

Calumet ²⁰²⁵ Conservator

Protecting, Promoting & Enhancing the Natural Resources of Calumet County

STONY BROOK FINDS A NEW PATH IN LATEST RESTORATION PROJECT

During Wisconsin's early settlement days, dredging and straightening streams was a common practice. The practice would increase agricultural production by creating more cropping acres while draining wet areas and squaring up fields. Sections of Stony Brook, Calumet County's only trout stream, was straightened sometime before the earliest aerial photos on record (1938). In particular, a 700-foot section of Stony Brook was channelized and squared up, creating two right-angle (90-degree) turns. The first turn was located just downstream of the County F highway culvert.

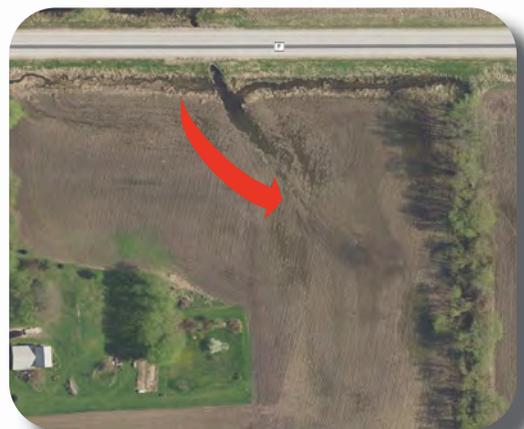
During heavy rain events, the force of water fights the redirection of a sharp turn, eroding the banks in the process. In 2018, a large rain event caused the streambank to fail at the first turn pictured. As the bank failed, the stream rerouted itself through the cropland causing significant erosion. As the stream receded, the streamflow went back into the channel. However, the bank eroded into the cropland causing loss of cropland and destabilizing the 90-degree turn. The path it took told a story of where the stream wanted to go.



NOTE: Red arrow depicts flow direction.

Above Photo: Eroded cropland with receding water after the May 2018 event.

Upper Right: A 2010 photo showing the sharp turn to the east, and a second sharp turn to the south. Notice the buffer between the stream edge and the cropland prior to the 2018 rain.



Lower Right: Aerial photo taken May 2018, depicting bank failure and the path of cropland erosion that followed. Credits: Calumet County

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STONY BROOK RESTORATION AND TROUT UPDATES

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Some landowners would have tried to fix the problem by adding hard armor such as Rip-Rap the bank to prevent further erosion and keep the stream in the banks. Instead, Tony and Teresa Hahn were approached by Friends of Stony Brook partners with an alternative: restore the section by reestablishing a meandering channel through the marginal (often wet) cropland and improving fish habitat.

The project cut a new 680 foot channel through former cropland, buffering each side with seed mixes of wetland and pollinator friendly plant species. To allow the property owners access to the other side of the property, a small equipment crossing was incorporated using larger gravel and reinforcing the banks with a geotextile material.

In September, the Friends of Stony Brook and the Hahns hosted an open house, inviting the public to explore the restored channel.

An added benefit to the project design was restoring wetland habitat to improve wildlife habitat, reduce erosion, and improve water quality. The new channel *reconnected the floodplain*, allowing the stream to have room to overtop banks and slow down the water, reducing erosion and allowing pollutants and sediment to settle out in the flooded area. It also reduced the risk of future flood damage.



Aerial view of restored stream channel at the Hahn Property. Credit: Calumet LWCD



