

NEW YORK STATE | Department of Environmental Conservation

Chesapeake Bay Riparian Buffer Action Strategy for New York

UPPER SUSQUEHANNA AND CHEMUNG WATERSHEDS

JULY 2022

Kathy Hochul, Governor | Basil Seggos, Commissioner

Contents

Prepared by:

DEC's Bureau of Water Resource Management

Upper Susquehanna Coalition

Cover photographs by:

Top left and top right by Michael Ludgate

Top middle photo by Chenango County Soil and Water Conservation District

Bottom photo by Will Parsons, Chesapeake Bay Program

Current Effort

Based on the targets set in New York's Phase III Watershed Implementation Plan (WIP), New York plans to implement 2,606 acres of forest buffer and 1,020 acres of grass buffers in the agriculture sector by 2025. In the urban sector, New York plans to implement 3,095 acres of forest buffer and 1,853 acres of tree planting by 2025. Table 1 shows the current progress in 2021 towards achieving riparian forest buffer targets, the percent achieved, and acres remaining.

Best Management Practice	2021 Progress (acres)	WIP III (acres)	Percent Achieved	Acres Remaining	Acres Needed per Year
Pasture Forest Buffers	2,049	3,543	58%	1,494	373.5
Pasture Grass Buffers	1,159	1,815	64%	656	164
Cropland Forest Buffers	1,520	2,124	72%	604	151
Cropland Grass Buffers	235	776	30%	541	135
Urban Forest Buffers	36	3,132	1%	3,096	774

Opportunities for Implementation

Participating Partners

New York's key partners in buffer implementation are the Department of Environmental Conservation (DEC), Department of Agriculture and Markets (AGM), Upper Susquehanna Coalition (USC), and Soil and Water Conservation Districts (SWCD). Partners to be further engaged include Farm Service Agency (FSA), National Resources Conservation Service (NRCS), National Fish and Wildlife Foundation (NFWF), United States Forest Service (USFS), local communities, nongovernment organizations, land trusts, members of the Climate Action Council, as well as private companies, and colleges and universities.

Strategy for Implementation

As outlined in the Phase III WIP, New York proposes the following strategies to improve its riparian buffer delivery including increase voluntary implementation, explore new funding strategies, sustaining motivation and continuing to support technical capacity. These strategies will require flexible funding that can expand and continue existing programs and also require continues coordination between partners to provide consistent technical service. Execution of these strategies will require collaboration among partners, as well as consistent funding Lead partners have been identified for each strategy, though partners responsible for final execution of these initiatives may vary and is dependent on available capacity and funding.

The USC utilizes a regional watershed-based program delivery system that engages 22 SWCDs (18 in New York and 4 in Pennsylvania) and associated partners, in the headwaters of the Susquehanna River Basin. Their approach and delivery mechanism have led to a strong conservation community and a network of resource professionals that work to address priority resource concerns. The USC's primary focus is to address water quality and quantity issues through Best Management Practice (BMP)

installation, leading to habitat improvements and other co-benefits within the watershed. Over the past 25 years this approach has been fine-tuned to provide watershed focused technical expertise and scientifically sound approaches to BMP implementation, improving conditions locally and in the Chesapeake Bay. The USC is seen as a leader in shaping programming, as demonstrated by the recognition of our influence on stream, wetland, riparian buffer, and tree planting programs at both the regional and national scale. Efforts are dedicated to supporting watershed management, residents and wildlife locally, but also to assisting in the achievement of the Chesapeake Bay Watershed Implementation Plan, developed by DEC, and in response to the Total Maximum Daily Load as allocated by the United States Environmental Protection Agency (EPA), Chesapeake Bay Program.

Increase Voluntary Implementation

Declining net farm incomes in New York will continue to present a challenge regarding encouraging voluntary BMP implementation. Cost share rates for state and federal programs have remained unchanged, even though cost share rates have become unaffordable for many farmers in New York. Both state and federal programs need to be reassessed in terms of reducing the required farmer cost-share. Matching multiple sources of funding should be considered to reduce the farmer cost share as much as possible. DEC has begun the process with the USC to pilot a reduced cost-share program, which will pair Chesapeake Bay Implementation Grant (CBIG) funding with projects funded under the AgNPS program.

Federally funded programs in New York include the Conservation Reserve Program (CRP), which enrolled 0 new acres of riparian forest buffer in 2020. While this program provides plenty of financial incentive to entice landowners to sign up, the bureaucracy and lack of priority of the United States Department of Agriculture (USDA) to implement buffers often drives landowners to give up on the program and practice all together. Better coordination between the USDA and USC may lead to landowners being presented multiple program opportunities and finding the best fit for each individual landowner. Providing flexible programs to landowners will increase voluntary adoption of the practice.

