

Navigating Nature

Introducing Dutchess County's Natural Resources Inventory Website and Environmental Mapper

By: Devin Rigolino, Environmental Program Director

County residents recognize that the abundant environmental resources found in the Hudson Valley are what make Dutchess such a special place to live, work, and visit. Dutchess County boasts a diverse natural heritage that has played a pivotal role in fostering thriving communities and a high quality of life for its residents. Its varied habitats, fertile farmland, plentiful water resources, and picturesque landscapes are defining features that have drawn people to the region and nurtured a strong sense of belonging.

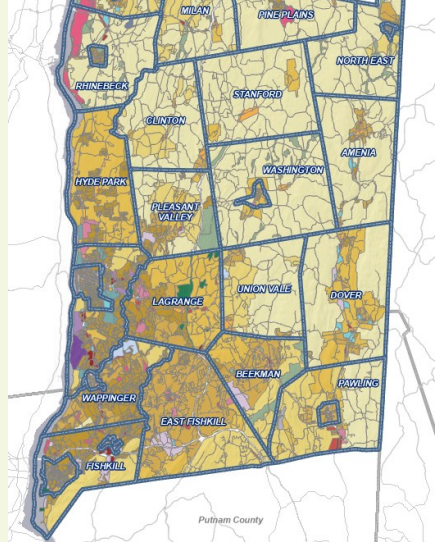
Local communities have the responsibility to go beyond just acknowledging the vital role natural resources play in shaping the area's unique charm and allure. They must also ensure that the decisions made today allow future generations to likewise revel in the richness of the Hudson Valley's environmental treasures. It is this recognition of a need to embrace and protect the region's ecological wealth that forms the backdrop for the Dutchess County Department of Planning and Development's latest endeavor. Through the unveiling of its new [Natural Resources Inventory \(NRI\) website](#) and [Environmental Mapper](#) application, the County has taken a bold step towards empowering its residents, municipalities, developers, and County personnel to further explore, understand, and safeguard invaluable environmental assets.

The updated NRI website represents a significant advancement from the County's previous NRI document, offering users new ways to explore local natural resources and environmental datasets. When used together, the NRI website paired with the Environmental Mapper, can enhance communities' comprehension and stewardship of the natural resources that enable Dutchess County to flourish.

Also New from County Planning: The Zoning App

In Fall 2023, the County released a brand new [Zoning application](#). The Zoning app collects all 30 of our municipalities' zoning maps in one place and makes them searchable, sortable and toggleable. You can zoom in and out, select parcels, and turn overlays on and off. The app includes a parcel zoning information print feature and links to Parcel Access, the municipality's zoning code, and the building/zoning department website. It is a simple application that elevates the local zoning map, making it easier to see what zones apply to what parcels.

The app also includes a "County-Wide Overview" feature that breaks the 373 unique zones into 22 categories based on allowed uses and densities. This feature is intended for use in comprehensive plans and other regional planning efforts.



The Zoning Application's County-Wide Overview feature



The Dutchess County Natural Resources Inventory Website Home Page

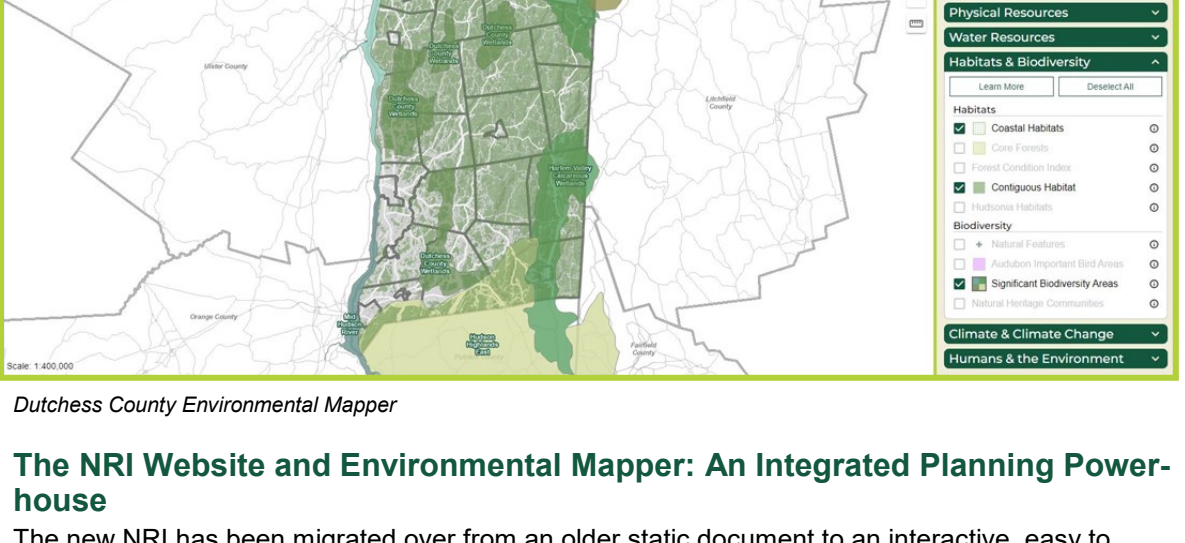
Understanding the Value of NRIs

Natural Resources Inventories (NRIs) serve as comprehensive repositories detailing the physical and biological attributes of an area, aiding in the creation and implementation of conservation strategies. With a focus on data and mapping, modern NRIs have begun incorporating online resource mappers to offer advanced visualization capabilities. The County's new Environmental Mapper exemplifies this technological approach, empowering users to identify conservation priorities and integrate them into local land-use planning initiatives.

