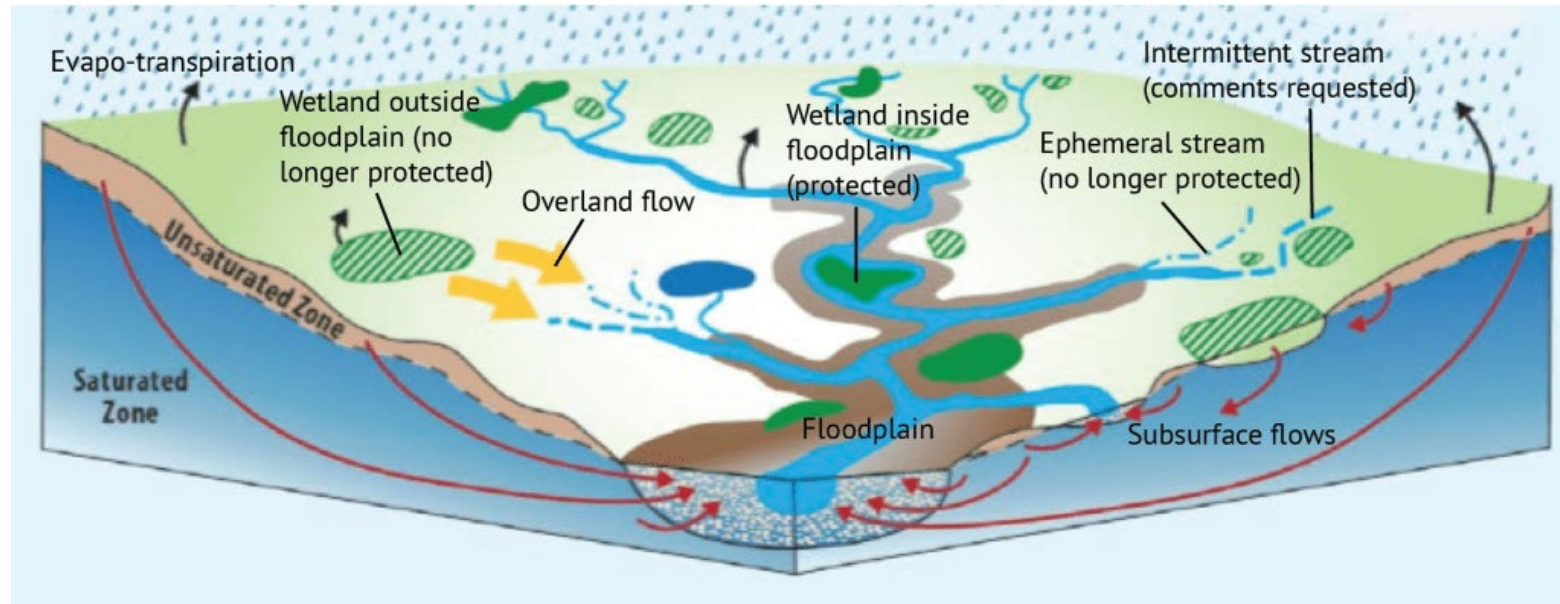




Department of  
Environmental  
Conservation

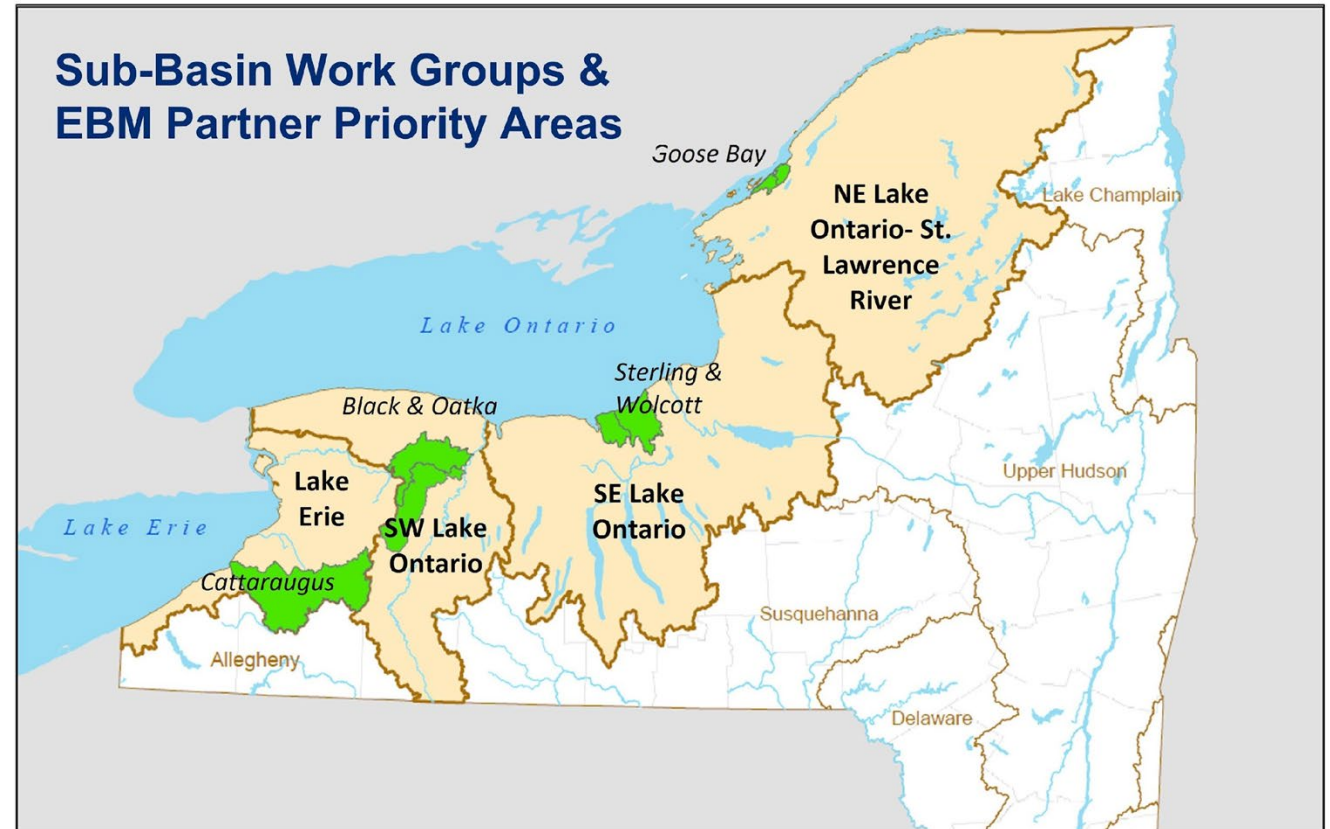


# Watersheds and Floodplains

Emily Fell: Eastern Great Lakes Watershed Coordinator, NYSDEC Great Lakes Program, in partnership with the NYS Water Resources Institute at Cornell University  
Understanding and Managing Floodplains for Healthy Watersheds and Resilient Communities– November 9th 2022

