2022 ANNUAL REPORT

Cortland County Soil and Water Conservation District

CORTLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT

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"Here is your country. Cherish these natural wonders, cherish the natural resources, cherish the history and romance as a sacred heritage, for your children and your children's children. Do not let selfish men or greedy interests skin your country of its beauty, its riches or its romance."

— Theodore Roosevelt

2022 PROGRESS AT A GLANCE

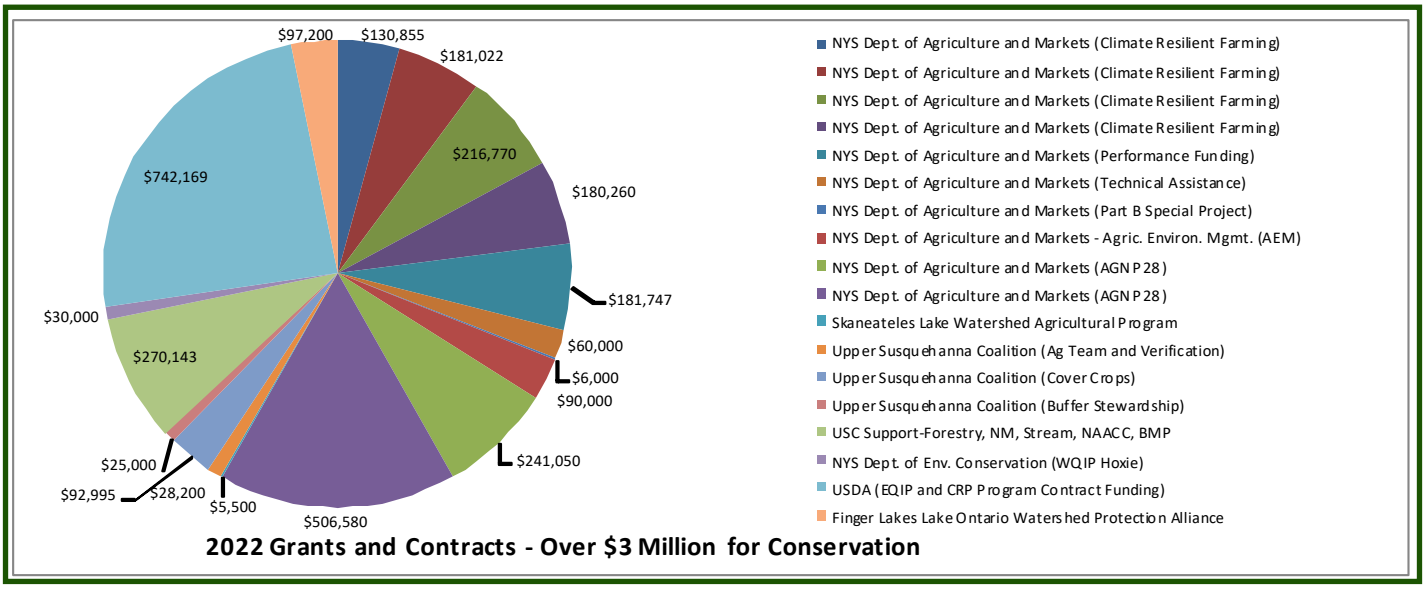
20,999 Acres
of nutrient management

85 Tons
of aquatic invasive species harvested

92 Educational Outreach Events

6.8 Stream Miles
reconnected upstream habitat

$3 Million
in conservation funding grants



2022 Grants and Contracts - Over $3 Million for Conservation

...Established to promote the wise use and conservation of our county's natural resources

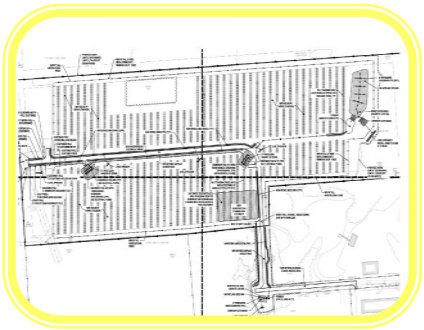
2022 PROJECT SPOTLIGHTS

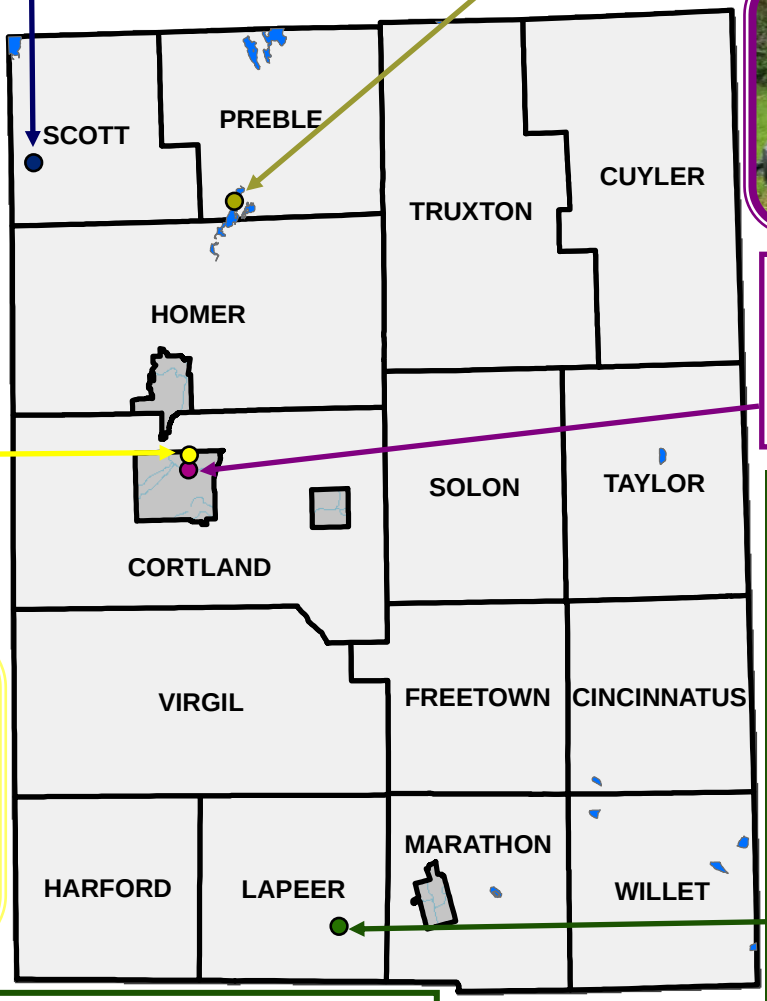
Forest Management Plan for Dwyer Park recognizing the unique role that the park and forest play in protecting water quality around this beautiful lake.