Brown Trout



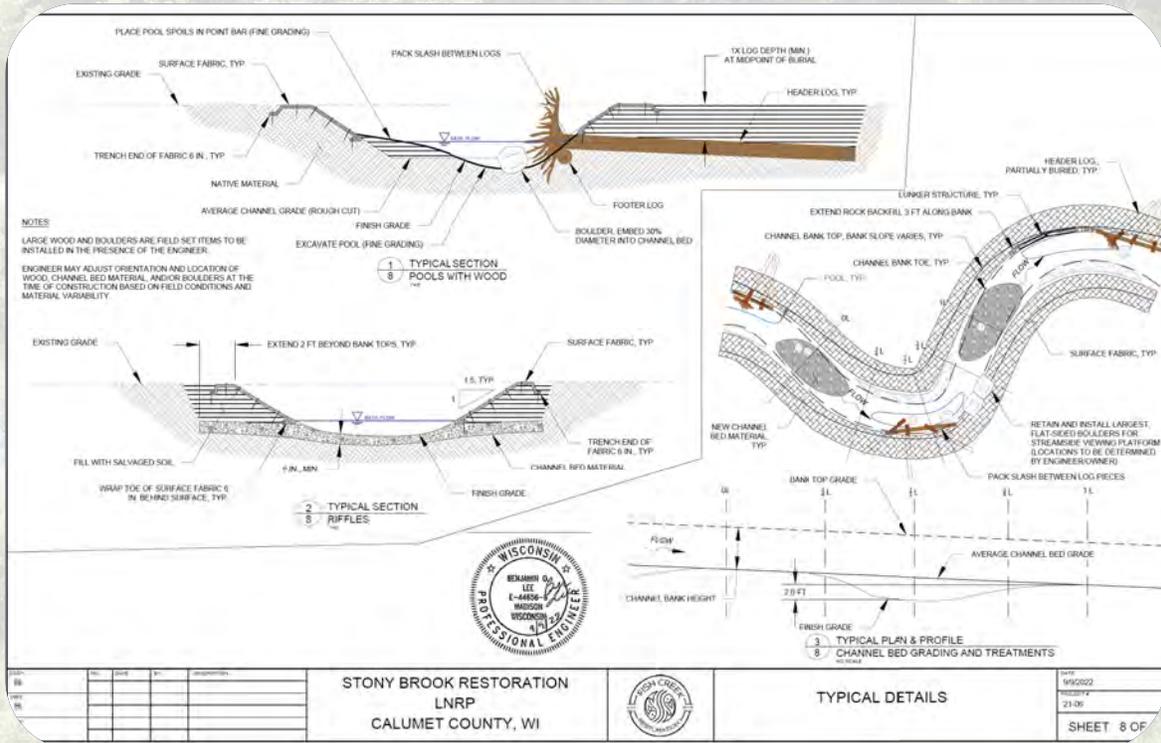
Blackside Dace



Left Photo: Friends and Neighbors overlooking a riffle and lunger structure section at the Fall Open House. Photo Credit: Friends of Stony Brook.



You can connect with the Friends of Stonybrook at www.friendsofstonybrook.com or <https://www.facebook.com/FriendsofStonyBrook>



*Habitat Structure Design Schematics.
Credit: Fish Creek Restoration, LLC*

DESIGN CONCEPT

The project aimed to create a *New Channel*, incorporating meanders that mimic the natural flow of a stream and provide better fish habitat.

Riffles are spawning areas for trout and other fish species and serve as habitat for aquatic bugs (fish food). Riffles were added by placing gravel piles at specific heights and locations to mimic shallow water areas.

Lunker structures are ideal habitats for larger fish. They provide shelter from land predators (fishing birds, mammals) and mimic undercut banks. Lunkers were incorporated into the design at several bends.

Log Sills with Root Wads are ideal habitats for smaller fish species including brook trout, and serve to shelter younger fish from predators. They also offer natural streambank protection from erosion.



Riffle during Construction



Lunker Structure Placement



Log Sills Placement

IRON ENHANCED SAND FILTER INSTALLED TO REMOVE PHOSPHORUS FROM STORMWATER RUNOFF

Most street gutters, grass swales, and other stormwater pathways drain directly to lakes and streams. Much of the water that is transported through those pathways becomes polluted with sediment, nutrients, salt, and anything else that is spread or spilled on the ground. Municipalities are tasked to remove these pollutants to help improve local waters, including Lake Winnebago and the Lower Fox River.

One of the hardest pollutants to remove from stormwater is phosphorus. Phosphorus enters waterways in two forms:

