# Quarterly NEWSLETTER

## DATES TO REMEMBER

**March:**
15 - TU Owego Creek Public Workshop
25 - USC Annual Retreat Day 1
26 - USC Annual Retreat Day 2

**April:**
18 - Trees for Tributaries Deadline
22-23 - NYSWF Annual Conference

**May:**
21 - Buffer Steward Training

## IN THIS ISSUE



# Project Highlight: Bridgewater Stream Restoration Site

By Payton Reese, *Oneida SWCD Water Quality Specialist*

The Oneida County Soil and Water Conservation District (OCSWCD) completed a floodplain reconnection project in Bridgewater, NY this past fall. The work was done on a tributary that flows into the West Branch of the Unadilla River in the Upper Susquehanna watershed. The original stream channel flowed under an obstructive access bridge (shown below) and behind several houses before turning south and flowing through a wetland. In high flow events, water would overflow the banks into yards and basements damaging property. The path of the channel resulted in sediment deposition, raising the channel elevation and exacerbating the issue. District staff surveyed the area and Gian Dodici with the Fish and Wildlife Service developed the plan for the new channel incorporating rock and roll logs and toe wood for stability and habitat in this intermittent trout stream.

The new stream channel turns south before reaching the old bridge and houses. It now flows through an area where storm flows can freely reach the floodplain on both sides and under a new unrestricting bridge. The shape of the new channel also promotes stable sediment transport through the area. The downstream end of the new channel ties into a reach of the tributary with similar channel dimensions. Cross vanes at the upstream end of the project area will act as sediment cleanout locations. The Town of Bridgewater will be able to access these as needed to clean out sediment to maintain the stable channel downstream.

Oneida County Soil & Water Conservation District

With the help of the Upper Susquehanna Coalition (USC), the planting of 5,000 trees and shrubs was coordinated in the floodplain area. This work was completed by Shenandoah Habitats. Lydia Brinkley with the USC helped develop the planting plan and coordinate the efforts of the planting contractor. We were also able to engage the public with a FFA student tree planting, resulting in more than 300 extra trees planted at the project site. Materials and expertise for this volunteer effort were also provided by USC and staff. With support for buffer maintenance and tree establishment efforts from the USC and OCSWCD, we will be able to move forward and encourage high survivability of these plantings.

Funding for this project was provided by the Oneida County Flood Mitigation program and the Upper Susquehanna Coalition

# Giving a Helping Hand Through Conservation

By: Shamar Fitzpatrick, *Otsego SWCD Buffer Steward Coordinator*

Through the USC Trees for Tributaries Program, Otsego Soil and Water Conservation District partners with local organizations to implement riparian forest buffers. Otsego SWCD partnered with the Master Gardeners of Cornell Cooperative Extension to plant trees and shrubs at 6 Habitat for Humanity homes. Master Gardener Celia Oxley reached out to Otsego SWCD with concerns that the newly built homes had no shade and asked if there was anything we could do to help. She was ecstatic to hear about the Trees for Tributaries program and how it could help bring shade to the newly built homes. Trees for Tributaries Program is implemented by bringing volunteers together to plant Riparian Forest Buffers. The program also educates on the importance of trees for water quality, providing wildlife habitat, sequestering carbon, and decreasing soil erosion.

Master Gardeners - Celia and Coleen

In October 2024 volunteers from the CCE, homeowners, SWCD family members, OCCA, and the Cooperstown Leo Club Program came out to help plant the riparian forest buffer. The landowners prepared the site by mowing and weed whacking. Otsego SWCD employees set up the planting the day before by laying out the tubes, stakes, and stems. A total of 0.53 acres were planted with 215 stems. Species planted were sugar maple, American basswood, black cherry, serviceberry, American hazelnut, elderberry, and arrowwood.

This planting will help improve water quality, provide shade to the homes, and enhance wildlife habitat. With the volunteers' positive vibes and hard work, the planting was completed in a day. This planting led to further connection with other volunteers and hopefully will lead to future volunteer projects.

