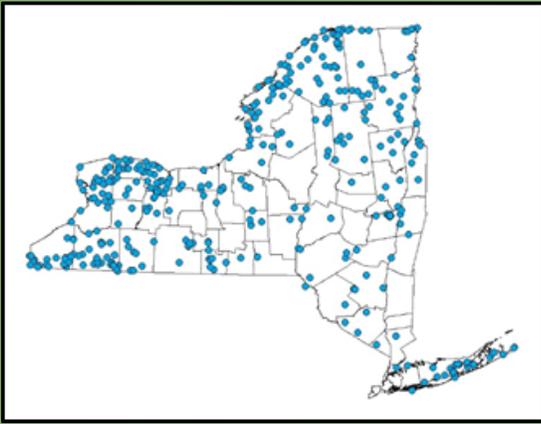


Maintaining the Accuracy of Biodiversity Information for Conservation

A report to the Sarah K. de Coizart
Article TENTH Perpetual Charitable Trust



New York
Natural Heritage
Program

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by the
New York Natural Heritage Program

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Cover images (clockwise from top left): Common eastern bumble bee (Matthew D. Schlesinger), map of database records of at-risk species documented for this project, barrens buckmoth (Matthew D. Schlesinger), example of updated mapping of database record using backlog data, bog turtle (Matthew D. Schlesinger)

Introduction

The database maintained by the New York Natural Heritage Program is the primary source of information on biodiversity used in environmental review by state agencies in New York and one of the important inputs in setting priorities for conservation organizations. In early 2017, we received a \$100,000 grant from the Sarah K. de Coizart Article TENTH Perpetual Charitable Trust (the Trust) to update the status of rare animal populations through field surveys and by processing data from our considerable backlog. The grant was instrumental in helping us keep our database information current and protecting New York's biodiversity. This report will summarize our activities and accomplishments under the grant and present some highlights in greater detail.

Grant expenditure

Funds were received in January 2017 and our project officially began on April 1, starting with database updates using existing information in our backlog. The grant enabled us to hire Ashley Ballou, M.S., as an Assistant Zoologist and support about half of her time for the duration of the grant period. Field surveys began July 2017, and database updates and field surveys continued through the end of 2019.

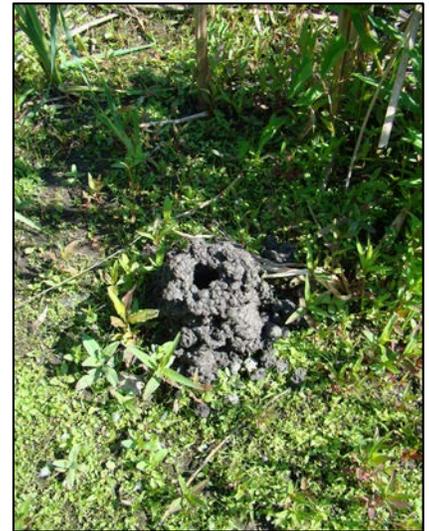
Grant funds covered some of the expense of sending Ashley to a NatureServe Core methodology training in Fort Collins, Colorado in April 2018. Core methodology training provides instruction on the standards, methods, and tools used by the NatureServe Network. The training allows NatureServe network scientists and others to effectively advance biodiversity conservation through a system that allows network participants to integrate and discuss the data across boundaries and programs. This training is essential to fully understand the background of the network and how to use the standards and data collection methods.

Field surveys

We conducted 24 site surveys over 23 days between July 2017 and September 2019 for a range of species including moths, crayfish, mussels, and birds. Funding from the Trust also helped us to participate in ongoing survey projects covering pollinators and rare turtles. Our field surveys took us all over New York State, including the Saratoga Sandplains, Adirondacks, and Finger Lakes region.

Invertebrates

A large part of our field work during this time period focused on rare and imperiled invertebrate species. Between 2017 and 2019, we spent many days surveying for invertebrates such as the brook floater (*Alasmidonta varicosa*), a New York State threatened mussel, cobra clubtails (*Gomphus vastus*) on the Hudson and Mohawk Rivers, devil crawfish (*Cambarus diogenes*) in three locations, and two species of tiger beetles. We were also able to use funding from the Trust to supplement our work on our statewide pollinator survey, which is helping us determine which native pollinator species (select groups of bees, flies, beetles, and moths) are of conservation concern.