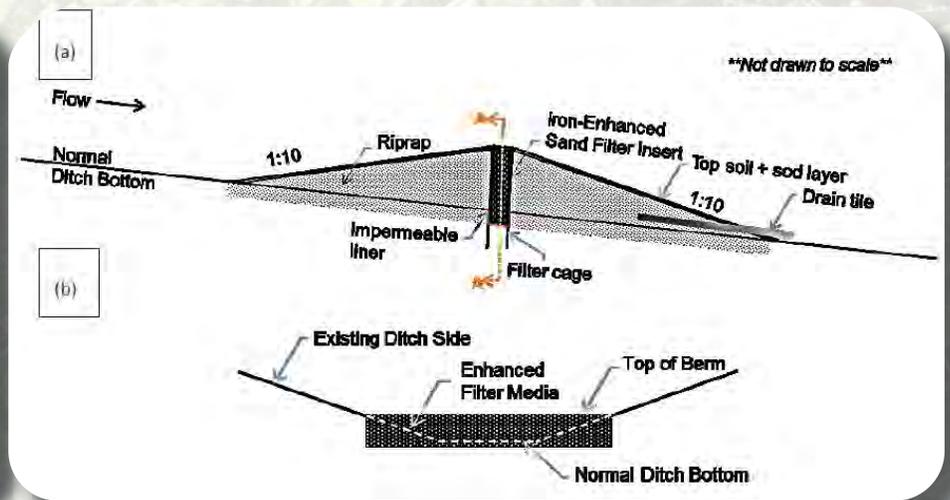
- attached to sediment particles carried with stormwater runoff and
- dissolved in the stormwater runoff itself

Most stormwater management practices such as grass swales and stormwater ponds perform well at removing phosphorus attached to sediment. However, dissolved phosphorus is more difficult to remove with these practices and often ends up in surface waters. In order to remove dissolved phosphorus, additional filtration practices are needed. One such practice is an Iron Enhanced Sand Filter. Calumet County installed several Iron Enhanced Sand Filter (IESF) ditch checks to remove higher amounts of phosphorus from urban stormwater runoff.



Just one pound of Phosphorus can create up to 500 pounds of wet algae. Photo Credit: LWCD

The IESF ditch checks that the County installed were constructed by placing a gabion basket in an excavated trench at the bottom of the road ditch. The basket is lined with a geotextile fabric to hold an iron sand mixture. The basket is then closed up and stone is added around the basket to protect and keep trash out of the filter portion. During rain events, the stormwater from the roadway will flow through the filter, where the dissolved phosphorus will bind to the iron in the filter. The filter can be expected to remove between 75% - 81% of total phosphorus from the roadways where they are installed.



*Left Photo: Newly constructed Iron Enhanced Sand Filter on County N in Harrison. Photo credit: Calumet LWCD
Right Diagram: Schematic of iron-enhanced ditch check. (a) Profile view (b) Cross-sectional view (Source: Natarajan & Gulliver 2015)*



LOCAL FARMER-LED GROUP SHARES SUCCESSES, OPPORTUNITIES

Submitted by Autumn Gomez-Tagle, County Ag Educator

CCASA is a group of conservation-minded Calumet County Farmers and community members who make it their mission to learn and educate about farming practices to improve water quality in our area. Every year we put together research, outreach, and events to further demonstrate the effectiveness of conservation agriculture in maintaining natural resources and improving farm resiliency.

CCASA's 27 members operate 23,434 acres throughout the county. These acres are managed with water quality in mind, utilizing techniques like cover crops and no-till in order to reduce soil erosion and improve soil health. This year CCASA assisted with several events, including collaborative soil health field days "Step into Soil Health" in the ManCal/Spring Creek watershed, and "Managing Water in a Soil Health System" at Dallmann East River Dairy. They also planted and managed a trial plot of 19 different cover crop species after winter wheat. Planted on board member Ken Rach's farm, these trial plots were monitored for growth, and had soil and plant biomass measurements taken. CCASA then hosted their own field day to take a look at the plots, presented by Steve Hoffman with InDepth Agronomy. At the field day they discussed phosphorous mobility, soil texture and biology, and emergence and efficacy of the different species of cover crops. Attendees got a chance to consider which cover crops might work on their own farms, and ask questions of CCASA members about their cover crop experience.

