

Cattaraugus Creek Integrated Watershed Action Plan

Public Meeting #2

July 25, 2023



Department of
Environmental
Conservation



Office of
General Services



Zoom Meeting Logistics: Webinar



Q&A Button



Chat Button

- Webinar format
- Q&A: Use to submit comments or questions
- Chat: Can find relevant hyperlink resources, alert panelists of technical issues

IWAP Team



Tony Eallonardo, PhD, PWS
Senior Project Manager
Ramboll



Emily Fell
Eastern Great Lakes Watershed Coordinator
NYSDEC



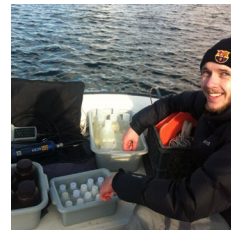
Veronica Davies
Project Engineer
Ramboll



Shannon Dougherty
Acting Great Lakes Programs Coordinator
NYSDEC



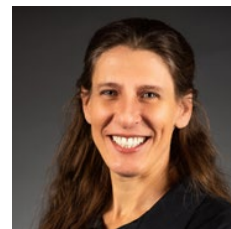
Jasmine James
Staff Scientist
Ramboll



Ryan Elliott
Western Great Lakes Watershed Coordinator
NYSDEC



Liz Moran, PhD
Principal Scientist
EcoLogic LLC



Carolyn Dunderdale
Senior Landscape Architect
NYSOGS



Watershed Stakeholder Committee

Informed of project progress and advise on project priorities and decisions

- Seneca Nation of Indians
- Soil and Water Conservation Districts (SWCDs), Allegany, Cattaraugus, Chautauqua, Erie, and Wyoming Counties
- Planning Departments
- SUNY Fredonia
- University at Buffalo
- NYS Department of State
- NYS Department of Environmental Conservation, Region 9
- Municipal Leaders
- The Nature Conservancy
- Nature Sanctuary Society of Western New York
- Western New York Land Conservancy
- Western New York Partnership for Invasive Species Management



Agenda

Meeting purpose: provide information on IWAP development, next steps and opportunities for involvement

- Background
- Project StoryMap
- Key findings and project ideas
- Next steps



IWAP Purpose

To identify, protect, and restore key aspects of the Cattaraugus Creek watersheds that support human health and well-being

Vision:

*An engaged and empowered community protecting and restoring the watershed based on **actions and resources** developed through this project. **A healthy watershed for families and communities into the future!***

Approach:

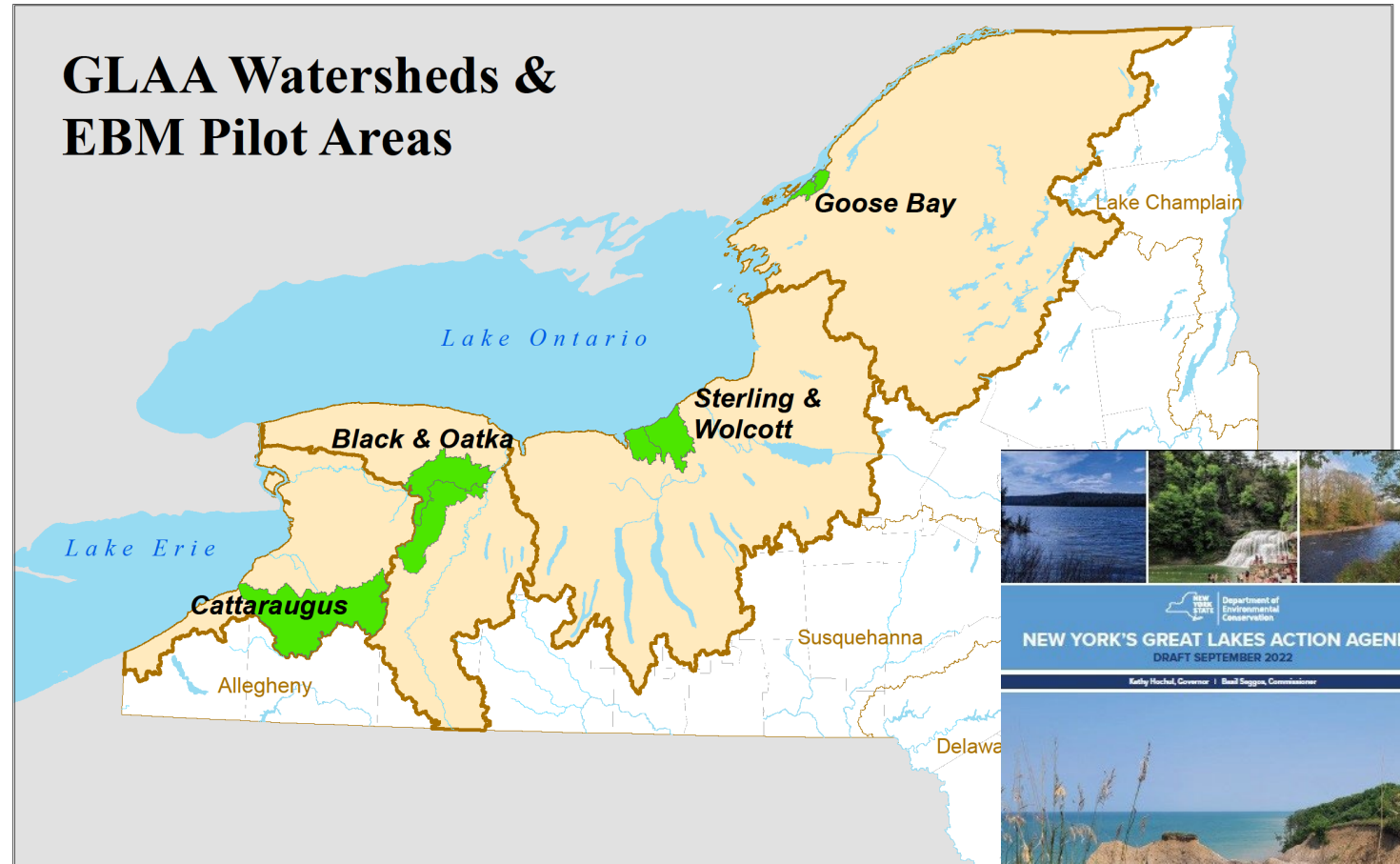
*Science-based, collaborative, focused on **ecosystem-based management***



