



Department of  
Environmental  
Conservation

# Great Lakes Program Report

PROTECTING, CONSERVING, RESTORING,  
AND ENHANCING NEW YORK'S GREAT LAKES

2018–2020

Andrew M. Cuomo, Governor | Basil Seggos, Commissioner



# Message from the Commissioner



In 2020, DEC celebrated its 50<sup>th</sup> anniversary. Imagine the past 50 years in New York State without our agency's efforts to protect and sustain our environment. What would our state look like today? How would our health and quality of life be impacted?

As we look back, we also need to look forward, recognizing that our efforts to protect and sustain our environment remain critical for so many reasons—from protecting our natural resources and public health to providing recreational opportunities that enhance our quality of life.

During these past 50 years, DEC has been instrumental in Great Lakes conservation, protecting freshwater and land resources that are irreplaceable. In 1970, new laws took effect and new programs were enacted that established goals for Great Lakes protection, including critical Water Quality standards, Superfund cleanup programs, the Endangered Species Act, the Solid Waste Management Act, and cooperative agreements between Canada and Great Lakes states in the U.S.

Many people may not be aware that Great Lakes conservation efforts and other key laws and initiatives date back only 50 years. Fortunately, after launching these initiatives, New York has expanded its environmental protection efforts, addressing current and future needs. These efforts recognize that the resources of the Great Lakes are vital to outdoor recreation, our regional and state economies, and the quality of life for millions of New Yorkers.

New York has made great strides and continues to develop and support projects that will produce short- and long-term benefits for the Great Lakes and all the people and businesses who depend on them, as well as the fish and wildlife that are critical to these vibrant resources.

Outdoor recreation is an important component of the regional economy and benefits the health and well-being of residents and visitors. DEC continues to address key issues that affect nature and recreation, ranging from swimming, boating, and fishing to clean drinking water. We are also working with local and state partners to promote sustainable agriculture, vibrant tourism, resilient coastal communities, and a strong economy.

Of course, managing New York's Great Lakes resources also means dealing with new and existing challenges, such as controlling chemicals of emerging concern, minimizing the impacts of harmful invasive species, and addressing environmental justice and racial equity issues. Our natural resources provide many benefits, and those benefits should be available to all people.

DEC's Great Lakes Program is committed to building on past accomplishments, even as some of its operations must adjust to the COVID-19 crisis. Rest assured, the program will continue to work to achieve its mission, using an ecosystem-based approach that has and will continue to protect, restore, and improve the Great Lakes.

We hope that you will be part of our efforts to manage these wonderful resources. Working together, we can accomplish key goals that will benefit all of us now and for years to come.

Very truly yours,

Basil Seggos, Commissioner



# New York's Great Lakes Program

New York's Great Lakes Program goals are guided by New York's Great Lakes Action Agenda (GLAA), and integrate local, state and federal plans, goals, and initiatives. The GLAA promotes collaborative action and applies an ecosystem-based management (EBM) approach. Goals for this area are ambitious and broad, and include:

- Restoring environmental quality;
- Conserving and restoring natural resources;
- Promoting resilient communities and sustainable development;

- Building public stewardship and leadership; and
- Promoting science-informed decision-making through ecosystem-based management.

DEC is pleased to share Great Lakes Program accomplishments from 2018–2020, recognizing that we couldn't have done it without strong support and participation from our partners. Thank you for all of your hard work to keep our Great Lakes healthy.

## Restoring Environmental Quality

### Managing the Great Lakes – A Shared Resource across an International Border

From 2018–2020, DEC assisted the governments of Canada and the United States in the development of Lake-wide Action and Management Plans (LAMPs) for Lake Erie and Lake Ontario, identifying ecosystem-based strategies for restoring and protecting the lakes. To access the LAMPs, visit: [www.binational.net](http://www.binational.net). Recent accomplishments under the LAMPs include:

- Assessments of nearshore and offshore nutrient dynamics;
- Aquatic food web and fish community assessments;
- Ongoing monitoring of chemical contaminants; and
- Planning for coastal condition assessments and habitat restoration projects.

For more information, visit: <https://www.dec.ny.gov/lands/92335.html>.

### Building Partnerships for Ecosystem-Based Watershed Planning and Implementation across New York's Great Lakes

Intermunicipal and Nine-Element watershed planning play an important role in the protection and restoration of water quality through the Great Lakes watershed. Watershed management plans address nonpoint source pollution, invasive species, flooding and erosion, and resilience by taking a comprehensive study of the watershed conditions to prioritize actions. Plans are under development and being implemented as follows:

#### Lake Erie

- DEC collaborated with the United States Geological Survey (USGS) to complete a 2-year water quality monitoring program at 19 sites across the Lake Erie watershed. Data will be used to determine where sediment and nutrient reductions are needed, in support of the Lake Erie Nine-Element (9E) Watershed Management Plan under development by the Lake Erie Watershed Protection Alliance. New York's Department of State (DOS) is supporting the development of the Lake Erie 9E Plan under the Local Waterfront Revitalization Program.

A popular beach on Lake Erie



## St. Lawrence River

- Partners across New York's St. Lawrence watershed have been engaged in a new, collaborative EBM watershed planning effort, developing a St. Lawrence River Watershed Revitalization Plan that is supported by DOS funding. A series of watershed advisory committee and public meetings were held, and a public opinion survey had over 1,200 diverse responses and perspectives that will inform management. For more information, visit: <https://fcswcd.org/partnerships/st-lawrence-river-watershed-partnership-slrwp/>.

## Genesee River

- The Genesee River Coalition of Conservation Districts is successfully implementing the Genesee River 9E Watershed Management Plan. Partners secured federal and state grants to promote soil health practices, and developed a system to track agricultural best management practices, and estimate nonpoint source loading reductions across the watershed.



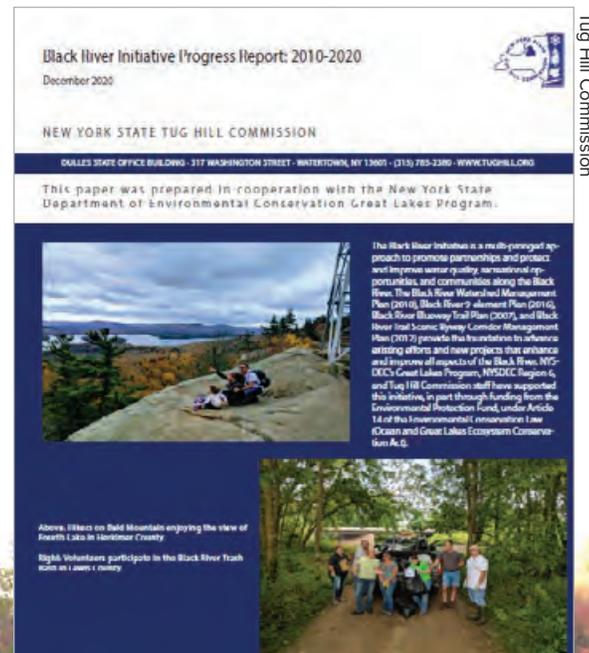
## Finger Lakes

- In 2018, DEC researchers completed a Finger Lakes Water Quality Report, which can be reviewed at: [https://www.dec.ny.gov/docs/water\\_pdf/2018flwqreport.pdf](https://www.dec.ny.gov/docs/water_pdf/2018flwqreport.pdf).
- Total Maximum Daily Load (TMDL) plans for Conesus Lake and Honeoye Lake were finalized in 2019, and the TMDL for Cayuga Lake is being developed: <https://www.dec.ny.gov/chemical/23835.html>.
- Complex modeling and 9E watershed management plans are being developed for Skaneateles Lake, Canandaigua Lake, Owasco Lake, and Seneca-Keuka Lake, with support from partners, including the DOS.
- Harmful Algal Bloom (HAB) Action Plans are being implemented with various lake committees and academic partners throughout the region to improve water quality by reducing both phosphorus and nitrogen loading. To view the plans, visit: <https://www.dec.ny.gov/chemical/113733.html>.
- Hundreds of volunteers have been trained in citizen-science techniques to help monitor and report HABs. All 11 Finger Lakes now have active monitoring programs.