Yearly, the USC offers the DEC's Trees for Tributaries (T4T) as a method of practice implementation and for the past two years the program has been fully prescribed. Increasing opportunities for all landowners to be engaged in riparian restoration should be a strategy for increasing practice adoption.

Financial incentive programs for specific BMPs have been piloted in New York and are critical to making implementation financially feasible for farmers. DEC, AGM, and the USC partnered with FSA to deliver the State Practice Incentive Program for riparian forest buffers enrolled in Conservation Reserve Enhancement Program (CREP). Other Chesapeake Bay states (including Pennsylvania and Virginia) have successfully implemented BMP tax credit programs, where agricultural producers are provided a credit towards state income tax for a percentage of out-of-pocket expenses spent on installation of agricultural BMPs or purchasing of specialized equipment to reduce nutrient and sediment runoff. New York has a similar Forest Tax Law that provides tax incentives to forest landowners who implement forest management plans. New York should explore the potential for creating a similar tax credit program for agricultural BMP implementation.

Explore New Funding Strategies

While Total Maximum Daily Load (TMDL) watersheds are typically prioritized in existing state and federal funding programs, agricultural implementation projects located in the Chesapeake Bay watershed must compete against many other water quality needs and initiatives statewide. There are currently no state funding streams dedicated directly to agricultural implementation in the Chesapeake Bay watershed. The

SWCC ruled against direct funding to a single watershed and instead assign projects in a TMDL watershed additional points in the AgNPS competitive grant application More of the current programs available could be expanded to prioritize riparian buffer restoration and potentially include an incentive payment for riparian forest buffers. Furthermore, the USC competes with partners throughout the Chesapeake Bay watershed for funding for riparian restoration from entities like the National Fish and Wildlife Service. Given that there is a buffer implementation workload with lack of funding for project implementation demonstrates that this BMP can and will be adopted by landowners. What is needed to continue with project implementation is program consistency and sustainability.

Potential funding strategies were identified by the Environmental Finance Center at the University of Maryland in partnership with Syracuse University Environmental Finance Center and published in their report “Strategies for Financing Chesapeake Bay Restoration in New York State”. Strategies identified in the report that are applicable to the agricultural sector include directing a greater share of existing state water quality funds to the watershed, including dedicating a portion of the Environmental Protection Fund (EPF) to the Chesapeake Bay restoration effort and ensuring the Fund’s long-term stability.

In November 2020, Chesapeake Watershed Investments for Landscape Defense (WILD) Act was signed into law and created a $15 million grant program for carrying out coordinated restoration and protection activities, which includes riparian buffer implementation and restoration.

The Susquehanna River Basin Commission supports priority water resources needs through the Water Resource program. The 2019-2021 program includes Restore Impaired Waterways and the Chesapeake Bay. Future programs could include incorporating implementation of riparian buffers to address flood resiliency.

Current Programs

Upper Susquehanna Coalition Programs:

a. **Trees for Tributaries (T4T) Program:** The USC coordinates this state funded program on behalf of DEC, described further below, within the USC geography. Additional capacity funding from EPA via the DEC is used to support this program. The USC plants 5,000 plants with this program each year on roughly 30 acres of riparian area. Landowners vary in size and land use characteristics with most projects being 1 acre or under in size. Volunteers often participate with Trees for Tributaries projects.

Figure 1 Trees for Tributaries Buffer

b. **Water Quality Program:** The USC’s regional delivery method is referred to as the USC Water Quality Program. This program seeks to offer financial compensation and resource assistance (planning, design and plant material) to increase the implementation and restoration of riparian forest buffers, wetlands, stream corridor rehabilitation, and associated water quality BMPs through conventional, as well as new programs. This program has proven to be both innovative and successful for the USC, based primarily on the fact that we focus on local interest and need (flooding, erosion, stream instability from flood and cattle), which targets both nutrients and

sediment. This allows for the USC to let local stakeholders identify needs. USC member districts and conservation partners projects are supported through this funding. Projects are funded according to ranking criteria. USC staff are engaged at many levels of project implementation, including initial site visits, planning, and implementation. Projects contain a riparian restoration aspect. Project examples include:

- Stream bank and/or channel stabilization that incorporates natural stabilization techniques,
- Riparian restoration including plants, and planting materials (tubes, herbicide spray, stakes, etc.), site preparation, post-planting establishment activities, cattle exclusion, and prescribed grazing practices.
- In stream habitat improvement
- Floodplain connectivity (i.e. berm or obstruction removal)
- Watershed reforestation, focusing on floodplain, and areas suitable for stormwater attenuation.
- Wetland restoration such as restoring site specific hydrology, reducing agricultural impacts, and plantings.