A devil crawfish (*Cambarus diogenes*) burrow, an indication of a population (Kimberly J. Smith)

For more information

Brook floater: <https://guides.nynhp.org/brook-floater/>

Appalachian tiger beetle: <https://guides.nynhp.org/appalachian-tiger-beetle/>

Hairy-necked tiger beetle: <https://guides.nynhp.org/hairy-necked-tiger-beetle/>

Ostrich fern borer moth: <https://guides.nynhp.org/ostrich-fern-borer-moth/>

Barrens buckmoth: <https://guides.nynhp.org/coastal-barrens-buckmoth/>
Tawny emperor: <https://guides.nynhp.org/tawny-emperor/>
Empire State Native Pollinator Survey: <https://www.nynhp.org/pollinators>

Turtles and Birds

Funding from the Trust allowed us to conduct a *de novo* survey for Red-headed Woodpeckers (*Melanerpes erythrocephalus*) on private lands near Saratoga. A *de novo* survey is a survey at a location that to our knowledge has not been surveyed previously for the target species. A NYNHP ecologist heard what she thought could be the distinctive drumming of a Red-headed Woodpecker within a highbush blueberry bog, prompting a zoologist to go out to investigate further. Results from this survey were inconclusive, but it may be a site worth following up on in the future.

Surveys for bog turtles (*Glyptemys mublenbergii*) and Blanding's turtles (*Emydoidea blandingii*) were conducted in 2017. A bog with an historical record of bog turtles was surveyed again after almost 20 years. The habitat was found to still be suitable for bog turtles, but none were found. Further surveys may be warranted at a different time of year. A known location of Blanding's turtles was surveyed for a week in June using visual survey and trapping methods. No turtles were observed through these methods, although one was observed crossing a road by a nearby resident.



A Blanding's turtle (Ryan von Linden)

For more information

Red-headed Woodpecker: <https://guides.nynhp.org/red-headed-woodpecker/>

Bog turtle: <https://guides.nynhp.org/bog-turtle/>

Blanding's turtle: <https://guides.nynhp.org/blandings-turtle/>



Pine barrens zale (Hugh McGuinness)

Backlog data processing

Over the course of the grant period, 316 new and 181 updated database records for 97 rare and at-risk species were processed using these funds. The Trust's funding allowed us dedicated staff time for mapping records that would otherwise have remained in our backlog. Our MOU with the New York State Department of Environmental Conservation requires that we prioritize records of state-listed threatened and endangered species, but many more species than those are at risk in New York. As a result of this dedicated time, locations of at-risk species are mapped for the first time, are mapped more accurately, or have up-to-date information on the status of species occurrences. These database records constitute the primary method of screening development projects for their potential impact to biodiversity, and projects are frequently modified to lessen their impact on biodiversity based on records in our database. See Figure 1 for examples of updated maps for several species.

