NEW YORK STATE | Department of Environmental Conservation

Data Deep Dive: Exploring Statewide & Chesapeake Bay Resources

Upper Susquehanna Watershed Forum
Binghamton University
Cassandra Davis, Research Scientist

10/2/2025

Chesapeake Bay Program

New York's Connection to the Chesapeake Bay

- Susquehanna and Chemung Rivers are the headwaters of the Chesapeake Bay
  - Otsego Lake, Cooperstown NY is 444 river miles to the mouth of the Susquehanna River
  - ~9.7% of the watershed
  - ~3.7% of the population

- Regional Partnership to Restore the Bay
  - Chesapeake Bay Program
  - Signatories include seven jurisdictions (Six states and D.C.), EPA, and Chesapeake Bay Commission

Chesapeake Tree Canopy Network and Riparian Forest Buffer Network

- Maintained by Chesapeake Bay Program, Alliance for the Chesapeake Bay, and USDA Forest Service
- Resources
  - Best Practices
  - Understand Your Canopy
    - Fact Sheets by County and Municipality
  - Community Spotlights and Success Stories
  - Funding
  - Outreach Strategies
- Newsletters

Chesapeake Tree Canopy Network

https://chesapeaketrees.net/

Chesapeake Riparian Forest Buffer Network

https://chesapeakeforestbuffers.net/

Chesapeake Tree Canopy Network

https://chesapeaketrees.net/

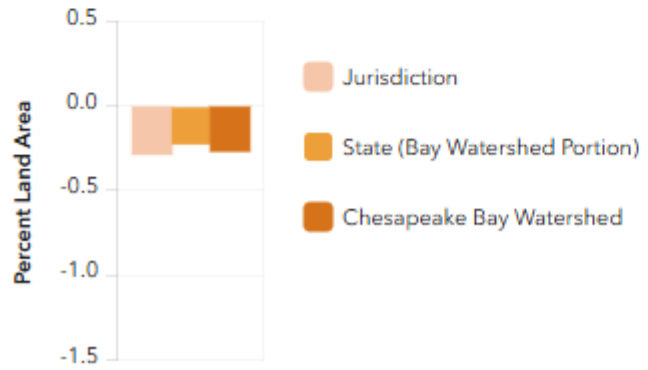
Broome County, NY

Net Tree Cover Change on Developed/Developing Lands:

-1,101.08 acres (-0.28% land area)

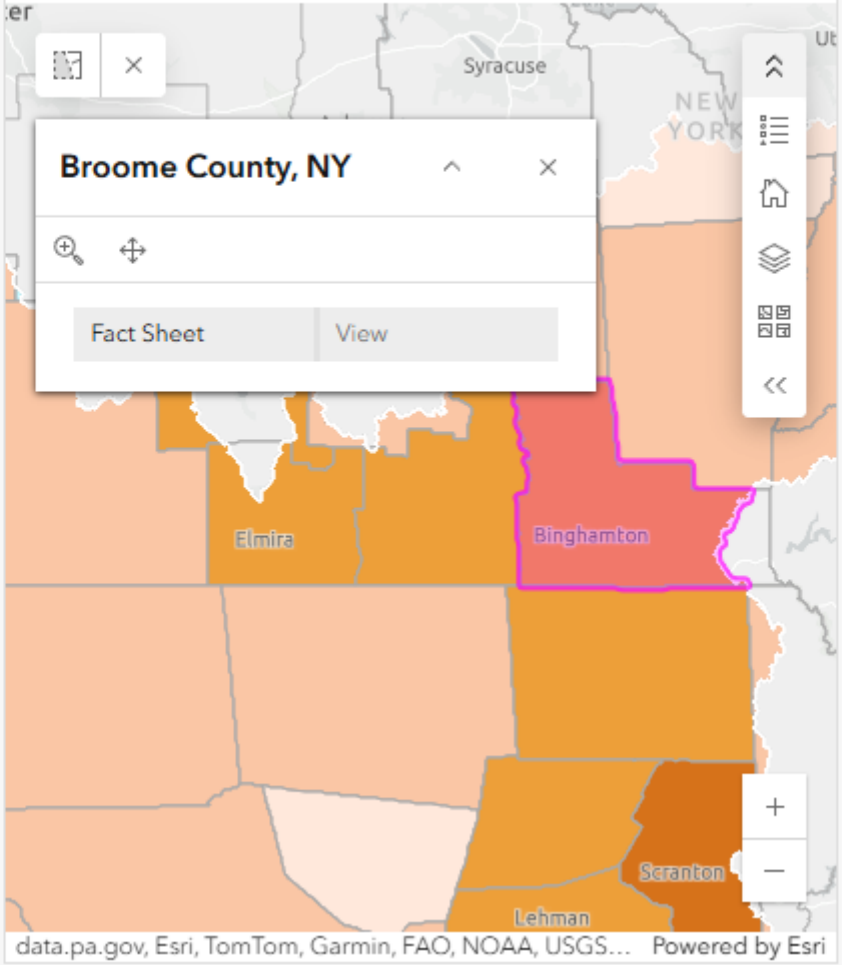
Within the Chesapeake Bay Watershed

Net Tree Cover Change: How Does Your Jurisdiction Compare?



