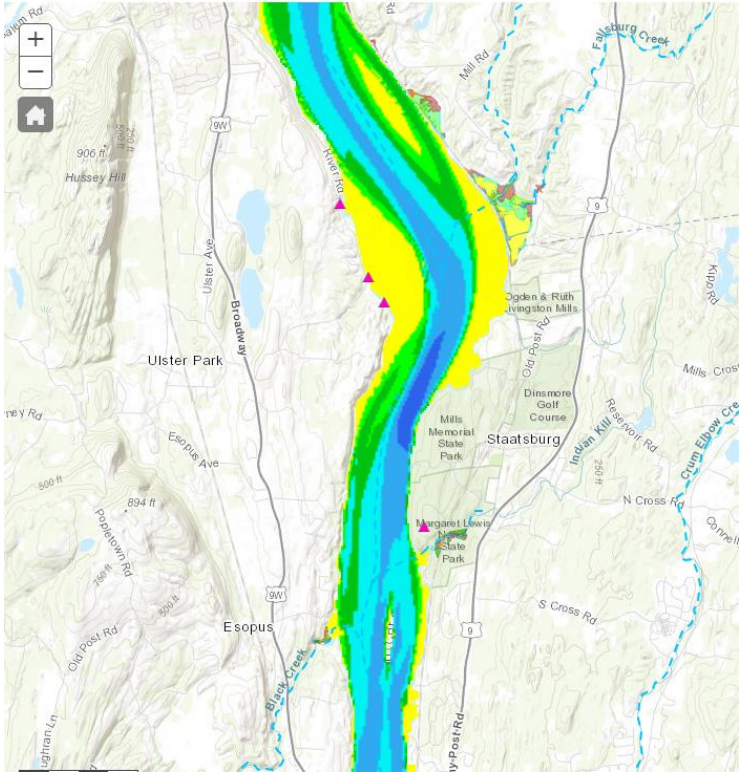
NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Introduction to the Hudson Valley Natural Resource Mapper



SENY Stormwater Conference
October 16, 2019

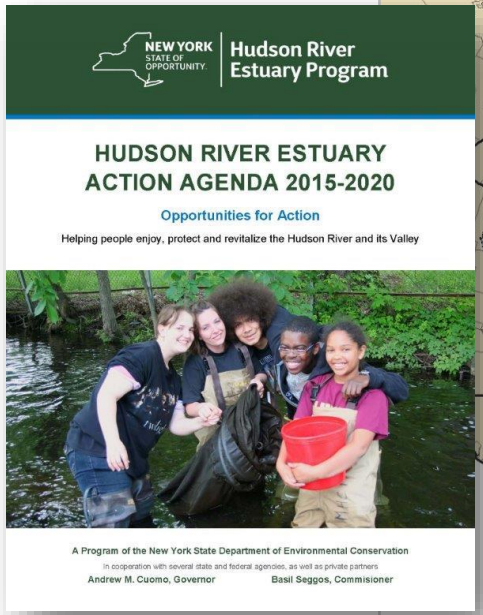
Ingrid Haeckel, *Conservation & Land Use Specialist*
DEC Hudson River Estuary Program & Cornell University

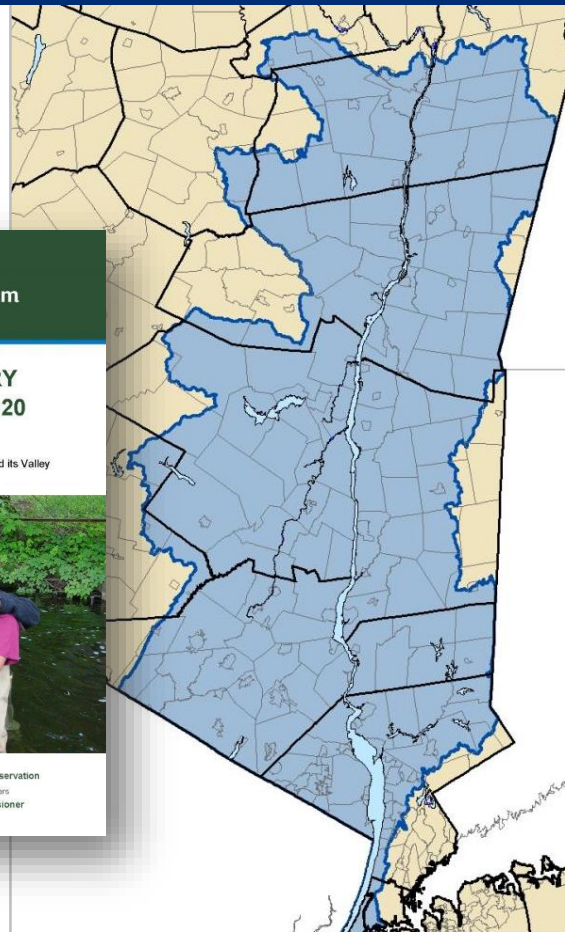
Cornell University

The Hudson River Estuary Program

Working to achieve key benefits:

- clean water
- resilient communities
- vital estuary ecosystem
- fish, wildlife, and habitat
- natural scenery
- education, access, recreation, and inspiration





The Hudson River Estuary Program

Grants and technical assistance to support:

- natural resource and open space planning
- watershed planning
- stream buffer restoration and barrier removal
- climate adaptation and resilience planning
- sustainable shoreline strategies

and more!

Photo by Laura Heady

Photo by Ingrid Haeckel

Conservation Planning Approach:

identify what you have → prioritize → plan, protect, manage

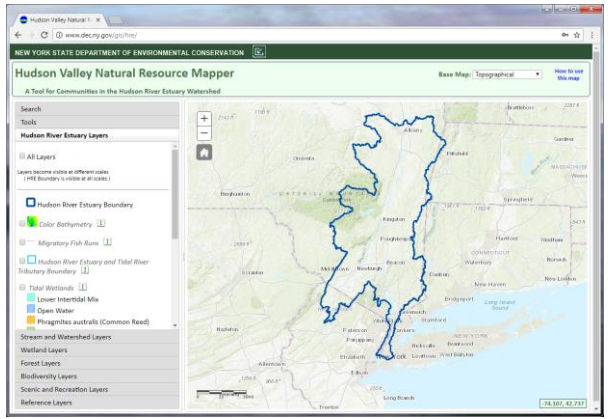
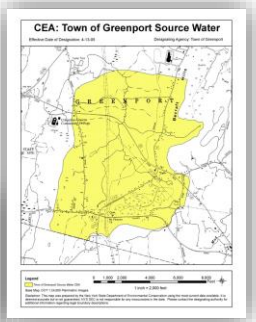


