

STATEWIDE PARTNER PROJECTS

- Pa.'s Second Breeding Bird Atlas
- Little Brown Bat Genetics
- Allegheny Woodrat Genetics
- Golden-winged Warbler Conservation
- Motus Wildlife Tracking System
- Northern Goshawk Status Assessment
- Broad-winged Hawk Telemetry
- Grassland Bird Conservation
- Conservation Opportunity Area Tool
- Secretive Marsh Bird Survey



WILDLIFE ACTION PLAN IMPLEMENTATION

State Wildlife Grants Program

Private Land Owner Assistance Program

Partner Projects



PRIVATE LANDOWNER ASSISTANCE PROGRAM
by PGC region through December 31, 2021

Northwest: over 307 plans for more than 31,143 total acres
 Northcentral: over 345 plans for more than 71,159 total acres
 Northeast: over 249 plans for more than 60,498 total acres
 Southwest: over 313 plans for more than 60,192 total acres
 Southcentral: over 274 plans for more than 42,779 total acres
 Southeast: over 372 plans for more than 40,505 total acres
STATEWIDE: 1,860 plans for more than 306,276 total acres

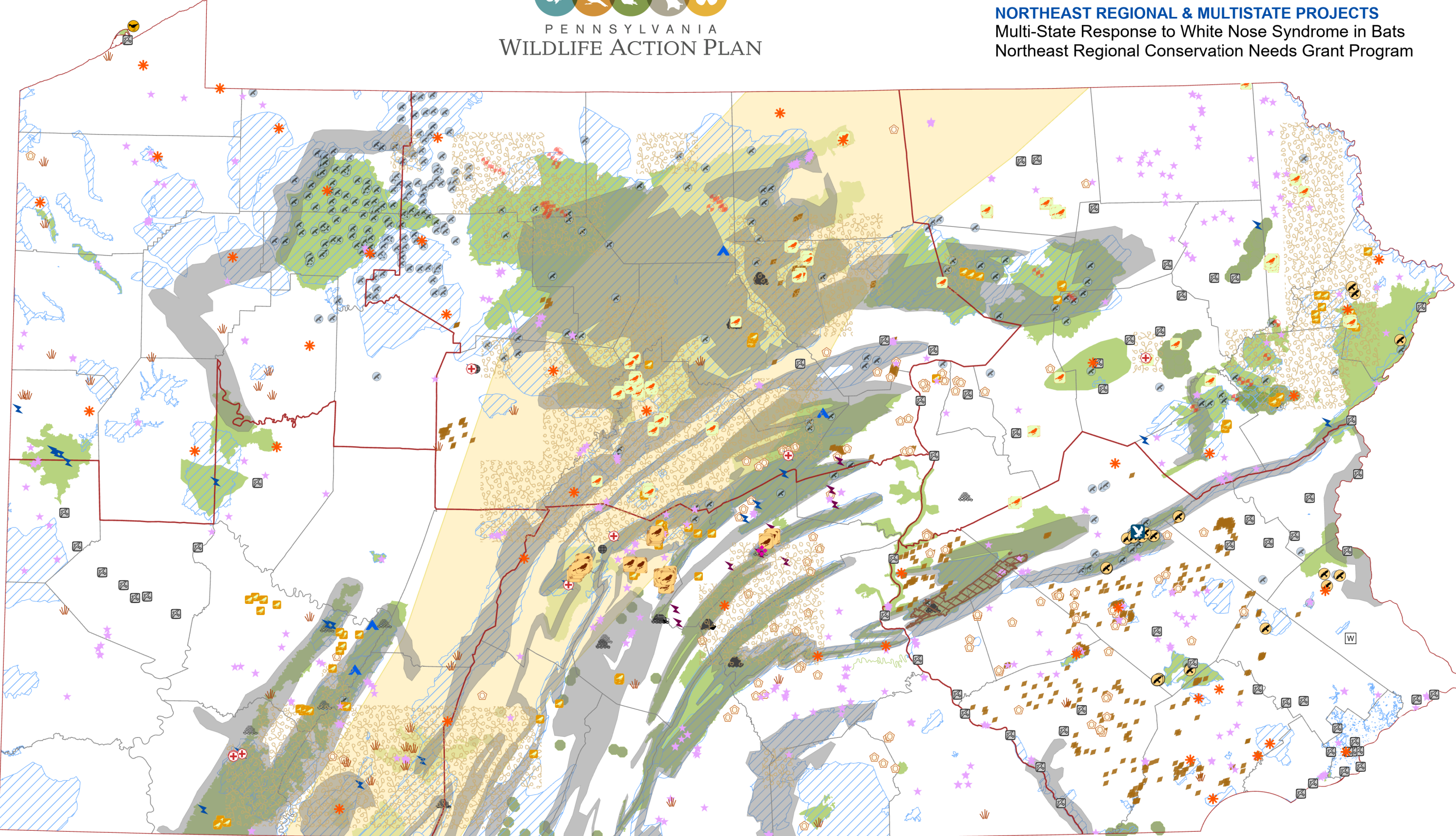
NORTHEAST REGIONAL & MULTISTATE PROJECTS

