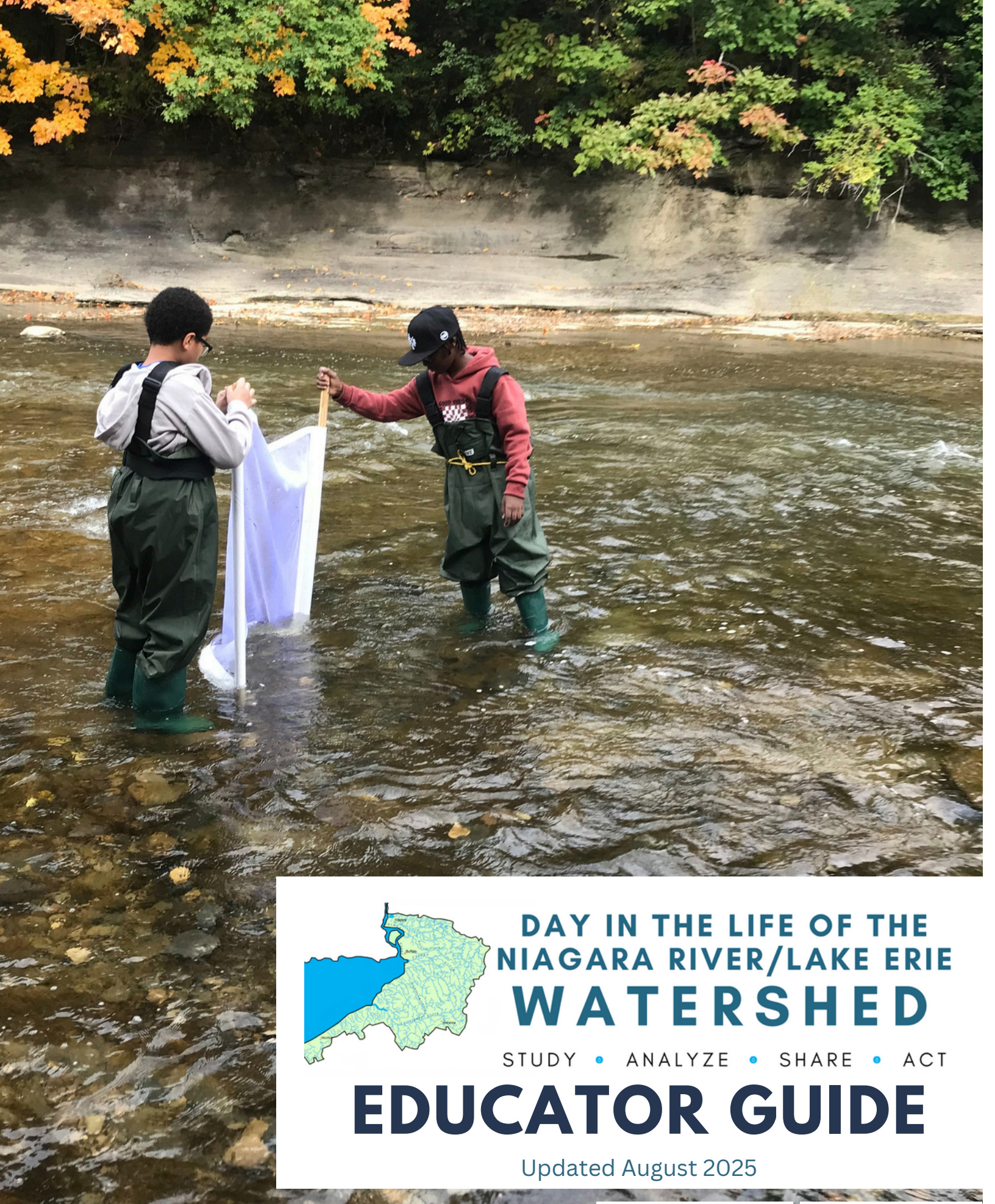


DAY IN THE LIFE OF THE NIAGARA RIVER/LAKE ERIE WATERSHED

STUDY • ANALYZE • SHARE • ACT

EDUCATOR GUIDE

Updated August 2025

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

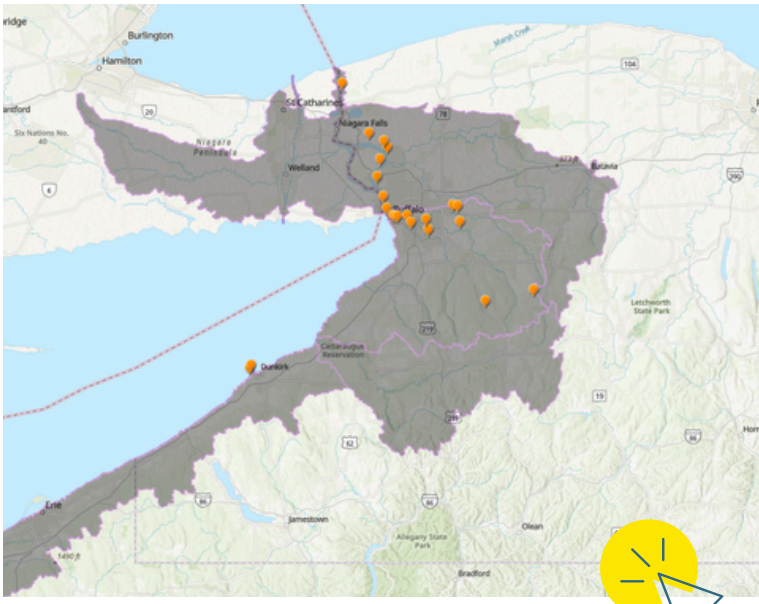
FRIENDS OF Reinstein WOODS

CONTENTS

HISTORY OF THE PROGRAM

Students have been collecting water quality data during the "Day in the Life of the Buffalo River" beginning in 2013. Through this program- modeled after the successful "Day in the Life of the Hudson River"- students collected data at sampling sites throughout the Buffalo River watershed on one day to create a snapshot of the river. The compiled data- including turbidity, pH, dissolved oxygen, temperature, and macroinvertebrate measurements- was shared online so students could see how their piece of the river fits into the larger watershed.

In 2019, the program was expanded to include the entire Niagara River/Lake Erie watershed thanks to a grant from the National Oceanic and Atmospheric Administration (NOAA) Bay Watershed Education and Training (B-WET). Participating teachers adopted the Meaningful Watershed Educational Experiences (MWEE) model which strives to empower students to investigate local and global environmental issues and identify actions to address these issues.



NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

FRIENDS OF Reinstein WOODS

NOAA

WHAT'S A MWEE?

"Meaningful Watershed Educational Experiences (MWEEs) are multi-stage activities that include learning both outdoors and in the classroom, and aim to increase the environmental literacy of all participants. Teachers should support students to investigate topics both locally and globally that are of interest to them, learn they have control over the outcome of environmental issues, identify actions available to address these issues, and understand the value of those actions."

- National Oceanic and Atmospheric Administration

COMPONENTS OF A MWEE

- Issue definition and background research
- Outdoor field activities
- Synthesis and conclusions
- Stewardship action projects

MWEE Toolbox

NRLE MWEEs

MEET YOUR WATERSHED

The Niagara River/Lake Erie Watershed is located in western New York; in fact Lake Erie and its outlet, the Niagara River, represent the western boundary of the state. At its mouth the Niagara River drains an area encompassing more than 265,000 square miles in the north central United States and south central Canada. The drainage area beyond New York includes four of the five Great Lakes as well as some of the largest and most urban/industrial cities in North America.

