



**Department of
Environmental
Conservation**

Citizen Science in DEC Water Quality Monitoring

June 8, 2022

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NYSDEC; Division of Water, Stream Monitoring and Assessment Section

Agenda

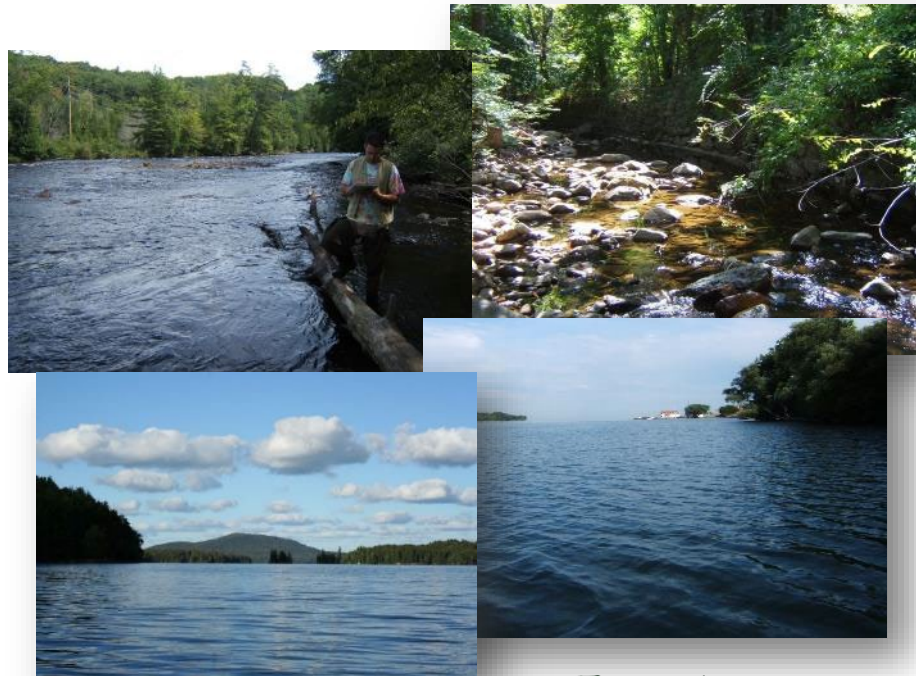
- Monitoring program background and objectives
 - RIBS monitoring and rotating schedule
 - Lake and Stream specific programs
- Citizen Science Programs
 - CSLAP
 - NYHABS
 - WAVE



Statewide Waters Monitoring Program

Monitoring by waterbody type

- Rivers/Streams
- Lakes/Ponds/Reservoirs
- Groundwater



RIBS Program Objectives

(Rotating Integrated Basin Studies)

