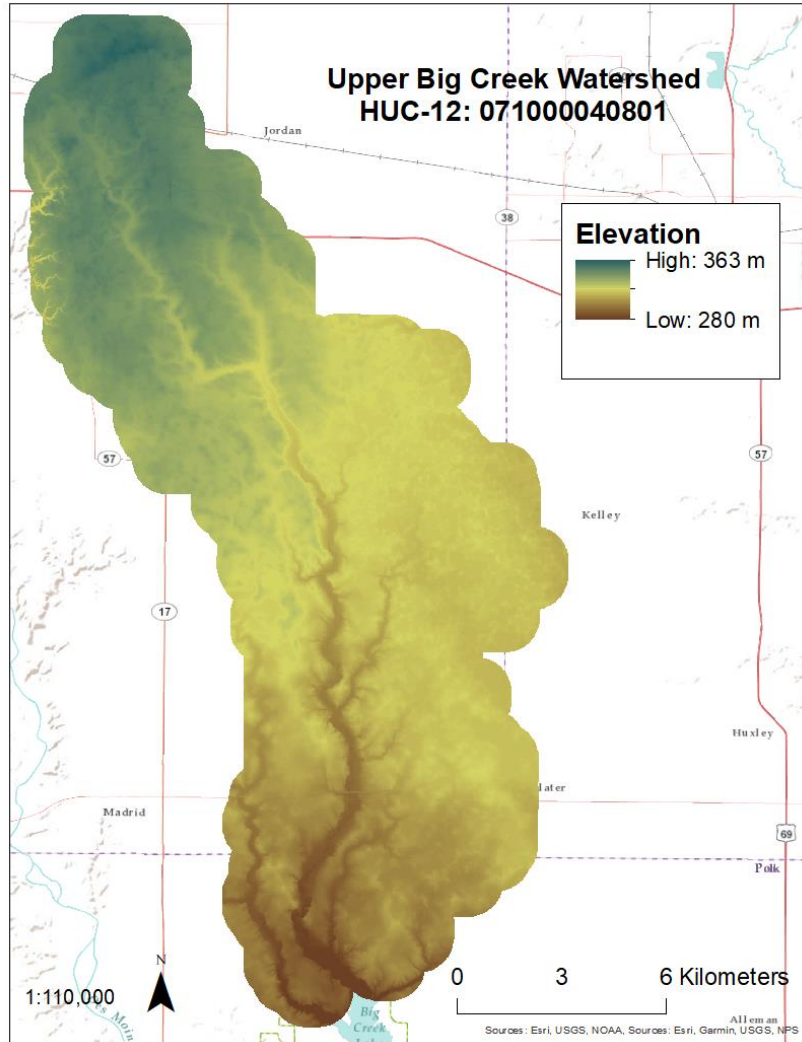


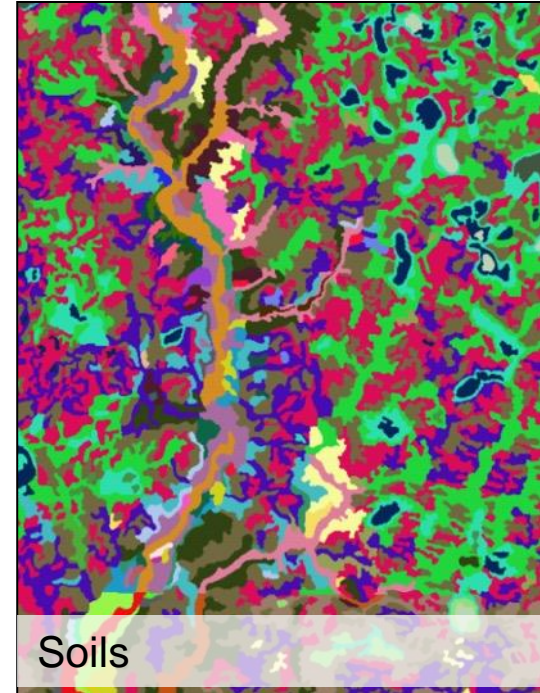
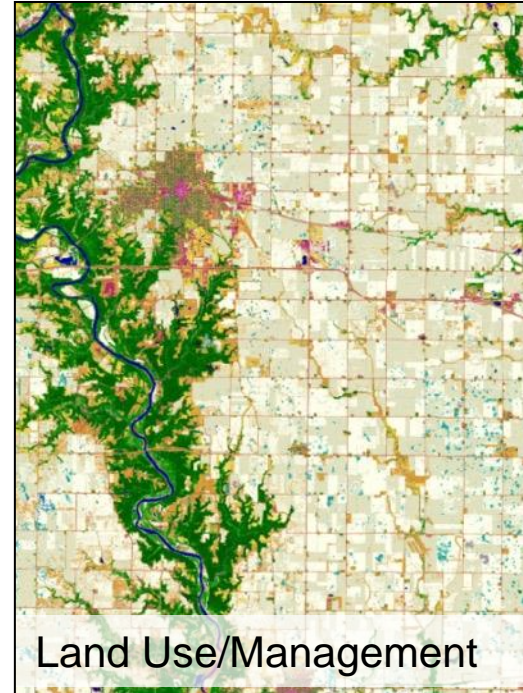
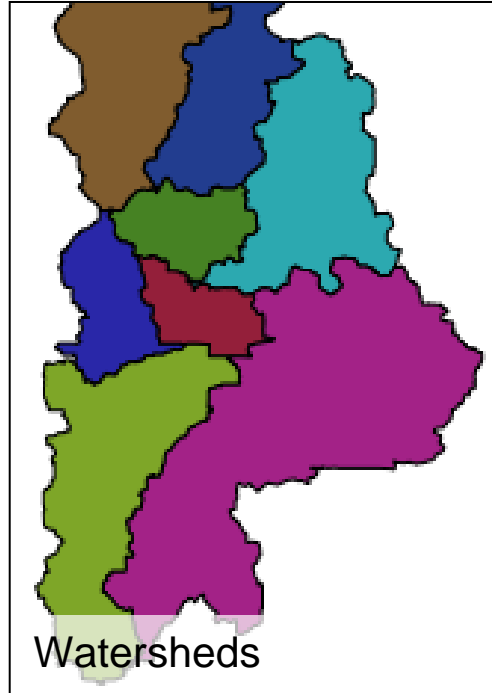
gSSURGO	
MUname	
Belview loam, Bemis moraine, 16 to 30 percent slopes	
Biscay clay loam, 0 to 2 percent slopes	
Blue Earth mucky silt loam, 0 to 1 percent slopes	
Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded	
Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	
Canisteo-Urban land complex, 0 to 2 percent slopes	
Clarion loam, 9 to 14 percent slopes, moderately eroded	
Clarion loam, Bemis moraine, 2 to 6 percent slopes	
Clarion loam, Bemis moraine, 6 to 10 percent slopes	
Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	
Clarion-Urban land complex, 2 to 5 percent slopes	
Coland clay loam, 0 to 2 percent slopes, frequently flooded	
Coland clay loam, 0 to 2 percent slopes, occasionally flooded	
Coland, occasionally flooded-Terril complex, 2 to 5 percent slopes	
Coland-Spillville complex, 2 to 5 percent slopes	
Crippin loam, Bemis moraine, 1 to 3 percent slopes	
Cylinder loam, 0 to 2 percent slopes	
Dickman fine sandy loam, 5 to 9 percent slopes	
Dickman sandy loam, 2 to 6 percent slopes	
Dumps, mine	
Dundas silt loam, Bemis moraine, 0 to 2 percent slopes	
Harps clay loam, Bemis moraine, 0 to 2 percent slopes	
Hawick gravelly sandy loam, 12 to 20 percent slopes	
Hawick gravelly sandy loam, 6 to 12 percent slopes	
Hayden loam, Bemis moraine, 10 to 22 percent slopes	
Hayden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	
Hayden loam, Bemis moraine, 2 to 6 percent slopes	
Hayden loam, Bemis moraine, 6 to 10 percent slopes	
Hayden-Storden loams, 25 to 50 percent slopes	
Klossner muck, 0 to 1 percent slopes	
Knoke mucky silty clay loam, 0 to 1 percent slopes	
Knoke silty clay loam, 0 to 1 percent slopes	
Le Sueur loam, Bemis moraine, 1 to 3 percent slopes	
Lester loam, Bemis moraine, 2 to 6 percent slopes	
Lester loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	

Linder sandy loam, 0 to 2 percent slopes
Luther loam, 0 to 2 percent slopes
Moingona loam, 1 to 5 percent slopes
Nicollet loam, 1 to 3 percent slopes
Nicollet-Urban land complex, 1 to 3 percent slopes
Okoboji mucky silt loam, 0 to 1 percent slopes
Okoboji mucky silty clay loam, depressional, 0 to 1 percent slopes
Okoboji silty clay loam, 0 to 1 percent slopes
Orthents, loamy
Palms muck, ponded, 0 to 1 percent slopes
Ridgeport sandy loam, 0 to 2 percent slopes
Ridgeport sandy loam, 2 to 5 percent slopes
Ridgeport sandy loam, 5 to 9 percent slopes, moderately eroded
Sparta loamy fine sand, 5 to 9 percent slopes
Spillville loam, 0 to 2 percent slopes, occasionally flooded
Spillville loam, 2 to 5 percent slopes
Spillville-Buckney complex, 2 to 5 percent slopes
Spillville-Coland complex, channeled, 0 to 2 percent slopes
Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded
Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded
Storden loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded
Storden-Salida complex, 14 to 25 percent slopes
Terril loam, 2 to 6 percent slopes
Terril loam, 5 to 9 percent slopes
Wacoosta silty clay loam, 0 to 1 percent slopes
Wadena loam, 0 to 2 percent slopes
Wadena loam, 2 to 6 percent slopes
Water
Webster clay loam, Bemis moraine, 0 to 2 percent slopes
Zenor sandy loam, 2 to 5 percent slopes
Zenor sandy loam, 5 to 9 percent slopes
Zenor sandy loam, 5 to 9 percent slopes, moderately eroded
Zenor-Storden complex, 14 to 25 percent slopes, moderately eroded
Zenor-Storden complex, 9 to 14 percent slopes, moderately eroded
Perennial Stream Reach



Users provide the Digital Elevation Model (DEM)



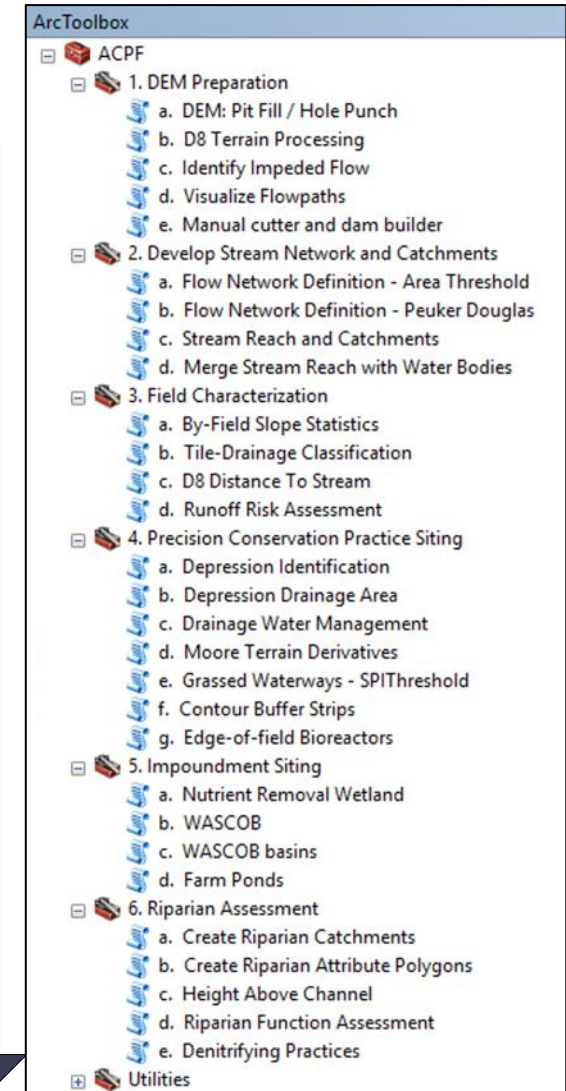
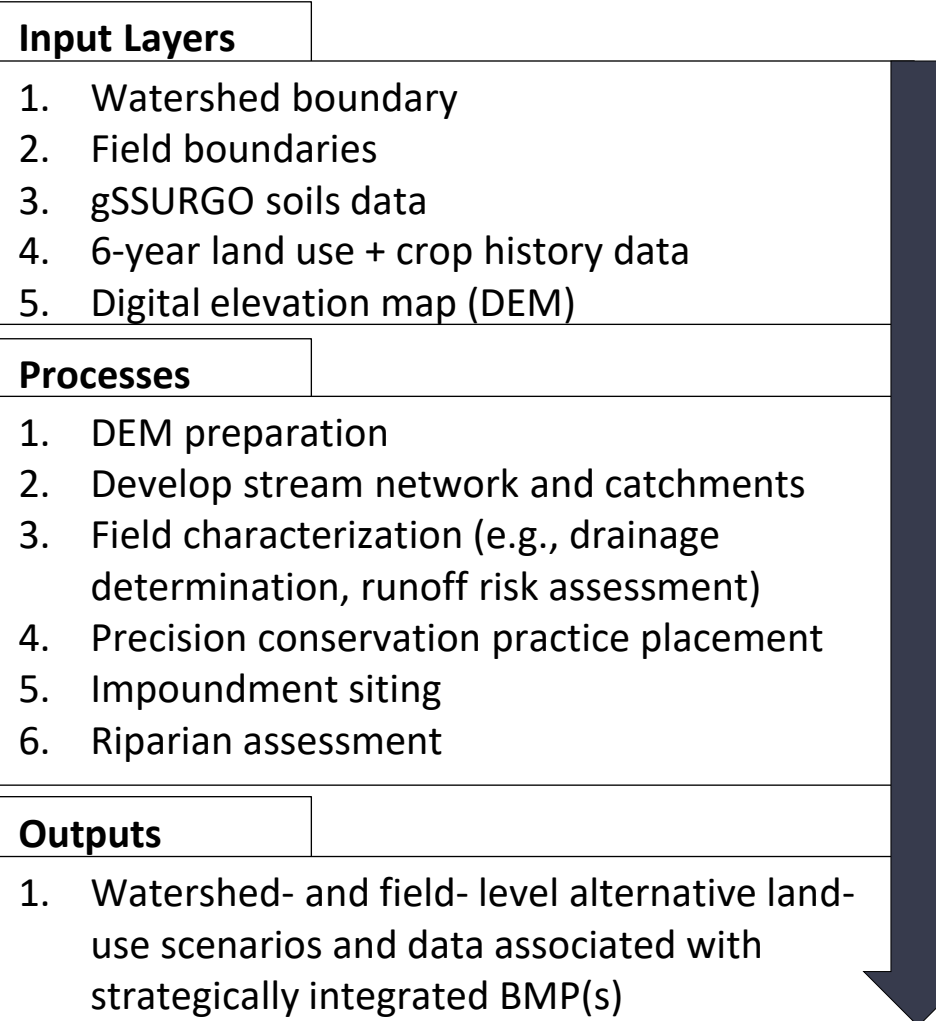


Water Quality Pollution
Potential

How does the ACPF work?