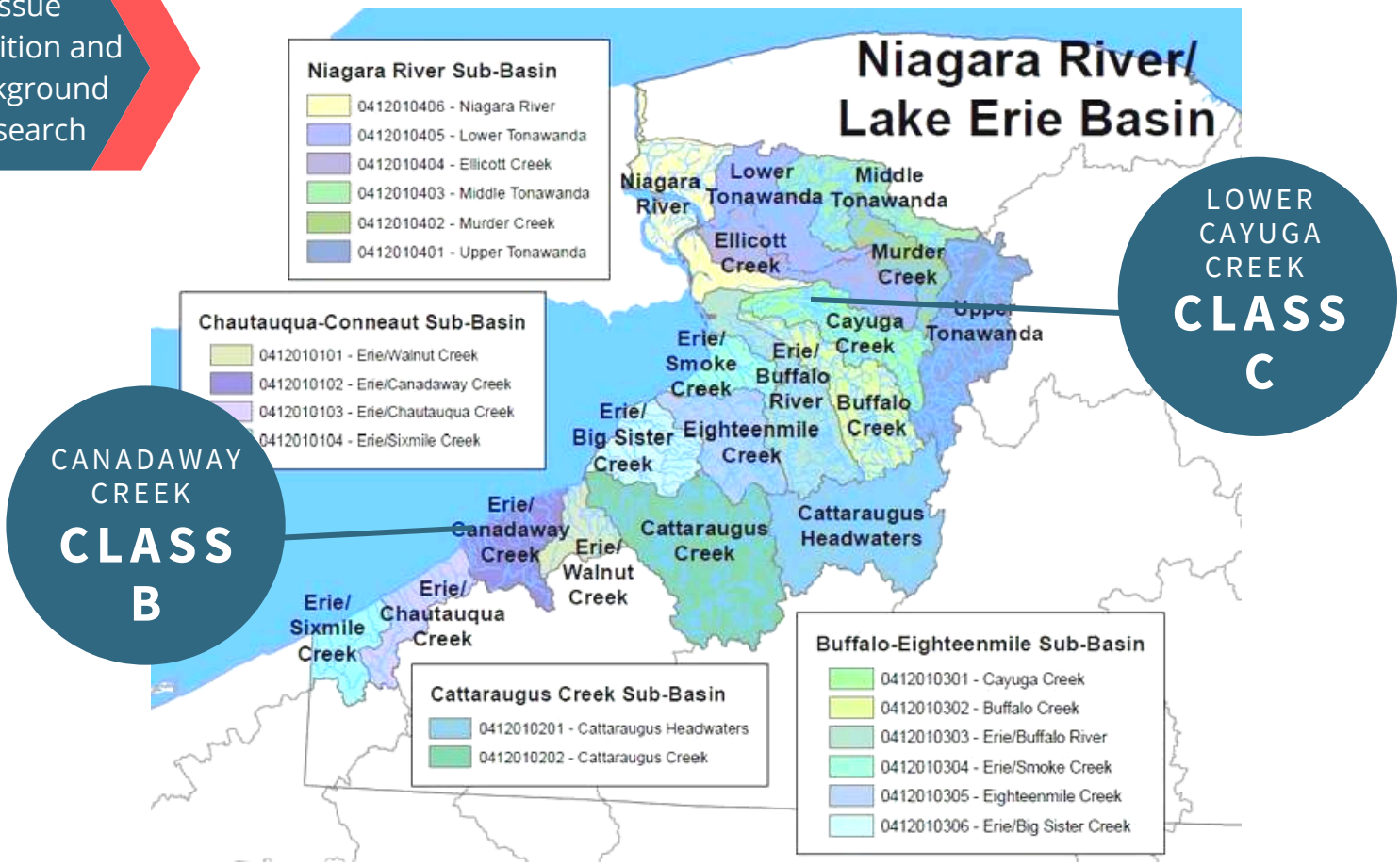
(NYS Department of Environmental Conservation)

4,086 MILES OF FRESHWATER RIVERS AND STREAMS

2,280 SQUARE MILES OF LAND

24 SIGNIFICANT FRESHWATER LAKES, PONDS, AND RESERVOIRS

92 MILES OF GREAT LAKES SHORELINE



HEALTH OF THE WATERSHED

New York waterbodies are assigned a "best use" classification. Best use classifications are:

Class AA and A : Drinking water

Class B : Public swimming and contact recreation activities

Class C : Fishing and non-contact activities

Class D : Does not support any of the uses listed above *(this classification is rarely used)*

Waterbodies with AA, A, B and C classifications may also have "T" or "TS" classifications, meaning they support trout populations or trout spawning.

- NYSDEC "ASSESSING WATER QUALITY IN NY"

Check your watershed health at water.ny.gov

OCTOBER FIELD STUDY
EVENT DETAILS

BEFORE THE EVENT

- Create a student research team of up to 30 students. If you need space for more, make sure your sample site has adequate space.
- Schedule transportation
- Send home permission slips and photo releases
- Review site description and visit your sample site
- Optional: Complete prediction page with students (1.0 Bin or 2.0 Bin)
- Print student data sheets or use online student data form (7th-12th grades only)
- Create event schedule and activity rotations

PLEASE NOTE:

- The event will take place outside, so wear clothes and sturdy shoes that can get muddy. Water shoes/rubber boots and a change of clothes are good ideas.
- You may have a Reinstein Woods employee, trained volunteer, or a partner organization staff member at your site. They will help run the event; however, we look to you, the teacher, to take an active role in running the event.
- If there are any issues, please discuss them with the trained staff person or volunteer, but be prepared to make the final decision.
- Use the scheduling tool to create a plan for student groups and activity rotation.
- You and your class may take a lunch break at any time during the event.
- Help ensure that all equipment is collected and returned to the equipment bin.
- Ensure the site and its facilities are left in good order

SAMPLE SCHEDULE:

10 AM: Arrive at field study site
10 - 10:15 AM: Site introduction
10:15 AM - 12:00 PM: Activity rotation
12:00 PM: Optional on-site lunch or return to school
Note: Community partners and volunteers leave by 1 PM; however, you are welcome to stay longer with your students.

EVENT SAFETY

- Teachers are responsible for student safety and emergencies.
- Students should be supervised whenever they are near or directly in the water. Shallow wading is permissible; however, no swimming is allowed.
- Ticks are small arachnids that may attach to the skin and transmit diseases. Everyone should check for ticks after being outside.