# Intro – DEC GLP

- Coordinate science and adaptive management
- Provide research, education, and training
- Coordinate community engagement and stewardship
- Provides and identifies grants



# GLAA 2030 Goals

1. Reduce or Eliminate Releases of Persistent Toxic Substances
2. Control Sediment, Nutrient, and Pathogen Loadings
3. Prevent and Control Invasive Species
4. Conserve and Restore Native Fish and Wildlife and Their Habitats
5. Enhance Community Resiliency and Ecosystem Integrity
6. Revitalize Local Communities and Economies

***Are your Great Lakes interests and concerns included in these goals?***





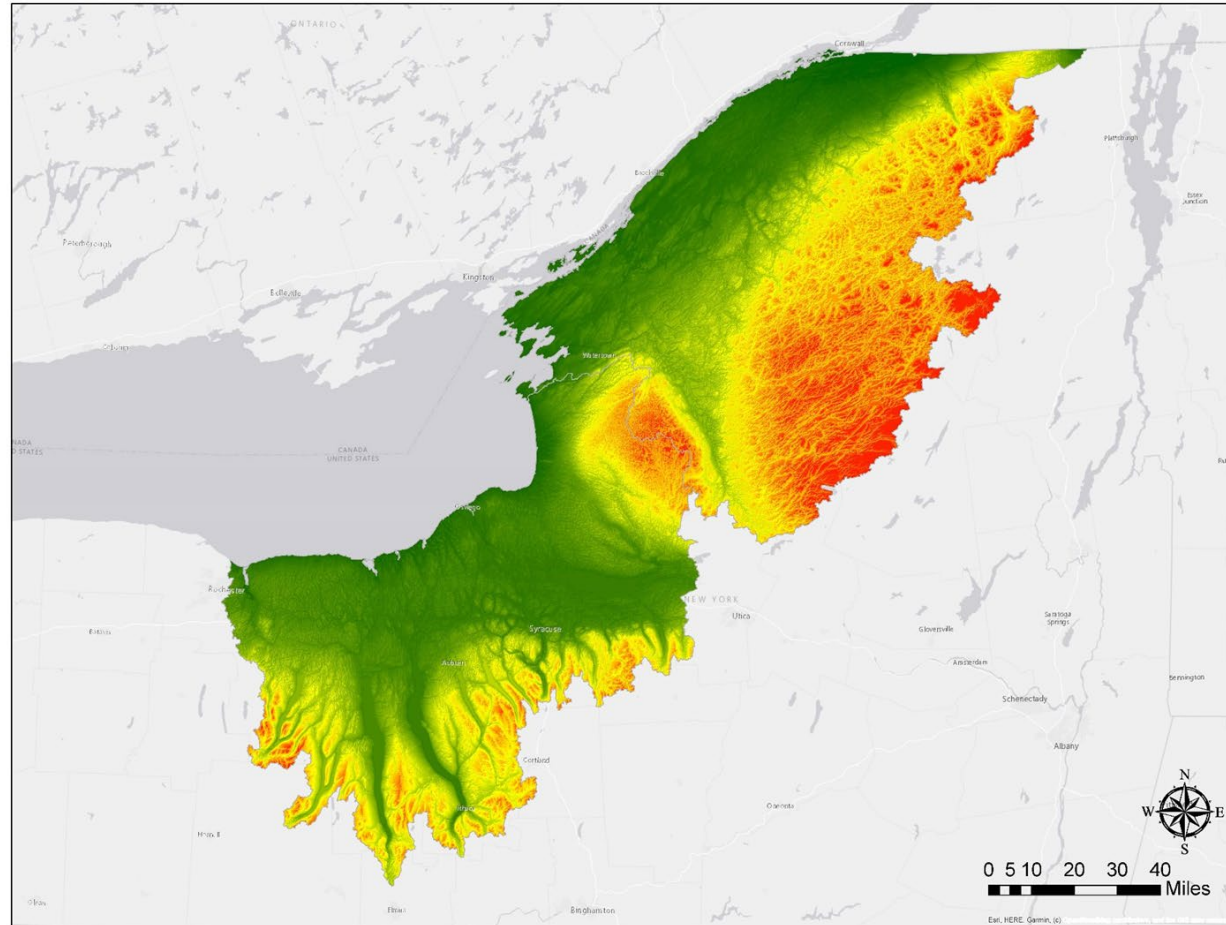


# Great Lakes Watershed Drainage- We All Live in a Watershed

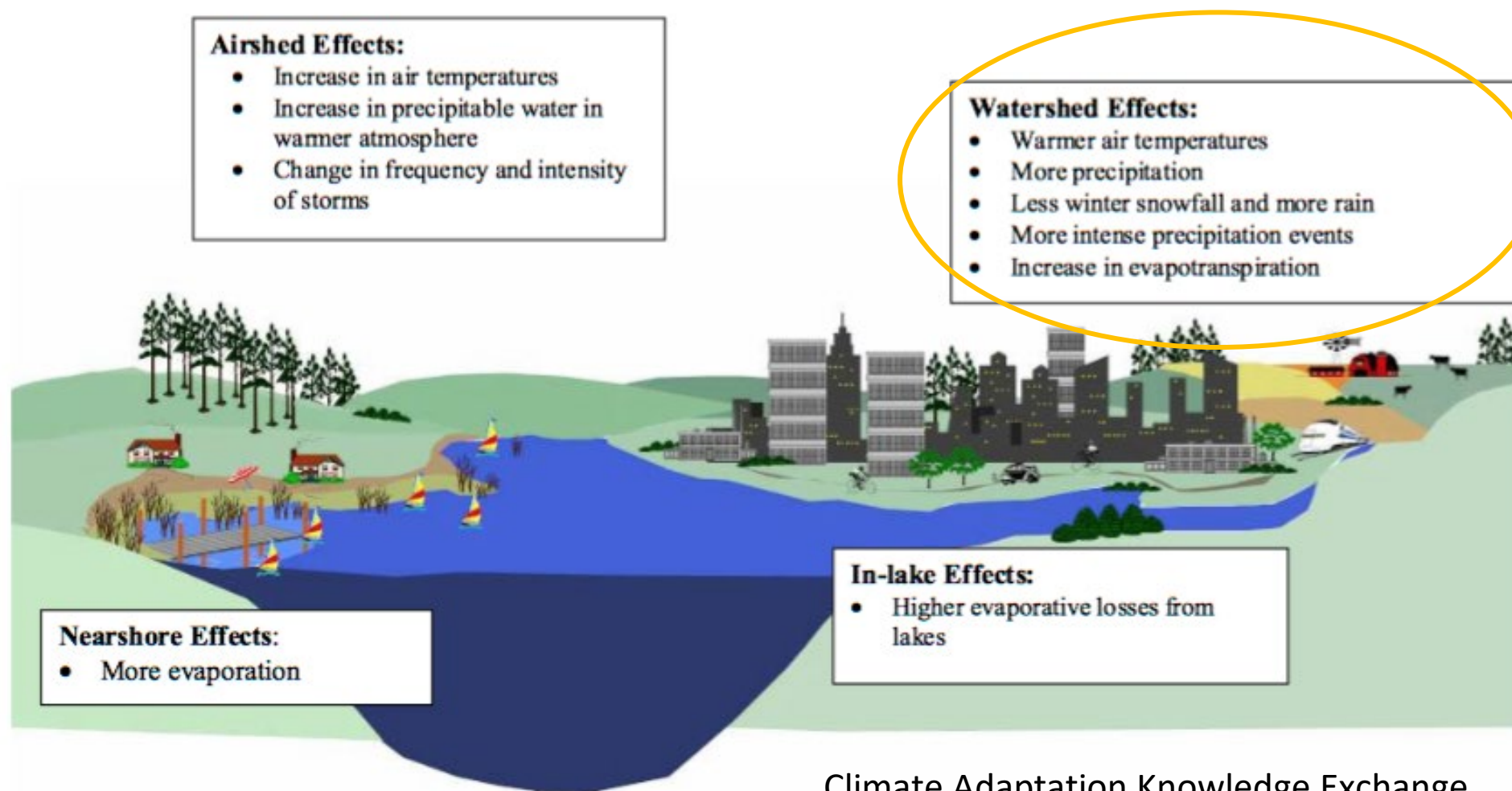
The highly varied topography of New York's Great Lakes watershed supports a diversity of ecosystems.