Primary

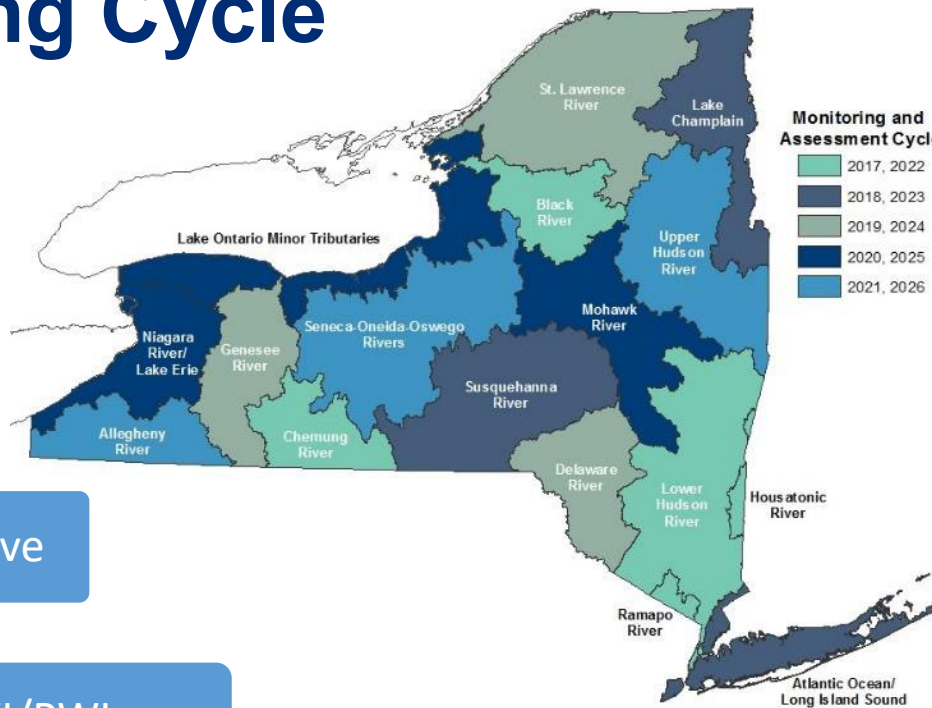
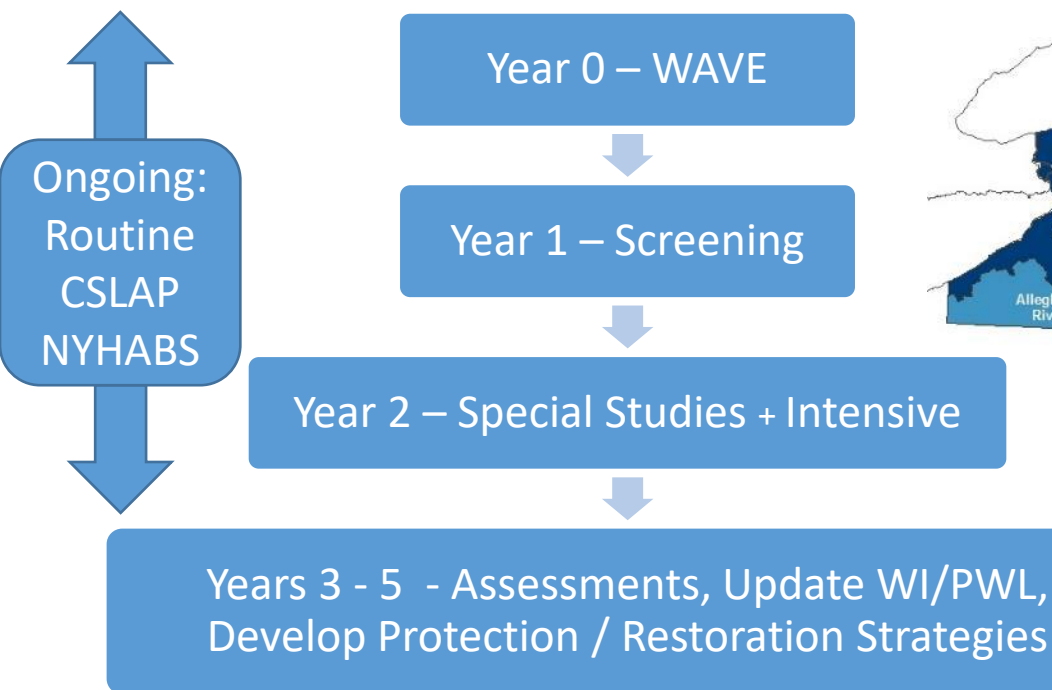
- Provide a comprehensive assessment of water quality in support of 305(b) and 303(d)

Secondary

- Identify and analyze temporal and spatial trends
- Characterize natural background conditions
- Support data needs of other department programs



5 Year RIBS Monitoring Cycle



River and Stream Monitoring Programs

- Biological Monitoring Program
- Water Chemistry Sampling Program
- Water Assessment by Volunteer Evaluators (WAVE)
- Toxicity

Lake Monitoring Programs

- Lake Classification and Inventory (LCI)
- Citizen Statewide Lake Assessment Program (CSLAP)
- Harmful Algal Bloom (NYHABs) Program



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Lake Monitoring Programs

- **Lake Classification and Inventory Program (LCI)**- 1982-1991, 1996-present; 800+ lakes, 50-75 annually
- **Citizen Statewide Lake Assessment Program (CSLAP)**- 1986-present; 250+ lakes, >150 annually



What is CSLAP?

Managed by DEC and New York State Federation of Lake Associations (NYSFOLA)

- Program initiated 1986 and mandated by ECL (17-0305); 270 participating lakes
- Educate and engage public about lake preservation, management and restoration
- Collect chemical, physical and biological data several times per year
- Identify baseline water quality and changes in lake health



The DEC HABs Program : NYHABS

Interpretation: Bloom Status

- Determine bloom status based on surveillance (visual evidence) from public and sampling data

Education

- Maintain website with HABs primer, FAQs, photo gallery and more (on.ny.gov/hab)
- Publish articles, respond to press inquiries, etc.
- Public presentations and training workshops

Outreach

- Weekly updates to website (map), social media, etc.