AFTER THE EVENT

- Summary of All Data (email to mary.ronan@dec.ny.gov by October 20)

OCTOBER FIELD STUDY
STATION OVERVIEW

WATER QUALITY PARAMETERS

We encourage educators to collect as much data as possible with students, but you are welcome to choose the water quality parameters that best meet their curriculum and time constraints. Use our suggested Activity Rotations, or create your own using our activity length times on the following pages.

- **Water Transparency:** Water transparency refers to the degree to which light can pass through water. Transparency measurements in centimeters typically decrease with an increase in runoff carrying sediment and particles into the water, Erosion carrying sediment into the water, algae growing in the water, and seasonal mixing (for lakes and ponds).
  - ***Activity Length:*** 10-15 minutes, when combined with cloud cover.

- **Water Temperature:** Water temperature may increase with increased sediment in the water, resulting in darker water that absorbs more sunlight, industrial discharge, runoff from warm pavement, and a lack of shade. Warm water holds less dissolved oxygen than cold water.
  - ***Activity Length:*** Up to 10 minutes. Encourage student discussion or a waiting activity if needed.

- **Dissolved Oxygen:** Dissolved oxygen (DO) is the amount of oxygen that is present in water. Water bodies receive oxygen from the atmosphere and from aquatic plants. Running water, such as that of a swift-moving stream, dissolves more oxygen than the still water of a pond or lake. Cold water holds more oxygen than warm water.
  - ***Activity Length:*** Up to 10 minutes. Encourage student discussion or a waiting activity if needed.

- **pH:** pH is a measure of how acidic/basic water is. Water pH may decrease with rainfall, especially if rain is acidic, runoff from mines, industrial discharge, or runoff containing cleaners and degreasers. Water pH may increase with runoff from cleaning concrete mixing equipment, or runoff or discharge containing soaps and detergents.
  - ***Activity Length:*** Up to 10 minutes. Encourage student discussion or a waiting activity if needed.

- **Conductivity:** Conductivity is a measure of the ability of water to pass an electrical current. Each water body tends to have a relatively constant range of conductivity that, once established, can be used as a baseline for comparison with regular conductivity measurements. Significant changes in conductivity could then be an indicator that a discharge or some other source of pollution has entered the aquatic resource. (US EPA)
  - ***Activity Length:*** Up to 10 minutes. Encourage student discussion or a waiting activity if needed.

- **Nitrate:** Nitrogen, like phosphorus, is a critical nutrient required for all life. The most common forms of nitrogen used by biological organisms include ammonia, nitrates, and nitrites. Nitrogen is an essential component of cell amino acids, proteins, and DNA. These forms of nitrogen occur naturally in the environment at various points of the nitrogen cycle. Increased nitrogen inputs can stimulate excess growth of algae, which leads to low dissolved oxygen levels, potential for harmful algal toxins, blockage of sunlight needed by organisms and plants in the water and degraded habitat conditions for benthic macroinvertebrates and other aquatic life. Sources of excess nitrogen to rivers and streams, lakes and coastal waters include fertilizers, waste water, animal wastes and atmospheric deposition. (US EPA)
  - ***Activity length:*** 15-20 minutes

OCTOBER FIELD STUDY
STATION OVERVIEW

WATER QUALITY PARAMETERS

- **Phosphate:** Phosphorus, like nitrogen, is a critical nutrient required for all life. The most common form of phosphorus used by biological organisms is phosphate (PO_4), which plays major roles in the formation of DNA, cellular energy, and cell membranes (and plant cell walls). Phosphorus is particularly important as a contributor to freshwater, coastal, and estuarine algal blooms. Too much phosphorus can stimulate excess growth of algae, which leads to low dissolved oxygen levels, potential for harmful algal toxins, blockage of sunlight needed by organisms and plants in the water and degraded habitat conditions for benthic macroinvertebrates and other aquatic life. Sources of excess phosphorus to rivers and streams, lakes, and coastal waters include fertilizers, runoff from urban areas, leaking septic systems or discharges from wastewater treatment plants. (US EPA)
  - ***Activity Length:*** 10-15 minutes

- **Macroinvertebrate Sampling (Bioassessment):** Benthic (meaning "bottom-dwelling") macroinvertebrates are small aquatic animals and the aquatic larval stages of insects. They are commonly used as indicators of the biological condition of waterbodies. They are reliable indicators because they spend all or most of their lives in water, are easy to collect and differ in their tolerance to pollution. Macroinvertebrates respond to human disturbance in fairly predictable ways, are relatively easy to identify in the laboratory, often live for more than a year and, unlike fish, have limited mobility. (US EPA)
  - ***Activity Length:*** 15-30 minutes, although this can be extended with identification.