# Digital Elevation for Southeast Lake Ontario/Finger Lakes and Lake Ontario/St. Lawrence River



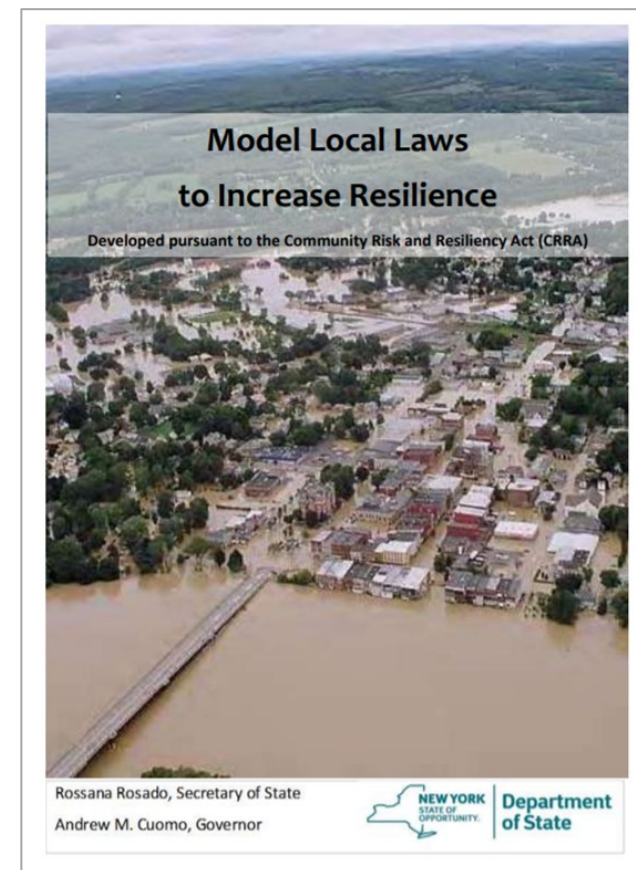
# Climate Change in the Great Lakes



Climate Adaptation Knowledge Exchange

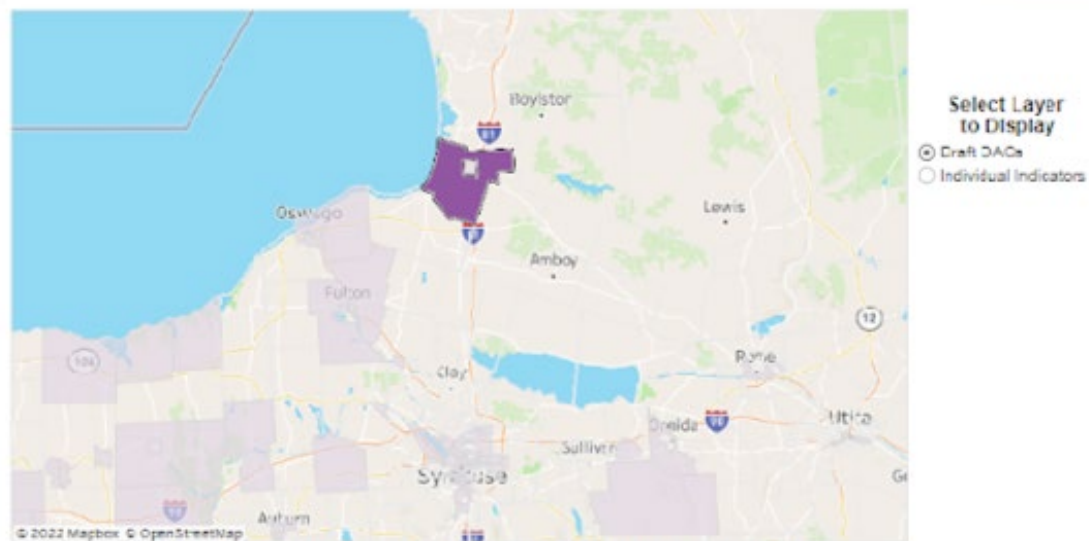


# Community Risk & Resiliency Act





# Climate Leadership and Community Protection Act



Click a Single Census Tract on the Map to View Indicator Details

## Population Characteristics & Vulnerability

Health Impacts & Burdens	Asthma ED visits	3%
	COPD ED visits	65%
	Heart attack (MI) Hospitalization	67%
	Low Birthweight	57%
	Pct Adults Age 65+	61%
	Pct w/ Disabilities	72%
	Pct w/o Health Insurance	61%
	Premature Deaths	66%
Housing, Mobility, Communications	Energy Poverty / Cost Burden	94%
	Homes Built Before 1960	19%
	Housing Cost Burden (Rental C.	23%
	Manufactured Homes	89%
	Pct Renter-Occupied Homes	18%
	Pct w/o Internet (home or cellu.	74%

## Environmental Burden & Climate Change Risk

Land Use & Historic Discrimination	Active Landfills	0%
	Housing Vacancy Rate	91%
	Industrial/Manufacturing/Mining La.	62%
	Major Oil Storage Facilities	0%
	Municipal Waste Combustors	0%
	Power Generation Facilities	0%
	Regulated Management Plan (UN.	3%
	Remediation Sites	0%
Potential Climate Change Risk	Scrap Metal Processing	0%
	Agricultural Land Use	83%
	Coastal Flooding and Storm Risk	60%
	Driving Time to Urgent/Critical Care	87%