c. **Natural Filter Protection Program:** The USC's Natural Filter Permanent Protection Program seeks to restore riparian and wetland areas on permanently protected lands as well as provide financial support for permanent protection through conservation easement or purchase. This program is vital to overcoming barriers associated with placing conservation easements on properties throughout the watershed. Through the Natural Filters Program, the USC assists with protecting target areas at a faster pace. We seek to further develop this program to prioritize land protection on sites that have significant potential for wetland, riparian, and floodplain restoration, and also to focus on state owned lands to restore riparian areas and to protect them from future impairment. Having already identified several opportunity areas for riparian restoration on state owned land, staff capacity and implementation funding is needed to develop to move the potential projects forwards. Also, in alignment with state climate goals, the USC will seek to reforest areas permanently protected so as to contribute to state carbon sequestration goals. Project examples include:

   - Funding for conservation easement transaction costs. For example, partner land trusts are often able to secure an easement donation by a landowner but may not have funding to cover transactional costs associated with placing that easement.
   - Providing a payment for ecosystem services to encourage placement of a conservation easement.
   - Purchase property with significant natural filter restoration opportunity.

d. **Buffer Steward Program:** This program has been a vital part of monitoring for plant survival and for maintaining riparian areas throughout the watershed. Developed in 2016, the USC coordinates riparian buffer stewards throughout the watershed to focus on maintaining established riparian planting projects planted within the past 5 years. Collectively, the stewards monitor over 600 acres of riparian plantings each year and coordinate management activities on at least 400 acres. Management activities include replacing or reinstalling materials, replanting, and performing vegetation management.

State opportunities available for agriculture and urban buffers and plantings:

a. **Agricultural Environmental Management (AEM) Base Program:** The AEM Base Program is administered by New York's Soil and Water Conservation Committee (SWCC) and provides non-competitive technical assistance funding to SWCDs to inventory and assess farms in priority watersheds, plan and design BMPs, and evaluate effectiveness of planning and BMPs on priority farms based on County AEM Strategic Plans and Annual Action Plans. Tier 4 implementation track that will pay for RFB implementation at 87.5% cost share up to $50,000.00. Through AEM you can utilize the forest buffer monitoring/establishment planning tool for districts to use for previously planted buffers. This applies to farmland only.

b. **Agricultural Nonpoint Source Abatement and Control (AgNPS) Program**: The AgNPS program is a competitive financial assistance program administered by the SWCC that assists farmers in abating and preventing water pollution from agricultural activities by providing technical assistance and financial incentives. SWCDs are the only entities eligible to apply for AgNPS funding. Funding is used to plan, design, and implement priority BMP systems, including cost-share funding to farmers. Farmers are eligible to receive between 75% and 87.5% of BMP implementation costs depending on their contribution to the project.

c. **Climate Resiliency Farming (CRF) Program**: The CRF Program is a new competitive grant program administered by the SWCC 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 CRF Program operates with three distinct tracks, in recognition of the different applications and benefits of various BMP systems for mitigation and adaptation: Manure Storage Cover and Flare Systems (Track 1), Water Management Systems (Track 2), and Soil Health Systems (Track 3). Forest buffers are eligible practices for Track 2 and Track 3. SWCDs are the only entities eligible to apply for CRF funding.

Figure 2 Willow growing in a riparian buffer

d. **Trees for Tributaries (T4T) Program**: Since 2007, DEC's Trees for Tributaries Program has been working to reforest New York's tributaries, or small creeks and streams, which flow into and feed larger rivers and lakes. The goal of the program is to riparian buffers in order to prevent erosion, increase flood water retention, improve wildlife and stream habitat, as well as protect water quality

e. **Environmental Justice Grant Program:** DEC's Office of Environmental Justice offers Community Impact Grants to provide community-based organizations with funding for projects that address various environmental and public health concerns. The program has a focus on low-income and minority communities that have historically been burdened by environmental problems. More than $5 million in 145 grants to organizations statewide that have made exceptional improvements in the communities they serve. Projects that have been funded include research, community

gardens, tree plantings, education and curriculum development, urban farming training, habitat restoration, water quality monitoring, air quality monitoring and more.

f. **Urban and Community Forestry Grant Program:** DEC's Division of Lands and Forests offers grants that provide support and assistance to communities in comprehensive planning, management, and education to create healthy urban and community forests. Eligible projects Include tree inventories and management plans; tree planting, maintenance and education programming. Funds are made available from the New York State Environmental Protection Fund. Grants of up to $75,000 are available per community.