Fitzpatrick Family, Frank Harte from the OCCA, and Bianca Adams from The Leo Club Program planting trees and shrubs

OTSEGO COUNTY
SOIL AND WATER
CONSERVATION DISTRICT

# Utilizing the USFS Climate Change Tree Atlas for Restoration Planning

By: Ava Glasser, *Upper Susquehanna Coalition*

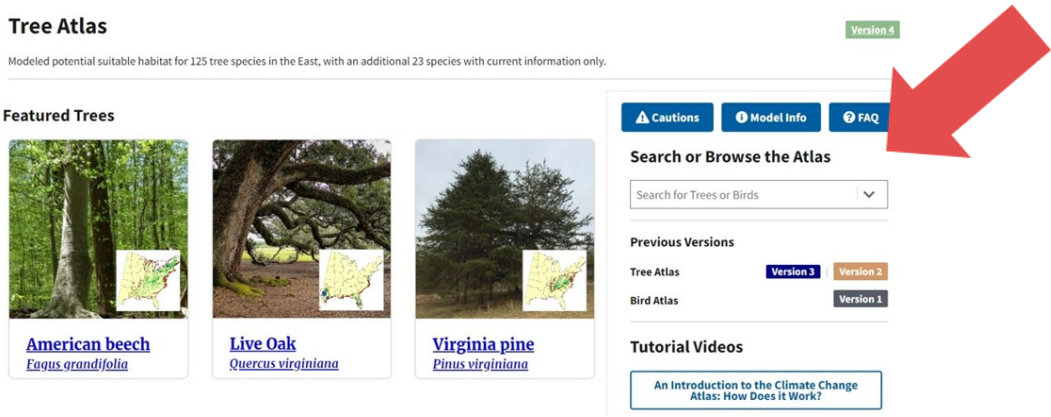
For those of us planning afforestation projects here in the Upper Susquehanna watershed, climate resilience is a major consideration when selecting which species to plant. The U.S. Forest Service Climate Change Tree Atlas is a great resource to help determine which species will continue to grow and thrive in forests of the future, under increasingly unpredictable conditions.

**What is the Climate Change Tree Atlas?**

The Tree Atlas was created by the U.S. Forest Service to model the potential suitable habitat for 125 important tree species on the East Coast of the United States. Potential habitat distribution (or *habitat suitability*) in the future (2070–2099) was determined using a combination of climate and emissions models. The Tree Atlas attempts to show the effects of both moderate & high emissions scenarios on the potential suitable habitat for significant tree species, the adaptability and capability of certain species to handle disturbance and change, and therefore the resiliency and composition of future forests.

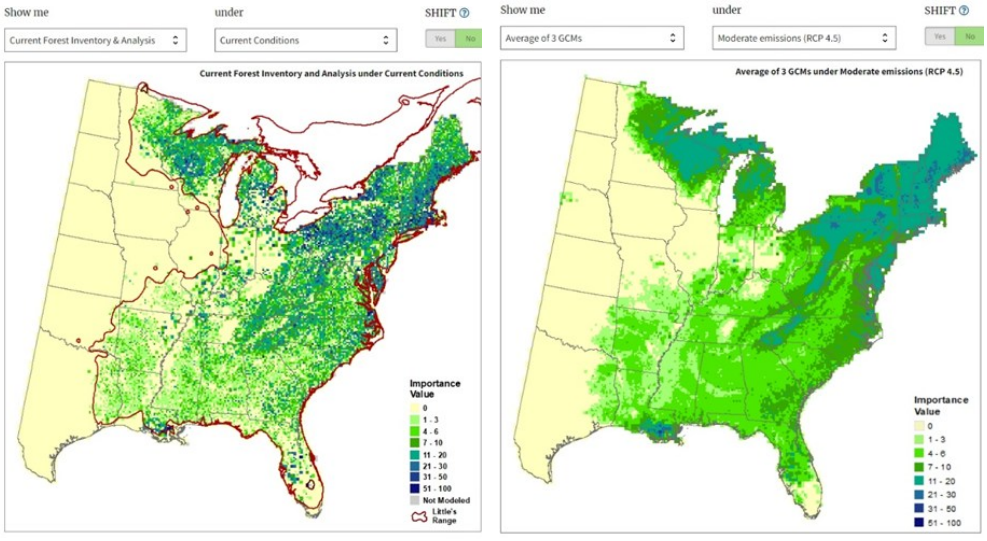
**How to use the Climate Change Tree Atlas**