The Agricultural Conservation Planning Framework (ACPF):

- Operationalizes principles of agricultural watershed management
- Uses publicly available geospatial data (e.g., elevation, soils, land use)
- Applies a GIS-based tool to identify opportunities to install best management practices (BMPs) to address soil and water quality needs



How does the ACPF work?

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9 targeted BMPs + user ability to consider in-field practices (e.g., cover crops)



Photo Credit: USDA NRCS

Grassed Waterways



Photo Credit: STRIPS Project

Contour Buffer Strips

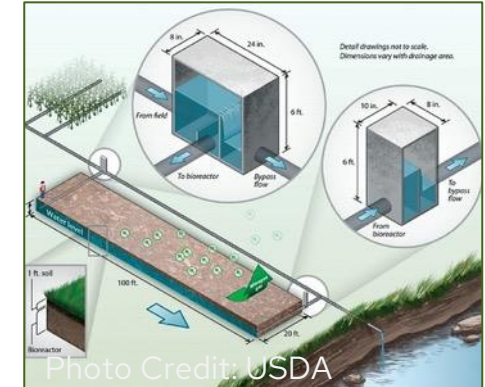


Photo Credit: USDA NRCS

Bioreactors



Photo Credit: Iowa Learning Farms

Nutrient Removal Wetlands



Photo Credit: Fairfield SWCD

Water and Sediment Control Basins



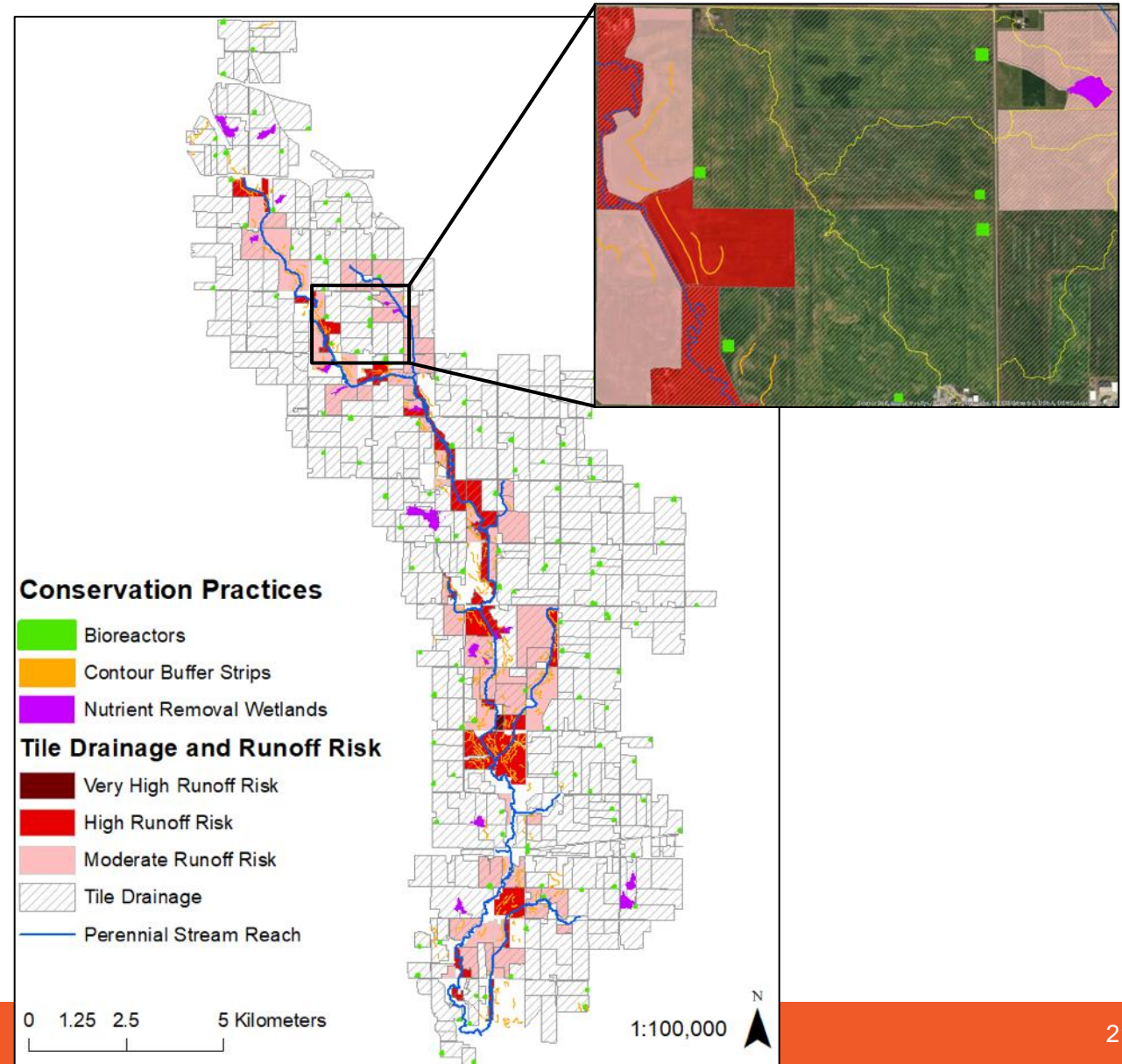
Photo Credit: USDA NRCS

Riparian and Saturated Buffers

What's the role of ACPF and its outputs in conservation planning?

ACPF results can inform multiple steps in conservation planning:

- NRCS 9-Step Conservation Planning Process
 - Informing identification of problems, opportunities, and objectives
 - Inventorying and analyzing resources
 - Formulating and evaluating alternatives
- Adaptive Management
 - Planning, prioritization, outreach, monitoring



Use Example #1: Polk County Batch-and-Build Saturated Buffers

The Problem

2015-2019: only 6 saturated buffers installed
Needed more saturated buffers to reach nitrate goals

ACPF

Used ACPF to identify the top 50 fields identified as suitable sites
Simplified maps sent to landowners with suitable field sites
County served as fiscal sponsor and hired contractors to build saturated buffers

Results

2021: 51 saturated buffers installed
2022: 60 saturated buffers installed

Use Example #2: Root River Watershed in Southeast Minnesota

The Problem

There was a need to evaluate how ag practices affect runoff and water quality in local rivers, streams, and groundwater.

ACPF

Used ACPF to identify high-runoff risk areas. These maps were used as a guiding tool before field walkovers with farmers.

Reports were kept simple and prioritized the most problematic areas for producers to “fix soon.”

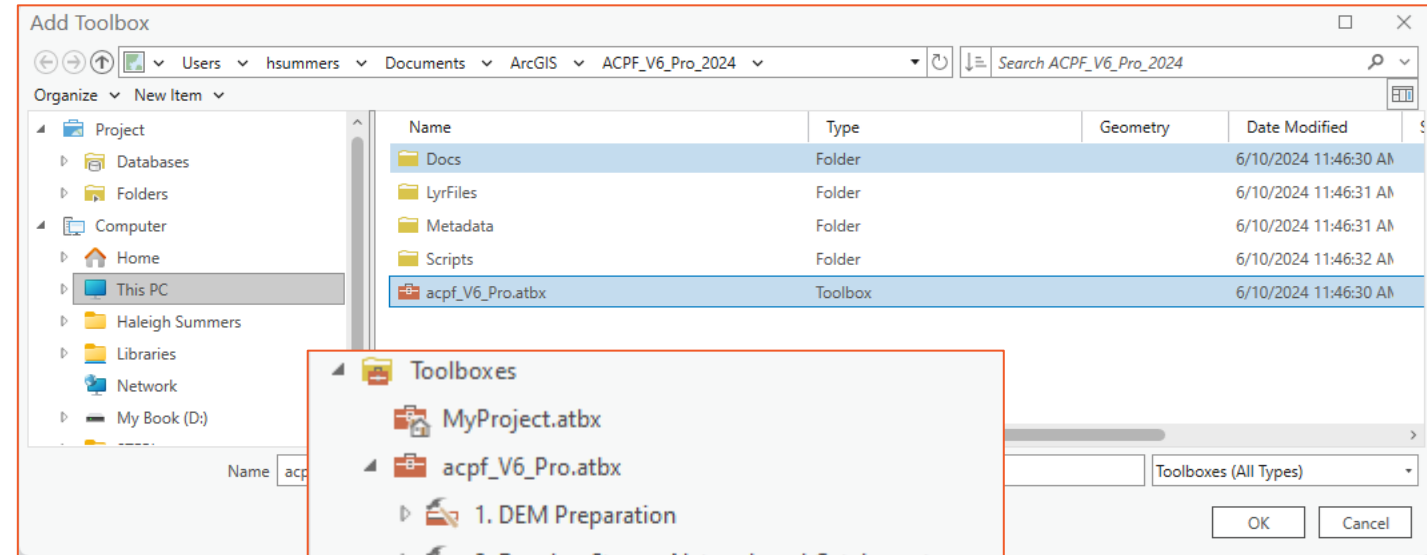
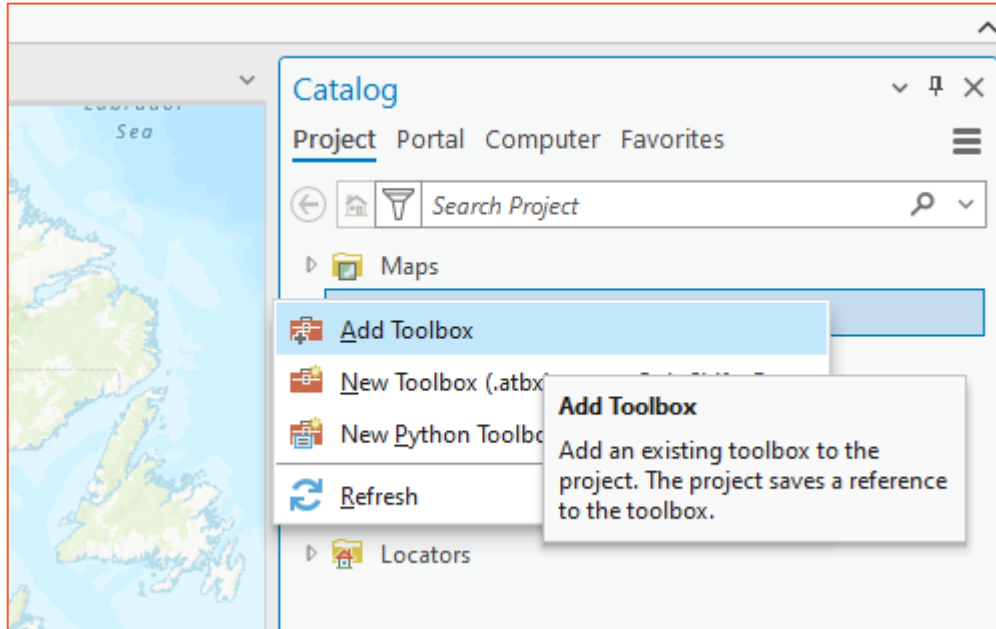
Results

100% of farmers in the watersheds participated in the walkover.