	Extreme Heat Projections (>90° F)	2%
	Inland Flooding Risk Areas	49%

- Draft Scoping Plan
- Adaptation and Resilience Measures
- Barriers and Opportunities Report
- Draft disadvantaged communities map

# Natural Resilience Measures Guidance – examples from guidance

## What Are Natural Resilience Measures?

Natural resilience measures are actions to conserve, restore, or mimic natural landforms (or features) and natural processes that reduce risk from flooding and erosion. They work with nature to reduce risk while providing other benefits, or co-benefits, to society, including cleaning our water and air, mitigating drought, and enhancing spaces for outdoor recreation.

## Examples of NRM:

- Elevating or relocating structures
- Floodplain protection
- Wetland restoration
- Dune restoration
- Right sizing culverts
- Riparian/shoreline buffers

# E. Lake Ontario – Natural Resilience Measure Example



Town of Sandy Creek  
Sandy Island Beach Dune  
Restoration/Wetland Protection



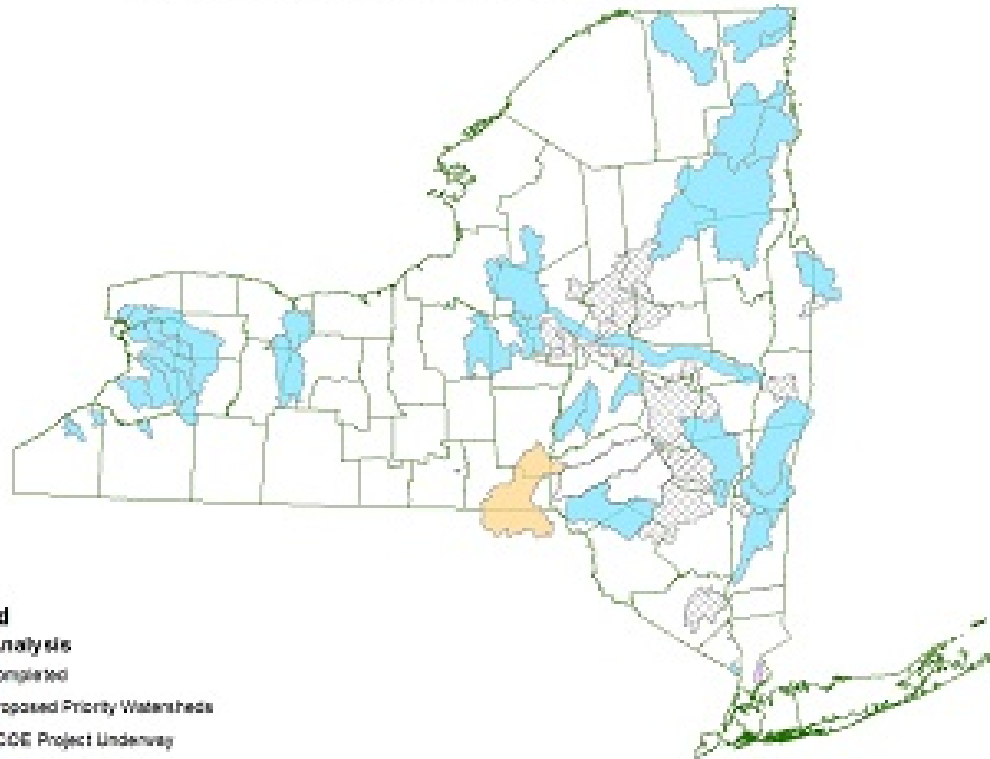
# Culvert Assessments



- Training in Oswego county on the North Atlantic Aquatic Connectivity Collaborative (NAACC) Culvert Assessment Protocols
- Soil and Water Conservation Districts can assist with assessments.
- Database of assessments available at [www.streamcontinuity.org](http://www.streamcontinuity.org)
- Data to inform culvert right sizing project priorities