Photo by Laura Heady



Department of Environmental Conservation

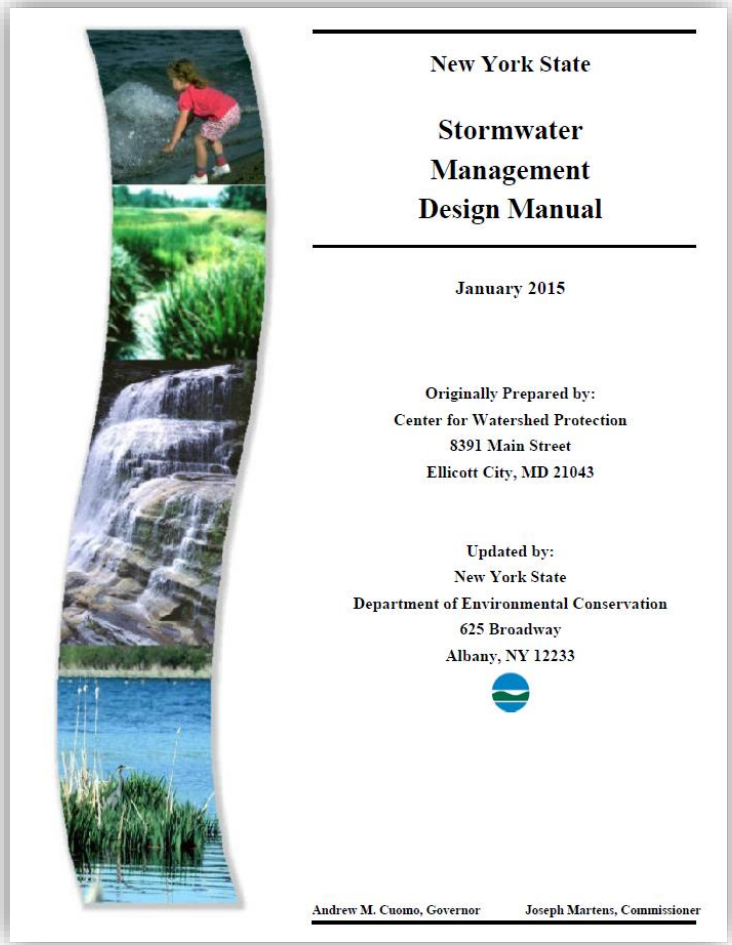
identify what you have

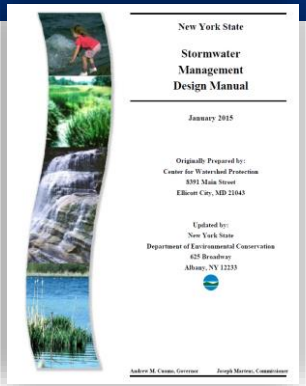
"increased emphasis on holistic approach"

"In the context of stormwater management, the term green infrastructure includes a wide array of practices at multiple scales"

"On a regional scale, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains and wetlands."

"On the local scale, green infrastructure consists of site- and neighborhood-specific practices and runoff reduction techniques."

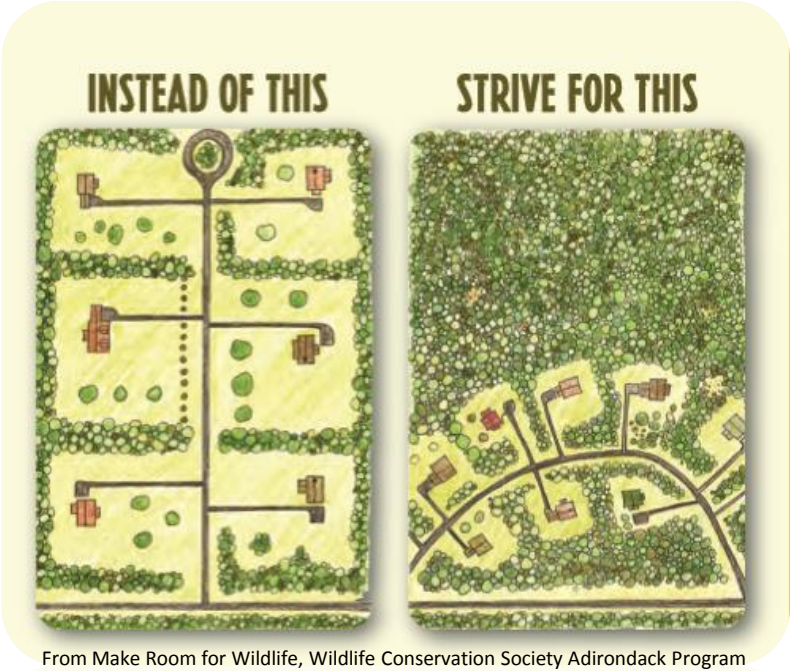




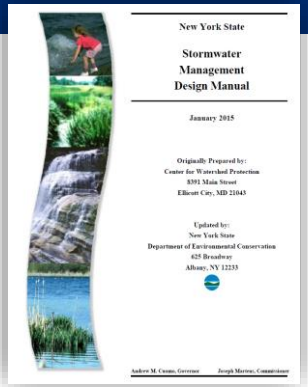
"The first step in planning for stormwater management using green infrastructure is to avoid or minimize land disturbance by preserving natural areas."

Planning practices include:

- preservation of undisturbed areas
- preservation of buffers
- reduction of clearing and grading
- locating development in less sensitive areas
- open space design
- soil restoration



From Make Room for Wildlife, Wildlife Conservation Society Adirondack Program



Many practices require *identifying what you have:*

Table 5.1 Planning Practices for Preservation of Natural Features and Conservation

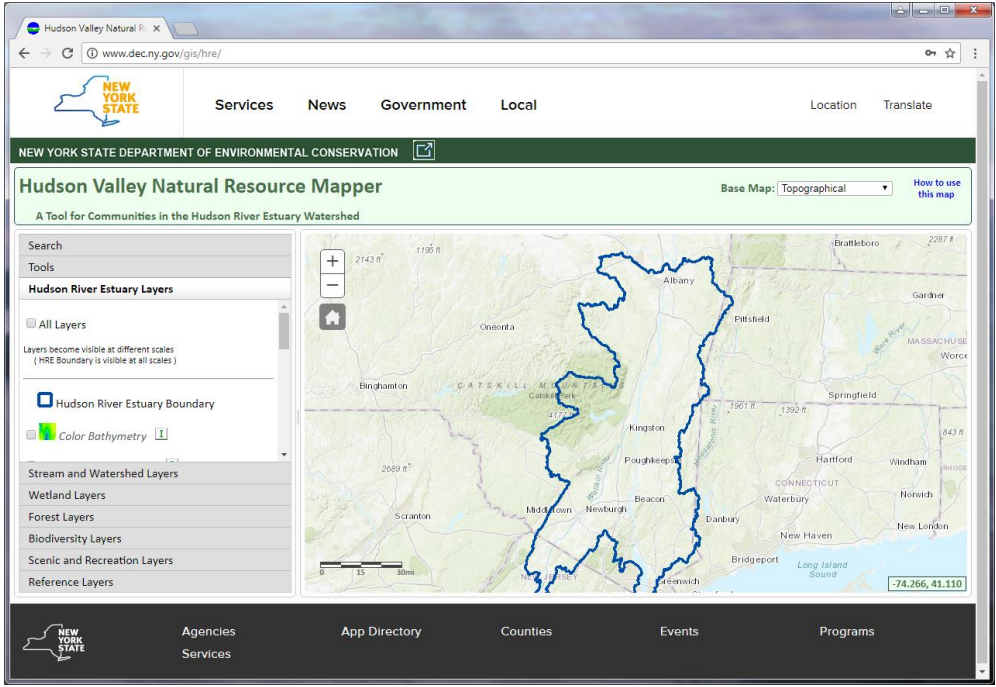
Practice	Description
Preservation of Undisturbed Areas	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.
Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.
Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.
Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.
Open Space Design***	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.
Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.