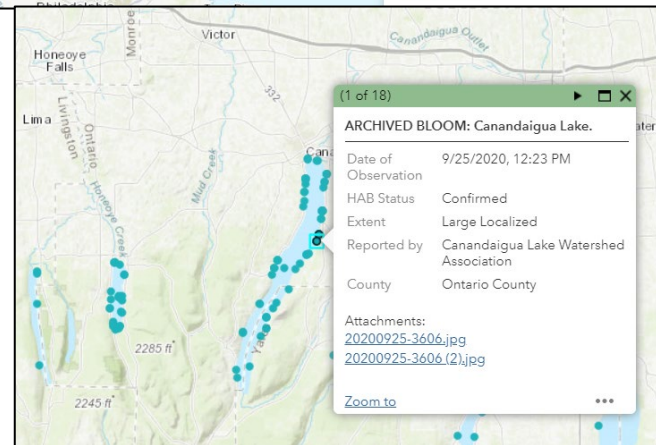
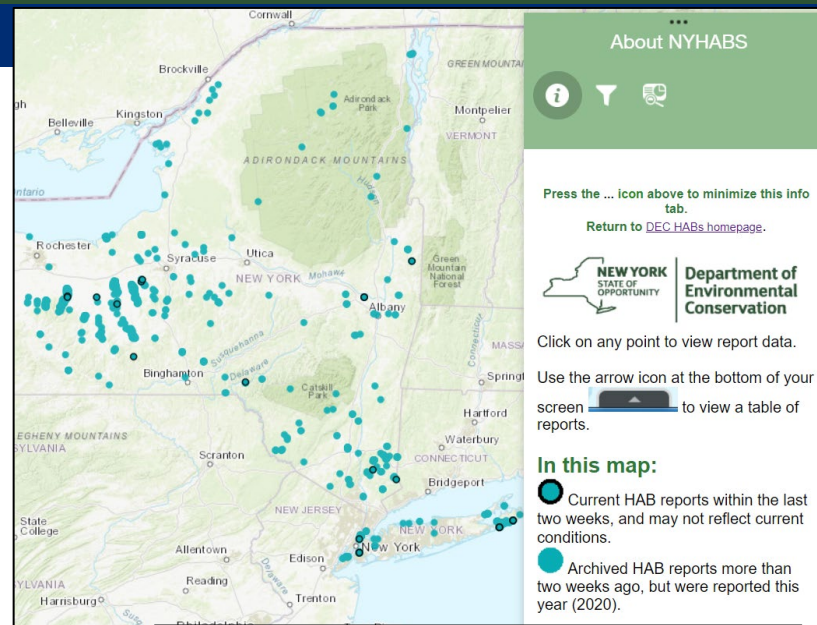


Know it, Avoid it, Report it!

The NY HABs System (NYHABS)

- Esri ArcGIS Online interactive map of HAB reports, updated daily
- Reports include status, extent, reported by, exact location, photos
- Reports remain Current on map for 2 weeks
- After 2 weeks, all HABs remain visible as Archived
- User can filter by lake or county and export reports as pdf