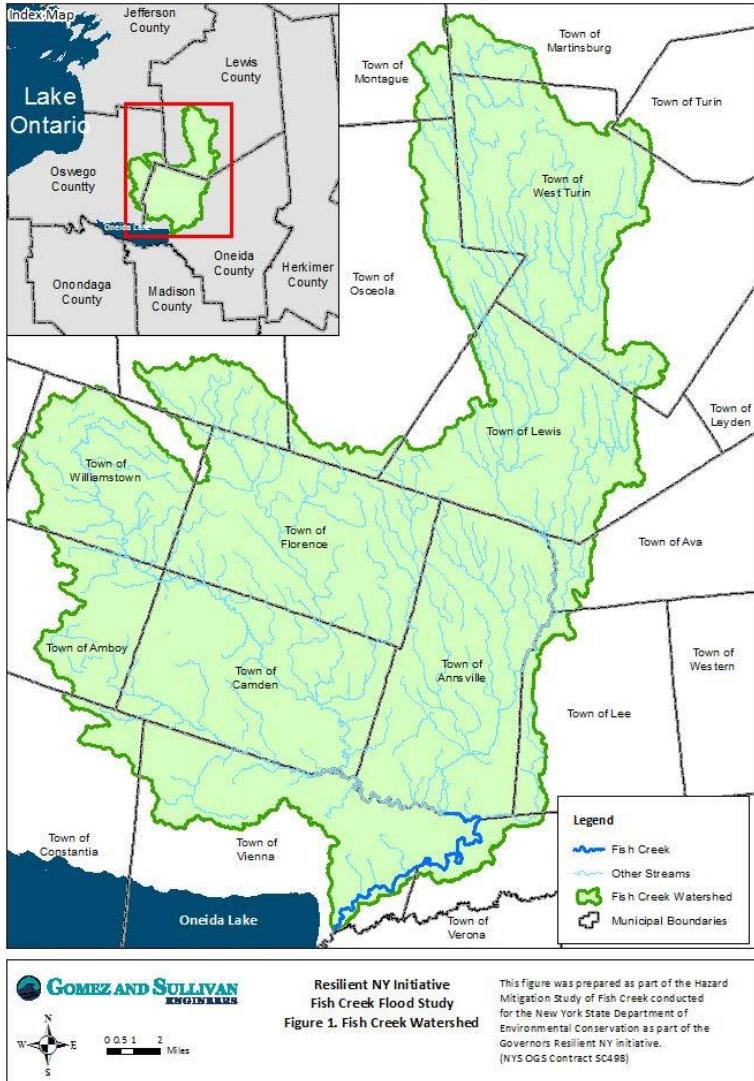
# Resilient NY Flood Studies

Resilient NY Program  
Proposed & Completed Priority Watersheds



- Identify the causes of flooding in a watershed through hydraulic and hydrological modeling
- Recommend ecologically sustainable flood and ice jam hazard mitigation projects
- Integrate climate change science

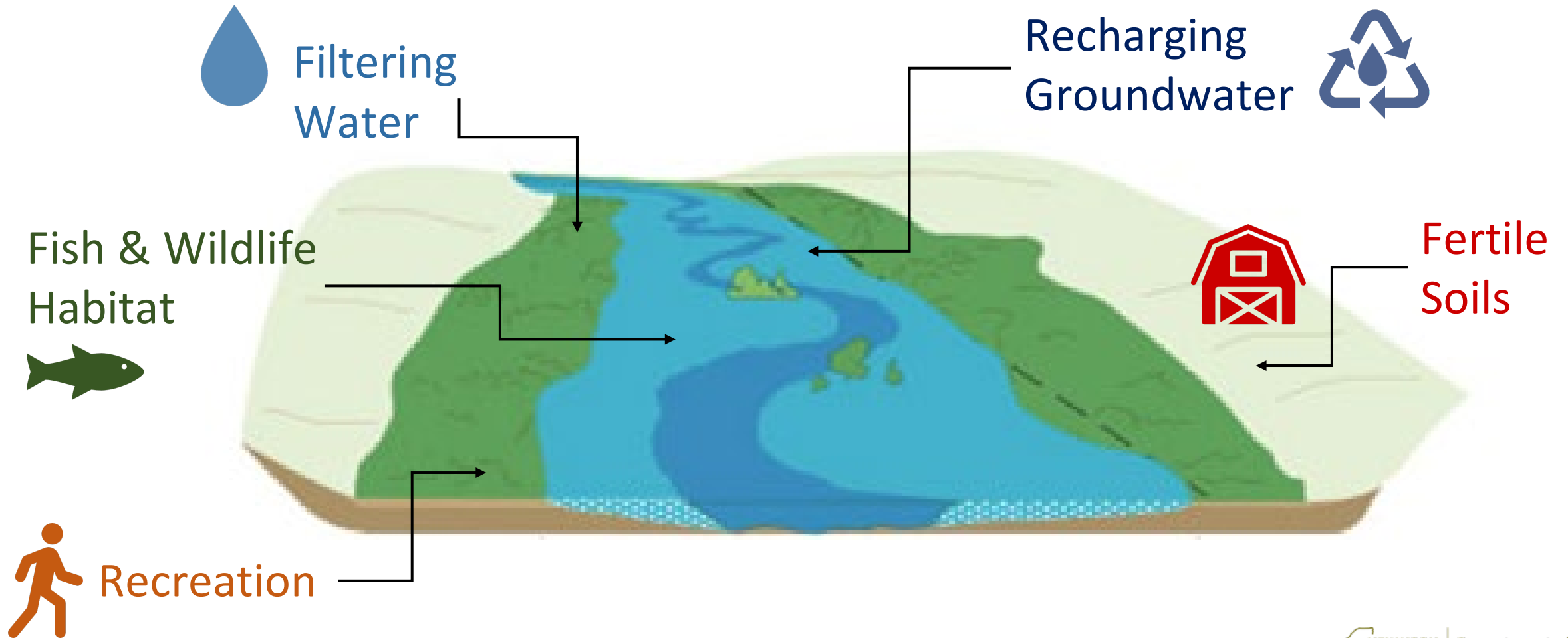
# Fish Creek Study



- Identifies high risk areas, such as the confluence with the Barge Canal where projects are needed
- Identifies mitigation alternatives, such as flood benches, culvert right sizing, area preservation, and intermunicipal floodplain ordinances
- Next steps include additional modeling and wetland investigations to further scope out projects