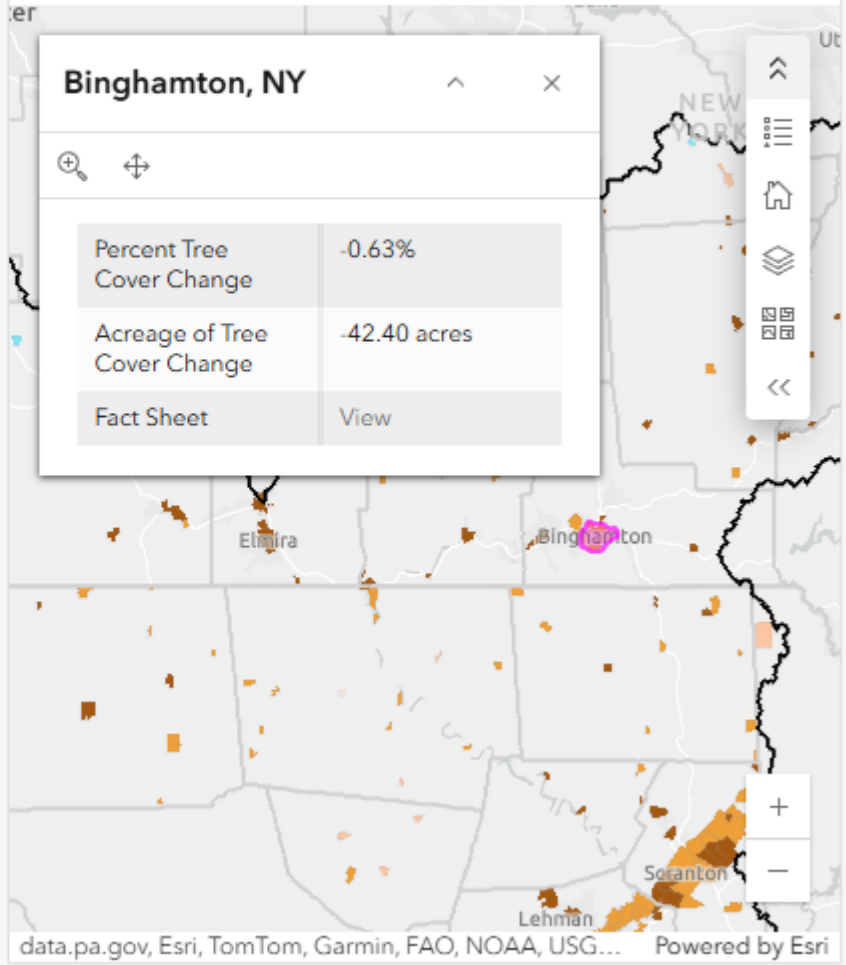
County Net Tree Cover Change

Click county to view and download fact sheet



Municipal Net Tree Cover Change

Click municipality to view and download fact sheet



Chesapeake Tree Canopy Network

https://chesapeaketrees.net/

Tree Cover Status & Change

FOR BINGHAMTON, NY 2013–2022 BROOME COUNTY

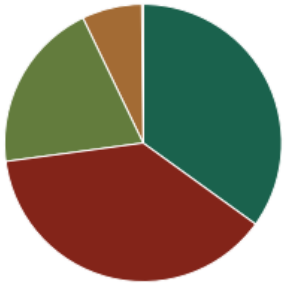
35%
Total percent of land with Tree Cover

$1.8 million
Annual benefits provided by Tree Cover (in reduced air pollution, stormwater, & carbon dioxide)

-42 Acres
Net loss of Tree Cover on developed lands, 2013 to 2022

What is the land use/land cover breakdown in your community?

6,724 ACRES OF LAND AREA
IN BINGHAMTON



35%	Tree Cover[1] 2,330 acres	38%	Impervious 2,542 acres
20%	Turf Grass 1,366 acres	7%	Other[2] 470 acres
0.17%	Agriculture 11 acres	< 0.1%	Non-Forested Wetlands 4 acres

1. Tree cover includes all trees occurring on all land uses, such as individual trees found over turf, impervious, agricultural, wetlands, or other lands. It also includes areas of "forest," defined in this dataset as patches of tree cover 1 acre or greater, with a minimum patch width of 36 meters.
2. Other includes a mixture of non-treed land uses not captured in the main pie chart categories. See the *Data Guide* for detailed definitions of "other" and all the land use categories as well as accuracy statistics.

Land use/land cover statistics were generated based on 2022 imagery using the 2024 edition of the *Chesapeake Bay Land Use and Land Cover Database*.

Where does tree cover occur in your community?

50% is in forest (**1,155** acres)

9% is over impervious (**210** acres)

24% is over turf grass (**571** acres)

17% is other tree cover (**395** acres)

What are some benefits of tree cover in your community?

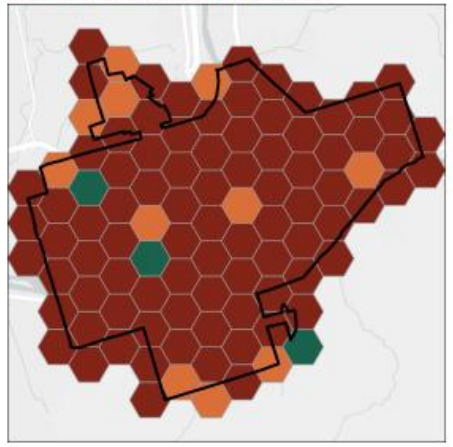
Total Air Pollution Removal Value
104,000 lbs removed annually
$255,000 saved annually
Total air pollution removal includes CO, NO_2, O_3, SO_2, and Particulate Matter (PM2.5, PM10).

Gallons of Reduced Stormwater Runoff Value
45.1 million gallons reduced annually
$403,000 saved annually

Carbon Sequestered Value
2,000 tons removed annually
$1.1 million saved annually

Calculated based on 2021 tree cover data using: *landscape.itreetools.org*

How is tree cover changing on developed and developing lands?



> 0.1 Acres Net Tree Cover loss | Minimal Tree Cover Change (± 0.1 Acres) | > 0.1 Acres Net Tree Cover gain

*Hexagons that are >90% water are not shown on the map.

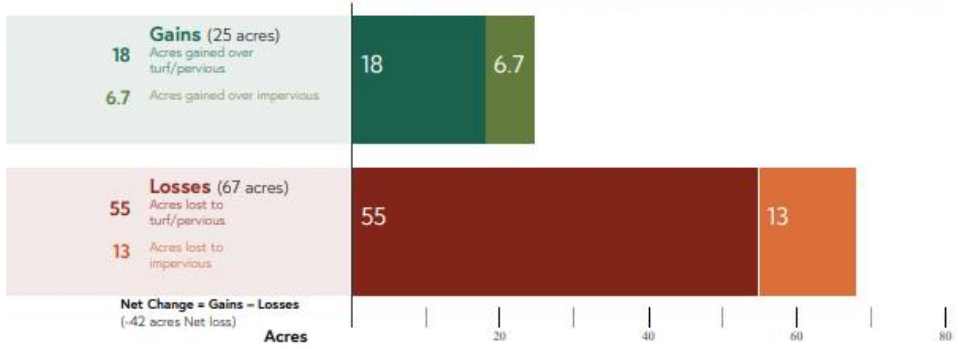
Understanding how your tree cover changes over time can inform the sustainable management of forests and community trees. The map to the left shows where your community has lost and gained tree cover from 2013 to 2022, focusing on land that is already or newly developed.

Tree cover can be lost quickly due to human activities (e.g., construction) or natural events (e.g., severe weather).

Tree cover can be gradually increased through tree planting and natural regrowth, but these gains may take 10-15 years to be detected in high resolution imagery.

Since mature, healthy trees provide significantly greater community benefits than newly planted trees, it is important to both preserve existing tree cover and seek opportunities to grow new trees and forests. Local land use planning, ordinances, and tree programs play a critical role!