on.ny.gov/nyhabs



River and Stream Monitoring Programs

- Water Chemistry Sampling Program
- Biological Monitoring Program
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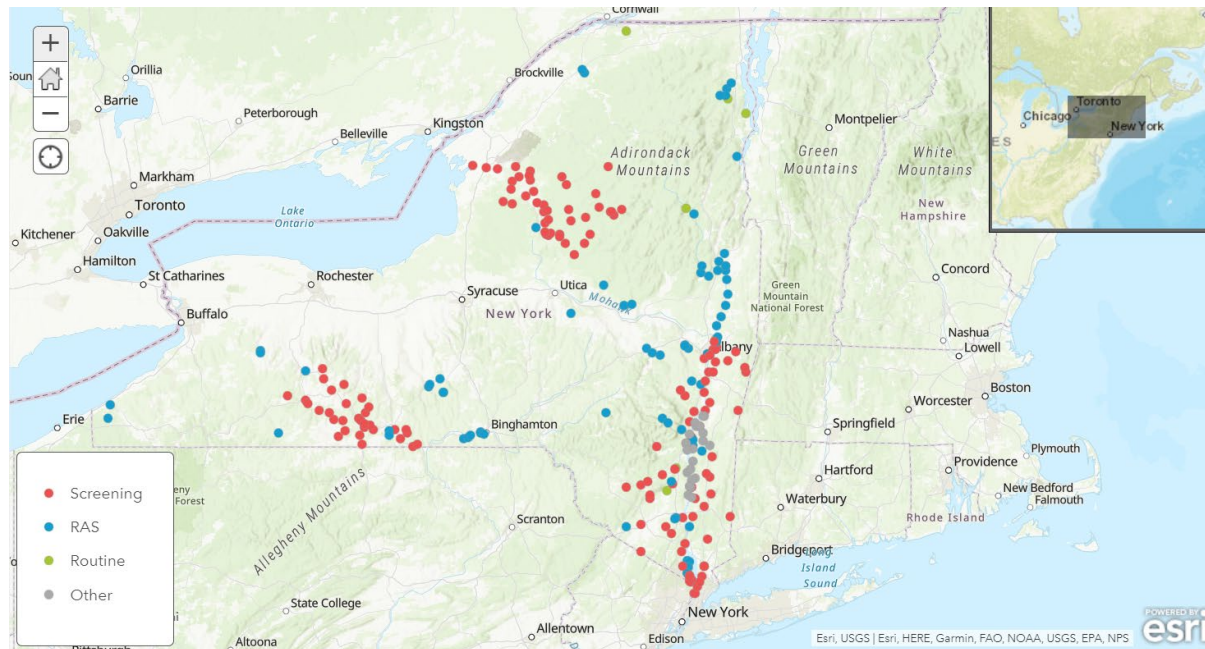
Lake Monitoring Programs

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RIBS Water Chemistry Sampling Program

- Routine monitoring network
- Screening network
 - Toxicity
- Special studies (RAS)



Biological Monitoring Program

- Abundant, easy and inexpensive to sample
- Less mobile than fish
- Sensitive to change/pollution
- Indicators of overall, integrated water quality, short and long term