g. **Local Waterfront Revitalization Program:** New York Department of State (DOS) provides matching grants on a competitive basis to eligible villages, towns, cities, and counties located along New York's coasts or designated inland waterways for planning, design, and construction projects to revitalize communities and waterfronts. Green infrastructure and stormwater retrofit projects are eligible under this grant opportunity.

h. **Water Quality Improvement Project (WQIP) Program:** DEC administers the WQIP program, a competitive, reimbursement grant program that funds projects to address documented water quality impairments. Non-agricultural non-point source grants are provided through the program, including funding for green infrastructure, road ditch stabilization, and riparian buffers.

i. **Five Start and Urban Waters Restoration Grant:** NFWF offers grant funding for projects that address water quality issues in priority watersheds, such as erosion due to unstable streambanks, pollution from stormwater runoff, and degraded shorelines caused by development. Ecological improvements may include one or more of the following: wetland, riparian, forest, and coastal habitat restoration; wildlife conservation, community tree canopy enhancement, water quality monitoring, and green infrastructure best management practices for managing run-off. Awards range from $20,000 to $50,000.

j. **Climate Smart Communities Grant Program:** The Climate Smart Communities (CSC) grant program provides funding for municipalities to perform inventories, assessments, and planning projects that advance their ability to address climate change at the local level and become certified Climate Smart Communities. Eligible adaptation projects that benefit water quality include: increasing or preserving natural resilience, such as construction of living shorelines and other nature-based landscape features to decrease vulnerability to the effects of climate change and to improve or facilitate conservation, management, and/or restoration of natural floodplain areas and/or wetland systems and extreme-heat preparation, including, but not limited to, establishment of cooling centers, construction of permanent shade structures, and implementation of other cooling features or programs (such as establishing urban tree canopy).

Figure 3 Tree tubes in a riparian buffer

k. **Chesapeake Bay Stewardship Fund:** NFWF offers grant funding each year in the form of Small Watershed Grants (SWG), and Innovative Nutrient and Sediment Reduction (INSR) grants for implementation focused projects to reach bay goals.

l. **Regenerate NY:** The purpose of this grant program is to support the regeneration of forests so they may continue to deliver vital services such as mitigating climate change, protecting air and water quality, and supporting the economy. Landowners can apply for financial assistance for projects on their land that support the establishment and renewal of healthy forests.

USDA Farm Bill Programs available for increasing riparian buffer implementation:

a. **Environmental Quality Incentives Program (EQIP):** EQIP is a program administered by USDA-Natural Resources Conservation Service (NRCS). EQIP assists farm, ranch, and forest production and improves and protects environmental quality and is authorized under the federal Farm Bill. This offers financial and technical assistance to help agricultural producers voluntarily implement conservation practices. To be eligible for funding for practices, farms must have a conservation plan the requirements outline in the National Planning Procedures Handbook. Practices eligible for funding for EQIP include, but are not limited to, Cover Crops, Riparian Forested Buffer and Riparian Herbaceous Buffer, Grassed Waterway, Prescribed Grazing, Waste Storage Facility, Nutrient Management, and Fencing.

b. **Conservation Reserve Program (CRP):** CRP is a voluntary program for agricultural landowners. Through CRP, farmers can receive annual rental payments in exchange for removing farmland from production and establishing long-term vegetative cover for the goal of improving water quality, controlling soil erosion, and increasing wildlife habitat. Annual rental payments are based on the agriculture rental value of the land. Participants enroll in CRP contracts for 10 to 15 years.

Figure 4 Planting site for riparian buffer project

c. **Conservation Reserve Enhancement Program (CREP):** CREP is an offshoot of CRP. CREP is funded in partnership between state and federal governments. In New York, CREP is funded by AGM and USDA. Through the state-federal program partnership, cost-share assistance for up to 50 percent of the participant's costs in establishing approved conservation practices is available. Additional incentive payments are also available for selected practices. Incentive payments can be received at the time of contract enrollment (signing incentive payment or SIP) and after a practice is established (practice incentive payment or PIP). Practices eligible under CREP include riparian buffers, filter strips, wetland restoration, grassed waterways, establishment of permanent grasses and tree planting. In 2016, FSA received a $1 million allocation to increase the signing incentive payments for acres enrolled in CRP and planted as a riparian forest buffer. DEC provided an additional $200,000 in funding as match, which is being directed to farmers in the form of an additional practice incentive payment received after riparian forest buffer establishment. Within CREP there are financial and technical gaps. The USC currently has an agreement with NRCS to perform technical assistance

for the program. However, gaps continue to exist between the USC and USDA on program and planning specifics**.**

d. **Conservation Stewardship Program (CSP):** CSP is a voluntary conservation program that helps producers building on existing conservation efforts. It encourages producers to undertake additional conservation activities while maintaining and managing those existing benchmark conservation activities. The program provides equitable access to all producers, regardless of operation size, crops produced, or geographic location. CSP was changed in the 2018 Farm Bill and existing authorities were combined with EQIP. Riparian forest buffers are included in the wildlife CSP enhancements.