Tree Cover Change on developed/developing lands (2013–2022)



Learn More:

Chesapeake Tree Canopy Network
Links to municipal and county fact sheets, user guides, map viewers, datasets, and more

Capitalizing on the Benefits of Trees
A slideshow for local leaders featuring tree benefits, case studies and resources

State Urban and Community Forestry Assistance
(Gloria VanDuyne, New York Website)

CHESAPEAKETREES.NET
PUBLISHED JULY 2025

Chesapeake Stormwater Network

https://chesapeakestormwater.org/

- Non-profit organization
- Recorded webinars on urban stormwater restoration practices
- Newsletter
- Chesapeake Urban Stormwater Professionals Training Program
  - Free, begins Spring 2026

Chesapeake Conservancy – Chesapeake Conservation Center

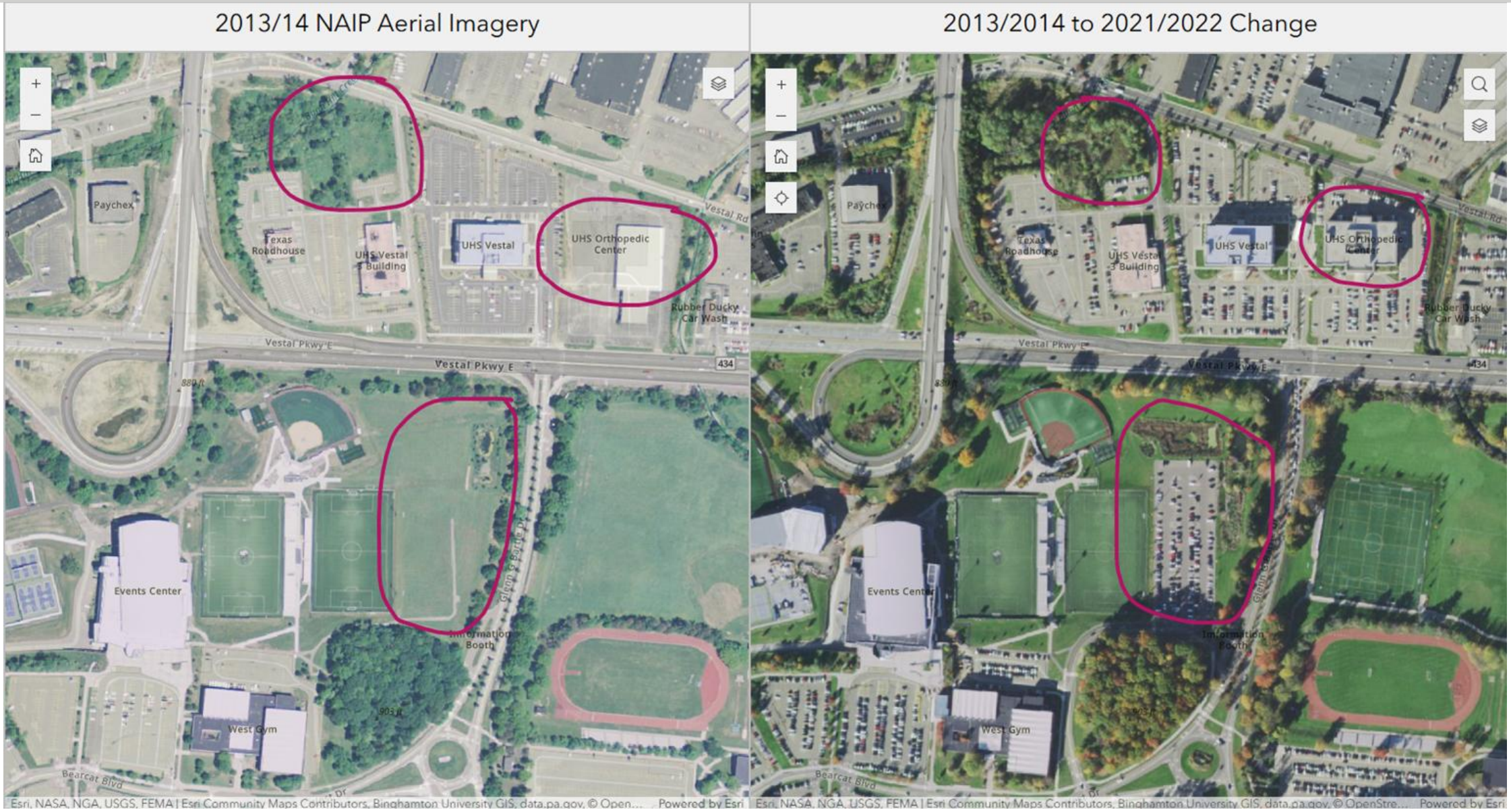
- Non-profit organization
- Open Data
  - 1-meter land use/land cover data (includes 19 full counties in NY's portion of the watershed)
  - Hyper-resolution hydrography
  - Wetland mapping - publication
  - Solar Mapping & Predicting – publication

1-Meter Land Use Data

- Arieal Imagery, LiDAR elevation data and machine learning to produce 1-meter resolution land cover maps
- Land Use – 56 classes (now including solar)
- Land Cover - 11 unique land cover types
- Land Use/Cover Change product for 2013/14, 2017/18, 2021/22
- 95% accurate and land use change is 77% accurate

https://www.chesapeakeconservancy.org/projects/cbp-land-use-land-cover-data-project

1- Meter Land Use Data Change Product Example



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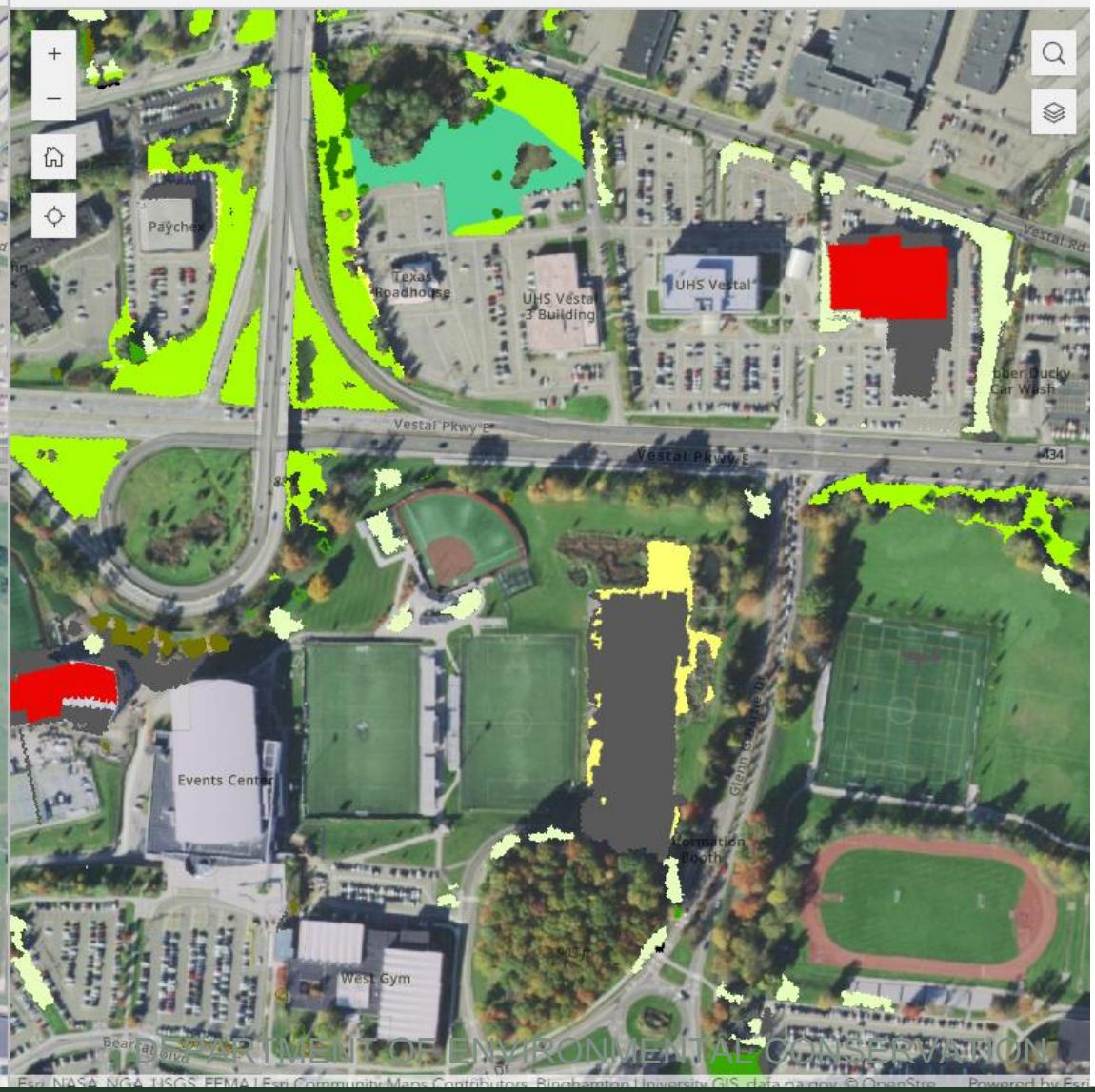
2013/14 NAIP Aerial Imagery