Professional Sampling Methods



Kick Sampling

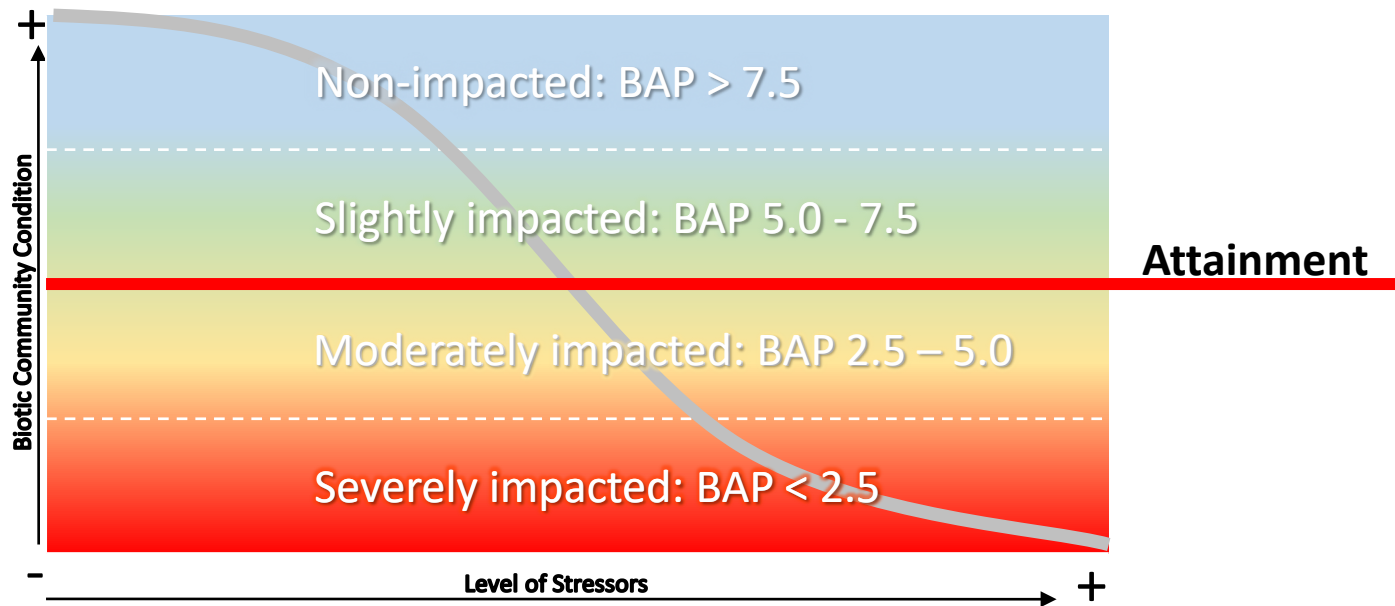


Multiplate Sampling



Ponar Sampling

Macroinvertebrate Community Analysis – Biological Assessment Profile (BAP) Score



Biological Monitoring : WAVE



What is WAVE?