Multi-State Response to White Nose Syndrome in Bats
 Northeast Regional Conservation Needs Grant Program

LEGEND

- Allegheny Woodrat Habitat
- Allegheny Woodrat Research, HQ Habitat
- Allegheny Woodrat Captive Breeding
- Allegheny Woodrat Chestnut Plantings
- ◆ Allegheny Woodrat Translocation
- Appalachian Cottontail Surveys, IUP
- Bat Hibernacula Surveys
- Bat Maternity Colony Monitoring
- Bat Protection Gates
- ⊕ Bat WNS Treatment Site
- Broad-winged Hawk Telemetry
- Grassland Bird Surveys, P-R
- Golden Eagle Migration Corridor
- Golden-winged Warbler Habitat Mngmt
- Golden-winged Warbler Statewide Survey
- Hawk Mountain Sanctuary Association
- Important Bird Areas, Audubon
- Important Mammal Areas, PABS
- ★ Marsh Bird Surveys, PGC/Volunteers
- ★ Motus Receiver, C-SWG, WRCP
- ⊕ Northern Flying Squirrel Acoustic Survey
- Northern Goshawk Assessment, WRCP
- Peregrine Falcon Recovery
- Piping Plover Recovery
- PLAP Barn Owl Conservation Initiative
- PLAP American Kestrel Conservation
- Priority Barrens Habitats
- ▲ Water Shrew Surveys
- Wood Thrush Habitat Research, P-R

Note: These are selected projects, not comprehensive of all projects implemented to support Species of Greatest Conservation Need research and recovery.



PGC AND PARTNER STATE WILDLIFE ACTION PLAN IMPLEMENTATION PROJECTS for FEDERAL FISCAL YEARS 2002 - 2021

BIRD PROJECTS

Important Bird Areas Conservation Project

Audubon Pennsylvania

This project plans and implements community-based habitat protection and management of identified Important Bird Areas statewide to benefit state-listed and declining birds through partnerships with landowners, land trusts, and government entities.

Pennsylvania's Second Breeding Bird Atlas

Carnegie Museum of Natural History

STATEWIDE

The atlas employed the volunteer birding community in a 5-year survey effort to provide an updated database presenting the modern distribution of all nesting bird species. Data analysis resulted in a comprehensive assessment for conservation and management.

Migrant Raptor & Songbird Habitat Use Along the Kittatinny Ridge

Hawk Mountain Sanctuary Association

The Kittatinny Mountain has a unique concentration of raptors and songbirds along its slopes during fall. Extensive data on habitat use was gathered using telemetry and ground surveys.

From Birding to Environmental Review

Western Pennsylvania Conservancy

STATEWIDE

This project developed data from Game Commission collectors into a format for entry into the Pennsylvania environmental review system, part of the state's permitting process.

Silvicultural Impacts on Cerulean Warblers & Other Priority Forest Birds

Clarion University of Pennsylvania

The cerulean warbler is a species of high-level concern because of range-wide decline and potential threats to its mature forest habitats, where timber production is often the primary land use and dominant sector of local economies. Results inform foresters and land managers.

Assessing Risks of Wind Energy Development for Conservation of Eastern Golden Eagles I & II

National Aviary (initially), University of West Virginia (later)

Golden eagles are a species of conservation concern with protected status. The eastern U.S. population passes through a migration corridor in an area that is also important to wind power. These studies provided data to inform responsible decisions.

Northern Goshawk Status & Response to Forest Management

Slippery Rock University of Pennsylvania

Jointly funded by DCNR's Wild Resource Conservation Fund

This project assessed populations and evaluated responses to forest conditions to improve population modeling for a large but secretive accipiter of extensive woodlands.

Utilization of Wet Scrub/Shrub-Dominated Habitat Types by Willow Flycatchers and Other Priority Birds

Western Pennsylvania Conservancy

The willow flycatcher is identified as a species of concern in Pennsylvania's Wildlife Action Plan and at the continental scale. This project determined willow flycatcher and other priority species use of specific wet thicket habitat types to identify potential breeding areas crucial to management.