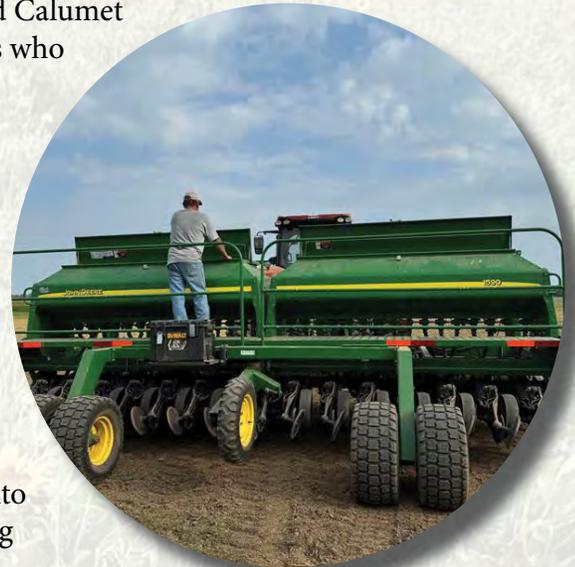
CCASA also continues to assist with a well testing program throughout the county, with the goal of measuring the effects of members' sustainable cropping techniques on water quality.

For more information on 2024 events and cost share programs, follow CCASA on Facebook at <https://www.facebook.com/CalumetCountyAgStewardshipAlliance> or check out their new website www.calumetcounty.org/CCASA

Left Photo: CCASA board members John Vandenboom and Ken Rach introduced the plots and describe the benefits of cover cropping.

Right Photo: Aerial View of Cover Crop Test Plots

Photo Credits: CCASA



Paul Meyers, CCASA Board member, rides on the back of a no-till drill on planting day at Ken Rach's farm. Photo Credit: CCASA



WELCOME TO OUR NEW CONSERVATION STAFF



Hi everyone! My name is Autumn Gomez-Tagle, and I'm the Soil Health Specialist and Agricultural Educator for Calumet County. I graduated from Kenyon College in Ohio, where I also spent some time working on a few local farms. In Wisconsin, I've worked at some urban and suburban operations, including Riverview Gardens in Appleton and The Garden in Neenah. My partner and I just moved to Hilbert, and we're loving getting to know the area! I have a background in research, having worked in a soil testing lab and as part of a field study of water quality improvement measures in Atenas, Costa Rica. I'm an animal and people person (in that order), with a special interest in soil properties and health. My favorite parts of my job are being out in the field, or at people's homes meeting the farmers and gardeners of the county. I look forward to helping and learning from you!



Hi, I'm Kaitlyn Bochniak – your newest friendly neighborhood Conservation Technician!

I joined the Land and Water team in 2024. I live in Green Bay now but I'm originally from Michigan. I'm a self-proclaimed Nature Nerd and have always enjoyed spending time outdoors. I wanted a career that could reflect that passion, so I earned my degree in Natural Resources Management at Fox Valley Tech. My work experience is a mixed bag. I've spent time in the restaurant industry, served as first mate on a research boat documenting algal blooms in Lake Michigan, and interned in the chemistry department at a nuclear power plant. It took me a little bit to find my place, but I think now I've found my rightful home at Land and Water.



Hello, I am Jen Bonlander and I am the new Program Assistant in Planning and Zoning and Land and Water Conservation Departments. I have a degree in Marketing and I owned and operated my own restaurant for many years. My husband operates his family's small farm with our 3 kids and I look forward to having more time to help on the farm. I am excited about everything there is to be learned in this new position.

CONSERVATION POSTER CONTEST WINNERS

Congratulations to this year's Calumet County Poster Contest Winners. The Conservation Poster Contest is open to kindergarten through 12th-grade students and posters are evaluated on the conservation message, visual effectiveness, originality, universal appeal, and individual artwork. This year's theme was Home is where the Habitat is.

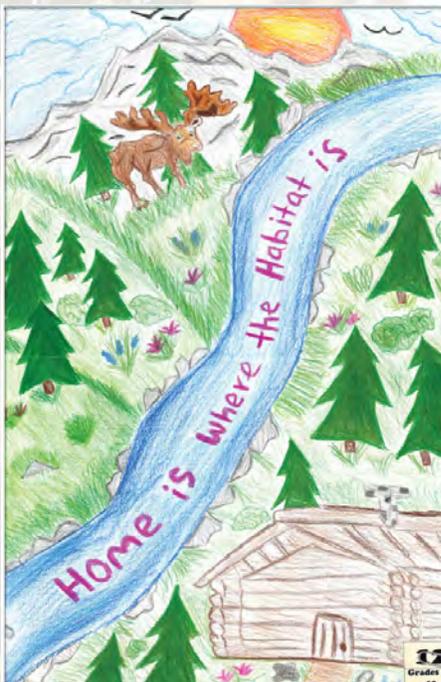
Winners move on to compete at the area competitions with the area winning posters moving on to compete at the State Competition in March at the WI Land+Water's Annual Conference. The first-place posters from the state competition will represent Wisconsin at the National Association of Conservation Districts' annual meeting.