Water Assessments by Volunteer Evaluators

Citizen
Scientists



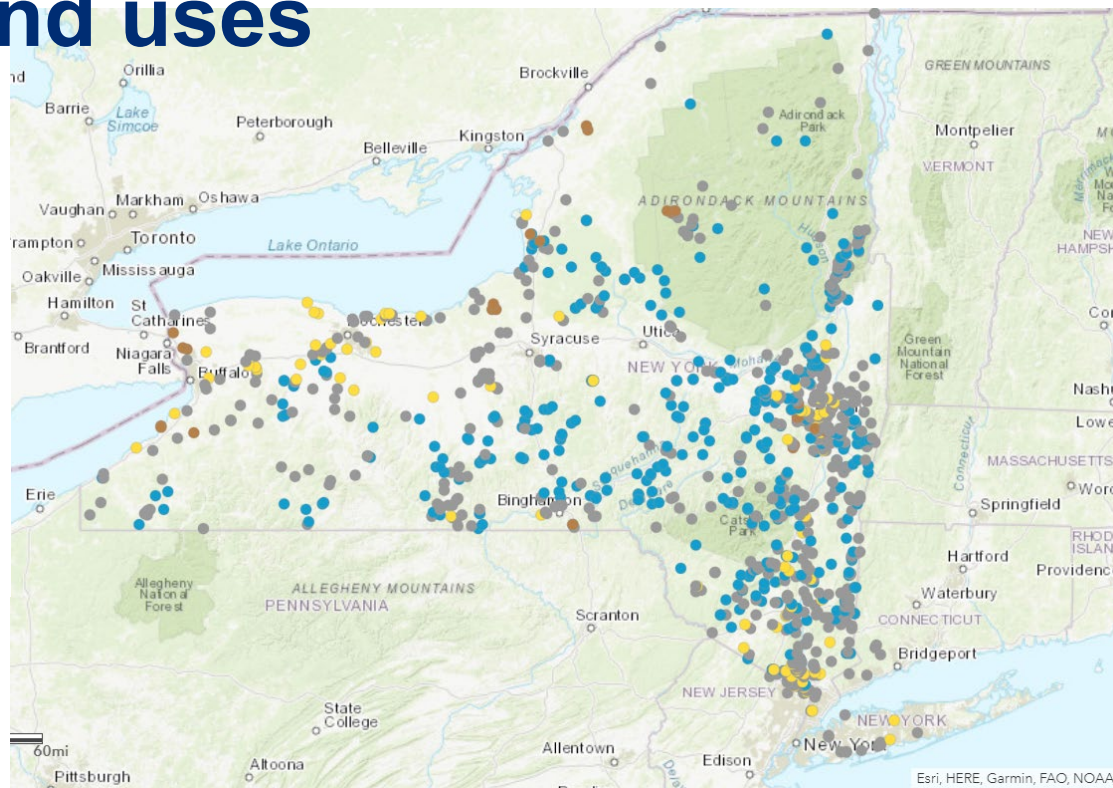
Macroinvertebrate sampling



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WAVE data and uses

- No Conclusion
- No Known Impact
- Possibly Impaired
- dry



WAVE Method

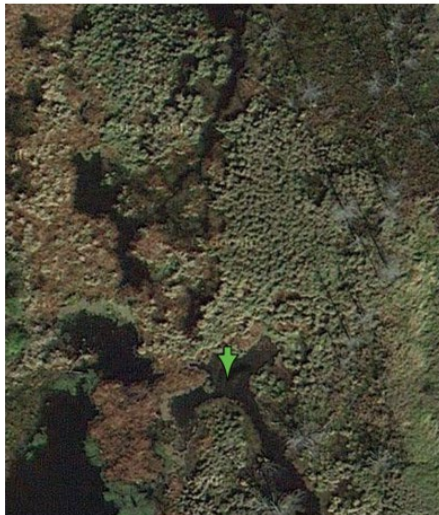


Site selection

Avoid 1st order streams



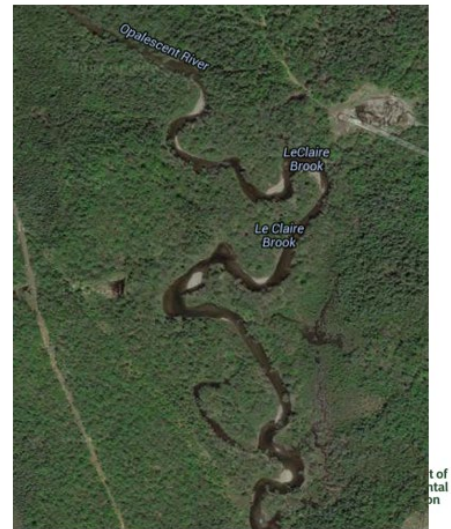
Avoid wetlands



Avoid ponded discharges



Avoid Slow Sandy Streams



Riffle me this



<https://www.youtube.com/watch?v=rUYcyXeQkg0&list=PLnBbYubhbH1Xm88bAcosUMIHx58H4s6eK>

WAVE Method

Collect BUGS!



Send in Vouchers!

