State and District of Columbia Analyses

CHESAPEAKE BAY COMPREHENSIVE WATER RESOURCES AND RESTORATION PLAN

STATE CHAPTER

State of New York

June 2018

US Army Corps of Engineers®

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Table of Contents

List of Figures

List of Tables

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SECTION 1

1.1 Introduction

The goal of the *Chesapeake Bay Comprehensive Water Resources and Restoration Plan* (CBCP) is to provide a single, comprehensive and integrated restoration plan that would assist with implementation of the *2014 Chesapeake Bay Watershed Agreement* (2014 Bay Agreement). The CBCP provides a "roadmap" of implementation actions that protect, restore, and preserve the Chesapeake Bay and actions that adopt and align with what organizations are doing without duplicating ongoing or planned actions. Additionally, the CBCP maximizes the use of existing information and identifies projects that can be implemented in each jurisdiction in the Chesapeake Bay Watershed.

The CBCP aligns with the vision established in the 2014 Bay Agreement:

"We envision an environmentally and economically sustainable [and resilient] Chesapeake Bay Watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders."

To identify implementation actions to protect, restore, and preserve the Chesapeake Bay, geospatial analyses were conducted at a 1) baywide, 2) jurisdiction or state, and 3) watershed scale. The baywide analysis characterized problems, needs, and opportunities at a hydrologic unit code 10 (HUC 10) scale, hereafter referred to as subwatershed. CBCP analyses were based on a core set of questions formulated from the 2014 Bay Agreement goals and outcomes as well as stakeholder input. The baywide analysis resulted in a set of recommended implementation strategies that included locations (subwatersheds), potential management measures, a range of potential costs, benefits, potential project implementation agencies, and any sequencing or dependences that could affect implementation. The full results of the baywide analysis are described in the CBCP Main Report. The CBCP state analyses are the result of the baywide analysis "clipped" per each jurisdiction in the Chesapeake Bay Watershed (New York, Pennsylvania, West Virginia, Virginia, Maryland, Delaware, and the District of Columbia). The results of State of New York analysis are described in this section of the report. The portion of the Chesapeake Bay Watershed within New York is referred to as New York throughout this chapter.

The CBCP state-selected watershed analysis contains a more detailed analysis in each jurisdiction, with the goal of identifying more site-specific project-scale opportunities (with priorities defined by the jurisdictions) for implementation. The Upper Susquehanna River Watershed was identified as the state-selected watershed by the state of New York for stream restoration, wetland creation and restoration, and riparian forest buffers. A number of agencies have identified the Upper Susquehanna River Watershed as a priority including The Nature Conservancy (TNC) and the U.S. Fish and Wildlife Service (USFWS). Additionally, Susquehanna River Watershed reports (available at: http://www.dec.ny.gov/lands/53788.html) are strategic plans previously developed to assist in the restoration of the Upper Susquehanna River Watershed.

The following are reference maps displaying the boundaries, name (Figure 1), and number (

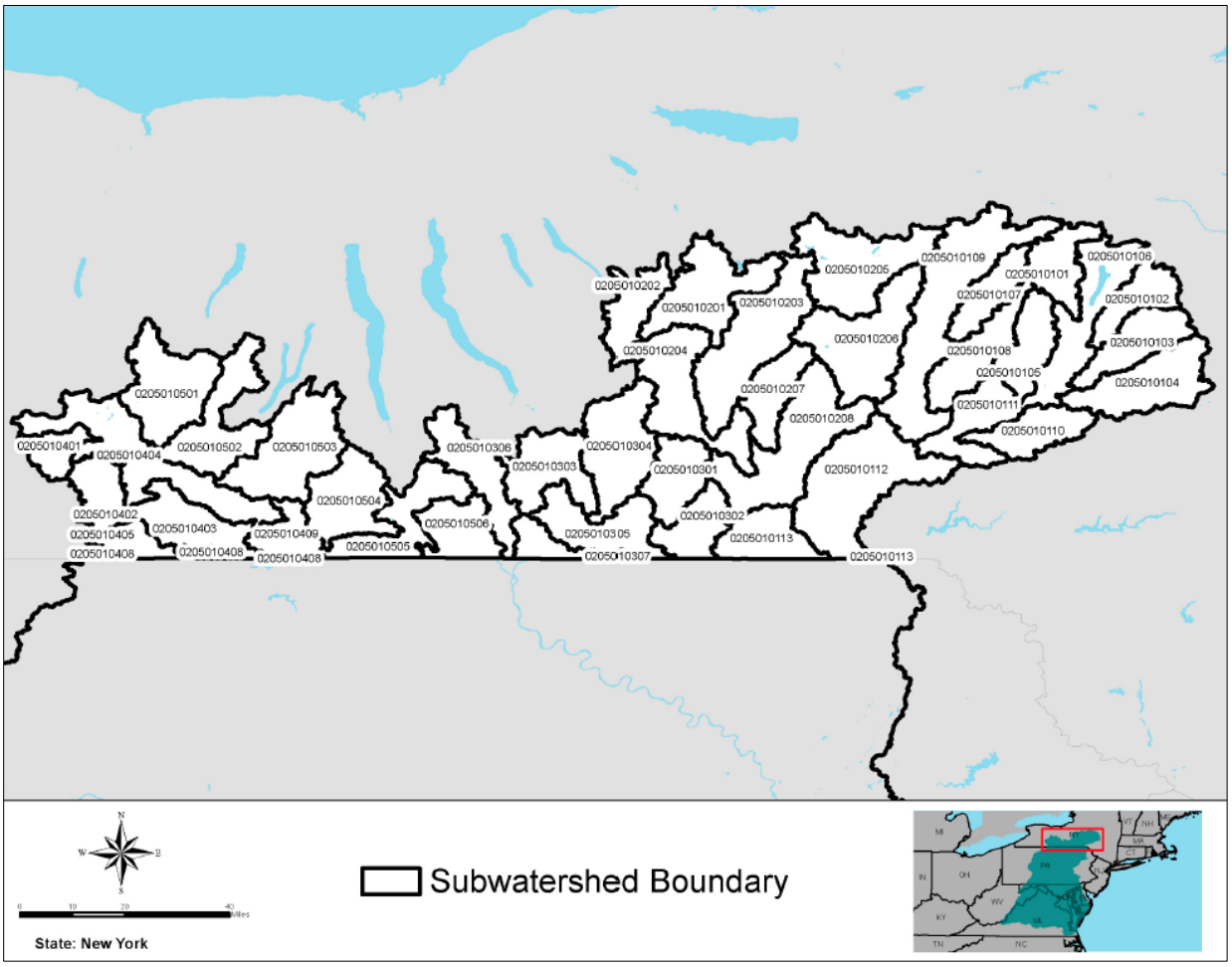

Figure 2) of each HUC 10 subwatershed in New York. Table 1 (all tables are provided following the report content) provides the number, name, size (acres), and other drainage states of each New York HUC 10 subwatershed. Hereafter, HUC 10 subwatersheds are referred to simply as subwatersheds.

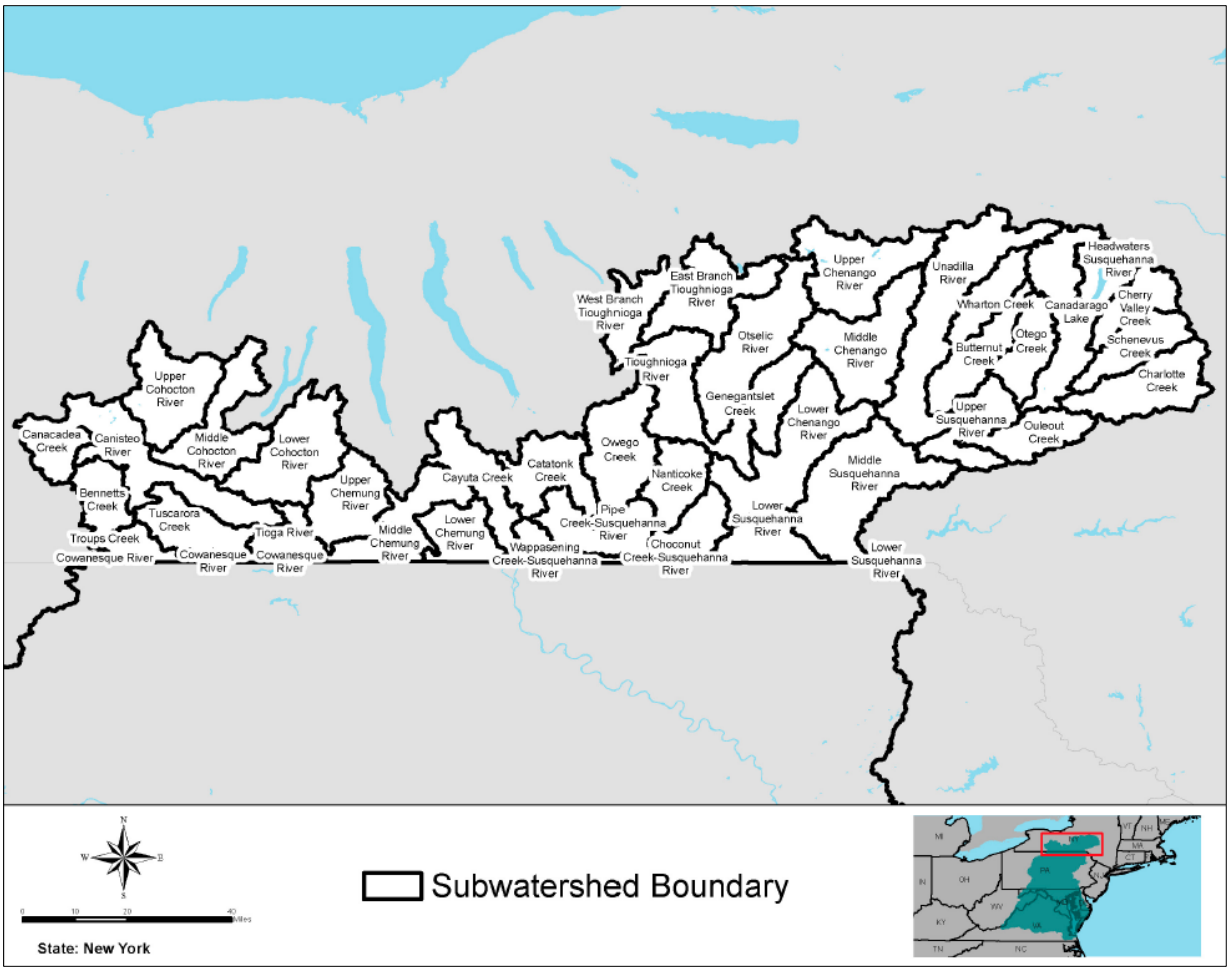

Figure 1. Hydrologic unit code (HUC) 10 subwatershed names for New York

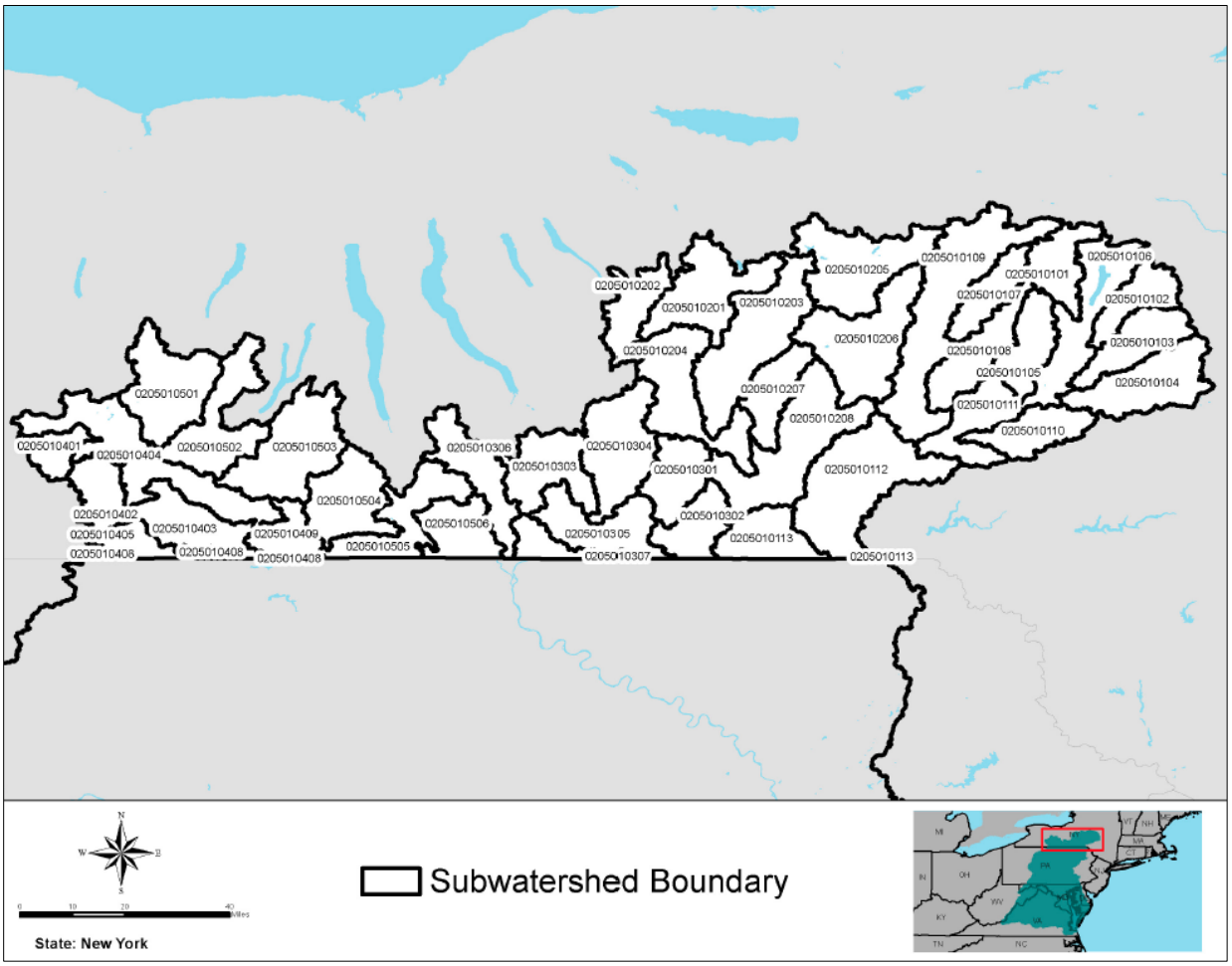

Figure 2. Hydrologic unit code (HUC) 10 subwatershed numbers for New York

1.2 Watershed Stressors

The Watershed Stressors Analysis evaluated the presence of stressors in each subwatershed based on six metrics listed below. See the Planning Analyses Appendix for more details on the data used.

- *Percent impervious cover* (Chesapeake Conservancy 2016)
- *Percent forest cover* (Chesapeake Conservancy 2016)
- *Percent of stream network with forested riparian buffers* (Environmental Protection Agency (EPA) 2010)
- *303(d) impaired waterways list* (EPA)
- *Benthic Index of Biotic Integrity (B-IBI)* (Chesapeake Bay Program (CBP))
- *Nitrogen and phosphorous yields* (as predicted by Spatially Referenced Regressions on Watershed (SPARROW) modeling)

Results of the Watershed Stressors Analysis for each subwatershed in New York are shown on Figure 3 and in Table 2. Subwatersheds that contain the least watershed stressors resulted in a high watershed stressor score, and subwatersheds that contain the most watershed stressors resulted in a low watershed stressor score. The healthiest watersheds are areas that, if not already protected, would be good candidates for protection. The areas that are less healthy indicate areas that may benefit from restoration actions aimed at increasing the overall health of the subwatersheds. In general, the pattern of watershed stressors typically follows that of development, with the greater the amount of development and industrial activities in an area, the more stressed the watershed.

In general, the subwatersheds in New York are considered moderately stressed. However, based on the CBCP analysis, there are three subwatersheds that are 'healthier' including HUC 0205010207 (Genegantslet Creek), HUC 0205010402 (Bennetts Creek), and HUC 0205010403 (Tuscarora Creek).

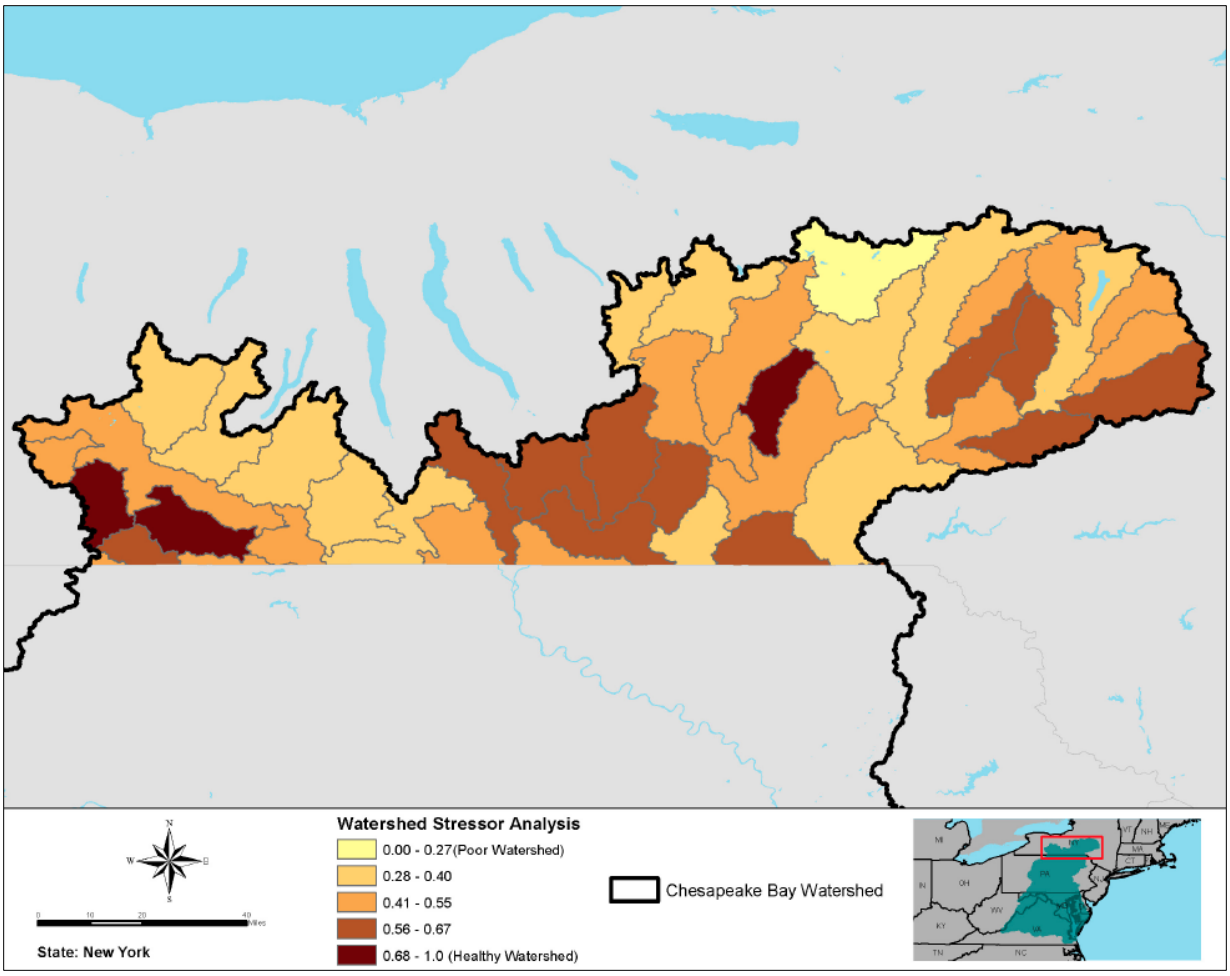

Figure 3. Watershed stressor scores for each hydrologic unit code 10 subwatershed in New York

SECTION 2

Restoration Efforts Contributing to Baywide Priorities

Opportunities for action were identified throughout the Chesapeake Bay Watershed by the baywide geospatial analyses. The *Opportunities Assessment* identifies subwatersheds with the greatest potential, need, or impairment, depending on the nature of the evaluation. The following sections discuss the *Opportunities Assessment* findings in New York and presents *Opportunity* maps that highlight subwatersheds holding the greatest potential to address the need investigated in each map. Shaded cells in the tables and darker-colored subwatersheds in the figures represent subwatersheds with the highest amount of *Opportunities*.

2.1 Vital Habitats Goal

"Restore, enhance and protect a network of land and water habitats to support fish and wildlife and to afford other public benefits, including water quality, recreation uses and scenic value across the watershed."

2.1.1 Outcome: Black Duck

"By 2025, restore, enhance and preserve wetland habitat to support a wintering population of 100,000 black ducks. Refine population targets through 2025 based on best available science."

The CBP black duck focus areas were overlaid on the CBCP wetland restoration and enhancement maps to identify the subwatersheds that provide wetland restoration and enhancement opportunities with the potential to benefit black duck populations during the nonbreeding, over-wintering season.

Results of this analysis identified subwatersheds in which to focus wetland restoration and enhancement to benefit black duck populations during the nonbreeding, over-wintering season lie within the tidally influenced wetland areas of the Chesapeake Bay Mainstem and near the mouths of bay tributaries as these areas are the most important over-wintering habitats utilized by the black duck.

There are no priority areas for wintering populations of black duck in New York.

2.1.2 Outcome: Brook Trout

"Restore and sustain naturally reproducing brook trout in the Chesapeake Bay's headwater steams, with an eight percent increase in occupied habitat by 2025."

Geospatial data regarding brook trout have been provided by the CBP and Trout Unlimited and are embedded in the fish passage, forest buffer, and stream restoration analyses below.

2.1.3 Outcome: Fish Passage

"Continually increase habitat to support sustainable migratory fish populations in the Chesapeake Bay Watershed's freshwater rivers and streams. By 2025, restore historical fish migration routes by opening 1,000 additional stream miles to fish passage. Restoration success will be indicated by the consistent presence of alewife, blueback herring, American shad, hickory shad, American eel and brook trout, to be monitored in accordance with available agency resources and collaboratively developed methods."

Fish passage within the Chesapeake Bay Watershed is limited by a significant number of blockages that range from large hydroelectric power-generating dams to historical mill dams to road culverts and utility pipes that have been exposed by erosion. The intent of the CBCP's Fish Passage Blockages Opportunities Assessment was to build upon the work of the CBP's Fish Passage Workgroup to identify where high prioritized blockages are co-located with *Opportunities* for stream restoration. The following data were used in the Fish Passage Blockages Opportunities Assessment (see the Planning Analyses Appendix for more details on the data used).

- *High prioritized fish passage blockages* (CBP Fish Passage Workgroup)
- *Stream Restoration Analysis results* (CBCP)

One of the limitations of the CBCP analyses was availability of data. The data used for the Fish Passage Blockages Opportunities Assessment did not include information on reported blockages in New York. Because of this constraint, results could not be generated for New York. Even so, it is clear that the Susquehanna River has a number of high priority fish passage blockages throughout its range; this can be inferred by reviewing the Fish Passage Blockages Opportunities Assessment in the Planning Analyses Appendix.

2.1.4 Outcome: Riparian Forest Buffers

"Continually increase the capacity of forest buffers to provide water quality and habitat benefits throughout the Chesapeake Bay Watershed. Restore 900 miles of riparian forest buffers per year and conserve existing buffers until at least 70 percent of riparian areas in the watershed are forested."