2013/2014 to 2021/2022 Change



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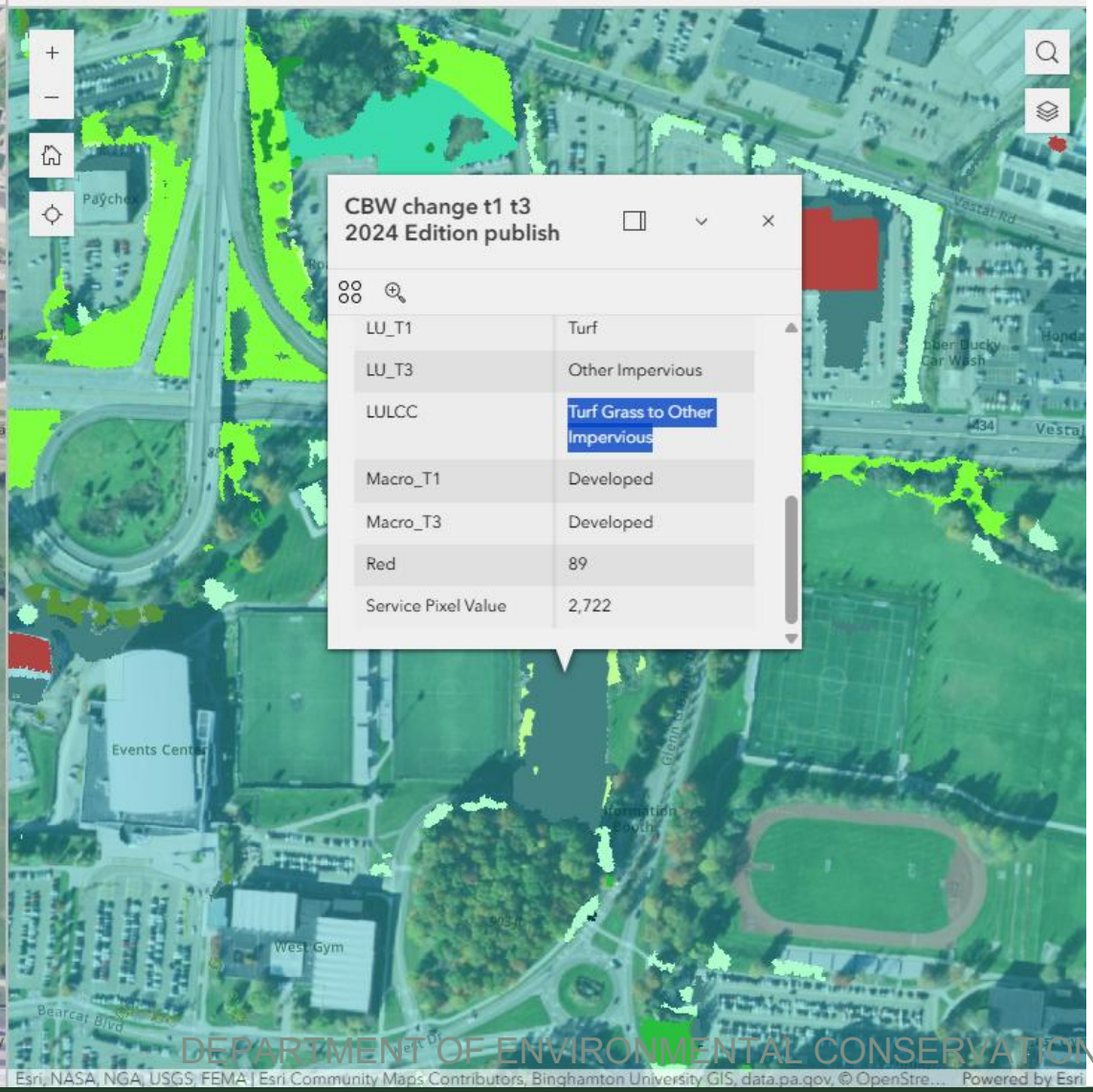
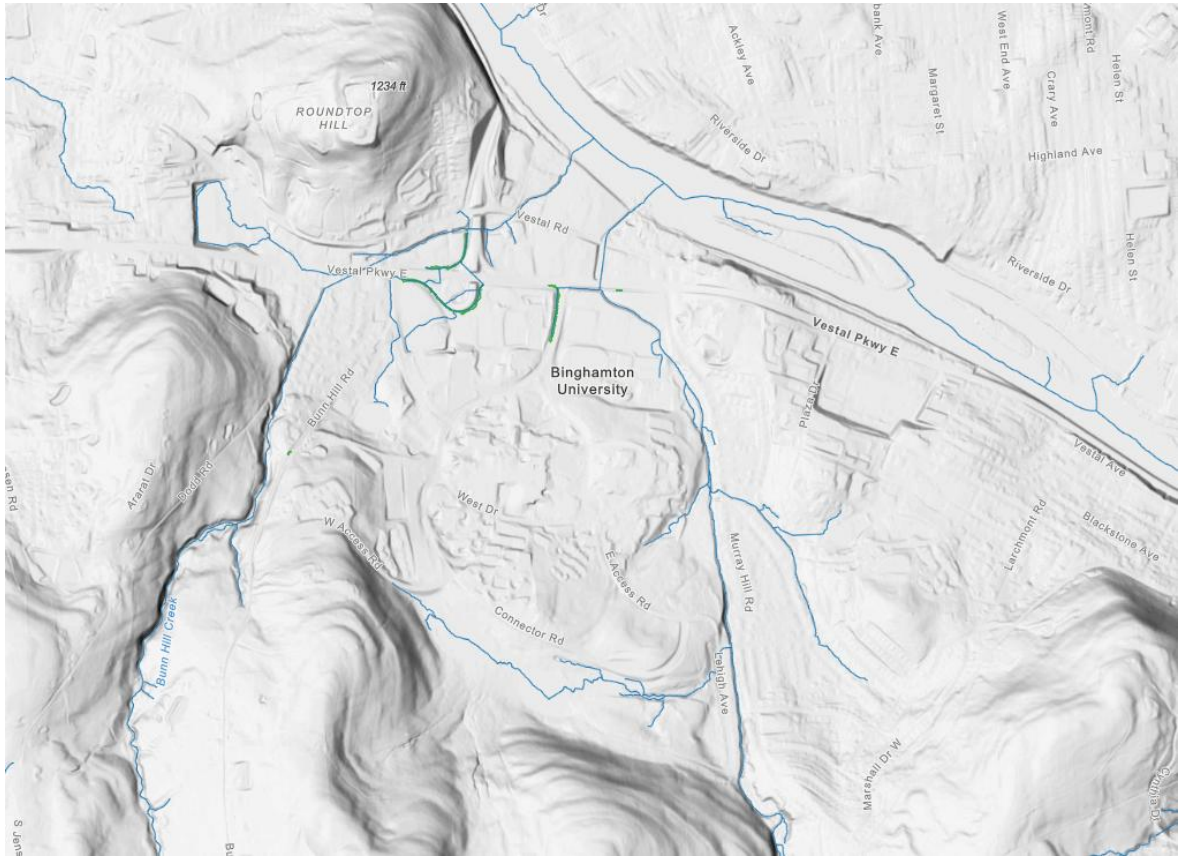