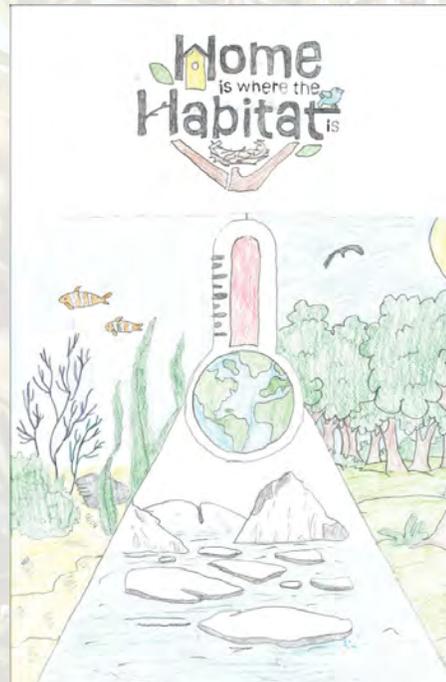
1st Place Grades 2-3. Submitted by Savannah Daun at Chilton Area Catholic School



1st Place Grades 4-6. Submitted by Adelle Schneider at New Holstein Middle School



1st Place Grades 7-9. Submitted by Mason Aplin at Brillion High School



1st Place Grades 10-12. Submitted by Aubrey Baeten at Brillion High School

NITROGEN LEACHING STUDY AIMS TO IMPROVE GROUNDWATER THROUGH AG CONSERVATION PRACTICES



In partnership with the Calumet County Land and Water Conservation Department, Discovery Farms began monitoring nitrogen leaching in the summer of 2023. Eight lysimeters were installed to capture the volume of water draining below the crop root zone and to allow for water quality samples to be collected and analyzed. The goal of this study is to better understand the timing and magnitude of nitrogen leaching and identify management practices to help reduce nitrogen leaching. When the lysimeters were installed in the summer of 2023, there were very dry conditions (~10% soil moisture). The dry conditions continued into the fall and winter.

The first drainage samples were collected in May 2024 after 20.6 inches of cumulative rain occurred. Since then, 36 samples have been collected from the lysimeters. Samples were consistently collected throughout the summer months due to more rain. A weather station was also installed at the site to understand how the samples collected relate to local precipitation and weather conditions. The largest rain event at the site so far was 1.84" in late June 2024. Dry conditions returned in the fall and with the cold winter conditions, further samples are not expected until the soils thaw in the spring.



View of collection boxes installed 4 feet down from the surface. A collection box was placed on each side of the trench, staggering the boxes so they were not in parallel with each other. In total, eight boxes were buried among four trenches. Sample lines were ran from collection boxes to the monitoring stations, located adjacent to the road right-of-way for accessibility.

Calumet County LWCD has cost-share opportunities and can provide technical assistance for producers or landowners who have conservation projects that they would like to see get completed. Projects or practices can be anything from cover crops and no-till cropping practices to engineered projects such as grassed waterways and water & sediment control basins. If you have a potential project, erosion issue or general questions about conservation practices please let us know. Please contact the LWCD at 920-849-1442 for more information.

CONSERVATION PRACTICE IDEAS



Cover Crops



Waterways and Buffers

Practices that reduce soil erosion remain a high priority. Keeping valuable soil on the field improves soil health, reduces the loss of valuable nutrients, and reduces the impacts of nutrient loss on water quality.

Shoreline stabilization is key to preventing property loss. The deep root structures of native plants naturally protect streambanks from eroding. In high energy areas, hard armor such as rip-rap may be needed.



Shoreline Native Plantings



Streambank Stabilization



Waste Storage and Transfers



Stream Equipment Crossings

Managing animal waste on the farm can be challenging. Every farm is unique. We can provide technical and financial assistance for many practices on the farm.

Replacing undersized culverts with equipment crossings may address streambank erosion and flooding challenges.

GOT PHRAGMITES?

We've got funding. But we need to hear from you!