The purpose of the Riparian Forest Buffer Opportunities Assessment was to identify subwatersheds to focus riparian buffer restoration. Riparian buffer restoration can provide numerous benefits while targeting various impairments. This analysis identified subwatersheds where riparian buffer restoration opportunities exist to:

- Address watershed stressors (high-yielding nitrogen and phosphorous subwatersheds)
- Improve brook trout habitat
- Support improving stream habitat for resident fish and migratory species

The following data layers were used in the Riparian Forest Buffer Opportunities Assessment (see the Planning Analyses Appendix for more details on the data used):

- *Area of existing riparian buffers* (acres) (forested and non-forested) (CBP from Chesapeake Conservancy 2016)
- *Nitrogen and phosphorous yields* (as predicted by Spatially Referenced Regressions on Watershed (SPARROW) modeling)
- *Brook Trout Watersheds* (U.S. Geological Survey (USGS) National Hydrography Dataset plus catchments identified as potentially supporting brook trout based on the Eastern Brook Trout Joint Venture Salmonid Catchment Assessment and Habitat Patch Layers)
- *National Fish Habitat Assessment* (National Fish Habitat Partnership (NFHAP))
- *Eastern Brook Trout Conservation Portfolio, Range-wide Habitat Integrity and Future Security Assessment, and Focal Area Risk and Opportunity Analysis* (Trout Unlimited, Fessenmeyer et al. 2017)

Results of the Riparian Buffer Opportunities Assessment for New York are shown in Figure 4 and in Table 3. In New York, riparian forest buffer *Opportunities* are concentrated in the Susquehanna and Chemung River Watersheds. In these areas, there are generally high acreages of forest buffers, ranging from 10,684 to 23,334 acres, as well as high acreages of streams containing populations of brook trout and resident fishes.

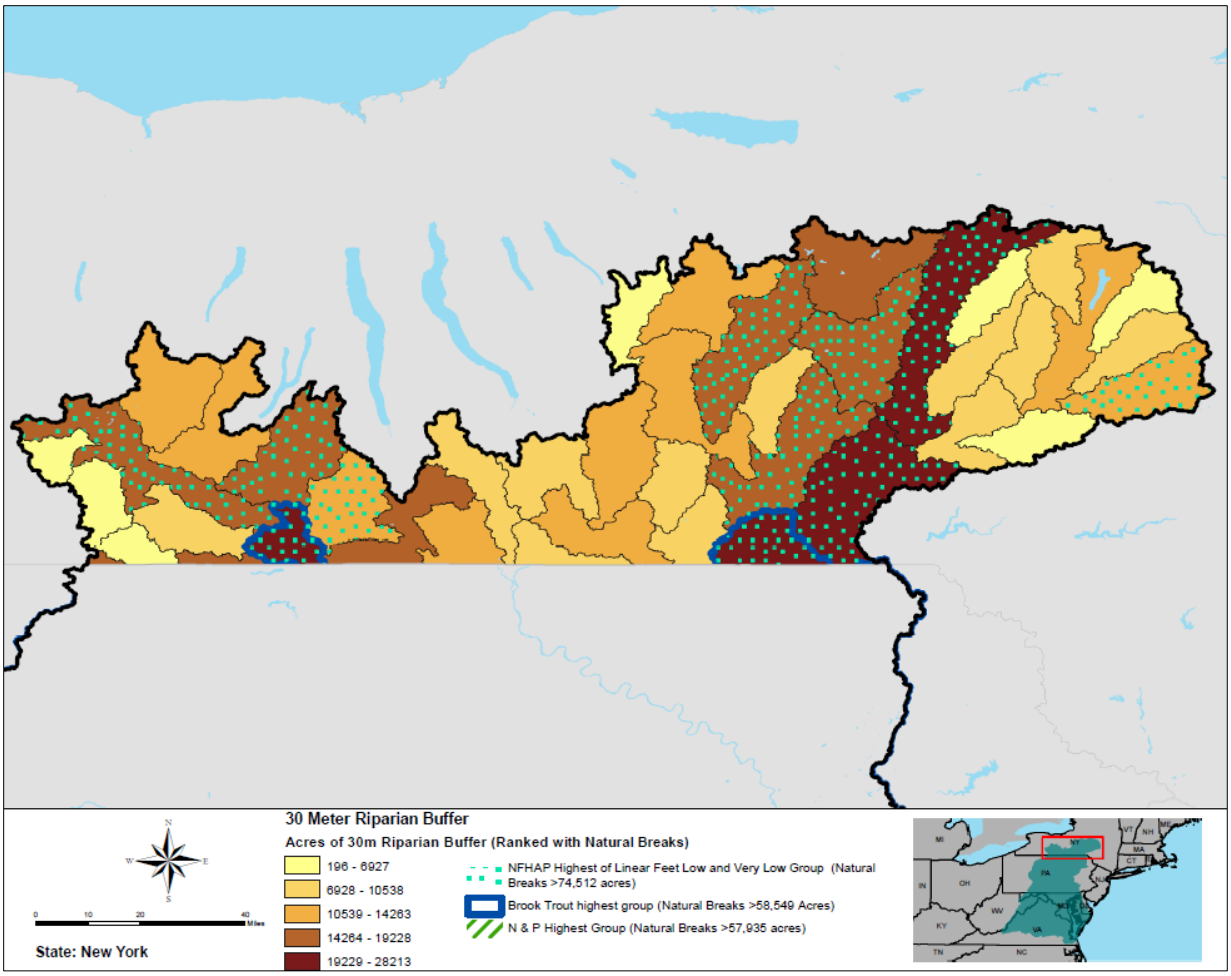

Figure 4. Riparian Forest Buffers Opportunities Assessment for New York

2.1.5 Outcome: Stream Health

"Continually improve stream health and function throughout the Chesapeake Bay Watershed. Improve the health and function of ten percent of stream miles above the 2008 baseline."

The purpose of this analysis was to identify subwatersheds to focus stream restoration efforts to benefit resident fish, brook trout, and anadromous fish. The following data was used in the Stream Restoration Opportunities Assessment (see the Planning Analysis Appendix for more details on the data used):

- *Watershed Stressor Analysis* (CBCP)
- *National Fish Habitat Assessment* (NFHAP)
- *Brook Trout Watersheds* (USGS)
- *Extent of anadromous fish habitat* (CBP)
- *Conservation Strategies for Brook Trout* (Trout Unlimited)

Results of the Stream Restoration Opportunities Assessment for New York are shown in Figure 5 and in Table 4. The subwatersheds with high watershed stressor scores (healthier watersheds)

and opportunities to benefit resident fish and brook trout are located in central New York. These areas, though relatively healthy, are areas that could benefit from stream restoration. Additionally, moderately healthy (0.5 to 0.6 stressor score) subwatersheds with available fish habitat or high B-IBI scores could potentially benefit from stream restoration. It is recommended that stressors are addressed prior to or in conjunction with stream restoration efforts in these subwatersheds to develop habitat benefits.

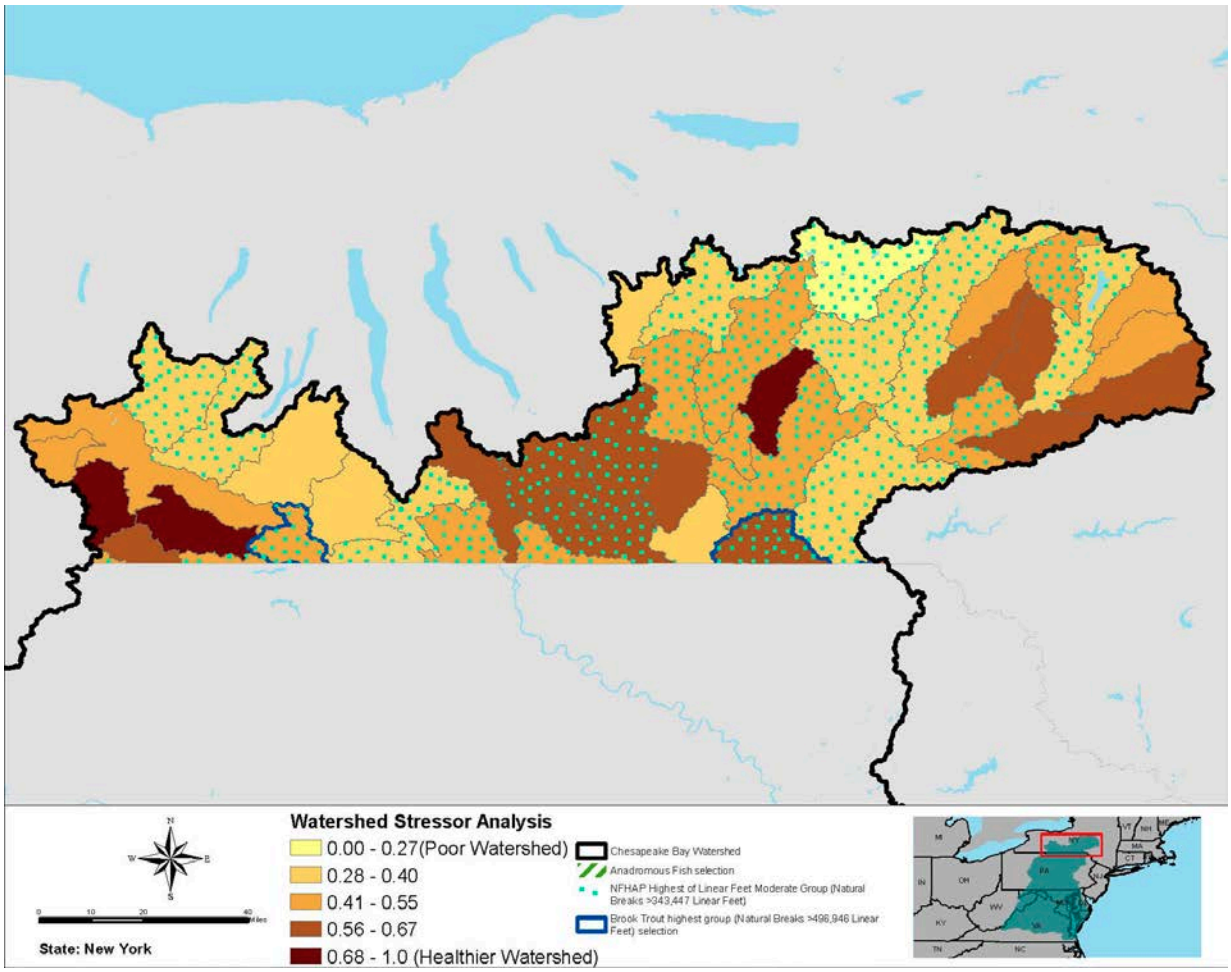

Figure 5. Stream Restoration Opportunities Assessment for New York

Conservation strategies for brook trout were incorporated into the Stream Restoration Opportunities Assessment to propose actions to benefit brook trout. There are Trout Unlimited brook trout conservation strategies identified for catchments within focus subwatersheds for eastern brook trout concentrated in the eastern portion of the bay watershed in New York (see Figure 6). This information has the potential for siting projects on a smaller scale by follow-up investigations (see Planning Analyses Appendix).

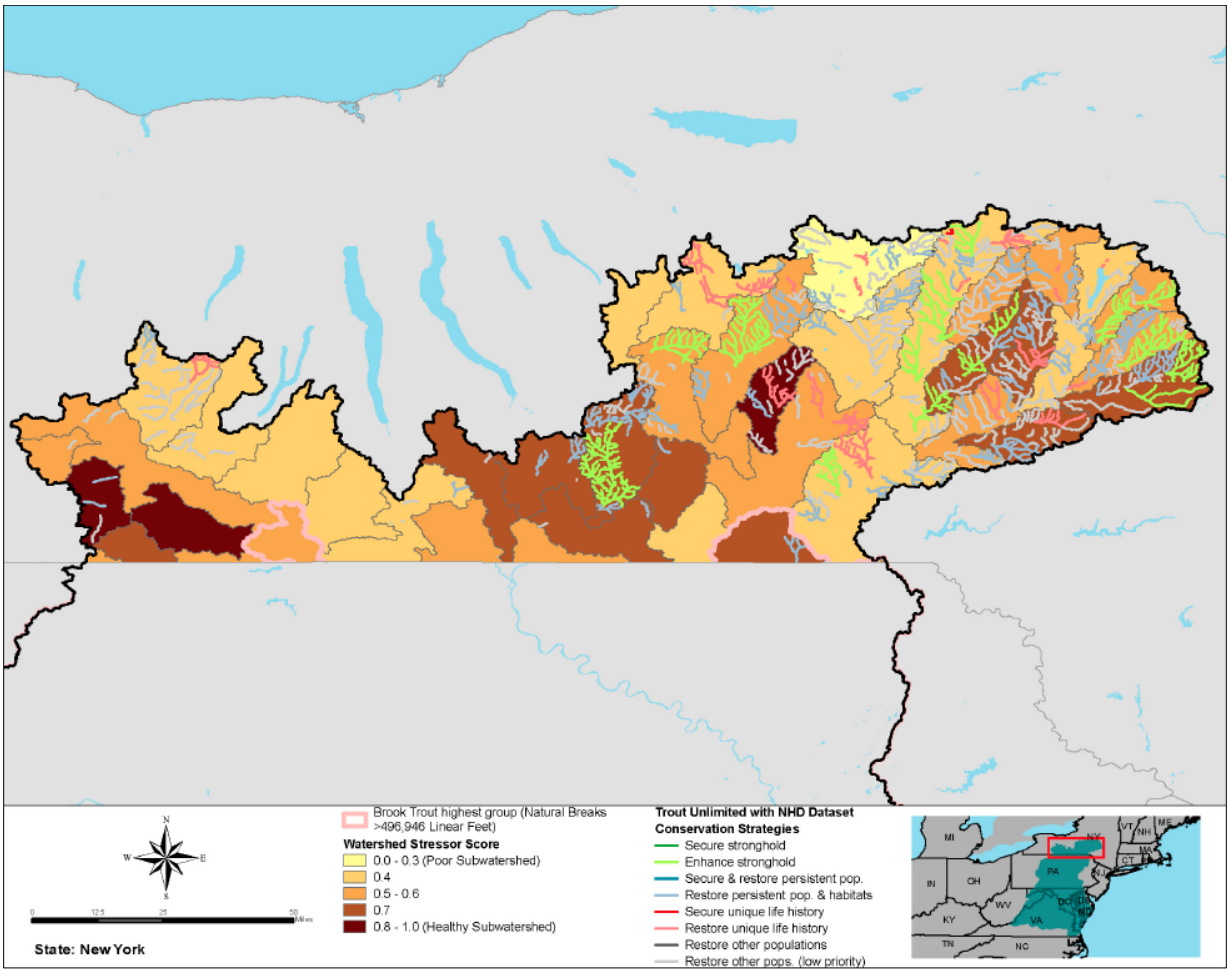

Figure 6. Potential areas for stream restoration to benefit brook trout based on Trout Unlimited conservation strategies and watershed stress in New York

2.1.6 Outcome: Wetlands

"Continually increase the capacity of wetlands to provide water quality and habitat benefits `throughout the Chesapeake Bay Watershed. Create or reestablish 85,000 acres of tidal and nontidal wetlands and enhance the function of an additional 150,000 acres of degraded wetlands by 2025. These activities may occur in any land use (including urban), but should primarily occur in agricultural or natural landscapes."

2.1.6.1 Identify Wetland Enhancement Opportunities

The Wetlands Enhancement Opportunities Assessment (nontidal and tidal) for Delaware identified areas where wetlands exist and may provide enhancement opportunities to increase their ecological value. The following data was used in the Wetlands Enhancement Opportunities Assessment (see the Planning Analyses Appendix for more details on the data used):

- *High Resolution Land Cover Data* (collected in 2016 by the Chesapeake Bay Conservancy and provided by NFWF)
- *Hydric Soils Dataset* (CBP)

Results of the Wetlands Enhancement Opportunities Assessment (nontidal) for New York are shown in Figure 8 and Table 5. When compared to the lower Chesapeake Bay Watershed, New York has relatively small acreages of existing nontidal wetlands, so the map appears to show very few subwatersheds with existing wetlands. The Tioga River (HUC 0205010409) and the Lower Susquehanna River (HUC 0205010113), which are shared with Pennsylvania, have the highest amount of existing wetlands, with 6,218 and 4,188 acres, respectively. Due to the limited amount of existing tidal wetlands in New York, enhancement opportunities in tidal wetlands will not be discussed.

The existing datasets do not evaluate the function and value of the existing wetlands; therefore, additional field analyses would be necessary to determine the existing wetland areas in need of enhancements and to identify the specific type of enhancement necessary.

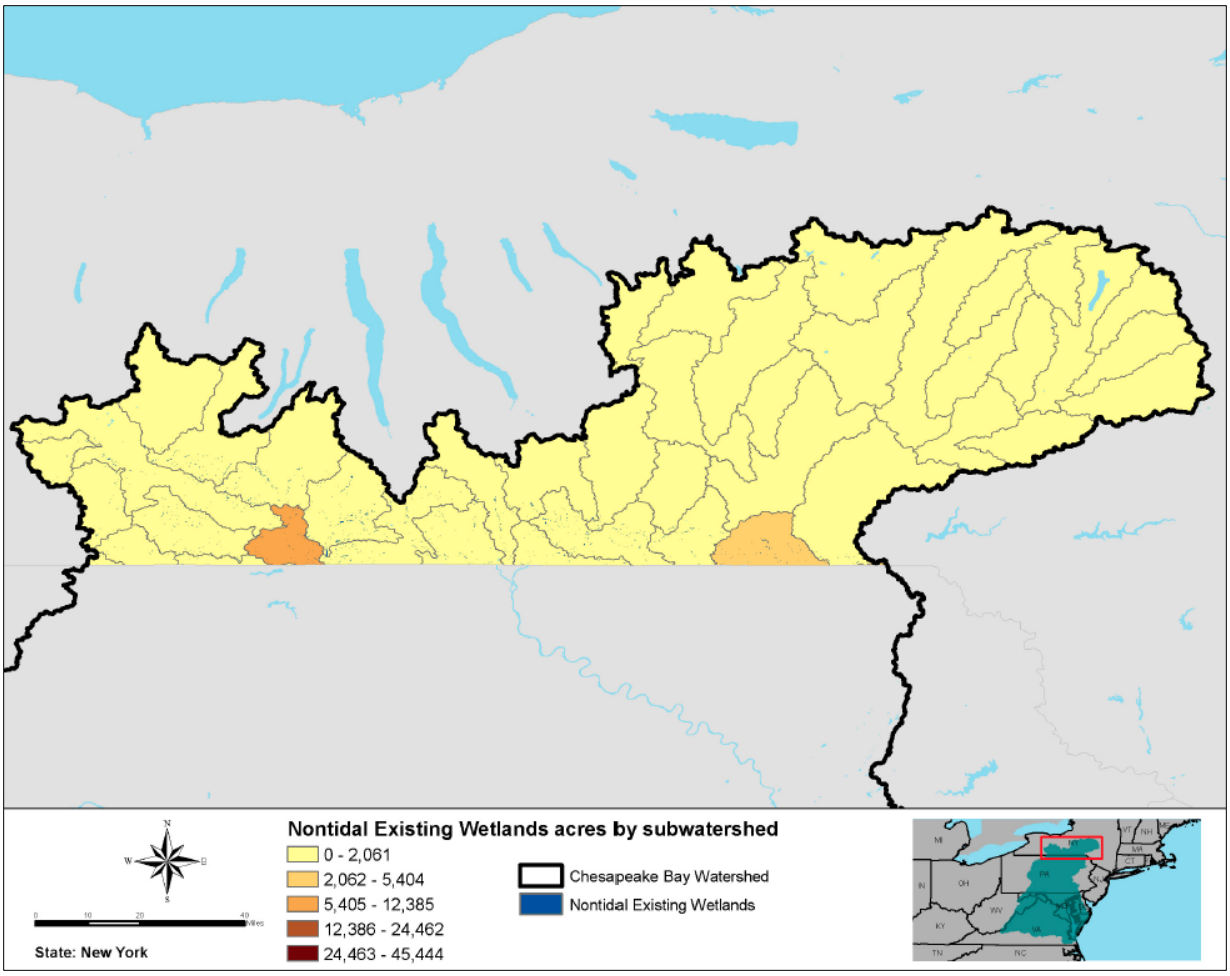

Figure 7. Existing nontidal wetlands in New York

2.1.6.2 Identify Wetland Restoration Opportunities

The Wetlands Restoration Opportunities Assessment identified opportunities for wetland restoration in New York. The following data was used in the Wetlands Restoration Opportunities Assessment (see the Planning Analyses Appendix for more details on each layer):

- *Wetlands Enhancement Opportunities Assessment Results* (CBCP)
- *Digital Elevation Model* (USGS)

Results of the Wetland Restoration Opportunities Assessment (nontidal) are shown on Figure 9 and in Table 6. The Wetland Restoration Opportunities Assessment for New York identified numerous *Opportunities* for nontidal wetland restoration.

The Susquehanna River Watershed has the most potential, based on available acreage, for nontidal wetland restoration, though there are nontidal wetland restoration *Opportunities* available throughout New York. Chemung River subwatershed that have a high number of acres available for nontidal wetland restoration. The HUC with the highest number of nontidal wetland

restoration opportunities is HUC 0205010409, 0205010109 which has potential for 6,218 acres of wetland restoration, though there are wetland restoration opportunities throughout the state.

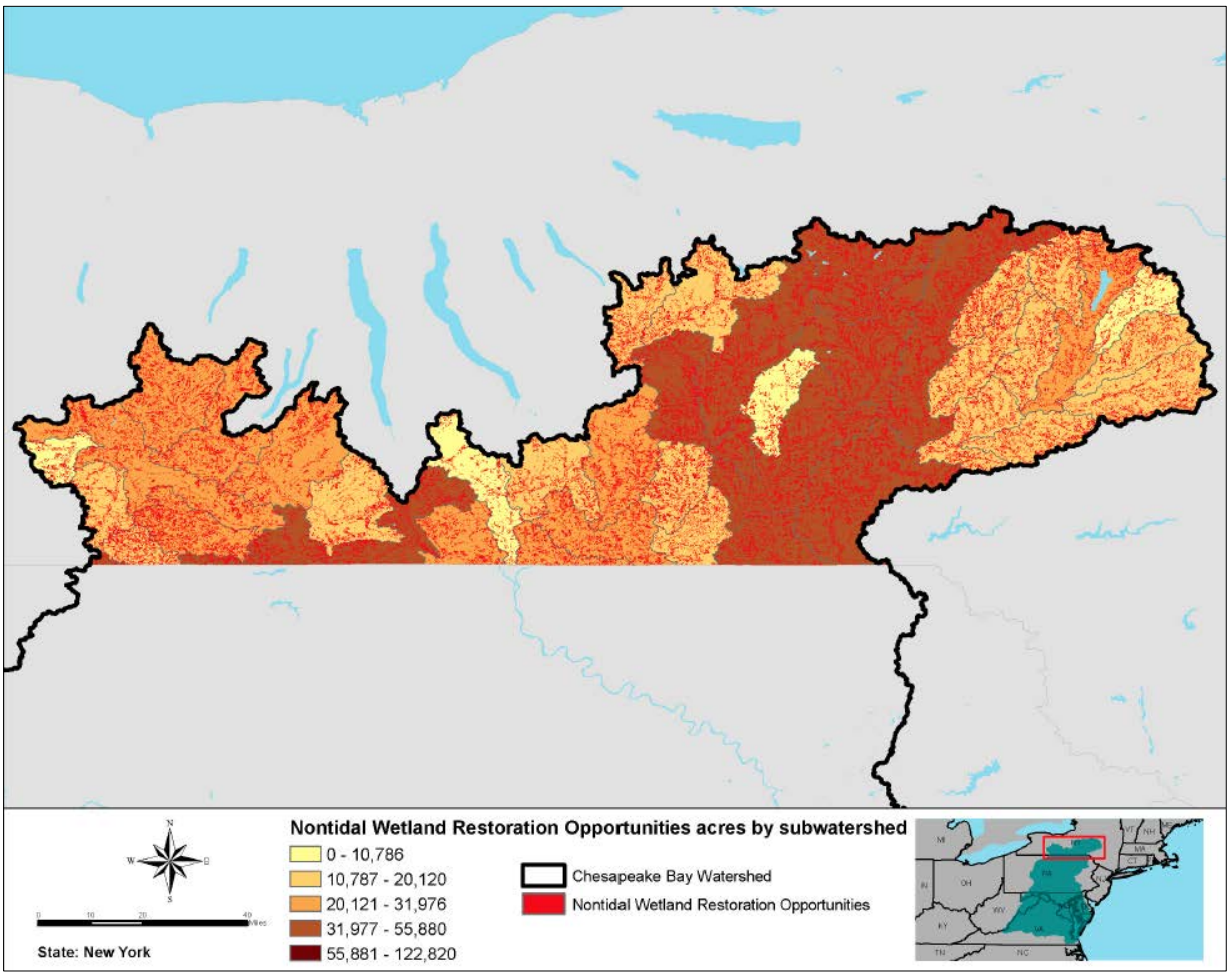

Figure 8. Nontidal wetland restoration opportunities in New York

2.1.6.3 Identify Wetland Restoration Opportunities that can Benefit Avian Wildlife

The purpose of this analysis was to identify the wetland restoration *Opportunities* that have the potential to benefit avian wildlife by determining where *Opportunities* overlap with Audubon Important Bird Areas. The following data was used in this analysis (see the Planning Analyses Appendix for more details on the data used):

- *Wetlands Restoration Opportunities Assessment Results* (CBCP)
- *Nesting locations for wading birds and waterbirds* (Center for Conservation Biology)
- *Black Duck Focus Areas* (CBP)
- *Audubon Important Bird Areas*

Results of this analysis are shown in Figure 10 and in Table 6. These subwatersheds correspond to those areas identified by Audubon as 'important bird areas.' These areas are clustered together

in a portion of the Upper Susquehanna River Subwatershed and the Chemung River Subwatershed. The subwatersheds identified as important bird areas are:

- HUC 0205010409 – Tioga River
- HUC 0205010203 – Otselic River
- HUC 0205010500 – Middle Chemung River
- HUC 0205010204 – Tioughnioga River
- HUC 0205010504 – Upper Chemung River
- HUC 0205010207 – Genegantslet Creek

There are no identified black duck areas or nesting locations for wading/water birds in New York.