Streambank Stabilization
W. Scott Rd, Grout Brook, Town of Scott— Installation of a series of 3 engineered rock riffle grade control structures, riprap streambank stabilization and riparian forest buffer plantings help reduce erosion, improve fish habitat and enhance this section of trout stream.

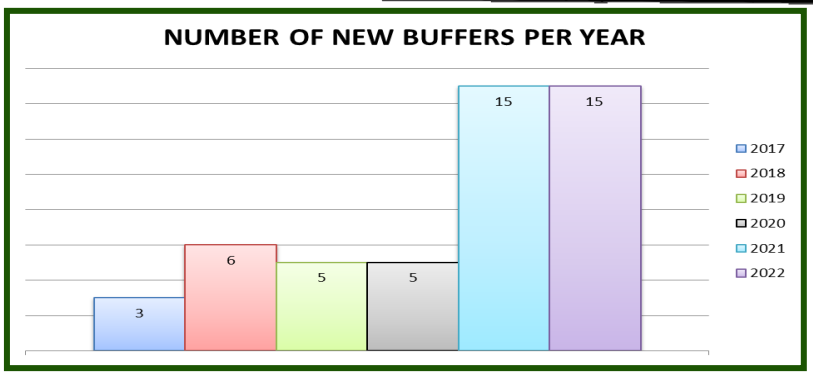
River Clean- Up
46 volunteers filled a dumpster full of trash collected from 6 waterbodies in Cortland County.

Proposed solar array review
For the City of Cortland, SWCD staff performed thorough review of Stormwater Pollution Prevention Plan (SWPPP) for proposed 44.8 acre solar array.





Ag Riparian Forest Buffer: Clover Knoll Farm – Wood Road, Tributary to Jennings Creek, Town of Lapeer – Implementation of a 2 Acre riparian forest buffer was completed in 2022 protecting roughly 1,000 linear feet of stream from the impact of activities in the adjacent crop fields. More than 260 trees and shrubs were planted along the watercourse with the protection of tree tubes.



2022 Ag Program Update

Agricultural Environmental Management

Agricultural Environmental Management (AEM) is a voluntary, incentive-based program available to all farmers throughout Cortland County. AEM supports common-sense, cost-effective, and science-based decisions to meet farm goals while protecting and conserving New York's natural resources. In 2022 the District assisted with many facets of the AEM program from inventory and evaluation on new farms (Tiers 1&2), implementation of Best Management Practices (BMPs) on farms (Tier 4), evaluation of existing BMPs (Tier 5b), outreach, education and more!

The map below indicates the new farms we have worked with in 2022 as well as those where BMP implementation projects, including AGNP and cover crop implementation projects have taken place and where the SWCD has evaluated existing BMPs to ensure farms are properly operating and maintaining practices as intended to protect the environment while aiding in farm management.