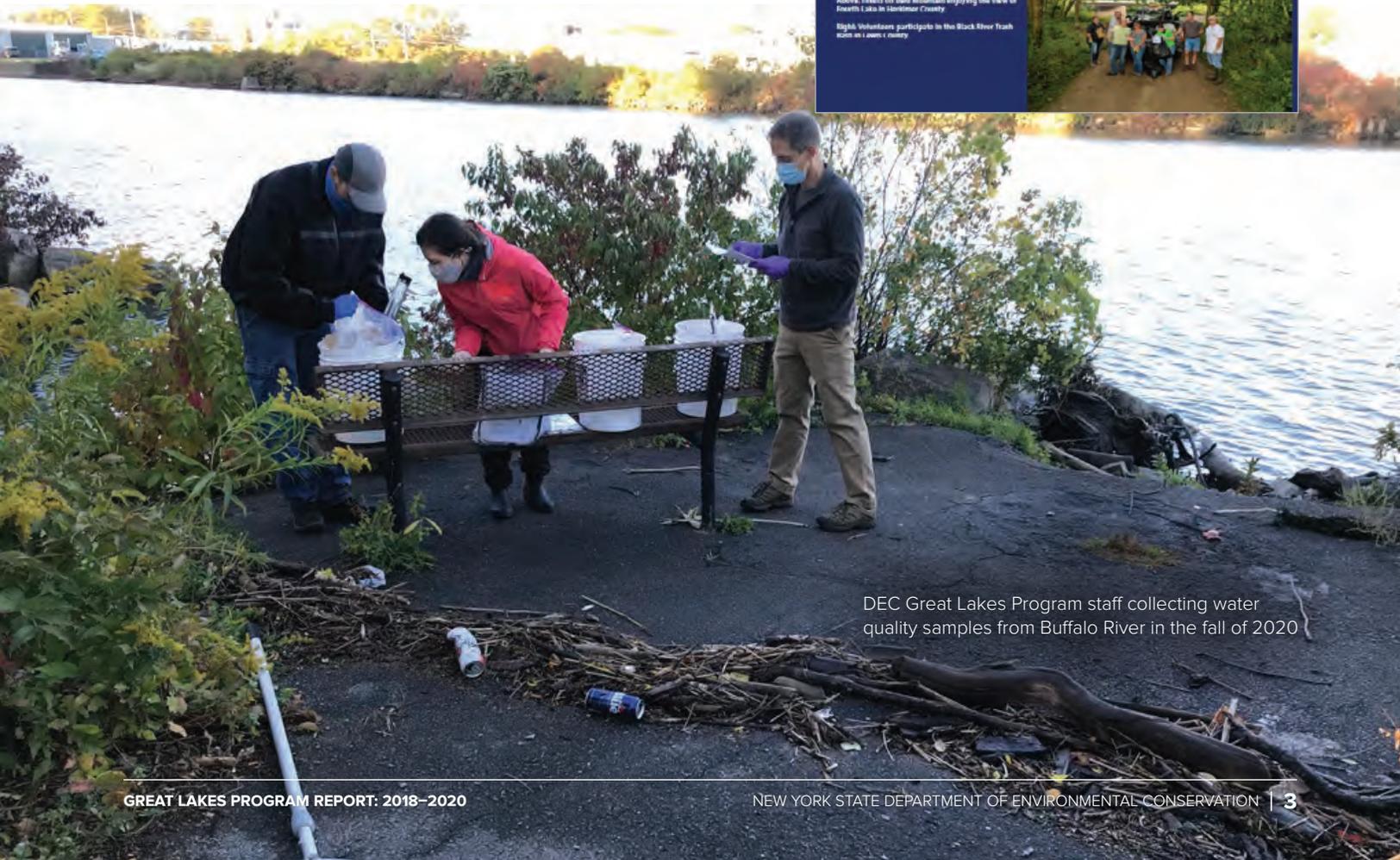
## Black River

- Tug Hill Commission staff and partners are celebrating 10 years of collaborative action toward implementing the Black River Watershed Management Plan and the Black River 9E Plan. A recent report was completed and presented, detailing 72 actions and projects with funding totaling \$35,812,470, to improve water quality, natural resource management, and quality of life in the watershed. For more information, visit: <https://tughill.org/projects/black-river-projects/>.