Great Lakes Action Agenda

Protect, conserve, restore and enhance NY's Great Lakes

GLAA Watersheds & EBM Pilot Areas

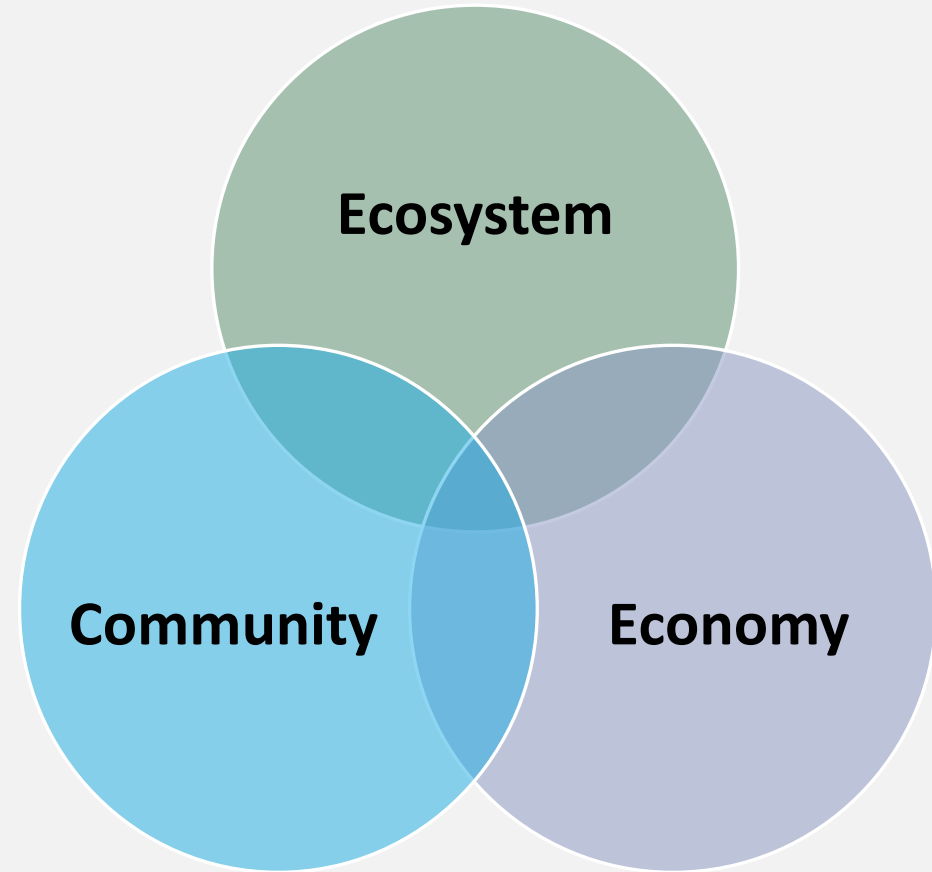


 Department of Environmental Conservation
NEW YORK'S GREAT LAKES ACTION AGENDA
DRAFT SEPTEMBER 2022
Kathy Hochul, Governor | Basil Seggon, Commissioner



Ecosystem-Based Management

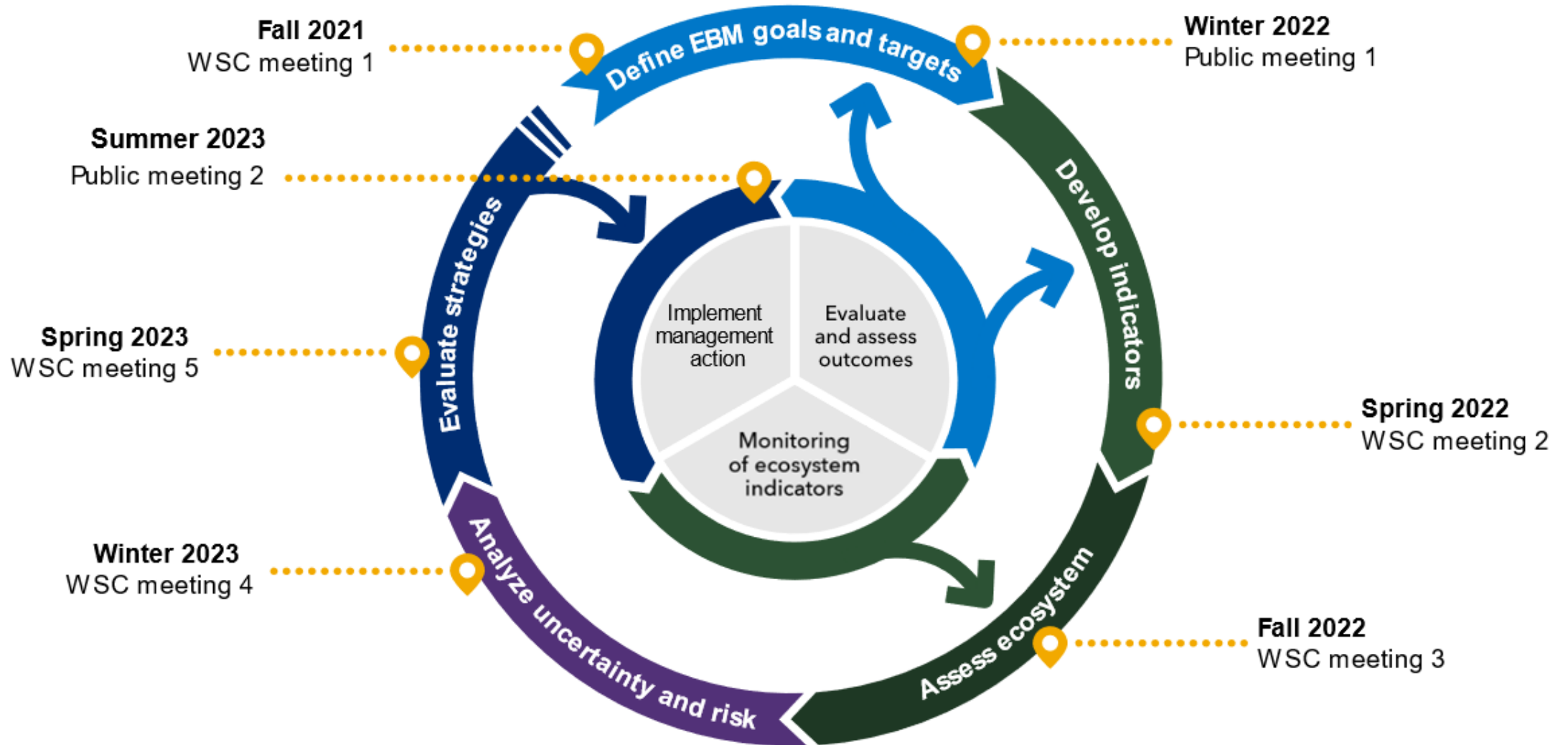
A systems approach that strives to balance the needs of people, nature, and the economy through science-based decision making