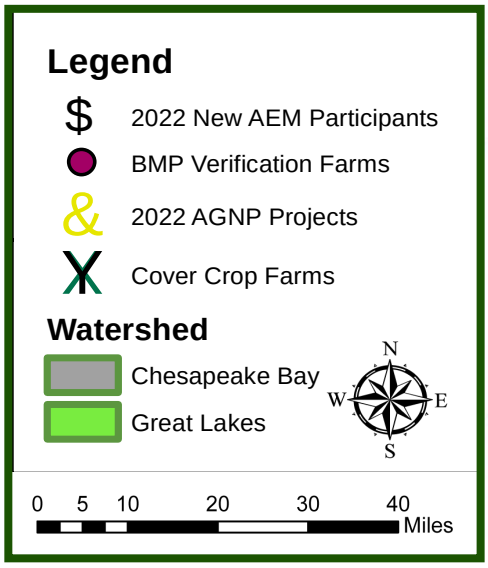
Agricultural Grant Applications

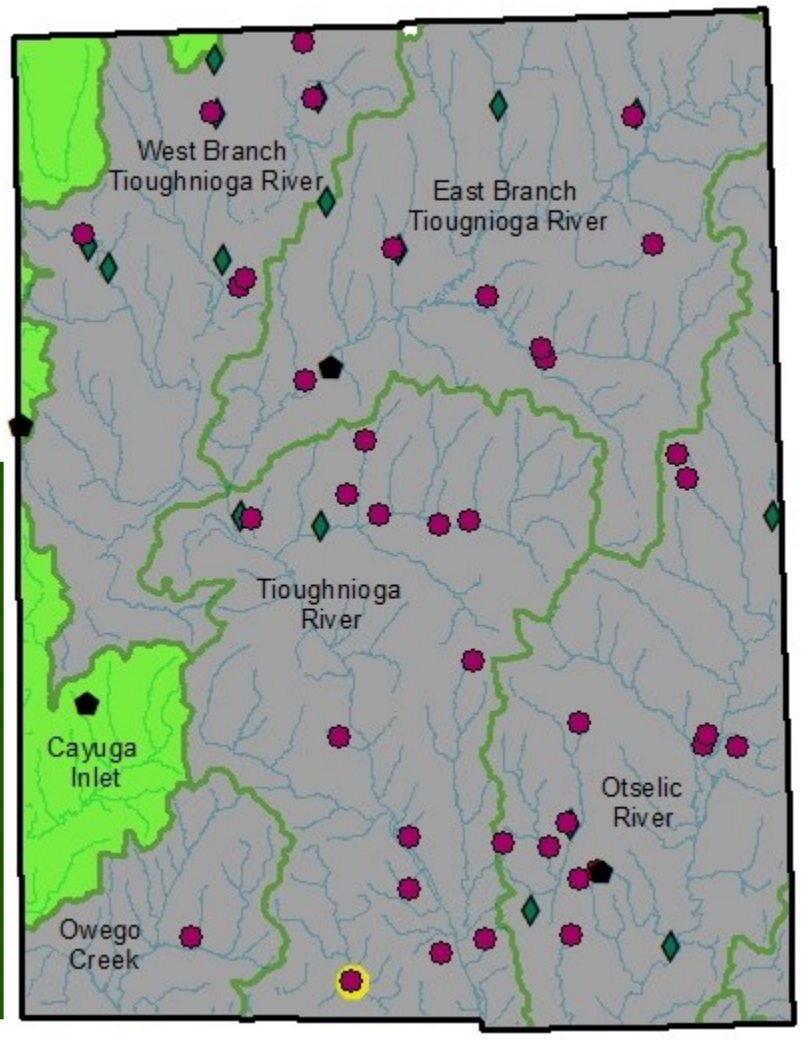
One goal of our AEM strategic plan is the implementation of conservation practices in order to benefit local natural resources without jeopardizing the financial well-being of farms. We do so by seeking out grant funding from various sources including the Climate Resilient Farming (CRF) and Agricultural Nonpoint Source Abatement and Control (AGNP) Programs.

The goal of the CRF Program is to reduce the impact of agriculture on climate change (mitigation) and to increase the resiliency of New York State farms in the face of a changing climate (adaptation). The AGNP Program is a cost-share grant program that provides funding to address and prevent potential water quality issues that stem from farming activities.

In 2022, we applied for CRF and AGNP, competitive grant programs, on 16 farms looking to implement conservation practices. We successfully received awards to assist 7 farms with implementation projects, securing nearly $1.7 million dollars in funding assistance valued at over $2.2 million dollars for work to be completed in the next few years!

We utilize SWCD sponsor match and landowner resources as a match to contributions from these State Reimbursement programs funded by the Environmental Protection Fund.





BMP Verification

As a county in the Chesapeake Bay watershed, SWCD is responsible for an annual best management practice (BMP) verification process. BMPs have been installed on farms and are periodically evaluated to help ensure that Cortland County farms are doing their part to protect water quality locally and to reduce nutrient loading from New York to the Chesapeake Bay. The goal of verification is to evaluate installed BMPs and certify that they are still operated and functioning as intended to reduce non-point sources of pollution and improve water quality on and around each farm. In 2022, BMP whole farm verification was completed on 34 farms, with annual BMP updates completed for practices like precision feeding and reduced tillage on 4 CAFO farms. BMP verification involves surveys, interviews with farm operators, and field inspections of BMPs.

AGNP Program: Covered Heavy Use Area and Waste Storage

Clover Knoll Farm operates a dairy in the Town of Lapeer. The farm has been participating in the AEM program with Cortland SWCD for nearly 15 years completing farmstead planning, a Silage Leachate Control and Treatment project along with the development of a Comprehensive Nutrient Management Plan (CNMP). The CNMP identified a need to address multiple ag waste management practices.

Through funding from the AGNP program (administered by SWCD) along with program dollars from the USDA, significant landowner contributions, and with the services of a professional engineer, a covered waste storage, heavy use area (HUA), milkhouse waste storage and transfer systems were installed on the farm. The farm, as a result of this project, is better able to manage farm wastes, according to their CNMP, while minimizing spreading during poor weather and when frozen or saturated conditions exist. The covered HUA enables the farm to easily clean the barnyard, feed and water the herd, and exercise the cows; all while keeping clean water clean and eliminating runoff concerns while improving management efficiencies.

Cover Crops

Over the last few years, the amount of funding for cover crop has been rising. This is due to farmers seeing the benefits of working them into their planting plans and putting more acres into the Cover Crop program year after year. There were 18 farms that participated in the program for 2022, implementing 3,103 acres of cover crops last fall. Within the Upper Susquehanna Watershed, 2,901 acres were planted along with 202 acres planted in the Fall Creek/ Cayuga Lake Watershed.