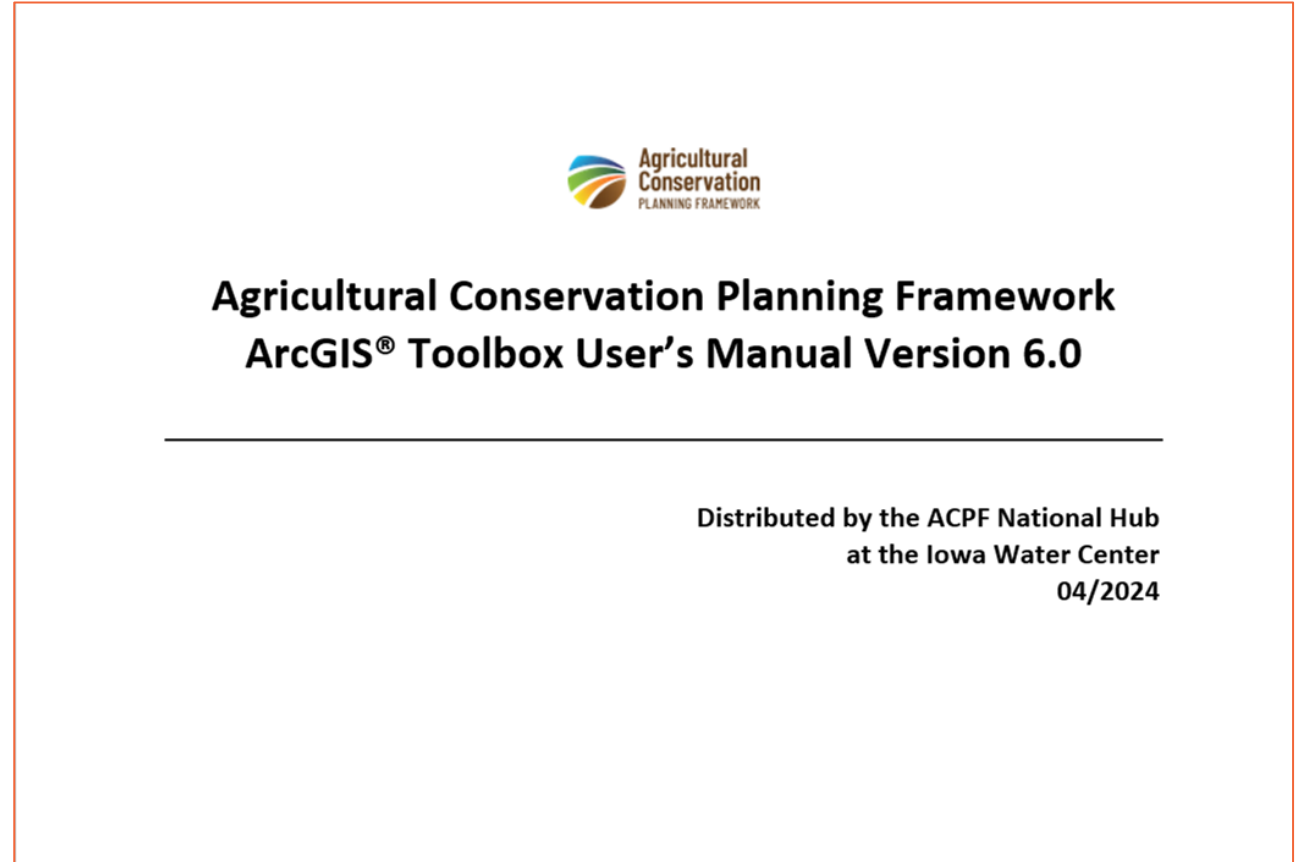
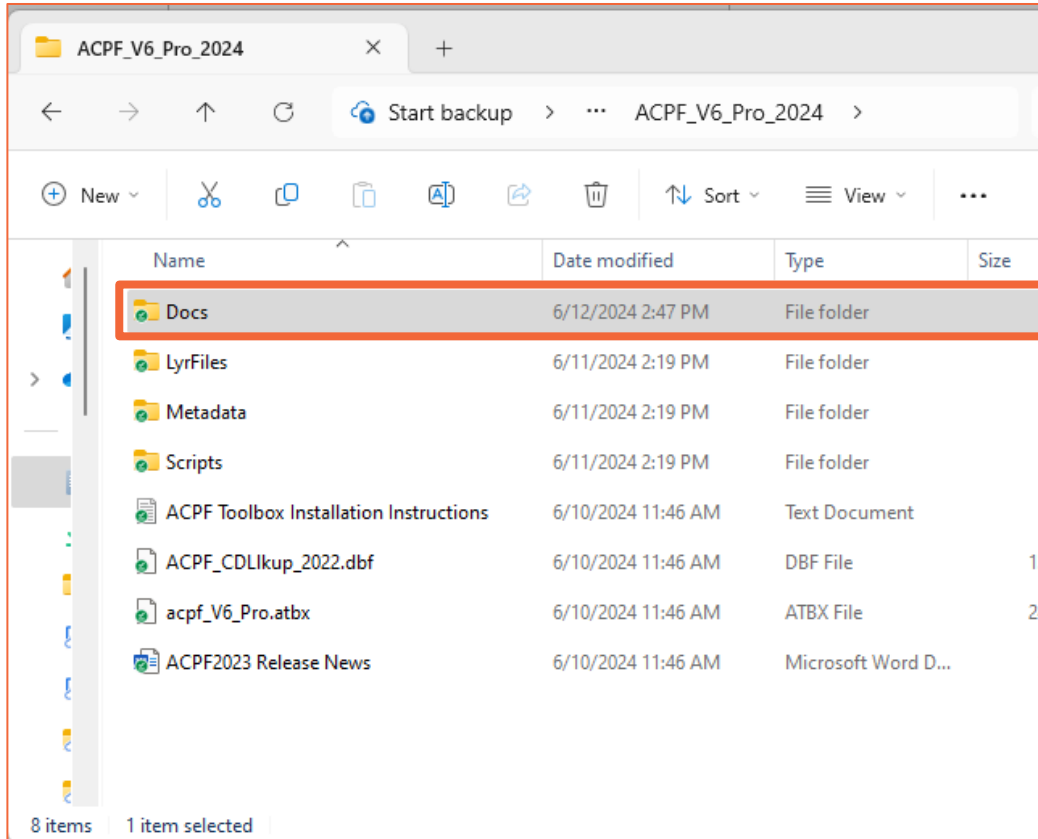
70% of farmers implemented conservation practices in the first two years.

Downloading and Using ACPF

Downloads available here: <https://acpf4watersheds.org/toolbox/>

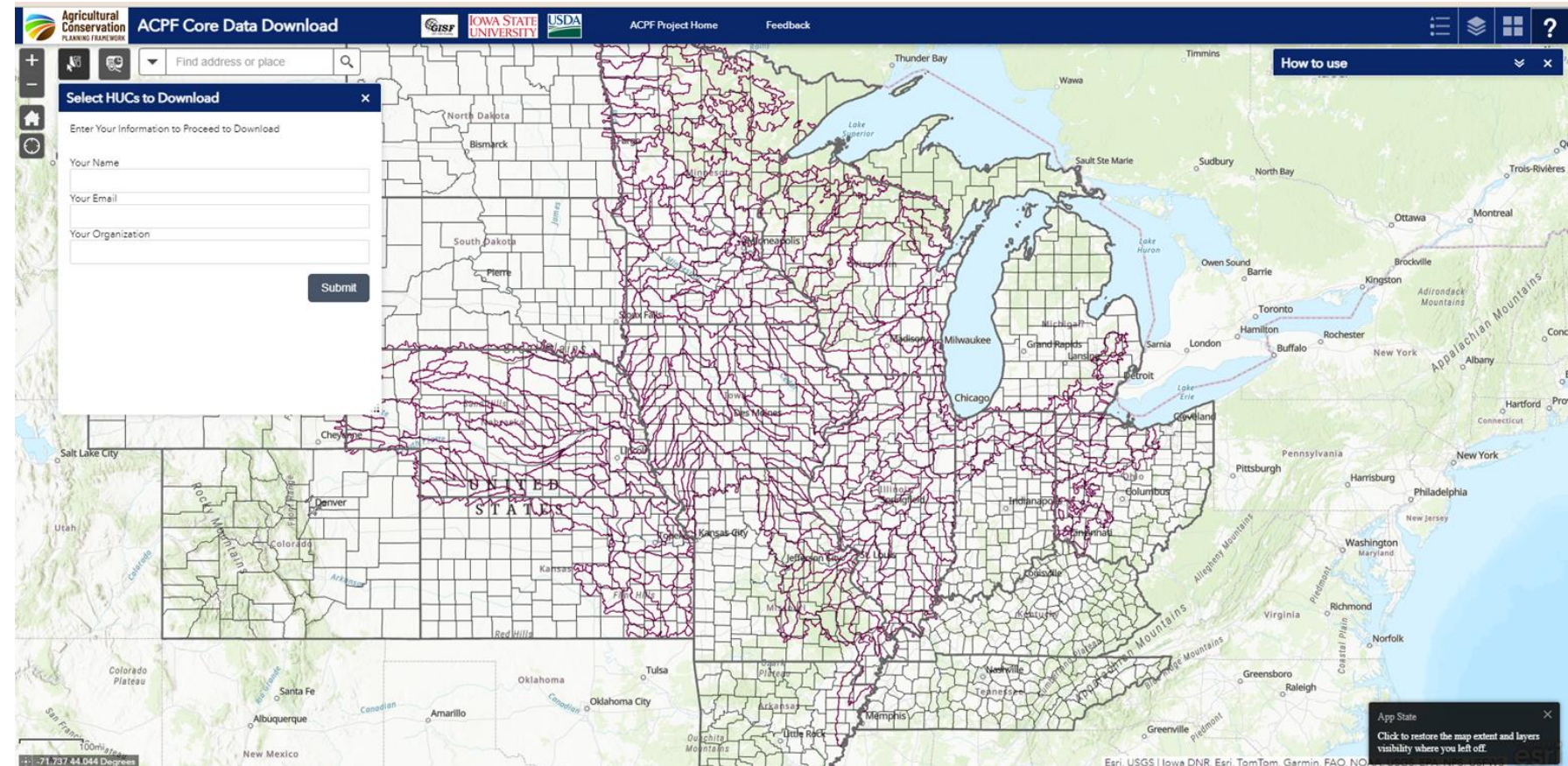


Using the manual



How to Download ACPF Core Data

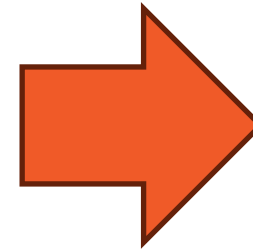
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 - gSSURGO
 - LU6_070801050403
 - SoilProfile070801050403
 - SurfHrz070801050403
 - SurfTex070801050403
- wsCDL2010
- wsCDL2011
- wsCDL2012
- wsCDL2013
- wsCDL2014
- wsCDL2015
- wsCDL2016
- wsCDL2017
- wsCDL2018
- wsCDL2019
- wsCDL2020
- wsCDL2021
- wsCDL2022
- wsCDL2023



ACPF Utilities Suite: Build your own ACPF Geodatabase

Utilities

- u1. Get ACPF Soils Data
- u2. Get NASS CDL by Year(s)
- u3. Update Edited Field Boundaries
- u4. Project ACPF FGDB to new Spatial Referenc...
- u5. Find Terraces
- u6. Get US Roads



acpf_huc070801050403

- acpf070801050403.gdb
 - bnd070801050403
 - buf070801050403
 - CH_070801050403
 - FB070801050403
 - gSSURGO
 - LU6_070801050403
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 - wsCDL2016
 - wsCDL2017
 - wsCDL2018
 - wsCDL2019
 - wsCDL2020
 - wsCDL2021
 - wsCDL2022
 - wsCDL2023

u1. Get ACPF Soils Data

Parameters Environments

* Enter Buffered Watershed Boundary

u3. Update Edited Field Boundaries

Parameters Environments

* Edited Field Boundary feature class

'Less Than' feature size (acres)

* ACPF Landuse Lookup table

* Field Boundary Update Year






ACPF Data – Digital Elevation Models (DEMs)