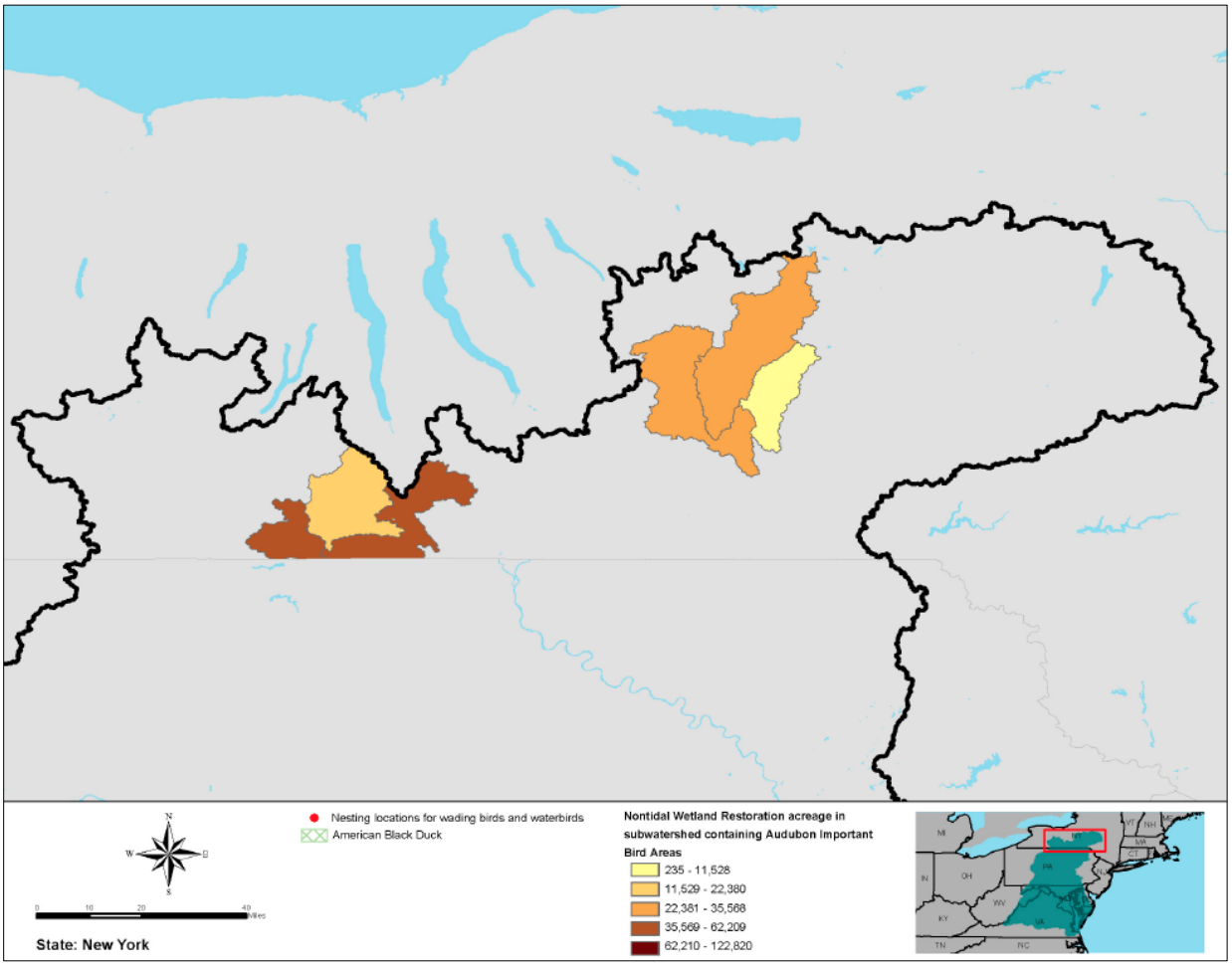

Figure 9. Nontidal wetland restoration opportunities with avian benefits in New York

2.1.6.4 Identify Wetland Restoration Opportunities that are Important Habitats for Imperiled Species (Rare, Threatened, and Endangered)

The purpose of this analysis was to identify wetland restoration *Opportunities* that are important habitats for rare, threatened and endangered (RTE) species. The following data was used in this analysis (see the Planning Analyses Appendix for more details on the data used):

- *Wetlands Restoration Opportunities Assessment Results* (CBCP)
- *Nature's Network Imperiled Species Dataset* (identifies important, moderately important, and less important habitat for imperiled species)

Results of this analysis for New York are shown in Figure 11. Core habitats for imperiled species are located sparsely throughout New York. There are areas of greater core habitat density in the northeastern part of New York, near Otsego Lake, which also corresponds to areas of high connectivity.

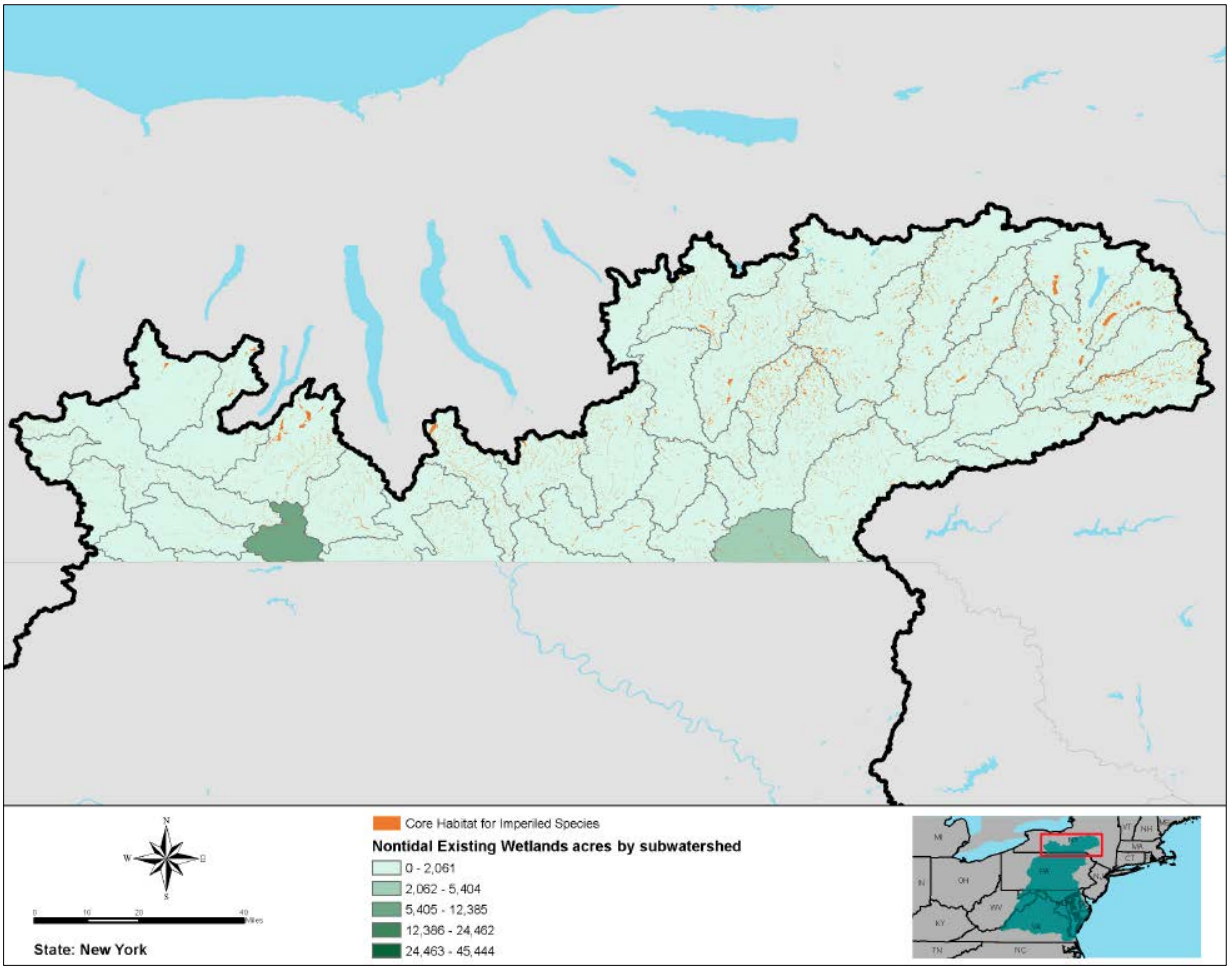

Figure 7. Core habitat for imperiled species in relation to nontidal wetland restoration *Opportunities* in New York

2.1.6.5 Wetlands Threats Opportunities Assessment

The Wetlands Threats Opportunities Assessment investigated whether wetland restoration *Opportunities* are at risk to climate change, anticipated increases in flooding and coastal storms, and projected development in the Chesapeake Bay Watershed. This analysis incorporated the results of the CBCP Threats Analysis with the CBCP Wetlands Restoration Opportunities Assessment and the Wetlands Enhancement Opportunities Assessment to understand habitats that may be lost or impaired by future threats.

Results of this analysis for New York are shown on Figures 12 and 13 in Table 7. Wetland enhancement and restoration opportunities within New York are generally at low risk of nontidal threats. However, there is one subwatershed, HUC 0205010404 (Canisteo River), with 639 acres of restoration opportunities that are at low to moderate risk of nontidal threats.

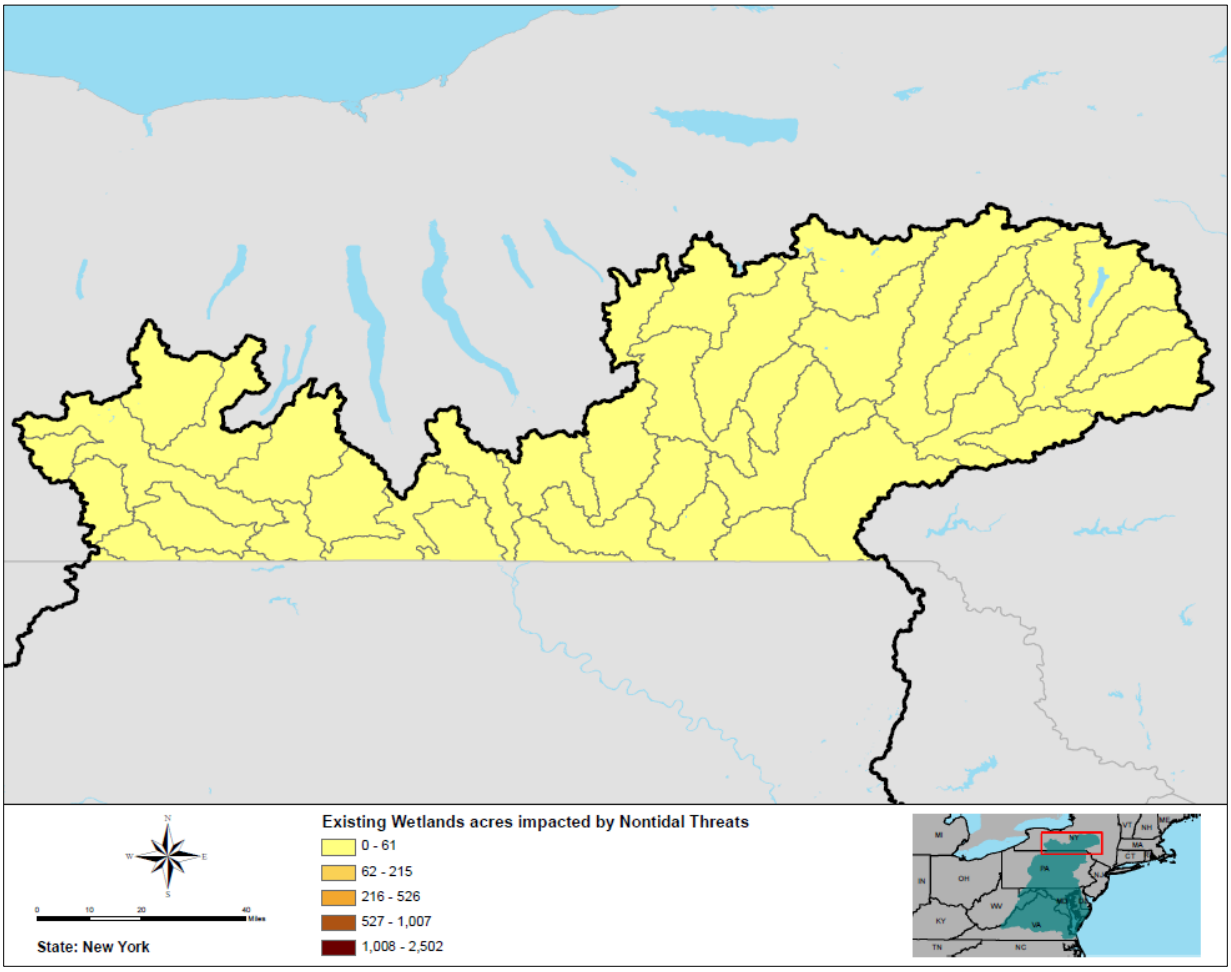

Figure 11. Core habitat for imperiled species in relation to existing nontidal wetland habitats in New York

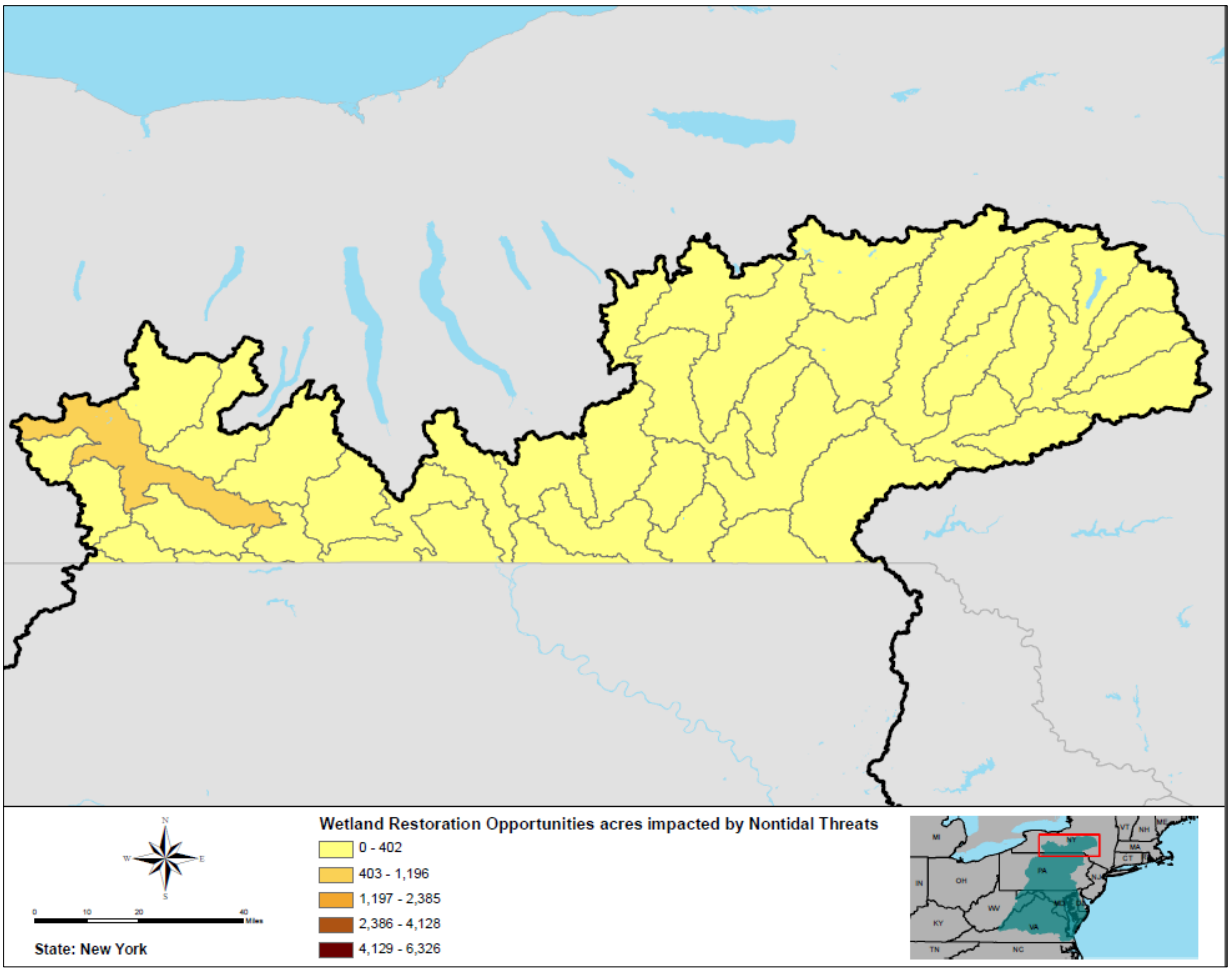

Figure 12. Wetland restoration opportunities at risk to nontidal threats in New York

2.2 Toxic Contaminants Goal

"Ensure the Chesapeake Bay and its rivers are free of the effects of toxic contaminants on living resources and human health."

2.2.1 Outcome: Toxic Contaminants Research

"Continually increase our understanding of the impacts and mitigation of toxic contaminants. Develop a research agenda and further characterize the occurrence, concentrations, sources and effects of mercury, polychlorinated biphenyls (PCBs) and other contaminants of emerging and widespread concern. In addition, identify which best management practices might provide the multiple benefits of reducing nutrient and sediment pollution as well as toxic contaminants in waterways."

2.2.2 Outcome: Toxic Contaminants Policy and Prevention

"Continually improve practices and controls that prevent or reduce the effects of toxic contaminants on aquatic systems and humans. Build on existing programs to reduce the amount and effects of polychlorinated biphenyls (PCBs) in the Chesapeake Bay Watershed. Use research findings to evaluate the implementation of additional policies, programs and practices for other contaminants that need to be further reduced or eliminated."

The following data was used in the Toxic Contaminants Opportunities Assessment (see the Planning Analyses Appendix for more details on the data used):

- *National Priorities List (NPL) Sites (Superfund Sites) (*downloaded from https://toxmap-classic.nlm.nih.gov/toxmap/superfund/identifyAll.do and cross referenced with EPA for accuracy)

Results of the Toxic Contaminants Opportunities Assessment are shown in Figure 14 and in Table 8. There are 17 NPL (Superfund) sites in New York. The majority of the NPL sites are clustered towards southeastern New York.

There are 9 NPL sites (Superfund sites) in final status in New York; 1 in each of the following subwatersheds: Upper Susquehanna River (HUC 0205010111), Otselic River (HUC 0205010203), Tioughnioga River (HUC 0205010204), Lower Chenango River (HUC 0205010208), and Nanticoke Creek (HUC 0205010301); and 2 in each of the following subwatersheds: Middle Susquehanna River (HUC 0205010112) and the Middle Chemung River (HUC 0205010505). Final status is defined as:

> *"[a] site determined to pose a real or potential threat to human health and the environment after completion of [Hazard Ranking System] HRS screening and public solicitation of comments about the proposed site" (USDH&HS 2017)."*

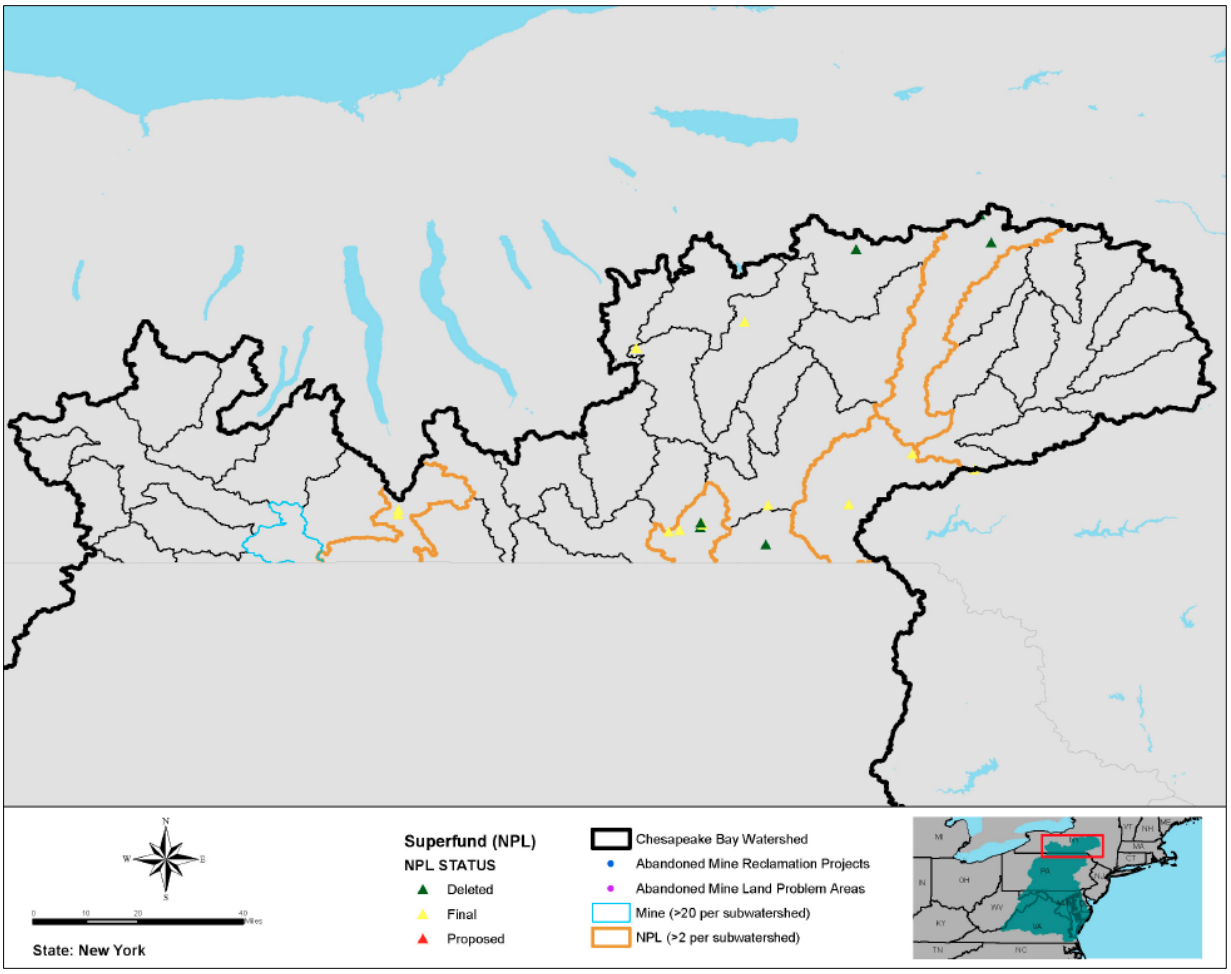

Figure 13. Toxic Contaminants Opportunities Assessment for New York

2.3 Healthy Watersheds Goal

"Sustain state-identified healthy waters and watersheds, recognized for their high quality and/or high ecological value."