18
Farms received cover crop assistance

97
Ag assessments completed

3,103
Acres of cover crops

$107k
Cover crop reimbursement

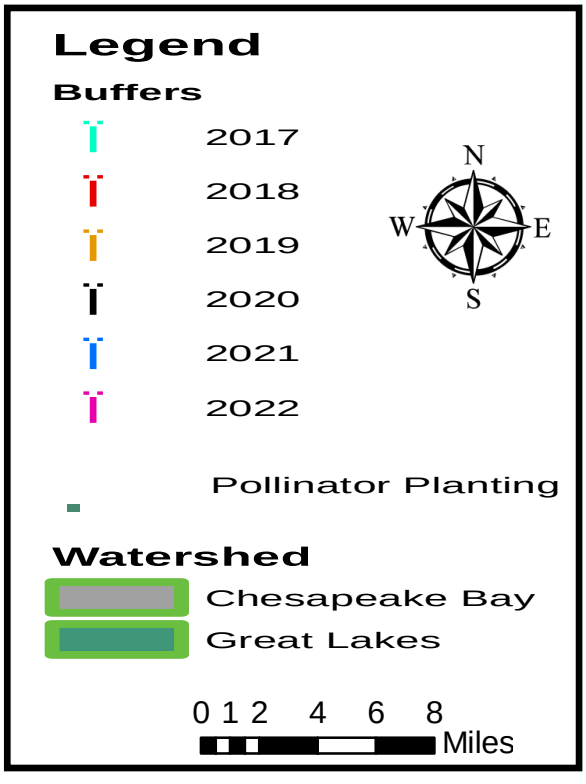
Nearly $1.7 m
in Ag Conservation funding secured for work on 7 farms

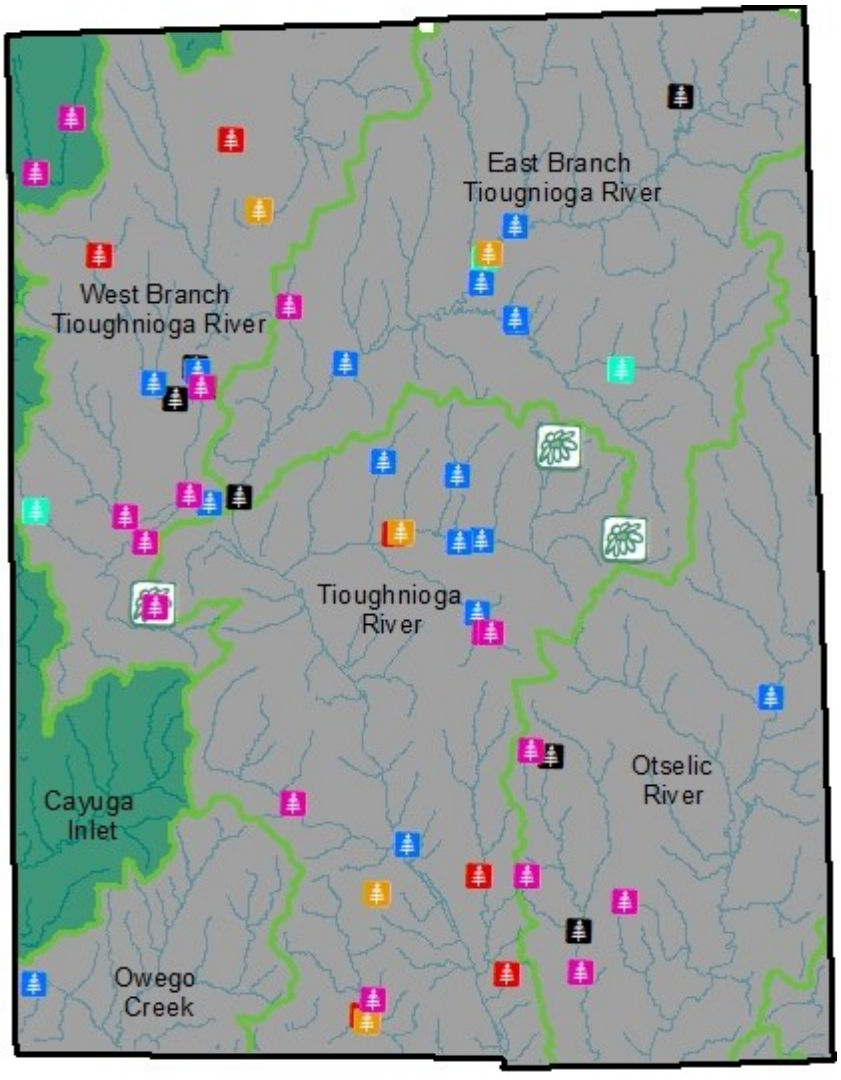
2022 Forestry Program Update

Trees serve a variety of purposes and are planted for many different reasons. Whether planting a buffer, shade trees, wildlife habitat, or for reforesting, the establishment of trees is a conservation practice of "growing" importance as a result of climate change. As trees grow, they remove carbon dioxide from the air, storing carbon in their wood and the soil, and releasing oxygen into the atmosphere. This has a direct effect, as excess carbon dioxide is the primary driver of climate change, and in comparison to many mitigation strategies, tree planting is also relatively inexpensive.

Seedling Sale

SWCD supports tree planting by providing low-cost seedlings to county landowners through our seedling sale. Bareroot seedlings are an inexpensive way to plant large areas. Our sale is held annually starting in January, with distribution in April. Species are selected for a variety of conservation uses and are adapted to Cortland County site conditions. By focusing on native species and offering planting materials in varying quantities, the program is set up to meet the needs of all county landowners, whether they own a quarter acre lot or hundreds of acres. In 2022 over 200 landowners planted over 17,000 seedlings.