Black River Initiative Progress Report: 2010–2020



Tug Hill Commission

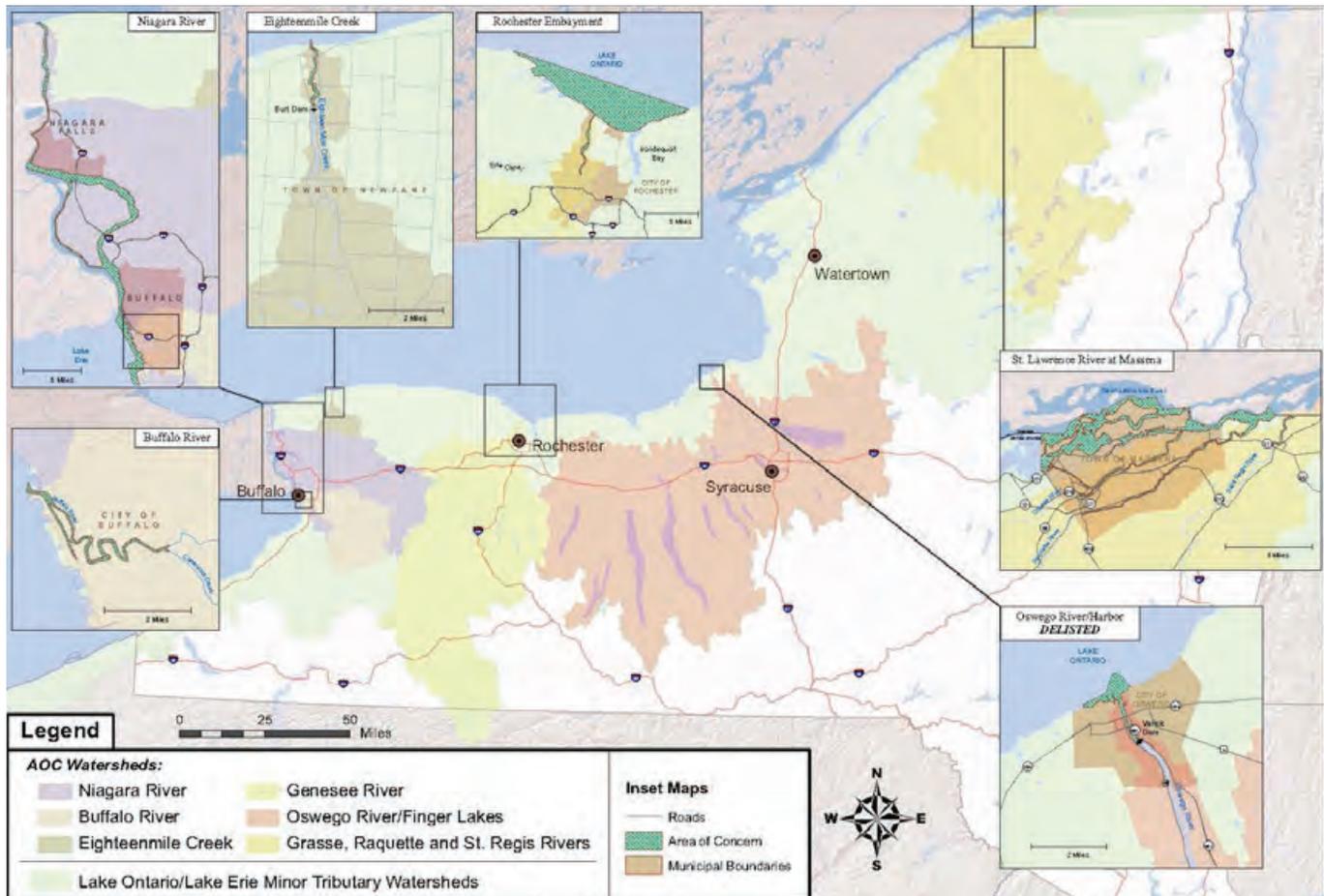


DEC Great Lakes Program staff collecting water quality samples from Buffalo River in the fall of 2020

# Reducing Lake Erie Beach Closures

Building upon previous engineering studies funded by the New York State Environmental Protection Fund (EPF), the Lake Erie Watershed Protection Alliance constructed green infrastructure projects at Point Gratiot in the city of Dunkirk, and Lake Erie beaches in the town of Evans, to capture untreated stormwater runoff carrying *E.coli*, which would impact beach water quality. Project implementation was funded by the Great Lakes Restoration Initiative (GLRI), and lessons learned from these pilot projects will be applied at other Lake Erie and Lake Ontario beaches.

New York State Great Lakes Areas of Concern



## Progress Restoring Areas of Concern (AOCs)

In partnership with the United States Environmental Protection Agency's (EPA) Great Lakes National Program Office, and with GLRI funding, DEC works to remove beneficial use impairments (BUIs) and evaluates progress toward AOC restoration, in coordination with local and state partners, as guided by Remedial Action Plans (RAPs). There are **five remaining AOCs** within New York's Great Lakes, and progress toward delisting each of these AOCs within the last two years includes:

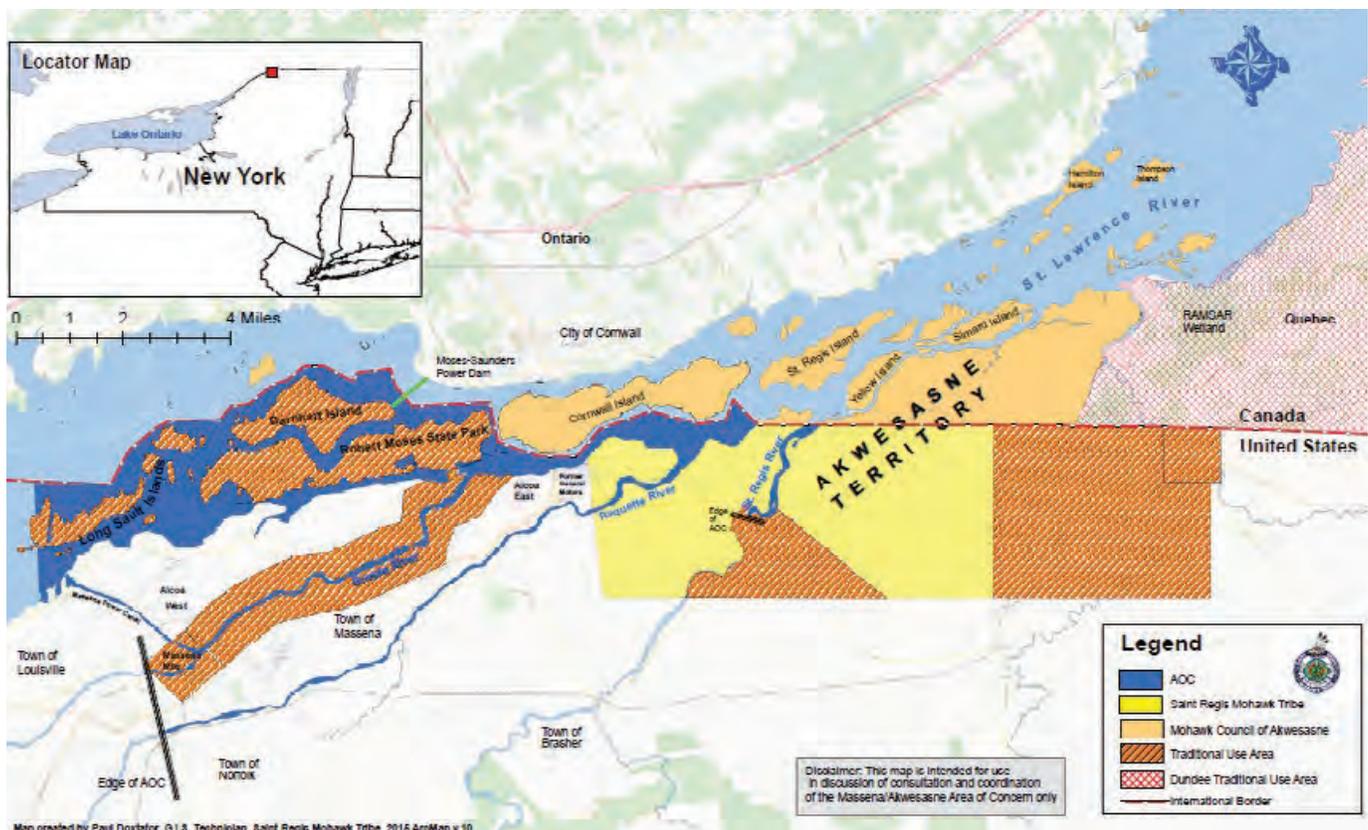
- Eighteenmile Creek – DEC, in coordination with local, state, and federal partners, has determined that no additional projects are needed for removal of all BUIs beyond actions being implemented under the Superfund Program. DEC presented the case for removing the Restrictions on Dredging Activities BUI to the public, and the BUI was formally removed in September 2020. DEC and its partners are committed to monitoring ecological indicators throughout the AOC, including mink and native fish communities, and working with the Superfund Program to ensure that the AOC is restored.

### ENVIRONMENTAL JUSTICE

Environmental Justice is the fair and meaningful treatment of all people, regardless of race, income, national origin, or color, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Several of New York's AOCs, including the Buffalo River, Niagara River, Rochester Embayment, and St. Lawrence River at Massena/Akwesasne, are within or include environmental justice areas disproportionately impacted by environmental contamination. To find out if you live in an environmental justice community, and to get involved, check out the new guide from NYSG: **Environmental Justice Mapping Tools for NY State Communities.**