Piney Tract Important Bird Area Grasslands Management

National Audubon Society

This project improved habitat at the Piney Tract, a site of global significance to several grassland-obligate bird species of conservation concern. Invasive trees and shrubs were removed and bird population response was monitored to inform restoration efforts at similar habitats.

State Game Lands 214 (Pymatung) Wetland Restoration

Ducks Unlimited

Restoration and enhancement of 113 acres of emergent and scrub/shrub wetlands benefit Wildlife Action Plan species of high concern, including American and least bitterns, Virginia and black rails, and marsh wren.

Golden-winged Warbler Projects:

Implementing BMPs for Golden-Winged Warbler Breeding Habitat

Indiana University of Pennsylvania

This project expedites implementation of breeding habitat Best Management Practices on state game lands for one of the most imperiled birds in the eastern U.S.

Survival, Movements, and Habitat Selection of Golden-winged Warbler

Fledglings and Avian Monitoring on Managed Public Forests

Indiana University of Pennsylvania

Fledgling golden-winged warblers are tracked using radio telemetry to estimate survival and habitat use during this critical life stage. Surveys of golden-winged warblers, American woodcock, and other young forest birds are used to evaluate forest management effectiveness.

Marcellus Shale Exploration and Development; Quantifying Effects

Penn State University

Surveys of forest bird species at well-pad sites and Breeding Bird Atlas blocks in north-central Pennsylvania tracked whether their populations increased, decreased or stayed the same in relation to differing levels of gas exploration and changes to habitat.

Broad-winged Hawk Habitat Use, Range, and Movement Ecology

Hawk Mountain Sanctuary Association

The broad-winged hawk is a long-distance migrant and an indicator of large scale forests. The year-round habitat use and movement ecology of broad-winged hawks breeding in Pennsylvania and over-wintering in Central and South America will be examined using satellite telemetry technology. More information available [here](#).

Identifying Characteristics and Management Strategies Associated with High Avian Abundance and Diversity in Core Forest Habitats

Penn State University

STATEWIDE

Surveys of forest birds and their habitat will be used to identify the features of core forests most associated with bird abundance and diversity, providing insights into management strategies that may extend and enhance the value of remaining core forests for birds.

Grassland Bird Surveys

Western Pennsylvania Conservancy

STATEWIDE

This statewide project will identify high value grasslands and assess conservation value of each site for nesting birds based on habitat characteristics and avian community composition. Targeted surveys for grassland-dependent bird species of greatest conservation need will also be conducted (upland sandpiper and short-eared owl, state endangered; northern harrier—state threatened; and Henslow's sparrow). Results will be evaluated against Wildlife Action Plan goals and objectives. Funded through PGC WSFR Pittman-Robertson.

Wood Thrush Habitat Research

The Pennsylvania State University

Best management practices for this declining, yet still common, forest songbird species of greatest conservation need have been developed for the northeastern U.S. Forest types and conditions in Pennsylvania differ from those described in the best practices. The goal of this project is to evaluate and refine the recommended forest management practices for optimal results in Pennsylvania. Funded through PGC WSFR Pittman-Robertson.

Threatened and Endangered Shorebird Monitoring

Erie Bird Observatory; Jointly funded by DCNR

Great Lakes Piping Plovers are federally and state endangered shorebirds. This project supports surveillance and monitoring for plovers, red knots (federal and state threatened), and other shorebirds at Presque Isle State Park, Erie Co. Piping plovers returned as breeding birds to in 2017 after a more than 60 year absence. Removal of non-native invasive plant species in 2012 improved habitat and facilitated this recolonization.

MAMMAL PROJECTS

Important Mammal Areas Program

National & Pennsylvania Wildlife Federations

This project used a proactive, voluntary and science-based approach to identify essential habitat for mammal conservation. Scientists, conservationists, sportsmen, and the general public cooperated to develop management plans.

Northern Flying Squirrel Projects:

Statewide Monitoring & Management

Wilkes University & Penn State University

Because the northern flying squirrel was proposed for threatened or endangered status in Pennsylvania, 160 historic locations and potentially suitable habitat were evaluated and a long-term nest box survey was established.

Eastern Hemlock & Mixed Coniferous Forested Ecosystems:

Distribution & Use by Sciurid Communities

Penn State University

The flying squirrel survey effort was expanded and radio telemetry used to identify habitat preferences in forests threatened by the hemlock wooly adelgid.