Dwyer Park Community Forest Inventory

SWCD received a Community Forestry grant from NYSDEC to develop a Forest Management Plan for Dwyer Park. In 2022 the forest inventory was completed. This provides baseline data about Dwyer Park trees that are in or adjacent to public use areas. The inventory includes species, size, condition, a Risk-Tree Inventory and an analysis of ecological values these trees provide including air pollution removal, oxygen production, carbon storage and sequestration, temperature modification, avoided runoff, etc. SWCD hired LBS Ecological to perform the work and to develop the forest management plan. Stakeholders include County staff, DEC staff, Friends of Dwyer Park, and Little York Lake Preservation Society. The plan will be complete in early 2023.

Trees for Bees

For landowners interested in planting trees on their property, enhancing habitat for pollinators and other beneficial insects, and helping to fight climate change, SWCD offered a new program in 2022! Those willing to establish at least a one-acre tree and shrub planting to provide long-term forested pollinator habitat were invited to apply. SWCD technical and planning assistance and free planting stock, associated tree shelters, stakes and weed mats were provided to establish forested pollinator habitat. Landowners were responsible for preparing the sites, planting stems and installing the necessary tree shelters and weed mats. A 10-year operation and maintenance agreement was required to help improve plant survival. Three landowners participated resulting in the implementation of 4.8 acres of tree planting.

Buffers

A riparian forest buffer is an area adjacent to a stream, lake, or wetland that contains a combination of trees, shrubs, and/or other perennial plants. This land area can be managed to provide numerous conservation benefits. Buffers can improve soil health, remove harmful nutrients and contaminants, create healthier stream ecosystems by improving water quality and providing shade, shelter, and food for aquatic organisms, while simultaneously reducing flooding and erosion through improved cover and soil health. Buffers also improve recreation opportunities (fishing, hunting, hiking, etc.) and enhance property values. Not only are trees aesthetically pleasing, but they provide health benefits including improved air quality. Riparian buffers can also be managed to include a harvestable crop along with the conservation benefits. SWCD worked with 15 landowners to install nearly 25 acres of buffers in the county.

To promote the long-term functionality of riparian areas for water and habitat quality, we support a buffer steward program. Each summer a Conservation Aide is hired to monitor and maintain recently installed buffers. In 2022 the buffer steward program involved 35 sites and over 145 acres of buffer. Monitoring data is now captured via electronic means utilizing Survey 1-2-3 to facilitate data reporting to funders.