Hyper-Resolution Hydrography Database

Maps over twice the amount of NHDPlus Flowlines and identifies agricultural and roadside ditches

Uses:

- LiDAR elevation models
- Geomorphic Interpretation
- Advanced tracing



https://www.usgs.gov/data/chesapeake-bay-hyper-resolution-hydrography-database

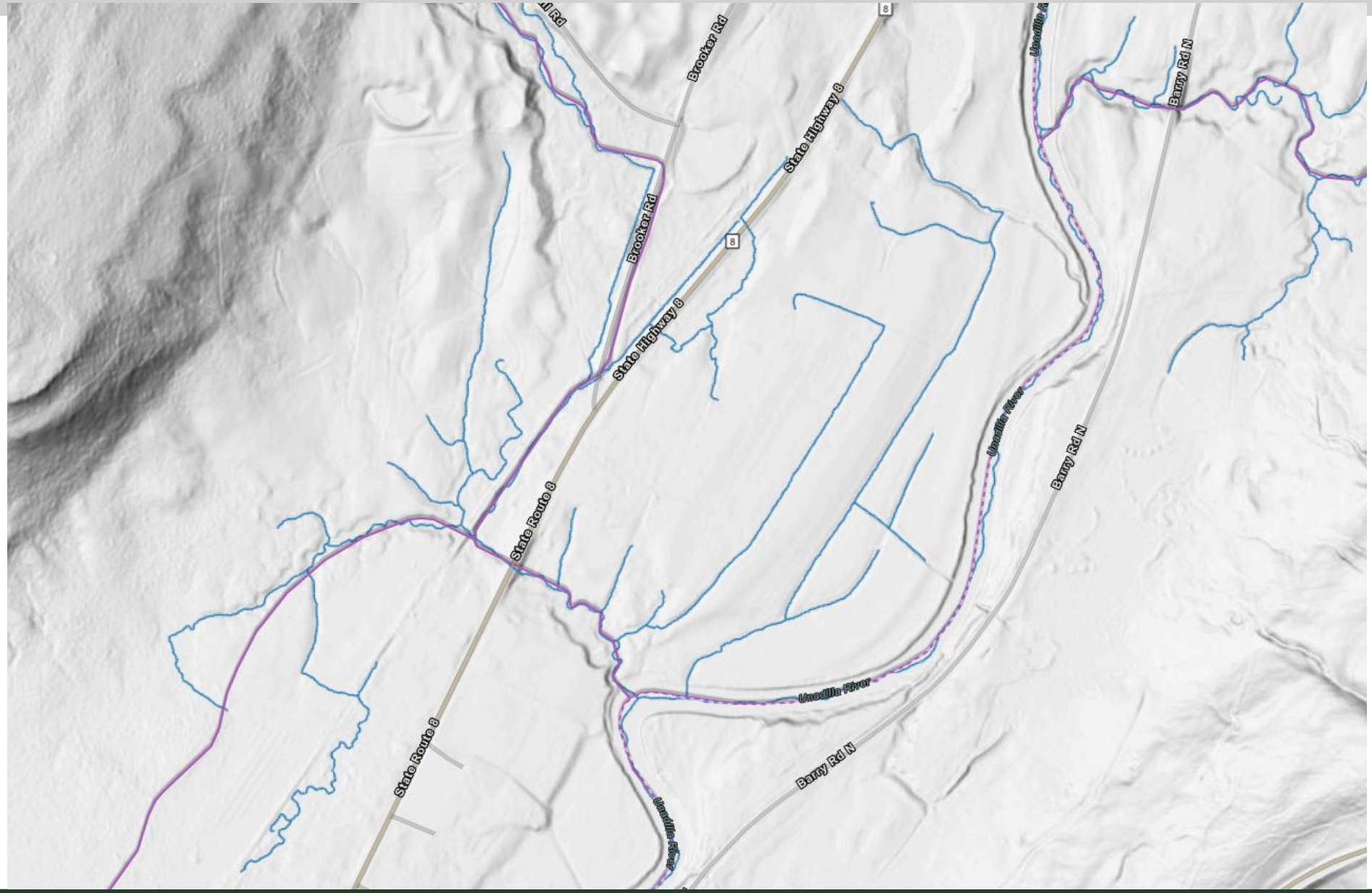
Hyper-Resolution Hydrography Database

NHDPlus High Resolution Flowlines

Hyper-Resolution Hydrography Database

NHDPlus High Resolution Flowlines

Hyper Resolution Hydrography Steam Centerline



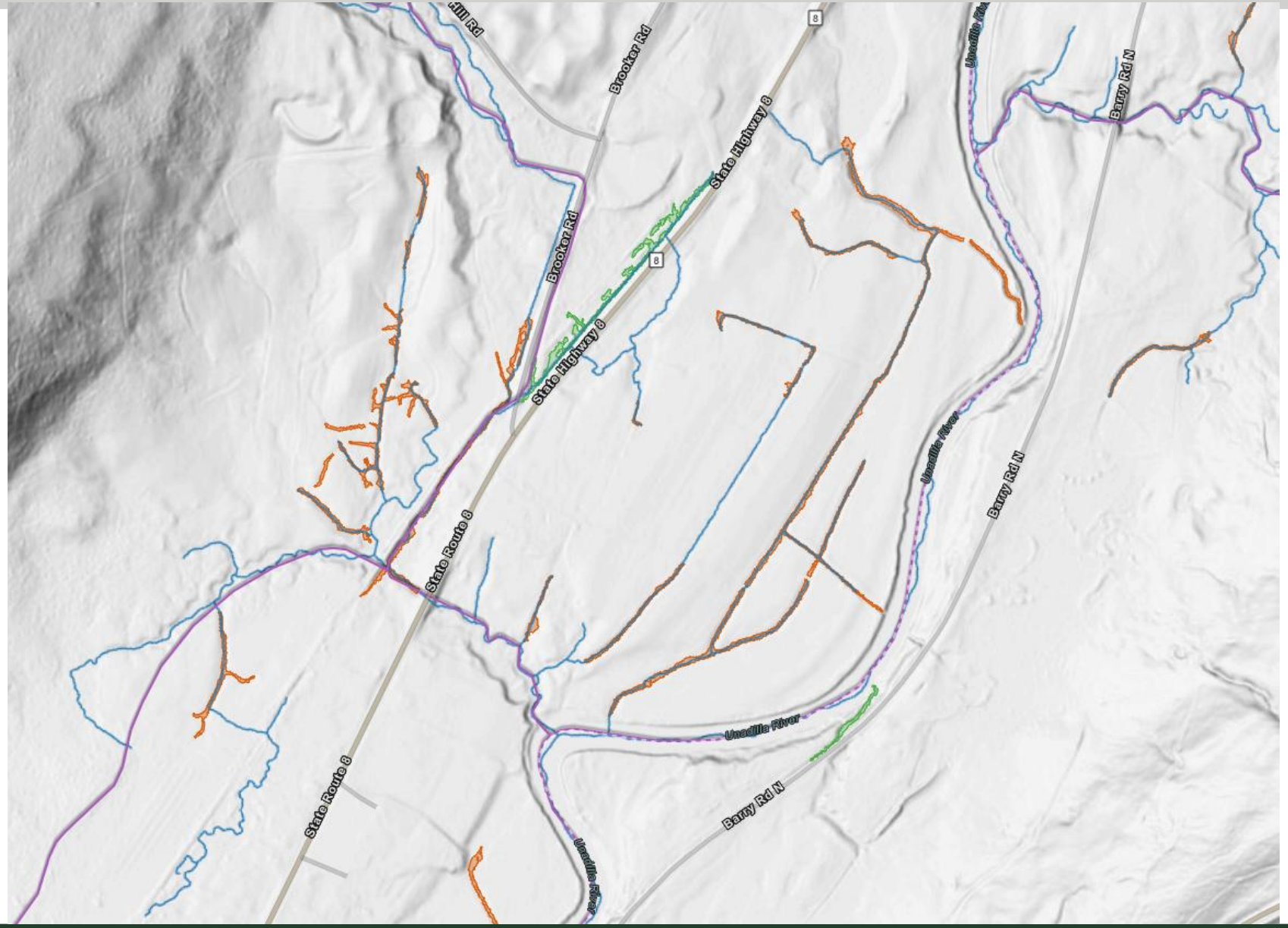
Hyper-Resolution Hydrography Database

NHDPlus High Resolution Flowlines

Hyper Resolution Hydrography Steam Centerline

Agricultural Ditches

Roadside Ditches