Distribution & Large-Scale Habitat Associations of Snowshoe Hares in Pennsylvania

Penn State University

This project delineated the distribution and large-scale habitat associations of snowshoe hares across northern Pennsylvania by extracting DNA from rabbit and hare fecal pellets.

Bat Hibernacula Gating

Sanders Environmental Inc.

When disturbed, hibernating bats burn part of their limited fat resources and may not survive until spring. Gates were installed on caves and mines with temperatures preferred by rare bat species or used by large numbers of bats.

Allegheny Woodrat Captive Breeding

Delaware Valley University

The small population size and fragmented habitat of state threatened Allegheny woodrats limits genetic flow between populations. This project aimed to breed woodrats in captivity in an effort to supplement the population.

Identifying & Predicting High-Quality Habitat

Indiana University of Pennsylvania

This planning project developed a model for predicting population viability, tested supplemental feeding, characterized habitat, and determined age-specific demographics.

Genetic Catalog

Indiana University of Pennsylvania

STATEWIDE

Development of a genetic catalog of the state's woodrat metapopulations will guide management actions including translocations, reintroductions and habitat improvements.

Small-Footed Bat Telemetry and Population Assessment

Sanders Environmental, Inc.

Radio telemetry at Lake Raystown produced first-of-its-kind data enhancing our ability to successfully manage this state threatened species, thus decreasing the likelihood of it becoming endangered.

Habitat Requirements of the Least Shrew in the Grasslands of Southcentral Pennsylvania

The Nature Conservancy

This project investigated range, dispersal corridors, and threats to the habitat of a state endangered species.

Testing Solutions to Bat Fatalities by Wind Turbines

Bat Conservation International

A wind power facility participated in testing deterrent and curtailment options that reduced the threat of wind turbines to bats and increased our understanding of bat activity patterns.

Genetic Structure of Pennsylvania's Little Brown Bat Population

Penn State University, Beaver Campus

STATEWIDE

This project investigated the population genetic structure of Pennsylvania little brown bats and identified female migration patterns and topographic features as factors affecting the spread of White-Nose Syndrome.

West Virginia and Northern Water Shrew Surveys

Western Pennsylvania Conservancy

STATEWIDE

West Virginia water shrew is a state threatened species of greatest conservation need. It is unknown how closely related West Virginia water shrew is to northern water shrew, a more common species of greatest conservation need. These surveys intend to document locations of these at-risk species to better understand species' range in Pennsylvania and obtain genetic samples to better understand their relatedness. Funded through PGC WSFR Pittman-Robertson.

OTHER PROJECTS

Initiation & Completion of County Inventories of Pennsylvania

The Nature Conservancy

STATEWIDE

Developed by The Nature Conservancy and Western Pennsylvania Conservancy, county inventories provide location information and management recommendations for natural areas and rare species to state, county, and local officials, the public, developers and land managers.

Multi-Species Management Guidelines for Priority Barrens Habitats in Pennsylvania I & II

The Nature Conservancy

Habitat management and decision-making tools were developed to help public and private land managers of the state's barrens habitats identify barrens communities, understand long-term viability of barrens systems, and discuss management options. Best Management Practices are provided for wildlife species dependent on barrens systems.

Multi-Species Habitat Profiles for Four Major Terrestrial Forest Types in Pennsylvania

The Nature Conservancy

STATEWIDE

This project developed multi-species habitat profiles for northern hardwood, dry white pine-oak, dry oak-health, and red oak-mixed forest types, including community and successional characterizations, current and best potential site analysis, and small mammal surveys and habitat profiles.

Fort Indiantown Gap Grassland Habitat

Penn State University

An ecosystem-based restoration plan improved native warm-season grassland habitat by rehabilitating former grasslands and expanding current grasslands, impacting cohesiveness and connectivity for the benefit of 19 Wildlife Action Plan priority species.

Geospatial Habitat Condition Analysis for the Pennsylvania Wildlife Action Plan Revision

Western Pennsylvania Conservancy

STATEWIDE

A comprehensive evaluation of current habitat condition and changes in habitat over the last 20+ years informs conservation planning for Species of Greatest Conservation Need and their habitats.

Conservation Action Mapping

Western Pennsylvania Conservancy/NatureServe

STATEWIDE

Development of a publicly accessible, GIS-based visualization tool for Wildlife Action Plan species distributions, habitat, species-habitat associations, threats, and recommended management actions to inform conservation planning. <https://wildlifeactionmap.pa.gov>

Motus Wildlife Tracking System

Willistown Conservation Trust, Inc.