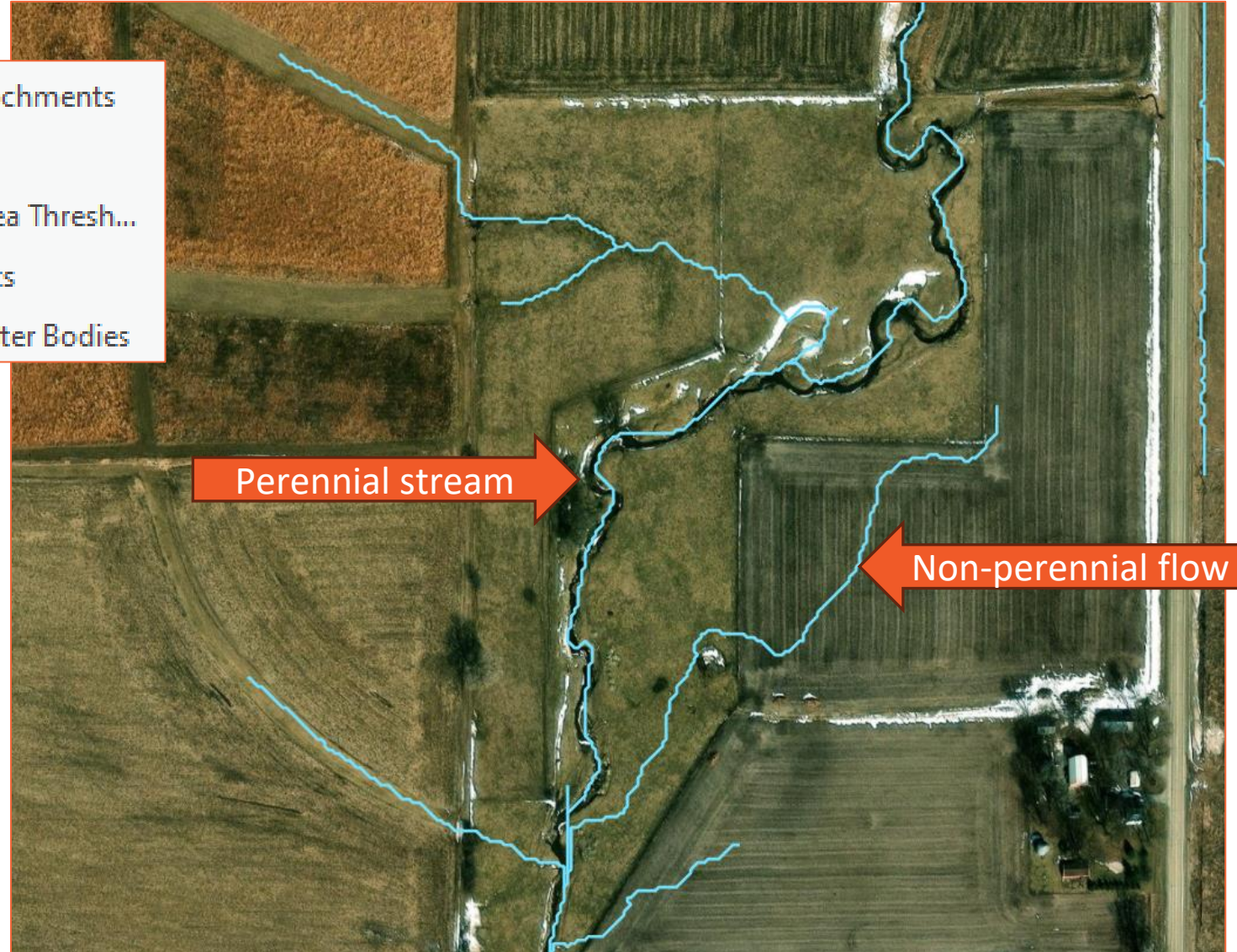


Iowa

<https://acpfdata.gis.iastate.edu/ACPF/DEM/>

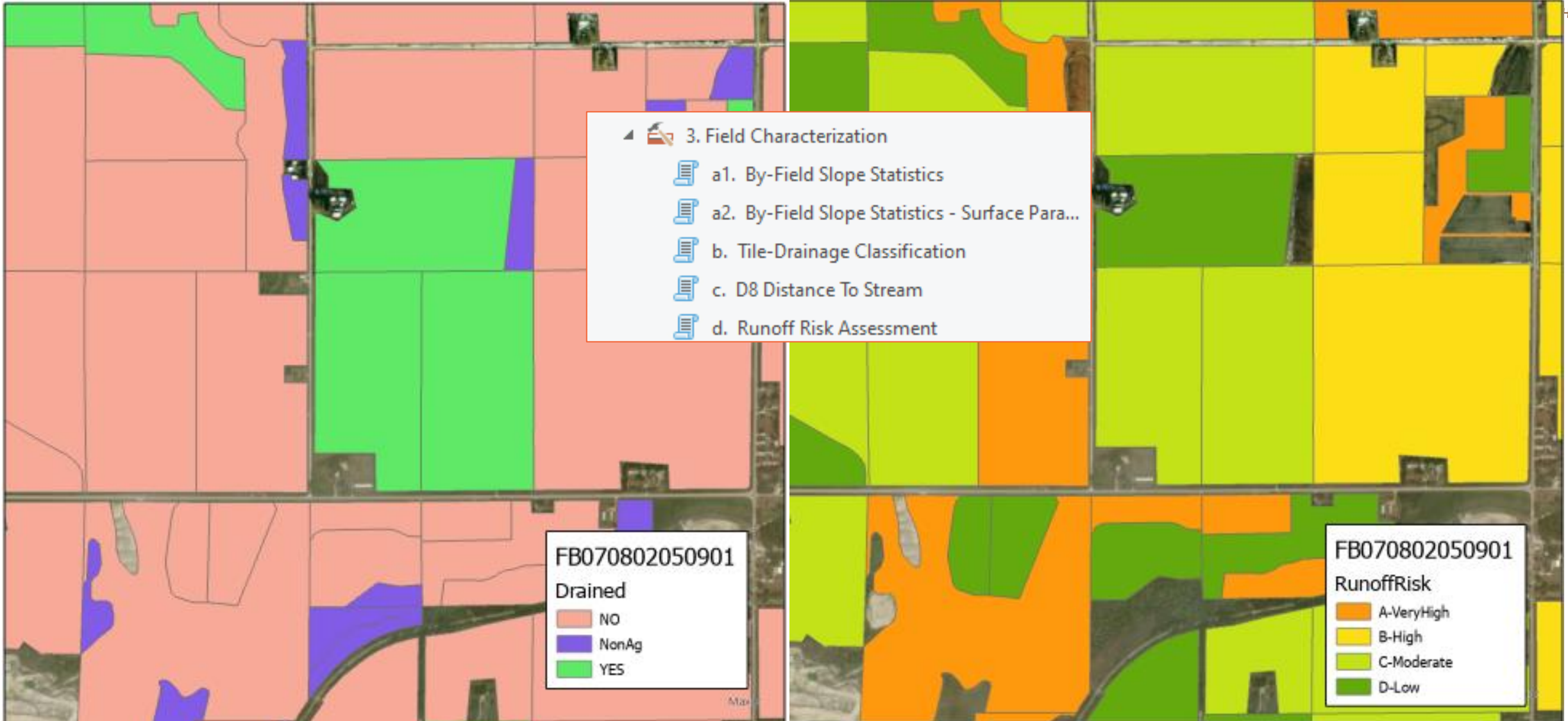
Step 2: Develop Stream Network & Catchments

- ▲  2. Develop Stream Network and Catchments
 -  a. Create Pour Points
 -  b. Flow Network Definition - Area Thresh...
 -  c. Stream Reach and Catchments
 -  d. Merge Stream Reach with Water Bodies

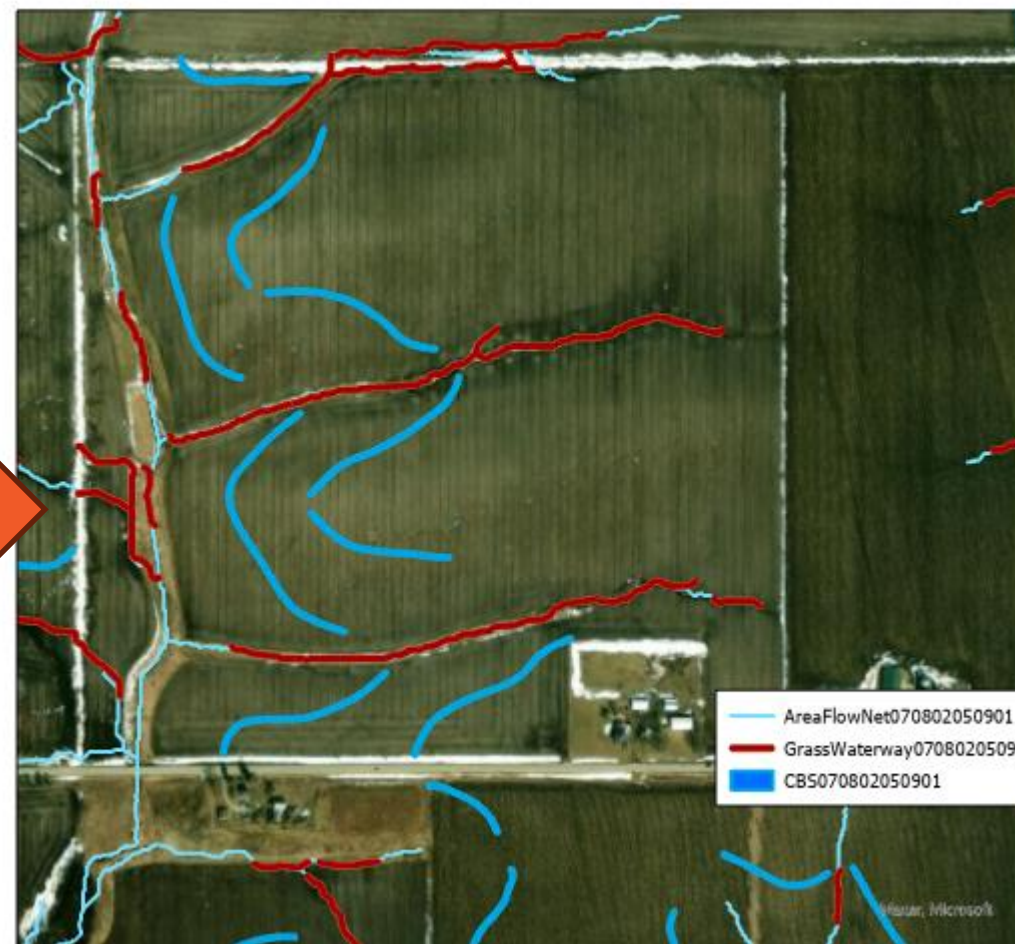
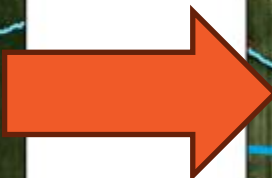


Step 3: Field Characterization

Hub



Step 4: Precision Conservation Practice Siting



- 4. Precision Conservation Practice Siting
 - a. Depression Identification
 - b. Depression Drainage Area
 - c. Drainage Water Management
 - d. Moore Terrain Derivatives
 - e. Grassed Waterways - SPIThreshold
 - f. Contour Buffer Strips
 - g. Edge-of-field Bioreactors

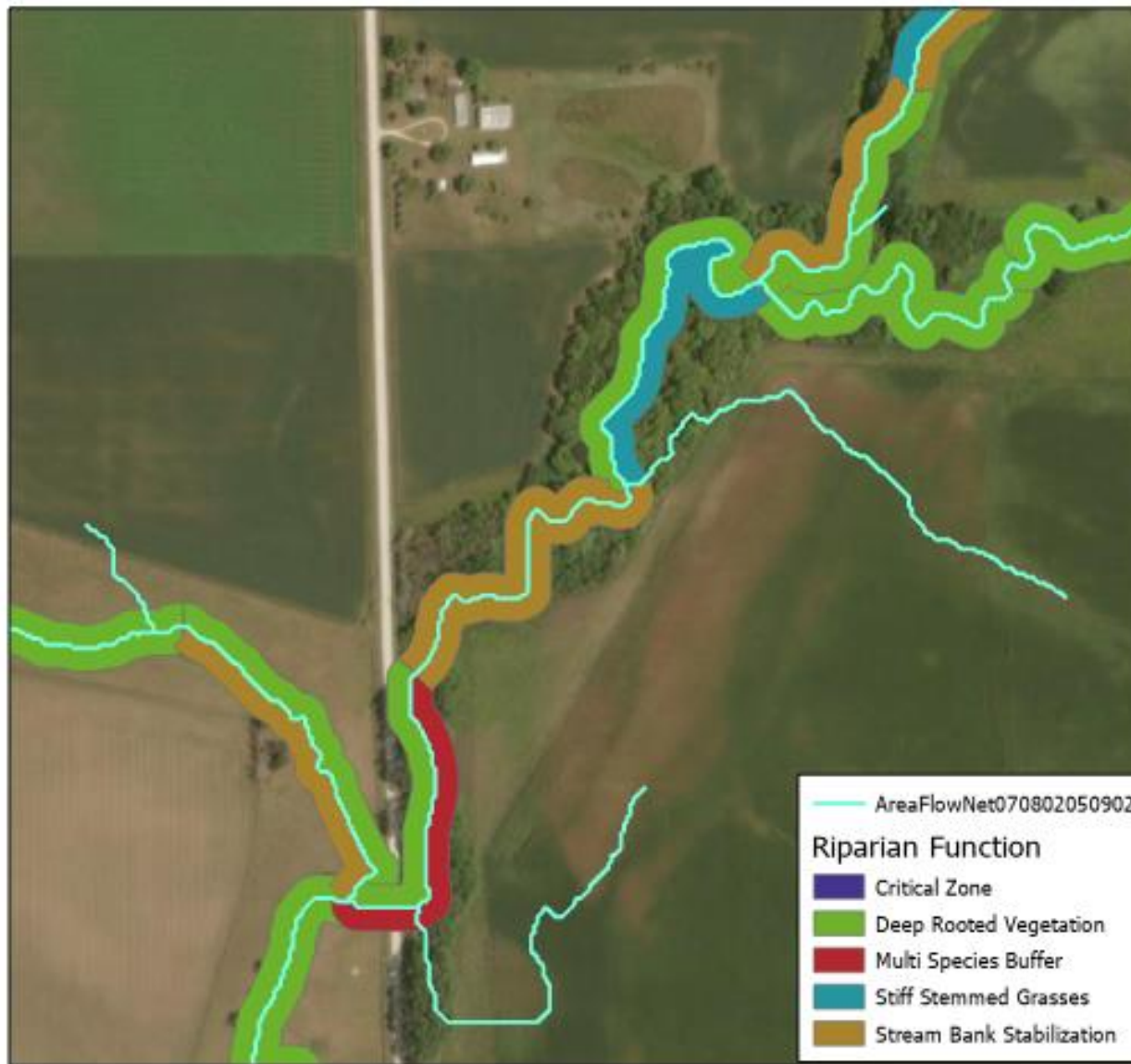
Step 5: Impoundment Siting

- 5. Impoundment Siting
 - a. Nutrient Removal Wetland
 - b. Farm Ponds
 - c. WASC OB
 - d. WASC OB basins