Hudson Valley Natural Resource Mapper

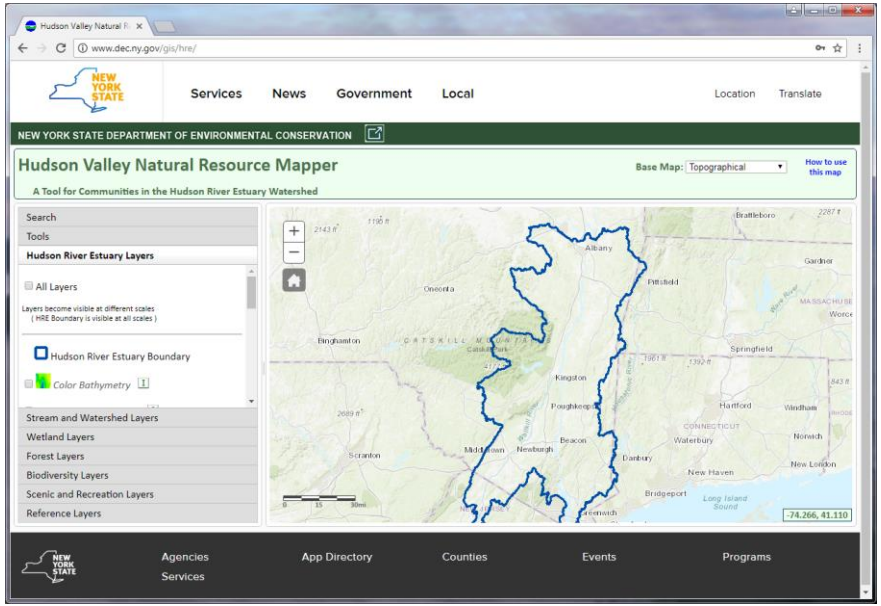
30+ geographic data sets:

- Estuary
- Streams and Watersheds
- Wetlands
- Forests
- Biodiversity
- Scenic and Recreation

www.dec.ny.gov/gis/hre



What about the Environmental Resource Mapper?



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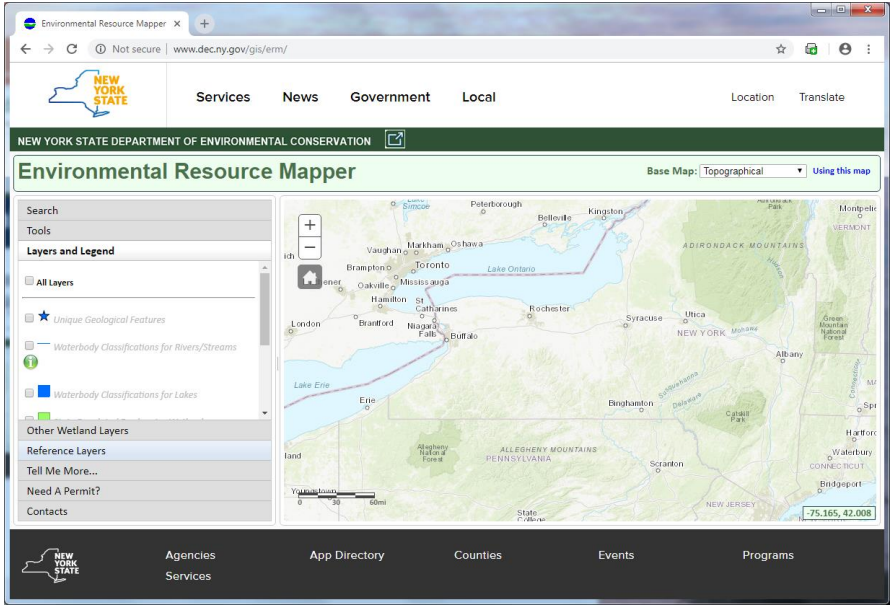

Regional coverage

Focus on planning

Statewide coverage

Do I need a permit?

Landing Page on DEC website

http://www.dec.ny.gov/lands/112137.html

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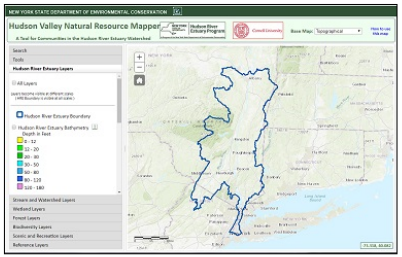
Hudson Valley Natural Resource Mapper

A Tool for Viewing Natural Features in the Hudson River Estuary Watershed

NEW: State Regulated Freshwater Wetlands and Wetland Checkzones are now available on the mapper under Wetlands.

Links to the July 18, 2018 introductory webinar and presentation slides are posted below.



The Hudson Valley Natural Resource Mapper is an online, interactive tool designed to help identify and understand important habitat and water resources, the connections between them, and their broader regional context. The mapper also highlights Hudson River recreation sites and other areas where residents an
natural beauty . By bringing together information about natural features such as s
as well as recreation amenities and existing protected lands, communities can be
and strategies that can be incorporated into local land-use planning. This process
generations continue to enjoy the numerous benefits provided by the Hudson Val

Launch Mapper

Enter the Hudson Valley Natural Resource Mapper

Hudson Valley Natural Resource Mapper Fact Sheet (PDF, 435 KB)

Introduction to the Hudson Valley Natural Resource Mapper Webinar Presentation

- July 18, 2018 webinar recording (link leaves DEC website) *Note: Use the WebEx Network Player Playback function to stream the webinar recording to your computer. It may take some time for the recording to open.*
- Webinar presentation slides (PDF, 6.4 MB)

Webinar

Mapper Contents

The Natural Resource Mapper contains over 30 geographic data sets organized under seven categories:

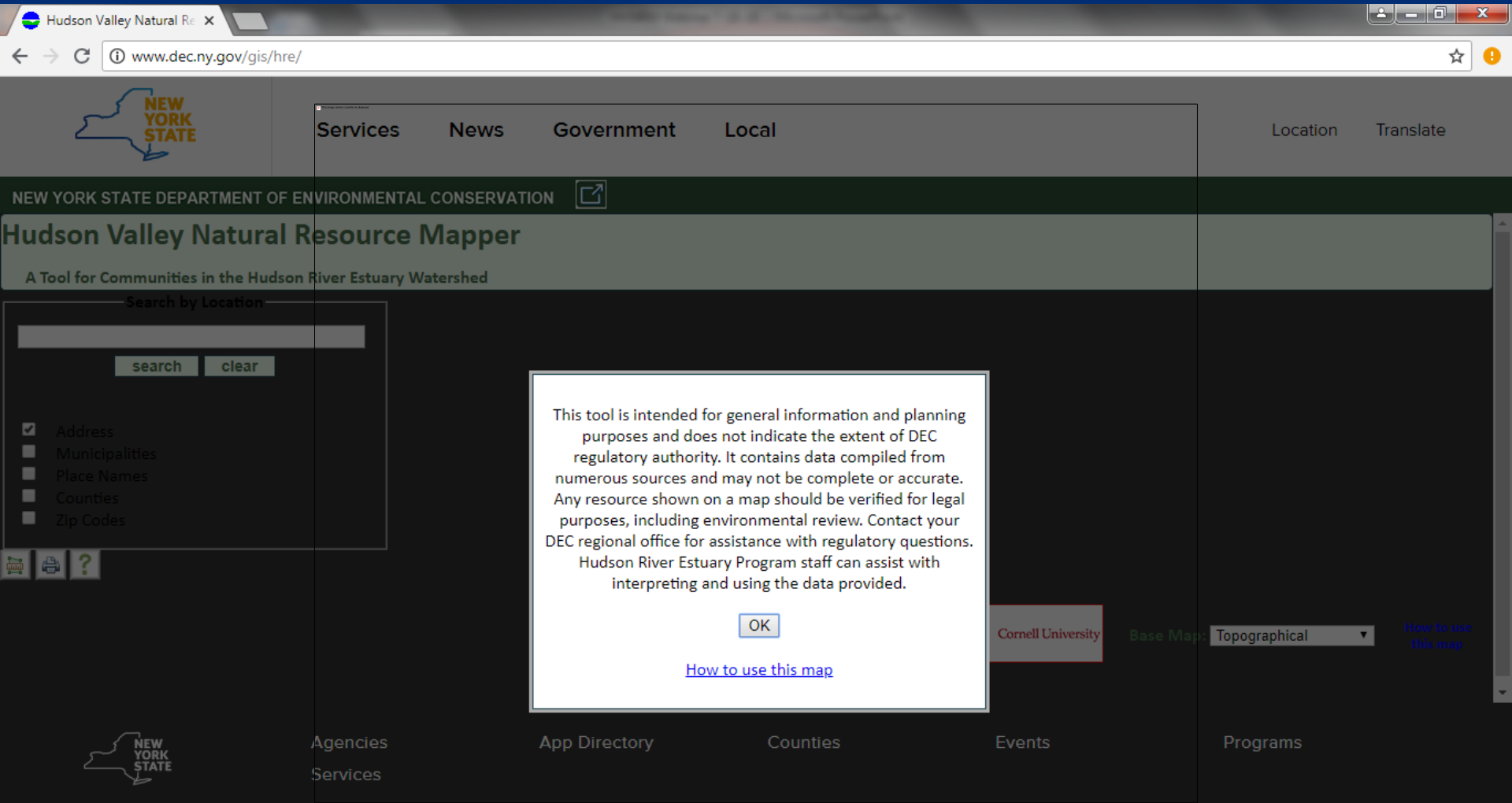
Important Links

- Conservation and Land Use Program for the Hudson River Estuary
- Clean Water for the Hudson River Estuary
- Access to the Hudson River Estuary

Contact for this Page

This Page Covers

Department of Environmental Conservation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Hudson Valley Natural Resource Mapper
A Tool for Communities in the Hudson River Estuary Watershed
Search by Location
search
clear
Address
Municipalities
Place Names
Counties
Zip Codes
This tool is intended for general information and planning purposes and does not indicate the extent of DEC regulatory authority. It contains data compiled from numerous sources and may not be complete or accurate. Any resource shown on a map should be verified for legal purposes, including environmental review. Contact your DEC regional office for assistance with regulatory questions. Hudson River Estuary Program staff can assist with interpreting and using the data provided.
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How to use this map
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Base Map:
Topographical
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Hudson Valley Natural Resource

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Hudson Valley Natural Resource Mapper

A Tool for Communities in the Hudson River Estuary Watershed

NEW YORK STATE OF OPPORTUNITY | Hudson River Estuary Program
A Program of the New York State Department of Environmental Conservation

Cornell University

Base Map: Topographical

How to use this map

Search

Tools

Hudson River Estuary Layers

All Layers

Layers become visible at different scales
(HRE Boundary is visible at all scales)

Hudson Valley Natural Resource

Not secure | www.dec.ny.gov/gis/hre/

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Hudson Valley Natural Resource Mapper

A Tool for Communities in the Hudson River Estuary Watershed

NEW YORK STATE OF OPPORTUNITY | Hudson River Estuary Program
A Program of the New York State Department of Environmental Conservation

Cornell University

Base Map: NYS Aerial

How to use this map

- Search
- Tools
- **Hudson River Estuary Layers**

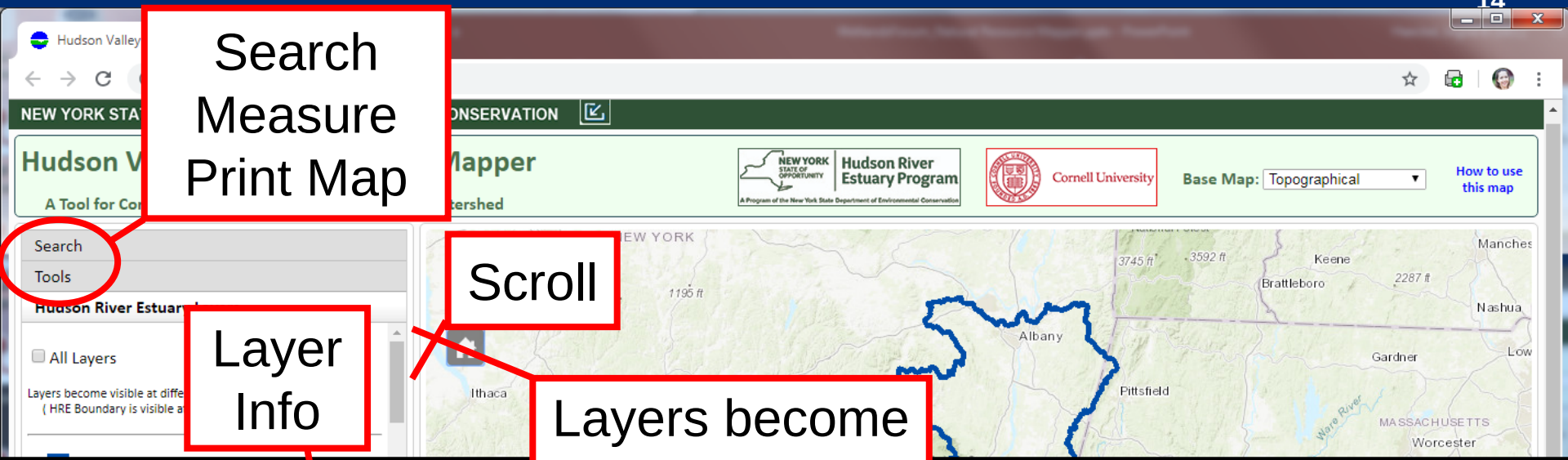
All Layers

Layers become visible at different scales
(HRE Boundary is visible at all scales)

Hudson River Estuary Boundary

Hudson River Estuary Bathymetry
Depth in Feet
- 0 - 12
- 12 - 20
- 20 - 30

- Stream and Watershed Layers
- Wetland Layers
- Forest Layers
- Biodiversity Layers
- Scenic and Recreation Layers
- Reference Layers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Ithaca
Pittsfield
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Brattleboro
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MASSACHUSETTS

Hudson Valley Natural Re | Information About the La

www.dec.ny.gov/gis/hre/layerInfo.html#cbi

Bathymetry – water bottom elevation

The elevation of the water bottom in the Hudson River Estuary constrains the use of … reach the estuary floor. The turbid nature of the water limits light penetration to a few meters. Animals that depend on … their life cycle. Vessel navigation is limited by water depth – deep draft vessels are confined to the navigation channel. … influenced by water depth.

Water depth is provided in feet below sea level. Tides in the estuary cause water dep… this Mapper is water depth relative to the North American Vertical Datum 1988 (NVD88). This is the same vertical referenc… the vertical datum used in NOAA navigational charts. Water depths shown on this Mapper will appear ~2.5 feet greate…

Publication Year: 2008

Publisher: Hudson River National Estuarine Research Reserve and NYS Department o…

For more information: NY Department of Environmental Conservation

Link to GIS Data Download: GIS.NY.GOV

Layer description
Publication year
Publisher
Links
GIS data download

Hudson River Estuary and Tidal Tributary Boundary

Approximate boundary of the Hudson River Estuary shoreline based on interpretation of 1995-1997 air photos.