e. **Agricultural Management Assistance Program (AMA):** Through the AMA program, NRCS provides financial assistance funds annually to producers in to: Construct or improve water management structures or irrigation structures; plant trees to form windbreaks or to improve water quality; and mitigate risk through production diversification or resource conservation practices including soil erosion control, integrated pest management, or the transition to organic farming. AMA is available in 16 states where participation in the Federal Crop Insurance Program is historically low, including New York. AMA does not have the same irrigation history requirement as EQIP.

f. **Agricultural Conservation Easement Program (ACEP):** The Farm Bill of 2014 established ACEP and repealed the Wetland Reserve Program (WRP), Grassland Reserve Program (GRP), and Farm and Ranch Lands Protection Program (FRPP). ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements component, USDANRCS helps American Indian tribes, state and local governments, and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, USDA-NRCS helps to restore, protect, and enhance enrolled wetlands.

g. **Regional Conservation Partnership Program (RCPP):** The 2014 Farm Bill created RCPP. RCPP encourages partnerships between local, state, or private entities, and NRCS to install and maintain conservation practices in priority projects areas. In New York, conservation practices are implemented by applicants in collaboration with NRCS through the existing EQIP and ACEP NRCS programs. Funding is divided into three pools: 1) State; 2) National; and 3) Critical Conservation Areas. The Chesapeake Bay Watershed is one of eight critical conservation areas that have been identified in the program. In fiscal year 2016, the Upper Susquehanna Coalition was successfully awarded $4.1 million from RCPP to implement practices through EQIP. Farmstead and field conservation practices, such as cover crops, conservation tillage, crop nutrient management, manure storage, precision feed management, grazing, fencing livestock out of streams, streambank stabilization, riparian buffers, and barnyard runoff control are prioritized under the program. The 2018 Farm Bill has made RCPP a standalone program that will have its own direct funding. It contains improvements to make RCPP more efficient and effective and hopes to remove impediments so that NRCS and partners can better manage the program throughout the duration of the agreements.

Other Funding Programs:

a. **Chesapeake Bay Implementation Grant (CBIG):** DEC is the recipient of the Chesapeake Bay Implementation Grant from EPA. This is a non-competitive grant given to jurisdictions covered by

the TMDL to support implementation programs and projects. $1.25 million is allocated to New York on an annual basis. Programs supported by the CBIG contract related to riparian forest buffer implementation include:

- USC Assessment and Maintenance of Riparian Forest Buffers: Funding through this single source purchase order with the USC supported site assessments and maintenance of riparian forest buffers implemented through a variety of state and federal programs. The project term of this purchase order has expired, but DEC will continue to direct funding to this work through the USC Capacity Contract.
- Riparian Buffer Protection and Restoration Competitive Grant Program: DEC released the first round of competitive grant funding in 2017. $ 1 million of funding was available in the first round. Three grants awarded through this program will support local land stewardship programs to purchase land or to permanently protect and restore riparian corridors in the Chesapeake Bay watershed. Additional sub-contracts of the CBIG grant will be considered in order to support Phase III WIP program goals.

b. **CREP State Enhancement Program:** As part of the USDA-FSA Chesapeake Bay Riparian Forest Buffer Initiative of 2015, USDAFSA's New York State office received $1 million of extra funding to increase signing incentive payments to landowners located in the Chesapeake Bay watershed that enrolled in in new riparian forest buffer CREP contracts. USDA-FSA offered additional signing incentive payments of $250-375 per acre, depending on the length of the contract. DEC has allocated an additional $200,000 of CBIG funding as match that was dedicated to a new practice incentive payment. Payments were 5-15 times the soil rental rate, depending on soil type and width of the buffer to be installed. Higher payments will be made to landowners that enroll cropland acres. An amendment to the program was made in 2018, raising the payment multiplier to 20 times the soil rental rate for all acres. Despite the additional incentive funding, enrollment in CREP has remained low.