2.3.1 Outcome: Healthy Watersheds

"Ensure 100 percent of state-identified currently healthy waters and watersheds remain healthy."

The Healthy/High Value Habitats Opportunities Assessment identifies areas in the Chesapeake Bay Watershed that have the healthiest habitats. The following data was used in the Healthy/High Value Habitats Opportunities Assessment (see Planning Analyses Appendix for more details on the data used):

- *State-identified Healthy Watersheds* (based on state-derived definitions and classifications of healthy waters and watersheds)
- *Subwatersheds identified as brook trout catchments (*National Hydrography Dataset plus catchments identified as potentially supporting brook trout based on the Eastern Brook Trout Joint Venture Salmonid Catchment Assessment)

- *Black Duck Focus Areas* (CBP)
- *Audubon Important Bird Areas*
- *Index of Ecological Integrity (IEI)*
- *Nature's Network Core and Connector Habitat*

Results of the Healthy/High Value Habitats Opportunities Assessment are shown in Figure 15 and in Table 9. Based on the results of this analysis, the subwatersheds with the greatest acreage of healthy/high value habitats are located in HUC 0205010409 (Tioga River) and HUC 0205010113 (Lower Susquehanna River). These subwatersheds, which are shared between New York and Pennsylvania, have thousands of acres identified as having healthy ecosystems and habitats, which indicates a high ecological value of an area.

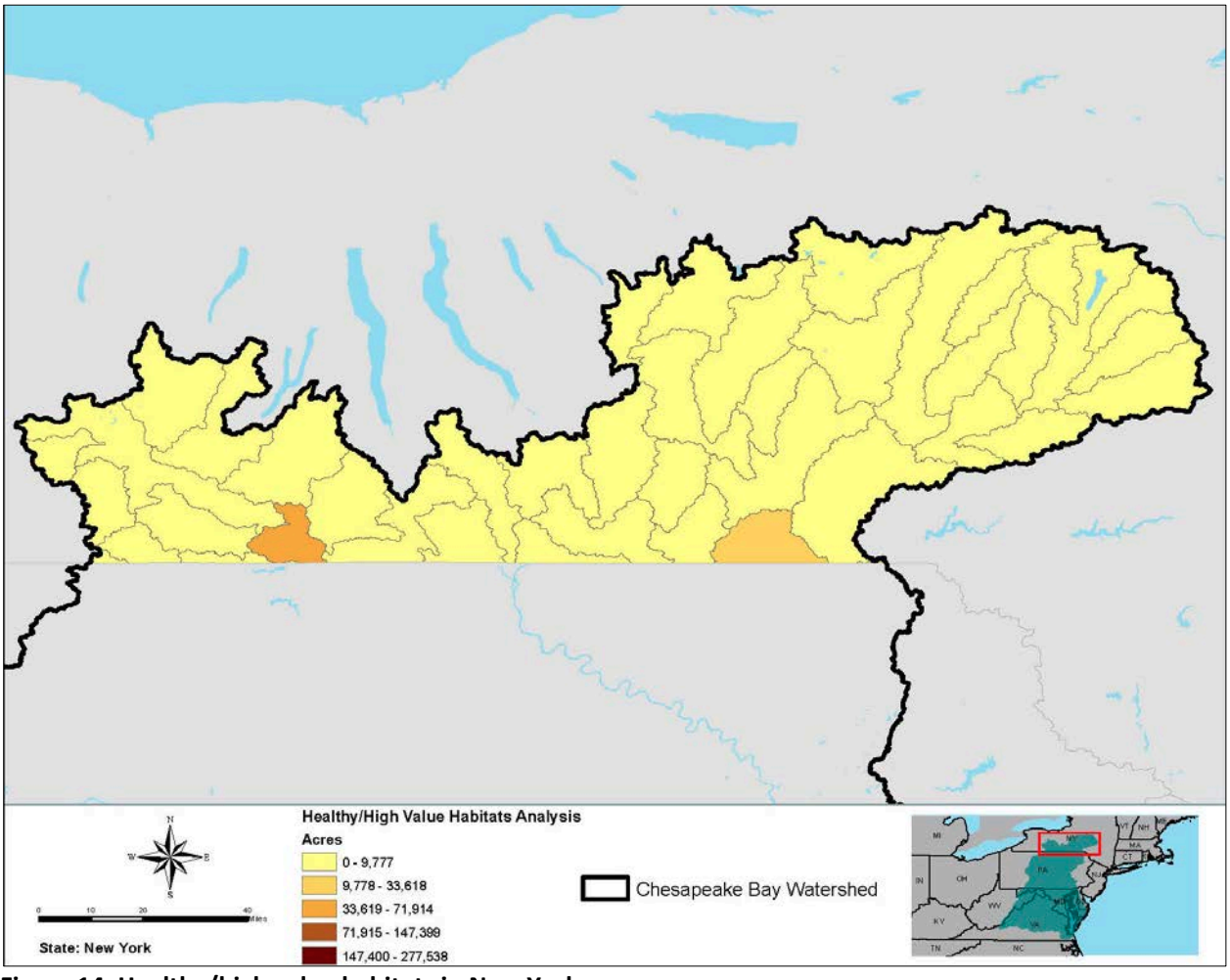

Figure 14. Healthy/high value habitats in New York

2.4 Land Conservation Goal

"Conserve landscapes treasured by citizens in order to maintain water quality and habitat; sustain working forests, farms and maritime communities; and conserve lands of cultural, indigenous and community value."

2.4.1 Outcome: Protected Lands

"By 2025, protect an additional two million acres of lands throughout the watershed – currently identified as high-conservation priorities at the federal, state or local level – including 225,000 acres of wetlands and 695,000 acres of forestland of highest value for maintaining water quality."

The purpose of the Conservation Opportunities Assessment was to identify habitats in need of potential conservation. Areas in potential need of conservation consist of healthy/high value habitats that are currently not conserved and potential habitat enhancement and restoration areas that align with conservation initiatives.

The following data was used in the Conservation Opportunities Assessment (see the Planning Analyses Appendix for more details on the data used):

- *Healthy/High Value Habitats Opportunities Assessment Results* (CBCP)
- *Protected Lands Dataset* (CBP)

Results of the Conservation Opportunities Assessment for New York is shown in Figure 16 and in Table 10.

The Healthy/High Value Habitats Opportunities Assessment was then overlaid with the following layers to identify those prime habitat enhancement and restoration opportunities that align with conservation initiatives:

- *Habitat Restoration Compilation including the Stream Restoration Riparian Buffer Restoration Opportunities Assessment Results* (CBCP)
- *Wetlands Restoration and Enhancement Compiled Opportunities Assessment Results* (CBCP)

Results of this analysis for New York are shown in Figures 17 and 18 and in Table 10.

In general, the best opportunities to conserve unprotected healthy/high value habitats are concentrated in subwatersheds located along the New York and Pennsylvania border.

Additionally, the subwatersheds identified to have high overlap of conservation and wetland restoration opportunities has been identified as a habitat restoration *Opportunity*. This subwatershed is HUC 0205010409 (Tioga River) shared by New York and Pennsylvania.

Opportunities for conservation and wetland enhancement are located in HUC 0205010409 (Tioga River and HUC 0205010113 (Lower Susquehanna River), which are both shared by New York and Pennsylvania.

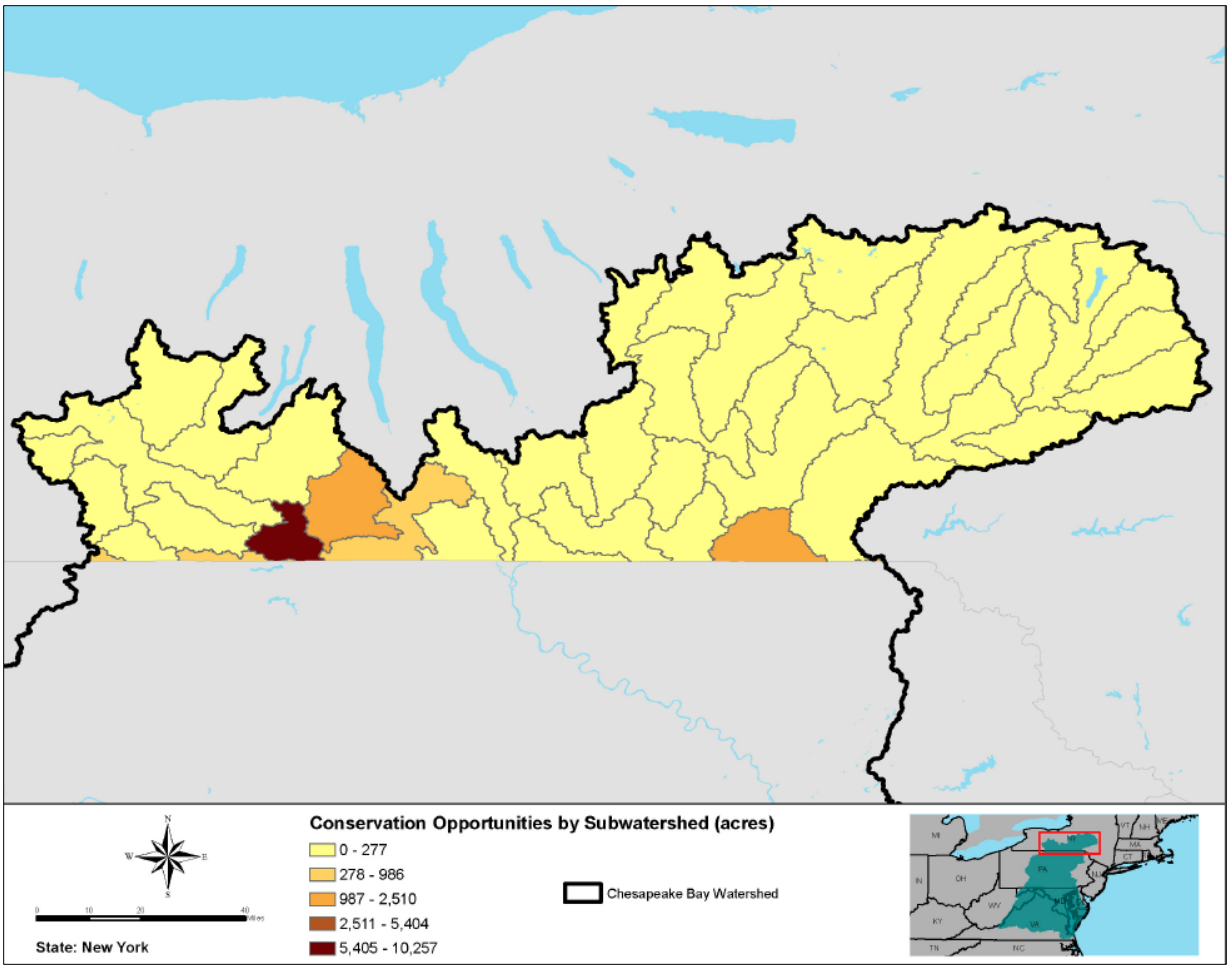

Figure 15. Conservation opportunities in New York

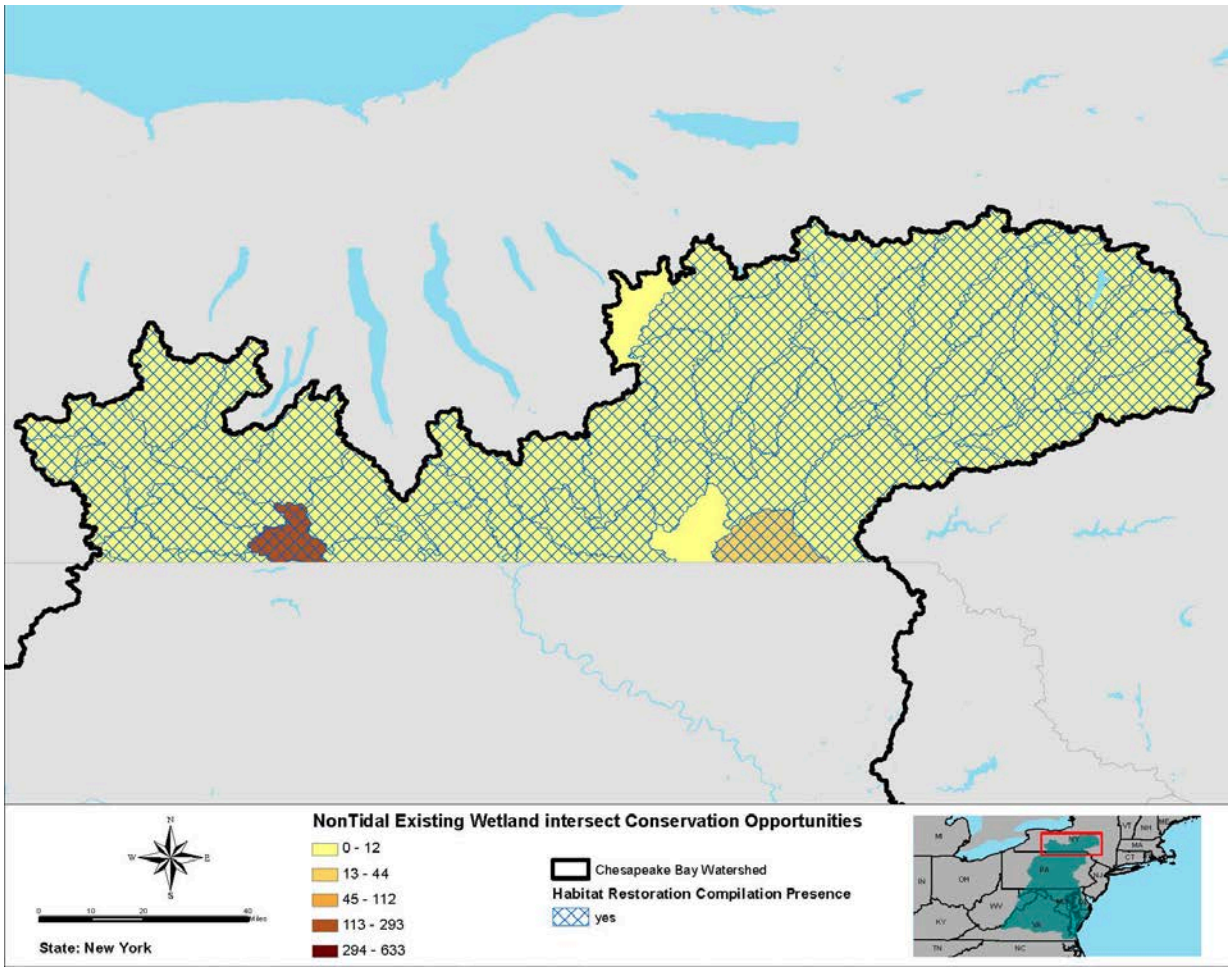

Figure 16. Nontidal wetland enhancement and conservation opportunities that intersect with areas included in the Habitat Restoration Compilation (blue hatched lines) in New York

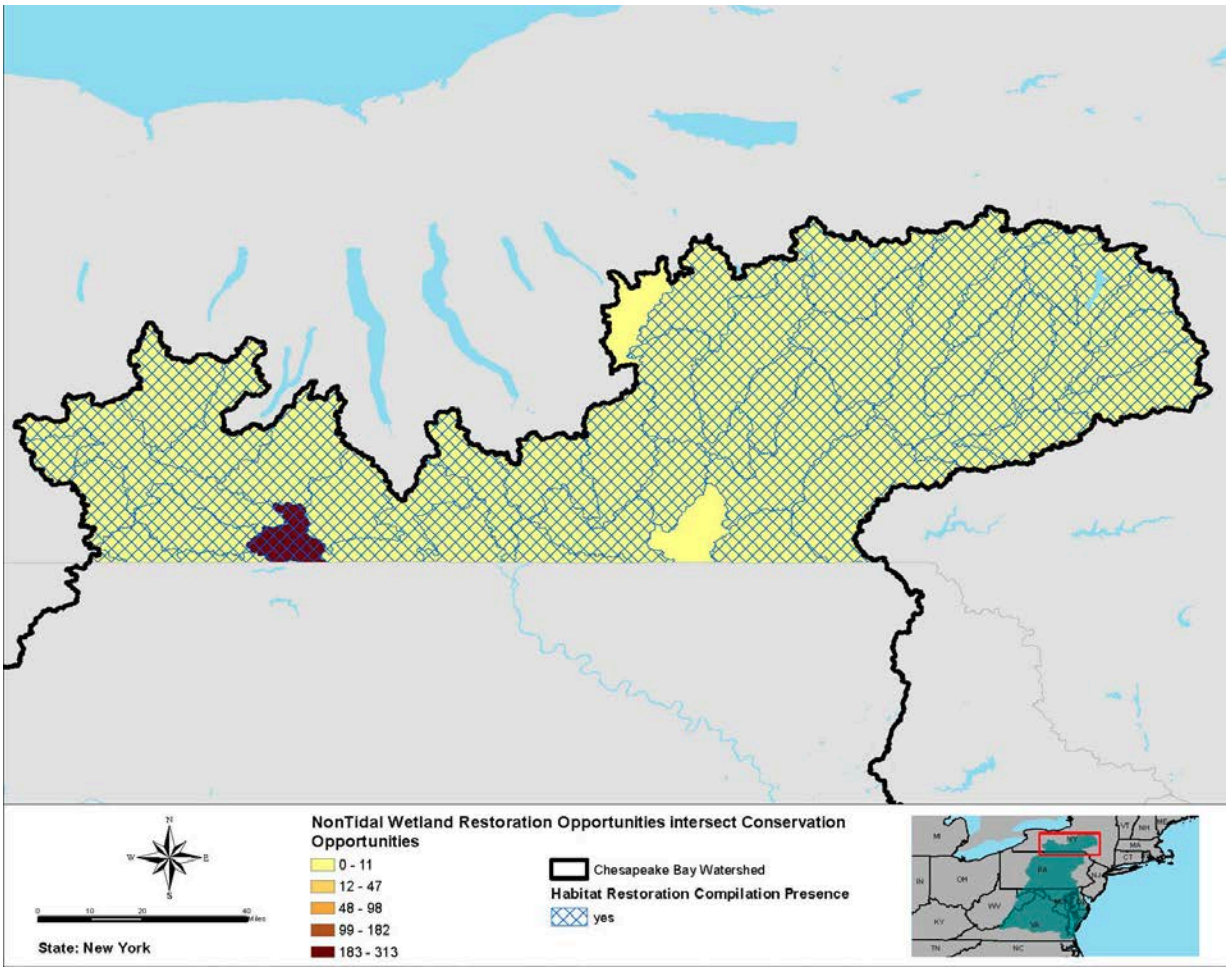

Figure 17. Nontidal wetland restoration and conservation opportunities that intersect with areas included in the habitat restoration compilation (blue hatched lines) in New York

2.5 Public Access Goal

"Expand public access to the Chesapeake Bay and its tributaries through existing and new local, state, and federal parks, refuges, reserves, trails and partner sites."

2.5.1 Outcome: Public Access Site Development

"By 2025, add 300 new public access sites to the Chesapeake Bay Watershed, with a strong emphasis on providing opportunities for boating, swimming and fishing, where feasible."

The Socioeconomic Analysis synthesizes information that reflects societal use of resources within the Chesapeake Bay Watershed. The compilation characterizes the locations in the watershed that are important for recreation and public access, water supply, and source water protection and those areas where underserved populations are located.

The following data was used in the Socioeconomic Analysis (see Planning Analyses Appendix for more details on the data used):

- *Locations of national, state, and local parks*
- *Public access points* (Nationally designated trails, existing and proposed public access sites compiled by the CBP)
- *Underserved populations* (Minority and low-income populations provided by the CBP)
- *National Inventory of Dams* (Congressionally authorized database documenting dams in the U.S. and its territories; maintained and published by the USACE)

The results of the Socioeconomic Analysis are shown in Figure 19 and in Table 11. The Socioeconomic Analysis for New York shows that there are substantive areas of the state that do not have public access sites, parks, water supply sites, or reservoirs. There are few to no access points reported in the Tioga and Chemung River Subwatersheds in the northwestern portion of the watershed at the Pennsylvania/New York line. Additionally, the Upper Susquehanna River Subwatershed has limited reported access and recreation areas.

To determine where conservation may provide societal benefits to the public, the following data were overlaid:

- *Conservation Opportunities Assessment Results* (CBCP)
- *Socioeconomic Analysis Results* (CBCP)

The results of this analysis are shown in Figure 20 and in Table 11. The subwatershed with the greatest overlap between conservation opportunities (unprotected healthy habitats) and socioeconomic resources is HUC 0205010113 (Lower Susquehanna River), which is shared between New York and Pennsylvania and contains 15 acres of potential opportunities that are adjacent to and/or overlap with underserved, low-income populations.

