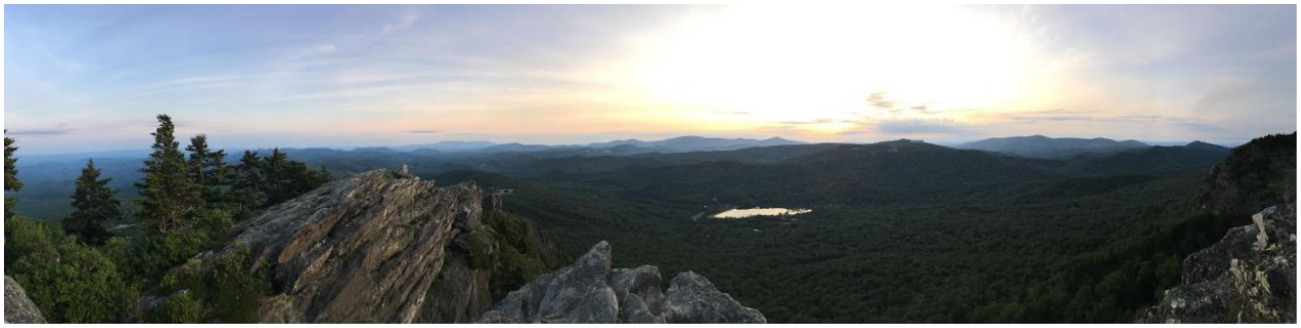
2019

APPALACHIAN MOUNTAINS JOINT VENTURE

YEAR IN REVIEW

Our mission is to restore and sustain viable populations of native birds and their habitats in the Appalachian Mountains Joint Venture region through effective, collaborative partnerships.



Dear AMJV Partners,

Welcome to the 2019 AMJV Year in Review. Now, you may be thinking to yourself, it's half-way through 2020 – isn't this Year in Review a bit late? Yes, it is, but then again, we are in an extraordinary time. COVID-19 is impacting all of us in ways we could not predict, including the timeliness of completing this Year in Review. That said, the accomplishments and successes we enjoyed in 2019 are no less impressive regardless of when you read about them.

One of the most notable events of 2019 that resonated across the entire bird conservation community was the publication of the report in *Science* documenting the loss of almost 3 billion birds since 1970. While the magnitude of that loss is staggering, it is also a call to action and underscores the importance of our work in the Appalachians. With that in mind, I want to thank all AMJV staff, Board Members, Tech Committee members, and other partners for your continued hard work and dedication to our partnership, and I look forward to our continued work to bring back the birds!

Thank you again for another great year!

Todd Fearer, Appalachian Mountains Joint Venture Coordinator

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AMJV MISSION & VISION

Our mission is to restore and sustain viable populations of native birds and their habitats in the Appalachian Mountains Joint Venture region through effective, collaborative partnerships.

Vision - Partners working together for conservation of native bird species in the Appalachian Mountains region to attain:

- Fully-functioning ecosystems with sustainable populations of the region's native avifauna, guided by state, regional, national, and international bird plans
- Effective delivery of habitat conservation through adaptive management and guided by a conservation approach consisting of biological planning, conservation design, delivery of conservation actions, evaluation, and research
- Success in capitalizing on funding opportunities relevant to partnership priorities
- An engaged Management Board, representative of the diverse landscape and effective partnerships in the Appalachian Mountains

INTRODUCTION

The AMJV Partnership - which consists of over 50 state and federal agencies, conservation organizations, and universities throughout 12 states in the Appalachian Region - is focused on preserving, managing, and restoring diverse, healthy forest habitats in the region to benefit not only birds, but the diversity of Appalachian plants and wildlife.

This Year in Review is organized to reflect the two overarching themes of the current AMJV Strategic Plan (2018-2023). Theme 1 goals, which focus on creating a dynamic, healthy forest landscape in the Appalachian Region, are supported by projects within the six focal landscapes: Allegheny Highlands (PA/NY); Greenbrier/Alleghenies (WV); Southeastern Ohio; Cumberlands (KY/TN); Southern Appalachian High Country (NC/TN/VA); and Virginia Highlands as part of the AMJV Focal Landscape Initiative and also by state and regional projects that occur outside of those boundaries. Theme 2 goals, which focus on full annual cycle conservation of birds, are supported by international projects completed by various AMJV partners.