- Place-based
- Protection of ecosystem structure, function and key processes
- Interconnectedness within and among systems
- Integration of ecological, social, economic and institutional perspectives
- Sustainable human uses of the ecosystem
- Stakeholder involvement & collaboration
- Scientific foundation for decision-making
- Adaptive management

Process

FOCUS: science-based actions and long-term management
Based on NOAA Integrated Ecosystem Assessment approach



1. Define EBM Goals

- Invasive species



2. Develop Indicators

- Presence or absence of invasive species



3. Ecosystem Assessment

- Cumulative observations of aquatic and terrestrial invasive species



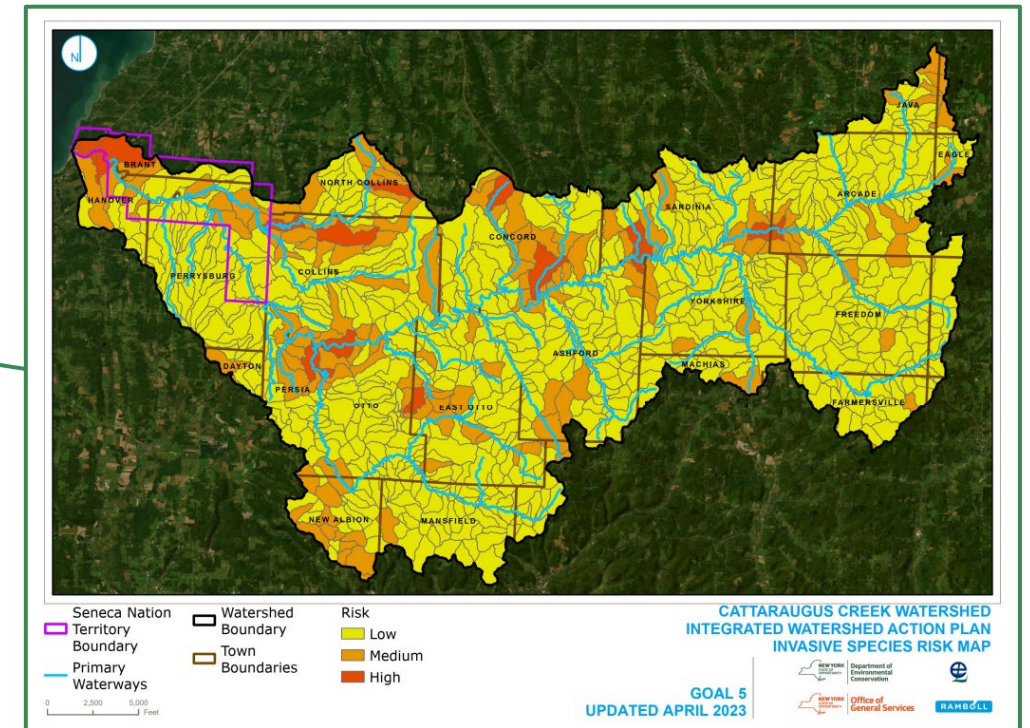
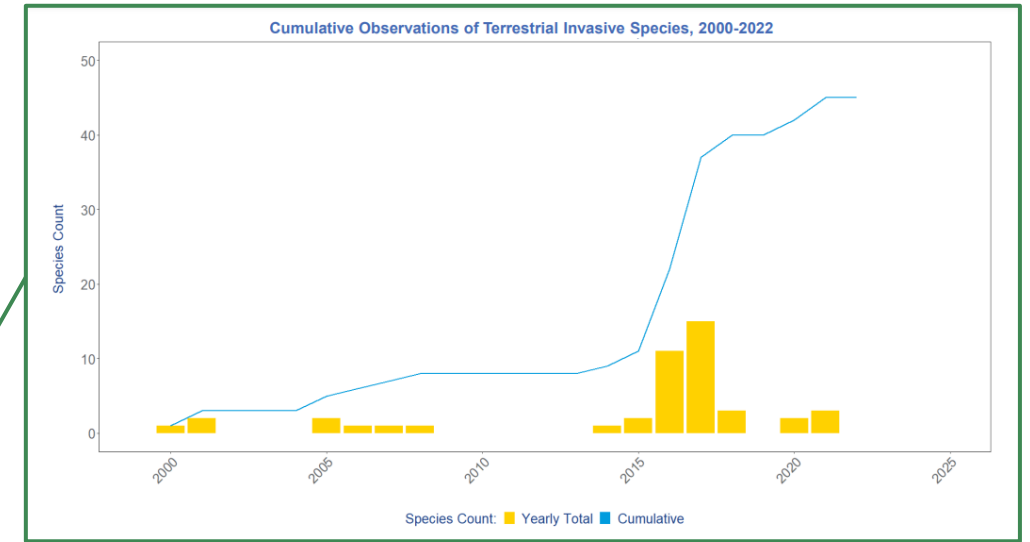
4. Risk Assessment