- Niagara River – DEC has been working with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and other local, state and federal partners, to implement habitat restoration opportunities under the RAP and the Niagara River AOC Habitat Restoration Plan that will remove the Fish and Wildlife Habitat BUI. Shoreline and wetland restoration projects are underway at Buckhorn Island State Park, Burnt Ship Creek, Grass Island, East River Marsh, Spicer Creek Wildlife Management Area, and Ralph C. Wilson Centennial Park. DEC and its federal partners are also investigating the presence of sediment contamination within tributaries to the river, to determine if targeted remediation is needed.
- Buffalo River – Management actions to restore beneficial uses have been essentially completed. Ongoing monitoring and adaptive management activities are underway to assess the degree to which BUIs have been removed and determine if additional actions are needed. DEC and local partners successfully removed the Tainting of Fish and Wildlife Flavor BUI in June 2020. A virtual public meeting was held and 74 people attended.
- Rochester Embayment – USACE led restoration efforts at the Braddock Bay Wildlife Management Area that were substantially completed in the fall of 2018. SUNY Brockport and USACE are collaboratively conducting monitoring to assess the success of the restoration efforts and to identify and implement any adaptive management efforts. The Beach Closings, Eutrophication or Undesirable Algae, and Restrictions on Dredging Activities BUIs were all removed in 2019. DEC anticipates that the Restrictions on Fish and Wildlife Consumption, Degradation of Fish and Wildlife Populations, and Degradation of Aesthetics BUIs will be removed by the end of 2021.
- St. Lawrence River at Massena/Akwesasne – In December 2019, DEC and the Saint Regis Mohawk Tribe finalized a historic agreement to co-coordinate implementation of the RAP. This historic agreement that equitably engages the Saint Regis Mohawk Tribe in decision-making will include enhanced education and outreach and the restoration of important cultural resources. Actions are being implemented to protect native freshwater mussels in the lower Grasse River during sediment remediation activities over the next three to four years. In collaboration with consultants, shoreline restoration management actions are being developed by assessing shoreline conditions using drone imagery.



Updated map of the St. Lawrence River at the Massena/Akwesasne AOC

# Conserving and Restoring Natural Resources

## Trees for Tribs Program Helps Restore Waterways

DEC's Trees for Tribs program supports riparian plantings to improve water quality, wildlife habitat, and resiliency along waterways. A total of \$156,400 from New York's Environmental Protection Fund supported four projects:

- Sugar Creek Restoration Project – The Finger Lakes Museum planted 600 trees along a 13-acre area of a Keuka Lake tributary. Planting events were held in spring 2019, and a tree-share program gave away free trees to private landowners: <https://www.fingerlakesmuseum.org/trees-for-tribs>.
- Sandy Bottom Park Trees for Tribs – The Town of Richmond and the Friends of Sandy Bottom Park held public tree plantings in April and June of 2019, in celebration of Arbor Day and National Trails Day. The project enhances 37 acres by planting 67 trees and shrubs and 225 tree seedlings.
- Riparian Restoration of the Ley Creek Watershed – The Onondaga Environmental Institute and Onondaga Earth Corps are completing restoration work at 4 sites totaling 6 acres along Ley Creek by planting 1,891 native trees and 260 shrubs along the creeks banks: <https://oei2.org/projects/>.
- Isle View Tree Planting Project – The Erie County Department of Parks, Recreation and Forestry is replacing dead and invasive species by planting 162 native trees along a 2.27-acre area of the Niagara River, and educating the public about the value of native trees.

## Great Lakes Fisheries Management Showcased through “A Day in the Life of a Fisheries Research Vessel Captain” video

DEC's “On the Front Lines” video series spotlighted the Bureau of Fisheries’ two Great Lakes Research Vessel (R/V) Captains. The video showcased what it's like to be a captain onboard the *R/V Seth Green* and *R/V Argo*, where state-of-the-art technology is being used to improve fisheries management. Check out the video at: <https://www.youtube.com/watch?v=vtOgtK9Hmnw>. For more information on Lake Ontario fisheries research, visit: <https://www.dec.ny.gov/outdoor/7969.html>, and for Lake Erie, visit: <https://www.dec.ny.gov/outdoor/7967.html>.

Tree recently  
planted at Isle  
View park



## Culvert Assessments Support Enhanced Aquatic Connectivity

Under the Great Lakes Culvert Assessments pilot project completed in 2018, New York State’s Department of Agriculture and Markets awarded funding to 18 Soil and Water Conservation Districts to complete culvert assessments for 3,300 culverts, using the North Atlantic Aquatic Connectivity Collaborative protocols. These assessments identified 950 severe barriers to fish passage throughout the basin. Using U.S. Fish and Wildlife Service Fish Passage grants, GLRI habitat restoration funding, and DEC’s Water Quality Improvement Project (WQIP) grants, these severe barriers can be enhanced (enlarged and embedded) to allow for improved stream flow, aquatic connectivity, and reduced flood risk.



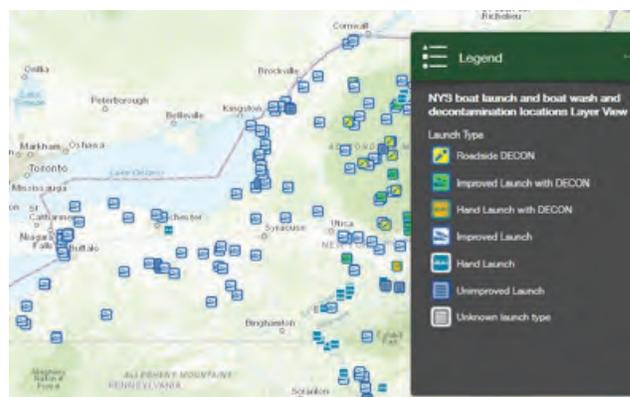
Cortland County SWCD

An example of a severe barrier that was enhanced in Cortland County

## Integrated Invasive Species Management Projects

Holistic approaches that are being applied to management promote awareness, address the causes of the spread of invasive species, and promote collaboration to control high-priority species, as follows:

- Boat launch stewardship expands – Boat launch stewardship programs were expanded throughout the basin in 2019 and 2020. Through collaboration with OPRHP and other Partnerships for Regional Invasive Species Management (PRISMs) throughout the state, launch stewards are educating boat users on how they can stop the spread of aquatic invasive species (AIS), and have completed more than 266,000 boat inspections statewide in 2019 and 2020. The following map shows boat launch steward locations, and more information is available at <https://www.dec.ny.gov/animals/107807.html>. A link to an interactive map with steward sites is available from this linked page.
- Clean, Drain, and Dry to Prevent AIS – In 2019 and 2020, DEC participated in a Great Lakes basin-wide awareness campaign, the Great Lakes AIS Landing Blitz, to train boaters to “clean, drain, and dry” to prevent the spread of AIS. For more information, visit: <https://www.glc.org/work/blitz>.
- Controlling Hydrilla in Tonawanda Creek – DEC, USACE, and the U.S. Fish and Wildlife Service have been monitoring and managing hydrilla adaptively within a 15-mile stretch of Tonawanda Creek to identify best practices for hydrilla control that can be applied throughout the Great Lakes. Through a basin-wide collaboration, experts are sharing their research, successes, and lessons learned: <http://hydrillacollaborative.com/>.



Interactive map showing boat launch steward locations

# Promoting Resilient Communities and Sustainable Development

## Governor Cuomo's Lake Ontario and St. Lawrence River Resiliency and Economic Development Initiative (REDI)

In response to extreme flooding and erosion that occurred in 2017 and 2019, **Governor Andrew M. Cuomo's REDI program** is providing \$300 million in funding to support 132 shoreline resiliency and economic development projects, identified by the impacted communities, across 8 counties along Lake Ontario and the St. Lawrence River.

DEC and its state agency partners are applying EBM to restore barrier bars, protect infrastructure, and demonstrate nature-based shoreline management techniques. In some locations, previously funded Great Lakes EBM small grants studies and projects have helped inform science and coastal decision-making. Examples include:

- North Sandy Pond Nature-Based Dune Restoration – The Town of Sandy Creek was awarded a \$320,000 WQIP nature-based shoreline grant and additional REDI funding to improve inlet and sediment management and restore the dunes and beach at North Sandy Pond in February 2020. This work implements recommendations of the North Pond Study that was funded by a New York Sea Grant (NYSG) small grant in 2015.