# Benefits of Healthy Floodplains



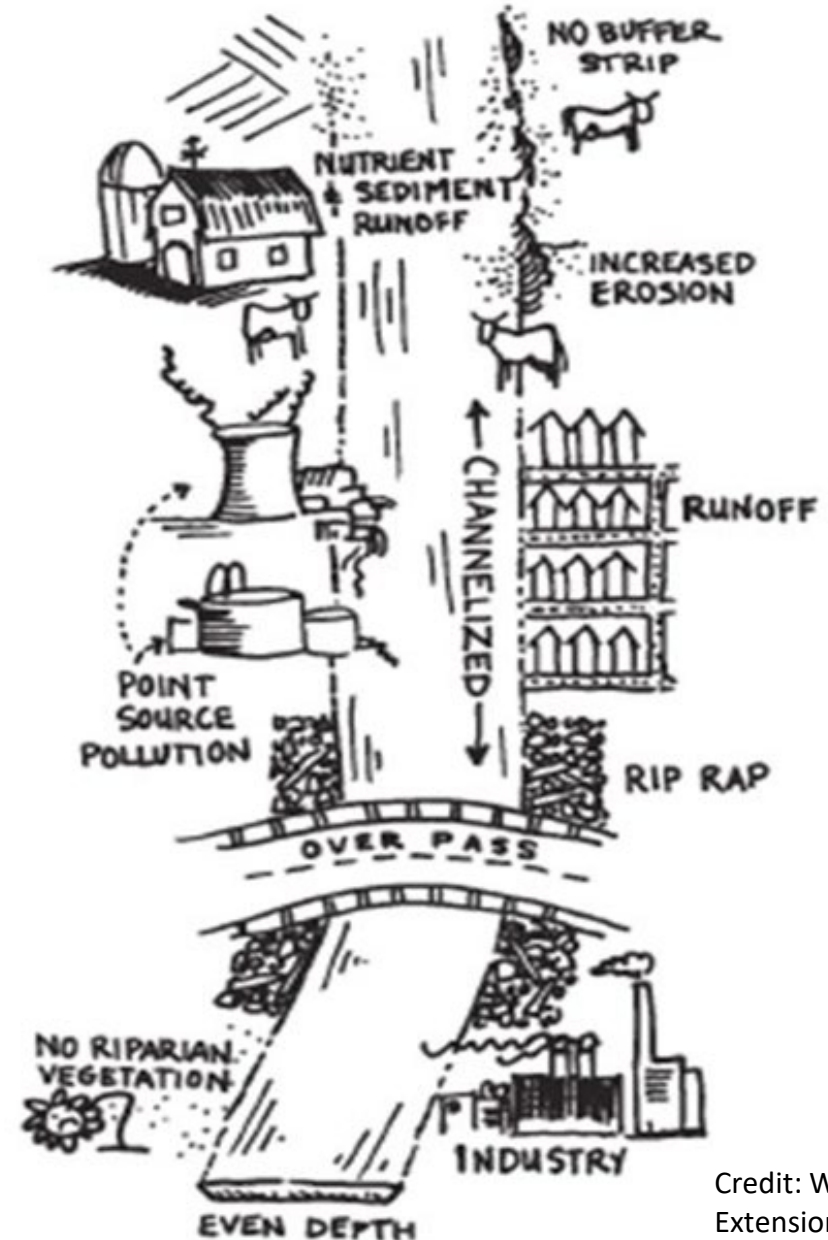
# Activities that Impair Floodplain Benefits

Filling or Encroaching

Straightening/ Dredging /  
Berming/Hardening

Removal of floodplain  
vegetation

Incompatible land uses



Credit: WSU Whatcom County  
Extension

# Funding Opportunities- see handout

## Water Quality

- Water Quality Improvement Program
- Nonpoint Source Planning Grant
- Green Innovation Grant Program
- Great Lakes Restoration Initiative

## Resilience / Flooding

- Bridge NY
- Climate Smart Communities
- FEMA
  - Building Resilient Infrastructure and Communities
  - Flood Mitigation Assistance Program
  - Hazard Mitigation Grant Program
- NRCS Emergency Watershed Protection Program

## Others

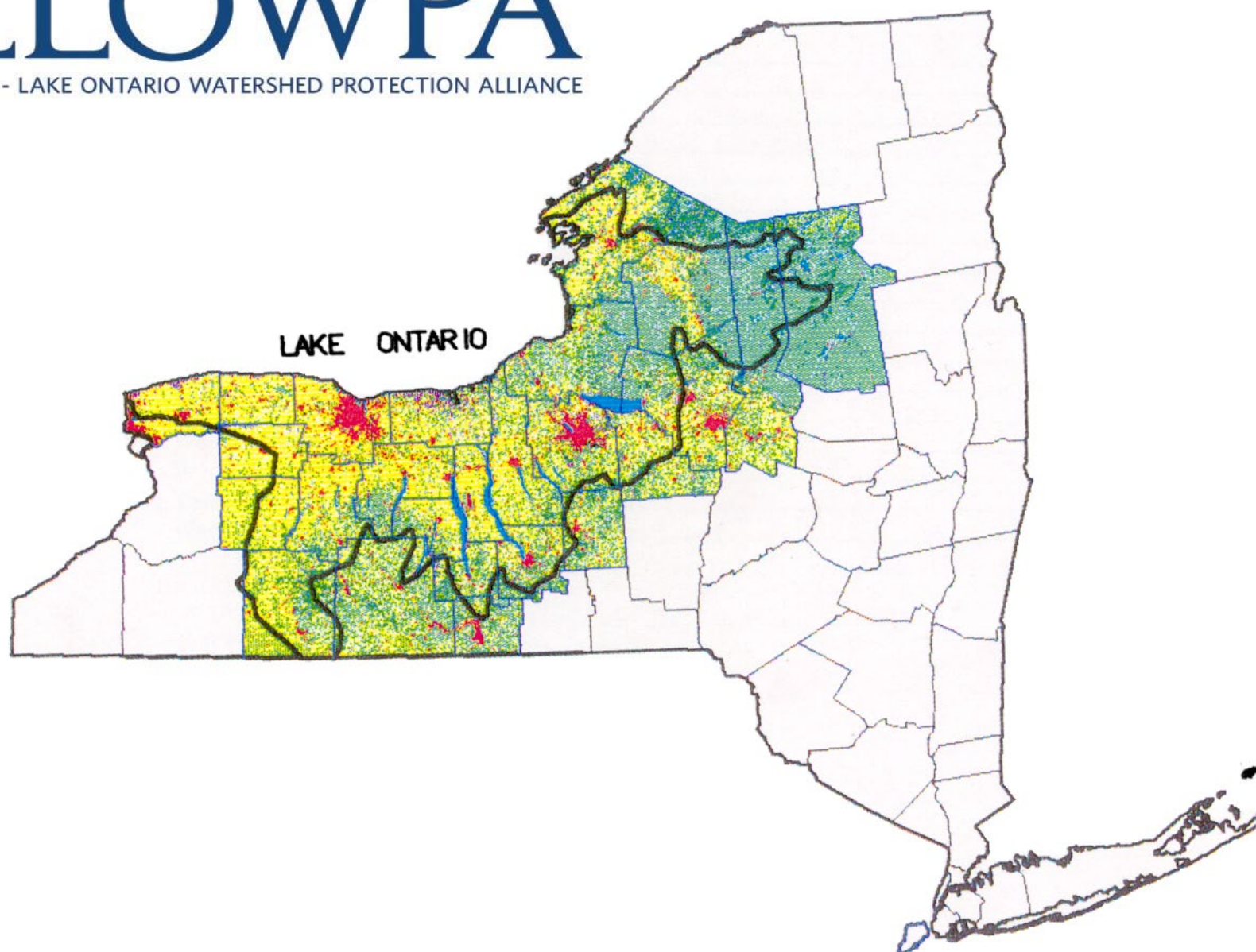
- USACE Continuing Authorities Program (CAP)
- Clean Water State Revolving Fund