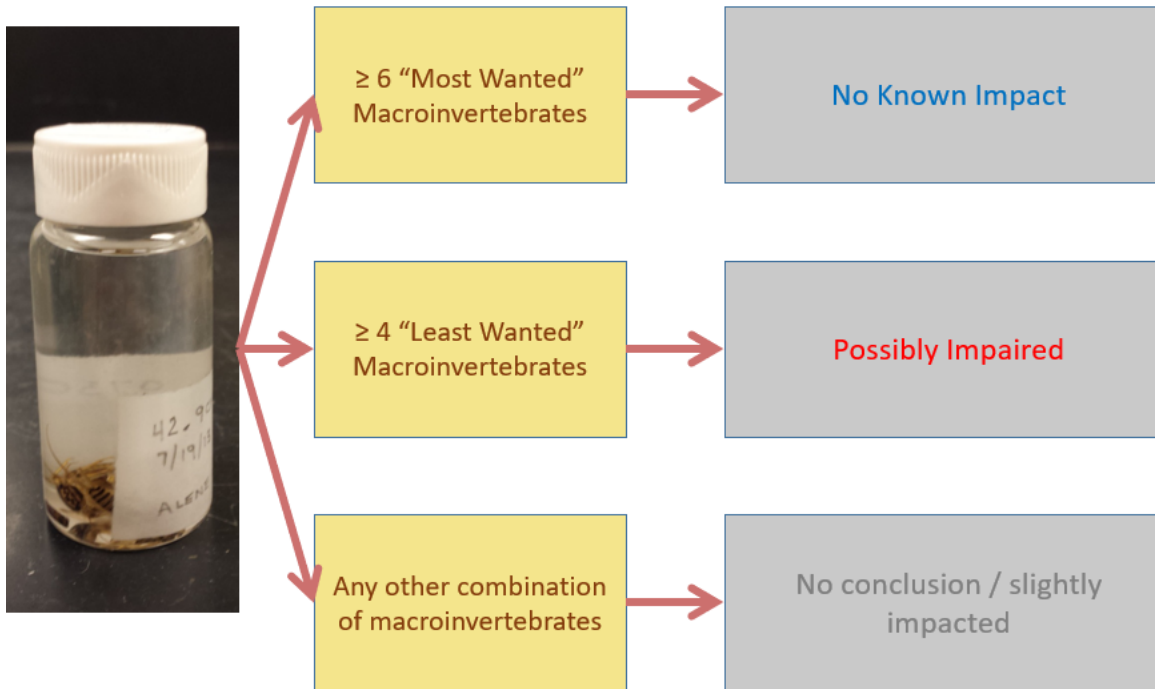


Commitments and Results

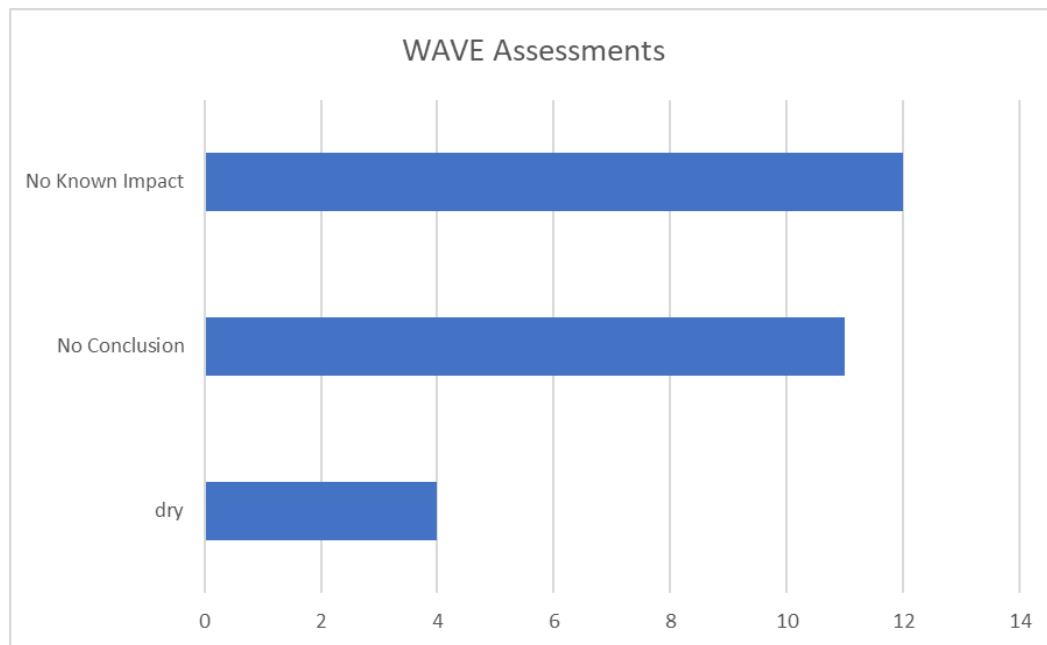


1-3 hours

The WAVE assessment



WAVE data in the Black River Basin



- 27 assessments
- 2014-2017
- 12 Identified High Quality Stream segments

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Where to find data

NYSDEC Info Locator

<https://gisservices.dec.ny.gov/gis/dil/>

Biological, Toxicity, HABS, WI/PWL Factsheets



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DEC Info Locator

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION



DECinfo Locator

Base Map: Topographical



Search

Tools

DEC Information Layers

Environmental Quality Outdoor Activity

Permits and Registrations

Environmental Cleanup

Environmental Monitoring

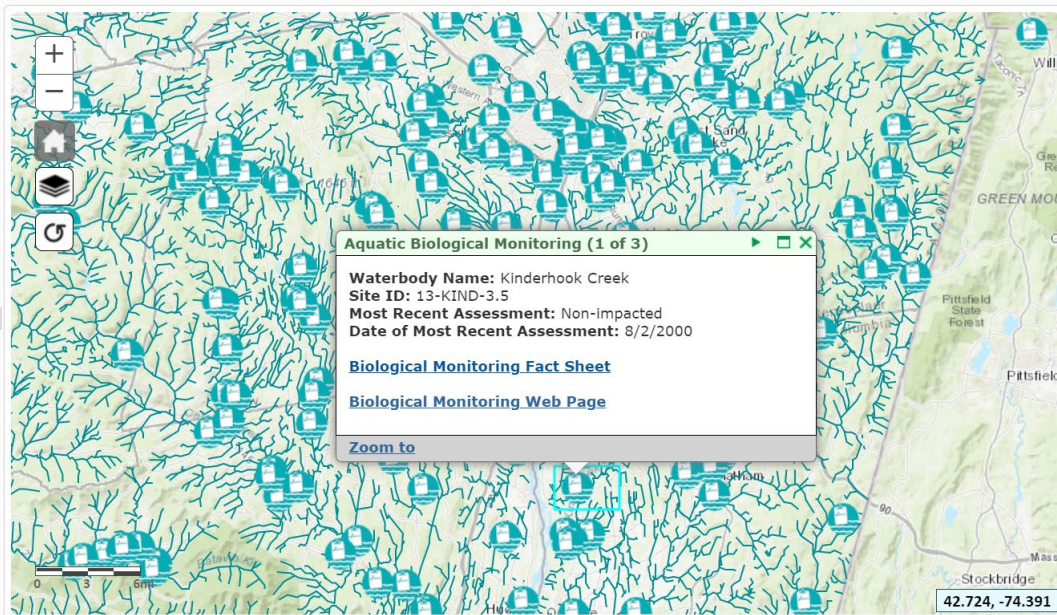
☐ Shorelines☐ Air Quality Monitoring Sites☒ Aquatic Biological Monitoring☐ Aquatic Toxicity Monitoring