Three thousand linear feet of dunes are being restored and planted at North Sandy Pond



- Port Bay Barrier Bar Resiliency Project – Following record-high Lake Ontario water levels in 2017, a significant breach occurred on the eastern Port Bay barrier bar, part of the Lake Shore Marshes Wildlife Management Area. DEC commissioned a study to identify management solutions that balanced the multiple uses and benefits of this area, such as aquatic habitat, access, coastal ecology, and risk-reduction factors. The study identified two solutions that best achieved this balance: a nature-based repair of the barrier bar using natural materials, and enhanced management of channel dredge material. Through a partnership with Healthy Port Futures, an innovative feeder bluff was constructed to encourage replenishment of sediment along the narrowed barrier bar, with plans to construct a nature-based barrier bar under the REDI program.



## New York Sea Grant Promotes Great Lakes Coastal Resiliency

NYSG and its partners are bringing science-informed shoreline management to shoreline communities and landowners:

- Shoreline erosion management outreach across New York's Great Lakes shorelines in 2018 and 2019 assisted homeowners impacted by flooding and erosion. NYSG held workshops in Fair Haven, Webster, and Chaumont, where more than 75 attendees were able to connect with professionals and permitting staff from New York's DEC and DOS, and USACE, and learn about innovative shoreline erosion management techniques.
- In 2020, virtual site visits were provided to adapt to social distancing during the State's COVID-19 response. Shoreline property owners and managers can now submit local histories of erosion and flooding, photos of shoreline damage, and connect with professionals to get help with shoreline management projects. Since April 2020, the virtual site visits have connected 55 homeowners in Jefferson, Oswego, Wayne, Orleans, Niagara, and Erie counties. More information is available at <https://www.seagrant.sunysb.edu/glcoastal/virtualsitevisit>.
- NYSG produced a 16-page booklet, "Erosion Management for New York's Great Lakes Shorelines," in April 2019 to provide shoreline residents with information on permissible shoreline erosion strategies along Lake Erie and Lake Ontario. The booklet is available here: <https://seagrant.sunysb.edu/glcoastal/pdfs/ErosionManagement.pdf>.
- NYSG developed New York's Great Lakes Coastal Resilience Index as a self-assessment checklist to help communities investigate their vulnerabilities to coastal flooding and weather disasters such as blizzards, flash floods, and windstorms. To access the 44-page CRI in PDF format, visit <https://seagrant.sunysb.edu/coastalcomm/pdfs/CCD-CoastalResiliencyIndex.pdf>.



NYSG Coastal Processes and Hazards specialist presenting at a community workshop in Webster

- To bring awareness to infrastructure and services that may be at risk to flooding, NYSG developed the Lake Ontario Inundation Mapping Tools to show inundation impacts at varying lake levels. Features include:
  - Mapping tools and **tutorials** available in two different formats: A **web mapping application** for anyone with an internet connection, and a map package for advanced GIS users;
  - High-resolution views of parcels and infrastructure; and
  - The ability to create maps to export in PDF format.
- Post-Flood Recovery Visioning with the Village of Sodus Point: NYSG and the Genesee/Finger Lakes Regional Planning Council established and piloted a visioning process to help communities improve resiliency to future flooding events. **The workshop** held in the village of Sodus Point was attended by a mix of local residents, village and county staff, and topical experts with state and federal agencies, organizations, and academia.

Sandy Pond inlet and barrier beach aerial

Roy Widrig, Great Lakes Coastal Processes and Hazards Specialist, NYSG

# Partners at the New York State Department of State Promoting Coastal Collaboration

## Strengthening Coastal Lakeshore Economies and Resiliency

The Coastal Lakeshore Economy and Resiliency (CLEAR) Initiative, spearheaded by New York's DOS, will result in comprehensive and long-term coastal resiliency plans and strategies for communities along Lake Ontario, the lower Niagara River, and the upper St. Lawrence River. A partnership between DOS and Empire State Development, CLEAR is building on the momentum of Governor Cuomo's REDI program to continue supporting communities as they institute critical long-term protective measures and strengthen existing investments. CLEAR also meets priorities highlighted under the GLRI by building on cooperation and partnerships among multiple stakeholders, to help lakeshore communities identify and prioritize necessary actions to achieve long-term resiliency, restoration, and sustainability. For more information on the CLEAR Initiative, visit <https://www.dos.ny.gov/opd/planning/clear-program.html>.

## Monitoring Shoreline Resiliency Outcomes

To help decision makers manage and monitor shorelines, DOS, DEC, and other partners developed the "State Shoreline Monitoring Framework," which identified 17 distinct monitoring protocols for a range of shoreline types in New York, including natural and nature-based features. These protocols focus on resilience service areas, including ecological function, hazard mitigation/structural integrity, and socioeconomic factors. For more information, visit <https://www.dos.ny.gov/opd/monitoring.html>. Funding for this project was provided by the National Oceanic and Atmospheric Administration (NOAA), and the New York State Energy and Research Development Authority (NYSERDA).