- Identify areas that are impacted by priority invasive species



5. Evaluate Strategies

- Offer training opportunities for municipal staff working outdoors to identify invasive species present in and approaching their municipality and report observations through iMapinvasives

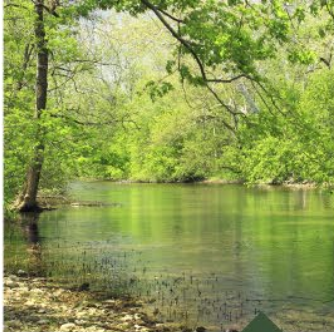


Goals

Broad based, collaborative

WATER QUALITY **GOAL 01**

Protect and improve high quality surface and groundwater resources to support aquatic habitat, drinking water supplies, and water-dependent recreation



FORESTS **GOAL 03**

Promote healthy and connected forests and upland communities to support clean air and water, biodiversity, opportunities for outdoor recreation, and sustainable use of natural resources



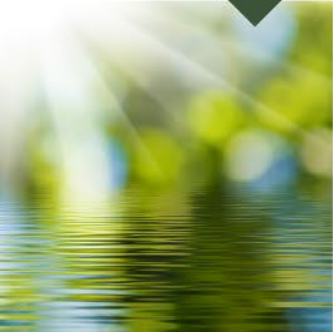
INVASIVE SPECIES **GOAL 05**

Minimize the negative impacts caused by invasive species to support fish and wildlife, forest and agricultural productions, and natural physical conditions



HERITAGE & SENSE OF PLACE **GOAL 07**

Inspire and facilitate a connection with nature to support physical, social, and mental well-being



FLOODPLAINS & RIPARIAN AREAS **GOAL 02**

Enhance functioning floodplains and riparian corridors to minimize infrastructure impacts from flood events, improve water quality, and support natural shorelines



STREAMS **GOAL 04**

Facilitate and improve stream health through connectivity and natural sediment transport to support quality habitat for fish and wildlife



SUSTAINABLE WORKING LANDS **GOAL 06**

Promote, implement, and improve sustainable land uses to provide future generations with the ability to use and prosper from natural resources



Ecosystem and Risk Assessments

A comprehensive examination of the watershed and risks to realizing management goals

- 67 different types of data evaluated with respect to trends over time and spatially throughout the watershed
- Used to understand current watershed conditions and help identify key projects

Human well-being and poverty reduction

- Basic material for a good life
- Health
- Good social relations
- Security
- Freedom of choice and action

Indirect drivers of change

- Demographic
- Economic (e.g., globalization, trade, market, and policy framework)
- Sociopolitical (e.g., governance, institutional and legal framework)
- Science and technology
- Cultural and religious (e.g., beliefs, consumption choices)

Direct drivers of change

- Changes in local land use and cover
- Species introduction or removal
- Technology adaptation and use
- External inputs (e.g., fertilizer use, pest control, and irrigation)
- Harvest and resource consumption
- Climate change
- Natural, physical, and biological drivers (e.g., evolution, volcanoes)

Ecosystem services

- Provisioning (e.g., food, water, fiber, and fuel)
- Regulating (e.g., climate regulation, water, and disease)
- Cultural (e.g., spiritual, aesthetic, recreation, and education)
- Supporting (e.g., primary production and soil formation)

LIFE ON EARTH - BIODIVERSITY

★ = strategies and projects



Cattaraugus Creek Integrated Watershed Action Plan (IWAP)

NYSOGS | NYSDEC | Ramboll

June 27, 2023



[What is an IWAP?](#)

[Exploratory Maps](#)

[Goals](#)

[Ecosystem Assessment](#)

[Risk Assessment](#)