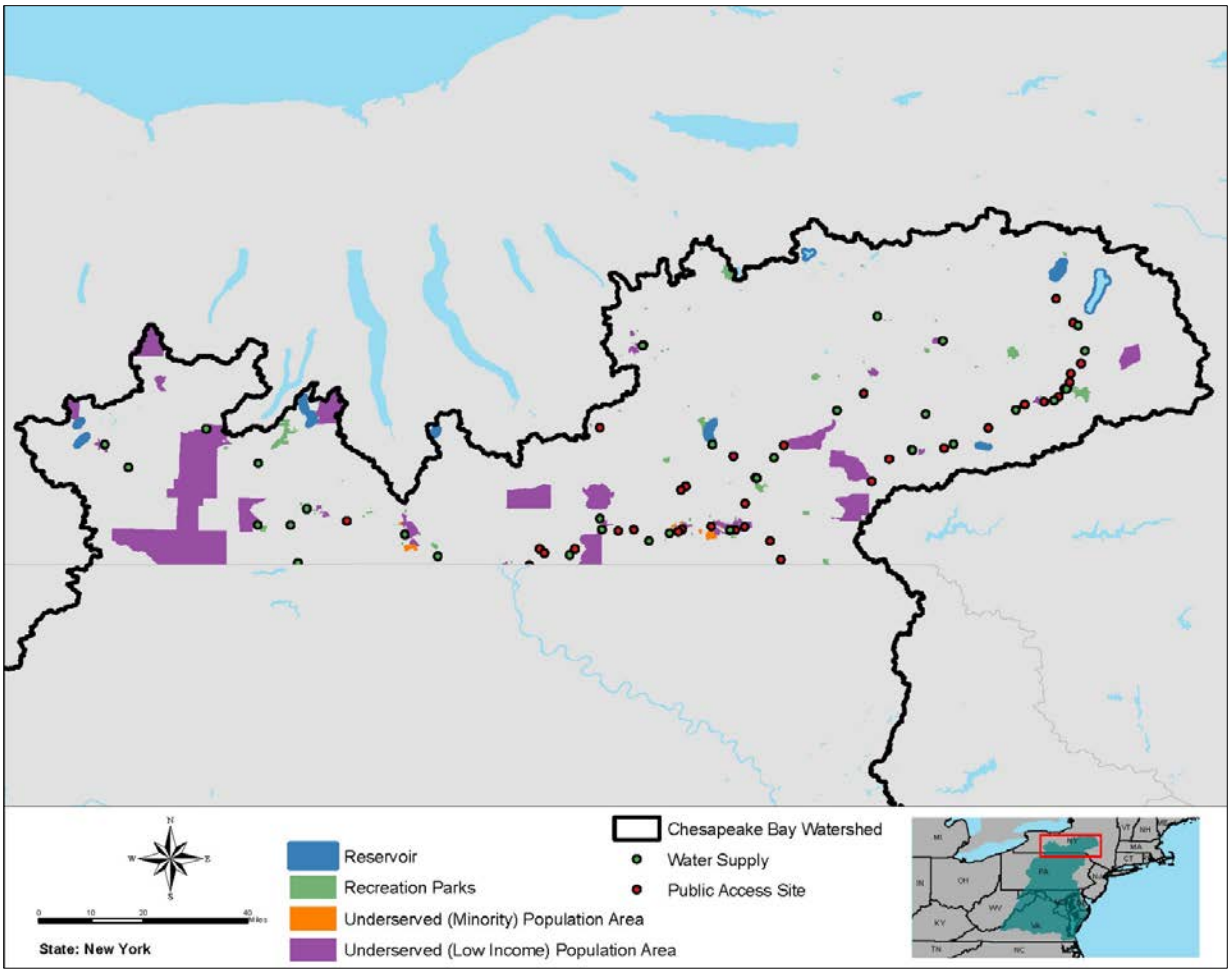

Figure 18. Socioeconomic Analysis for New York

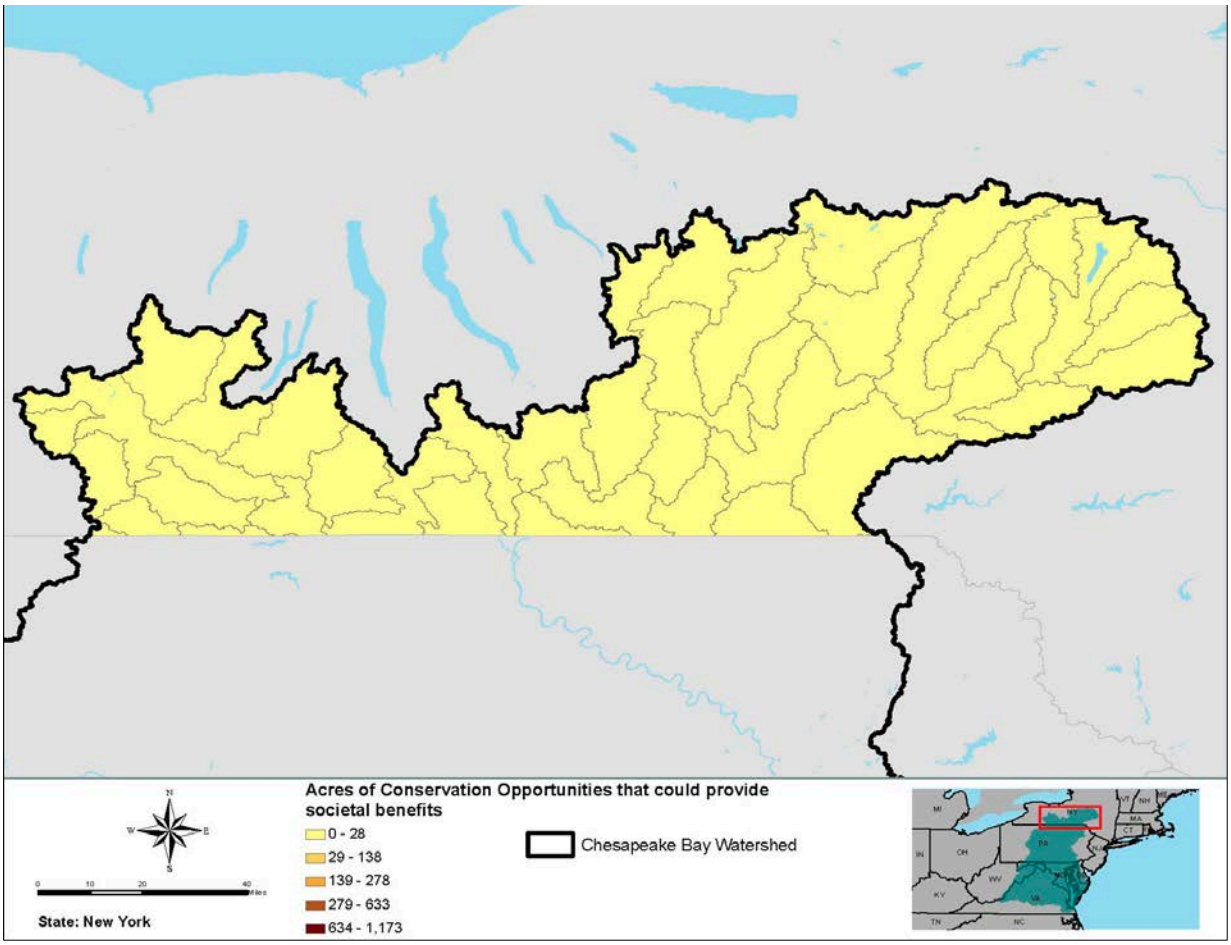

Figure 19. Conservation opportunities that may add societal benefits in New York

2.6 Climate Resiliency Goal

"Increase the resiliency of the Chesapeake Bay Watershed, including its living resources, habitats, public infrastructure and communities, to withstand the adverse impacts from changing environmental and climate conditions."

2.6.1 Outcome: Climate Adaptation

"Continually pursue, design and construct restoration and protection projects to enhance the resiliency of the Chesapeake Bay and its aquatic ecosystems against the impacts of coastal storm erosion, coastal flooding, more intense and more frequent storms, and sea level rise."

The Threats Analysis identifies areas within New York that are threatened by urbanization and climate change, as well as areas prone to increased/persistent future flooding.

The following data was used in the Nontidal Threats Analysis (see Planning Analyses Appendix for more details on the data used):

- *Nontidal flooding* (USGS)
- *Future projected development* (USACE North Atlantic Coast Comprehensive Study (NACCS))
- National Fish Habitat Assessment (NFHAP)

Results of the Nontidal Threats Analysis is shown in Figure 21 and in Table 12. In general, New York is at low risk to potential nontidal threats in the future; however, there is one subwatershed, HUC 0205010404 (Canisteo River), with 1,122 acres of threatened lands.

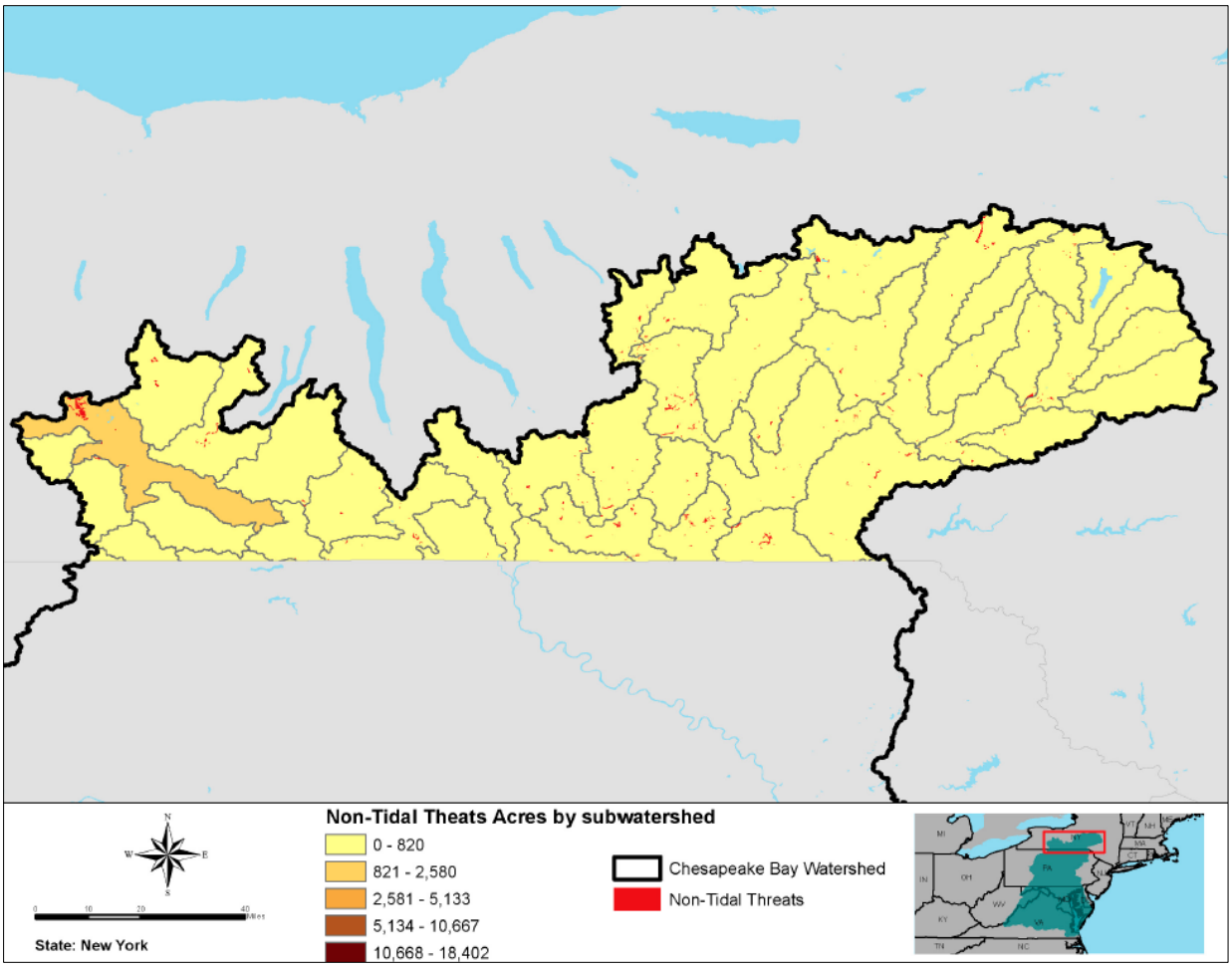

Figure 20. Nontidal Threats Analysis for New York

SECTION 3

Watershed Planning Considerations outside the 2014 Bay Agreement

3.1 Rare, Threatened, and Endangered Species and U.S. Fish and Wildlife Service (USFWS) Species of Concern

The following maps (Figures 22 through 24) display areas in New York that have federally listed threatened and endangered species as well as species identified as critical by the USFWS. The species have been placed into the following categories based on their primary habitat needs — aquatic, stream, and wetland dependent. The following maps display the number of species per subwatershed that fall into the aquatic, beach, stream, or wetland categories and whether they are federally listed, critical, or both. The Chemung River Watershed supports the highest concentration of threatened and endangered and critical stream species in New York.

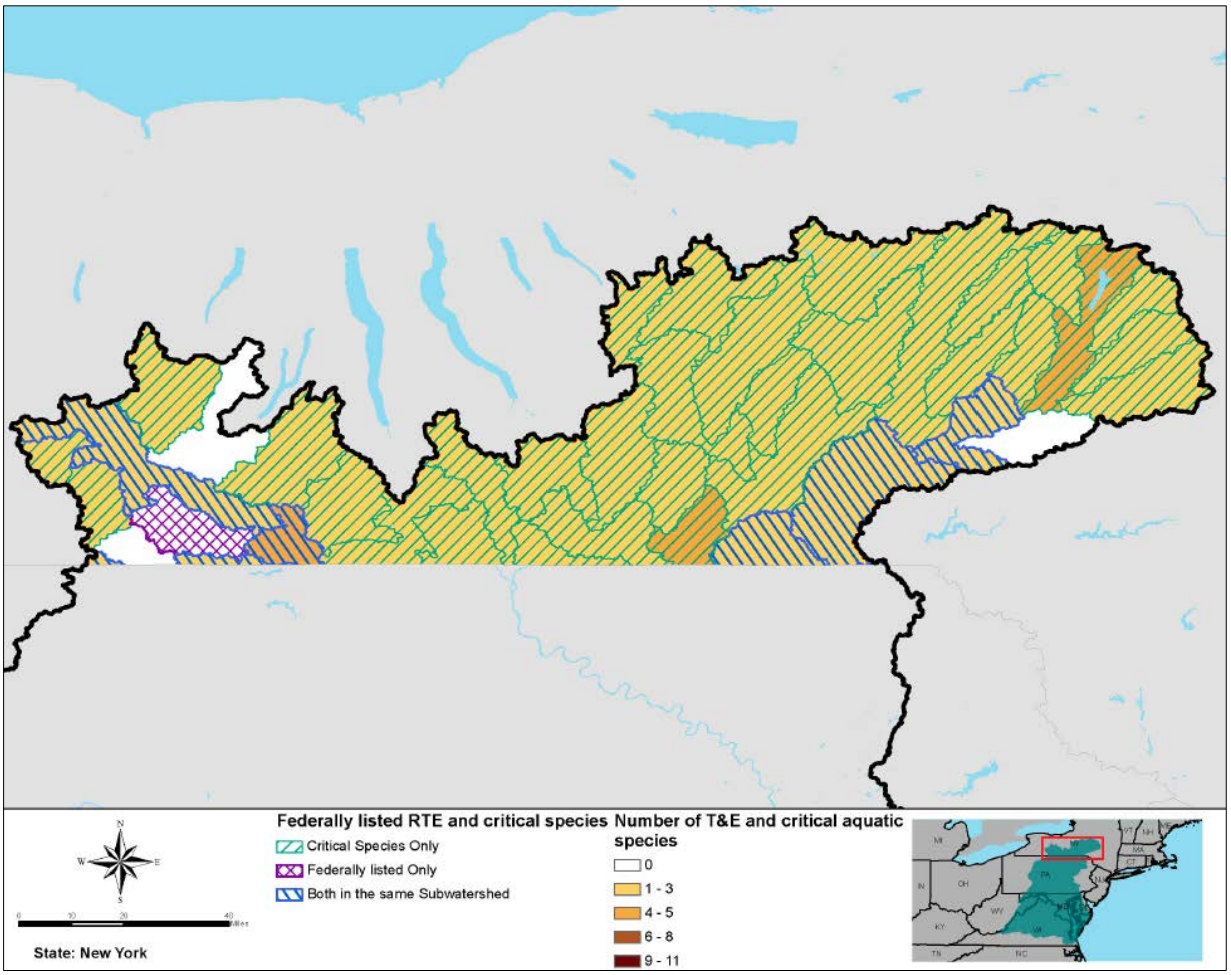

Figure 21. Occurrence of rare, threatened and endangered aquatic species in New York

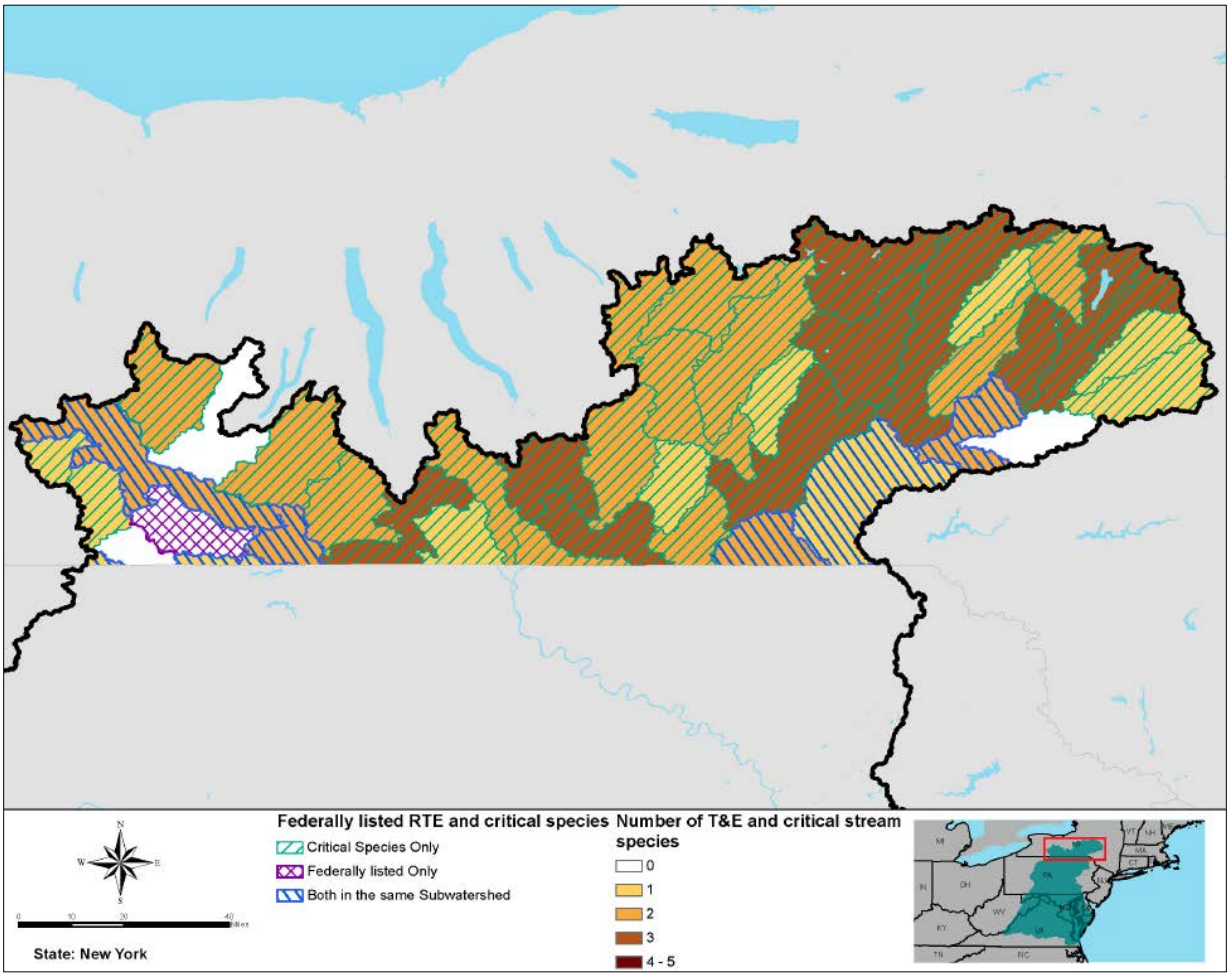

Figure 22. Occurrence of rare, threatened and endangered stream species in New York

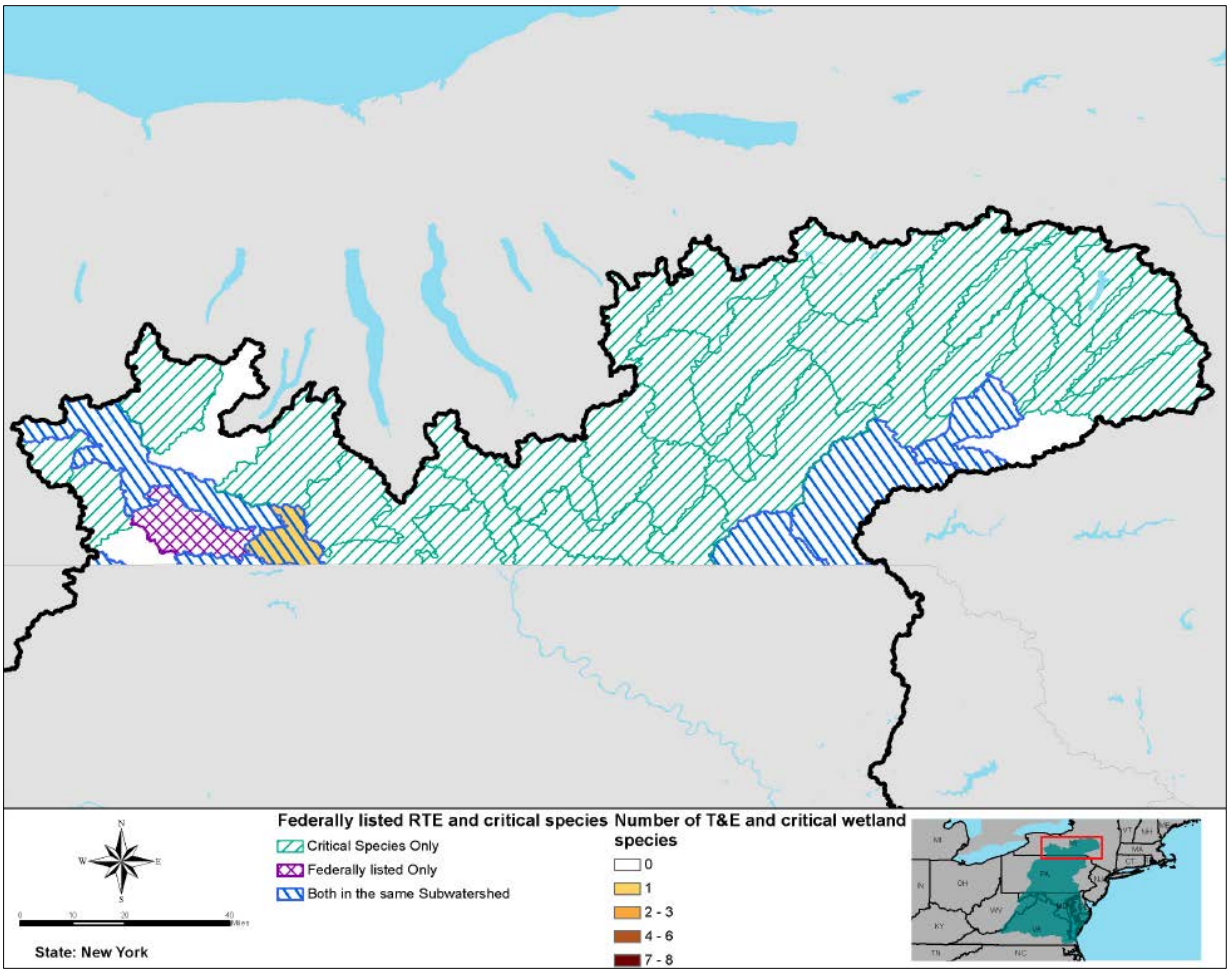

Figure 23. Occurrence of rare, threatened and endangered wetland species in New York

3.2 Shale Gas Development

There are two major shale plays that fall within the Chesapeake Bay Watershed, the Marcellus and Utica shale plays. The Marcellus shale play area extends from Ohio, north to New York, and includes extensive areas in West Virginia, Pennsylvania, and New York, as well as marginal areas in Maryland and Virginia. The Utica shale play covers much of the same area as Marcellus shale but extends further west and north than the Marcellus shale play. In the New York portion of the watershed (approximately 6,250 square miles (NYDEC 2017)), the Utica and Marcellus shale plays cover approximately 6,137 and 5,995 square miles, respectively (Figure 25).