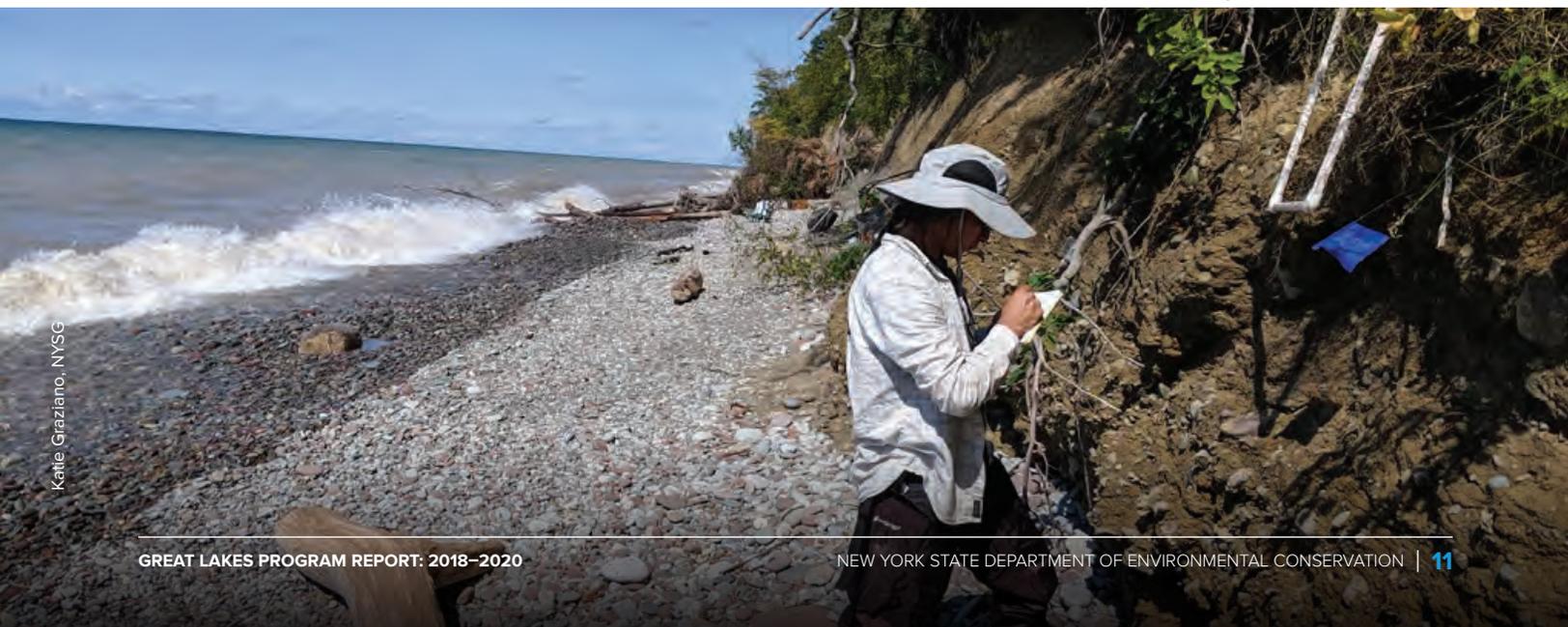
## Revitalizing Local Waterfronts

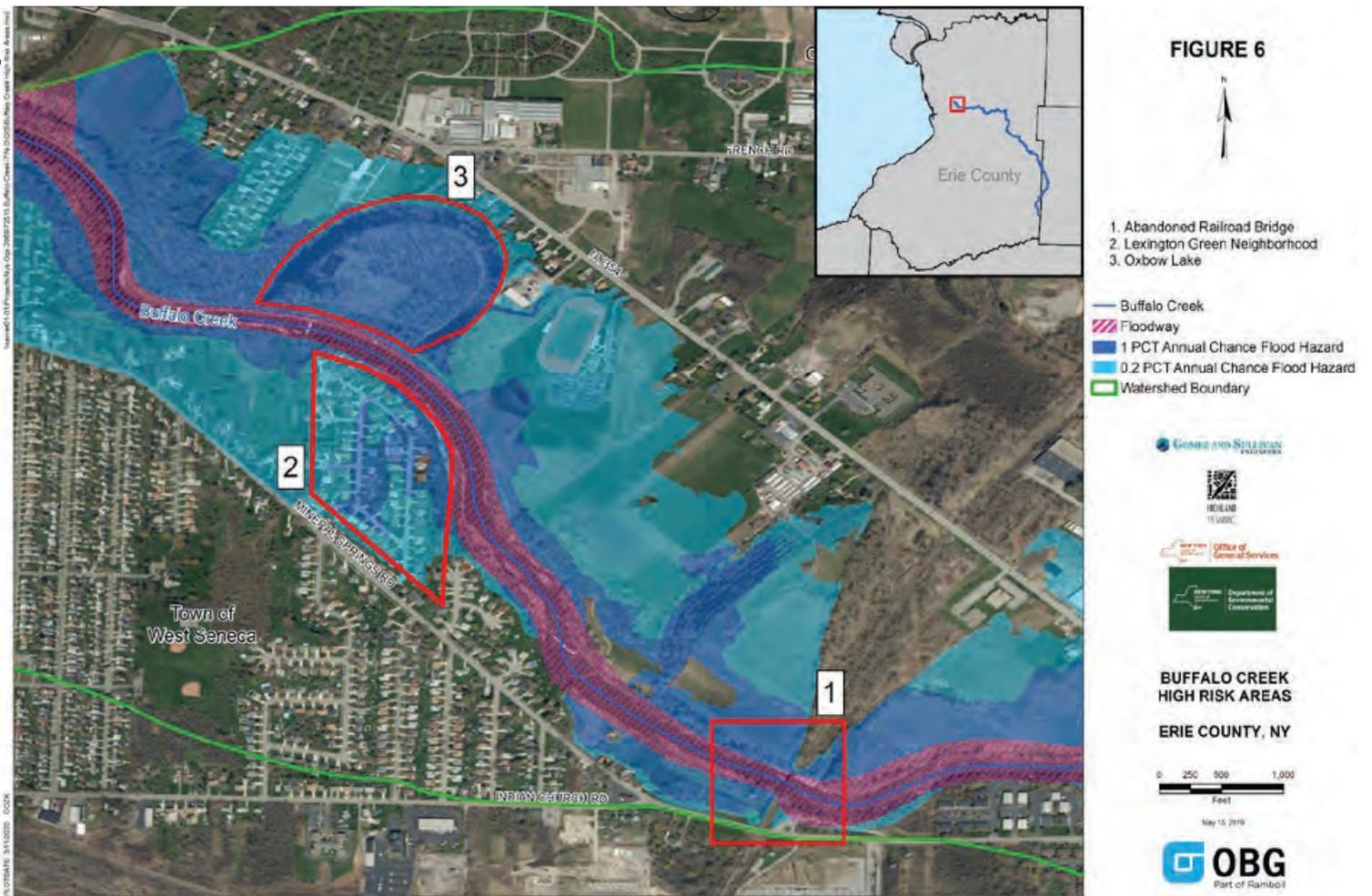
DOS is collaborating with waterfront communities throughout the Great Lakes watershed to develop Local Waterfront Revitalization Plans (LWRPs) that promote resilient communities, sustainable development, improvements to waterfront access, and protection of natural resources. Since 2018, the City of Buffalo, City of Rochester, Village of Alexandria Bay, Town of Alexandria, and Village of Union Springs have adopted LWRPs. LWRPs being implemented in the cities of Buffalo and Rochester benefit these environmental justice communities. Additionally, LWRPs are under development for 71 communities within the watershed. LWRPs are funded through Title 11 of the Environmental Protection Fund – Local Waterfront Revitalization Program. For more information on LWRPs, visit: <https://www.dos.ny.gov/opd/programs/LWRP.html>.

## Designating Lake Ontario as a National Marine Sanctuary

In 2019, NOAA formally initiated the National Marine Sanctuary designation process for a region of eastern Lake Ontario. The proposed Lake Ontario National Marine Sanctuary is a community-based effort to promote awareness and protection of the area's nationally significant maritime heritage resources, particularly shipwrecks. The designation process benefits from extensive input from the Sanctuary Advisory Council and New York State agencies like DOS, DEC, OPRHP, and the Office of General Services. For more information, visit: <https://sanctuaries.noaa.gov/lake-ontario/>.

Researchers monitor the shoreline at Sterling Creek nature preserve





Buffalo Creek Flood hazard mapping

## Resilient New York Flood Studies

In 2018, Governor Cuomo announced \$3 million in funding for **Resilient NY Flood Mitigation studies** to utilize advanced modeling techniques and field assessments within 48 flood-prone watersheds and identify priority projects that would reduce flooding impacts and ice jam risks, and improve habitat. Community leaders can use the report to develop grant applications, gain community support, and ultimately mitigate flood risks within their communities. Environmental justice communities that will benefit from these studies include the city of Buffalo, the village of Oneida, and the town of Malone.

- Erie County – Grannis Creek, Gott Creek, Cayuga Creek, Cazenovia Creek, Buffalo Creek, Eighteen-mile Creek, Ellicot Creek
- Niagara County – Donner Creek, Tonawanda Creek, Eighteenmile Creek, Cayuga Creek
- Chautauqua County – Silver Creek, Walnut Creek
- Wyoming County – Cattaraugus Creek
- Monroe County – Irondequoit Creek
- Ontario County – Honeoye Creek

- Onondaga County – Butternut Creek
- Oneida County – Fish Creek
- Madison County – Oneida Creek, Chittenango Creek
- Franklin County – Salmon River



Erosion and flooding on Eighteenmile Creek in Erie County

# Building Public Stewardship and Leadership

## Engaging Students and Teachers in Great Lakes Literacy and Stewardship

The **Great Lakes Ecosystem Education Exchange (GLEEE)** program held workshops in 2019 and 2020, engaging 62 teachers and up to 18,362 students in Great Lakes stewardship activities. NYSG's Great Lakes Literacy Educator is integrating diversity and equitable engagement into GLEEE programming, and is expanding Great Lakes literacy and stewardship programming to environmental justice areas like the city of Niagara Falls. GLEEE's new focus on environmental justice communities connects with youth who are underrepresented in environmental education, and encourages them to pursue environmental careers.



