New York Natural Heritage Program

Strategic Plan 2023-2028

ESF State University of New York
College of Environmental Science and Forestry

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Cover Photo: Northern Barrens Tiger Beetle (Cicindela patruela)

Introduction

The New York Natural Heritage Program (NYNHP) collects information on the locations, populations, and habitats of native plants and animals in New York. Our work focuses on rare and declining species and ecosystems - those species in greatest need of protection – and we use our expertise in field surveys, ecological systems, and species identification to find and document rare species locations statewide as part of government-funded or private-funded projects. In addition to conducting our own surveys, we also gather, confirm, and process data collected from a wide variety of sources, including state, federal, and local government agencies; conservation organizations working across New York State; private citizens who have expertise in plants or animals; researchers at both public and private colleges and universities, and specimen records housed in museums both inside and outside New York. In the process of researching and documenting locations, we also gather extensive data on the quality and condition of the ecosystems (natural communities) that support them, including information on the invasives species present and their impacts.

Our program shares data with both state and federal agencies and other conservation partners both within and outside New York. We also use our expertise in scientific analysis and information management to create new data and tools that can used by government agencies and landowners to protect or restore native species in their natural habitats. Please see the Appendix for more on program establishment and operations.

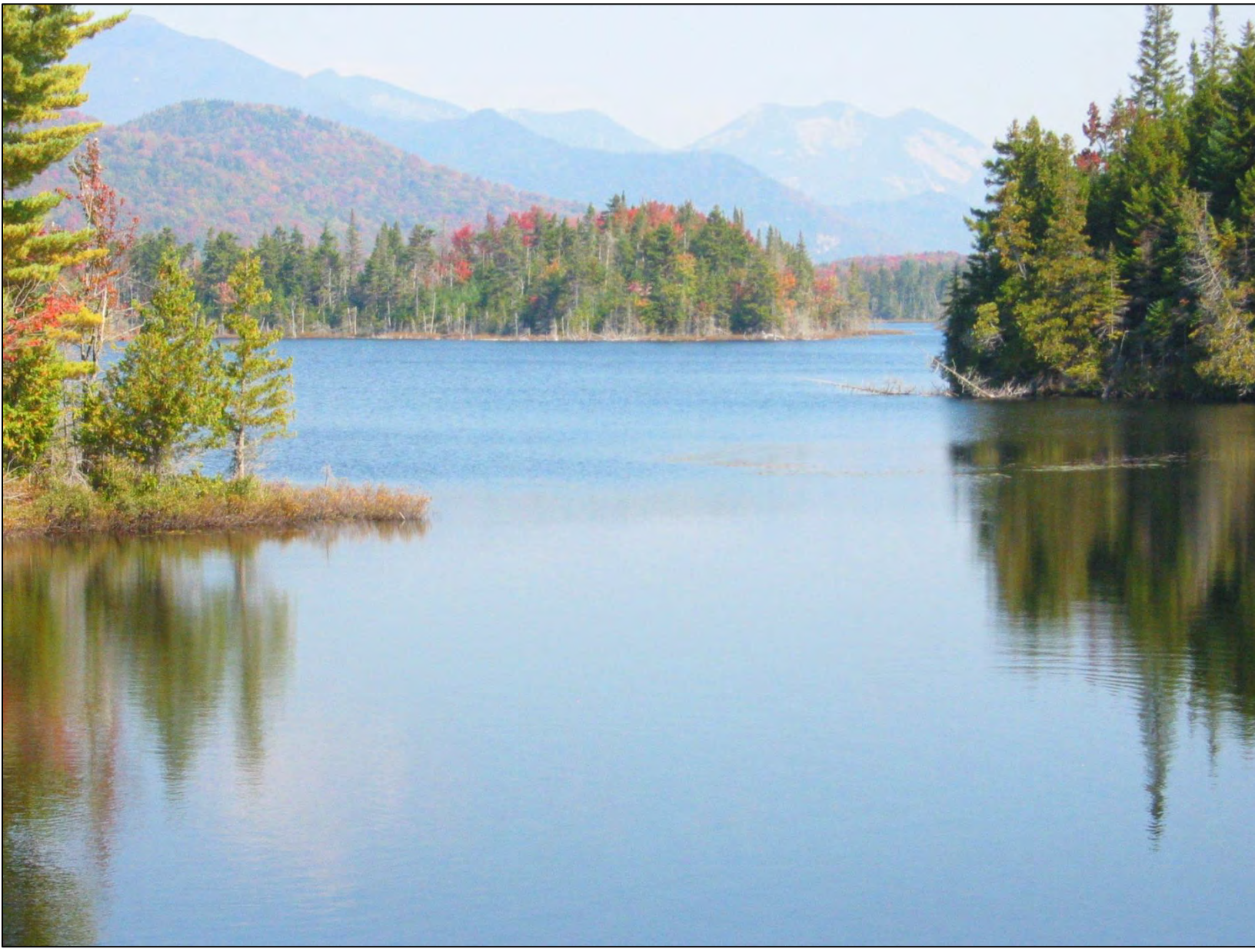
As a program designated by state law to collect and compile information on the state's most imperiled species and habitats, our data is enormously important to ensuring the protection of New York's diverse landscapes and natural environments. We provide partners and data users across the state a consistent, standardized set of locations of rare species and habitats to help them prioritize where to work. We also turn our data into products that help partners view and apply our data to their work in the context of important environmental issues climate change, carbon storage, energy development and more. The information we compile and provide to organizations across New York is used for many purposes, including environmental review, conservation planning, and land management.