# FLLOWPA

FINGER LAKES - LAKE ONTARIO WATERSHED PROTECTION ALLIANCE



# FLLOWPA Membership

25 Lake Ontario Basin Counties

- Planning Departments
- Soil and Water Conservation Districts
- Health Departments
- Environmental Management Councils
- Water Quality Management Agencies

# FLLOWPA Programs

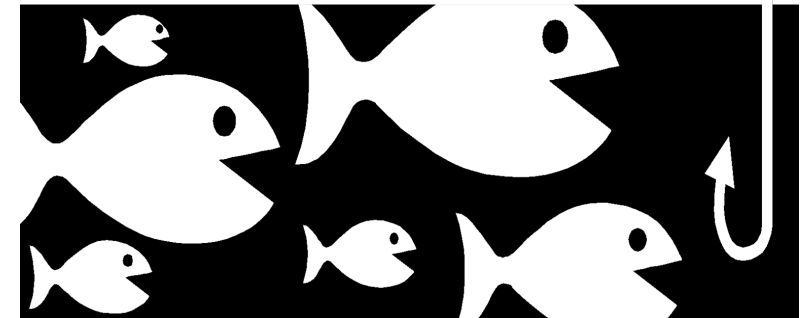
- Based on local needs
- Reinforce state and federal programs
- Address identified, site specific problems
- Create and capitalize on partnerships
- Multi-faceted, watershed based

# FLLOWPA Mission

To facilitate processes that encourage watershed partnerships and implementation of action plans to protect and enhance water quality based on:

- local needs assessments
- holistic approaches
- information exchange and public education
- measurable goals and milestones

*“Get all the fish swimming in the same direction”*



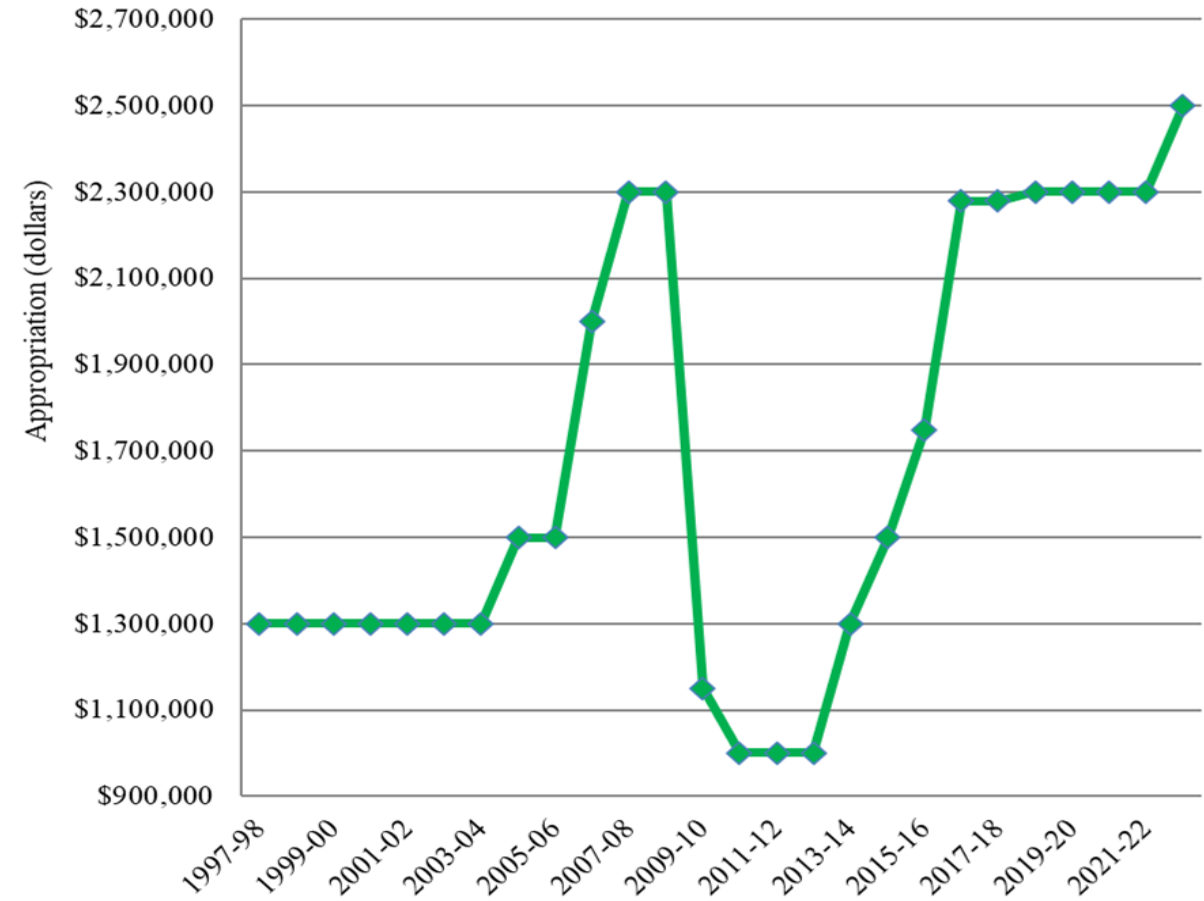
# FLLOWPA Funding

Environmental Protection Fund since 1997

County water quality programs (96%)