NEW JERSEY

Golden-winged Warbler and Habitat Management in New Jersey

By Sharon Petzinger, Senior Zoologist, New Jersey Division of Fish and Wildlife

In New Jersey, breeding Golden-winged Warblers have been declining by about 6.6% per year since 2012. Fortunately, we detected the same number of 16 males singing in both 2018 and 2019. Half of this breeding population was observed on utility rights-of-way, a portion of which were within spans specifically managed to maintain breeding habitat for Golden-winged Warblers while also complying with regulations to guarantee powerline reliability.

After much debate and deliberation with groups opposed to forest management, we were able to implement Year 1 of the forest stewardship plan and implement forest management cuts across 9.4 acres on Sparta Mountain WMA for young forest restoration. Another 9.1 acres on Sparta Mountain WMA and 27 acres on Weldon Brook WMA will be ready to be cut in early 2020.

The Working Lands for Wildlife Program in NJ continues to move full steam ahead. Our team held two outreach events for private landowners in 2019 and contracted with five new landowners for 243 acres.

Bird monitoring results in 2019 showed a decline in number of bird species in 76% of the WLFW sites, 70% of managed sites on public lands, and 100% of the

A utility right-of-way span managed for Golden-winged Warblers. Only 1/3 of the span is cut every 3 years. In 2019 the wire zone was cut in these spans.

Photo by Sharon Petzinger/New Jersey Division of Fish and Wildlife

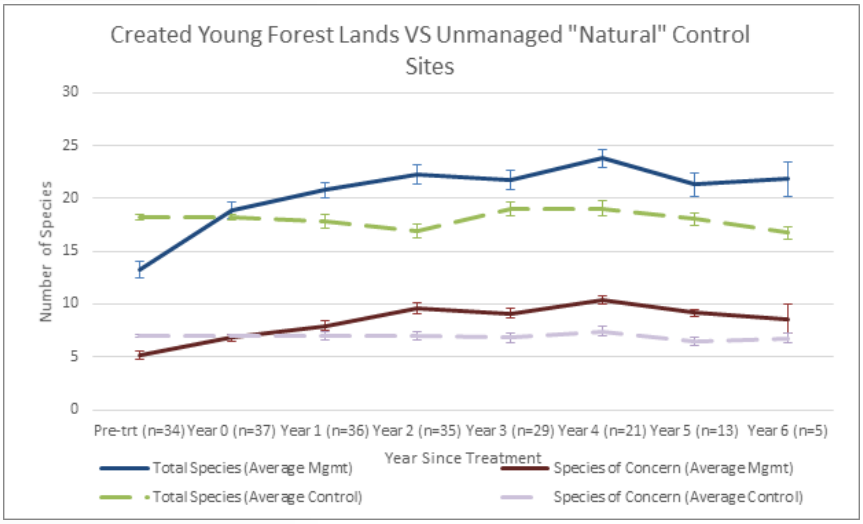
This tract on Sparta Mountain WMA was cut per guidelines in winter 2019. In September 2019 we counted an average of 2,760 live stems per acre, mostly chestnut oak, red oak, and white oak.

Photo by Sharon Petzinger/New Jersey Division of Fish and Wildlife

(Above) This site was cut in 2013 and burned early 2018 to eradicate the Betula lenta that was taking over.

Photo by Sharon Petzinger/New Jersey Division of Fish and Wildlife

shrubby wetland sites used as a control. That said, all the managed sites monitored continued to have significantly greater species richness compared to the control sites (P=0.002). Based on a combination of years since treatment and regeneration rates, only nine WLFW sites and 12 managed sites on public lands were considered suitable breeding habitat for golden-winged warblers in 2019. Golden-winged Warblers were detected on three of the 12 suitable sites on public lands but not on any of the 9 WLFW sites.



(Right) Average (± SE) number of bird species (blue, green) and bird species of concern (red, violet) observed during breeding bird surveys on Managed (WLFW & public lands treated to create or enhance habitat for GWWAs) and Unmanaged (Natural Control) sites.

SAF workshop, discussing forest bird habitat.