Hyper-Resolution Hydrography Database

NHDPlus High Resolution Flowlines

Hyper Resolution Hydrography Steam Centerline

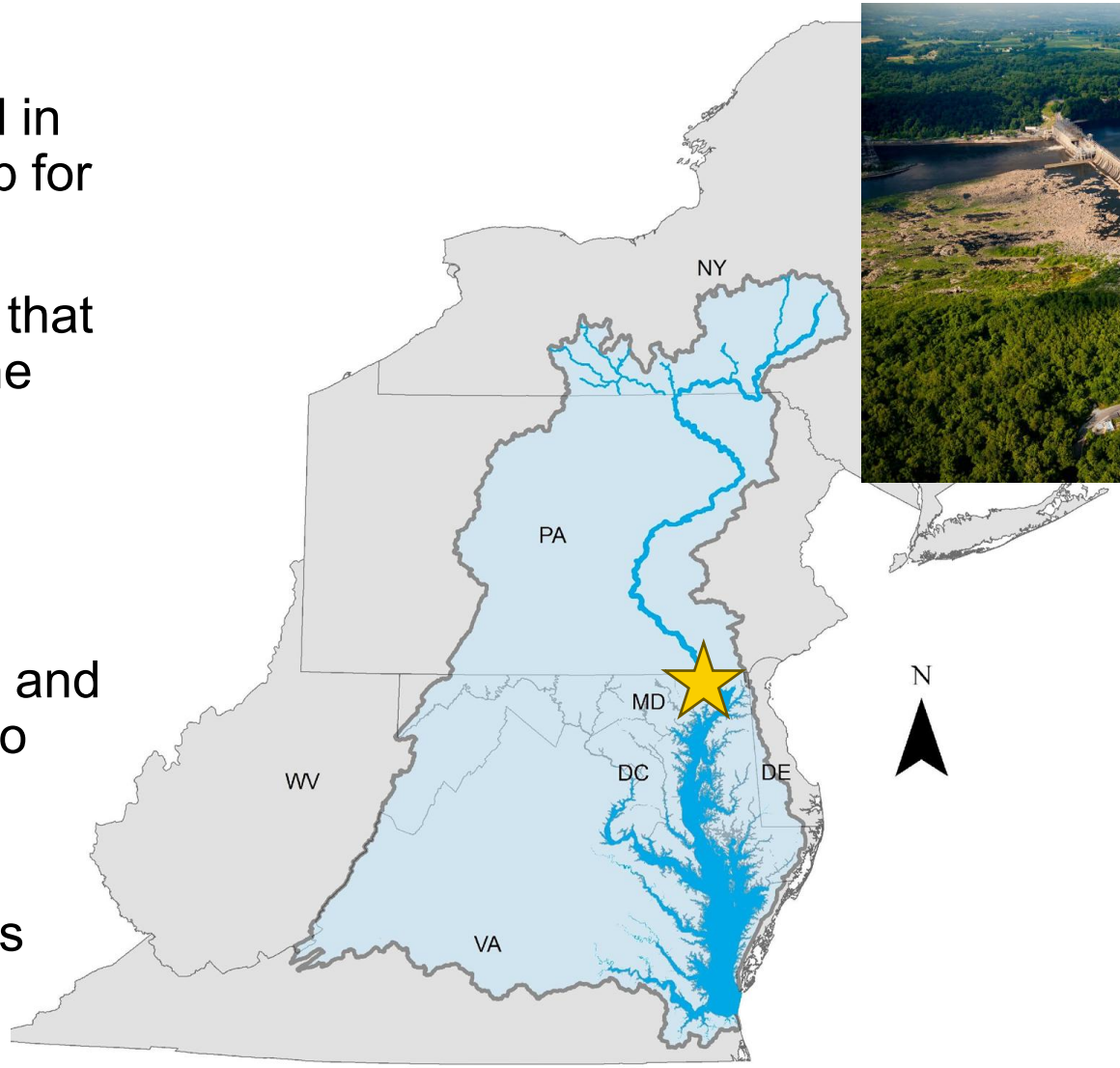
Agricultural Ditches

Roadside Ditches

Conowingo Watershed Implementation Plan BMP Viewer

The Conowingo Dam

- Since construction completed in 1928, the dam acted as a trap for nutrients and sediment
- Recent studies have showed that the reservoir no longer has the long-term ability to store sediment and associated nutrients
- A Watershed Implementation Plan was created for NY, PA, and MD to address the Conowingo Dam loads
- Chesapeake Conservancy created a tool to identify areas where projects could be implemented



Conowingo Watershed Implementation Plan BMP Viewer