The Atlas can be used in several different ways. The easiest way to gather information on a particular tree's status is to search for the species on the home page of the Tree Atlas.




When viewing the atlas entry for a particular species, interactive maps can be used to view the range & distribution of the species under current and modeled conditions, as well as maps of range & distribution *predictors* such as mean annual temperature and annual precipitation under current and modeled conditions. Under the Summary of Predicted Changes tab, the Summary Change Maps also allow you to compare many of these maps side by side.

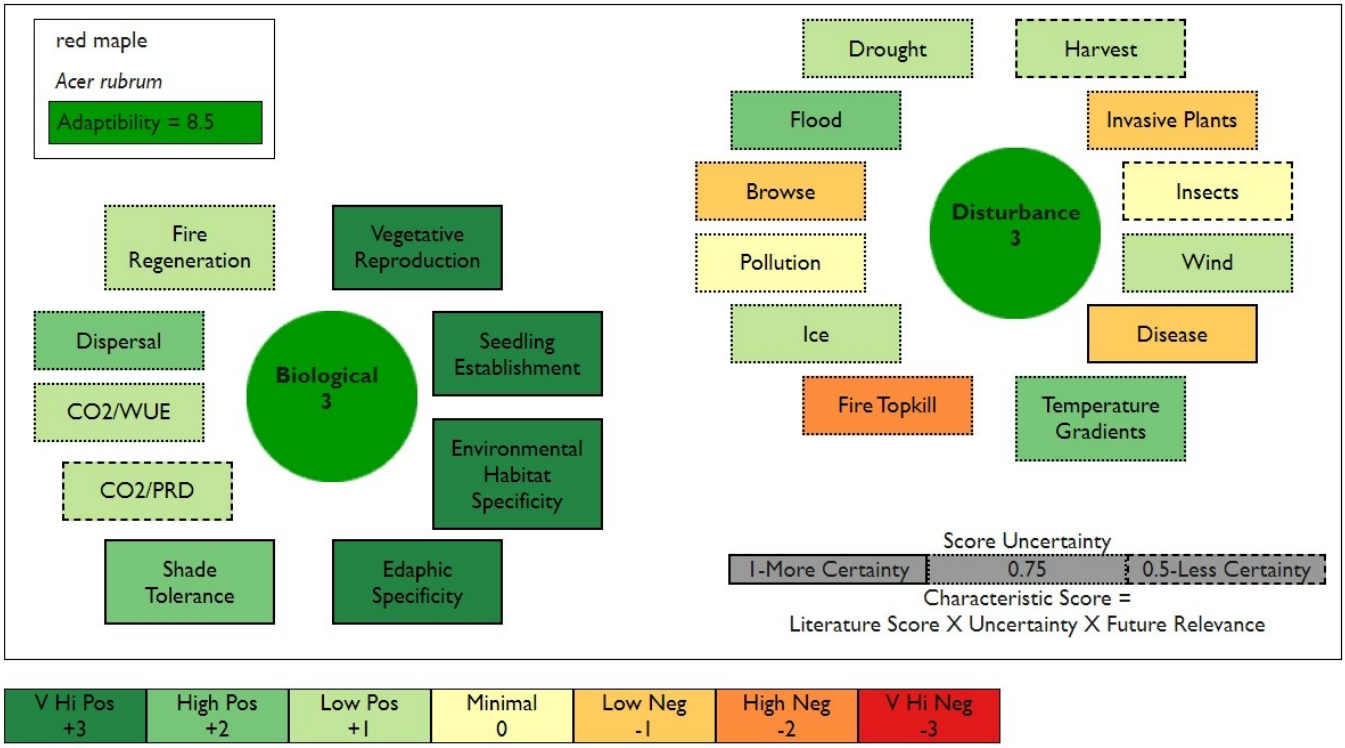
It's important to keep in mind that some maps and models are more reliable than others- a Model Reliability status will be shown at the top of the species page. Species with low model reliability have poor prediction performance due to low model fit, which is often the result of low sampling abundance within the forest inventory data, or the species is relatively rare or occupies a small geographic area. For these species, the current distribution does not allow the model to accurately predict suitable habitat, and results should be used with caution.