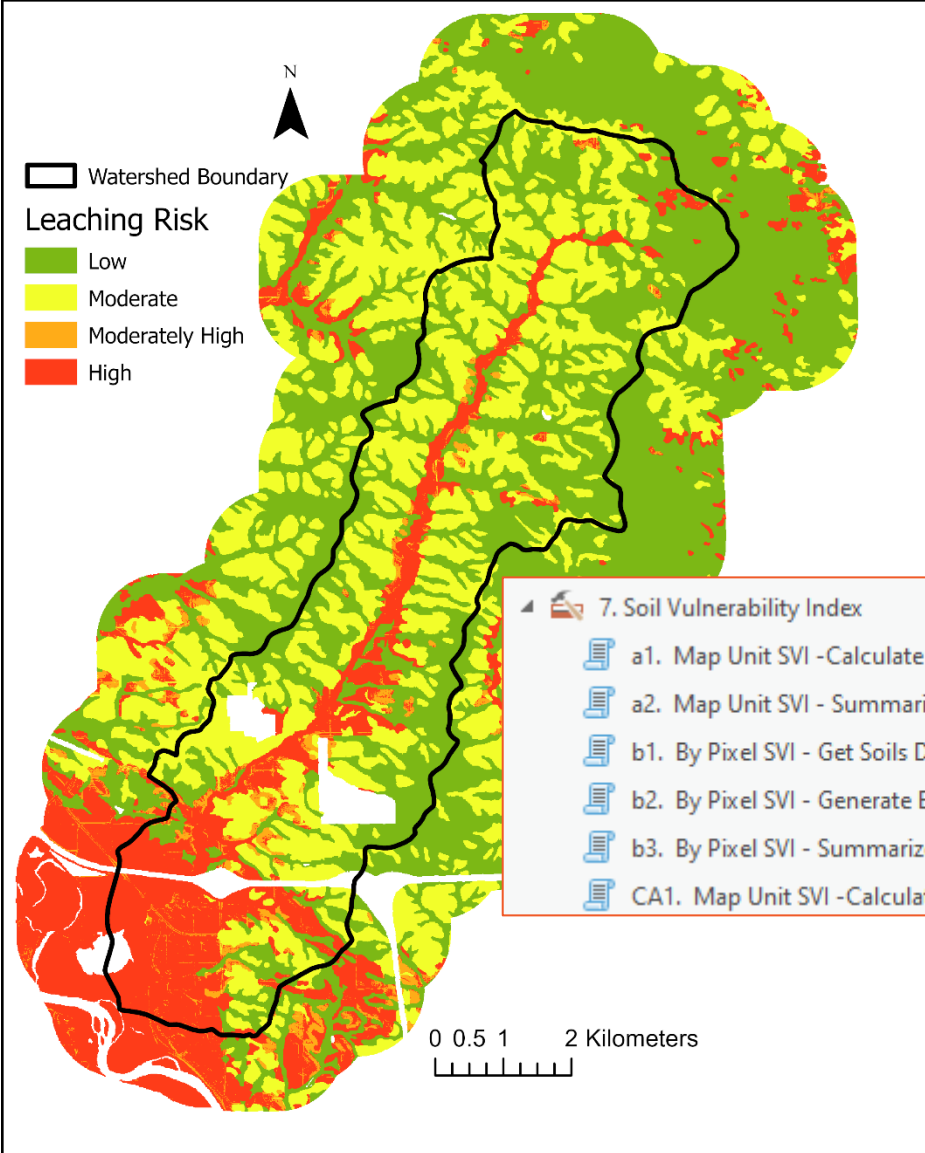
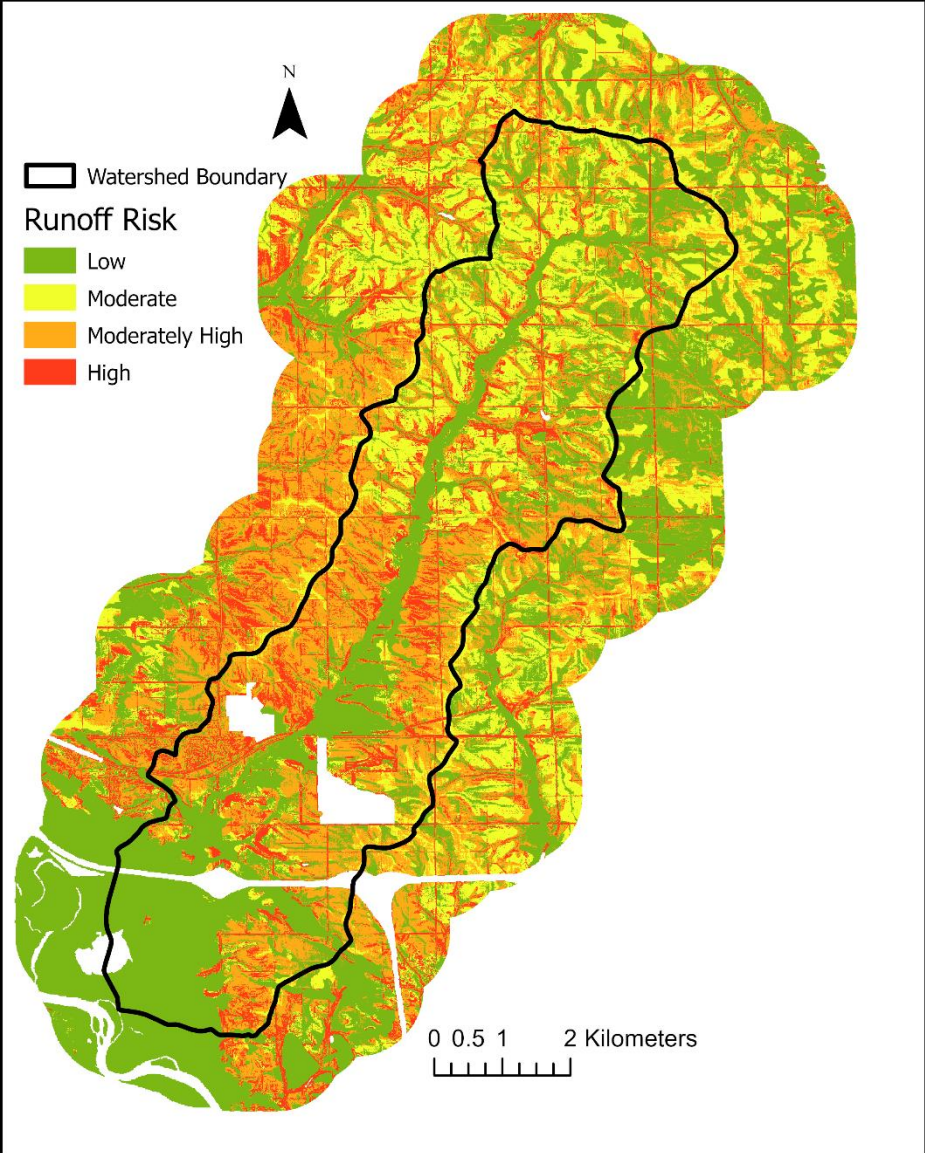


Step 6: Riparian Assessment

- 6. Riparian Assessment
 - a. Create Riparian Catchments
 - b. Create Riparian Attribute Polygons
 - c. Height Above Channel
 - d. Riparian Function Assessment
 - e. Denitrifying Practices
 - f. Two Stage Ditch



Step 7: Soil Vulnerability Index



7. Soil Vulnerability Index

- a1. Map Unit SVI - Calculate SVI For All Components
- a2. Map Unit SVI - Summarize Map Unit SVI
- b1. By Pixel SVI - Get Soils Data for Dominant Component
- b2. By Pixel SVI - Generate By Pixel SVI Rasters
- b3. By Pixel SVI - Summarize Field SVI
- CA1. Map Unit SVI - Calculate SVI For Canada

ACPF Companion Tool: Financial & Nutrient Reduction Tool (FiNRT)

Uses ACPF output to estimate nitrogen loss reduction and cost of implementing practices located by the ACPF

Could help prioritize practices to increase cost-effectiveness

Can estimate non-ACPF practices like cover crops and tillage

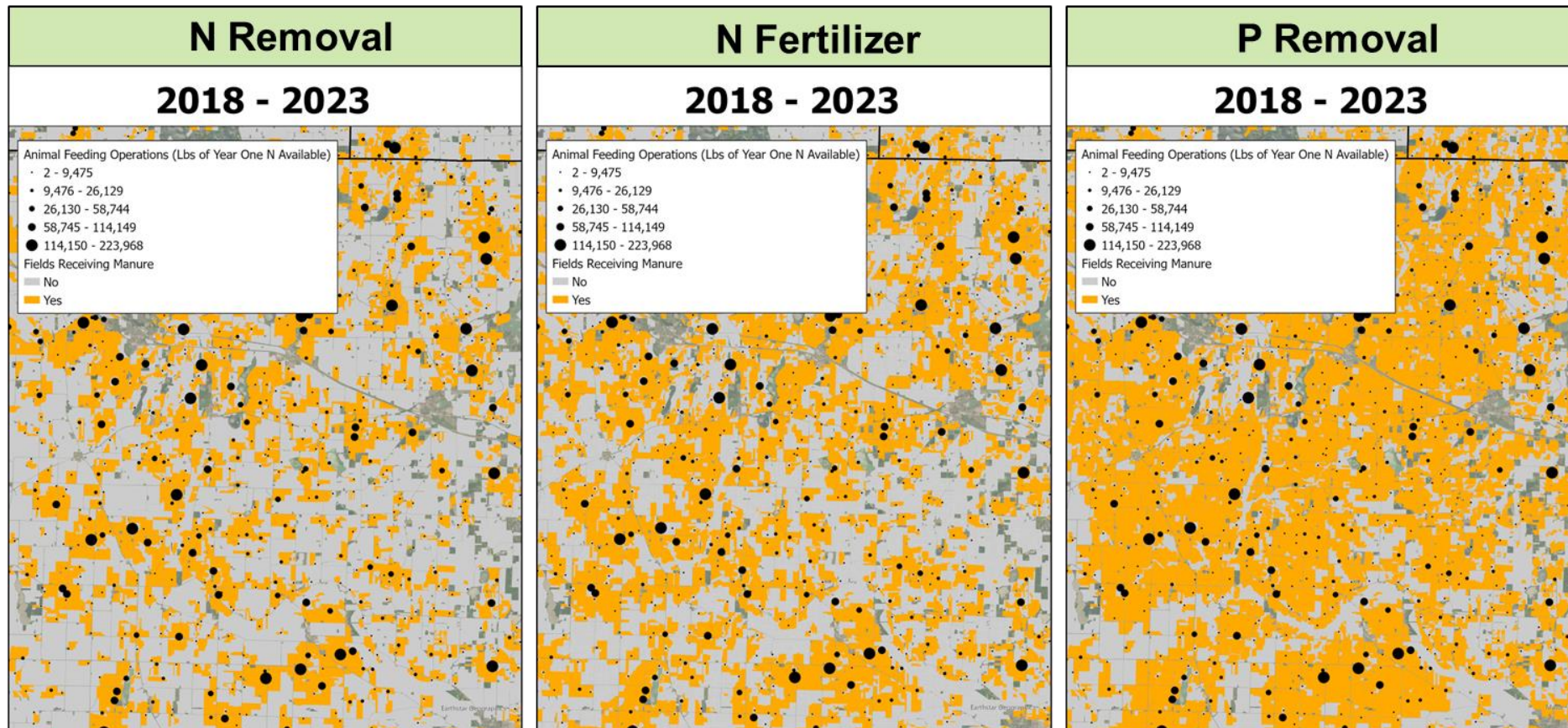
TABLE 3 Outcomes for practices used in Scenario 1 (S1) and Scenario 2 (S2) in the Middle South Fork Watonwan River watershed

Scenario	Nitrate reduction kg (%)	Total yearly cost 2021 US\$	Average cost of nitrate reduced US\$ kg ⁻¹	Fields with BMPs	Land removed from cultivation ha
S1: total (cover crops only)	167,041 (51)	2,136,962	12.81	362	0
S2: total	91,902 (28)	1,675,454	12.17	130	391
Wetlands	79,959 (24)	1,584,152	23.82	17	353
Bioreactors	5,420 (2)	53,573	10.30	96	0
Saturated buffers	6,524 (2)	37,729	11.06	17	38

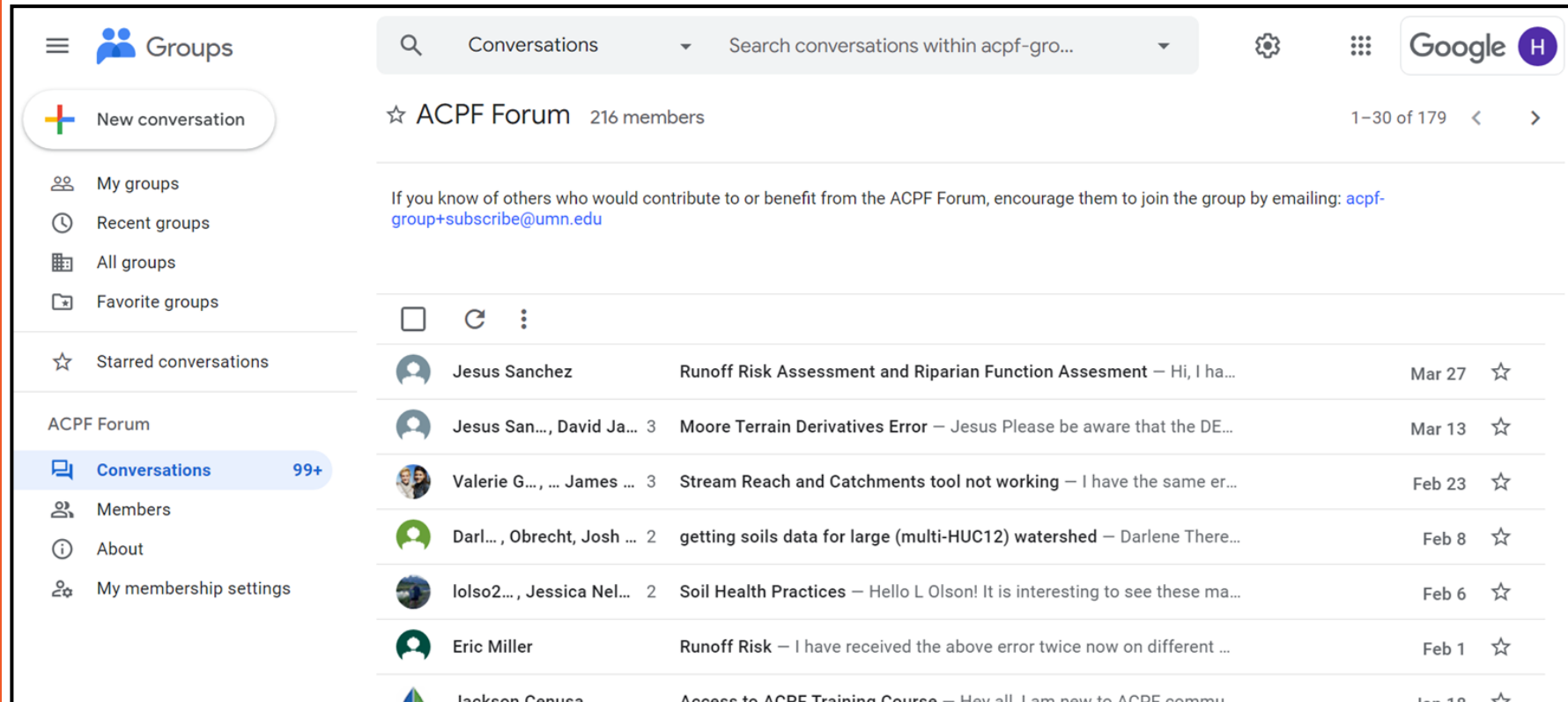
Note. The N-load reductions assume that stacked conservation practices have a multiplicative effect. Total cost includes both direct and opportunity costs where applicable. The last three rows show a breakdown of the best management practices (BMPs) included in S2.

ACPF Companion Tool: ManureMap Toolbox

Estimates manure disposal pressure using animal feedlot locations and nearby cropland area.



For help, join the ACPF Forum:

Groups Conversations Search conversations within acpf-gro...

