

Endangered and Nongame Species Program
Monthly Report for 16 February – 15 March 2024

Staff:

Kathy Clark, Supervising Zoologist (Chief)
Christina “Kashi” Davis, Principal Zoologist
Gretchen Fowles, GIS Specialist
MacKenzie Hall, Environmental Specialist II
Emily Heiser, Assistant Biologist
Alex Kisurin, Biologist Trainee/Aquatics
Kim Korth, Biologist Trainee/Planner
Sharon Petzinger, Senior Zoologist
Bill Pitts, Senior Zoologist
Melissa Roach, Biologist Trainee
Kris Schantz, Principal Zoologist
Robert Somes, Senior Zoologist
Brian Zarate, Principal Zoologist
Robert Criollo, Biotics temp services
Daniel Turcios, Biotics temp services

Administration – K. Clark

K. Clark worked on agency planning and policy issues, and regional actions as part of the Northeast Wildlife Diversity Managers technical committee. Staff worked on updating several grants in preparation for 2025 calendar year.

Landscape Project –

Staff are meeting monthly with Office of Information Services on the tasks of revising the Landscape Project mapping. Tasks include the review and testing of new species models and model parameters.

Technical Guidance & Policy/Planning – all staff

Staff reviewed and commented on DEP land use permit applications, energy project reviews, and internal NHR land projects.

Staff contributed to reviews of DEP draft rules and rule amendments.

Staff continued to work with the Office of Environmental Review on outreach to other DEP Divisions conducting permit and plan reviews (e.g., Site Remediation, Solid Hazardous Waste) to discuss the apparent exclusion of E/T species concerns.

C. Davis attended the Atlantic Flyway Council Nongame Technical Section meeting as the nongame representative for New Jersey. The meeting took place the first week of March in Buffalo, NY.

Biotics Database – G. Fowles

Biotics staff continued to work on catching up on entering backlogged data from the past several years into the Biotics database and updating records and information as needed, while processing new data coming in through the NJ Wildlife Tracker application.

Biotics staff updated and disseminated a new bulk upload template for receipt of survey data from ENSP biologists and consultants.

Biotics staff are working on several other efforts aimed at streamlining data flow and ingesting data from other or expanded sources.

Connecting Habitat Across New Jersey (CHANJ) – G. Fowles, B. Zarate, M. Hall

The CHANJ team continued planning a State of CHANJ meeting (to be held in April), where we will meet with fellow implementer groups from the land preservation and transportation communities to review progress since the 2019 launch of CHANJ and identify needs, gaps, and strategies to advance NJ's habitat connectivity goals.

The CHANJ Team has been working with staff from DEP's Office of Community Investment and Economic Revitalization on an upcoming public campaign about habitat connectivity, featuring several key wildlife species and the CHANJ project.

The CHANJ Team worked with staff from DEP's Learning Management System to add the CHANJ Tutorial to the LMS Learning Catalog.

The team updated content on the CHANJ website with the help of D. Rizio to include an archive of listservs to date, new connectivity papers, events, etc.

An updated Road Wildlife Mitigation Projects GIS layer was finalized and published by the CHANJ Team to include new proposed and constructed wildlife passage projects through roadways across the state including pre- and post-construction photos when available.

G. Fowles participated in Steering and Program Committees calls for the upcoming Northeast Transportation and Wildlife Conference to be held in September in CT, and submitted two CHANJ-related podium and lightning talk abstracts to present at the conference, which were both accepted.

G. Fowles has begun work on updating the CHANJ GIS layer using the 2020 land use/land cover data, as well as other updated layers.

Habitat Conservation Management on Public Lands – All staff

Habitat management work began on Stand 2 on Sparta Mountain WMA to restore open-canopy forest conditions on 10 acres. All tree felling will be completed before April 1, 2024.