Maps from USFS Tree Atlas species page for Red Maple- range under current conditions vs. moderate emissions through 2099

In addition to the interactive maps, several other ratings and indicators are available on a species' page. Perhaps the most important feature on this page is the **Climate Change Adaptability Score**. While climate models vary in their reliability in predicting suitable habitat, the Adaptability Score instead focuses on the species' ability to

adapt to variable conditions, which may include drought, fire, and flooding, among other things. The Adaptability Score is determined by 12 *disturbance factors* and 9 *biological factors*- fire regeneration, dispersal vegetative reproduction, seedling establishment, environmental habitat specificity, edaphic specificity, shade tolerance, CO2/PRD and CO2/WUE for *biological factors*, and drought, harvest, invasive plants, insects, wind, disease, temperature gradients, fire topkill, ice, pollution, browse, and flood for *disturbance factors*. Each of these individual factors is given a score from +3 (Very High Positive) to -3 (Very High Negative), and when added up, result in an overall Adaptability Score. Currently, the highest ranking tree species for adaptability is Red Maple at 8.5, and the lowest ranking is Black Ash at 1.7.




Regional summary tree tables are also available for comparing tree statistics by region, including by state, HUC6 watershed, urban area, national parks & forests, and USDA Forest Service EcoMap Section. These regional tables allow you to compare the rankings of tree species currently found in the region or expected to move into the region, based on adaptability, capability, change in habitat suitability, current abundance, current range, model reliability, and importance value. Another important rating to consider from these summary tables is the species' **Capability**. Capability is rated under both emissions scenarios (moderate and high emissions) and describes the overall capability for the species to cope with the changing climate in the region. This value differs slightly from Adaptability, as it also takes into account to current abundance, range, and changes in suitable habitat under both emissions scenarios. For example, a species with a high Adaptability score may have a relatively low Capability score in a certain region, if it is currently not abundant within the region, or a highly reliable model shows a decrease in suitable habitat in that region.

There are several tutorial videos available on the web page as well that cover an introduction to the atlas, understanding adaptability ratings, and how to choose regional outputs when looking at summary tree tables.

**Why Use the Climate Change Tree Atlas?**

Overall, the tree atlas provides useful information that restoration and afforestation planners may want to take into consideration during species selection stages. While regional tree rankings may help us to identify which species will perform best under a wide range of conditions and within a larger geographic range in the future, they may also help us to identify which species may be adaptable, but at risk of being lost within our watershed, and therefore could be considered for planting under certain conditions to preserve the species by increasing its abundance. The tree atlas can be found on the USDA Forest Service website, at the following link: https://www.fs.usda.gov/nrs/atlas/tree/

# Trout Unlimited Watershed Strategic Plan:
## Restoring Trout and their Habitat in Owego Creek

Allen Peterson, *Trout Unlimited*

**Vision:** Owego Creek was chosen by Trout Unlimited (TU) as a priority watershed based upon the size, quality and interconnectedness of its brook trout habitats. It is the largest, most intact brook trout system in western New York. It also hosts a substantial, naturally reproducing brown trout population. Since 2023, the Al Hazzard Chapter of Trout Unlimited has been working with local partners to study the trout and their habitats and to carry out projects that reconnect, restore and sustain brook and brown trout populations.