This strategic plan will help direct our activities and accomplishments for the next five years. It was developed through a series of internal staff meetings, more than 20 interviews with key partners, and a NYNHP data user survey that received 275 responses. The plan identifies four major goals of the program and several strategies that will build on our existing strengths, promote innovation, and organize our program to achieve our goals and those of our partners.

Mission and Vision

NYNHP's **mission** is to collect, analyze and share scientific information that can be used to preserve native species and ecosystems.

NYNHP's **vision** is that New York's natural heritage is preserved because conservation efforts are informed by the best available science and expertise on native species, ecosystems, and invasive species, and tools provided to decision-makers help them plan for and implement strategies that will protect our environment for future generations.



Goal 1: Discover and document New York's biodiversity

To support sound conservation that will preserve the range of New York's diverse natural world, we need to know the location, size, and condition of each element of biodiversity. However, our understanding of the distribution of species and ecosystems is incomplete. With our partners, we will conduct field surveys and collect data from a wide range of sources to maintain the most comprehensive dataset of locations of New York's rare native species, selected common native species, invasive non-native species, and ecosystems. We will build and maintain databases to store and manage these data so that the most complete information is available to our partners and the conservation community.

Objective 1.1

Maintain and manage the most comprehensive databases of New York's biodiversity and invasive species.

Strategy 1: Using NatureServe methodology and Biotics, maintain and manage element occurrence (EO) data on rare species and significant ecosystems.

Strategy 2: Maintain and enhance a database to store and manage Heritage field observations.

Strategy 3: Maintain and enhance iMapInvasives and the Watercraft Inspection Steward Program App (WISPA) to store and manage data on invasive species.

Strategy 4: Build and maintain internal databases to manage other data and support our funded projects.

Ram's head lady's slipper (Cypripedium arietinum), Essex County, NY.

Dragon's mouth orchid (Arethusa Bulbosa), Oswego County, NY.

Objective 1.2:

Conduct biological field inventories across New York for a wide taxonomic range of species and for significant ecosystems at regular intervals with the most effective methods.

Strategy 1: Conduct inventories for rare species and ecosystems on lands in all areas of New York State and in all types of ownership. Increase inventories in areas and ownership types that are underrepresented in the NYNHP databases, such as land trust holdings and private lands.

Strategy 2: In collaboration with experts, conduct comprehensive inventories on select taxonomic and functional groups, and to fill gaps in knowledge about understudied taxonomic groups and ecosystem types, such as mosses and fungi.

Strategy 3: Ensure that Heritage data are current. Revisit sites at intervals sufficient to ensure that our data reflect the current distribution of rare species and ecosystems, and to assist in documenting trends and in detecting responses to drivers of ecosystem change, including climate change and invasive species.

Strategy 4: Employ technological and methodological advances to collect data more accurately and efficiently, and to collect types of data not previously possible to obtain.

Strategy 5: Use results of predictive models to help identify and prioritize inventory sites**.** Conduct field inventories at areas predicted to be biologically rich areas or to have higher probabilities of discovering new locations of rare species.