Conowingo Watershed Implementation Plan BMP Viewer

DEC InfoLocator

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

DECinfo Locator is an interactive map that lets you access DEC documents and public data about the environmental quality of specific sites in New York State, as well as outdoor recreation information.

Environmental Quality

- Permits and Registrations
- Environmental Cleanup
- Environmental Monitoring –
  - Waterbody Inventory/Priority Waterbodies List Factsheets
  - Aquatic Biological Monitoring
  - Lake Monitoring Reports
  - Harmful Algal Bloom Reports
- Public Involvement
- Environmentally Sensitive Areas
- Legal Information

DEC InfoLocator

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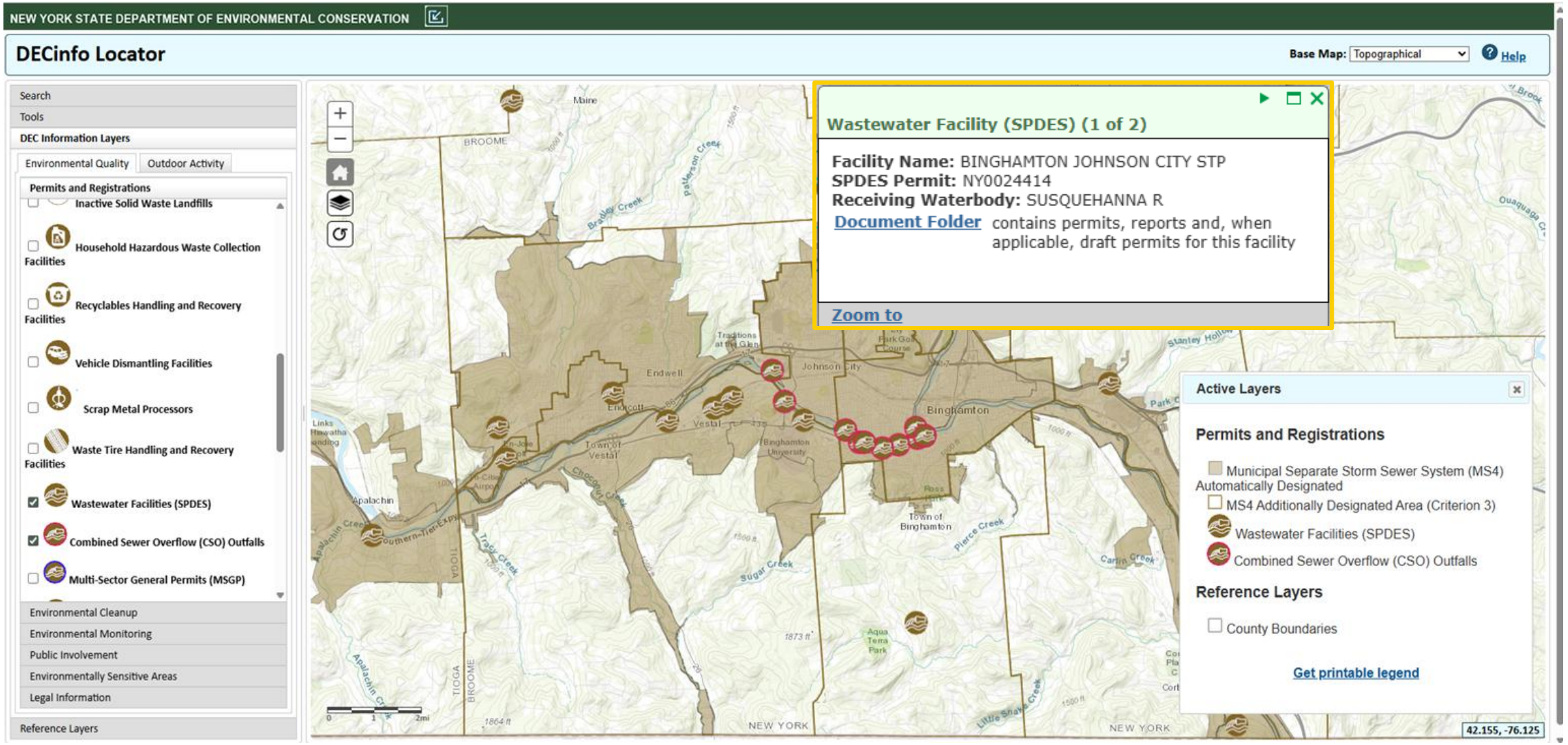