Periodically updating and maintaining a natural resources inventory helps communities develop an understanding of where their natural and cultural resources are located, and which resources are significant to a community. The compilation of maps, data, and descriptions within an NRI provides the foundation for a wide range of planning and conservation applications. In particular, the inventory provides the building blocks for land-use and conservation planning and serves as a tool for natural resource information to be included in local planning and zoning.

This project has been made possible in part by a grant from the New York State Environmental Protection Fund through the [Hudson River Estuary Program](#) of the New York State Department of Environmental Conservation. The content for the NRI website was primarily based on prior County NRI iterations, with updates provided in partnership between the County Department of Planning & Development and [Cornell Cooperative Extension of Dutchess County](#). The County's Office of Central & Information Services provided development support for both the NRI website and Environmental Mapper application. Many volunteers also donated hundreds of hours assisting with content review, drafting, and data collection.

Thank you!



Dutchess County Environmental Mapper

The NRI Website and Environmental Mapper: An Integrated Planning Powerhouse

The new NRI has been migrated over from an older static document to an interactive, easy to maintain website. The NRI's original PDF maps, previously snapshots in time, have evolved into a new interactive mapping application that can be accessed on its own, but is also heavily referenced and linked in many places throughout the NRI website. While both products can stand alone, they have been designed to be most helpful when used in tandem.

The NRI website is intended to be used as an advisory tool for officials involved with land use and natural resource planning to make more informed decisions. Elected and appointed officials, including planning and zoning boards, Conservation Advisory Councils or Boards, and the County Environmental Management Council, are encouraged to refer to the NRI as they consider the value of natural resources in their communities. Residents can also reference the NRI to become more informed property owners, and local educators can use the document to create locally relevant lesson plans for environmental curricula.

While the pages of the NRI site help to contextualize and emphasize the value of natural resources, the Environmental Mapper application lets users see where natural resources are located.

A Succinct Site Summary

The NRI website is designed to ensure that users can quickly find what they are looking for without needing to read the site in its entirety. In employing this approach, the website was sectioned into 7 main pages, each focusing on a particular theme or series of related topics:

Home: The [Home](#) page of the website is meant to orient first-time visitors. After reviewing its contents, users should have a solid understanding of what NRIs are, why they are important, and how best to utilize them in projects and plans.

County Overview: The [County Overview](#) page is meant to clarify the geographical limits of the inventory and contextualize Dutchess' location within the greater region and State. Information pertaining to population centers and County demographics is included here, as well as a brief history of settlement and development within the County.

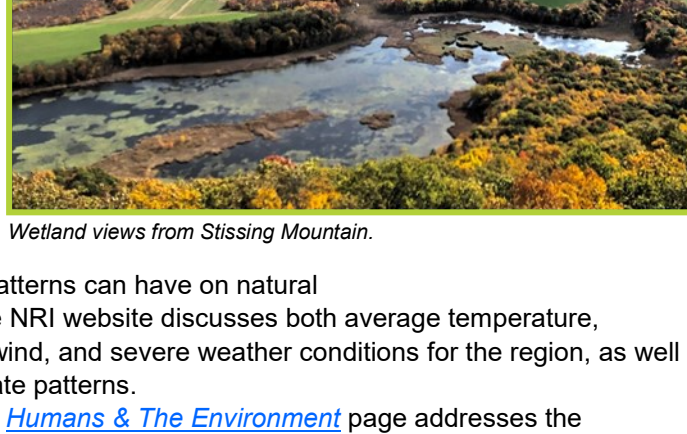
Physical Resources: Topics pertaining to geology & geologic history, topography & elevation, soils, and mineral resources can all be found under the [Physical Resources](#) page. Understanding geologic materials and processes is essential to sound resource management because geology affects the quality and quantity of groundwater resources, the migration of pollutants, soil characteristics, and drainage patterns.

Water Resources: Water is a vital resource as drinking water and an essential component of habitat suitability for a wide array of aquatic organisms. In addition to these direct uses, the movement of water throughout the atmosphere, surface streams, and lakes & aquifers carries both necessary materials (such as dissolved oxygen and nutrients) and harmful materials (such as pollutants). Topics such as groundwater & aquifers, watersheds, streams & waterbodies, floodplains, wetlands, and water quality can all be found under the [Water Resources](#) page.

Habitats & Biodiversity: Dutchess County contains a rich diversity of habitats, and biodiversity plays a crucial role in the benefits these [Habitats & Biodiversity](#). In visiting the [Habitats & Biodiversity](#) page, users will gain an understanding of the benefits of biodiversity, the benefits of habitat conservation, and of the specific habitats most common throughout Dutchess: wetlands & coastal habitats, grasslands & shrublands, and forests.