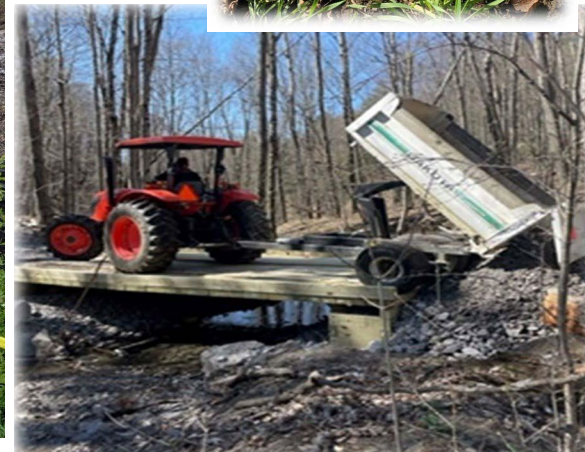
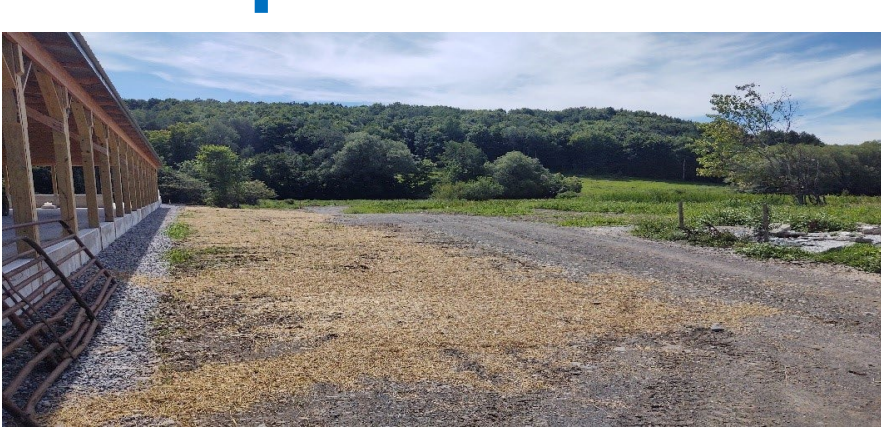
- Nonpoint source pollution control & remediation
- Watershed research, planning, & monitoring
- Invasive species
- Public education and outreach

Coordination through WRB (4%)





# Nonpoint Source Pollution Control and Remediation





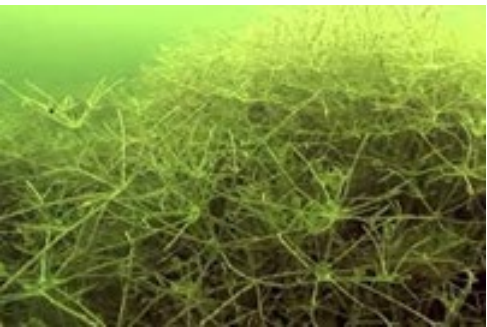
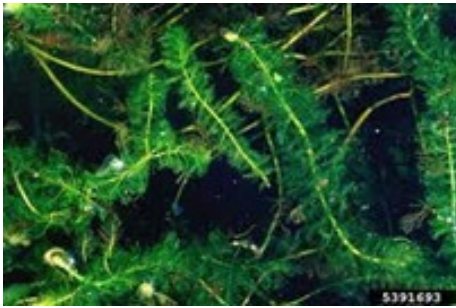


# Watershed Planning and Monitoring





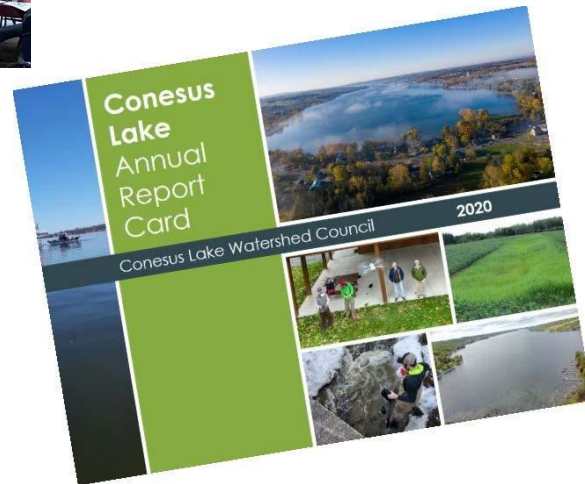
## Invasive Species Control and Monitoring







# Public Education and Outreach



You're invited to attend FREE monthly educational programs and lectures on a wide range of environmental and historical topics of interest and concern to residents and friends of the Conesus Lake watershed. All programs will be held online and/or at the Watershed Education Center at Vitale Park in Lakeville.

For updates on our 2021 schedule, scan the QR code below or visit our website: [www.conesuslake.org/lake-community/wec](http://www.conesuslake.org/lake-community/wec).

Call (585) 346-6864 to register.

We hope to see you at our next FREE program.



Use the QR code to see the latest WEC schedule for any updates

This ad was funded by the Finger Lakes-Lake Ontario Watershed Protection Alliance through an appropriation from the New York State Environmental Protection Fund.

Watershed Education Center  
2021 Program Schedule

Date	TOPICS
January 13th	Soil Core Analysis of Livonia High School Wetlands
February 24th	Aquatic & Underwater Surveillance of Conesus Lake
March 17th	Amanda's Garden: Gardening with Native Plants
April 7th	Trains, Planes, and Boats 1874 to 1920's
May 5th	A Bird Walk of Our Conesus Lake Inlet
May 12th	Talk Talk
May 15th	Youth Planting Workshop
May 26th	Native American Storyteller
June 9th	Conesus Lake: How We Got Where We Are
June 23rd	Aquatic & Terrestrial Invasives
July 21st	Marine Patrol Activities including Sonar
August 11th	Trains, Planes and Boats Part 2 1930's to 1970
August 25th	Tree Safety
September 21st	The Health of Conesus Lake - CSLAP
October 27th	Cornell Cooperative Extension
November 10th	Macro Invertebrates
December 1st	SUNY Brockport Students - Project Updates

*"An ounce of prevention is worth a pound of cure"- Benjamin Franklin*



# FLOWPA Partners



Find us on  
Facebook

[www.flowpa.org](http://www.flowpa.org)

# We look forward to hearing from you!

## Kristy LaManche

Program Coordinator

Finger Lakes – Lake Ontario Watershed Protection Alliance

Finger Lakes – Lake Ontario Watershed Protection Alliance

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