Species Status Review – K. Clark

D. Jenkins and M. Monteschio completed the draft rule amendment for species status updates and submitted for OLA review.

State Wildlife Action Plan – K. Korth

Results from the final Regional Round 2 surveys were reviewed with TAG; decision on the Level 3 threats included in the next prioritization process was made. Regional Level 3 Threat Surveys were sent to Technical Stakeholders and staff who took a regional survey. Nearly 200 Technical Stakeholders and staff from the bureaus of Lands Management, ENSP, Wildlife Management, Fresh Water Fisheries, and Marine Fish participated in this final survey. Staff from Parks and Forestry and Office of Natural Lands Management also participated.

K. Korth completed the web-enabled map for SWAP. K. Korth and D. Rizio (I&E) released the Species of Greatest Conservation Need (SGCN) list on the website for public comment. Social media and newsletter outreach are being scheduled.

Kim Korth led NE Regional SWAP Coordinator's monthly meeting and attended AFWA's Paperless SWAP Guidance and SWAP Learning Series meetings.

K. Clark continued to work with OIT to finalize contract with Strategic Stewardship initiative (SSi) for the SWAP Database Design.

HERPTILES

Snake Fungal Disease – K. Schantz

Dr. Joanna Burger (Rutgers University), Bob Zappalorti (Herpetological Associates, Inc.) and John Bunnell (Pinelands Commission) have partnered the past few years testing for and confirming the presence of *Ophidiomyces ophidiicola* (the fungus responsible for snake fungal disease) present in northern pinesnake dens and on winter-excavated snakes. Based on snakes sampled from Dr. Burger's group of annually excavated pine snake hibernacula, *Ophidiomyces ophidiicola* detection on snakes was highest in swabs of skin lesions (71%), males had higher prevalence than females (82% versus 62%), and the fungus was not detected in hatchling snakes in the fall but 75% of juveniles tested positive at the end of hibernation. This indicates that pinesnakes become infected with the fungus in their winter dens and supports researchers' theory that other snakes are also likely infected during brumation.

Snakes – K. Schantz

Research conducted by the Pinelands Commission, in partnership with Dr. Howard Reinert and Bob Zappalorti (Herpetological Associates) on cornsnakes, pinesnakes, and kingsnakes has demonstrated that while some snakes have fidelity to their winter dens, other individuals shift dens within and among den complexes. It is unclear why this occurs but could be driven by one or more factors including but not limited to, den collapse, winter hydrology, social interactions, anticipation of spring resource needs (e.g., number of individuals at a den complex may indicate less available food and/or mates after emergence). There is also evidence that some snakes use "temporary" winter dens or stopovers as temperatures decrease, taking temporary refuge (for days or weeks) before moving to another location, and finally reaching a site where they stop shifting whether by reaching their chosen winter den or due to climatic conditions prohibiting their movements. This evidence supports the need for telemetry research requiring late fall through pre-emergence relocations to determine if shifting has occurred and to identify these important, reused, temporary dens. This evidence also demonstrates the difficulties in identifying these critical habitat features without the use of telemetry for the purpose of conservation and/or as part of permitting requirements.

Research conducted by Tyler Christensen (Friends of Hopewell Valley Open Space and Rutgers University PhD Candidate) on eastern copperheads has also found while some snakes demonstrate fidelity to their winter dens, others are shifting between two sites, entering one site during "standard ingress" and shifting to a second site during late winter or possibly early spring). Where regulations apply, land-use permit applicants have been required to conduct spring emergence surveys in search of winter dens. However, it is possible that important winter dens are being inadvertently excluded from

the survey effort based on timing, in addition to the difficulty of finding copperheads given their propensity to remain hidden.

In 2023, the ENSP radio-tracked five snakes (two adult ratsnakes, and three adult rattlesnakes) that had been excavated from their 2022-2023 dens during pipeline maintenance activities. ENSP had discovered in 2010 that snakes had colonized the old pipeline that had been backfilled with rubble for winter denning as the pipeline provided a stable temperature of 54 deg. F. The gas company and the ENSP agreed to test a backfill procedure that would ultimately alter the winter den, insulating the pipeline for public safety but altering the subsurface temperature, while providing access underground for the snakes given rattlesnake fidelity to winter dens. As of March 2024, four snakes have been observed. One rattlesnake has not yet surfaced and is believed to have died underground due to exposure (cold temperatures) in November 2023, based on his lack of sub-surface movements. While this work only tested five snakes to examine the impacts of altering the wintering den associated with the pipeline, it suggests that this alternate back-fill strategy may be a reasonable alternative to complete destruction of pipeline-associated wintering dens.