**What We Are Doing**: Trout populations in the Owego Creek system were impacted by a series of floods and droughts that began in 2005. Although their numbers appear to have stabilized, they remain lower and continue to be impacted by short, intense 'flash droughts' that dewater important spawning tributaries. We are working to restore connectivity to maximize the ability of trout to migrate seasonally, especially to spawning reaches and cold-water refuges. We are also working with local partners to complete projects that enhance spawning as well as flood and drought resiliency in order to restore the wild brook and brown trout population to their pre-flood and pre-drought level of abundance:

**Assessment:** So far, our volunteers have identified 41 brook trout spawning tributaries and located 17 important cold water springs and spring-fed tributaries. Beginning in 2025, TU staff will use an infrared drone to identify more coldwater inputs. DEC biologists will begin electrofishing surveys to document population levels and trends and volunteers will work with Soil and Water Conservation District staff to identify culverts
and dams that are barriers to trout movements and spawning.

**Reconnection:** In 2024, the Town of Caroline replaced a barrier culvert that was blocking access to spawning areas on Boyer Creek and the Town of Richford replaced a similar barrier culvert on the headwater of Hubby Creek. We will continue to work with municipalities to replace barrier culverts and dams as they are identified.

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**Habitat Improvement:** Our habitat work began in 2023 with a successful project led by Tioga County Anglers to replace two failing pool diggers on the upper west branch with new and permanent rock vane structures. The Tioga County Soil and Water Conservation District (SWCD) completed two major bank stabilization/habitat projects on the lower Owego Creek and has another one planned and scheduled. The Cortland SWCD likewise completed two important habitat projects along a key spawning reach on the upper east branch of Owego creek. TU volunteers are now working with DEC fisheries staff to plan and execute multiple habitat improvement projects along spawning tributaries located on State Forests.

**Outreach:** We placed catch and release informational signage in 2024 and continue to promote a catch and release ethic for brook trout to help the population recover. Look for us at streamside and community events to learn more.

**Join Us!** Big things are happening on Owego Creek and you can be a part of it. Volunteers are needed to help find spawning tributaries (catch a trout for science!), assist with water quality and habitat assessments and help plan and carry out habitat improvement projects.

Watch for events and opportunities at the Al Hazzard TU Facebook page and sign up with TU coordinator Allen Peterson at Allenpeterson54@gmail.com for inside information and news.

# Tioga County SWCD's 3rd Annual Soil Health Meeting

By: Danielle Singer, *Tioga SWCD*


The Tioga County SWCD held its 3rd annual Soil Health Meeting on February 18th. It was a chilly day and the attendees were glad to cozy up with coffee, soups and sandwiches while we dug into soil health topics. Danielle Singer from our office started the meeting off with some basics of soil health and updates about how to get involved with our AEM Program and funding opportunities. Bryan Brown from NYS Integrated Pest Management shared thoughts about weed management in crop fields with soil health BMPs in mind. We discussed how cover crops could assist with weed suppression, but could also be a source of weeds if you aren't using clean seed or if your cover crop gets away from you in the spring. Kristen Workman from PRO-DAIRY shared experiences working with farmers on soil health in heavy clay soils in Vermont, as well as some case studies with her work with New York farms on nutrient management, cover cropping and reducing tillage. She showed us that farms of all sizes and soil types are making soil health BMPs work for them. Colleen Mezzano (FSA) and Tess Flynn-Belles (NRCS) shared some program updates from USDA for Tioga and Chemung counties. Kelly Jackson and Kristi Snyder gave program updates from CCE Tioga and Kelly presented about some online pest management tools and how she can assist farmers in utilizing those resources. Emily Dekar from the USC spoke about upcoming opportunities to work with Tioga SWCD at a basic nutrient management workshop, get soil and manure samples taken and participate in a pilot of a phone app for record keeping related to manure spreading and cropping as part of a USC grant. The meeting, with lunch provided, was free to attendees through a state Climate Resilient Farming (CRF) grant awarded to Tioga SWCD.