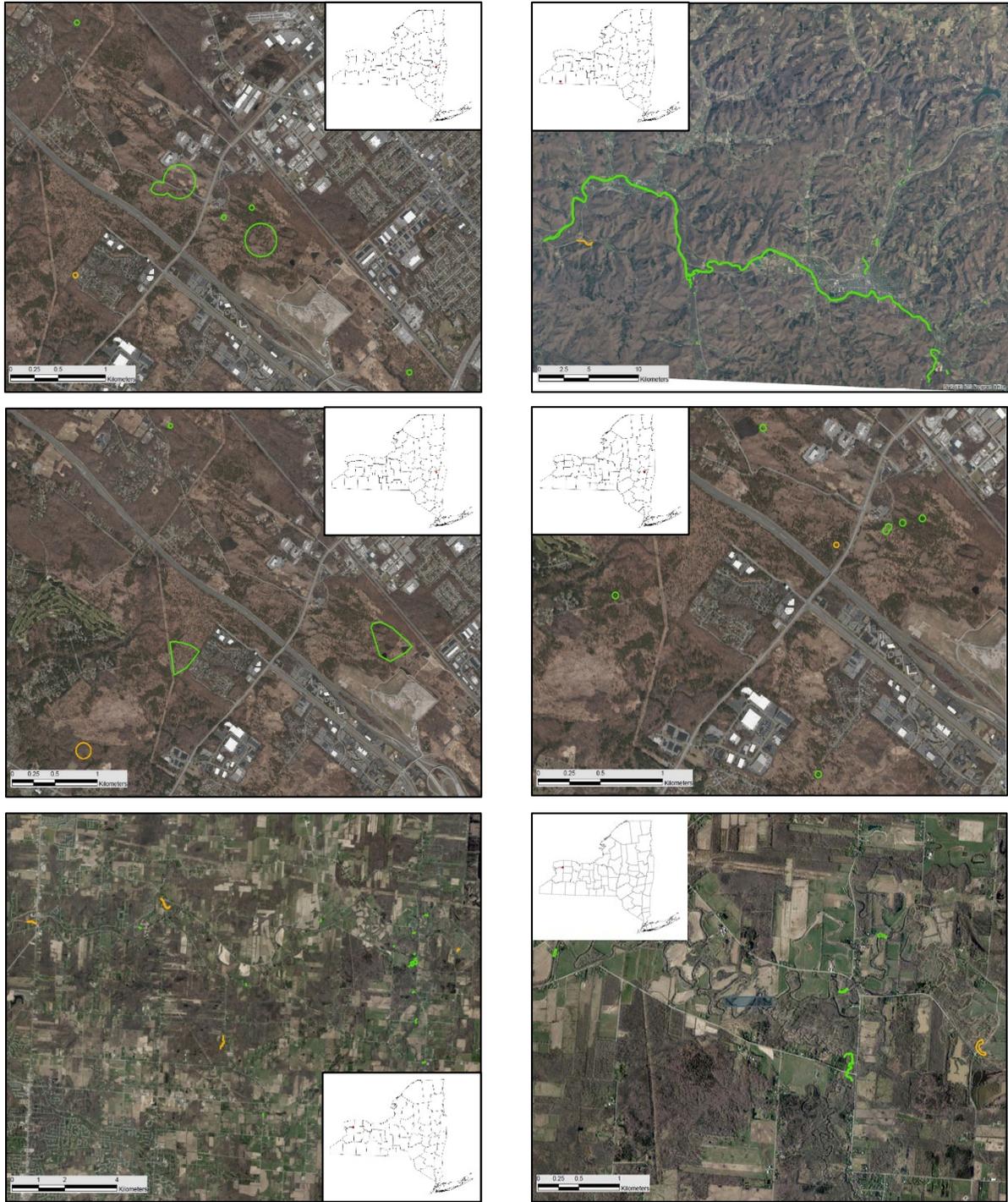


Figure 1. New mapped locations (green) significantly expanded the original known locations (orange) of many at-risk species, including (clockwise from top left): sensitive chytonix (*Chytonix sensilis*), black redhorse (*Moxostoma duquesnei*), barrens itame (*Speranza exonerate*), black sandshell (*Ligumia recta*), rainbow (*Villosa iris*), and two-striped cordgrass moth (*Macrochilo bivittate*)

The grant funding allowed us to create occurrences for seven species that were not previously in the database: bridle shiner (*Notropis bifrenatus*), lake chub (*Conesius plumbeus*), northern

riffleshell (*Epioblasma rangiana*), salamander mussel (*Simpsonaias ambigua*), snuffbox (*Epioblasma triquetra*), straight lined mallow moth (*Bagisara rectifascia*), and a geometer moth without a common name (*Apodrepanulatrix liberaria*). Forty-eight of the species we worked on are ranked as critically imperiled (S1) or imperiled (S2) in New York but are not listed on the state threatened and endangered species list, so funding from the Trust is the main way we can cover staff time for working on these species.

The funding also allowed us to focus on creating new and updated maps for some groups of species that were largely unfunded previously.

Albany Pine Bush Moths

Between 2017 and 2019 we worked on updates for six rare moth species and created new occurrences for 10 rare moth species within the Albany Pine Bush. The majority of these records were taken from a report on a 2014-2017 moth survey within the Pine Bush and resulted in 20 new and updated records in the database.



Albany Pine Bush pitch pine-scrub oak barrens (Greg Edinger)