STATEWIDE

Forty-five nanotag receiver stations were installed northwest to southeast across the Commonwealth to intercept tagged migrant species. Better understanding of the pathways birds, bats and even butterflies use in during migration can help conserve habitat upon which they depend. Funded through the DCNR Wild Resources Conservation Fund, Competitive State Wildlife Grants, and private donations.

PRIVATE LANDOWNER ASSISTANCE PROGRAM

In 2021, [Private Landowner Assistance Program](#) (PLAP) biologists wrote 87 plans for 22,063 acres, bringing the cumulative total to 1,860 plans for over 306,276 acres since program inception. Because nearly 80% of Pennsylvania is privately owned, the Game Commission created the program in May 2004 to provide a technical resource for landowners who wish to manage their properties for 109 bird and mammal species of greatest conservation need. PLAP relies largely on federal State Wildlife Grants Program (SWG) funds. Six biologists, strategically located throughout the state, evaluate properties of interested landowners and write plans to enhance habitat for wildlife. There is no charge or public access requirement. PLAP biologists also assist landowners in finding resources to help implement habitat improvements, often working with the USDA Natural Resources Conservation Service's Wildlife Habitat Incentives Program and Environmental Quality Incentives Program.

PLAP biologists created a [Barn Owl Conservation Initiative](#) in 2005. Once called "the farmer's friend" for its control of small rodents, the barn owl's declining population and contracting range in Pennsylvania made it a species of greatest conservation need. Where barn owls are found biologists assess habitat, install nest boxes, and make grassland management recommendations. A banding program studies dispersal and survival. Thanks to the efforts of landowners and PLAP biologists, the future now looks brighter for Pennsylvania's barn owls. A similar American Kestrel Conservation Initiative was started in 2017 in the southeastern region and expanded to the northcentral region in 2021.

PLAP biologists also participate in comprehensive planning for the state's more than 1.5 million acres of game lands, contributing information on general ecology, habitat relationships, and habitat treatments for species of concern. They also participate in habitat treatments, such as prescribed fire.

NORTHEAST REGIONAL CONSERVATION NEEDS GRANT PROGRAM

The [Northeast Regional Conservation Needs \(RCN\) Grant Program](#) was developed by the Northeast Association of Fish and Wildlife Agencies in 2007 as a mechanism to share expertise and funding to address landscape-scale issues, advance collaboration and likelihood of success, and result in more effective species conservation. A small portion of each states' State Wildlife Grants Program apportionment is pooled to foster projects of mutual interest and need, as identified in each state's Wildlife Action Plan and prioritized within the Northeast region (Maine to Virginia). The first phase of the RCN program (RCN 1.0: 2007-2017) supported 47 regional conservation projects. The current phase, RCN 2.0, was developed in 2017, and is organized around three projects, Turtles, Pollinators and Technical Services, with objectives for the period 2018 to 2023.

The Pennsylvania Game Commission has been actively contributing to the pollinator project, particularly on State Game Lands 176 (Scotia Barrens) in Centre Co. Although many groups of native pollinators remain understudied and poorly understood, there is increasing evidence of alarming declines in some species. Many pollinators depend upon open habitats and canopy gaps for foraging, and in the Northeast, xeric, fire-influenced grasslands and barrens likely support a unique native pollinator assemblage. These habitats are found in states throughout the Northeast Region, require active management, are in decline, support disproportionate concentrations of Species of Greatest Conservation Need (SGCN), and have been identified as priority conservation targets in many Northeast State Wildlife Action Plans (SWAPs).

The objective of the RCN 2.0 [Xeric Grassland, Barren, and Woodland Pollinator Conservation](#) project is to improve the ability of Northeast states to implement cost-effective habitat management for the benefit of native pollinators and Regional Species of Greatest Conservation Need that depend upon these priority habitat types.

In Pennsylvania, we are specifically focused on surveying and improving habitat for populations of a highly imperiled butterfly and Pennsylvania Species of Greatest Conservation Need, the frosted elfin (pictured below), to preclude federal listing. The RCN 2.0 pollinator project results will inform a U.S. Fish and Wildlife Service Species Status Assessment. The site assessments and surveys conducted by Western Pennsylvania Conservancy are funded PA Department of Agriculture grant, which provides nearly \$20,000 in non-federal match to the RCN 2.0 project.



The frosted elfin (Calliphrys irus) is identified as a Species of Greatest Conservation Need in the 2015-25 Pennsylvania Wildlife Action Plan and one of the rarest butterflies known in the state. Western PA Conservancy/ Natural Heritage Program surveys and site assessments will inform habitat management in PA and contribute to the U.S. Fish and Wildlife Service Species Status Assessment in 2023.