In New York State, high-volume hydraulic fracturing (commonly referred to as fracking), a method by which shale gasses are extracted from shale rock beds, was prohibited in 2015 after an intensive seven year study. Documentation on NYDEC's decision to prohibit fracking is available at: http://www.dec.ny.gov/energy/75370.html

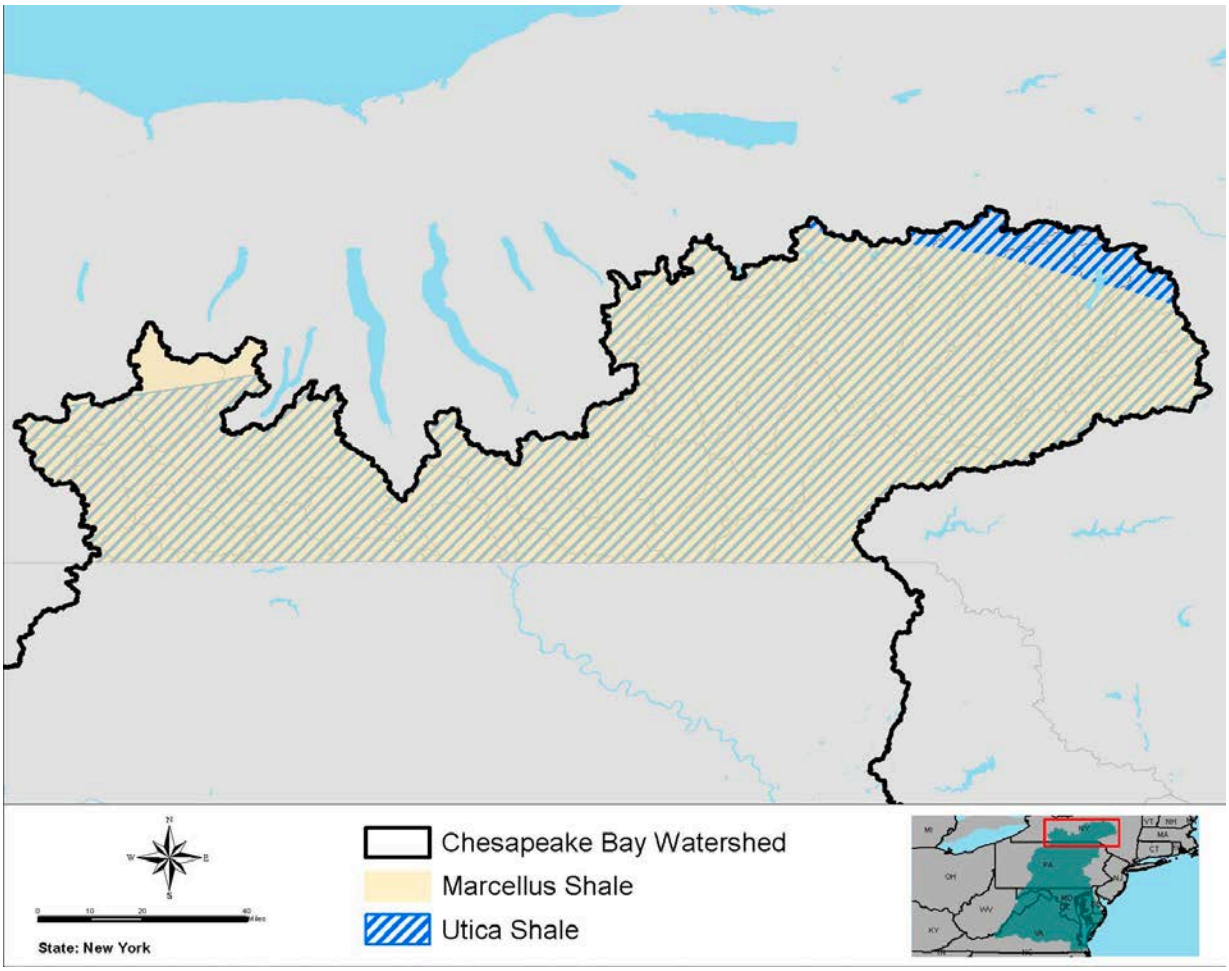

Figure 24. Extent of the Marcellus and Utica shale in New York

3.3 Regional Flow and Connectivity

Nature's Network developed data that characterizes the ability of flora and fauna to move across the landscape. This regional flow data characterizes areas within a range of constrained flow to high diffuse flow (Figure 26 and Table 13) (see the Planning Analyses Appendix for definitions of each category.) The purpose of this analysis is to discern where there are important areas of regional flow, as determined by the Nature Conservancy (2016), which could benefit from tidal and/or nontidal wetland restoration. By aligning areas for potential wetland restoration with regional flow, opportunities to improve connectivity and ease of passage are identified. To investigate this concept, the CBCP overlaid the combined wetland restoration opportunities with the regional flow data. The acreage that is identified by Nature's Network as being a regional flow corridor of any degree was summed within each subwatershed. The total acreage of restoration opportunity was classified into 5 groups utilizing the Jenks (Natural Breaks) method in ArcGIS. The top 2 groups of watersheds based on acreage of opportunity are identified as *Opportunity* subwatersheds. Those subwatersheds with the greatest overlap between wetland restoration opportunity (acres) and regional flow data include: Lower Susquehanna River (HUC 0205010113), Middle Susquehanna River (0205010112), Lower Chenango River (HUC 0205010208), Unadilla River (HUC 0205010109), Cowanesque River (HUC 0205010408), Middle Chenango River (HUC 0205010206), Otselic River (HUC 0205010203), Lower Chemung River

(0205010506), Tioga River (HUC 0205010409), Middle Chemung River (HUC 0205010505), Canisteo River (HUC 0205010404), Nanticoke River (HUC 0205010301), Owego River (0205010304), Pipe Creek-Susquehanna River (HUC 0205010305), and the Tioughnioga River (HUC 0205010204).

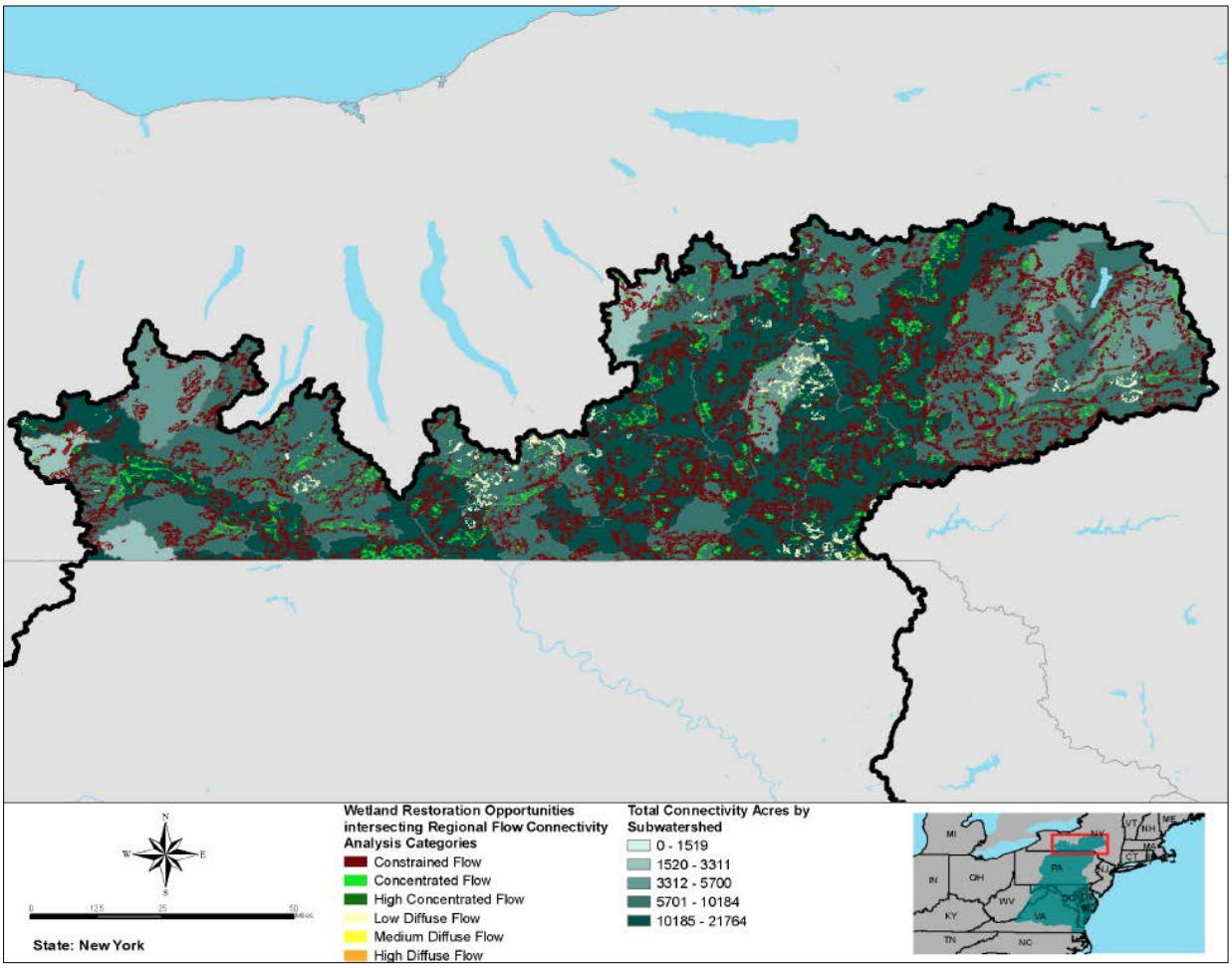

Figure 25. Acres of wetland restoration opportunities that could beneficially impact regional flow in New York

3.4 Road-Stream Crossings

A number of human activities can disrupt the continuity of river and stream ecosystems. The most familiar human-caused barriers are dams. Fish passage projects and dam removals have been a focus of the Chesapeake Bay Fish Passage Workgroup (FPWG) since 1989, and many dams and fish passage structures have been installed, opening thousands of miles of potential fish habitat. In recent years, there is growing concern about the role of road-stream crossings, especially culverts, in altering habitats, disrupting river and stream continuity, and blocking fish passage. Over 160,000 road-stream crossings exist in the Chesapeake Bay watershed. In New York alone there are 14,261 road-stream crossings. However, few culverts in the Chesapeake Bay watershed have been assessed for fish passage. Of those in New York, 325 have been surveyed (Figure 27).

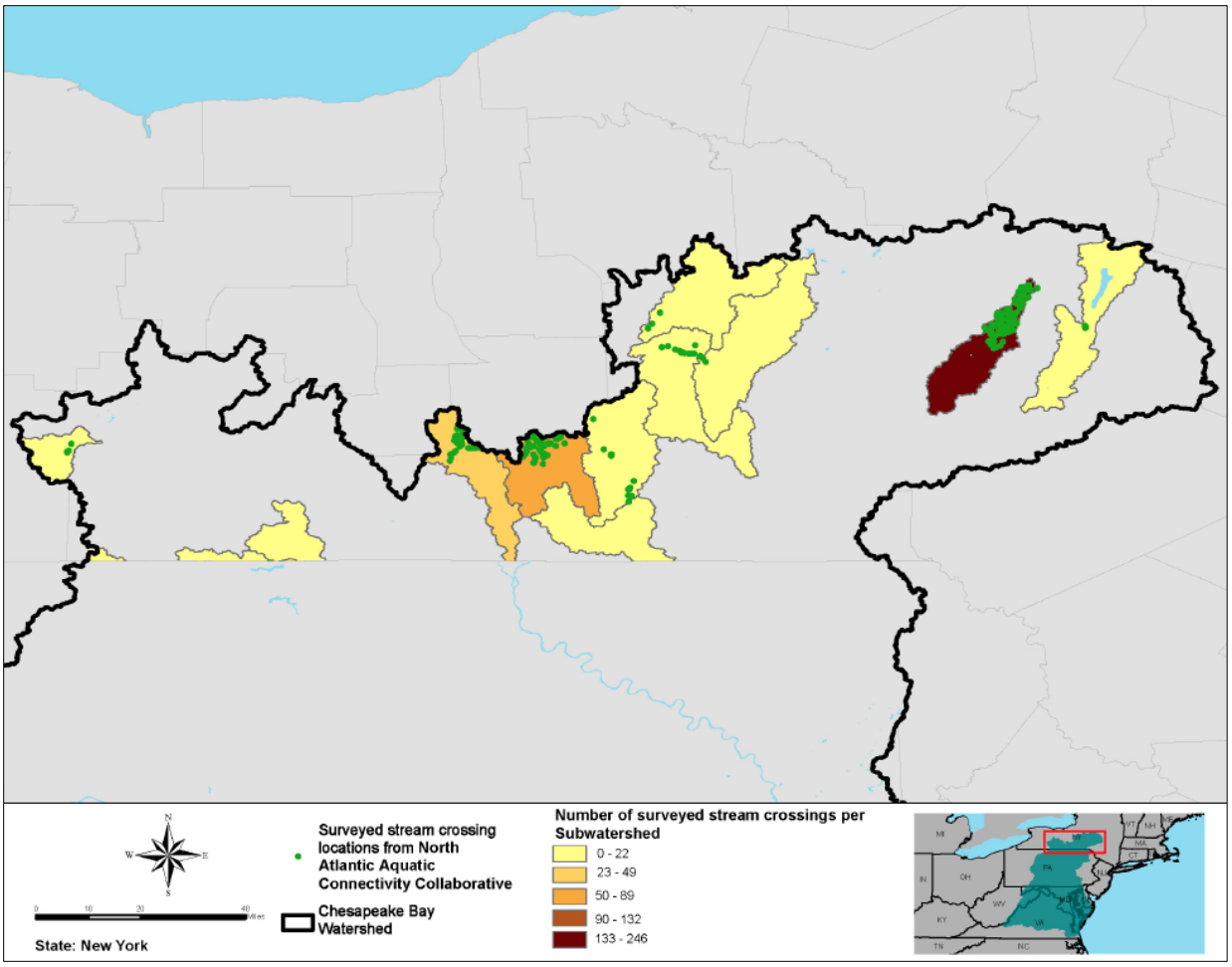

Figure 26. Surveyed stream crossings in New York

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SECTION 4
Integration Analysis

The *Opportunity* maps can guide various stakeholders and focus efforts. The purpose of the Integration Analysis was to evaluate the results of the individual Opportunity Assessments to identify where multiple 2014 Bay Agreement goals and outcomes or co-benefits that could be achieved. The resulting *Restoration Roadmap* is a compilation of the *Opportunity Assessments* which highlights co-benefits and the potential to address multiple problems with an integrated water resources management approach.

In New York, the following *Opportunities Assessments* identified subwatersheds with opportunities aligning with the 2014 Bay Agreement goals and outcomes:

- Nontidal wetlands restoration
- Wetlands restoration to benefit avian wildlife
- Connectivity – regional flow
- Riparian forest buffers
- Stream restoration
- Toxic contaminants
- Conservation
- Watershed stressors (water quality improvements)

Due to the fact that there are a number of analyses that occur only in estuarine or tidal areas (oyster restoration, SAV, etc.), these data were separated and included in scoring only in those subwatersheds where 2014 Bay Agreement goals and outcomes have the potential to occur, eliminating bias towards tidal/estuarine areas at the mouth of the watershed when compared to the basin states further from the mainstem of the Chesapeake Bay. This allows for consistency between all analyses where subwatersheds were placed in disparate categories.

The subwatersheds in New York with the highest potential to achieve the most 2014 Bay Agreement goals are:

- HUC 0205010505, Middle Chemung River
- HUC 0205010409, Tioga River
- HUC 0205010109, Unadilla River
- HUC 0205010112, Middle Susquehanna River

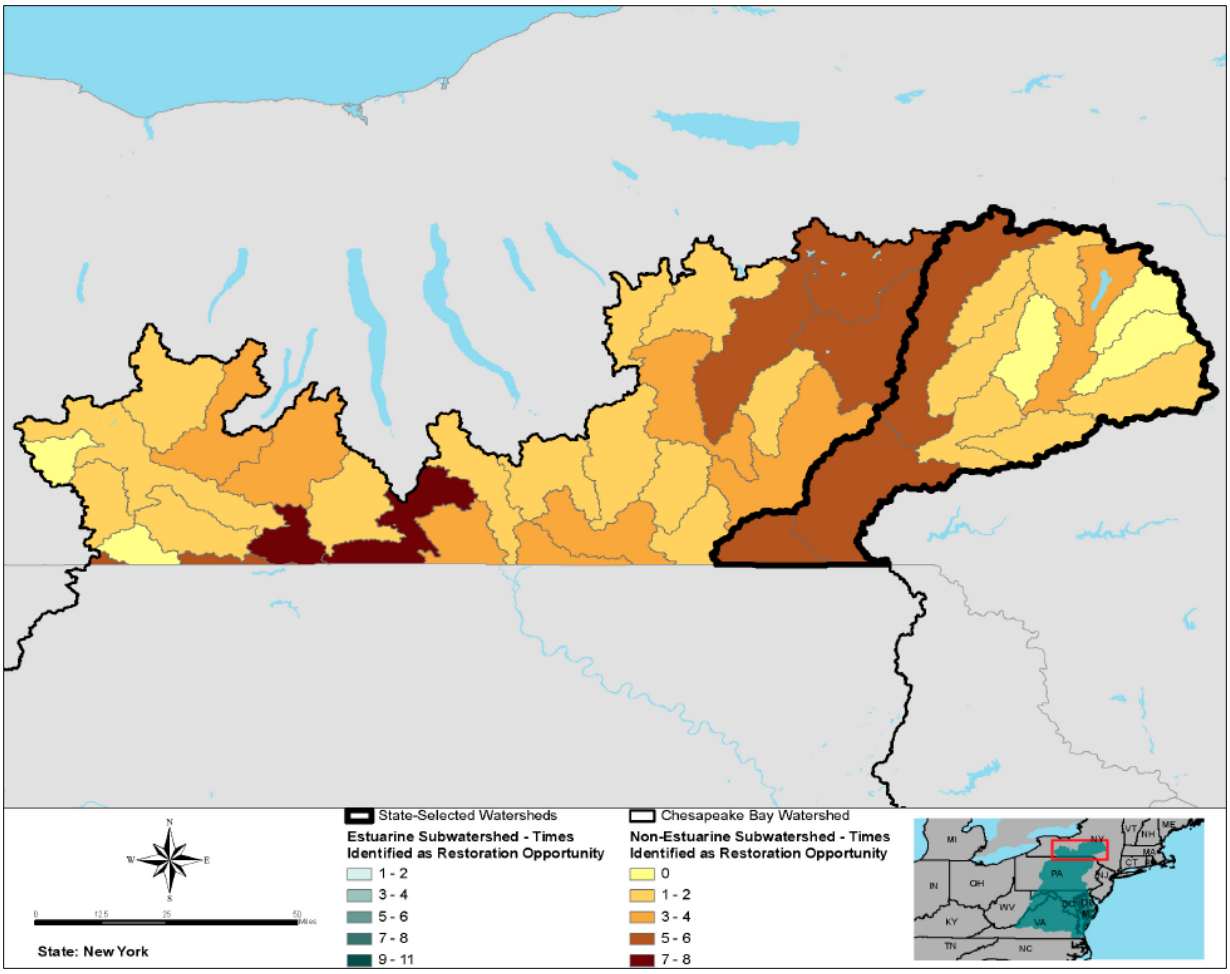

Figure 27. *Restoration Roadmap* for New York

Table 1a. *Restoration Roadmap* for Pennsylvania: Compilation of Opportunity Assessments (1 = yes; 0 = no)

Drainage States	HUC 10 Number	Subwatershed Name	Nontidal Wetland Restoration Opportunity	Wetlands Restoration to Benefit Avian Wildlife Opportunity	Connectivity – Regional Flow Opportunity	Riparian Forest Buffer Opportunity	Stream Restoration Opportunity	Toxic Contaminants Opportunity	Conservation Opportunity	Water Stressor Analysis Opportunity	Times Identified as *Opportunity*
NY	0205010505	Middle Chemung River	1	1	1	1	1	1	0	1	7
NY,PA	0205010409	Tioga River	1	1	1	1	1	1	1	0	7
NY	0205010109	Unadilla River	1	0	1	1	1	1	0	1	6
NY	0205010112	Middle Susquehanna River	1	0	1	1	1	1	0	1	6
NY	0205010203	Otselic River	1	1	1	1	1	0	0	0	5
NY	0205010205	Upper Chenango River	1	0	1	1	1	0	0	1	5
NY	0205010206	Middle Chenango River	1	0	1	1	1	0	0	1	5
NY	0205010204	Tioughnioga River	1	1	1	0	1	0	0	0	4
NY	0205010208	Lower Chenango River	1	0	1	1	1	0	0	0	4
NY,PA	0205010113	Lower Susquehanna River	1	0	1	1	1	0	0	0	4
NY,PA	0205010408	Cowanesque River	1	0	1	1	1	0	0	0	4
NY	0205010106	Headwaters Susquehanna River	0	0	1	0	1	0	0	1	3
NY	0205010502	Middle Cohocton River	0	0	1	0	1	0	0	1	3
NY	0205010503	Lower Cohocton River	0	0	1	1	0	0	0	1	3

Drainage States	HUC 10 Number	Subwatershed Name	Nontidal Wetland Restoration Opportunity	Wetlands Restoration to Benefit Avian Wildlife Opportunity	Connectivity – Regional Flow Opportunity	Riparian Forest Buffer Opportunity	Stream Restoration Opportunity	Toxic Contaminants Opportunity	Conservation Opportunity	Water Stressor Analysis Opportunity	Times Identified as *Opportunity*
NY	0205010111	Upper Susquehanna River	0	0	1	0	1	0	0	0	2
NY	0205010201	East Branch Tioughnioga River	0	0	1	0	1	0	0	0	2
NY	0205010303	Catatonk Creek	0	0	1	0	1	0	0	0	2
NY	0205010304	Owego Creek	0	0	1	0	1	0	0	0	2
NY	0205010305	Pipe Creek-Susquehanna River	0	0	1	0	1	0	0	0	2
NY	0205010404	Canisteo River	0	0	1	1	0	0	0	0	2
NY	0205010501	Upper Cohocton River	0	0	0	0	1	0	0	1	2
NY	0205010504	Upper Chemung River	0	1	1	0	0	0	0	0	2
NY,PA	0205010302	Choconut Creek-Susquehanna River	0	0	1	0	0	1	0	0	2
NY,PA	0205010307	Wappasening Creek-Susquehanna River	0	0	1	0	1	0	0	0	2
NY,PA	0205010506	Lower Chemung River	0	0	1	0	1	0	0	0	2
NY	0205010101	Canadarago Lake	0	0	0	0	1	0	0	0	1
NY	0205010104	Charlotte Creek	0	0	1	0	0	0	0	0	1

Drainage States	HUC 10 Number	Subwatershed Name	Nontidal Wetland Restoration Opportunity	Wetlands Restoration to Benefit Avian Wildlife Opportunity	Connectivity – Regional Flow Opportunity	Riparian Forest Buffer Opportunity	Stream Restoration Opportunity	Toxic Contaminants Opportunity	Conservation Opportunity	Water Stressor Analysis Opportunity	Times Identified as *Opportunity*
NY	0205010107	Wharton Creek	0	0	1	0	0	0	0	0	1
NY	0205010108	Butternut Creek	0	0	1	0	0	0	0	0	1
NY	0205010110	Ouleout Creek	0	0	1	0	0	0	0	0	1
NY	0205010202	West Branch Tioughnioga River	0	0	0	0	0	0	0	1	1
NY	0205010207	Genegantslet Creek	0	1	0	0	0	0	0	0	1
NY	0205010301	Nanticoke Creek	0	0	1	0	0	0	0	0	1
NY	0205010306	Cayuta Creek	0	0	1	0	0	0	0	0	1
NY	0205010402	Bennetts Creek	0	0	1	0	0	0	0	0	1
NY	0205010403	Tuscarora Creek	0	0	1	0	0	0	0	0	1
NY	0205010102	Cherry Valley Creek	0	0	0	0	0	0	0	0	0
NY	0205010103	Schenevus Creek	0	0	0	0	0	0	0	0	0
NY	0205010105	Otego Creek	0	0	0	0	0	0	0	0	0
NY	0205010401	Canacadea Creek	0	0	0	0	0	0	0	0	0
NY	0205010405	Troups Creek	0	0	0	0	0	0	0	0	0

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SECTION 5

State-Selected Watershed Action Plan Summary

The State-Selected Watershed Action Plans undertook a detailed analysis for each jurisdiction with the goal of identifying site-specific, project-scale for implementation. The watershed being evaluated in detail for New York is the Upper Susquehanna Watershed. The full action plan for the Upper Susquehanna Watershed is appended to this chapter. Figures 29 and 30 depict the results of the action plan investigation. Utilizing the results of the CBCP baywide analyses, local data, and candidate restoration projects submitted by stakeholders, 10 areas are identified as focal points for developing projects that could address multiple CBA goals and outcomes. Table 1b summarizes the potential opportunities identified in each polygon.