Publication Year: 2002

Publisher: Hudson River National Estuarine Research Reserve and NYS Department of Environmental Conservation

Link to GIS Data Download: CUGIR

NYSDOS Significant Coastal Fish and Wildlife Habitat Areas

DEC has identified and evaluated coastal habitats throughout the state's coastal regions, providing recommendations to the New York State Department of State (NYSDOS) so that the most important or "significant" habitats may be designated for protection in accordance with the Waterfront Revitalization and Coastal Resources Act. The Significant Coastal Fish and Wildlife Habitats (SCWFWs) are useful for planning at the local level because they describe the highest quality habitats on the Hudson, outlining fish and wildlife values and activities that may have large impacts on the habitats. State and federal law requires that some projects may be reviewed for consistency with coastal policies on significant fish and wildlife habitat. Contact the NYSDOS Office of Planning &

Municipal Boundaries

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Tax Parcels

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Photo by Laura Heady

Watersheds

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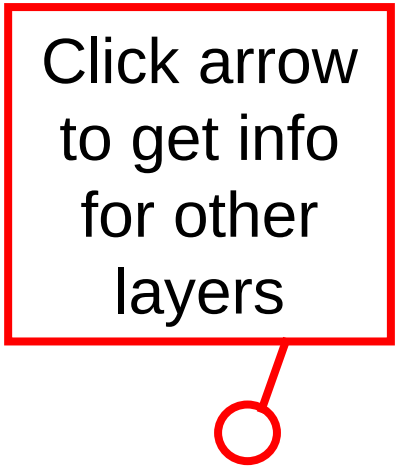
Querying Data Layers



Stream Classifications

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Priority Waterbody List

Esopus Creek, Middle, and minor tribs (1307-0003) MinorImpacts

Waterbody Location Information

Revised: 12/13/2007

Water Index No: H-171 (portion 2)
Hydro Unit Code: 02020006/210 **Str Class:** B(T)
Waterbody Type: River
Waterbody Size: 89.0 Miles
Seg Description: stream and select tribs, from Kingston to Ashokan Reser

Drain Basin: Lower Hudson River
Middle Hudson River
Reg/County: 3/Ulster Co. (56)
Quad Map: KINGSTON WEST (N-24-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Public Bathing	Stressed	Suspected
Aquatic Life	Stressed	Suspected
Recreation	Stressed	Suspected

Type of Pollutant(s)
Known: ALGAL/WEED GROWTH (aquatic vegetation), NUTRIENTS (phosphorus)
Suspected: Water Level/Flow
Possible: D.O./Oxygen Demand

Source(s) of Pollutant(s)
Known: AGRICULTURE, HYDRO MODIFICATION (Ashokan releases)
Suspected: Urban/Storm Runoff
Possible: - - -

Resolution/Management Information

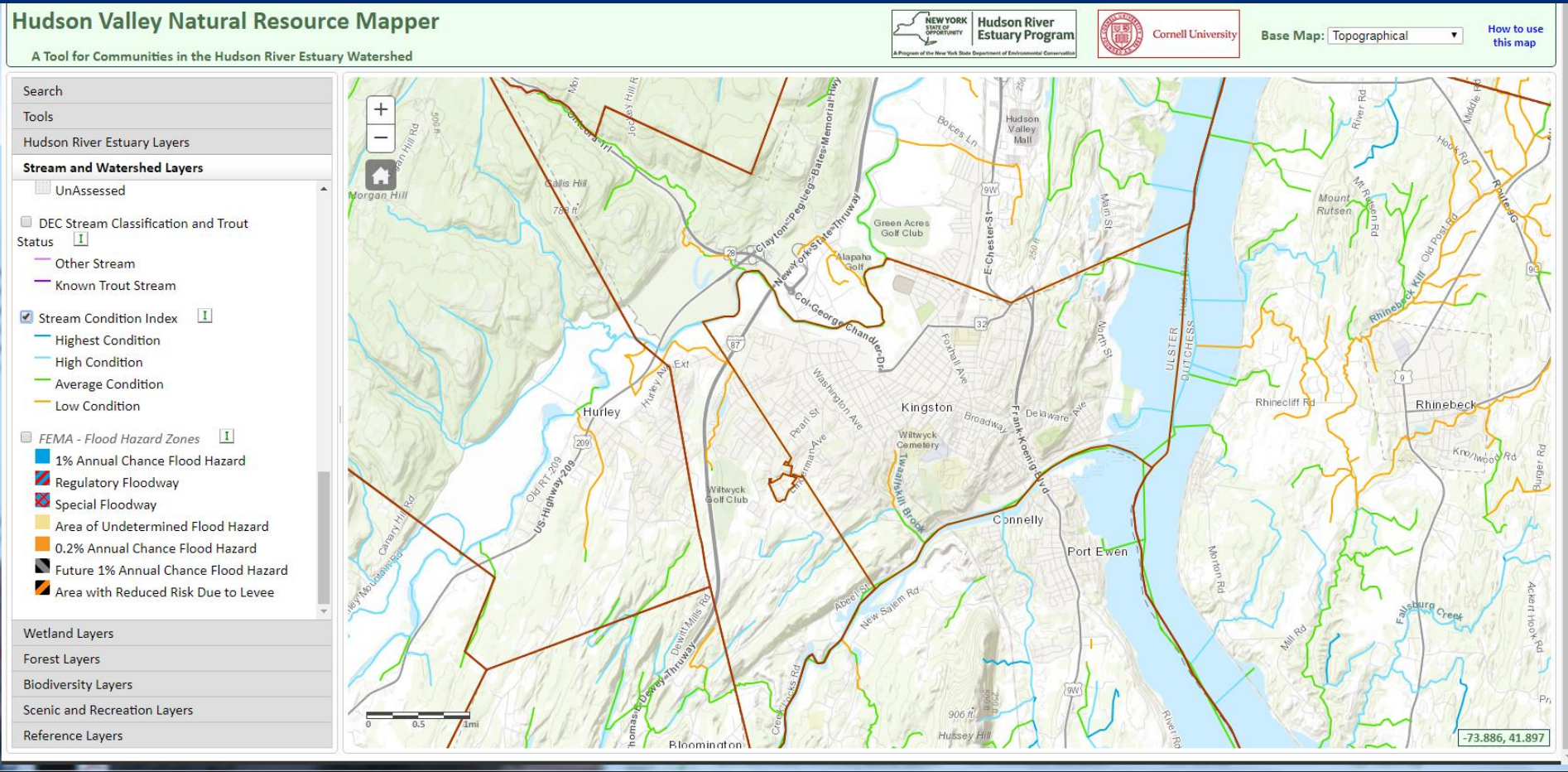
Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 4 (Source Identified, Strategy Needed)
Lead Agency/Office: DOW/Reg3
TMDL/303d Status: n/a
Resolution Potential: Medium