SGCN Turtles – B. Zarate and B. Pitts

Significant time was spent continuing to plan with hourly staff the upcoming field season, including bog turtle, wood turtle, and box turtle surveys and activities. Three priority bog turtle sites will be monitored this year along with three wood turtle transects, each site/transect receiving three visits this spring – effort following regional, standardized practices.

For box turtle, conversations started with BLM staff on the potential of releasing box turtles that have been seized by law enforcement onto state lands, to augment existing populations of this special concern, RSGCN species. Criteria for selecting a suitable release site include A) size and quality of the habitat, B) current habitat management objectives, C) proximity and accessibility related to post-release monitoring by staff, D) current condition of existing box turtle population, among other factors. B. Zarate will meet with a large internal and external team next reporting period to review portions of the overall strategy, specifically related to the health status of the seized turtles.

Re-occurring species coordination meetings were attended and work has started on reviewing and issuing scientific collecting permits.

Eastern Tiger Salamander – B. Pitts

Nine total sites were surveyed in the winter of 2023-2024, seven had confirmed breeding activity, and two did not. A total of 40 egg masses were translocated to WMA property in Cumberland County, and some hatching had been confirmed by March 15.

B. Pitts is coordinating with A. Kisurin to begin eDNA surveillance next winter. Partners from NY are presenting findings from their eDNA survey in next month's NE Working Group meeting.

Diamondback Terrapins - B. Zarate

Primary activities this reporting period included review of scientific collecting permit reports from the 2023 field season and beginning issuance of permits for 2024. B. Zarate met with DSR staff to review draft analyses of terrapin-road encounter data based on 2022 external partner submissions. F&W and DSR will meet with external partners to review the results in the next reporting period.

MAMMALS

Bobcat Project – G. Fowles

Two bobcats were struck by vehicles and five bobcats were reported trapped during the reporting period. Samples were taken from individuals/carcasses.

G. Fowles is working on a collaborative research project with the University of Delaware and DOT. Scoping of the locations was completed and will involve analyzing bobcat habitat connectivity in NJ via cameras under 6 major highways as part of a Master's thesis project.

G. Fowles and detection dog Fly surveyed several sites in central and southern NJ for bobcat scat. Results are pending DNA analysis.

Bat Conservation – M. Hall

Three additional bat hibernacula surveys were completed. At one location, approx. 11 rarer *Myotis* bats were seen for the first time. Another site was previously undocumented and found to be used by a small number of bats, including two imperiled species. This new information was added to ENSP's Biotics database and shared with the USFWS NJ Field Office.

M. Hall met (virtually) with collaborators from Virginia Tech to begin planning a two-year project that will help to characterize the northern long-eared bat's presence and habitat use across southern NJ. The project will serve as a Master's thesis and will utilize acoustic bat detectors, mist-netting and radio-telemetry.

M. Hall gave a well-attended bat presentation at Brookdale College's "Science Mondays," organized by the Sierra Club Jersey Shore Group.

Allegheny Woodrat – G. Fowles

No new report.

BIRDS

Colonial Waterbirds – C. Davis

C. Davis made final comments to the regional coordinator for the upcoming colonial waterbird surveys (May and June) to ensure all data will be collected consistently across the coast. She worked with the helicopter vendor to finalize paperwork to ensure the purchase order will be ready in time for the surveys. She recruited contractors to assist with the surveys and set the dates with the helicopter vendor.

Beach-Nesting Birds - C. Davis & E. Heiser

Staff worked with partners around the state planning for the 2024 beach-nesting bird season. Seasonal staff and interns have been hired. Fencing of nesting sites is slated to begin within the next month.

Bald Eagle Monitoring - K. Clark

Staff documented and took possession of several deceased eagles found across the state or died while in rehab care. Dr. E. Miller has been conducting the necropsies to document causes of death.