New York Sea Grant's Great Lakes Literacy Educator presents at a teacher workshop

## Advancing Ecosystem-Based Management (EBM) in Partner Priority Areas

EBM is being applied in priority areas—especially environmental justice communities—identified by sub-basin work groups, with the following accomplishments:

- A headwaters workshop was held in 2019 to engage Upper Cattaraugus Creek municipalities in watershed protection.
- Oatka Creek partners continue to engage municipal leaders in watershed management, including a 2019 green infrastructure training workshop.
- A Goose Bay watershed invasive species workshop was held to engage the public in assisting with invasive species management.
- Wolcott Creek watershed workshops were held by the Syracuse University Environmental Finance Center, to identify priority water quality projects.

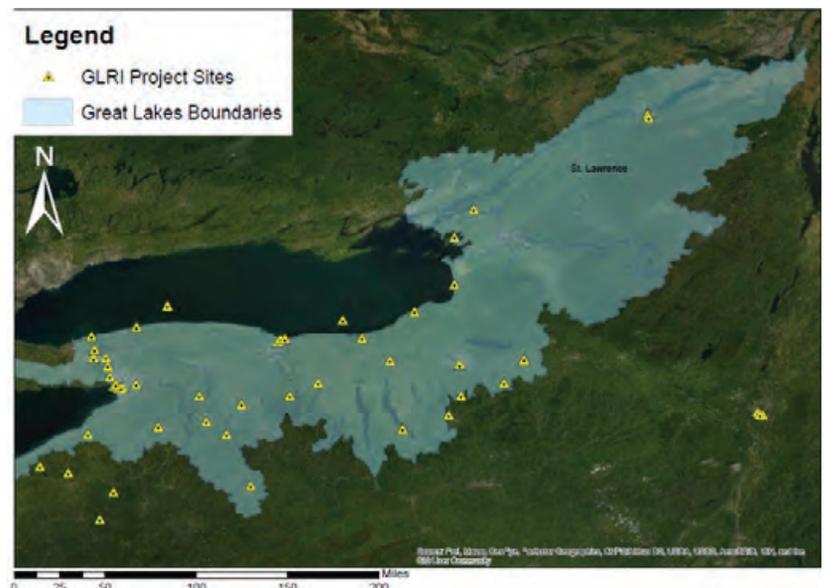
## Adapting to Virtual Engagement

To adapt to social distancing requirements and reduce the spread of COVID-19, a GLAA Project and Partners webinar series was held in the summer of 2020 in lieu of work-group meetings. Presenters shared project success stories related to water quality, natural resources, sustainability, environmental education, and research. More than 150 organizations participated. Webinars can be accessed at: <https://www.dec.ny.gov/lands/91881.html>.

## GLRI Partners Leveraging Federal Funding

DEC supports partners in leveraging federal GLRI funding to implement Great Lakes Restoration projects. From 2018-2020, partners in New York have implemented over \$19 million in funding for 117 projects. Locations are shown in the map:

GLRI Project Sites of New York State from 2018 to Present



# Promoting Science-Informed Decision-Making through Ecosystem-Based Management

## Lake Erie and Lake Ontario Cooperative Science and Monitoring Initiative

Great Lakes Program staff supported research efforts through the Cooperative Science and Monitoring Initiative in 2018 on Lake Ontario, and in 2019 on Lake Erie. Research included chemical contaminants, nutrient loading/cycling and algal blooms, food web dynamics, near-shore/offshore processes, and critical habitat identification and mapping to support native and priority species restoration efforts.



The Argo Research Vessel on Lake Erie

## Citizen-Based *Cladophora* Monitoring

To promote awareness, improve our understanding of *Cladophora* filamentous algae along New York's Great Lakes shorelines, and support science priorities of the Great Lakes Water Quality Agreement, a new website and citizen-science monitoring tool were developed in 2019, which can be accessed at: <https://www.dec.ny.gov/lands/117838.html>.

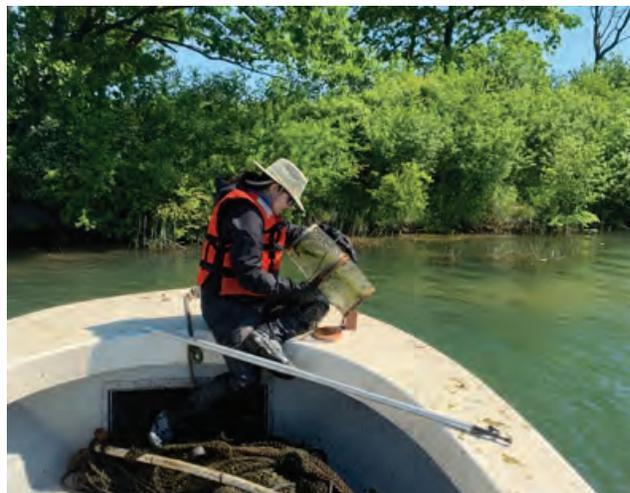


*Cladophora* observed on eastern Lake Ontario shoreline

## Great Lakes Research Consortium Small Research Grants Support Science-Informed Decision Making

In 2019, \$121,916 was awarded for 5 projects, including:

- “Food Web Impacts and Contaminant Transfer by the Tubenose Goby in the Lake Ontario-St. Lawrence River Basin” by the State University of New York (SUNY) College of Environmental Science and Forestry (ESF);
- “Toward Complete Removal of Per- and Polyfluoroalkyl Substances (PFAS) Using a Nanotechnology-assisted Advanced Water Treatment Process” by the University at Buffalo;
- “Increasing Shoreline Erosion Resiliency Using Marine-Based Biopolymers” by SUNY Stony Brook;



Researchers monitoring tubenose goby

Jonathan White

- “Eastern Lake Erie Erosion, Sediment Transport and Depositions Under a Changing Climate” by SUNY Stony Brook; and
- “Assessing the Effects of Cattail Treatment on Methane Emissions from Lake Ontario Coastal Wetlands” by SUNY Brockport.

Check the **Great Lakes Research Consortium (GLRC) website** for updates from the GLRC on research results, funding announcements, and other opportunities for students and practitioners.

## Great Lakes Basin Small Grants Support Local Projects with Regional Impact

From 2018–2020, NYSG and DEC’s Great Lakes Program provided \$200,155 in funds from the Environmental Protection Fund for 9 projects that enhance recreation, stewardship, and resiliency within New York’s Great Lakes communities:

- Sandy Bottom Park Shoreline stabilization in the Town of Richmond;
- Wolcott Creek Watershed Workshop to identify community-based restoration projects;
- Lake St. Lawrence Tourism Destination Area Master Planning;
- Promoting Smart Food Serviceware Choices among Restaurants, Customers, and Tourists in the Buffalo Niagara Area along Lake Erie and Niagara Falls;
- “From Planning to Implementation: Building Capacity in the Town of Sandy Creek”;
- Canoe/Kayak Access Map for Genesee River Basin;
- Aquatic Organism Passage Assessments in Franklin County;
- Advancing Resiliency through Housing Assistance in the Genesee-Finger Lakes Region; and
- South Ontario Street Accessible Boat Launch in Sodus Point.

New York Sea Grant created a YouTube video to share these projects, which can be accessed at <https://www.youtube.com/watch?v=K-z4IA49hkU>.