Climate: A natural resources inventory is incomplete without addressing local climate characteristics, and importantly, the impacts that changing climate patterns can have on natural resources. The [Climate](#) page on the NRI website discusses both average temperature, precipitation, barometric pressure, wind, and severe weather conditions for the region, as well as projected changes to those climate patterns.

Humans & The Environment: The [Humans & The Environment](#) page addresses the interconnection between people and place. What do land cover, agriculture, protected lands, public health, and recreational, historic, and scenic resources have in common? They all pertain to how humans interact with, alter, and rely on the environment.

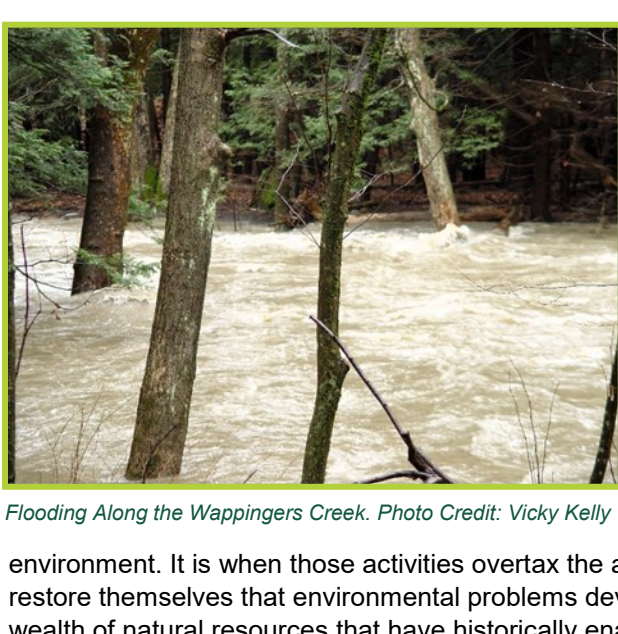


Wetland views from Stissing Mountain.

Dynamic Data Deserves Modern Mapping

The new [Environmental Mapper](#) is the latest addition to Dutchess County's robust catalog of GIS (geographical information systems) [mapping applications](#). The mapper is meant to be a dynamic resource that is updated as new data layers become available, including certain localized datasets created for municipal inventories. Designed to communicate directly with original data sources, as well as other popular applications, such as [Parcel Access](#), this mapping application offers users a one stop site to access more than 50 different relevant datasets – with more data still to come!

The mapper was designed to be easily maintained, with live links back to original data sources, meaning as data are updated, so is the mapper. The contents pane of the mapper is broken into data categories that match the NRI webpages, ensuring an intuitive approach to finding data layers of interest. As opposed to the older NRI PDF maps that were snapshots in time, this new application can be easily updated as additional datasets are made available, further growing the County's GIS products, it is important to keep in mind that data provided via this tool are for planning and educational purposes only and are not a substitute for site-specific studies and surveys.



Flooding Along the Wappingers Creek. Photo Credit: Vicky Kelly

The Risks and Consequences of Resource Mismanagement

The County's new Natural Resources Inventory website and Environmental Mapper together present a comprehensive catalog of all the major natural elements of the County's ecosystems, documenting many facts and details, but the true beauty is in the bigger picture.

Fundamentally, all human activities affect the environment. It is when those activities overtax the ability of natural resources to replenish and restore themselves that environmental problems develop. Dutchess County is endowed with a wealth of natural resources that have historically enabled the County to prosper. The risks and consequences of damaging these resources through abuse and mismanagement grows when development pressures remain unchecked without sound land use policies, plans, and regulations in place that respect environmental limits. The County NRI and Environmental Mapper are instruments to be used to better understand and respect those environmental limits. These tools can be used for decision-making at the community level by considering the following actions:

- Develop a set of goals and strategies for the conservation of significant natural features, landscapes, and habitats;
- Assess existing and proposed land use conditions, including priority growth areas for future development and priority greenspaces;
- Use the NRI as a baseline of information to assess the environmental impacts of proposed activities;
- Use the NRI and local natural resource data to identify critical areas for protection, such as wetlands, floodplains, or prime aquifer recharge areas;
- Identify threats to natural resources and plan for conservation and mitigation;
- Develop and update comprehensive plans that incorporate the concepts and information provided in the NRI; and
- Consider whether local natural resource conservation policies, such as planning and zoning board procedures, zoning laws, and other regulations, need to be revised and/or adopted.

Future development is critical to the success and prosperity of our local communities, but a healthy environment is a necessary condition for continued growth. Balancing the needs of economic progress with environmental preservation requires meticulous planning and strategic utilization of available resources. Through leveraging tools like the Dutchess NRI website and Environmental Mapper, local communities can ensure that the County's rich natural heritage will remain present and thriving for generations still to come.

More Information

- [Cornell Cooperative Extension Dutchess County](#)
- [Dutchess County NRI Website](#)
- [Dutchess County Environmental Mapper](#)
- [Hudson Valley Estuary Program](#)

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This newsletter was developed by the Dutchess County Department of Planning and Development, in conjunction with the Dutchess County Planning Federation.

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