Public Involvement

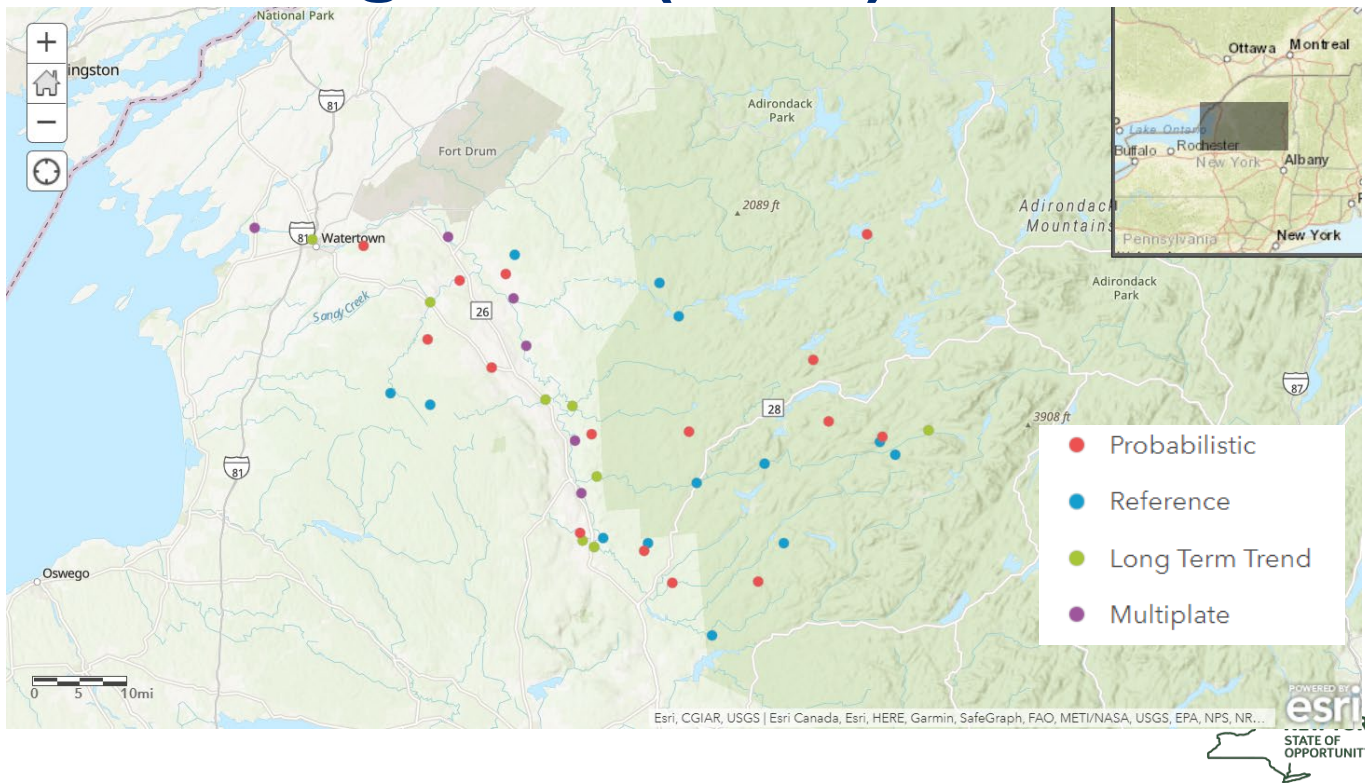
Environmentally Sensitive Areas

Legal Information

Reference Layers

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2022 Screening sites (draft)



Questions?

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