Jake Straub

Researchers studying cattails



Town of Richmond

Restoration at Sandy Bottom park



Maxine Appleby

Accessible boat launch installed in Sodus Point

# Looking Ahead

## Message from Don Zelazny, DEC's Great Lakes Basin Programs Coordinator

Among the ecosystem-based management (EBM) tenets, adaptation has been a guiding principle for us this past year as we navigated the uncharted waters of COVID-19 containment protocols. For example, work-from-home and e-communication alternatives have become the norm, and in lieu of in-person meetings, we've transitioned our public outreach to virtual platforms, including the new GLAA webinar series launched earlier this year. I believe we've successfully fostered ongoing connections with partners across the state and Great Lakes basin.

I'm pleased to report that substantive progress has been made on 103 of 124 total actions included in the 2015–2020 *NY's Great Lakes Action Agenda*. We look forward to working with you in updating the Agenda for the next 5–10-year timeframe to ensure that it is fully responsive to emerging ecological challenges. The Agenda will aim to be inclusive, accessible, and more reflective of the needs of diverse Great Lakes communities, especially those of environmental justice areas. Addressing the values and needs of environmental justice communities enables us to better engage diverse perspectives, to promote greater innovation, and to improve the targeting of resource management policies and practices to effectively restore, protect, conserve, and enhance New York's Great Lakes region.

We are developing new coastal management tools and data to inform EBM decision-making for natural resilience of our coastal ecosystem, and we are assessing outcomes of demonstration areas to promote effective nature-based

erosion and flood reduction techniques. Updated binational Lakewide Action and Management Plans (LAMPs) for Lake Erie and Ontario are being finalized, offering scientific information on the state of the lakes, and what additional work is needed. Our shared progress will also continue to remove beneficial use impairments in our five remaining Areas of Concern.

As we look ahead, we're eager to pursue new opportunities, partnerships, and expanded progress in promoting collaborative action, through mutually beneficial projects with sustainable outcomes. We will build on environmental justice community engagement within each of the four **EBM Partner Priority Areas**, by developing innovative, integrated EBM action plans for the Cattaraugus Creek, Sterling Creek, and Wolcott Creek watersheds. These plans will help focus resources on watershed stewardship activities such as headwater source protection, invasive species management, voluntary citizen-science monitoring, habitat restoration, and coastal resiliency planning and implementation.

We all have a role to play in keeping our Great Lakes healthy. We invite you to connect with local organizations through our GLAA work groups and webinars. **Learn about your local waterway** and what **you can do to protect it**. Attend a meeting, have respectful discussions within your community, read a book, or watch a documentary to learn more. Every action you take counts toward shaping the future of our Great Lakes.

DEC's Great Lakes Basin Programs Coordinator delivers a presentation discussing Lake Ontario.



Don Zelazny, DEC's Great Lakes Basin Programs Coordinator



# How to Get Involved

Four sub-basin work groups meet biannually to discuss collaborative opportunities to implement projects at the regional scale. In response to the COVID-19 pandemic, DEC's Great Lakes Program staff have integrated virtual engagement opportunities to facilitate partnerships at the basin-wide scale.

- Join our mailing list to learn more and get involved,
- Reach out to DEC Great Lakes Program staff to discuss your interests and ideas,
- Email [greatlakes@dec.ny.gov](mailto:greatlakes@dec.ny.gov), or
- Contact your regional watershed coordinator:

- **Shannon Dougherty** – Western (Lake Erie and Southwest Ontario) Great Lakes Watershed Coordinator

Email: [Shannon.Dougherty@dec.ny.gov](mailto:Shannon.Dougherty@dec.ny.gov)

Phone: (716) 851-7070

- **Emily Sheridan** – Eastern Lake Ontario (and St. Lawrence) Watershed Coordinator

Email: [Emily.Sheridan@dec.ny.gov](mailto:Emily.Sheridan@dec.ny.gov)

Phone: (315) 785-2382

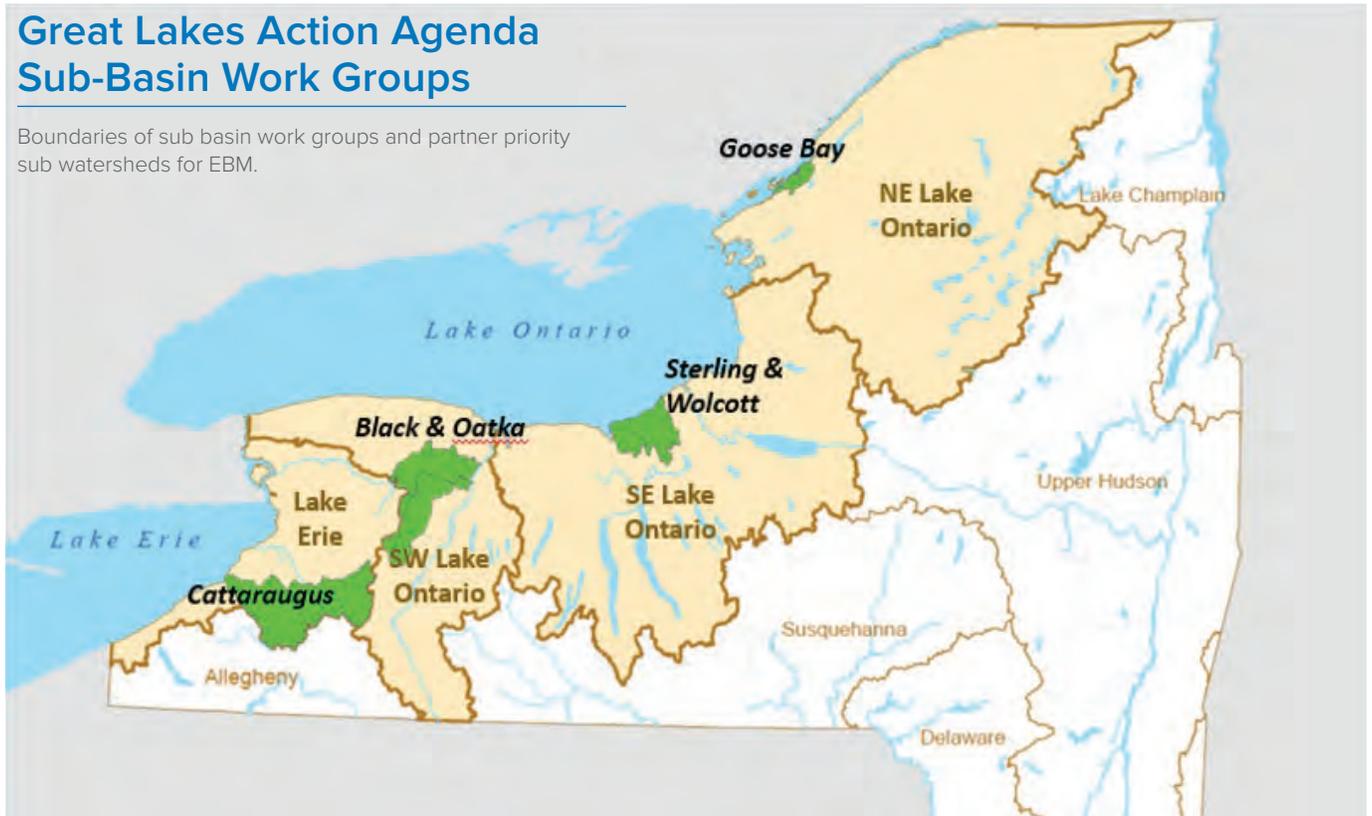
- **Connect with Us on Social Media**

DEC has several social media accounts where you can learn the latest information and engage with us through your feedback and comments. Find us on:

- Facebook
- Twitter
- Instagram
- Flickr
- YouTube

## Great Lakes Action Agenda Sub-Basin Work Groups

Boundaries of sub basin work groups and partner priority sub watersheds for EBM.





NEW YORK STATE

Department of Environmental Conservation