Table 1b. Summary of activities in proposed focus areas for project identification in the Upper Susquehanna Watershed

Upper Susquehanna Watershed Project Focus Areas										
Activity	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Stream Restoration		X	X	X	X	X	X	X	X	X
Riparian Buffer Restoration	X	X	X	X	X	X	X	X	X	X
Wetland Restoration	X	X	X	X	X	X	X	X	X	X
Removal of Fish Blockages							X*			

*Data on removal of fish passage blockages was intermittent throughout the Upper Susquehanna. Their existence within the "G" boundary is therefore a result of data quality/availability and does not reflect upon the ecological status of the particular area.

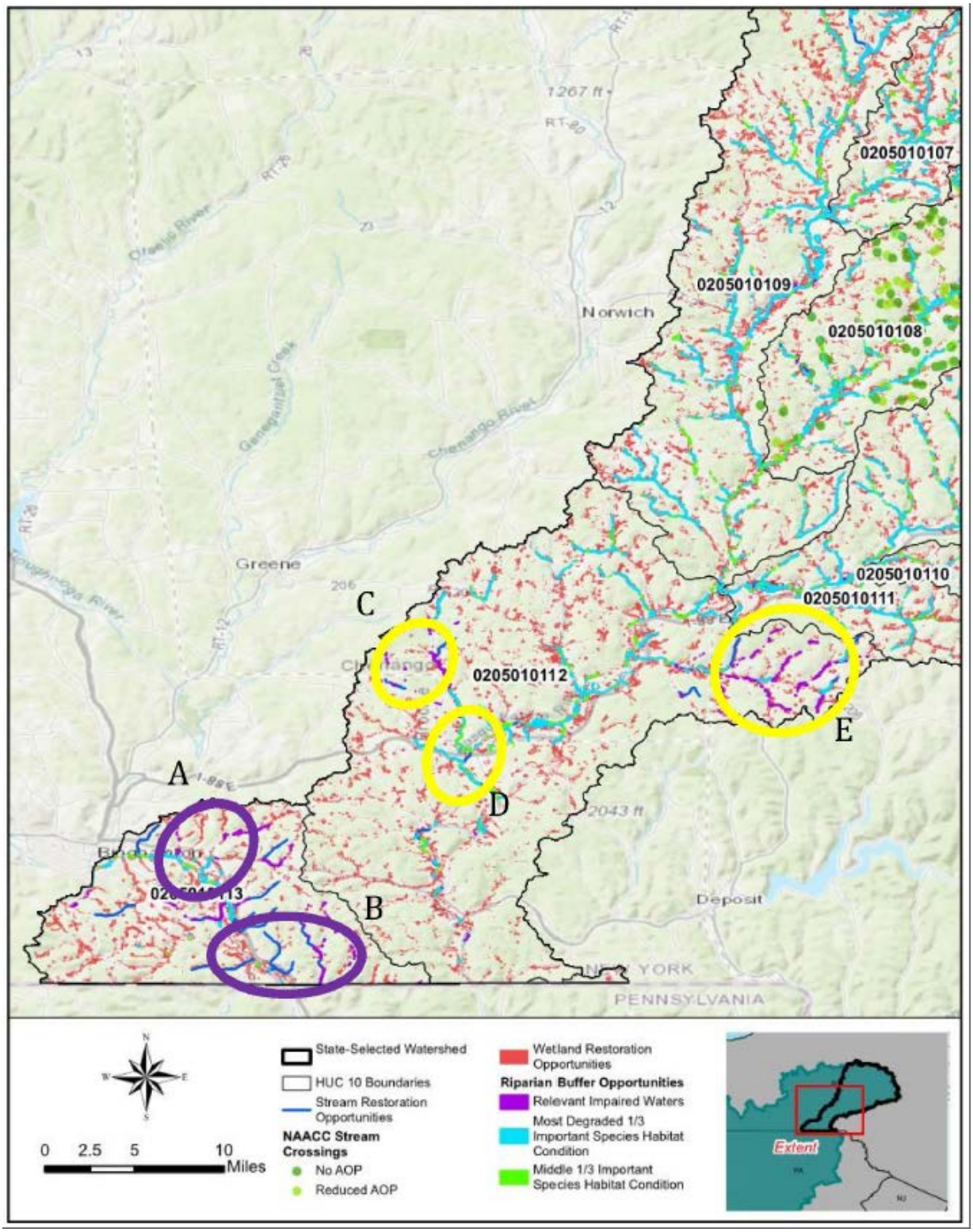

Figure 28. Proposed focus areas for project identification in the southern portion of the Upper Susquehanna Watershed

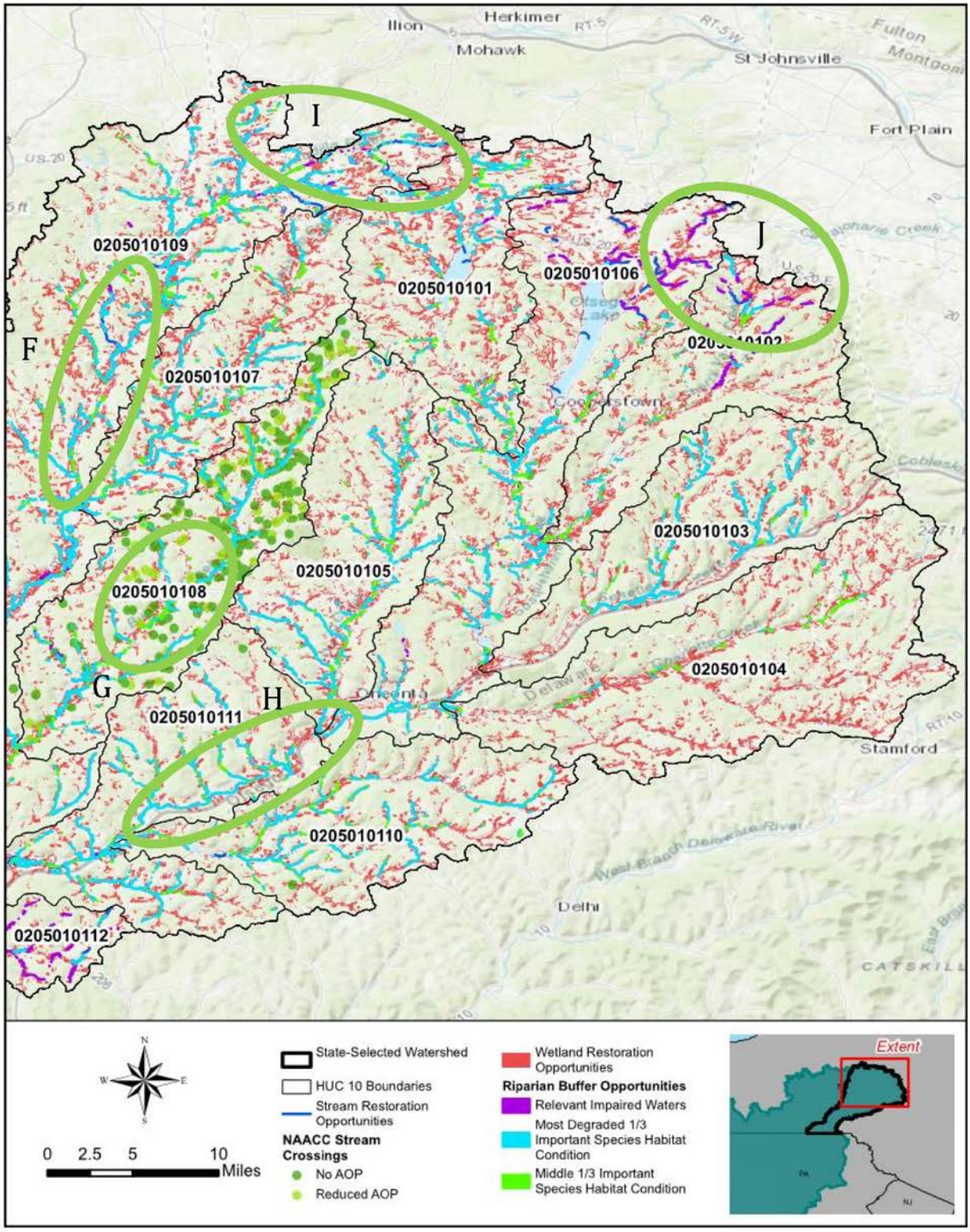

Figure 29. Proposed focus areas for project identification in the northern portion of the Upper Susquehanna Watershed

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Section 6

Funding and Implementation Strategy

The Federal Leadership Committee for the Chesapeake Bay, including EPA and the Departments of Agriculture, Commerce, Defense, and the Interior, invested more than $536 million in watershed restoration in fiscal year 2016. Funding is directed to state and local governments, educational institutions, nonprofit organizations, and territorial and tribal agencies. These groups often provide additional funding—cash or in-kind—to further facilitate restoration efforts.

This section details a summary of federal, state, and nongovernmental programs and organizations that could be pursued for assistance in implementation efforts.

6.1 Federal Funding

The *Catalog of Federal Funding Sources for Watershed Protection* is a searchable online database of financial assistance sources (grants, loans, and cost-sharing) available to fund a variety of projects. The database may be searched by:

- Key word (e.g., wetlands, infrastructure, education, forestry);
- Type of organization (e.g., nonprofit groups, state, tribal, educational institution);
- Match requirement (yes or no); and
- Federal agency.

A search of all criteria provided programmatic information by agency that may be useful for different needs and opportunities identified in the CBCP. This information is available in the CBCP Existing Watershed Conditions and Threats Report in Table 39 of Section 12.3. Each program is linked to a web page that details the most current information regarding the funding source, including program overview, current and past funding levels, lowest/median/highest awards, match requirements, contact information, and eligible organizations.

6.2 Non-Governmental Resources

Outreach and public engagement, advocacy, volunteer and community support, monitoring, and research are examples of activities that many nongovernmental and nonprofit groups do as part of their mission. These groups often are more nimble than larger governmental agencies. They are on the ground and aware of opportunities and constraints at the parcel scale. Networking with community groups can bring much needed resources to the aid of communities with the capacity to facilitate restoration efforts. Tables 40 and 41 in Sections 12.4 and 12.5 of the CBCP Existing Watershed Conditions and Threats Report catalogs a list of groups that support habitat conservation, management, and restoration efforts that are complementary to Chesapeake Bay goals.

6.3 Public-Private-Partnerships

A public-private partnership is typically a contractual agreement between a state or locality and a private organization or nongovernmental organization that commits them to provide an environmental or recreational service. Public/Private partnerships will be an essential component for implementation of various CBCP measures, including those associated with restoration, water quality, recreation, stewardship, and conservation. For example, public-private partnerships have become a popular and effective method to achieve stringent water quality standards required to meet stormwater initiatives in the Chesapeake Bay Watershed. Another successful and viable example of a public-private partnership approach is the execution of voluntary, long-term real estate protections by local citizens in the Chesapeake Bay Watershed. Other successful partnerships that have been implemented in the watershed are citizen water quality monitoring programs and programs where students grow oyster spat for reef restoration projects. Other public-private partnerships exist in which schools grow vegetation that they then plant at local restoration sites, providing a viable function for the school and promoting stewardship and interpretation throughout the watershed. Overall, the implementation of public-private partnerships will be an essential component to ensure successful implementation of the CBCP.

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Section 7
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Attachment A

State of New York –

Data Tables Supporting Geospatial Analyses and Outputs from Opportunity Assessments

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Table A1. Summary of each hydrologic unit code (HUC) 10 subwatershed in New York

HUC 10 Number	Subwatershed Name	Acres	Drainage States
0205010101	Canadarago Lake	65,687	NY
0205010102	Cherry Valley Creek	58,658	NY
0205010103	Schenevus Creek	76,637	NY
0205010104	Charlotte Creek	112,785	NY
0205010105	Otego Creek	69,838	NY
0205010106	Headwaters Susquehanna River	122,430	NY
0205010107	Wharton Creek	59,417	NY
0205010108	Butternut Creek	83,311	NY
0205010109	Unadilla River	216,429	NY
0205010110	Ouleout Creek	70,022	NY
0205010111	Upper Susquehanna River	82,041	NY
0205010112	Middle Susquehanna River	202,020	NY
0205010201	East Branch Tioughnioga River	124,122	NY
0205010202	West Branch Tioughnioga River	64,410	NY
0205010203	Otselic River	165,255	NY
0205010204	Tioughnioga River	134,813	NY
0205010205	Upper Chenango River	141,109	NY
0205010206	Middle Chenango River	154,641	NY
0205010207	Genegantslet Creek	66,700	NY
0205010208	Lower Chenango River	176,875	NY
0205010301	Nanticoke Creek	72,644	NY
0205010303	Catatonk Creek	96,467	NY
0205010304	Owego Creek	123,497	NY
0205010305	Pipe Creek-Susquehanna River	107,524	NY
0205010306	Cayuta Creek	91,154	NY
0205010401	Canacadea Creek	37,925	NY
0205010402	Bennetts Creek	61,223	NY
0205010403	Tuscarora Creek	82,080	NY
0205010404	Canisteo River	172,013	NY
0205010501	Upper Cohocton River	124,558	NY
0205010502	Middle Cohocton River	116,942	NY
0205010503	Lower Cohocton River	145,395	NY
0205010504	Upper Chemung River	103,361	NY
0205010505	Middle Chemung River	155,129	NY
0205010405	Troups Creek	43,432	NY
0205010113	Lower Susquehanna River	244,348	NY,PA
0205010302	Choconut Creek-Susquehanna River	82,674	NY,PA
0205010307	Wappasening Creek-Susquehanna River	94,271	NY,PA

HUC 10 Number	Subwatershed Name	Acres	Drainage States
0205010408	Cowanesque River	149,041	NY,PA
0205010409	Tioga River	208,335	NY,PA
0205010506	Lower Chemung River	130,083	NY,PA

Table A2. Watershed Stressors Analysis for New York

HUC 10 Number	Subwatershed Name	Watershed Stressor Score
0205010207	Genegantslet Creek	0.78
0205010402	Bennetts Creek	0.78
0205010403	Tuscarora Creek	0.72
0205010104	Charlotte Creek	0.67
0205010105	Otego Creek	0.61
0205010108	Butternut Creek	0.61
0205010110	Ouleout Creek	0.61
0205010113	Lower Susquehanna River	0.61
0205010301	Nanticoke Creek	0.61
0205010303	Catatonk Creek	0.61
0205010304	Owego Creek	0.61
0205010305	Pipe Creek-Susquehanna River	0.61
0205010306	Cayuta Creek	0.61
0205010405	Troups Creek	0.61
0205010101	Canadarago Lake	0.56
0205010102	Cherry Valley Creek	0.56
0205010103	Schenevus Creek	0.56
0205010107	Wharton Creek	0.56
0205010203	Otselic River	0.56
0205010307	Wappasening Creek-Susquehanna River	0.56
0205010401	Canacadea Creek	0.56
0205010408	Cowanesque River	0.56
0205010409	Tioga River	0.56
0205010506	Lower Chemung River	0.56
0205010111	Upper Susquehanna River	0.50
0205010204	Tioughnioga River	0.50
0205010208	Lower Chenango River	0.50
0205010404	Canisteo River	0.50
0205010201	East Branch Tioughnioga River	0.44
0205010302	Choconut Creek-Susquehanna River	0.44
0205010504	Upper Chemung River	0.44
0205010106	Headwaters Susquehanna River	0.39

HUC 10 Number	Subwatershed Name	Watershed Stressor Score
0205010109	Unadilla River	0.39
0205010112	Middle Susquehanna River	0.39
0205010202	West Branch Tioughnioga River	0.39
0205010206	Middle Chenango River	0.39
0205010502	Middle Cohocton River	0.39
0205010503	Lower Cohocton River	0.39
0205010505	Middle Chemung River	0.39
0205010501	Upper Cohocton River	0.33
0205010205	Upper Chenango River	0.28

Table A3. Riparian Forest Buffers Opportunities Assessment for New York

HUC 10 Number	Subwatershed Name	30 Meter Riparian Buffer (Acres)	Resident Fish (Acres)	Brook Trout (Acres)	Nitrogen and Phosphorous (Acres)	Percent Forested Buffer
0205010109	Unadilla River	23334	88802	0	168	88.3%
0205010113	Lower Susquehanna River	23264	141025	62295	1041	87.7%
0205010409	Tioga River	22216	118820	76723	994	85.2%
0205010112	Middle Susquehanna River	19891	114300	11	264	80.9%
0205010208	Lower Chenango River	17729	93442	0	24	74.3%
0205010404	Canisteo River	16627	101644	0	5316	71.3%
0205010505	Middle Chemung River	16044	63643	0	3536	68.5%
0205010203	Otselic River	16037	91747	0	0	68.2%
0205010206	Middle Chenango River	15641	85969	0	1979	67.0%
0205010205	Upper Chenango River	15201	49486	0	5555	63.7%
0205010408	Cowanesque River	15165	39514	31506	1387	63.1%
0205010503	Lower Cohocton River	15072	94427	0	1335	61.5%
0205010104	Charlotte Creek	11552	84772	0	0	48.5%
0205010504	Upper Chemung River	10684	78570	0	589	43.7%

Table A4. Stream Restoration Opportunities Assessment for New York

HUC 10 Number	Subwatershed Name	Watershed Stressor Score	Anadromous Fish (linear feet)	Brook Trout (Linear Feet)	National Fish Habitat Assessment (Linear Feet)	Index of Biological Integrity (IBI) Scores
0208011103	Upper Chenango River	0.28	0	0	632464	POOR
0205010501	Upper Cohocton River	0.33	0	0	556921	GOOD
0205010106	Headwaters Susquehanna River	0.39	0	0	404584	FAIR
0205010109	Unadilla River	0.39	0	0	779318	FAIR
0205010112	Middle Susquehanna River	0.39	0	0	550164	
0205010206	Middle Chenango River	0.39	0	0	501808	POOR
0205010502	Middle Cohocton River	0.39	0	0	457231	GOOD
0205010505	Middle Chemung River	0.39	32991	0	526490	FAIR
0205010201	East Branch Tioughnioga River	0.44	0	0	363230	POOR
0205010111	Upper Susquehanna River	0.50	0	0	355896	
0205010204	Tioughnioga River	0.50	0	0	535421	POOR
0205010208	Lower Chenango River	0.50	0	0	582804	POOR
0205010404	Canisteo River	0.50	0	0	287985	GOOD
0205010409	Tioga River	0.56	0	819559	451328	GOOD
0205010408	Cowanesque River	0.56	0	275480	762883	GOOD
0205010101	Canadarago Lake	0.56	0	0	389504	FAIR
0205010102	Cherry Valley Creek	0.56	0	0	156592	FAIR
0205010103	Schenevus Creek	0.56	0	0	142898	FAIR
0205010107	Wharton Creek	0.56	0	0	273528	FAIR
0205010203	Otselic River	0.56	0	0	419068	POOR
0205010307	Wappasening Creek-Susquehanna River	0.56	81483	0	409811	FAIR
0205010401	Canacadea Creek	0.56	0	0	15134	GOOD
0205010506	Lower Chemung River	0.56	101825	0	414211	FAIR
0205010113	Lower Susquehanna River	0.61	0	530897	503324	
0205010305	Pipe Creek-Susquehanna River	0.61	90396	115888	438116	FAIR

HUC 10 Number	Subwatershed Name	Watershed Stressor Score	Anadromous Fish (linear feet)	Brook Trout (Linear Feet)	National Fish Habitat Assessment (Linear Feet)	Index of Biological Integrity (IBI) Scores
0205010405	Troups Creek	0.61	0	36584	63977	GOOD
0205010105	Otego Creek	0.61	0	0	234988	FAIR
0205010108	Butternut Creek	0.61	0	0	304519	FAIR
0205010110	Ouleout Creek	0.61	0	0	306288	
0205010301	Nanticoke Creek	0.61	0	0	326777	POOR
0205010303	Catatonk Creek	0.61	0	0	354667	FAIR
0205010304	Owego Creek	0.61	0	0	410628	POOR
0205010306	Cayuta Creek	0.61	0	0	178841	FAIR
0205010104	Charlotte Creek	0.67	0	0	172061	
0205010403	Tuscarora Creek	0.72	0	0	282350	GOOD
0205010207	Genegantslet Creek	0.78	0	0	148388	POOR
0205010402	Bennetts Creek	0.78	0	0	86399	GOOD

Table A5. Potential areas for stream restoration to benefit brook trout based on Trout Unlimited conservation strategies and watershed stress in New York

HUC 10 Number	Subwatershed Name	Enhance Stronghold (Linear Feet)	Restore Other Populations (Low Priority) (Linear Feet)	Restore Other Populations (Linear Feet)	Restore Persistent Populations Habitats (Linear Feet)	Restore Unique Life History (Linear Feet)	Secure Unique Life History (Linear Feet)	Number of Chesapeake Bay Program (CBP) Blockages within Brook Trout Opportunities	Number of CBP Blockages within Resident Fish Opportunities
208011103	Upper Chenango River	0	384193	961	138753	56297	0	n/a	n/a
0205010501	Upper Cohocton River	0	434958	0	50450	97830	0	n/a	n/a
0205010106	Headwaters Susquehanna River	0	317440	0	116617	14442	0	n/a	n/a
0205010109	Unadilla River	628023	442669	0	118556	153975	11218	n/a	n/a
0205010112	Middle Susquehanna River	155988	149898	0	224569	207252	0	n/a	n/a
0205010206	Middle Chenango River	0	400180	0	256037	0	0	n/a	n/a
0205010502	Middle Cohocton River	0	97222	0	0	0	0	n/a	n/a
0205010505	Middle Chemung River	0	14559	0	27225	104218	0	n/a	n/a
0205010201	East Branch Tioughnioga River	0	15824	0	79599	327598	0	n/a	n/a
0205010111	Upper Susquehanna River	0	247078	0	118081	90513	0	n/a	n/a
0205010204	Tioughnioga River	245584	101612	0	57857	0	0	n/a	n/a
0205010208	Lower Chenango River	0	93994	0	0	194603	0	n/a	n/a
0205010404	Canisteo River	0	35004	0	0	0	0	n/a	n/a
0205010409	Tioga River	316542	22028	11435	199396	0	0	7	8
0205010408	Cowanesque River	0	61963	0	53133	147907	0	0	1
0205010101	Canadarago Lake	0	125855	0	142849	24532	0	n/a	n/a
0205010102	Cherry Valley Creek	343987	11868	0	57856	0	0	n/a	n/a
0205010103	Schenevus Creek	320099	104815	0	311696	28122	0	n/a	n/a
0205010107	Wharton Creek	17631	334448	0	118873	0	0	n/a	n/a