- **Invasive Species:** An Invasive Species is non-native to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm, or harm to human health. Invasive species may be plants, animals or pathogens. (WNY PRISM)
  - Activity Length: 10-15 minutes

- **Stream Velocity and Discharge:** Stream flow, or discharge, is the volume of water that moves over a designated point over a fixed period of time. It is often expressed as cubic feet per second (ft3/sec). Flow is a function of water volume and velocity. It is important because of its impact on water quality and on the living organisms and habitats in the stream. Large, swiftly flowing rivers can receive pollution discharges and be little affected, whereas small streams have less capacity to dilute and degrade wastes. Stream velocity, which increases as the volume of the water in the stream increases, determines the kinds of organisms that can live in the stream (some need fast-flowing areas; others need quiet pools). It also affects the amount of silt and sediment carried by the stream. Sediment introduced to quiet, slow-flowing streams will settle quickly to the stream bottom. Fast moving streams will keep sediment suspended longer in the water column. Lastly, fast-moving streams generally have higher levels of dissolved oxygen than slow streams because they are better aerated. (US EPA)
  - **Activity Length:** 15-20 minutes

- **Coliform Bacteria** (2.0 Bin, 1 test): Coliform bacteria levels may increase with increased runoff containing animal waste, including manure and pet waste, and discharge containing sewage.
  - ***Activity length:*** 5 minutes, with 24 24-hour wait time.

- **Chloride** (2.0 Bin, 1 test): Dramatic increases in salt (sodium chloride) concentrations are occurring in freshwaters globally due to human activities such as road salt application, water softening, mining and oil extraction, wastewater from commercial and industrial processes, weathering of concrete, sea level rise, and fertilizer application. Too much salt in the environment is toxic and lethal to aquatic life, pollutes drinking water sources, and damages infrastructure. (US EPA)
  - ***Activity length:*** 5 minutes

FIELD STUDY EQUIPMENT: 4TH-6TH GRADES

WATERSHED BIN 1.0

PROVIDED EQUIPMENT

Click to See Equipment

Misc. Items

- Folder: Activity Packets (4 extra student data sheets)
- Folder: maps, facts, overview
- Folder: Directions/Instructions for Staff
- Activity Station cones
- Clipboards
- Extra activity instructions
- Tarp
- Hand sanitizer
- Life jacket
- Pencils (extra)
- Plastic bag (for garbage and wet equipment)
- Towel
- Waders - Knee Boots, Hip/Chest

Transparency

- Transparency Instructions
- 60" Turbidity Tube
- 5-gallon bucket
- Measuring Cup or collapsible bowl

Water Temperature

- Water Temperature Instructions
- Water thermometer

Clouds, Wind, and Air

- Activity Instructions
- Cloud window
- Air thermometer
- Anemometer
- Wind flag
- Compass
- Compass instructions
- 1-minute sand timer

pH

- pH instructions
- Test tube
- pH TesTabs
- Color match sheet
- Waste chemical container

Dissolved Oxygen

- Dissolved oxygen instructions
- Dissolved oxygen Chemetrics kit
- Safety Glasses
- Waste Container

Nitrate

- Nitrate instructions
- Nitrate Test Kit
- Waste chemical container

Phosphate

- Phosphate instructions
- Test tube
- Phosphate TesTabs
- 5-minute sand timer
- Color match sheet
- Waste chemical container

Macroinvertebrates

- Macroinvertebrate Instructions (laminated)
- Ice cube tray
- Coolwhip containers
- Macroinvertebrate sort/ID laminated sheets
- Nets - small dip nets
- D-Net
- Seine net
- Shallow tubs
- Small pipettes
- Paint brushes
- Viewers for macroinvertebrates

EDUCATORS MUST BRING

- All copies of Student Activity Packet
- Writing utensils

SUGGESTED EQUIPMENT FOR EDUCATORS TO BRING

- First aid kit
- Pencils
- Change of clothes/shoes
- Digital camera
- Cell phone
- Emergency contact sheet
- Additional field guides
- Calculators
- Clipboards
- Water bottles & snacks
- Insect repellent
- Sunscreen
- Towels
- Any additional equipment such as nets, chemistry kit, thermometers, etc.
- Waders/water
- shoes/ rain boots

FIELD STUDY EQUIPMENT: 7TH-12TH GRADES

WATERSHED BIN 2.0

PROVIDED EQUIPMENT

Click to See Equipment

Misc. Items
- Folder: Activity Packets (4 extra student data sheets)
- Folder: maps, facts, overview
- Folder: Directions/Instructions for Staff
- Activity Station cones
- Clipboards
- Extra activity intructions (laminated)
- Tarp
- Hand sanitizer
- Life jacket
- Pencils (extra)
- Plastic bag (for garbage and wet equipment)
- Towel
- Yard/meter sticks
- Waders - Knee Boots, Hip/Chest