Leedy's roseroot (Rhodiola integrifolia ssp. leedyi) on cliff face, with invasive knotweed (Reynoutria spp.) at the base of the cliff.

Objective 1.3:

Compile and verify data from partners, the conservation community and the public on rare species, significant ecosystems, invasive species, and selected taxa.

Strategy 1: Acquire and enter data from New York State Department of Environmental Conservation (NYS DEC), New York State Office of Parks, Recreation, and Historic Preservation (NYS OPRHP), New York's Partnerships in Regional Invasives Species Management (PRISM) network, and other conservation partners.

Strategy 2: Develop web-based and mobile tools for streamlined submission of observations of rare species and invasive species**.**

Strategy 3: In collaboration with NatureServe and other Heritage programs, develop methods for mining and importing data from iNaturalist and other community science platforms.

Strategy 4: Develop projects and tools, and conduct outreach, to enable community scientists to participate in collecting and documenting New York's biodiversity.

Strategy 5: Coordinate all-species surveys for given taxa, such as the NY Breeding Bird Atlas.

Timber rattlesnake (Crotalus horridus)

Goal 2: Assess and analyze the status, distribution, and trends of New York's species and ecosystems

Locations and field observations are just the beginning. To better understand New York's rare species, ecosystems, and invasive species, we will analyze location and other data to better understand distribution and abundance, assess the status of imperiled species and ecosystems, to identify threats and management actions, and to determine the factors driving their distribution and status. With the results, we can predict new locations, inform conservation issues, and guide our partners in their planning and decision-making.
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Objective 2.1

Assess the current status of New York's rare species, ecosystems, and invasive species.

Strategy 1: Update State Conservation Ranks at regular intervals.

Strategy 2: Assign State Conservation Ranks to new taxonomic groups.

Strategy 3: Update Invasive Species Tiers at regular intervals in consultation with state partners.

Objective 2.2:

Understand the factors determining status and distribution of biodiversity at local and regional scales.

Strategy 1: Analyze changes in distribution and abundance over time.

Strategy 2: Determine and analyze threats to New York's rare species and ecosystems, including from invasive species.

Strategy 3: Analyze and model the responses of rare species, ecosystems, and invasive species to climate change. Identify those that are resilient or those that may serve as indicators of ecosystem change.

Objective 2.3

Model the suitable habitat and potential distribution of New York's rare species.

Strategy 1: Model the suitable habitat of terrestrial, aquatic, and marine species. and model the distribution of these habitats in New York.

Strategy 2: Model habitat connectivity.

Strategy 3: Support NatureServe's collaborative effort to construct regional and range-wide species distribution models.

Field trip with Northeast Natural Heritage Program botanists and ecologists to Riverside Ice Meadows on the Upper Hudson River, Warren County, NY.

Goal 3: Provide data, tools, and expertise in ways that will most effectively inform and contribute to conserving our natural environment

To effectively inform and support conservation of New York's biodiversity, the data we collect and develop must be readily available in products and tools that can be applied to planning, conservation, management, and other decision-making. We will meet the information needs of the conservation community by delivering data in formats that are easy to access and use, by creating interpreted information that adds value to the underlying data, and by developing tools that maximize the utility of the information. We will reach out to state and federal agencies, local governments, indigenous communities, private landowners, land trusts, and other land managers and ensure that they are aware of our products and are trained in their use.

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Objective 3.1.

Deliver locations and information on the status of rare plants, rare animals, and significant ecosystems, and associated data, frequently and in accessible formats.

Strategy 1: Develop more automated and accessible ways of delivering sensitive precise location data frequently to NYSDEC, NYS OPRHP, and other state agencies for project screening and environmental review.

Strategy 2: Develop more accessible ways of delivering sensitive precise location data, along with management and conservation guidance, to authorized partners for use in conservation planning.

Strategy 3: Develop more accessible and efficient ways of conducting project screening and of delivering non-sensitive location data that is relevant and applicable for environmental review to project applicants, consultants, planning boards, and the public.

Objective 3.2.

Develop informative and comprehensive web-based maps, and applications for delivering information on rare species, ecosystems, invasive species, and protected lands.

Strategy 1: Develop and enhance the Natural Heritage Conservation Guides website with new and updated Guides, as well as additional features and functionality.

Strategy 2: Develop informative and comprehensive web-based tools for delivering non-sensitive information on the status and locations of rare species and significant ecosystems.