HUC 10 Number	Subwatershed Name	Enhance Stronghold (Linear Feet)	Restore Other Populations (Low Priority) (Linear Feet)	Restore Other Populations (Linear Feet)	Restore Persistent Populations Habitats (Linear Feet)	Restore Unique Life History (Linear Feet)	Secure Unique Life History (Linear Feet)	Number of Chesapeake Bay Program (CBP) Blockages within Brook Trout Opportunities	Number of CBP Blockages within Resident Fish Opportunities
0205010203	Otselic River	469388	64748	0	324552	19528	0	n/a	n/a
0205010307	Wappasening Creek-Susquehanna River	0	0	0	96027	0	0	0	2
0205010401	Canacadea Creek	0	9162	0	0	0	0	n/a	n/a
0205010506	Lower Chemung River	0	0	0	0	0	0	0	5
0205010113	Lower Susquehanna River	372328	54498	0	214259	70812	0	43	38
0205010305	Pipe Creek-Susquehanna River	0	20543	0	17378	0	0	0	1
0205010405	Troups Creek	0	0	0	0	0	0	n/a	n/a
0205010105	Otego Creek	0	294815	0	198301	123711	0	n/a	n/a
0205010108	Butternut Creek	338174	175794	1137	90726	0	0	n/a	n/a
0205010110	Ouleout Creek	0	206778	0	152730	94379	0	n/a	n/a
0205010301	Nanticoke Creek	0	0	0	19277	0	0	n/a	n/a
0205010303	Catatonk Creek	0	1431	0	119408	0	0	n/a	n/a
0205010304	Owego Creek	612787	69934	0	344331	0	0	n/a	n/a
0205010306	Cayuta Creek	0	12358	0	0	0	0	n/a	n/a
0205010104	Charlotte Creek	371069	189342	0	221141	0	0	n/a	n/a
0205010403	Tuscarora Creek	0	0	0	0	0	0	n/a	n/a
0205010207	Genegantslet Creek	0	163811	0	58168	149582	0	n/a	n/a
0205010402	Bennetts Creek	0	30132	0	35930	0	0	n/a	n/a

Table A6. Existing nontidal wetlands and nontidal restoration opportunities in New York

HUC 10 Number	Subwatershed Name	Existing Nontidal Wetlands (Acres)	Nontidal Wetland Restoration Opportunities Area (Acres)
0205010109	Unadilla River	0	49,760
0205010409	Tioga River	6,218	41,827
0205010408	Cowanesque River	1,205	41,636
0205010113	Lower Susquehanna River	4,188	40,747
0205010505	Middle Chemung River	1,844	40,344
0205010112	Middle Susquehanna River	133	39,668
0205010208	Lower Chenango River	0	35,603
0205010205	Upper Chenango River	0	34,908
0205010203	Otselic River	0	33,359
0205010206	Middle Chenango River	0	33,308
0205010204	Tioughnioga River	0	32,418
0205010404	Canisteo River	548	31,037
0205010506	Lower Chemung River	1,760	28,479
0205010501	Upper Cohocton River	37	26,585
0205010502	Middle Cohocton River	464	25,866
0205010403	Tuscarora Creek	462	25,805
0205010304	Owego Creek	66	23,941
0205010503	Lower Cohocton River	627	23,733
0205010305	Pipe Creek-Susquehanna River	957	23,727
0205010307	Wappasening Creek-Susquehanna River	1,377	23,720
0205010106	Headwaters Susquehanna River	0	23,007
0205010201	East Branch Tioughnioga River	0	19,818
0205010104	Charlotte Creek	0	19,006
0205010301	Nanticoke Creek	47	18,673
0205010108	Butternut Creek	0	17,933
0205010107	Wharton Creek	0	17,418
0205010101	Canadarago Lake	0	17,300
0205010111	Upper Susquehanna River	0	16,615
0205010504	Upper Chemung River	1,252	16,332
0205010302	Choconut Creek-Susquehanna River	505	15,627
0205010303	Catatonk Creek	136	15,602
0205010110	Ouleout Creek	0	14,561
0205010405	Troups Creek	142	14,163
0205010105	Otego Creek	0	13,903
0205010202	West Branch Tioughnioga River	0	13,837
0205010103	Schenevus Creek	0	12,287
0205010402	Bennetts Creek	163	11,391
0205010306	Cayuta Creek	283	9,949

HUC 10 Number	Subwatershed Name	Existing Nontidal Wetlands (Acres)	Nontidal Wetland Restoration Opportunities Area (Acres)
0205010207	Genegantslet Creek	0	9,505
0205010102	Cherry Valley Creek	0	8,496
0205010401	Canacadea Creek	114	6,247

Table A7. Nontidal wetland restoration opportunities to benefit avian wildlife in New York

HUC 10 Number	Subwatershed Name	Presence of Black Duck	Presence of Audubon Important Bird Areas	Presence of Nesting for Wading and Waterbirds	Nontidal Wetland Restoration Opportunities (Acres)
0205010109	Unadilla River	no	no	no	49,760
0205010409	Tioga River	no	yes	no	41,827
0205010408	Cowanesque River	no	no	no	41,636
0205010113	Lower Susquehanna River	no	no	no	40,747
0205010505	Middle Chemung River	no	yes	no	40,344
0205010112	Middle Susquehanna River	no	no	no	39,668
0205010208	Lower Chenango River	no	no	no	35,603
0205010205	Upper Chenango River	no	no	no	34,908
0205010203	Otselic River	no	yes	no	33,359
0205010206	Middle Chenango River	no	no	no	33,308
0205010204	Tioughnioga River	no	yes	no	32,418
0205010404	Canisteo River	no	no	no	31,037
0205010506	Lower Chemung River	no	no	no	28,479
0205010501	Upper Cohocton River	no	no	no	26,585
0205010502	Middle Cohocton River	no	no	no	25,866
0205010403	Tuscarora Creek	no	no	no	25,805
0205010304	Owego Creek	no	no	no	23,941
0205010503	Lower Cohocton River	no	no	no	23,733
0205010305	Pipe Creek-Susquehanna River	no	no	no	23,727
0205010307	Wappasening Creek-Susquehanna River	no	no	no	23,720
0205010106	Headwaters Susquehanna River	no	no	no	23,007
0205010201	East Branch Tioughnioga River	no	no	no	19,818
0205010104	Charlotte Creek	no	no	no	19,006
0205010301	Nanticoke Creek	no	no	no	18,673
0205010108	Butternut Creek	no	no	no	17,933
0205010107	Wharton Creek	no	no	no	17,418
0205010101	Canadarago Lake	no	no	no	17,300
0205010111	Upper Susquehanna River	no	no	no	16,615
0205010504	Upper Chemung River	no	yes	no	16,332

HUC 10 Number	Subwatershed Name	Presence of Black Duck	Presence of Audubon Important Bird Areas	Presence of Nesting for Wading and Waterbirds	Nontidal Wetland Restoration Opportunities (Acres)
0205010302	Choconut Creek-Susquehanna River	no	no	no	15,627
0205010303	Catatonk Creek	no	no	no	15,602
0205010110	Ouleout Creek	no	no	no	14,561
0205010405	Troups Creek	no	no	no	14,163
0205010105	Otego Creek	no	no	no	13,903
0205010202	West Branch Tioughnioga River	no	no	no	13,837
0205010103	Schenevus Creek	no	no	no	12,287
0205010402	Bennetts Creek	no	no	no	11,391
0205010306	Cayuta Creek	no	no	no	9,949
0205010207	Genegantslet Creek	no	yes	no	9,505
0205010102	Cherry Valley Creek	no	no	no	8,496
0205010401	Canacadea Creek	no	no	no	6,247

Table A8. Threats to nontidal wetland restoration and enhancement opportunities in New York

HUC 10 Number	Subwatershed Name	Nontidal Threats Impacting Wetland Restoration Opportunities (Acres)	Nontidal Threats Impacting Wetland Enhancement Opportunities (Acres)
0205010404	Canisteo River	639	0
0205010204	Tioughnioga River	143	0
0205010305	Pipe Creek-Susquehanna River	101	23
0205010304	Owego Creek	56	0
0205010109	Unadilla River	55	0
0205010303	Catatonk Creek	46	0
0205010502	Middle Cohocton River	42	0
0205010112	Middle Susquehanna River	34	0
0205010302	Choconut Creek-Susquehanna River	33	6
0205010105	Otego Creek	27	0
0205010206	Middle Chenango River	27	0
0205010409	Tioga River	26	10
0205010113	Lower Susquehanna River	26	56
0205010111	Upper Susquehanna River	25	0
0205010506	Lower Chemung River	23	16
0205010501	Upper Cohocton River	22	0
0205010202	West Branch Tioughnioga River	18	0
0205010208	Lower Chenango River	16	0
0205010207	Genegantslet Creek	16	0

HUC 10 Number	Subwatershed Name	Nontidal Threats Impacting Wetland Restoration Opportunities (Acres)	Nontidal Threats Impacting Wetland Enhancement Opportunities (Acres)
0205010505	Middle Chemung River	15	32
0205010101	Canadarago Lake	14	0
0205010201	East Branch Tioughnioga River	12	0
0205010301	Nanticoke Creek	12	0
0205010205	Upper Chenango River	12	0
0205010106	Headwaters Susquehanna River	11	0
0205010203	Otselic River	7	0
0205010408	Cowanesque River	6	1
0205010102	Cherry Valley Creek	5	0
0205010402	Bennetts Creek	5	0
0205010104	Charlotte Creek	5	0
0205010110	Ouleout Creek	4	0
0205010307	Wappasening Creek-Susquehanna River	4	2
0205010504	Upper Chemung River	3	3
0205010503	Lower Cohocton River	2	0
0205010103	Schenevus Creek	1	0
0205010108	Butternut Creek	1	0
0205010306	Cayuta Creek	1	0

Table A9. Acreages affected by toxic contaminants in relation to restoration and conservation opportunities in the State of New York

HUC 10 Number	Subwatershed Name	Number of National Priority List (Superfund) Sites
0205010302	Choconut Creek-Susquehanna River	4
0205010109	Unadilla River	2
0205010112	Middle Susquehanna River	2
0205010505	Middle Chemung River	2
0205010111	Upper Susquehanna River	1
0205010203	Otselic River	1
0205010204	Tioughnioga River	1
0205010205	Upper Chenango River	1
0205010208	Lower Chenango River	1
0205010301	Nanticoke Creek	1
0205010113	Lower Susquehanna River	1

Table A10. Acreage of healthy/high value habitats in New York

HUC 10 number	Subwatershed Name	Healthy/High Value Habitat (Acres)
0205010409	Tioga River	58,094.40
0205010113	Lower Susquehanna River	10,752.18
0205010504	Upper Chemung River	8,358.45
0205010203	Otselic River	7,765.56
0205010204	Tioughnioga River	3,871.89
0205010505	Middle Chemung River	3,403.37
0205010408	Cowanesque River	1,872.06
0205010207	Genegantslet Creek	923.66
0205010201	East Branch Tioughnioga River	11.83
0205010112	Middle Susquehanna River	3.71
0205010306	Cayuta Creek	3.12
0205010405	Troups Creek	2.05
0205010304	Owego Creek	1.58
0205010503	Lower Cohocton River	1.48
0205010206	Middle Chenango River	1.04
0205010307	Wappasening Creek-Susquehanna River	1.03
0205010305	Pipe Creek-Susquehanna River	0.64
0205010506	Lower Chemung River	0.43
0205010208	Lower Chenango River	0.05

Table A11. Acreage of wetland restoration and conservation opportunities in New York

HUC 10 Number	Subwatershed Name	Existing Wetlands (Acres)	Wetland Restoration Opportunities (Acres)	Conservation Opportunities (Acres)	Stream Restoration Presence	Riparian Buffer Presence	Habitat Restoration Compilation	Nontidal Wetland Restoration Opportunities that Intersect with Conservation Opportunities (Acres)	Nontidal Existing Wetland that Intersect with Conservation Opportunities (Acres)
0205010409	Tioga River	6,218	41,827	5,664	yes	yes	yes	201	207
0205010113	Lower Susquehanna River	4,188	40,747	1,499	yes	yes	yes	5	21
0205010504	Upper Chemung River	1,252	16,332	1,264	no	yes	yes	10	1
0205010505	Middle Chemung River	1,844	40,344	460	yes	yes	yes	3	0
0205010408	Cowanesque River	1,205	41,636	376	yes	yes	yes	1	1
0205010112	Middle Susquehanna River	133	39,668	1	yes	yes	yes	0	0
0205010405	Troups Creek	142	14,163	0	yes	no	yes	0	0
0205010306	Cayuta Creek	283	9,949	0	yes	no	yes	0	0
0205010307	Wappasening Creek-Susquehanna River	1,377	23,720	0	yes	no	yes	0	0
0205010305	Pipe Creek-Susquehanna River	957	23,727	0	yes	no	yes	0	0
0205010506	Lower Chemung River	1,760	28,479	0	yes	no	yes	0	0

HUC 10 Number	Subwatershed Name	Existing Wetlands (Acres)	Wetland Restoration Opportunities (Acres)	Conservation Opportunities (Acres)	Stream Restoration Presence	Riparian Buffer Presence	Habitat Restoration Compilation	Nontidal Wetland Restoration Opportunities that Intersect with Conservation Opportunities (Acres)	Nontidal Existing Wetland that Intersect with Conservation Opportunities (Acres)
0205010101	Canadarago Lake	0	17,300	0	yes	no	yes	0	0
0205010102	Cherry Valley Creek	0	8,496	0	yes	no	yes	0	0
0205010103	Schenevus Creek	0	12,287	0	yes	no	yes	0	0
0205010104	Charlotte Creek	0	19,006	0	yes	yes	yes	0	0
0205010105	Otego Creek	0	13,903	0	yes	no	yes	0	0
0205010106	Headwaters Susquehanna River	0	23,007	0	yes	no	yes	0	0
0205010107	Wharton Creek	0	17,418	0	yes	no	yes	0	0
0205010108	Butternut Creek	0	17,933	0	yes	no	yes	0	0
0205010109	Unadilla River	0	49,760	0	yes	yes	yes	0	0
0205010110	Ouleout Creek	0	14,561	0	yes	no	yes	0	0
0205010111	Upper Susquehanna River	0	16,615	0	yes	no	yes	0	0
0205010201	East Branch Tioughnioga River	0	19,818	0	yes	no	yes	0	0

HUC 10 Number	Subwatershed Name	Existing Wetlands (Acres)	Wetland Restoration Opportunities (Acres)	Conservation Opportunities (Acres)	Stream Restoration Presence	Riparian Buffer Presence	Habitat Restoration Compilation	Nontidal Wetland Restoration Opportunities that Intersect with Conservation Opportunities (Acres)	Nontidal Existing Wetland that Intersect with Conservation Opportunities (Acres)
0205010202	West Branch Tioughnioga River	0	13,837	0	no	no	no	0	0
0205010203	Otselic River	0	33,359	0	yes	yes	yes	1	0
0205010204	Tioughnioga River	0	32,418	0	yes	no	yes	1	0
0205010205	Upper Chenango River	0	34,908	0	yes	yes	yes	0	0
0205010206	Middle Chenango River	0	33,308	0	yes	yes	yes	0	0
0205010207	Genegantslet Creek	0	9,505	0	yes	no	yes	1	0
0205010208	Lower Chenango River	0	35,603	0	yes	yes	yes	0	0
0205010301	Nanticoke Creek	47	18,673	0	yes	no	yes	0	0
0205010302	Choconut Creek-Susquehanna River	505	15,627	0	no	no	no	0	0
0205010303	Catatonk Creek	136	15,602	0	yes	no	yes	0	0
0205010304	Owego Creek	66	23,941	0	yes	no	yes	0	0
0205010401	Canacadea Creek	114	6,247	0	yes	no	yes	0	0

HUC 10 Number	Subwatershed Name	Existing Wetlands (Acres)	Wetland Restoration Opportunities (Acres)	Conservation Opportunities (Acres)	Stream Restoration Presence	Riparian Buffer Presence	Habitat Restoration Compilation	Nontidal Wetland Restoration Opportunities that Intersect with Conservation Opportunities (Acres)	Nontidal Existing Wetland that Intersect with Conservation Opportunities (Acres)
0205010402	Bennetts Creek	163	11,391	0	yes	no	yes	0	0
0205010403	Tuscarora Creek	462	25,805	0	yes	no	yes	0	0
0205010404	Canisteo River	548	31,037	0	yes	yes	yes	0	0
0205010501	Upper Cohocton River	37	26,585	0	yes	no	yes	0	0
0205010502	Middle Cohocton River	464	25,866	0	yes	no	yes	0	0
0205010503	Lower Cohocton River	627	23,733	0	no	yes	yes	0	0

Table A12. Hydrologic unit code (HUC) 10 subwatersheds in New York with public access sites and those priority areas with underserved communities that do not have public access or outdoor recreation opportunities within their

HUC 10 Number	Subwatershed Name	Recreation Parks (Acres)	Underserved (Minority) Population (Acres)	Underserved (Low Income) Population (Acres)	Reservoir Acres	Public Access Sites Counts	Conservation Opportunities that Add Societal Benefits (Acres)
0205010106	Headwaters Susquehanna River	711	0	554	4,095	9	0
0205010113	Lower Susquehanna River	14,018	492	16,192	0	8	15
0205010112	Middle Susquehanna River	368	0	23,501	0	4	0
0205010307	Wappasening Creek-Susquehanna River	4,369	0	3,176	0	4	0
0205010302	Choconut Creek-Susquehanna River	308	1,942	2,322	0	3	0
0205010305	Pipe Creek-Susquehanna River	2,028	0	8,737	0	3	0
0205010208	Lower Chenango River	1,816	631	10,960	0	2	0
0205010301	Nanticoke Creek	400	160	108	0	2	0
0205010101	Canadarago Lake	87	0	0	1,852	2	0
0205010111	Upper Susquehanna River	0	0	381	0	2	0
0205010204	Tioughnioga River	740	0	412	0	2	0
0205010506	Lower Chemung River	1,212	0	63	0	2	0
0205010206	Middle Chenango River	72	0	806	0	1	0
0205010304	Owego Creek	145	0	5,592	0	1	0
0205010504	Upper Chemung River	255	0	612	0	1	0
0205010505	Middle Chemung River	1,169	1,906	4,037	0	0	1
0205010102	Cherry Valley Creek	0	0	0	0	0	0
0205010103	Schenevus Creek	1,443	0	5,646	0	0	0
0205010104	Charlotte Creek	770	0	0	0	0	0
0205010105	Otego Creek	1,071	0	0	0	0	0
0205010107	Wharton Creek	0	0	0	0	0	0
0205010108	Butternut Creek	506	0	0	0	0	0
0205010109	Unadilla River	330	0	780	0	0	0

HUC 10 Number	Subwatershed Name	Recreation Parks (Acres)	Underserved (Minority) Population (Acres)	Underserved (Low Income) Population (Acres)	Reservoir Acres	Public Access Sites Counts	Conservation Opportunities that Add Societal Benefits (Acres)
0205010110	Ouleout Creek	0	0	0	122	0	0
0205010201	East Branch Tioughnioga River	2,238	0	0	0	0	0
0205010202	West Branch Tioughnioga River	105	0	729	0	0	0
0205010203	Otselic River	1,437	0	0	1,011	0	1
0205010205	Upper Chenango River	30	0	0	271	0	0
0205010207	Genegantslet Creek	0	0	0	0	0	0
0205010303	Catatonk Creek	17	0	17,393	0	0	0
0205010306	Cayuta Creek	95	0	1,218	377	0	0
0205010401	Canacadea Creek	0	0	160	429	0	0
0205010402	Bennetts Creek	0	0	699	0	0	0
0205010403	Tuscarora Creek	0	0	39,488	0	0	0
0205010404	Canisteo River	436	0	29,690	209	0	0
0205010501	Upper Cohocton River	0	0	11,841	0	0	0
0205010502	Middle Cohocton River	131	0	32,586	0	0	0
0205010503	Lower Cohocton River	3,355	0	12,025	1,334	0	0
0205010405	Troups Creek	0	0	20,178	0	0	0
0205010408	Cowanesque River	0	0	8,147	1,067	0	0
0205010409	Tioga River	4,499	0	5,100	461	0	2

Table A13. Acres of nontidal threats in New York

HUC 10 Number	Subwatershed Name	Nontidal Threats (Acres)
0205010404	Canisteo River	1122
0205010109	Unadilla River	440
0205010204	Tioughnioga River	399
0205010305	Pipe Creek-Susquehanna River	347
0205010205	Upper Chenango River	333
0205010113	Lower Susquehanna River	300
0205010502	Middle Cohocton River	235
0205010302	Choconut Creek-Susquehanna River	226
0205010304	Owego Creek	158
0205010112	Middle Susquehanna River	147
0205010105	Otego Creek	135
0205010506	Lower Chemung River	126
0205010505	Middle Chemung River	125
0205010501	Upper Cohocton River	124
0205010303	Catatonk Creek	118
0205010206	Middle Chenango River	100
0205010409	Tioga River	97
0205010106	Headwaters Susquehanna River	83
0205010202	West Branch Tioughnioga River	75
0205010201	East Branch Tioughnioga River	62
0205010208	Lower Chenango River	61
0205010307	Wappasening Creek-Susquehanna River	53
0205010207	Genegantslet Creek	50
0205010111	Upper Susquehanna River	47
0205010101	Canadarago Lake	42
0205010408	Cowanesque River	40
0205010301	Nanticoke Creek	37
0205010402	Bennetts Creek	29
0205010203	Otselic River	27
0205010504	Upper Chemung River	23
0205010503	Lower Cohocton River	22
0205010102	Cherry Valley Creek	12
0205010110	Ouleout Creek	8
0205010108	Butternut Creek	7
0205010104	Charlotte Creek	7
0205010103	Schenevus Creek	5
0205010306	Cayuta Creek	2
0205010405	Troups Creek	1

Table A14. Acres of wetland restoration opportunities that could beneficially impact regional flow in New York

HUC 10 Number	Subwatershed Name	Wetland Restoration Opportunities intersecting Regional Flow (Acres)
0205010113	Lower Susquehanna River	21,764
0205010112	Middle Susquehanna River	18,539
0205010208	Lower Chenango River	16,662
0205010109	Unadilla River	15,665
0205010408	Cowanesque River	14,678
0205010206	Middle Chenango River	14,257
0205010203	Otselic River	13,125
0205010506	Lower Chemung River	12,973
0205010409	Tioga River	12,514
0205010505	Middle Chemung River	12,033
0205010404	Canisteo River	11,815
0205010301	Nanticoke Creek	11,549
0205010304	Owego Creek	11,332
0205010305	Pipe Creek-Susquehanna River	10,958
0205010204	Tioughnioga River	10,875
0205010307	Wappasening Creek-Susquehanna River	10,073
0205010108	Butternut Creek	8,944
0205010205	Upper Chenango River	8,793
0205010502	Middle Cohocton River	8,584
0205010503	Lower Cohocton River	8,514
0205010104	Charlotte Creek	8,437
0205010111	Upper Susquehanna River	8,091
0205010303	Catatonk Creek	7,602
0205010110	Ouleout Creek	7,404
0205010106	Headwaters Susquehanna River	7,326
0205010302	Choconut Creek-Susquehanna River	7,317
0205010402	Bennetts Creek	6,473
0205010107	Wharton Creek	6,268
0205010201	East Branch Tioughnioga River	6,215
0205010306	Cayuta Creek	5,994
0205010504	Upper Chemung River	5,971
0205010403	Tuscarora Creek	5,954
0205010207	Genegantslet Creek	5,306
0205010102	Cherry Valley Creek	4,758
0205010105	Otego Creek	4,641
0205010501	Upper Cohocton River	4,346
0205010101	Canadarago Lake	4,265
0205010103	Schenevus Creek	3,785

HUC 10 Number	Subwatershed Name	Wetland Restoration Opportunities intersecting Regional Flow (Acres)
0205010202	West Branch Tioughnioga River	2,607
0205010401	Canacadea Creek	2,187
0205010405	Troups Creek	1,618