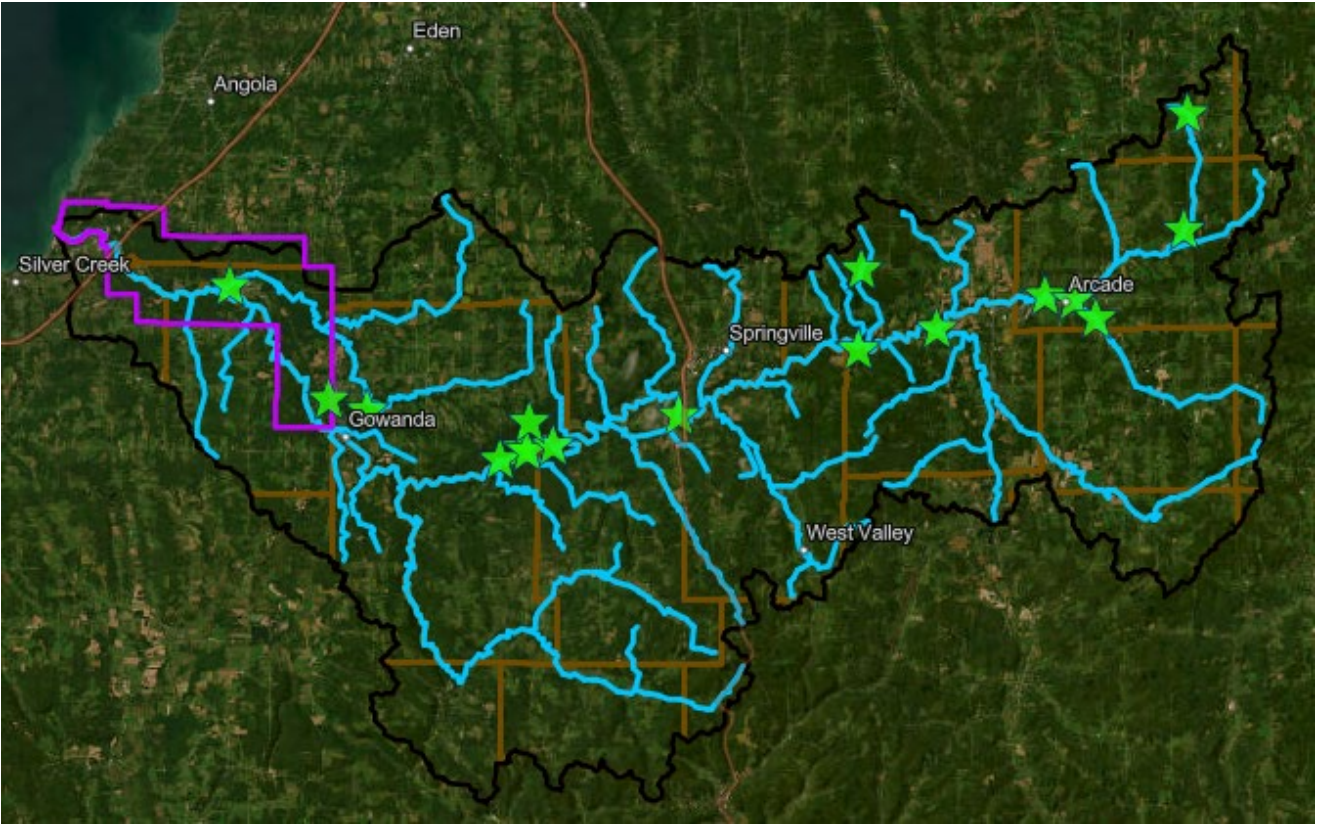
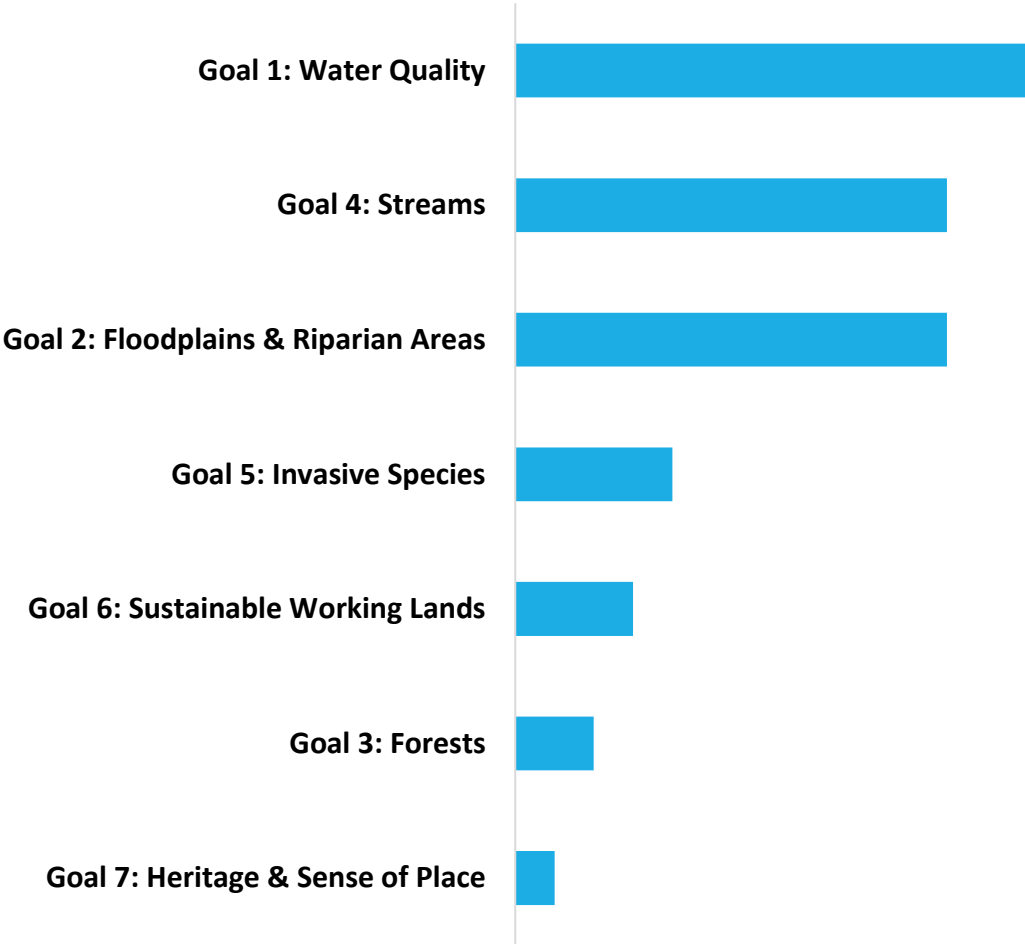
[Share Ideas](#)

[IWAP Updates](#)

Project Proposals

Project ideas submitted to date, by stakeholders

17 projects submitted to date





Goal 1: Water Quality

Protect and improve high quality surface and groundwater resources to support aquatic habitat, drinking water supplies, and water-dependent recreation

- **Up to 3 inches of additional annual precipitation may occur by 2050.**
- Developed lands are increasing at a rate of approximately 81 acres/year.
- Highest water quality risk areas include catchments associated with the **South Branch of the Cattaraugus Creek, Buttermilk Creek, Elton Creek and Clear Creek** due to a variety of point and nonpoint source concerns, and socioeconomic factors.
- Java Lake is subject to recurrent harmful algal blooms (confirmed reports in 2012, 2014, 2015, 2016, 2017, 2018, 2019, 2021, and 2022).
- Data gaps:
 - Continue and expand the NYSDEC Rotating Integrated Basin Studies (RIBS) Program, Citizens Statewide Lake Assessment Program (CSLAP) (i.e., Java Lake), and the Water Assessments by Volunteer Evaluators (WAVE) program.



Goal 1: Water Quality

Protect and improve high quality surface and groundwater resources to support aquatic habitat, drinking water supplies, and water-dependent recreation

Site Specific Project Recommendations:

- 1.** Riparian buffer or other stream management projects.
 - **Locations:** Along Cattaraugus Creek in the Towns of Otto, Collins, Yorkshire, Sardinia, and Arcade
2. Implement the Java Lake Total Maximum Daily Load (TMDL) for Phosphorus.
3. Waterbody Inventory/Priority Waterbodies List (PWL), CSLAP monitoring (i.e., Java Lake), and Water Assessments by Volunteer Evaluators (WAVE) program for unassessed lakes and streams.