200
Landowners planting trees and shrubs

17,535
Tree and shrubs sold

4.8
Acres of pollinator forest habitat planted

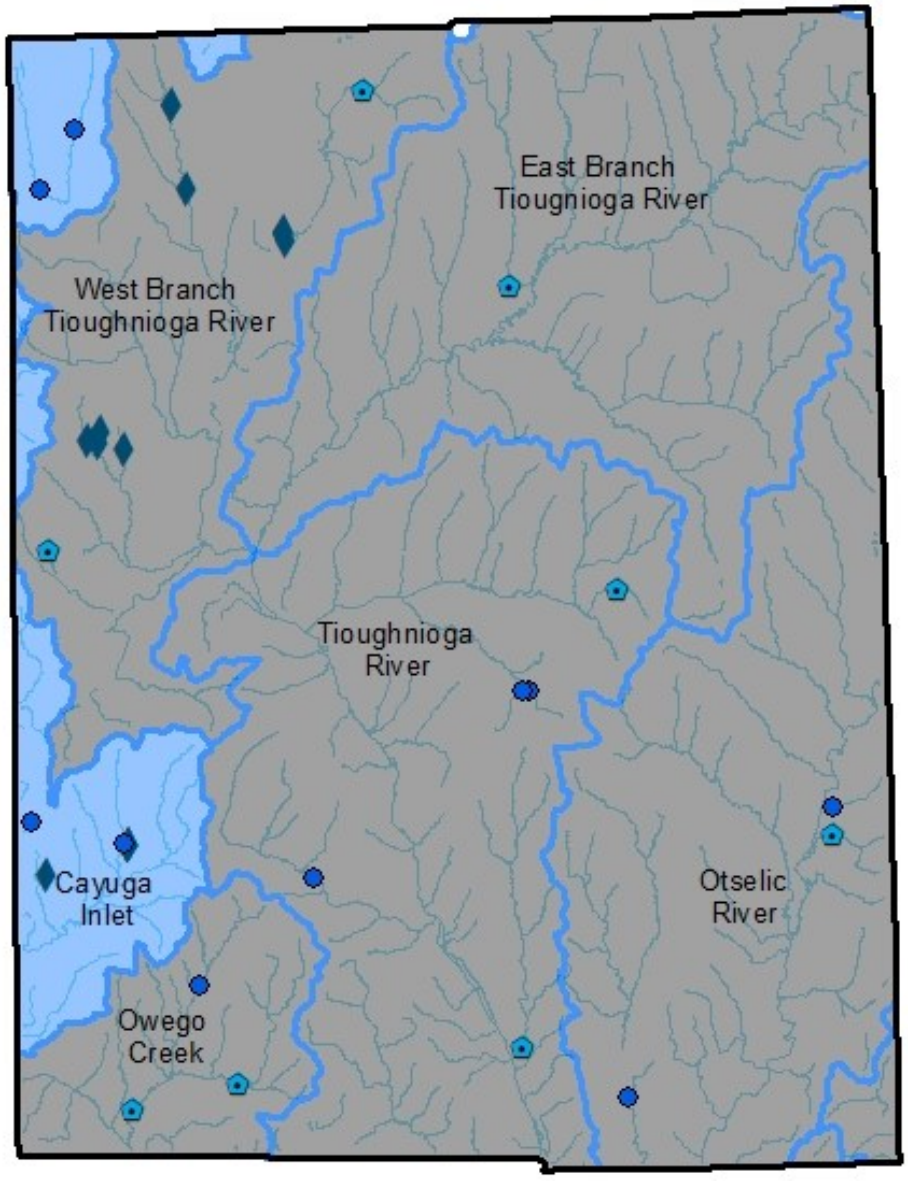
145
Acres of buffers monitored

3,493
Trees inventoried at Dwyer Park

2022 Stream Program Update

Staff have been very busy studying and learning about our county streams this year…

Some of our newer staff attended training for the North Atlantic Aquatic Connectivity Collaborative, also known as NAACC, a field based assessment and data collection tool utilized for assessing aquatic organism passage at culvert crossings. A majority of our district staff are now NAACC trained and have been actively completing culvert assessments for the purpose of identifying priority sites where culvert restoration may be needed to improve fish habitat. Approximately half of the just over 1000 county-wide structures have already been assessed since SWCD started participating in the program in 2017. In addition to the NAACC training, some of our more seasoned staff are busy working with the Upper Susquehanna Coalition Stream Team receiving stream stabilization and restoration design training.



Permits

SWCD staff frequently meet with landowners on their property to provide technical assistance on a variety of natural resource related issues. Streambank erosion and the associated property damage from flooding related issues is one of the most common technical assistance requests we receive. In 2022, SWCD assisted 29 landowners and/or municipalities with the preparation of NYS Department of Environmental Conservation and/or US Army Corp of Engineers stream permit applications.

Stream Projects

The 2022 summer construction season was active with the completion of 10 municipal stream corridor restoration projects. Initial site selection was based on a multi-barrier assessment approach focusing on three criteria: aquatic organism passage, culvert capacity and culvert condition. Locations with poor aquatic organism passage often impede fish access to upstream spawning areas and fragment stream habitats. Undersized culverts have the potential to cause flooding and streambank erosion. Poor culvert condition can lead to safety issues and compromised infrastructure. Those sites determined to be a high priority for both SWCD, the Towns and/or the County were selected to pursue implementation.

Sites were surveyed and designed by staff with construction implementation being installed by either town or county highway departments. Streambank stabilization was implemented at all 10 sites, with 5 of the sites requiring full culvert replacements. Over 3,300 ft. of streambank stabilization was installed with associated habitat improvement structures. Riparian forest buffer plantings were also installed at a majority of the sites to further improve the surrounding habitat.

Funding for these sites was provided through a combination of local, state, and federal grants, as well as funding sources including NYSDEC Water Quality Improvement Project grants, Finger Lakes-Lake Ontario Watershed Protection Alliance, Skaneateles Lake Watershed Agricultural Program, Upper Susquehanna Coalition, National Fish and Wildlife Foundation – Sustain Our Great Lakes, American Rescue Plan, and FEMA.

29
Stream permits

3,300
Linear feet of streambank stabilization

2
Stream trainings hosted

117
Water quality technical assistance requests

Before — Hewitt Rd, Grout Brook, Town of Scott. Previous culvert was in poor condition and had 2.7' elevation drop at the outlet preventing fish from moving up stream.

After — Hewitt Rd, Grout Brook, Town of Scott. New Culvert is enlarged and submerged, allowing for increased flow capacity and aquatic passage, reconnecting over 6 miles of upstream fish habitat.

2022 Water Quality Update

Stormwater Management

Stormwater is rain or snowmelt and includes any contaminants such as nutrients, sediments, metals or oils picked up by the stormwater as it flows across the land. When the land surface is changed from soil and vegetation to an impervious surface such as roofs, asphalt, or concrete, rainwater is unable to soak into the ground. This means more rainwater accumulates on the land and runs off onto surfaces downhill, which may also be paved with impervious surfaces. In urban areas and even in lower density suburban areas, excess stormwater can cause water quality degradation, flooding and erosion. Flooding associated with increased impervious areas has happened already but it is expected to get worse with climate change as we experience larger storms. In some cases, land conversion to impervious surfaces is regulated by local municipalities to ensure that flooding does not harm downhill landowners, municipalities or the natural environment.

The District has a formal arrangement with the Town of Cortlandville to implement a portion of its stormwater ordinance, in which we review proposed projects and manage their stormwater facility inspection program. Each year, we inspect approximately one-third of the 40+ constructed facilities that have post-construction stormwater management facilities on the property to ensure they are being maintained and are functioning properly. These facilities are designed to treat stormwater for water quality and then infiltrate or control release of the stormwater volume so flooding of other properties does not occur.

In 2022, we reviewed two proposed projects and inspected 16 properties within the program. In addition, all facilities are required to submit annual self-reporting documentation; the district compiles this information into an annual report that includes general and facility-specific recommendations.

We also advise other municipalities, private landowners and developers, upon request, on stormwater management to avoid causing water quality or flood impacts. In 2022, we conducted an extensive review of a proposed solar array installation on behalf of the City of Cortland.