Technical Assistance

The USC currently offers technical assistance to SWCD's, partners, and landowners for implementing buffers through supporting two full-time USC Buffer Team members to deliver new and existing buffer implementation programs. In addition to the full-time USC staff, staff within USC member SWCDs have the expertise to plan and implement riparian buffers but commonly lack the funding support to do so. Currently, the USC has funding (through DEC and AGM) to provide to SWCD district members for riparian buffer plan design, leading to an increase in Trees for Tributaries and non-farm projects throughout the watershed. Since riparian restoration is important for water and habitat quality off-farm, providing sustained funding for planning activities throughout the watershed should continue to lead to an increase in riparian restoration.

The USC Buffer Team also runs a Buffer Steward Program that supports a team of buffer stewards that educates landowners, and maintains and assesses buffers throughout the watershed to determine plant survival and management needs. Management activities may then be facilitated on behalf of landowners. Increasing the capacity of the USC Buffer Team to continue to run the Buffer Steward Program is crucial to reach the goals set in the WIP.

The USC continues to contribute riparian forest buffer technical assistance for CREP through multiple funding sources, however this requirement stifles progress for buffer implementation as CREP

implements few acres of riparian buffer and does not provide much support towards meeting WIP goals within New York. Currently, some USC Buffer Team staff is supported through the US Forest Service where work should be focused on assisting CREP.

Technicians working on riparian forest buffer implementation can plan and implement projects at a higher rate when prioritizing other programs. Funding USC member SWCD technical assistance, rather than NRCS and FSA technical assistance, to directly work on riparian restoration would increase the rate of implementation. Continuing to provide funding for USC technical assistance is important for reaching the targets set in our WIP.

DEC has stewardship foresters in each region who are available to advise landowners on forestry practices including afforestation. Foresters can write management plans for landowners, connect them to professionals, and provide technical assistance on projects.

Opportunity Analysis

A GIS analysis has been completed using the high-resolution land use data from the Chesapeake Conservancy to identify the amount of opportunity for buffer implementation throughout the watershed at a HUC 10 scale. An example of the 1-meter high resolution land use is shown in Figure 1. A riparian management zone area was developed using a 30-meter buffer around waterbodies and streams. Figures 2 and 3 show the areas of the watershed that have the highest amount of agriculture and turfgrass within the riparian area for each HUC 10.

The greatest opportunities for buffer implementation are in areas where multiple partners are active and are promoting buffer implementation. Currently the most implementation has occurred in the eastern portion of the watershed. Opportunities exist within the western portion of the watershed, but with few active partners progress has been slow.

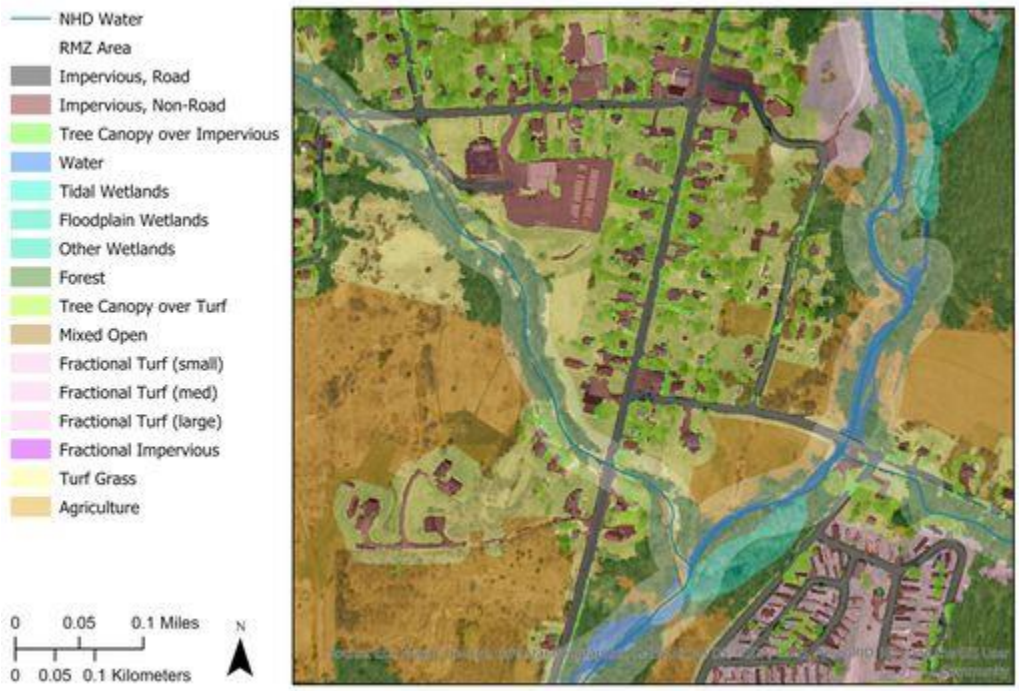

Figure 5 Example of the high-resolution land use and riparian management zone used to determine buffer opportunities.