Watershed Wide Project Recommendations:

1. Municipalities participate in the Drinking Water Source Protection Program (DWSP2) to develop Drinking Water Source Protection Plans.
2. New or expanded septic inspection and maintenance programs to improve water quality.

Project Recommendations, suggested locations needed:

1. Additional stream flow and other water quality monitoring locations.

Numbers highlighted in cyan denote recommendations that are in more than one IWAP project goal



Goal 2: Floodplains and Riparian Areas

Enhance functioning floodplains and riparian corridors to minimize infrastructure impacts from flood events, improve water quality, and support natural shorelines

- From 1990 to 2010, flood stage (17,100 cubic ft/second) at the Gowanda gage was only exceeded twice. **During the 2010's, there were three such events, and one already in the 2020's.**
- Developed land in riparian zones increased (~11.5 acres/year) between 2001 and 2019.



Goal 2: Floodplains and Riparian Areas

Enhance functioning floodplains and riparian corridors to minimize infrastructure impacts from flood events, improve water quality, and support natural shorelines

Site Specific Project Recommendations:

1. Implement management alternatives identified in the Resilient New York Flood Mitigation Initiative Final Report for Clear Creek and for Connoisarauley Creek.

Project Recommendations, suggested locations needed:

1. Explore opportunities for construction and restoration of wetlands (60% loss in NYS) to promote water infiltration and flood mitigation benefits.
2. Explore opportunities for increasing canopy cover and riparian plantings.
3. Update/expand Resilient New York Flood Mitigation Studies to include nature-based solutions, including wetland restoration and construction, where appropriate.

Educational Recommendations (reference existing resources when available):

1. Educate on the value of vegetation of land adjacent to streams and promote the use of buffers, using publicly funded riparian buffers as demonstration projects.

Numbers highlighted in cyan denote recommendations that are in more than one IWAP project goal



Goal 3: Forests

Promote healthy and connected forests and upland communities to support clean air and water, biodiversity, opportunities for outdoor recreation, and sustainable use of natural resources

- **Between 2013-2019, the average seedling density was 887 seedlings/acre (classified as “fair” regeneration capacity), but trends show declining density.**
- **Aboveground tree biomass stock estimates increased by 1.4 million tons from 1992 to 2018. On average, tree biomass sequestered 65,000 tons of carbon per year (above- and below-ground combined carbon estimate).**
- Bald eagle youths were recorded every year in the 2017-2021 dataset, which is an improvement over the state-wide extirpation of bald eagles during the mid 1900’s.
- **Data gaps:**
 - **Vernal pool location/distributions**
 - **Deer browse intensity**
 - **Forest regeneration following private land harvests**
 - **Invasive understory shrub populations and impact on forest regeneration**



Goal 3: Forests

Promote healthy and connected forests and upland communities to support clean air and water, biodiversity, opportunities for outdoor recreation, and sustainable use of natural resources

Site Specific Project Recommendations:

1. Update and Implement the Erie County Forestry Management Plan.

Watershed Wide Project Recommendations:

1. Provide input on updates to the New York State Open Space Plan and other habitat protection planning efforts to ensure key areas are prioritized. Acquire and/or protect properties to improve habitat connectivity and/or recreation opportunities.
2. Land acquisitions to protect source water areas.
 - Funding = Water Quality Improvement Project (WQIP) grants
3. Best management practices (BMPs) that prevent deer browsing.
 - Leaving logging slash/debris in the woods to create a barrier layer that protects seedlings from deer browse


Numbers highlighted in cyan denote recommendations that are in more than one IWAP project goal



Goal 4: Streams

Facilitate and improve stream health through connectivity and natural sediment transport to support quality habitat for fish and wildlife

- While Cattaraugus Creek temp and DO are quite stable, the median turbidity near Gowanda between 2012 and 2020 was 24 nephelometric turbidity unit (NTU), which is considered high for prime fishing conditions. Low catch rates during the 2018 season may be related to high turbidity (levels above 30 NTU).
- While the frequency of flood events has increased (based on available stream gage data), water budget deficits in 2020 and 2021 suggest concerns for low flow and loss of hydrologic connectivity.
- Data gaps:
 - Slumping/areas of significant bank failure
 - Cold water refuge reaches in headwaters
 - Connectivity of headwaters streams during drought conditions
 - Categorization of undersized culverts and dams that inhibit desired aquatic organism passage, as well as flows



Goal 4: Streams

Facilitate and improve stream health through connectivity and natural sediment transport to support quality habitat for fish and wildlife

Site Specific Project Recommendations:

1. Some barriers protect native brook trout populations and should remain (e.g., Spring Brook and Flynn Brook).

Watershed Wide Project Recommendations:

1. Survey Cattaraugus Creek and tributaries to identify areas of cold groundwater inputs for sustaining wild trout populations.
2. Expand the Stream Visual Assessment Protocol (SVAP) to the western portion of the watershed as this program provides an important basis for stream health and restoration opportunities.

Project Recommendations, suggested locations needed:

- 1.** Increase canopy cover and riparian plantings in the Cattaraugus Creek watershed to improve water quality and fish and wildlife habitat.
2. Improve aquatic connectivity of streams to support fish passage and natural stream flows. Potential projects can be identified using the North Atlantic Aquatic Connectivity Collaborative (NAACC) database and dam removal/mitigation studies.