Another of our stormwater activities is the training of contractors and others who engage in soil disturbance activities such as construction. Under NY State stormwater regulations, an employee must be onsite daily who is certified to ensure that erosion and sediment control practices are in place and functioning properly. Our District is authorized by the NYSDEC to conduct this training. In 2022, we held two training classes and certified 69 contractors and municipal employees.

CSLAP

The District supports the Cortland County, Citizen Statewide Lake Association Program (CSLAP) on four county lakes by providing financial and technical assistance. Tully, Song, Little York and Melody lakes have CSLAP volunteer teams that monitor water quality annually.

Aquatic Invasive Species

Each summer, District boat stewards educate recreational boaters at lake and river access points. These stewards ensure that boaters understand the importance of controlling aquatic invasive species and the role they must play in ensuring that they do not transport these species amongst waterways attached to their boats or trailers. In 2022, District staff engaged with over 100 boaters. The District also provides significant financial support to County Lake Associations in their efforts to control aquatic invasive species. Management efforts may include removal of plant material from the lake (weed harvesting) or targeted chemical treatment. In 2022, 85 tons of aquatic invasive species and other plants were harvested from Little York Lake and Tully Lake. The District also maintains a boat cleaning station at Dwyer Park on Little York Lake.

Water Quality Monitoring and Sampling

The District conducts monitoring and sampling activities that vary somewhat year to year. Annually, we assist Cortland County with required water monitoring of the county solid waste landfill. This monitoring program is extensive and is designed to protect public health by ensuring that no contaminants leave the landfill property. Sampling includes all three landfills on the property, West Side, Pinetree and Towslee. Groundwater monitoring wells and surface water are sampled quarterly and adjacent residential wells and leachate are sampled one to two times each year. A total of 53 sites are sampled each year. In addition, the District handles all laboratory service contracting and management, data analysis and reporting.

Hydroseeding

Hydroseeding provides a quick, easy and affordable way to vegetate large areas, controlling soil erosion and protecting water quality. Hydroseeding accomplishes this through an application mixture containing water, mulch and grass seed. The mix is sprayed over bare soil and grows into a thick stand of grass. The District provides hydroseeding services to municipalities and on other public projects for conservation purposes. In 2022, 22 projects including 6 acres of critical areas and 4,241 feet of ditches were hydroseeded.

85
Tons of aquatic invasive species and other plants harvested

4,241
Feet of ditches hydroseeded in over 22 projects

69
Contractors and municipal employees certified in Erosion and Sediment Control

75
Attendees to 7 septic maintenance workshops

46
Volunteers collected a dumpster worth of trash from 6 waterbodies in in 2022

2022 Education and Outreach Update

Envirothon

The Envirothon is a competition for high school students centered around environmental education. Teams of high school students are tested in Aquatics, Forestry, Soils, Wildlife, a Current Environmental Issue and a Problem Solving - Oral Presentation. They share in the decision making process and compete at the county level. The winning team then progresses to the state level competition. The winning state team advances to compete at the international level.

River Clean-Up

The District sponsors an annual River Clean-Up event, in which volunteer teams remove trash from local waterways. In 2022, 46 volunteers filled a dumpster full of trash collected from 6 waterbodies in Cortland County. The District coordinates the one-day event and collects donations from our businesses to help with supplies and proper waste disposal.

31st Annual Water Festival

The 31st Cortland County Water Festival was held on Saturday, June 4, 2022 at the Cortland Water Works. We had a great turnout, with over 380 people attending the festival to enjoy the displays, events and activities that focus on aquatic invasive species, water pollution, groundwater, water quality monitoring, forested stream buffers, watershed management, amphibians, reptiles, NY fish and more. Over 27 volunteers, agencies, organizations, and businesses participated to make this event possible. The Water Festival is a fun event spent learning about our water supply and water resources.

Septic Maintenance Workshops

The District conducted 7 septic system maintenance workshops in 2022. Cortland County homeowners were issued a redeemable $100 coupon to put toward septic system maintenance for their participation and 59 of these coupons were distributed as a result . The workshops focused on how homeowners can better manage their septic systems, including how a system functions, current system standards, maintenance requirements and schedules, trouble shooting, and system failures. Homeowners received a packet to help them with their own septic system maintenance. The workshops were sponsored by Cortland County Soil and Water Conservation District with support from the Cortland County Health Department and funding from a Clean Water Infrastructure Act/Environmental Protection Fund Water Quality Improvement Project Grant administered by New York State Department of Environmental Conservation.

Conservation Field Days

Conservation Field Days provide an educational opportunity for local 6th grade students to gain an appreciation for our natural environment and the need for continued conservation efforts. This two day, fall event is sponsored by the Cortland County SWCD and held at 4-H Camp Owahta. In 2022, 19 6th grade classes attended, participating in presentations related to aquatic invasive species, wetlands, firearm safety, maps and compasses, boating and water safety, forestry and ecology, wildlife and green energy, just to name a few.

NYSCDEA Community Service Award

Shawn Murphy, Natural Resource Conservationist, was recently recognized with the Community Service Award by the NYS Conservation District Employees' Association, Inc. Murphy was recognized at the Annual Association Banquet for his dedication to the Conservation District community and for his efforts in the community he calls home. He is a Rod and Gun Club member, Scout leader, has coached youth sports, church volunteer, school volunteer, congregation leader and Interfaith Community effort co-founder. He could be found installing flags for Memorial Day, cleaning up road sides, packing life-saving meals, creating greeting cards for the elderly, cooking chicken at a BBQ fundraiser, decorating at a senior housing facility, resetting lights at a play, camping with scouts, planning dinners, giving a pint of blood – one of almost four gallons given to the Red Cross – and much more. The quintessential volunteer, Shawn has repeatedly organized, lead, sponsored, participated, and given to the children, hungry, health, environment, and faith in his community earning him the recognition of the Association and his peers.