Calumet County, in collaboration with Lakeshore Natural Resource Partnership, Glacierland Resource Conservation, and Stantec Consulting Services Inc., has secured grant funding to map and treat invasive Phragmites across the county. The project, initiated in January 2020, involves roadside mapping and phased treatment, with grant funding now covering the entire county.



*Treatment of a small phragmites stand in Calumet Co.
Photo Credits: Stantec*

Invasive Phragmites, a European grass invading urban and rural areas, poses a threat to wetlands, streams, beaches, and shores. Urgent control is needed to curb its aggressive expansion. The project aims to map, treat, monitor, and provide long-term control, benefiting migratory shorebirds, waterfowl, fish, pollinators, and native fauna.

Over 193 acres of Phragmites were treated in 2024, and hundreds of landowner parcels are enrolled. Public support is strong. Visit <https://www.glacierlandrcd.org/phragmites-control-project> for program details, invasive mapping, permission forms, or donations.

Your participation is crucial. Trained professionals or student interns will conduct treatments from July to October annually, as long as funding is available. Mapping is continually updated, and landowners will receive yearly communication on treatment status. Grant funds are expected to cover treatment in 2025 at no cost to landowners.

For questions or if Phragmites are on your land, contact Melissa Curran at Stantec (920-841-1072 or melissa.curran@stantec.com) or Danielle Santry from Calumet County (920-849-1442 or danielle.santry@calumetcounty.org).

Visit the project map at <http://bit.ly/InvasiveWebMap>



PRIVATE WELL TESTING PROGRAM 2025 DATES

Calumet County LWCD will host the annual Private Well Testing Program in May. The program is open to all Calumet County Private well owners.

Registration is REQUIRED to ensure you get a kit.



Tests Available

HOMEOWNER'S PACKAGE - \$68

includes Coliform Bacteria, Nitrate, pH, Alkalinity, Hardness, Chloride, Conductivity, Corrosivity Index

METALS PACKAGE - \$60

includes Arsenic (Screen), Calcium, Copper, Iron, Lead (Screen), Magnesium, Manganese, Potassium, Sodium, Sulfur, Zinc

DACT SCREEN - \$40
tests for Atrazine and its byproducts

ALL THREE - \$161

FREE SHIPPING!

REGISTER BY APRIL 18.

Online registration is easy and preferred!

<https://tab.so/CalumetWellTesting>

OR

Phone: 920.849.1442

Email: danielle.santry@calumetcounty.org



KIT PICK UP BEGINS APRIL 29

Choose a tentative time/location when you register.

DAYTIME LOCATION: Wednesday, May 1
Calumet Co. Courthouse Lobby 11:00am - 1:00pm

EVENING LOCATIONS:

April 29 – Chilton Town Hall, 5:00pm - 6:30pm

April 30 – Harrison Municipal Building, 5:00pm - 6:30pm

May 1 – Brillion Municipal Building, 5:00pm - 6:30pm

SAMPLE YOUR WELL ON MONDAY, MAY 5

Return full bottles to one of the following locations.

DAYTIME: 11:00am - 1:00pm at the Calumet County Courthouse Lobby

EVENING – 5:00pm - 6:30pm at one of three locations

- Brillion Municipal Building – N8892 Randolph St

- Chilton Town Hall - N4695 County BB

- Harrison Municipal Building – W5298 Hwy 114

Full lab reports will be available 6-7 weeks after the sample day. An education program will be held in July. Information will be provided to help you understand your results and ask questions. Please email Dani Santry at danielle.santry@calumetcounty.org or call 920.849.1442 if you have any questions.



Land and Water Conservation

206 Court Street
Chilton, WI 53014

LAND & WATER CONSERVATION COMMITTEE:

Mike Hofberger - Chair
Nick Kesler - Vice Chair
James Lowey
Joan Pagel-Holzschuh
Anne Machesky
Eugene Hansen

DEPARTMENT STAFF:

Tony Reali - County Conservationist
Kaitlyn Bochniak - Conservation Project Technician
Autumn Gomez-Tagle - Soil Health & Ag Educator
Brent Jalonen - Erosion Control / Stormwater Specialist
Amanda Kleiber - Land Resource Specialist
Danielle Santry - Water Resource Specialist
Jennifer Bonlander - Program Assistant

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