Strategy 3: Develop informative and comprehensive web-based tools for delivering information on the status and locations of invasive species.

Strategy 4: Develop web-based tools for delivering results and findings of atlas projects for specific taxonomic groups.

Strategy 5: Grow and deliver comprehensive dataset on New York's protected lands (NYPAD).

Objective 3.3:

Create interpreted data and develop the tools for users to access, understand, and apply the data.

Strategy 1: Develop tools that enable users to assess condition of biodiversity resources, such as wetland conditions and old growth forest.

Strategy 2: Develop tools that assist users to identify and prioritize areas and habitats for conservation, based on ecological values, current biodiversity, and/or threats to biodiversity including invasive species.

Objective 3.4:

Establish a relationship with New York's indigenous communities wherein NYNHP and tribal partners exchange knowledge, data, and expertise.

Strategy 1: Partner with SUNY-ESF's Center for Native Peoples and the Environment (CNPE) in establishing relationships with these communities.

Strategy 2: Provide location data on culturally significant plants to CNPE and tribal partners.

Objective 3.5:

Facilitate use of biodiversity data by increasing awareness of our products and by offering training, expertise, and guidance in using them.

Strategy 1: Develop training materials and resources, and present to data recipients, including in state agencies.

Strategy 2: Reach out to a wider range of conservation practitioners, land managers, and decision-makers in agencies, municipalities, and land trusts to increase awareness of Heritage data products.

Strategy 3: Increase general awareness of the New York Natural Heritage Program through our website, publications, social media, and other means.

Chief Ecologist Greg Edinger surveying an Inland Atlantic White Cedar Swamp, Orange County, NY.

Goal 4: Respect, support, and inspire our staff and our partners so together we can maximize our effectiveness and impact

We will foster a healthy work environment where both staff and our partners of all backgrounds feel welcome, valued, and included. We will attract and retain high-quality staff, will promote and reward creative thinking and outstanding work, and will provide staff the training and equipment they need to succeed.

Objective 4.1:

Maintain the highest levels of integrity with our partners, working collaboratively to meet their needs while maintaining transparency and scientific objectivity.

Strategy 1: Maintain regular and effective communication with our partners.

Strategy 2: Be responsive to requests from partners to consult with us and to apply our expertise to their conservation issues.

Strategy 3: Solicit feedback from partners on the usefulness, accessibility, and impact of our information, products, and tools.

Strategy 4: Manage agreements and funds awarded by and to agencies and partners responsibly, following grant policies and best fiscal practices, and respond to questions and requests in a timely manner.

Dragonhunter (Hagenius brevistylus) at Cod Pond, Hamilton County, NY.

Objective 4.2.

Support the personal and professional welfare of our staff.

Strategy 1: Encourage and facilitate staff in maintaining a healthy work/life balance, including flexibility in work schedules and remote work options.

Strategy 2: Provide staff with training opportunities for developing new technical skills and for developing expertise in new taxonomic groups.

Strategy 3: Provide opportunities and time for staff to engage in activities separate from project-specific work, including writing research papers and articles for publication and attending meetings and conferences that support their professional development.

Strategy 4: Support and recognize innovation, longevity, and outstanding work.

Strategy 5: Promote cross-program collaboration and internal communication.

Strategy 6: Provide opportunities for team building and morale-building, including in non-work settings.

Objective 4.3.

Promote and value diversity in our staff, treat staff fairly, and ensure all staff feel included and welcome.

Strategy 1: Reach out and include communities not traditionally represented in conservation careers in our recruitment and hiring.

Strategy 2: Recognize and accommodate differences in cultural, social, economic, and ethnic backgrounds when hiring, interviewing, training, providing supplies and resources, and supervising.

Objective 4.4.

Build the capacity of the organization in a sustainable way, ensuring we have sufficient resources, space, and administrative support to accomplish our work.

Strategy 1: Employ the number of staff necessary for successfully completing funded projects.

Strategy 2: Ensure we have administrative support appropriate for the number of staff.

Strategy 3: Ensure we have the IT, technical, and programming support appropriate for the number of staff and their projects.

Strategy 4: Provide staff with the equipment, resources, and time needed to successfully accomplish their work.

Strategy 5: Explore options for work locations of staff.

Objective 4.5.

Help develop the next generation of conservation professionals.