*Numbers highlighted in **cyan** denote recommendations that are in more than one IWAP project goal*



Goal 5: Invasive Species

Minimize the negative impacts caused by invasive species to support fish and wildlife, forest and agricultural production, and natural physical conditions

- There was an observed increase in the number of new terrestrial invasive species in 2016 and 2017 (11 new species in 2016 and 15 new species in 2017, based on iMapInvasives).
- Terrestrial invasive species such as **Hemlock Woolly Adelgid (HWA)** and **Emerald Ash Borer (EAB)** were observed in Zoar Valley Unique Area, Collins, North Collins and Concord, NY. These invasive species are responsible for destruction of eastern hemlock and ash trees across New York State as well as significant alterations to adjacent aquatic communities.
- **The growing season (days between last spring and first fall frost) has increased from the long-term median of 117 days to 144 days. This change may impact species range limits.**
- Data gaps:
 - Invasive shrub populations
 - Comprehensive invasive species surveys (expanding coverage)
 - Seed bank and ground layer studies in eastern hemlock and ash stands



Goal 5: Invasive Species

Minimize the negative impacts caused by invasive species to support fish and wildlife, forest and agricultural production, and natural physical conditions

Site Specific Project Recommendations:

1. Invasive Species Management and Vernal Pool Restoration at Scoby Dam Park in coordination with potential Springville Dam fish passage project
2. Knotweed management along streambanks (i.e., Village of Arcade)


Project Recommendations, suggested locations needed:

- 1.** Continue to expand the usage of iMapInvasives to report invasive species observations to increase coverage of invasive species datasets in the watershed.

Educational Recommendations (reference existing resources when available):

1. Educate on invasive species identification and behaviors that prevent their spread

*Numbers highlighted in **cyan** denote recommendations that are in more than one IWAP project goal*



Goal 6: Sustainable Working Lands

Promote, implement, and improve sustainable land uses to provide future human generations with the ability to use and prosper from natural resources

- Headwaters of Elton Creek subwatershed (HUC12: 041201020103) has the highest agricultural environmental management (AEM) participation of the Cattaraugus Creek watershed, up to 21%.
- According to United States Department of Agriculture (USDA) farm census data, 95% of the farms in watershed counties are small and family owned, however there's a risk of land turnover/development as the human population in the watershed is aging.
- Well over half of the farms in the watershed use conventional tillage practices (USDA Census of Agriculture). **Erosion rates from “conventionally plowed agricultural fields average 1–2 orders of magnitude greater than rates of soil production”** (Montgomery 2007).
- Data gaps:
 - Timber and maple syrup production
 - Pollinator insect populations
 - Soil loss/erosion rates
 - Key barriers to advancing Agricultural Environmental Management (AEM) program

Goal 6: Sustainable Working Lands

Promote, implement, and improve sustainable land uses to provide future human generations with the ability to use and prosper from natural resources

Site Specific Project Recommendations:

1. Riparian buffer or other stream management projects

- **Locations:** Along Cattaraugus Creek in the Towns of Otto, Collins, Yorkshire, Sardinia, and Arcade

2. Increase participation in the Agricultural Environmental Management (AEM) program and implementation of agricultural nutrient management plans (NMPs), such as agricultural soil health practices and initiatives (i.e., cover crops, reduced tillage, no till programs)

- **Locations based on risk assessment:** Subwatersheds (HUC12s) associated with the South Branch of the Cattaraugus Creek, Buttermilk Creek, Elton Creek and Clear Creek

Project Recommendations, suggested locations needed:

1. Increase long-term monitoring of riparian buffer projects to document benefits.

Educational Recommendations (reference existing resources when available):

1. Educate the public about the value of vegetation of land adjacent to streams, using publicly funded riparian buffers as demonstration projects.

Numbers highlighted in cyan denote recommendations that are in more than one IWAP project goal





Goal 7: Heritage and Sense of Place

Inspire and facilitate a connection with nature to support physical, social, and mental well-being

- Fall and spring (October, November, April) salmonid angler hours have declined up to five-fold over the past two decades.
- Widespread portions of the watershed have notable risk to cultural services provided by the ecosystem due to socioeconomic factors such as social vulnerability and human population age structure.
- With watershed development increasing at a rate of approximately 81 acres/year increased suburban sprawl may pose a risk to natural lands.
- Data gaps:
 - One comprehensive public access dataset/resource
 - Trail use logs



Goal 7: Heritage and Sense of Place

Inspire and facilitate a connection with nature to support physical, social, and mental well-being

Watershed Wide Project Recommendations:

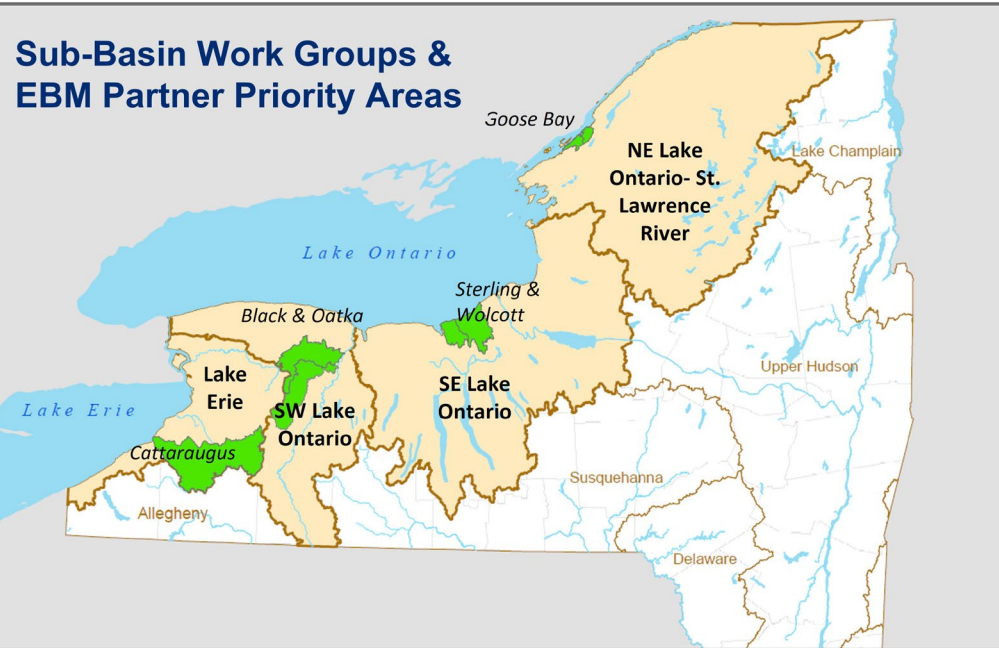
1. Provide input on updates to the New York State Open Space Plan and other habitat protection planning efforts to ensure key areas are prioritized. Acquire and/or protect properties to improve habitat connectivity and/or recreation opportunities.
2. Provide accessible online information on trails and other outdoor recreational opportunities on one comprehensive site
3. Natural history study of the watershed to understand general historical conditions, increase knowledge about the area's history and importance, and encourage traditional ecological knowledge (TEK).
4. Become a part of Tree City USA to connect with local Urban and Community Forestry programs and increase the number of trees in urban areas.