# Silvi - Corner: Liriodendron tulipifera

By Ava Glasser, *Upper Susquehanna Coalition*

*Liriodendron tulipifera*, also known as tulip poplar or yellow poplar, is actually not a poplar at all! Tulip poplar is one of two species in the very small genus *Liriodendron*, which is classified in the Magnoliaceae family. Magnolias evolved nearly 95 million years ago during the Cretaceous period while dinosaurs still roamed the earth, and genetically represent one of the earliest branches in the evolution of flowering plants. Looking at the large, unique flowers of the tulip poplar, it's not hard to picture how plants like these fit into an ancient landscape. Along with its distinct tulip shaped leaves, from which it derives one of its common names, one of tulip poplar's most defining features is its large, orange and yellow flowers, which can reach up to 3 inches in size. Flowers emerge in mid to late spring in our region, and are mainly pollinated by bees, butterflies and hummingbirds. During the winter and early spring, when distinct leaves and flowers are absent, it can be identified by its buds, which are "duck bill" shaped, and the bark, with its wide, flat ridges that separate much lighter colored furrows. The flowers are not the only massive feature of these trees; they can grow up to 200 feet in height, and 3 meters across in diameter! The largest, most massive individuals have been found in the center of its range, tucked away in the Ohio River valley and growing along the slopes of the Appalachian Mountains in North Carolina, West Virginia, Tennessee and Kentucky.

While fairly adaptable to different soil conditions, tulip poplar grows best on moderately deep loams that are fairly moist, well drained, and loose textured. According to the USFS, exceptionally good growth has been observed on alluvial soils bordering streams, on loam soils of mountain coves, on talus slopes below cliffs and bluffs, and on well-watered, gravelly soils. It's generally considered to be shade-intolerant, and is most often dominant in young forests (between 50-150 years of age) but notably rare or absent in forests greater than 500 years old. Tulip poplar has a wide range, spanning nearly the entire east coast of North America up to southern Ontario, and as far west as the Mississippi River. In New York, its current range as predicted by the USFS is fairly small, but under all current climate warming scenarios, suitable habitat is expected to expand across New York, increasing both the geographic range of the species and abundance within that range. The USFS Climate Change Atlas assigns scores to tree species found in the US to represent climate change adaptability under different emissions scenarios. These scores are based on factors like seedling establishment, fire regeneration, insect pressure, and habitat specificity. Tulip poplar scored high in climate adaptability, indicating that it will be a resilient forest species under many different

*Tulip poplar flower among leaves, up close. Credit: North Carolina State Extension Gardener Plant Toolbox, Jim Robbins*

*Mature tulip poplar bark. Credit: University of Minnesota*


*The tulip-tree silk moth (Callosamia angulifera). Credit: davesgarden.com*

warming and emissions scenarios, and will continue to grow and thrive in our region in the future. By planting this species in our watershed, we help to facilitate its natural northward migration into our forests, and create forests that are ready to handle higher temperatures, disturbance, and more chaotic weather patterns.