Further Details

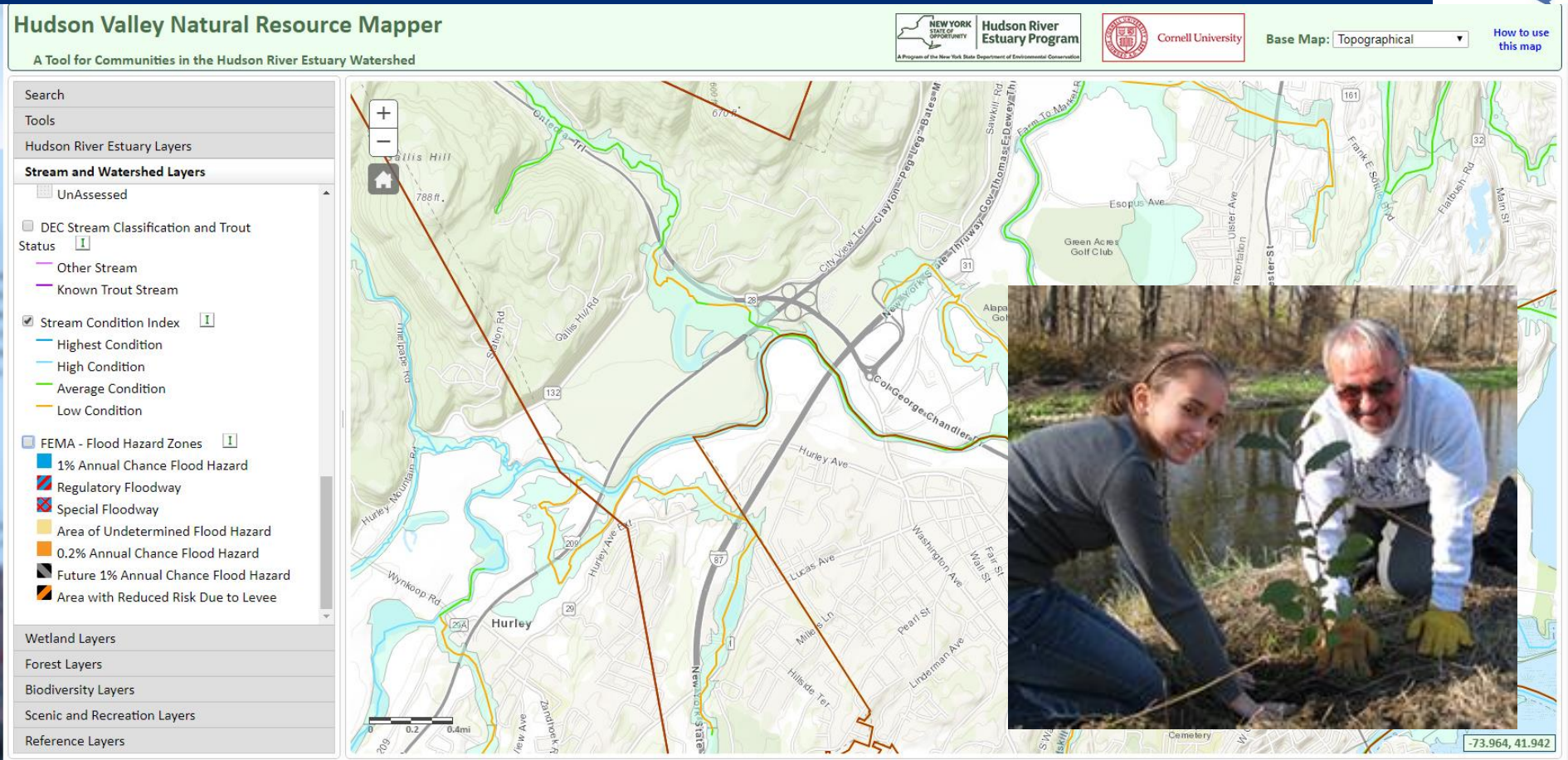
Overview
Public bathing, recreational uses and aquatic life support in this portion of Esopus Creek are thought to experience minor impacts due to nutrient enrichment from various nonpoint sources. These conditions result in heavy weed growth which impacts recreation throughout the reach. Limited water releases from Ashokan Reservoir, low gradient resulting in slow-moving waters and numerous ponded areas also contribute to water quality conditions in the stream.