Project Recommendations, educational:

1. Actions related to outreach and education in the Niagara Frontier Unit Management Plan

*Numbers highlighted in **cyan** denote recommendations that are in more than one IWAP project goal*

Sub-Basin Work Groups & EBM Partner Priority Areas



Long Term Management

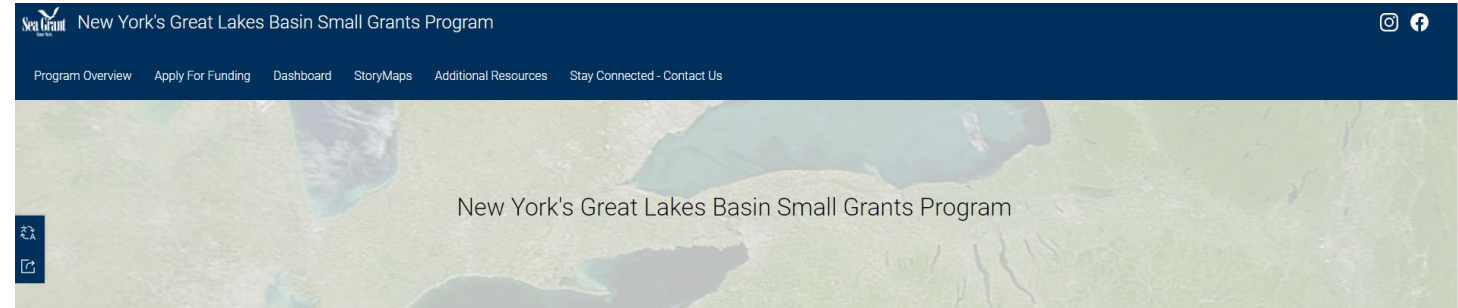
Inspire and facilitate a connection with nature to support physical, social, and mental well-being

- NYSDEC will help facilitate stakeholder engagement and plan implementation through the Great Lakes Action Agenda Lake Erie sub-basin work group
- Local champions can support project implementation, monitoring and evaluations
- Research opportunities to fill data gaps will be explored through partners
- Share interest and capacity to be involved in the Cattaraugus Creek IWAP by filling out the [long-term management survey](#)



Funding Opportunities - DEC Great Lakes

- [New York's Great Lakes Basin Small Grants Program](#)
- [New York State Water Resources Institute Competitive RFP](#)
(application window opens in the Fall)
- [Great Lakes Research Consortium](#)
- Sign up for the Great Lakes News, Funding, and Events listserv to get updates



Funding Opportunities - Consolidated Funding Application

- DEC Climate Smart Communities
- DOS Local Waterfront Revitalization Program
 - Applications due July 28th, 2023, using www.GrantsGateway.Gov
- DEC Water Quality Improvement Project
- DEC Non-Agricultural Non-Point Source Planning Grants
- EFC Green Innovation Grant Program
 - Applications due August 11, 2023, using www.GrantsGateway.Gov



Program Guidelines



Regional Economic Development Council Initiative Programs



Workforce Programs



Other New York State Programs

Funding Opportunities - DEC Funding Finder

Funding Finder Tool

Are you looking for funding? Our new tool can help you!

The Funding Finder, developed by the NYSDEC Division of Water in conjunction with the Long Island Sound Study, is designed to simplify the process of finding grant opportunities. The tool enables grant seekers to filter grant opportunities based on criteria that meets their specific needs.

After discussions with different stakeholders, it was clear there is a barrier to applicants being aware of grant opportunities. The Funding Finder is part of the solution and encompasses a wide variety of federal, state, and local funding and will be updated periodically. DEC grants featured in the tool include: water protection, wildlife protection, land and forest protection, climate change and environmental justice grants. Find more information on [DEC specific grants](#).

To download the Funding Finder and associated User Guide, click the links below.

- [Funding Finder](#) (Note: Preferred browsers for this tool are Chrome and Safari. If you are using Microsoft Edge or Firefox, allow pop-ups and click "download file.")
- [Funding Finder User Guide](#) - Step-by-step instruction packet with illustration for additional guidance.

<https://www.dec.ny.gov/pubs/127486.html>

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This Page Covers



IWAP Implementation

- How can you get or stay involved?
 - Share interest and capacity to be involved in the Cattaraugus Creek IWAP by filling out the [long-term management survey](#)
 - Attend a Lake Erie Sub-Basin Work Group Meeting
 - Participate in citizen science efforts (e.g., WAVE, CSLAP, iMapInvasives)



Next Steps

- IWAP report target release date: Fall 2023
- Long term management survey:

<https://survey123.arcgis.com/share/02728c55240f4464ba35745238d8e45a>

- Check out the StoryMap for updates:

<https://storymaps.arcgis.com/stories/369d69e8344a4856ac9729b178445eb0>



Thank you!

Final questions or comments?

Email: greatlakes@dec.ny.gov

Website: <https://www.dec.ny.gov/lands/124314.html>

StoryMap Link:

<https://storymaps.arcgis.com/stories/369d69e8344a4856ac9729b178445eb0>

Ryan Elliott, NYSDEC
ryan.elliott@dec.ny.gov

Tony Eallonardo, Ramboll
tony.eallonardo@ramboll.com