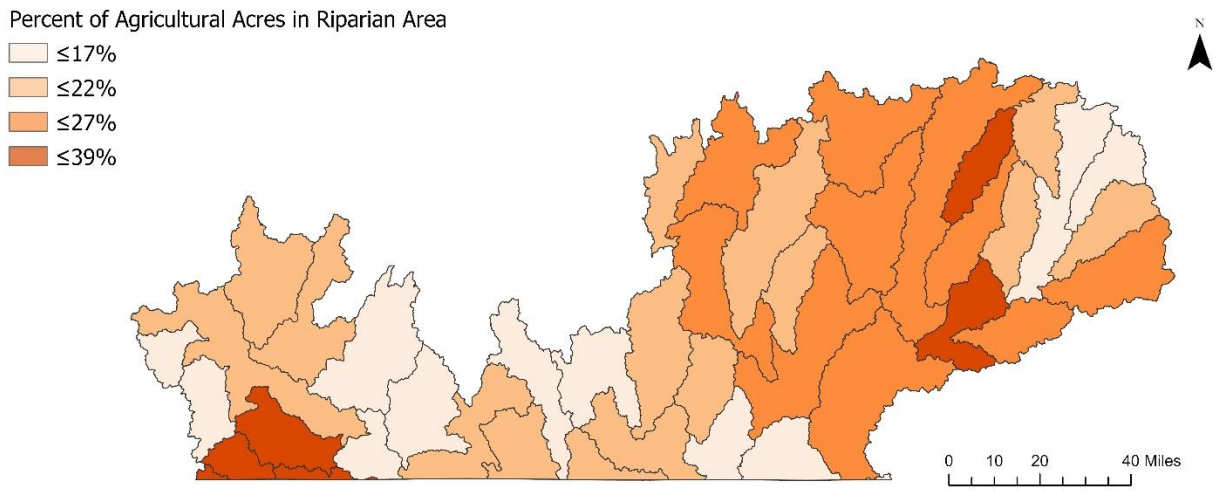

Figure 6 Map showing percent of agricultural acres in the riparian management zone area for each HUC 10

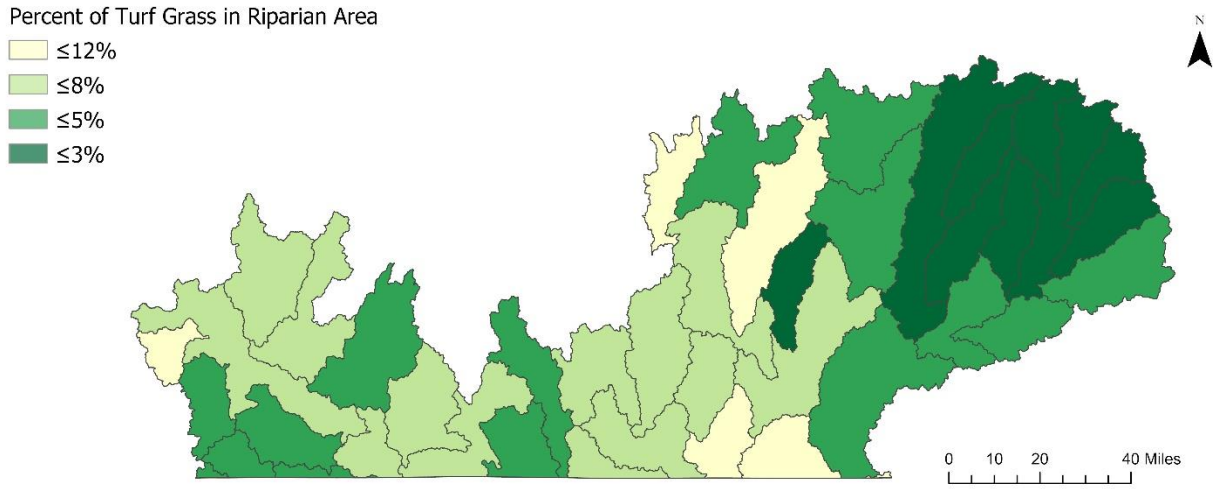

Figure 7 Map showing percent of turfgrass acres in the riparian management zone area for each HUC 10

Riparian Buffer Maintenance and Verification

As described in New York's Chesapeake Bay Nonpoint Source Quality Assurance Project Plan, after the first initial inspection of the riparian buffer, the Upper Susquehanna Coalition conducts follow up whole-farm verification on agriculture riparian buffers using a statistical subsample of BMPs annually. Verification inspections are completed by County Conservation Districts, NRCS staff, Certified AEM planners, or DEC inspectors. Urban forest buffers are inspected by the USC Buffer Team using a random sample of 5% of all projects.