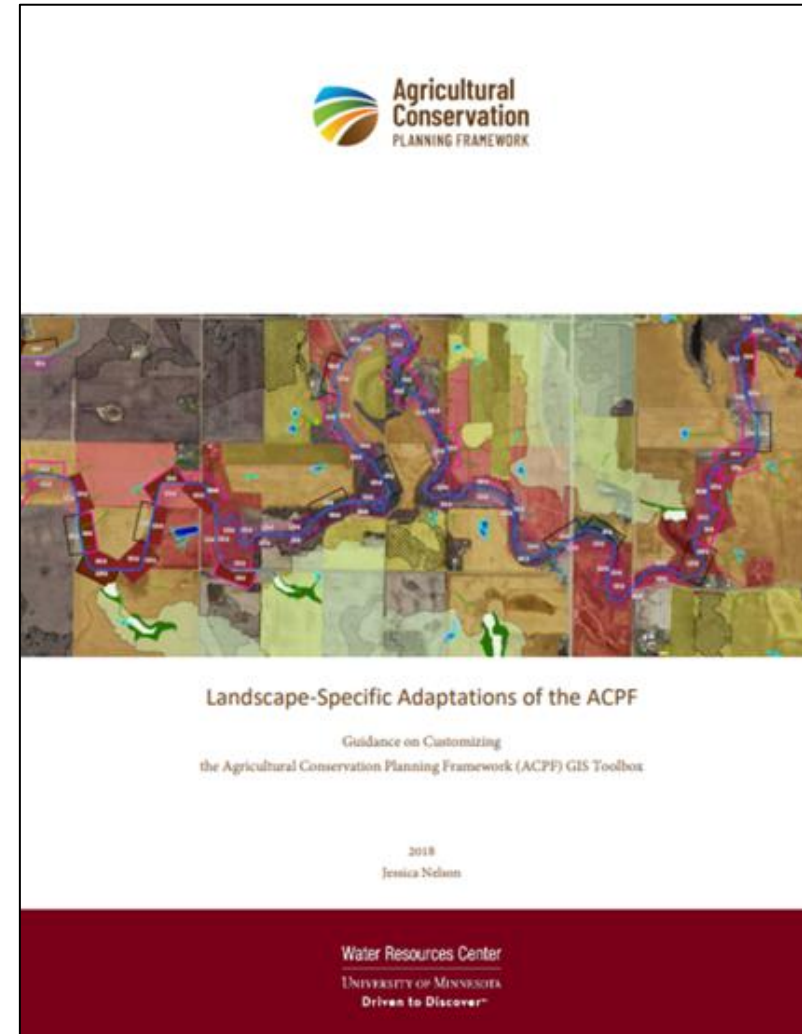
ACPF Forum 216 members 1-30 of 179

If you know of others who would contribute to or benefit from the ACPF Forum, encourage them to join the group by emailing: acpf-group+subscribe@umn.edu

Member	Topic	Date	Star
Jesus Sanchez	Runoff Risk Assessment and Riparian Function Assesment – Hi, I ha...	Mar 27	☆
Jesus San..., David Ja...	Moore Terrain Derivatives Error – Jesus Please be aware that the DE...	Mar 13	☆
Valerie G..., ... James ...	Stream Reach and Catchments tool not working – I have the same er...	Feb 23	☆
Darl..., Obrecht, Josh ...	getting soils data for large (multi-HUC12) watershed – Darlene There...	Feb 8	☆
Iolso2..., Jessica Nel...	Soil Health Practices – Hello L Olson! It is interesting to see these ma...	Feb 6	☆
Eric Miller	Runoff Risk – I have received the above error twice now on different ...	Feb 1	☆

Technical Training Resources

- ACPF Forum and Users Manual
- Best Practices and ACPF Forum Knowledge Base
- Technical how-to videos
- Guide to making landscape-specific adaptations



Technical Trainings

- Free online technical training available to take on your own on our website
 - Need ArcGIS and intermediate GIS skills
 - ACPF Core Data
 - ACPF Toolbox
 - DEM data
- Online cohort style technical training offered on a routine basis – one coming up in August 2024

▼ Module 1: Overview of the ACPF
Module 1: Overview of the ACPF
Pro Tips: Appropriate Uses
Lesson 1: Getting Started with the ACPF
Pro Tips: Work Environment Set-Up
The ACPF Website
Downloading the ACPF Toolbox
Important Information
ArcGIS Settings
Tips and Tricks
Details Window
TauDEM Terrain Analysis Software
Lesson 2: Downloading the Core Data

Using ACPF in a Watershed Context

- Resources for individuals who do NOT know ArcGIS but are interested in using ACPF results
 - Use Examples
 - User's Guide for Field Staff
 - Tips for Using the ACPF with Stakeholders
 - Using ACPF in Watershed and Conservation Planning
 - Video recordings of ACPF use examples and presentations
 - Listing of consultants who have run the ACPF
- Upcoming ACPF Watershed Training Workshop to be scheduled (3 3-hour zoom sessions) later this summer



Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

ACPF Results in NRCS Applications

Gregg Hadish

State GIS Specialist

Des Moines, Iowa

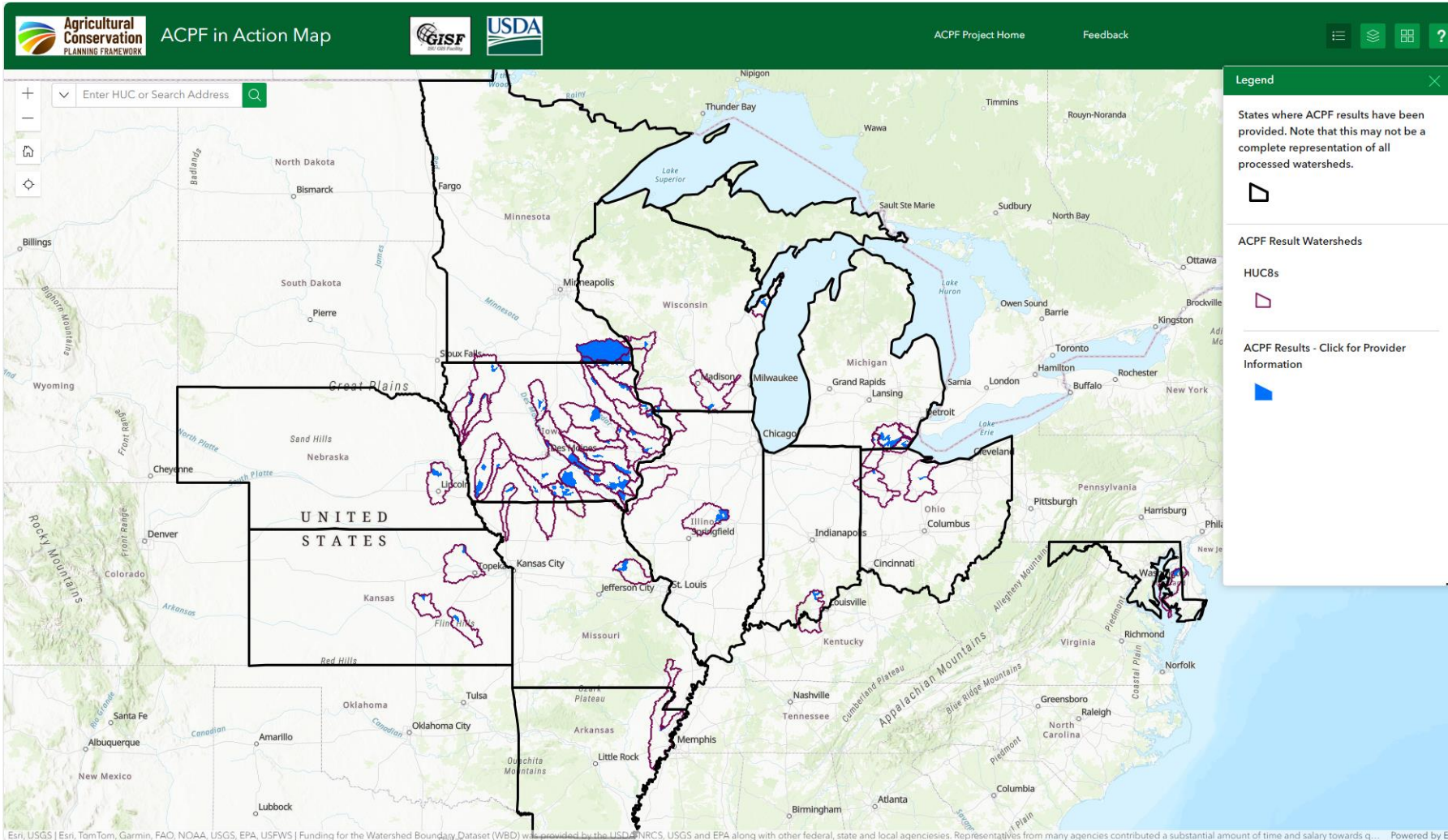


Gregg Hadish

- State GIS Specialist USDA Natural Resources Conservation Service, Des Moines, Iowa since 1997.
- State-wide coordinator for deployment of GIS data, tools, and training for all NRCS offices in Iowa.
- Education: Iowa State University Bachelor of Landscape Architecture, 1992.



ACPF Hub Results Watersheds



- Maintained by National ACPF Hub
- Shows location of ACPF results HUC 12s
- Currently in 12 States

ACPF Hub Results Watersheds

The screenshot shows the 'ACPF in Action Map' interface. At the top, there are logos for Agricultural Conservation Planning Framework, GISF, and USDA. The main area is a map of watersheds, with one watershed highlighted in blue. A pop-up window is open for HUC 070400080702 - City of Peterson-Root River. The pop-up contains the following information:

HUC12	070400080702
Name	City of Peterson-Root River
Provider	Matt Drewitz
Email	Matt.Drewitz@state.mn.us
Organization	Minnesota Pollution Control Agency
ACPF Version	Version 3

On the right side of the map, there is a 'How to Use' panel with the following text:

How to Use

Explore the ACPF results map displaying watersheds that have had results data provided by a user. If you are already using ACPF, let us know and we'll ensure your watershed is included! Submit your watershed to our ACPF Results dataset by contacting [ACPF Support](#). To utilize the results data yourself, please see the instructions on the [ACPF Results page](#).

To Use This Map

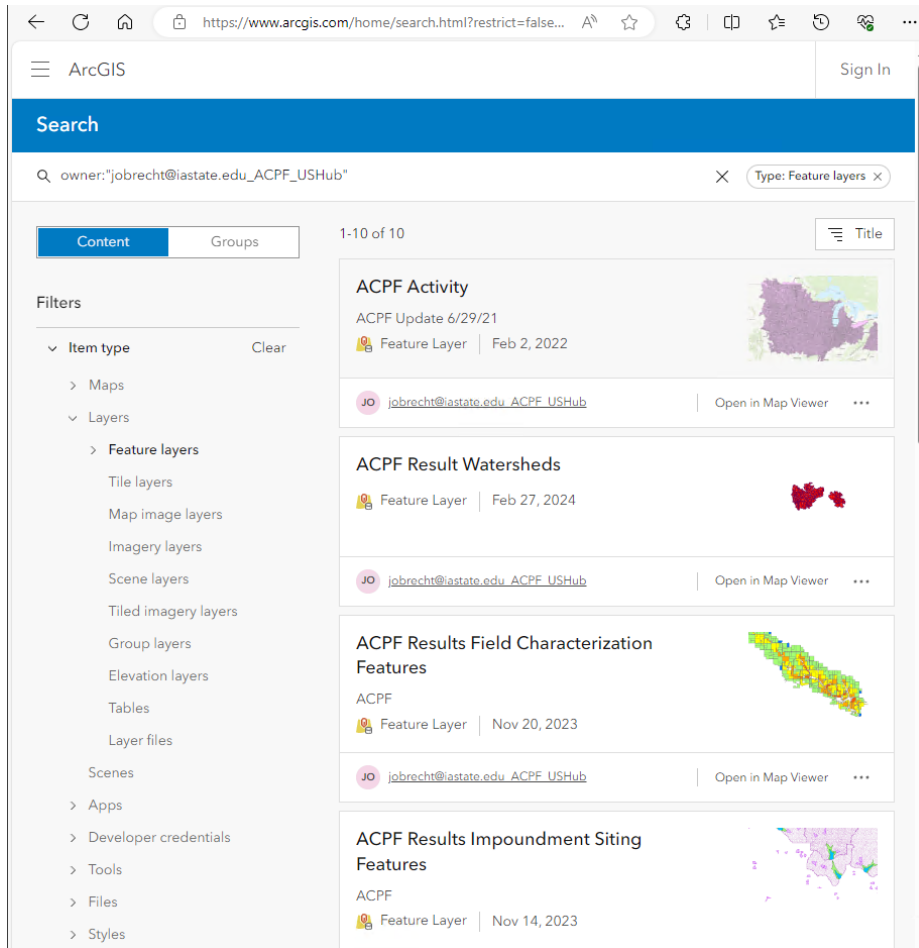
1. Click on a blue watershed to view the information of who provided the results data.
2. Zooming in far enough will turn on the results data that has been provided. You will not be able to download this data, only view it. To download, visit our [results information page](#).
3. Results will be published by the National Hub periodically and will be live at the time they are published.

How to Navigate

1. Use your mouse to Pan and mouse wheel to Zoom.
2. Use the My Location button on the left of the map to zoom into your current location. The application will need access to your computer's location. This tool will stay on unless turned off.

- Details of completed ACPF HUC 12s
- Source and contact information
- ACPF Toolbox version used

ACPF Hub Map Services - ArcGIS Online



- ACPF Results Stream Network and Catchment Features
 - Stream Reach
 - Catchments
- ACPF Results Field Characterization Features
 - Runoff
 - Drainage
- ACPF Results Precision Conservation Practice Siting Features
 - Grassed Waterways
 - Bioreactors
 - Drainage Water Management
 - Contour Buffer Strips
 - Depressions
 - Depression Drainage Areas
- ACPF Results Impoundment Siting Features
 - WASCObS
 - WASCOb Basins
 - Farm Ponds
 - Farm Pond Drainage Areas
 - Nutrient Removal Wetlands
 - Nutrient Removal Wetland Drainage Areas
- ACPF Results Riparian Assessment Features
 - Saturated Buffers
 - Riparian Function Assessment
 - Riparian Attribute Polygons
 - Riparian Catchments
 - Two Stage Ditches

- Full list of available services from Hub
- Shared publicly
- Can be accessed through desktop, mobile, and other GIS applications.