Strategy 1: Offer internships, seasonal positions, other opportunities for professional development, and career guidance to students and recent graduates.

Strategy 2: In collaboration with faculty from SUNY-ESF and other schools, interact with students through serving on graduate committees, presenting to classes, and providing field training.

Zoologist Erin White conducting Dragonfly and Damselfly surveys in an Adirondack wetland.

Implementation: Strategy Screening Questions

This plan is intended to be both aspirational and a framework for decision-making. Because we cannot anticipate all the needs of our partners, our work isn't necessarily limited to what is written in the plan. Instead, NYNHP's strategic plan is a guiding document that we will use throughout the year, including an annual review to address progress and adapt as needed. We will use this annual review process to evaluate our work each year and develop annual work plans to achieve the strategic goals.

Prioritizing activities can be difficult when there are so many things NYNHP can do that will make a positive difference. We will use the following **strategy screening questions** to prioritize activities when decisions need to be made about which programs to implement or opportunities to pursue:

1. How will it move us towards our vision, implement our mission, and achieve our short-term and/or longer-term goals?
2. Is this the right opportunity for NYNHP or might it be a better fit for one of our partners?
3. If we take this opportunity, is there anything we will not be able to do given current capacity? Or will we be able to expand our capacity to take on this project/activity?
4. What are the ramifications of not doing the project/activity?
5. What will success look like for this opportunity? How will we know that the results will make progress toward our goals and vision?

Answering these questions can help the plan be a useful navigational chart that helps guide our direction, rather than dictating it.

Implementation: Staying Connected with the Plan and Reporting on Progress

A plan is only as useful as it is used. The most effective way to keep the plan relevant over time is to integrate it into our regular operations. Therefore, we will:

1. Use the goals as a framework for communicating among staff, with our partners and the conservation community.
   - At staff meetings, when we report on activities or projects we will tie these back to relevant goals or strategies.
   - We will use the strategic plan goals as a framework to report our outcomes to our community each year by asking the following questions:
     - What did we do to **document NY's biodiversity**?
     - What did we do to **analyze data to understand the patterns we observe and make the data more useful for our partners**?
     - What did we do to **share high quality information about NY's biodiversity and help partners use the data**?
     - What did we do to **maintain a culture of collaboration, learning, and adaptation among staff *and* partners?**

2. Use staff meetings for periodic strategic plan updates.
   - Maintain a list of ongoing projects and activities by goal
   - Review how new projects and activities fit into our strategic plan every year (January - February).

3. Staff will review and update the strategies and identify activities to work on each year in an annual work plan (January-February).

Appendix

New York Natural Heritage Program Establishment and Operations

The New York Natural Heritage Program (NYNHP) was created in 1985 to identify the location and status of New York's plants, animals, and ecological communities and provide this information to public agencies and scientific and educational institutions. It is by law a program of the New York State Department of Environmental Conservation (NYS DEC) and is implemented as a partnership between NYS DEC, the State University of New York College of Environmental Science and Forestry (ESF), and the Research Foundation for SUNY, which provides operational support for the program and its employees. NYNHP operates as a sponsored program under the direction of ESF's Office of Research Programs and is funded entirely by grants and contracts from state and federal agencies whose missions involve natural resource management and biodiversity conservation, and private organizations involved in land protection and stewardship. The program is a satellite office of ESF, located within state agency offices in downtown Albany, NY.

The New York Natural Heritage Program (NYNHP) is an active participant in the Natural Heritage Network coordinated by NatureServe – an international network of biodiversity data centers that connects programs throughout the United States and Canada. Through membership in the NatureServe Network, natural heritage programs and data centers develop biodiversity data, maintain compatible standards for data management, and provide information about rare species and natural communities that is consistent across many geographic scales. This information is rolled up into a national database maintained at NatureServe headquarters. Collectively, the NatureServe network tracks the rarity of species and natural communities at state, provincial, national, and global scales and provides a variety of data products that support science-based decision-making from local to global scales.

For more information on how we work see our web site at nynhp.org and
What We Do - NY Natural Heritage Program (nynhp.org)

Contact

Mailing Address
New York Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757

Physical Address
625 Broadway, Albany, NY 12233

Phone (518) 402-8935
INFO@nynhp.org

Websites
https://www.nynhp.org

https://www.facebook.com/nynhp/

https://www.instagram.com/nynhp/