Total Coliform
- Coliform bacteria tube (wrapped in foam)
- Bleach dropper
- Coliform bacteria instructions
- Probe and pen instructions

Transparency
- Transparency Instructions
- Cloud Cover Sheet
- Turbidity Tube
- 5-gallon bucket
- Measuring Cup or collapsible bowl

Water Temperature
- 5-gallon bucket
- Water Temperature Instructions
- Timer
- Water thermometer w/ 10 cm marked

pH/Conductivity
- pH Instructions
- pH probe
- Conductivity instructions
- Conductivity probe
- plastic beaker
- Paper towels
- Distilled water

Dissolved Oxygen
- Dissolved oxygen instructions
- Dissolved oxygen kit
- Waste container
- Safety glasses
- Gloves

Nitrate
- Nitrate Instructions
- Nitrate test kit
- Waste container

Phosphate
- Phosphate Instructions
- Chemetrics Phosphate kit
- Gloves
- Safety glasses
- Waste container

Macroinvertebrates
- Macroinvertebrate Instructions (laminated)
- Ice cube tray
- Coolwhip containers
- Macroinvertebrate sort/ID laminated sheets
- Round macroinvertebrate container
- Square macroinvertebrate container
- Nets - small dip nets
- D-Net
- Seine net
- Shallow tubs
- Turkey baster
- Small pipettes
- Viewers for macroinvertebrates

Invasive Species Search
- Invasive species ID sheet

Stream Flow/Site Mapping Bag
- Site mapping Instructions
- Soft measuring tape
- Stake Flags
- Compass
- Compass Instructions
- Stream Flow Instructions
- Tennis ball

OPTION EQUIPMENT (LIMITED, ASK TO RESERVE)

- Anemometer
- Dissolved oxygen probe
- Trash removal kit

EDUCATORS MUST BRING

- All copies of Student Activity Packet
- Writing utensils

SUGGESTED EQUIPMENT FOR EDUCATORS TO BRING

- First aid kit
- Change of clothes/shoes
- Digital camera
- Cell phone
- Emergency contact sheet
- Additional field guides
- Calculators
- Clipboards
- Water bottles & snacks
- Insect repellent
- Sunscreen
- Towels
- Any additional equipment such as nets, chemistry kit, thermometers, etc.
- Waders/water shoes/ rain boots

Issue definition and background research

Threats to the Great Lakes

"Threats to the Great Lakes' ecosystems, include invasive species, climate change, pollution, and habitat destruction. Climate change affects water temperatures, weather patterns, and lake levels. Pollutants from residential, agricultural, and industrial areas reduce water quality. Land development decreases the amount of wildlife habitat. Fish populations have been declining offsite link in recent years as a result of these threats and increased fishing pressure." - National Oceanic and Atmospheric Administration

The links below provide extensive resources on these Great Lakes threats.

Great Lakes Issue Investigation Resources

GLANSIS GREAT LAKES AQUATIC NONINDIGENOUS SPECIES INFORMATION SYSTEM

GREATLAKESNOW

GLISA
A NOAA RISA TEAM

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation
NYHABS (New York HAB System)

GLERL
NOAA - Great Lakes Environmental Research Laboratory
Home | Quick Links | About Us | Research | Data & Pr
Great Lakes Harmful Algal Blooms (HABs) and Hypoxia

NOAA REGIONAL COLLABORATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS
HOME | REGIONAL TEAM | NOAA IN THE REGION | PROGRAMS AND INITIATIVES | CONTACT US
Great Lakes Region
Climate Adapted Planning Resources

Additional Resources

Editable Classroom Presentations

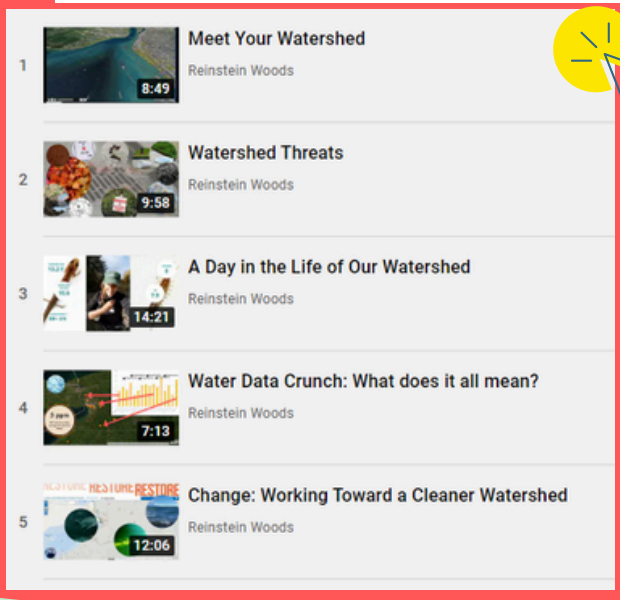
Trained educators have access to the following presentations:

- Introduction to Watersheds
- Land Use
- Water Quality Indicators
- Analyzing Water Quality
- Great Lakes Water Quality Over Time
- Stormwater Solutions

River-Runner

"Click to drop a raindrop anywhere in the contiguous United States and watch where it ends up."