Mussels and Fish

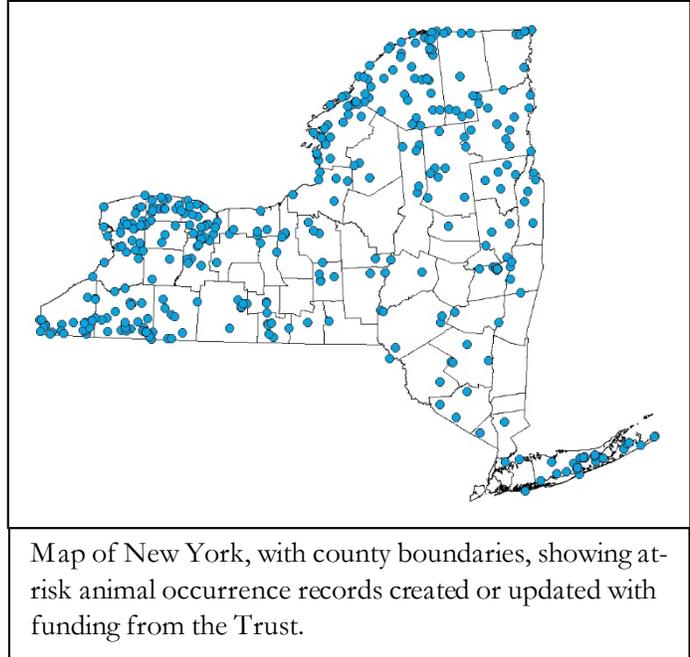
New occurrences for seven rare mussel species and updated records for 18 rare mussel species were added to the database over the course of the funding, for a total of 193 database records. Additionally, our work on backlogged fisheries data led to 253 database records consisting of new locations for 17 species and updated occurrences for 17 species. Most of these species are not listed in NYS and we do not currently have another funding source available to allow us to input these valuable records. The new record added for the salamander mussel (*Simpsonaias ambigua*) was the first record of this species in the state. The salamander mussel was previously thought to only occur in New York historically, with no known recent records within the state.



Eastern Pearlshell (Greg Edinger)

Conclusions

The hundreds of records of at-risk species that we were able to update or add to the Natural Heritage database under this project will have a significant impact on biodiversity conservation in New York. The new and updated database records cover all regions of the state and represent locations where project screening will ensure that biodiversity considerations are taken into account. As our database information gets older, the status of at-risk species populations becomes more uncertain and our information less useful to some. Keeping the database current has thus long been a priority for our program but we have not had sufficient funding to reduce our data backlog and update the status of populations with field work. The funding from the Sarah K. de Coizart Article TENTH Perpetual Charitable Trust has been instrumental in ensuring that New York State's most important source of biodiversity information has the most up-to-date data to maximize the effects of conservation efforts.



Acknowledgments

Support within the New York Natural Heritage Program was provided by DJ Evans, Fiona McKinney, Tim Howard, Nick Conrad, and Matt Buff. Andrea Chaloux conducted several field surveys and Colleen Lutz contributed to data processing.

About the New York Natural Heritage Program

The New York Natural Heritage Program (www.nynhp.org) is a program of the State University of New York College of Environmental Science and Forestry that is administered through a partnership between SUNY ESF and the NYS Department of Environmental Conservation. We are a sponsored program within the Research Foundation for State University of New York.

The mission of the New York Natural Heritage Program is to facilitate conservation of rare animals, rare plants, and significant New York ecosystems. We accomplish this mission by combining thorough field inventories, scientific analyses, expert interpretation, and a comprehensive database on New York's distinctive biodiversity to deliver high-quality information for natural resource planning, protection, and management.

Established in 1985, our program is staffed by more than 30 scientists and specialists with expertise in ecology, zoology, botany, information technology, and geographic information systems. Collectively, the scientists in our program have over 300 years of experience finding, documenting, monitoring, and providing recommendations for the protection of some of the most critical components of biodiversity in New York State. With funding from a number of state and federal agencies and private organizations, we work collaboratively with partners inside and outside New York to support stewardship of New York's rare animals, rare plants, and significant natural communities, and to reduce the threat of invasive species to native ecosystems.

NY Natural Heritage maintains New York State's most comprehensive database on the status and location of rare species and natural communities. We monitor hundreds of species and natural communities across New York in over 14,000 locations. Our database also includes detailed information on the relative status of each species and community, the quality of their occurrences, and descriptions of sites. The information is used by public agencies, the environmental conservation community, developers, and others to aid in land-use decisions. Our data are essential for prioritizing those species and communities in need of protection and for guiding land-use and land-management decisions where these species and communities exist.

NY Natural Heritage is an active participant in NatureServe (www.natureserve.org), the international network of biodiversity data centers. NatureServe's network of independent data centers collect and analyze data about the plants, animals, and ecological communities of the Western Hemisphere. The programs in the NatureServe Network, known as natural heritage programs or conservation data centers, operate throughout all of the United States and Canada, and in many countries and territories of Latin America. Network programs work with NatureServe to 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.