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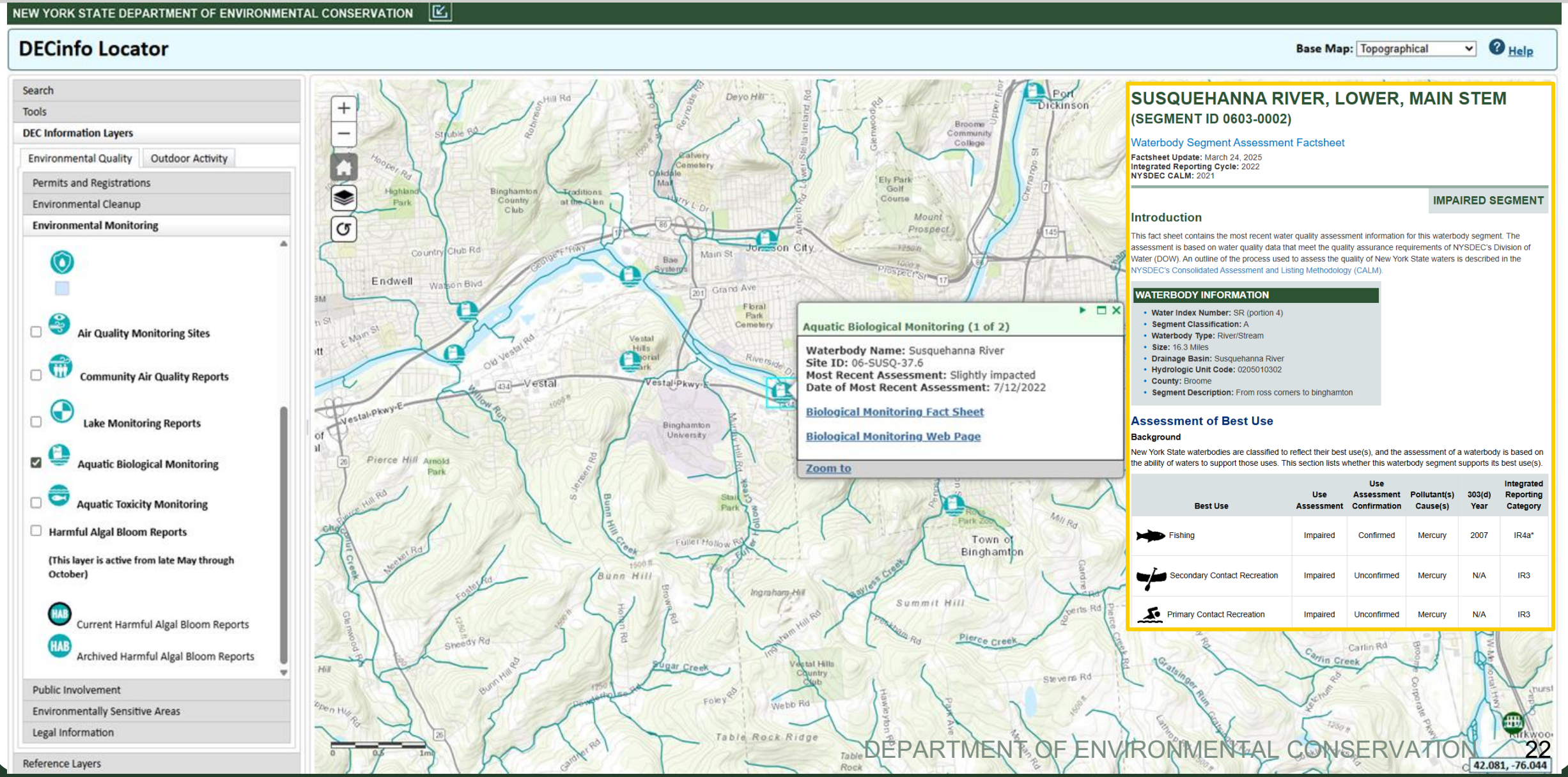
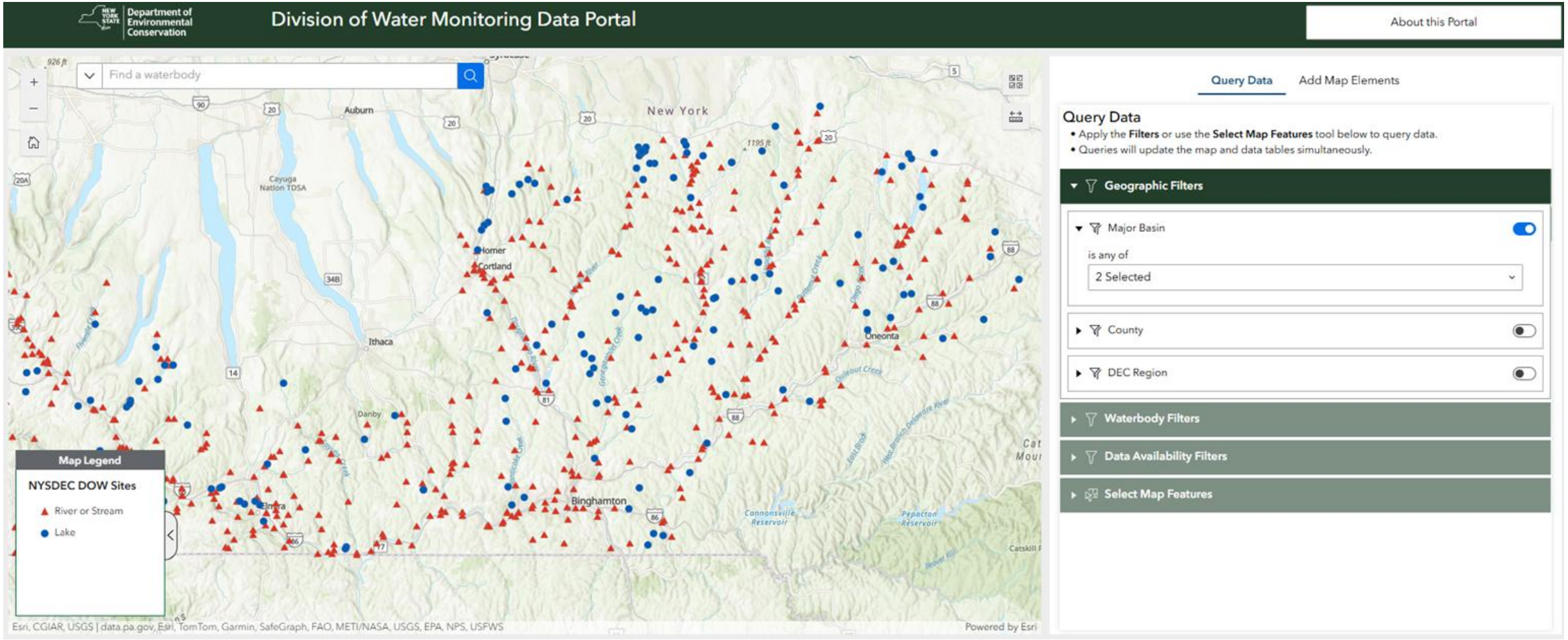


Division of Water Monitoring Data Portal

https://dec.ny.gov/environmental-protection/water/water-quality/monitoring/water-quality-data



Remaining Interactive Maps

https://dec.ny.gov/maps/interactive-maps

- NYSHABS Mapper
- Environmental Resource Mapper
- New York Nature Explorer
- Stormwater Interactive Map
- Division of Water Sampling Locations
- Division of Water Grants Data Portal
  - All Water Quality Grant Program and Nonpoint Source Planning Grant