In addition to the 5% requirement for verifying projects, the USC Buffer Steward Program strives to be on site yearly for all projects implemented within a 5-year time period. The program is set up to see landowners through what is referred to as the establishment period. These visits lead to recording verification of these sites annually.

Support Needed

The largest need is continued funding for technical assistance and project implementation of riparian buffers. Ideally, this funding would be flexible so as to result in more successful implementation acres. The USC is currently seeking opportunities to work with municipalities to create ways for them to implement riparian forest buffers on non-residential lands and lands outside of the agricultural sector. An opportunity exists for tree planting and buffer implementation in developed areas that are outside of regulated municipal separated stormwater sewer service (MS4) areas.

With each project different circumstances exist, both from a financial as well as an environmental standpoint, furthering the need for flexible programs to reach Bay goals. Congressional earmarks, that directly assist local partners with implementation could help New York meet the goals set in the WIP, if prioritized and awarded. The USC has developed a successful regional delivery mechanism to lead to the increased adoption of practices. Successful programs should be supported. CREP specific gaps continue to exist related to enrollment, technical assistance, and programmatic transparency. Facilitation from NRCS to carry out applications for RCPP programs could increase opportunities for planting riparian buffers on easements for wetland and floodplains.

The USC programs described above are successful models for sustaining and increasing the rate of riparian restoration. With, those programs being primarily funded through grant sources, they are therefore subject to grant cycles, offering no consistent funding mechanism. Oftentimes, the USC funds a specific program utilizing multiple funding sources.

Limited staffing capacity is a challenge. It would be beneficial to have more technicians and stewards across the watershed. Without building and sustaining staff capacity, it will be difficult to scale-up forest buffer implementation in the watershed while offering high-quality technical and maintenance services that are needed for successful projects and maintaining positive landowner perceptions of projects and associated programs.

Training is a continual need as there are new staff entering the SWCD/USC family, as well as seasoned employees looking to learn more about riparian restoration. Program specific and board implementation overview trainings are needed. The forestry workgroup could assist with developing a Chesapeake Bay onboarding resource for new members if one does not already exist.

A challenge we are all faced with when growing tree planting programs is finding resources for implementing the riparian buffers and tree plantings. Some of the tree nurseries in the watershed exhaust their stock of tree seedlings or do not sell plants best suited for a native riparian habitat.

Climate Change

While New York's portion of the Chesapeake Bay watershed will not be affected by sea level rise, there are multiple environmental concerns associated with climate change. New York is modeled to see increased frequency and intensity of weather events. Heavy rains and erosion have led some landowners to forgo production in the riparian area and allow the bank to be stabilized and floodplain reconnected.

With an increase in storm events and flooding, there will be a larger need for riparian buffers to protect farms and communities from flooding. Although this is true, stronger, more frequent flood events and droughts may lower the success of riparian plantings, especially without long-term, reliable maintenance activities and restored hydrology. Changes to flooding, drought, temperatures, growing periods, and the

success and expansion of invasive species and forest pests such as hemlock wooly adelgid and emerald ash borer may influence the tree and shrub species composition in existing riparian buffers and the success of species planted in new buffers. Further, the added climate benefits from enhanced carbon sequestration from additional established plantings will be essential to help mitigate greenhouse gas emissions to lower the projected future impacts of climate change. The New York Climate Law has laid out multiple strategies to mitigate climate change impacts in the agricultural and forestry sector.

The USC uses climate change models to predict range characteristics of trees and shrubs we are planting. For example, they are planting oaks farther north, as well as introducing paw paws and other plants whose range will be expanded into New York.

Available Resources

New York Department of Environmental Conservation Phase III Watershed Implementation Plan for the Susquehanna and Chemung River Basins

Soil and Water Conservation Committee Strategic Plan for 2019-2023

New York State Forest Action Plan 10-year strategic plan for New York's forestry community

New York Heritage Program Statewide Riparian Opportunity Assessment

Chesapeake Bay Program Riparian Forest Buffer Outcome Management Strategy (2015-2025)

Chesapeake Bay Stormwater Network Guide for Forestry Practices in the Chesapeake TMDL Phase III WIPs

United States Department of Agriculture Chesapeake Forest Restoration Strategy

New York Department of Environmental Conservation Stewardship Forester Coverage

New York Department of Environmental Conservation Climate Leadership and Community Protection Act (CLCPA)