Water Quality Sampling

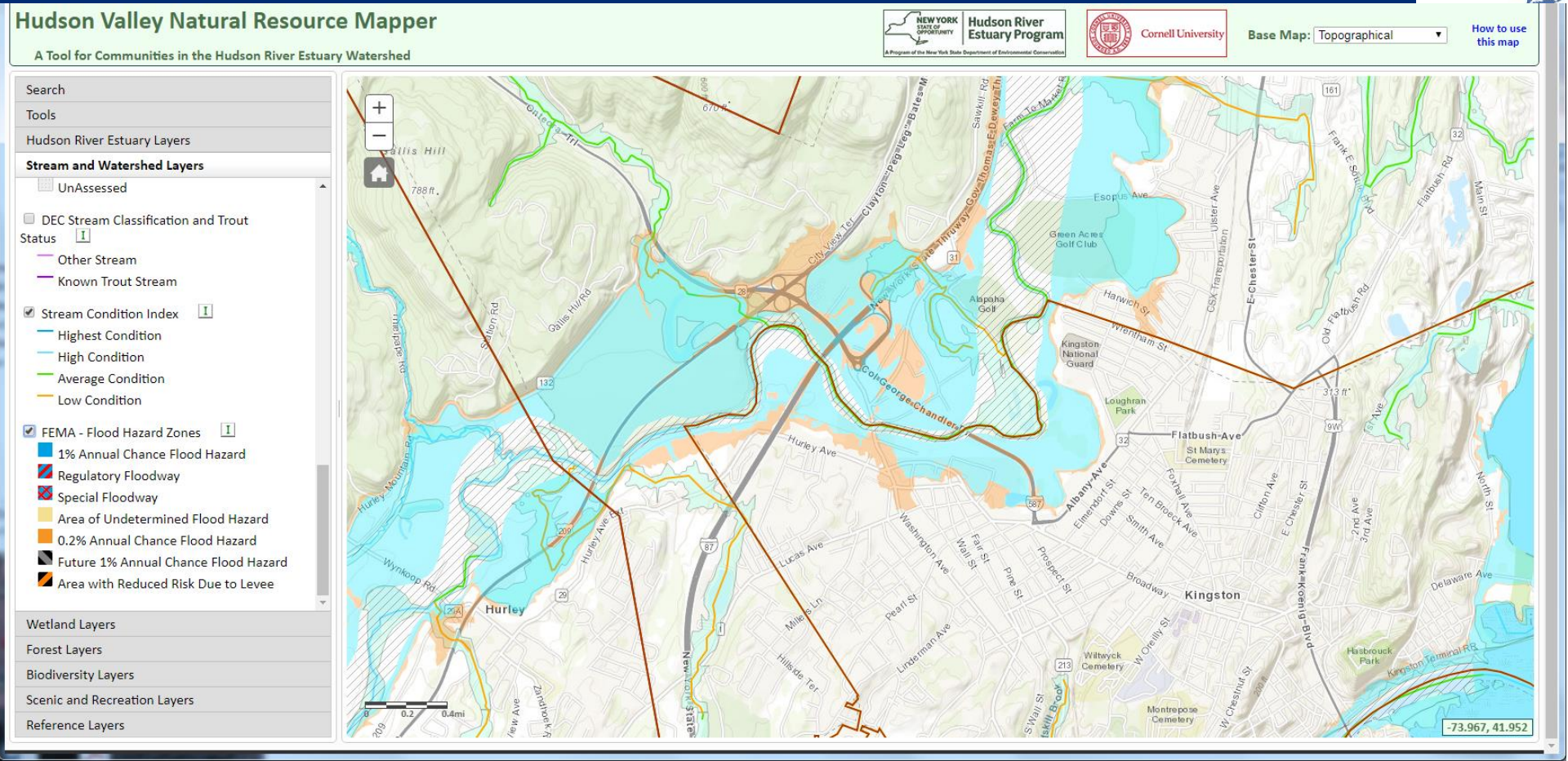
Stream Condition Index



Riparian Areas



FEMA Flood Hazard Areas

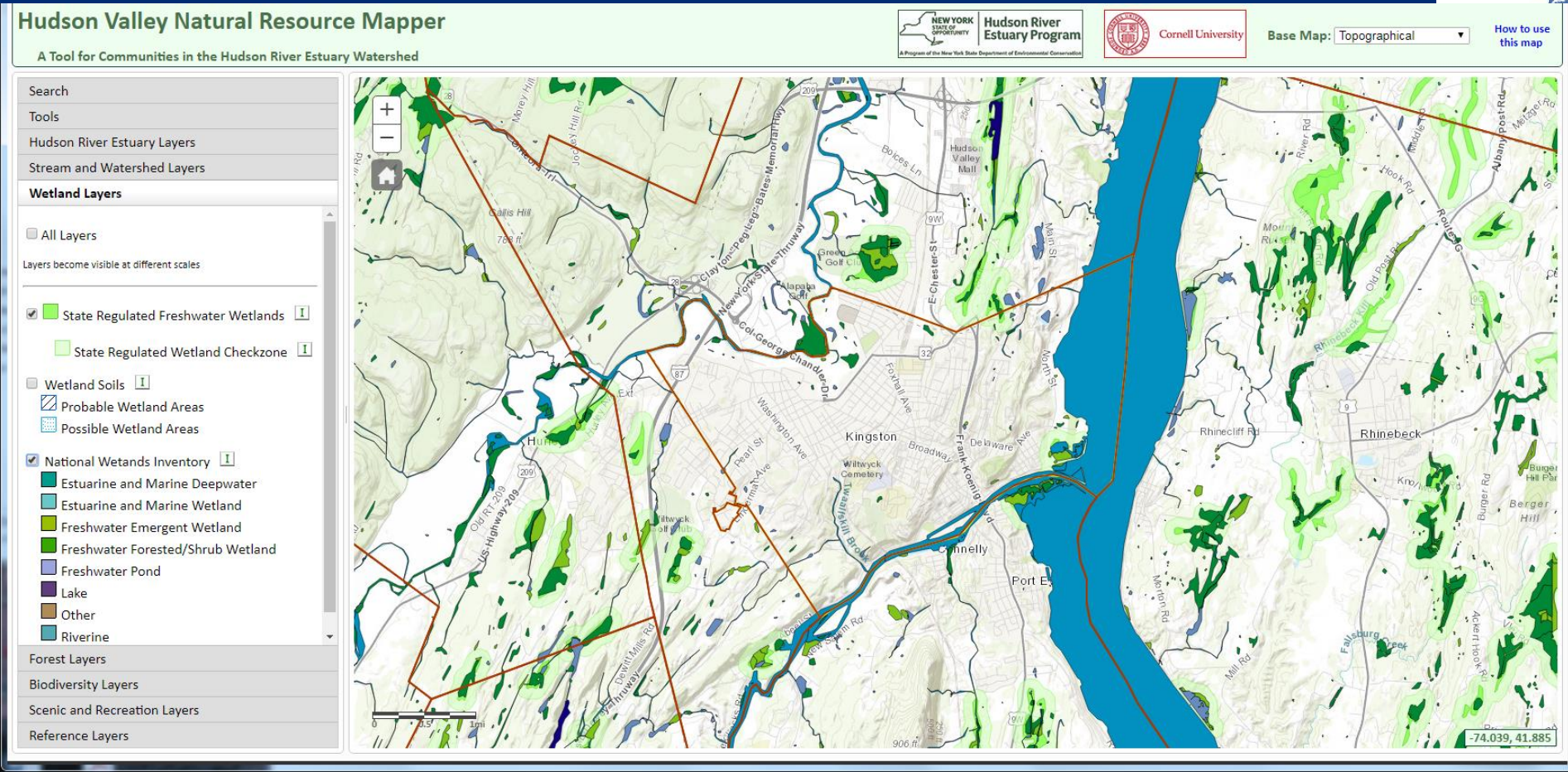


Assessed Road-Stream Crossings

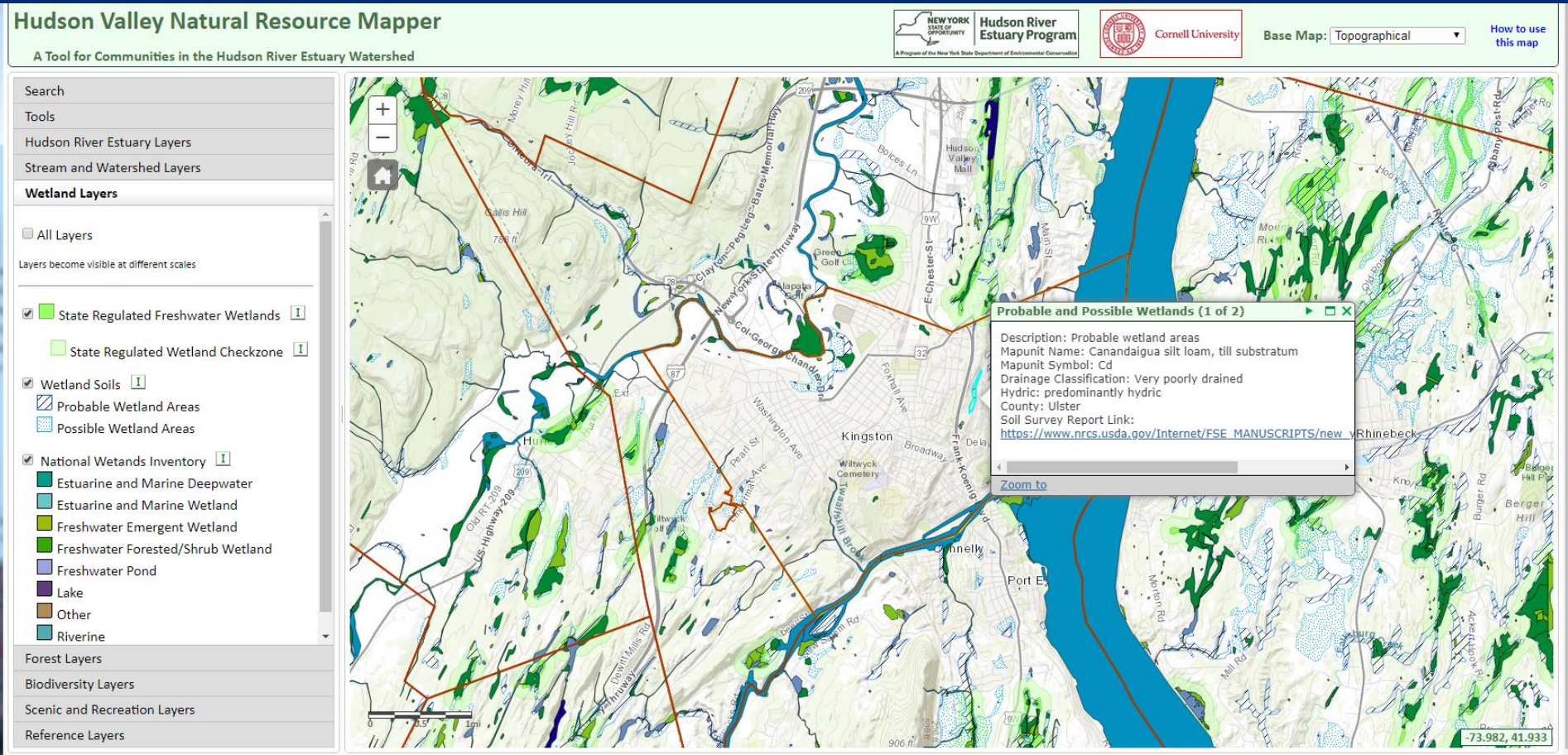
State Regulated Freshwater Wetlands

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

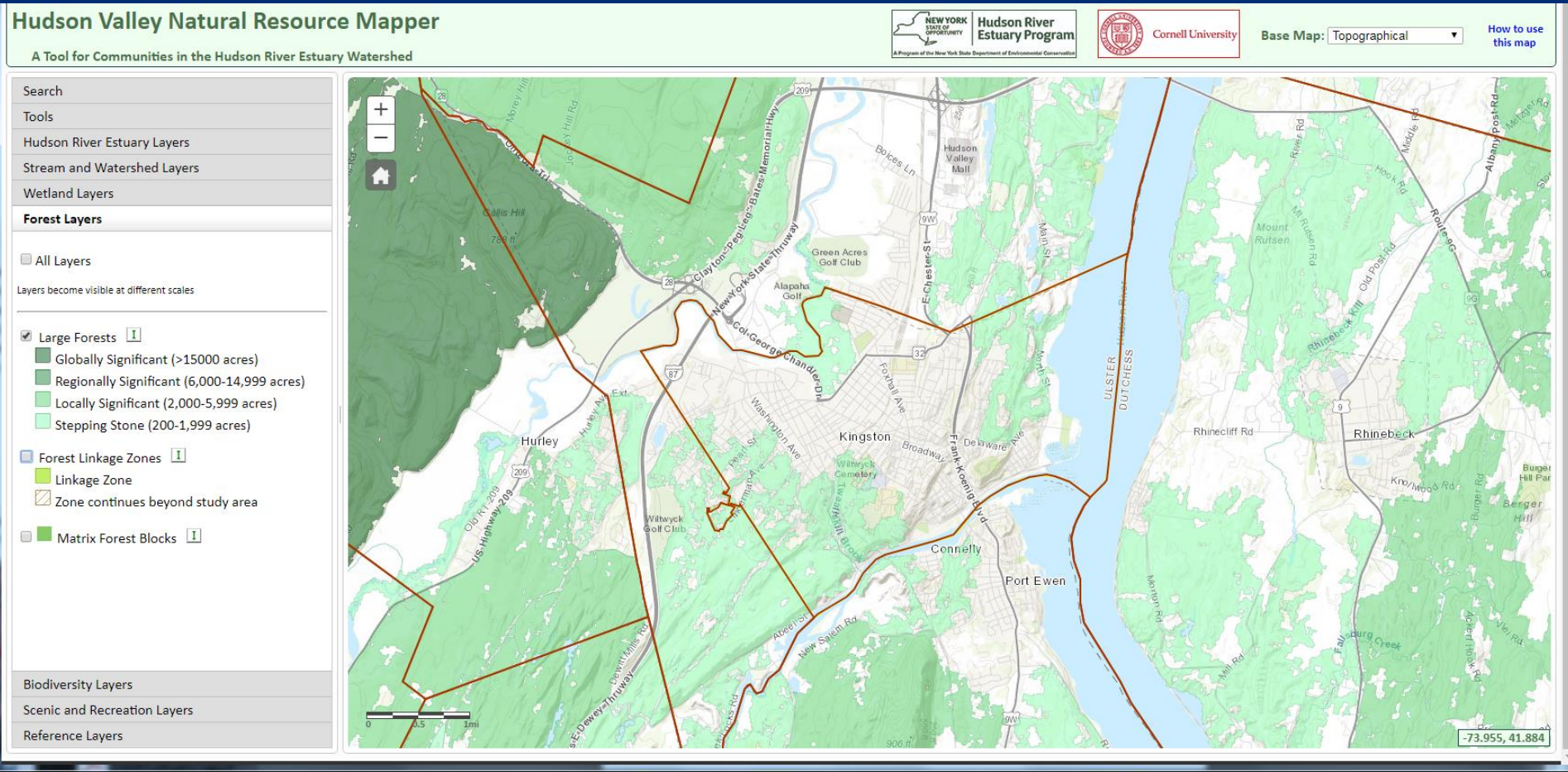
National Wetlands Inventory



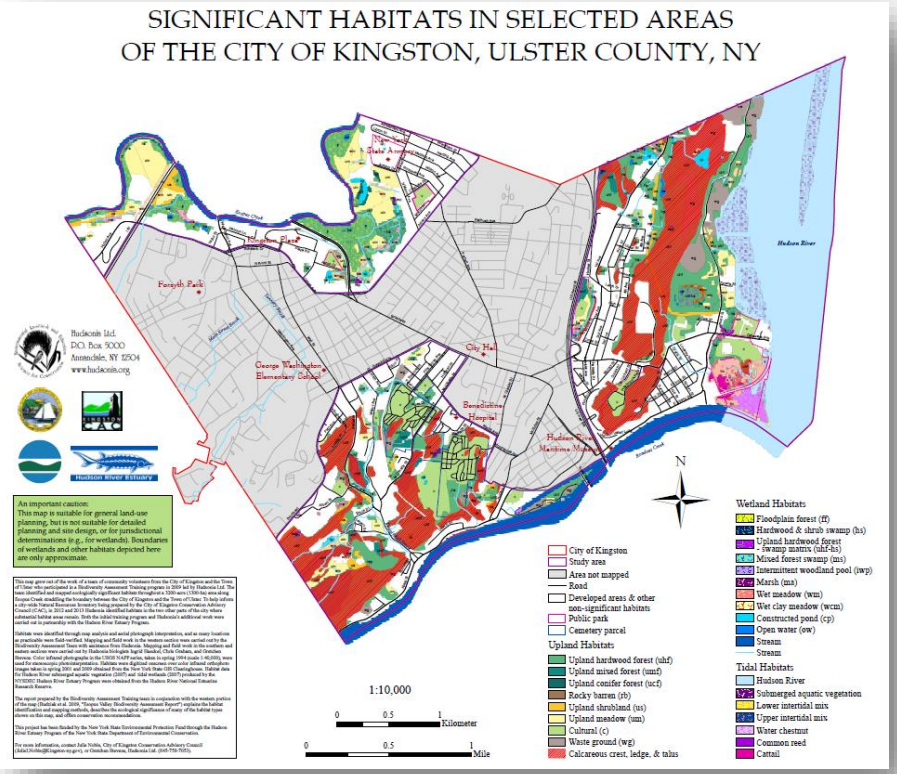
Wetland Soils



Large Forests



Local Inventories and Plans



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RECAP:

- What is the first step in green infrastructure planning?
  - preservation of natural areas
- What are examples of planning practices for preserving natural areas?
  - Preservation of undisturbed areas (e.g., large forest), riparian buffers, cluster/open space design

RECAP:

- What types of information can you obtain using the Hudson Valley Natural Resource Mapper to identify and prioritize natural areas in site design?
  - stream condition index, riparian buffer areas, floodplains, wetlands, wetland soils, large forests, important areas for biodiversity, etc.

Strategies for Stormwater Review:

- Stormwater planning needs to begin as early as possible.
- Consider use of pre-application meetings.
- Gather data about natural areas on/near site in advance and know which natural areas are most important to conserve.
- Develop a site resource assessment checklist that can be completed using online mappers + local inventories/ plans.
- Engage your conservation advisory council.

Planning Board Guide for Stormwater Review

Reviewing Stormwater Management in Site Design: A Guide for Planning Board Members

Version 2 - 2015

Lower Hudson Coalition of Conservation Districts

ABOUT THIS GUIDE

Planning board members have an important role in making sure new development projects manage stormwater well to avoid creating flooding or pollution on the site or elsewhere in the community. This guide will:

- Help planning board members understand their authority and responsibilities in reviewing the stormwater management aspects of site plan and subdivision applications
- Provide a quick reference guide to the 2015 Stormwater Design Manual to allow planning board members to access the parts that most apply to their work
- Suggest strategies for more efficient and predictable stormwater design review
- List recommendations for reviewing a SWPPP

Thank you! Questions?

Ingrid Haeckel
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Hudson River Estuary Program
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(845) 256-3829

Upcoming hands-on trainings:

Oct 30 – Goshen

Nov 12 – Ossining

Dec 5 – East Greenbush

Lunchtime webinars:

Oct 24 – Intro to Habitats

Nov 20 – Biodiversity Conservation

Cornell University

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