Peregrine Falcon Monitoring – K. Clark

M. Roach worked to install trail cameras at coastal nest sites prior to the nesting season. The earliest nests likely started incubation in mid-March and most will be incubating by 1 April.

American Kestrel – B. Pitts

B. Pitts has dates in late March scheduled to meet with new and existing landowners for box placement and maintenance. Reports have been coming in of birds starting to return to breeding locations.

Osprey Monitoring – K. Clark

The annual report was completed and posted on the website.

Other Raptors – K. Clark

No new report.

Migratory Shorebirds – B. Pitts

The Baywide planning meeting is scheduled for March 22. Dates for the 2024 aerial survey have been selected, and procurement paperwork is being submitted. Two resighters have been selected, and training will start the week of April 29th.

Secretive Marsh Birds – C. Davis and E. Heiser

Staff worked to gather data from previous or current Black Rail and/or Saltmarsh Sparrow projects in the state to enter in Biotics database. Staff sent out a recording of the first working group meeting and accompanying resources. C. Davis made preparations for the upcoming ground survey, which will take place with the assistance of a seasonal technician and contractors. The project is set to begin April 8.

Scrub-shrub/Open Field birds (GWWA) – S. Petzinger

Data are being summarized from the 2023 bird surveys.

Regional & National Bird Coordination – S. Petzinger

S. Petzinger attended an AMJV virtual meeting on Feb. 21, 2024.

INVERTEBRATES & AQUATICS

Butterflies, Dragonflies and other Insect Species – R. Somes

R. Somes participated in the Mid-Atlantic Firefly Conservation Working Group meeting. This is a new working group led by the Xerces Society focused on firefly conservation particularly in the coastal regions.

R. Somes attended the USFS Northeastern Fire Science Exchange Fire Ecology and History Symposium. This symposium was focused on fire history research and how it can be utilized to drive management planning to mimic historical conditions. Most NJ ecosystems experienced extensive natural wildfires through lightning and Native American fire use that are now absent today.

R. Somes met with Fish & Wildlife Bureau of Lands Management staff to plan butterfly and pollinator habitat management in southern New Jersey with a particular focus on Frosted Elfin.

R. Somes met with NJ State Museum Staff to discuss the upcoming Ecosystems and Wildlife Conservation Exhibit being developed for the Museum.

R. Somes participated in the NJ Invasive Species Striketeam Annual Technical Advisory Committee Meeting.

Pollinators – R. Somes

R. Somes gave a presentation on pollinator and butterfly conservation at the NJ Federation of Sportsmen's Clubs Annual Convention and the Becoming an Outdoors Women Workshop.

Freshwater Mussels – R. Somes, A. Kisurin

R. Somes participated in a NJ Dam Removal Working Group meeting where survey and research needs were discussed related to mussel population monitoring pre and post dam removal.

R. Somes and A. Kisurin participated in the Brook Floater Conservation Working Group meeting where planning for the upcoming field season was discussed. NJ is going to work with the group to collect data for an occupancy and habitat modeling study.

R. Somes participated in a Silty Pondmussel (aka Chinese Pondmussel) Working Group meeting with a focus on survey needs for the upcoming field season and determining funding needs for eradication.

A. Kisurin participated in the Yellow Lampmussel working group meeting focused on planning for 2024 field season for the region.

Environmental DNA (eDNA) TECHNOLOGY – A. Kisurin

A. Kisurin presented the projects utilizing eDNA in this field season's ENSP work to the Endangered & Nongame Species Advisory Committee's March meeting.

A. Kisurin continues to participate in the monthly eDNA working group (GEDWG) dedicated to standardizing and advancing the use of eDNA for various applications. Our discussions revolve around the application of eDNA in locating rare and invasive creatures, conducting community assessments, and expanding its role in ecology, conservation, and management.

A. Kisurin met with species biologists at ENSP to discuss the incorporation of eDNA into future projects, specifically aiming to detect rare and cryptic species presence and assess habitat restoration progress.