Conservation Desktop ACPF Map Services

CONSERVATION DESKTOP
A CDSI Solution

Programs Links Reports Documents Tasks HELC/WC Client Search Help

Data Configuration
Cost Lists
Geospatial Services

Geospatial Services Legend ? x

Services (100) Legend Add new Page 1 of 4

Layer Name	Service Type	Category	Start Date	End Date	Last Changed Date	Data Steward Name	Shared	Tools	Actions
ACPF - Bioreactors	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Catchments	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/06/2023	Gregg Hadish	--	CD	⋮
ACPF - Contour Buffer Strips	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Depression Drainage Areas	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Depressions	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Drainage Water Management	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Farm Pond Drainage Areas	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Farm Ponds	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Grassed Waterways	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Height Above Channel	ArcGIS Tiled Map Service Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Nutrient Removal Wetland Drainage Areas	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Nutrient Removal Wetlands	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Relative Elevation	ArcGIS Tiled Map Service Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Riparian Attribute	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Riparian Catchments	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Riparian Function Assessment	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮
ACPF - Run-Off Risk	ArcGIS Feature Layer	Project Data	01/01/2023	09/30/2025	01/12/2023	Gregg Hadish	--	CD	⋮

USDA United States Department of Agriculture

- NRCS Conservation Desktop configuration
- Each ACPF practice shared as individual map layer.
- Allows field staff to display specific practices based on client.

Conservation Desktop Service Authorization

Authorization

Select the roles, jurisdictions, and tools for which service will be available.

State to Authorize:

Iowa

Location that can access this service:

Page 1 of 7

- All Locations
- ADEL SERVICE CENTER
- ALBIA SERVICE CENTER
- ALGONA SERVICE CENTER
- ALLISON SERVICE CENTER
- ANAMOSA SERVICE CENTER
- ANKENY SERVICE CENTER
- ATLANTIC SERVICE CENTER
- AUDUBON SERVICE CENTER
- BEDFORD SERVICE CENTER
- BLOOMFIELD SERVICE CENTER
- BOONE SERVICE CENTER
- BURLINGTON SERVICE CENTER
- CARROLL SERVICE CENTER
- CENTERVILLE SERVICE CENTER
- CHARITON SERVICE CENTER

Roles that can access this service:

- All Roles
- CD-FA State Business Tools Coordinator
- CD-TA State Business Tools Coordinator
- Certified Planner
- Data Configuration Administrator
- Designated Conservationist
- Planner (Protracts Role)
- Planning Support
- Program Support Assistant

Tools:

- All Tools
- CD
- CART

Share Layer To (Optional):

Page 2 of 4

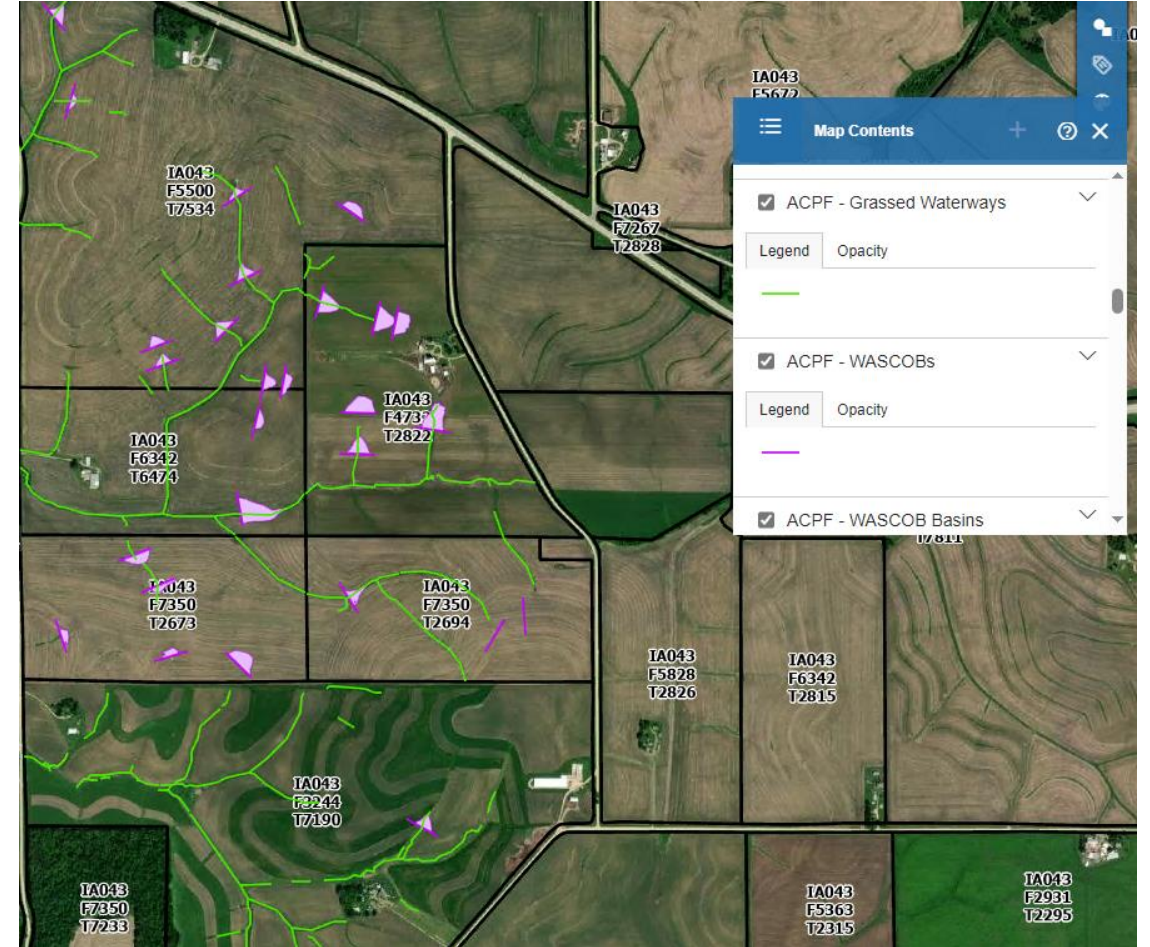
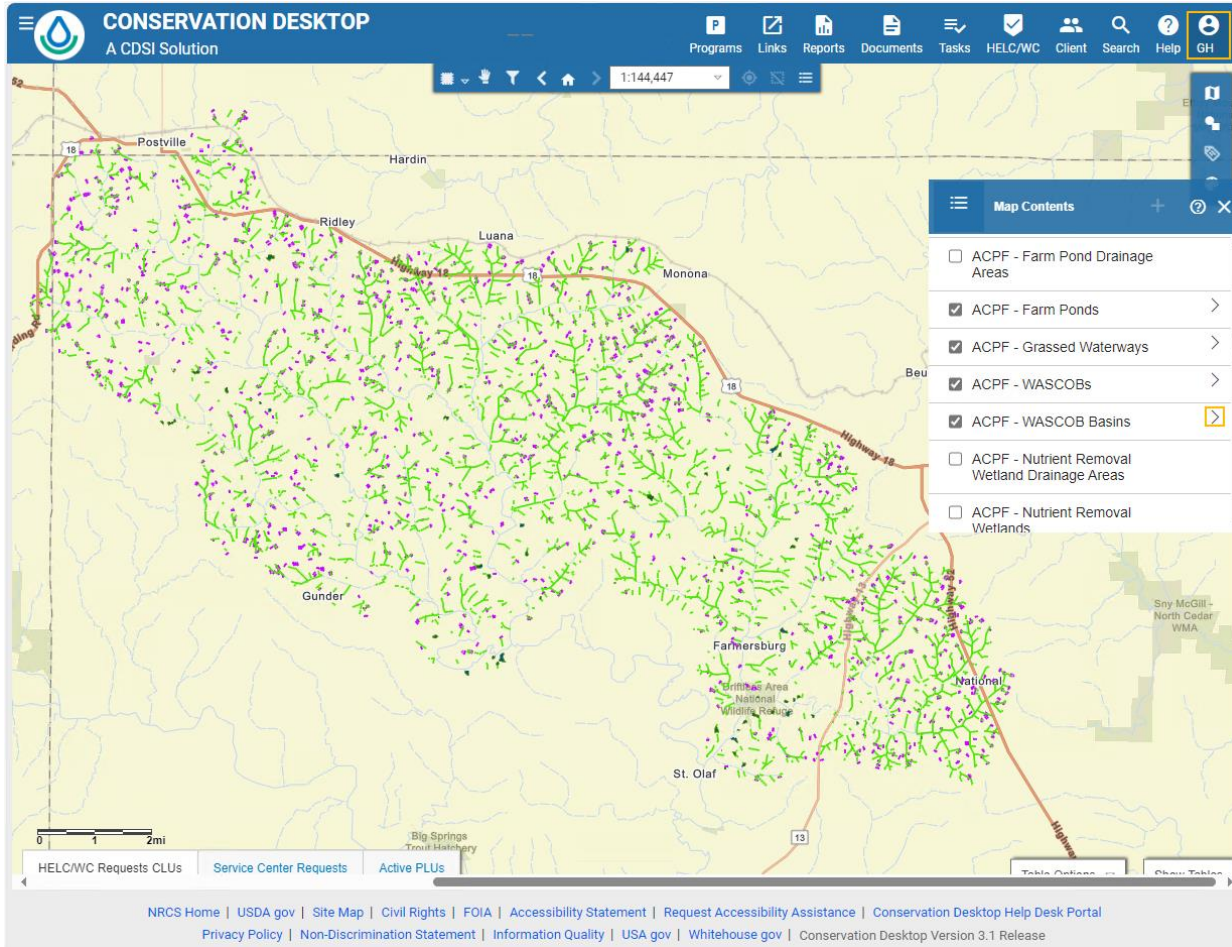
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey

CANCEL

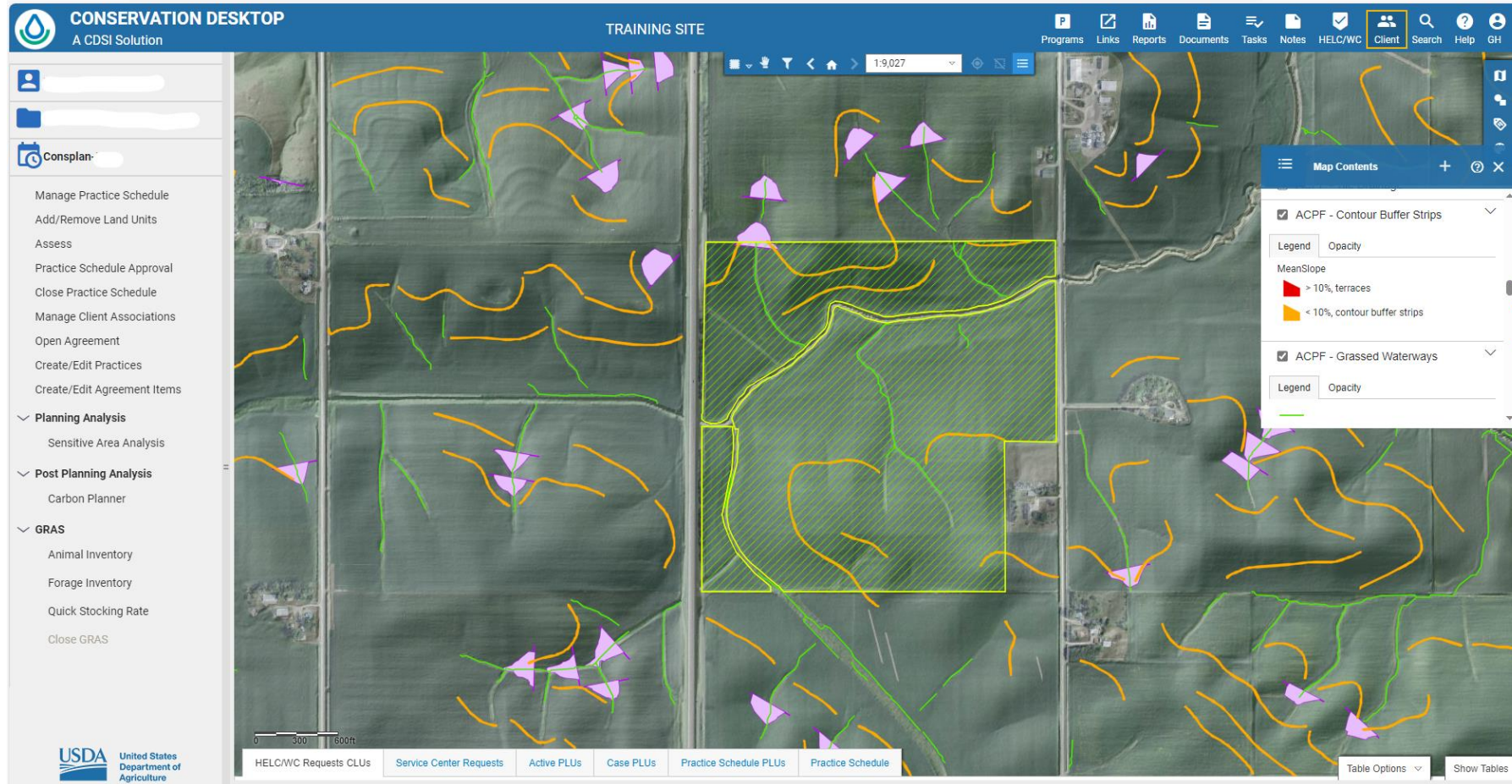
SAVE

- Sharing configuration based on data availability.
- Individual offices within States can be configured for sharing.