Several characteristics of the tulip poplar make it a valuable timber species, in addition to its ecological benefits in our landscape. Its rapid growth habit helps it to establish as an early successional tree in recently disturbed areas. Tulip poplar is a prolific seeder, producing seed at a relatively young age (15-20 years) in copious amounts to somewhat compensate for its seed's low germination rates, averaging between 5 and 20%. Seeds remain viable on the forest floor for up to 7 years, and can be dispersed a good distance away from the parent tree- for tall individuals, up to nearly ¼ mile. Tulip poplar is often one of the tallest trees in the forest, reaching heights of up to 200 feet, with very little lateral branching along its immense trunk. Compared to other popular commercial timber species, tulip poplar has relatively few insect pest problems. However, it is extremely palatable to white-tailed deer, making regeneration in clear-cut sites somewhat difficult without adequate protection. While some may love the species for its timber value and fast growth, others appreciate it based on its associates- tulip poplar hosts 28 species of native moth, and is the sole host for the giant tulip-tree silk moth, *Callosamia angulifera.* The eastern tiger swallowtail butterfly *(Papilio glaucus)*, which exclusively lays its eggs on plants of the Magnolia and Rose families, also favors tulip poplar to lay its eggs on in the summer.

Tulip poplar is a wonderful species to include in any afforestation project if you like to see quick results, get shade on a stream fast, or facilitate forest succession by getting canopy established for our shade-tolerant trees. The USC offers tulip poplar as one of our spring Trees for Tributaries selections!

## Save the Date for the 2025 NYS Wetlands Forum

# Annual Conference and Meeting

## Restoration & Revitalization

**Where:** Hyatt Regency Rochester
125 East Main Street
Rochester, NY 14607

**When:** 8:30am - 5:00pm April 22 &
8:30am -12:00pm April 23

Join the NYSWF this April in Rochester to learn, share, improve, and discuss wetland science, management, policy, and related matters. Enjoy networking with your colleagues and explore Rochester's wide array of activities.

# Project Highlight: White Eagle Barbland Project

By Joann Burke, *Madison SWCD Ag Program Specialist*


CREP Plan

White Eagle/Barbland Farms purchased a farm in 2022 and approached the Madison County SWCD with questions about what they could do to utilize an area adjacent to the Chenango River, that has been pastured for the past 100 years. District staff visited the property to see what the best use would be for this location and after discussions with the farm and their CAFO Planner, it was determined that this area should no longer be used as pasture due to the hydraulic conditions and its direct connection to the river. The District pitched the idea of a CREP project that would install a series of potholes to enhance the area. The SWCD in conjunction with FSA, NRCS, and the farm developed a design to install 6 potholes and complete brush management on the 12.5-acre site. Farm staff, under guidance of SWCD, completed construction of the potholes. In total the farm agreed to remove animals from a 15.8-acre site through the course of this project.

Potholes under construction

Potholes constructed, and prior to seed and mulch

# Acknowledging Excellence in the Watershed

Congratulations to Brian Reaser on his

**Division IV Merit Award**

at the 2025 Water Quality Symposium.

**Division Merit Awards**: Recognize current District employees who have shown outstanding effort in promoting their District and its activities.

# Urban Nutrient Management Toolbox

By Emily Dekar, *USC Ag Team Coordinator*

Spring is just around the corner! If you're anything like me, all you can think about is the smell of fresh grass clippings trees that have leaves again. With grass clippings, brings a few things to think about. The Upper Susquehanna Coalition in coordination with NYS DEC developed some Urban Nutrient Management guidelines and recommendations to assist landowners with best management practices of their home lawns. These practices also help us achieve our water quality goals for the Chesapeake Bay Program. As part of the development of the Urban Nutrient Management Program, we also developed multiple resource materials and social media post templates that your organization can use on your social media platforms and websites. These resources can be found at https://u-s-c.org/urbannutrientmanagement.

Urban Nutrient Management is a simple way for any homeowner to get involved with their SWCD, and pledge to follow the "Top 10 Urban Nutrient Management Practices to Protect Water Quality, Use Fertilizer Sparingly, and Potentially Save $". This pledge can be done online on the USC Website, or with the use of mail in pledge card. For more information, or for hard copy outreach materials contact Emily Dekar at dekare@tiogacountyny.gov.