NRLE Watershed Videos



Schoolyard Connections

Conduct a schoolyard survey to better understand the impact of the land use on your watershed health.

DIVING INTO THE DATA

ADDITIONAL DATA ANALYSIS IDEAS:

01

COMPARE TO PREVIOUS YEARS

DITL Data Since 2012

02

CALCULATE WATER QUALITY INDEX

Water Research Center: Monitoring the Quality of Surface Waters

03

CALCULATE BIOTIC INDEX

Leaf Pack Network

04

COMPARE MACROINVERTEBRATES

·Compare macroinvertebrate finds to NYSDEC WAVE Program's "most wanted" and "least wanted" organism list

04

SHARE AND COMPARE WITH OTHER ORGANIZATIONS

- Great Lakes Field Scope
- Izaak Walton League
- Buffalo Niagara Waterkeeper Water Quality

05

IDEAS FOR SCIENCE FAIR PROJECTS ON SURFACE WATER QUALITY TOPICS

Ideas for science fair projects on surface water quality from EPA's Office of Water.

SHARING RESULTS & EXPERIENCES

- WNY Regional Science and Engineering Fair
- Present results to class, school board, local planning committee, etc.
- Create a visual of result for Reinstein Woods Open House

Visual Tools:

- ArcGIS Story Maps
- Picktochart
- Canva

Types of Stewardship

From the National Oceanic and Atmospheric Administration

RESTORATION AND PROTECTION:

Actions that assist in the recovery or preservation of an ecosystem that have been degraded, damaged or destroyed and allow that ecosystem to evolve with minimal human influence. The following examples are actions that lead to improved biodiversity or ecosystem health:

- Clean up litter at local beaches, parks, or school grounds
- Assist local estuaries, parks, or other natural areas with planting or restoring protective vegetation or trees
- Restore a local habitat
- Remove invasive plants
- Develop a school garden, natural history area, community garden, or other sustainable green space and measure the change it makes
- Install rain gardens to help manage stormwater

EVERYDAY CHOICES:

Actions that reduce resource inputs and emissions per unit of output through technological change and consumer purchasing, use and disposal behaviors. The following examples are actions that lead to reduced carbon footprint or use of natural resources:

- Start or expand a recycling program at home or school and measure the effect of the change
- Monitor and save water in the face of potential drought or reduction in available water
- Upcycle discarded materials
- Compost food or yard waste
- Reduce waste in a cafeteria and measure the impacts to the school or local community
- Research and implement energy efficient strategies or energy alternatives at school and/or at home
- Offer personal ways for students to live more sustainably.

COMMUNITY AWARENESS:

Actions that inform others in an effort to convince them to take action to address community-level environmental issues. The following examples are actions that lead to increased awareness by community members:

- Giving presentations to local organizations
- Sharing information on social media
- Organizing community events
- Recording and broadcasting public service announcements
- Posting flyers in the community
- Posters at community events, fairs, festivals

CIVIC ACTION:

Actions that inform public or organizational policy decisions that can improve environmental outcomes for many people or organizations at once. Students behave as citizens by engaging in a cycle of research, action, and reflection about problems they care about personally while helping them master knowledge, skills, beliefs, and habits of civic action that they can apply in the future as well. The following examples are actions that lead to an environmental policy or rule for an organization or community:

- Speaking or presenting at town meetings
- Voting for legislation or candidates
- Writing to elected officials or decision makers
- Meeting with elected officials

Stewardship Support

Stewardship field trip to Reinstein Woods

- Phragmites Monitoring and Removal (2 hours): May-June
- Adopt-A-Trail (1.5 hours): September-October, April-June
- Site Need: Invasive Species: (1.5-2 hours). April-June
- Site Need: Habitat Restoration: (1.5-2 hours) September-October, April-June

Learn more and request a field trip at https://reinsteinwoods.org/explore/programs-services/dayinthelife/stewardship-actions/

Borrow a stewardship kit

Educators can borrow stewardship equipment for invasive species removal, native plant propagation, and clean-ups.