Conservation Desktop ACPF map layers

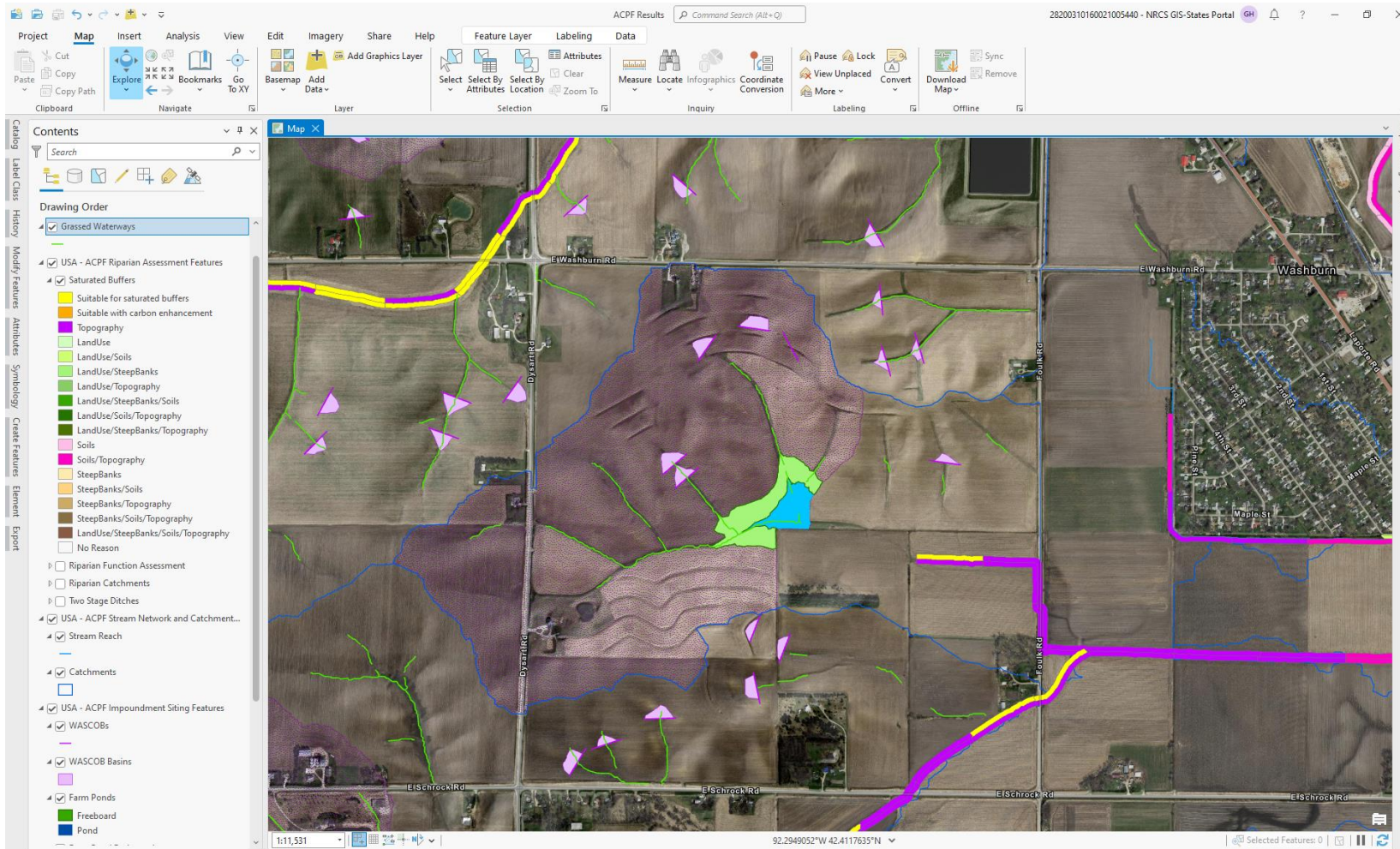


Conservation Planning with ACPF practices



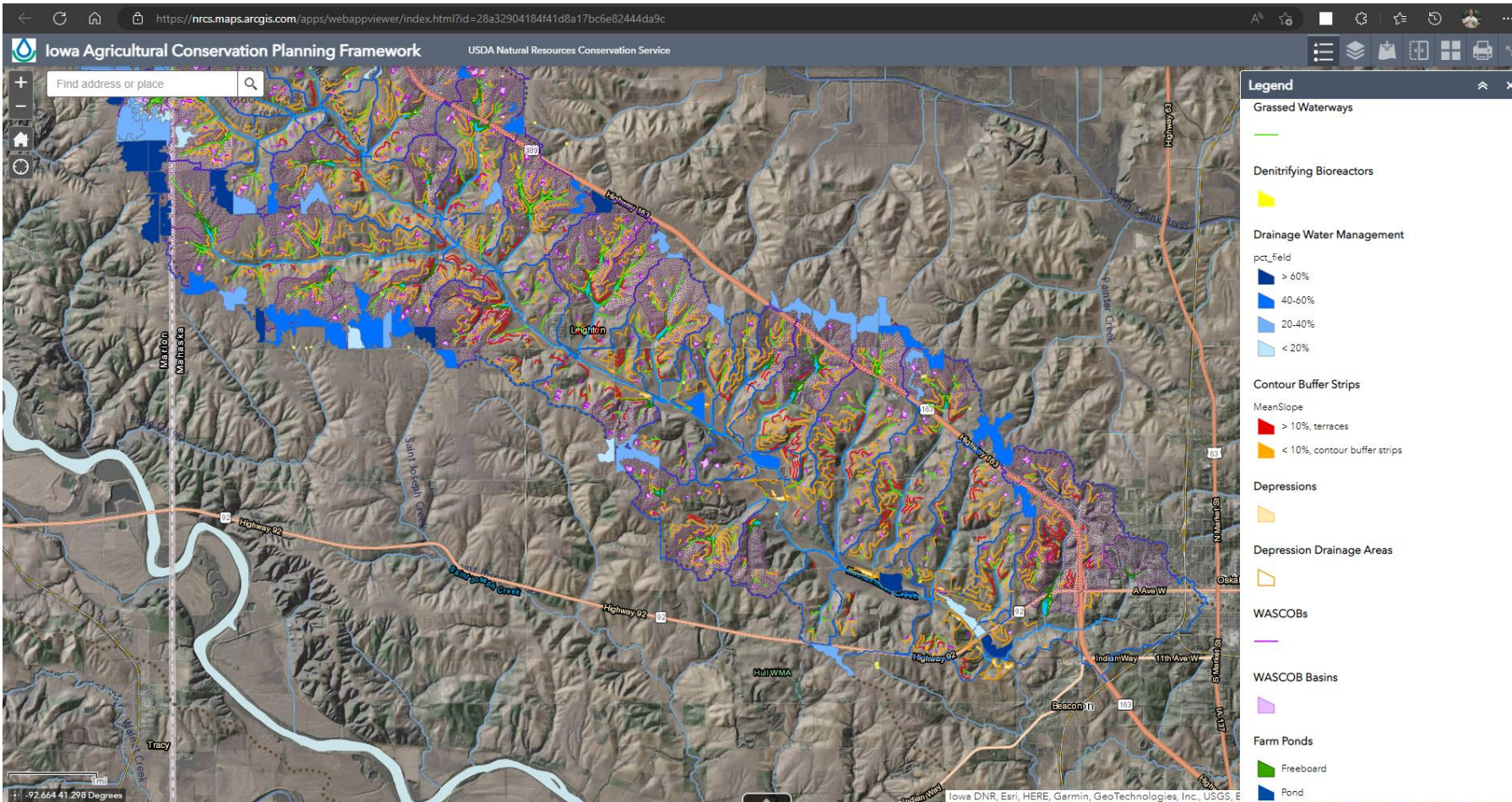
- Individual client folder for field-scale planning.
- Live map interface
- Part of a document management system to schedule practices

ArcGIS Pro – ACPF Results Services



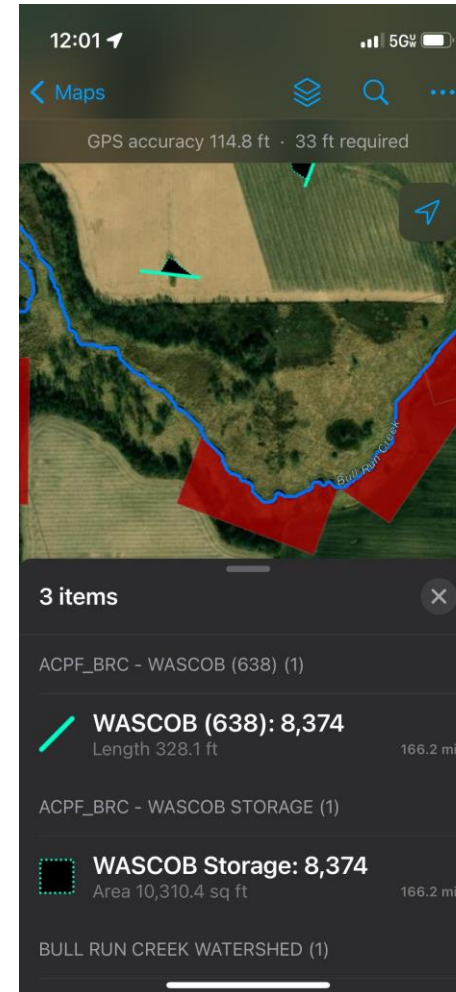
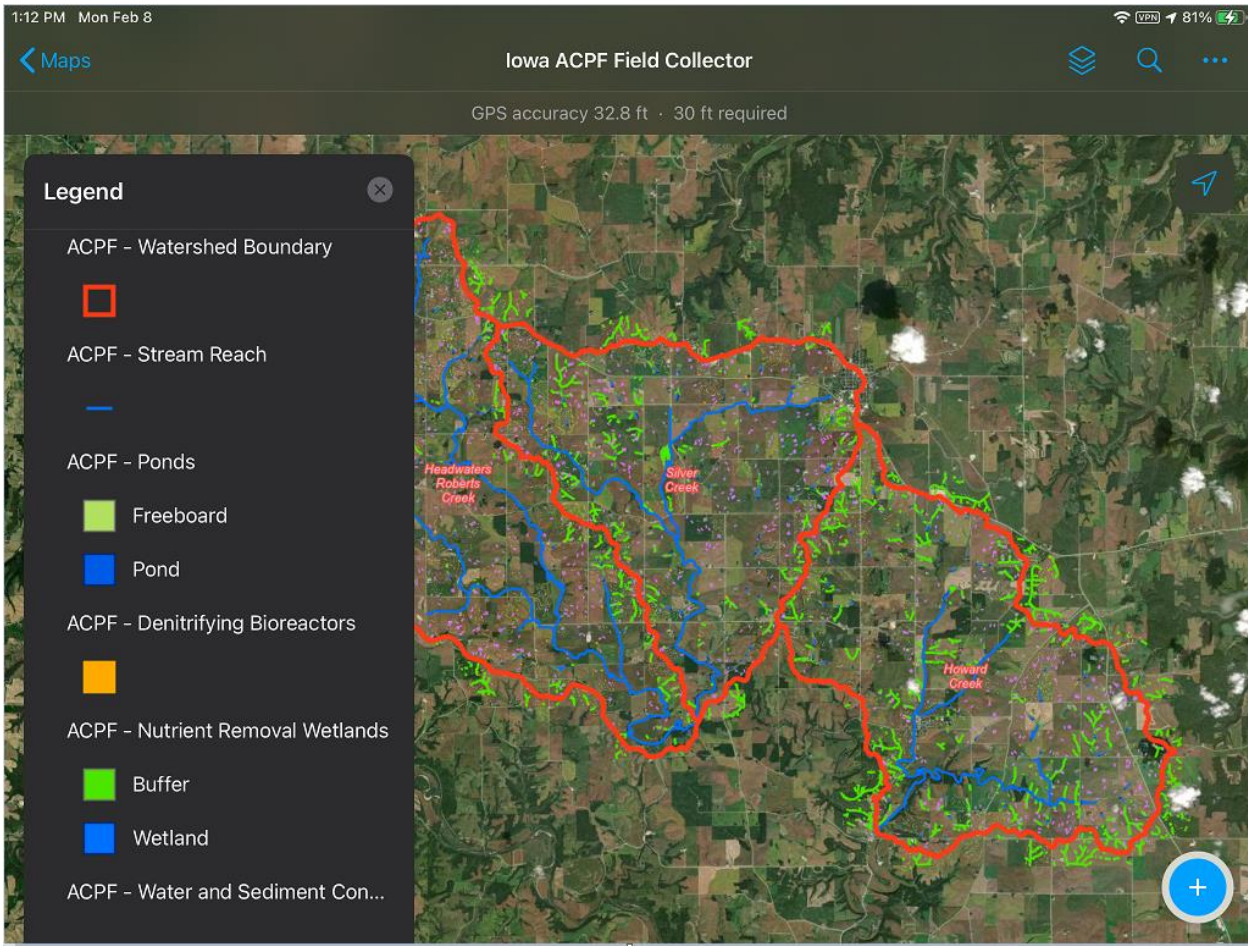
- Use hosted services within a full-featured desktop GIS
- Use services with other map layers (soils, elevation, imagery)
- Complete more detailed GIS analysis with geoprocessing tools.

Web Apps – Sharing ACPF Results



- Shared results through custom web apps
- ArcGIS WebApp Viewer
- Share internally within agency or public/partner organizations.
- View results in context of watershed along with other GIS basemaps (LiDAR elevation, imagery, etc.)

ArcGIS Field Maps – ACPF in the Field



- ACPF results data on mobile device (iPad/iPhone shown).
- Allows for in-field visualization or verification of potential practices.
- Same AGOL services used as the other apps
- Collect additional field data for in-office use and review.

Using ACPF

- No matter the local context, ACPF can help you meet your goals
- The ACPF is used by GIS specialists, conservation planners, watershed coordinators, agency staff, and producer-led groups to:
 - Engage stakeholders in the watershed planning process
 - Start conversations with stakeholders
 - Determine sub-watersheds to focus on and which landowners to engage
 - Determine conservation solutions on a field-scale
 - Transition watershed projects from demonstration to implementation by identifying priority areas



For more information and learning resources:

acpf4watersheds.org

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anne.nardi@wisc.edu

Dr. Haleigh Summers – Agricultural Geospatial Data Scientist, Sand County Foundation
hsummers@sandcountyfoundation.org

Gregg Hadish – State GIS Specialist with USDA Natural Resources Conservation Service for Iowa
gregg.hadish@usda.gov



IOWA STATE UNIVERSITY

Water Resources Center
UNIVERSITY OF MINNESOTA



Next steps in our outcomes estimation journey

- Bookmark and Share the OET Training Webinar Series page
- Fill out the 8-question (2-min) online evaluation survey
- Schedule a free “coaching” session with us (atapross@farmland.org)
- Download a copy of the OET Guide
- Join us at the Soil and Water Conservation Society annual conference in Myrtle Beach later this month!
- Are there other ag-environmental webinar series you want us to organize in the future?