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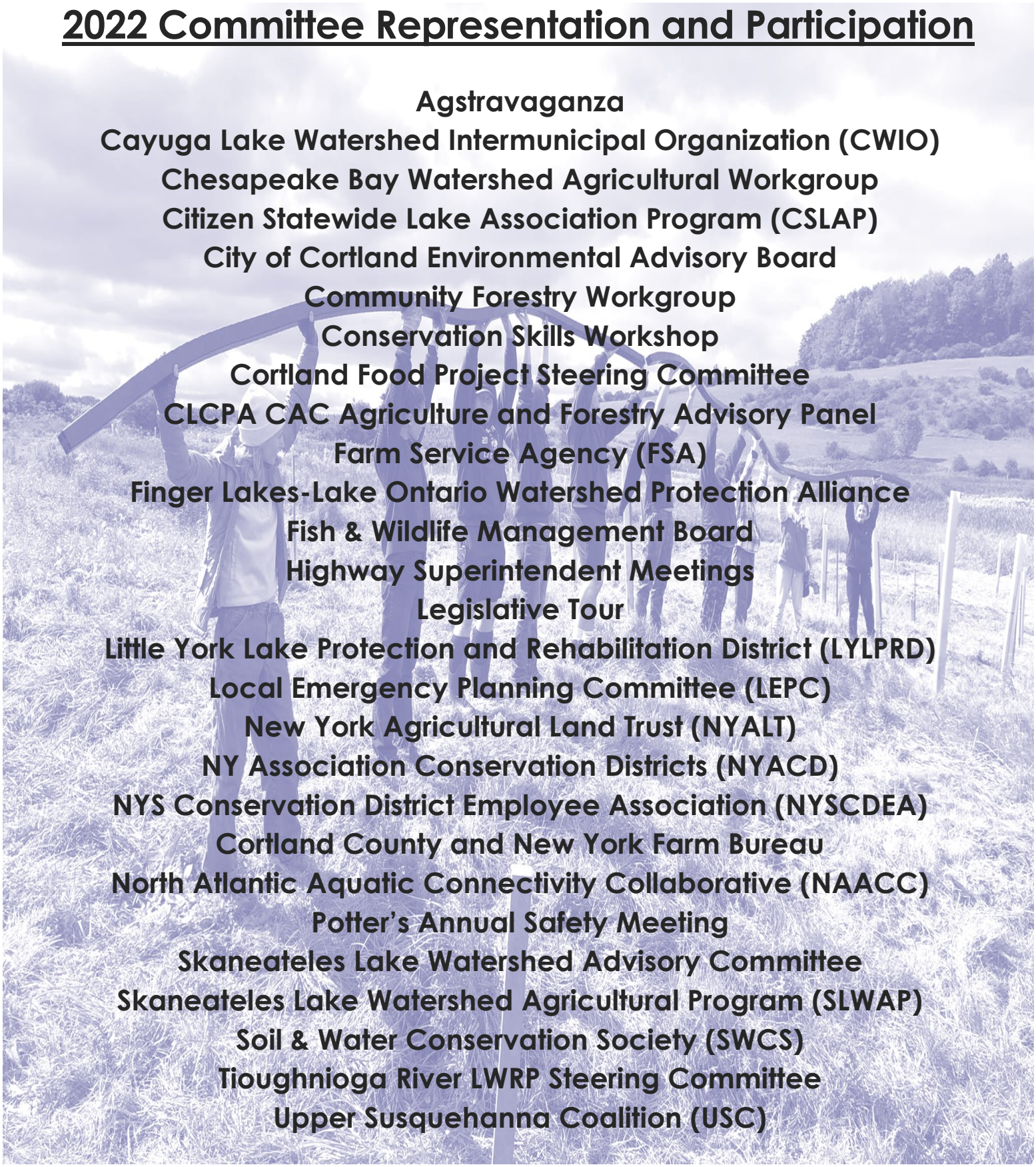
2022 Committee Representation and Participation



Agstravaganza
Cayuga Lake Watershed Intermunicipal Organization (CWIO)
Chesapeake Bay Watershed Agricultural Workgroup
Citizen Statewide Lake Association Program (CSLAP)
City of Cortland Environmental Advisory Board
Community Forestry Workgroup
Conservation Skills Workshop
Cortland Food Project Steering Committee
CLCPA CAC Agriculture and Forestry Advisory Panel
Farm Service Agency (FSA)
Finger Lakes-Lake Ontario Watershed Protection Alliance
Fish & Wildlife Management Board
Highway Superintendent Meetings
Legislative Tour
Little York Lake Protection and Rehabilitation District (LYLPRD)
Local Emergency Planning Committee (LEPC)
New York Agricultural Land Trust (NYALT)
NY Association Conservation Districts (NYACD)
NYS Conservation District Employee Association (NYSCDEA)
Cortland County and New York Farm Bureau
North Atlantic Aquatic Connectivity Collaborative (NAACC)
Potter's Annual Safety Meeting
Skaneateles Lake Watershed Advisory Committee
Skaneateles Lake Watershed Agricultural Program (SLWAP)
Soil & Water Conservation Society (SWCS)
Tioughnioga River LWRP Steering Committee
Upper Susquehanna Coalition (USC)