Learn more and request a bin.at https://reinsteinwoods.org/explore/programs-services/dayinthelife/stewardship-actions/

Niagara River Projects- Niagara River Greenway

Work with the Niagara River Greenway Youth Stewardship program to plan and support a stewardship project in the Niagara River Corridor. Find out more information and see past projects at https://www.niagararivergreenway.com/volunteercorps

CROSS- CURRICULAR CONNECTIONS: LESSON PLANS

GreatLakesNow

Great Lakes Now: An Exploration of the Great Lakes is an introduction to the science and geography of the Great Lakes. This collection aims to introduce students to basic scientific and geographic concepts about the Great Lakes. There are 17 lessons in this collection

TEACHING GREAT LAKES SCIENCE
Lessons & Data Sets

This website features a suite of lessons, activities and data sets focused on the Great Lakes. Any of these resources may be easily incorporated into formal and informal educational settings. All the lessons, activities, teacher tools and data sets are free and targeted for 4-12th grades.

ALLIANCE for the GREAT LAKES

The Great Lakes in My World curricula provides indoor and outdoor activities you can integrate into your classroom. The curricula includes free lesson plans, assessment rubrics, and student journal pages.

FLINT RIVER GREEN BRIDGES

10 – 12 week flexible science unit guides teachers and students through hands-on, citizen science data collection and analysis alongside local water quality experts and community stakeholders to answer the guiding question, "How healthy is our stream for aquatic organisms and how do human action on land impact the health of the stream?"

CROSS- CURRICULAR CONNECTIONS: SOCIAL STUDIES

PRIMARY AND SECONDARY SOURCES

Educators can access our collection of historical and modern print media on the **shared resource drive**. These materials include:

- Newspaper articles from the late 1800's to today
- Recent magazine articles
- Political cartoons
- Document analysis worksheets created by the National Archives

"The city of Niagara Falls has a population of 30,000 and while advantageous located so as to entertain all the visitors to the great natural spectacle, it is also situated at what might be termed the outlet of the great international sewer which carries the sewage of millions of people living on both side of lakes Erie, Huron, Michigan and Superior. "

- The Buffalo Sunday Morning News, 1912

EEN PAGES. PRICE ONE CENT

SHOWS DANGER OF POLLUTION OF LAKE ERIE

GOVERNMENT REPORT CONDEMNS THE SEWERS

Dr. McLaughlin Finds Buffalo Water Taken at the New Intake is Very Good With Low Bacterial Count.

HEALTH DEPARTMENT IS COMMENDED

STRIKING FEATURES OF THE REPORT

Pollution of Niagara River, by sewage of Buffalo, "Disgraceful both to New York State, and the United States."

No crude sewage should be discharged into the lake.

Consumption of water in Buffalo is enormous.

The Buffalo Health Department has done excellent work.

Niagara River cannot be used as sewer and furnish safe drinking water.

Buffalo Evening News Bureau, The Southern Building.

WASHINGTON, Sept. 25.—An elaborate report on sewage pollution on interstate and international waters with special reference to the spread of typhoid fever, dealing particularly with Lake Erie and the Niagara River, was issued today by the Public Health and Marine Hospital Service. It was prepared by Dr. Allan J. McLaughlin, one of the passed assistant surgeons in the division of pathology and bacteriology, and is accompanied by numerous maps and health charts.

Dr. McLaughlin says that sewage pollution of a water supply shows that the spread of asiatic cholera, typhoid fever and other diseases is possible and depends only upon the presence of certain pathogenic organisms in the sewage. The only remedy is to secure a pure water supply by proper disposal of sewage and filtration or treatment of the water.

The report includes Niagara Falls and Cohoes among cities whose source of water supply is grossly polluted constantly. Plans have been approved for filtration plants at Niagara Falls, and a mechanical filter is being installed in Cohoes. The report quotes Prof. William T. Sedgwick as saying that the pollution at the Falls by the sewage of Buffalo is "disgraceful both to New York State and the United States.

Great Natural Reservoir.

The report speaks of lake Erie as a source of water supply, pointing out that this great natural reservoir, with capacity for 320 days' storage, assures a high degree of purification by natural agencies, affording the storage time necessary to permit the natural death of pathogenic bacteria. The ability of the natural agencies which are dilution, aeration, and sedimentation, operating in the lake to render sewage inocuous, is very great, so that water at the center of the lake is comparatively pure.

Discussing the position of waterworks intakes as a measure of protection, the report says that though at Erie and Niagara Falls the citizens have continued to drink sewage polluted waters for years, eventually filtration plants will have to be installed to prevent water borne typhoid, while the sewage disposal problem is still unsolved.

(Continued on Page 6, Sixth Column).

Buffalo Evening News, 1911

Bill Roberts, 1970

CROSS- CURRICULAR CONNECTIONS: ELA