Photo by Suzanne Treyger/Audubon NY

NEW YORK

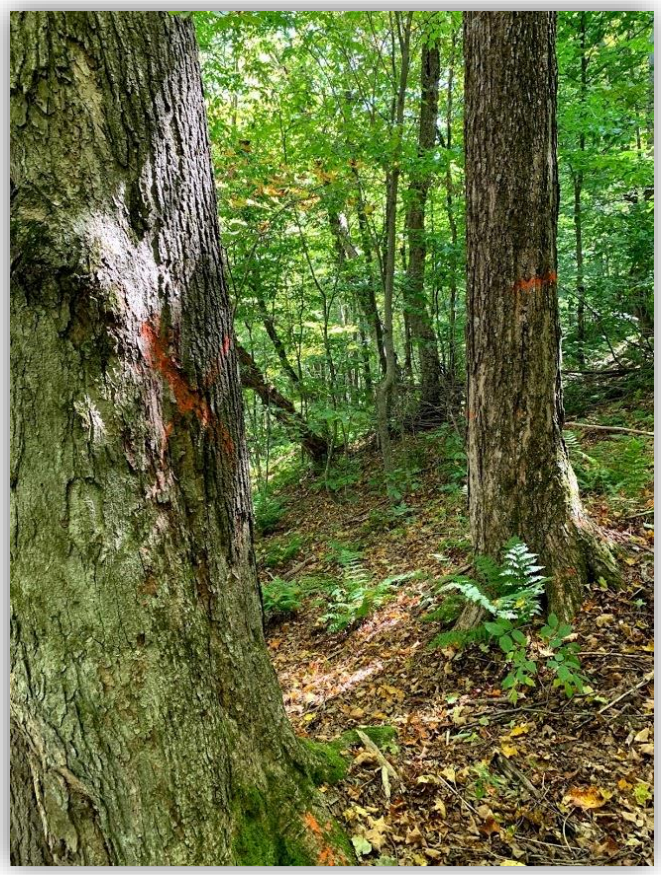
Forest Habitat Educational Workshop for Society of American Foresters Chapter

By Suzanne Treyger, Forest Program Manager, Audubon New York

This work overlaps the Allegheny Highlands (PA/NY) Focal Landscape

Audubon NY co-led a workshop for the Central NY Society of American Foresters chapter to discuss forest

bird habitat management. More than 12 consulting, procurement, and NYS Department of Environmental Conservation (DEC) foresters were in attendance, where a variety of harvests were toured on private and public land throughout the daylong workshop. The resulting growth and structure from each cut and the habitat benefits to forest birds at the landscape and stand level was discussed in detail.



Trees marked for a Wood Thrush habitat management project.

Photo by Suzanne Treyger/Audubon New York

Harvests for Habitat Project in NY: Upper Delaware Watershed

By Suzanne Treyger, Forest Program Manager, Audubon New York

Harvests for Habitat is a new collaborative partnership between Audubon NY, Watershed Agricultural Council, and NY Tree Farm Program, that enables habitat improvements for Wood Thrush, Cerulean Warbler, and associated species, through active forest management and financial incentives. In an effort to mitigate the absence of markets for low-grade wood material that often come from harvests that improve habitat quality, this project will provide financial assistance to loggers to offset any monetary losses they may incur. Financial assistance is also available to foresters to compensate their time in working with our field staff to plan and mark cuts that benefit target forest birds.

Throughout 2019, project partners successfully created and delivered effective outreach campaigns within the Upper Delaware Watershed, which included targeted mailings and emails to landowners, foresters, and loggers, as well as printed articles and a radio interview. Through these efforts, more than 3,000 people (landowners, foresters, and loggers) have been targeted and reached about Harvests for Habitat. Further, 161 landowners, foresters, and loggers have engaged directly with the Harvests for Habitat program, demonstrating interest and taking action by attending educational workshops, programs, and woods walks, with 84 forest owners indicating interest in implementing a habitat project on their property. To better prioritize these landowners and identify those with the highest potential to implement a habitat project, we developed an application that gathered more information about each landowner's property and goals, and also asked if they were planning a harvest within the grant period. We have received more than 20 applications to date and have delivered technical assistance and assessed forest habitat on more than 1,000 acres. Working closely with consulting foresters and other natural resource professionals, six to seven habitat projects that seek to improve forest conditions on more than 400 acres have been identified and are waiting for ideal ground and weather conditions for cuts to occur. The approved projects are a mix of commercial and non-commercial harvests. For each approved project, financial assistance will be distributed to foresters and loggers or other operators that perform the cuttings.

Another important component of this project is developing economically viable funding rates that compensate loggers for implementing harvests that produce the desired forest conditions for Wood Thrush and Cerulean Warbler. To calculate those costs, we will use Planning Analysis in Timber Harvesting (PATH) software to track logging costs during the harvest and specifically during the implementation of the bird habitat recommendations. PATH will give us the insight we need to design an appropriate funding rate that provides sufficient incentive to implement habitat management recommendations at a significant scale.

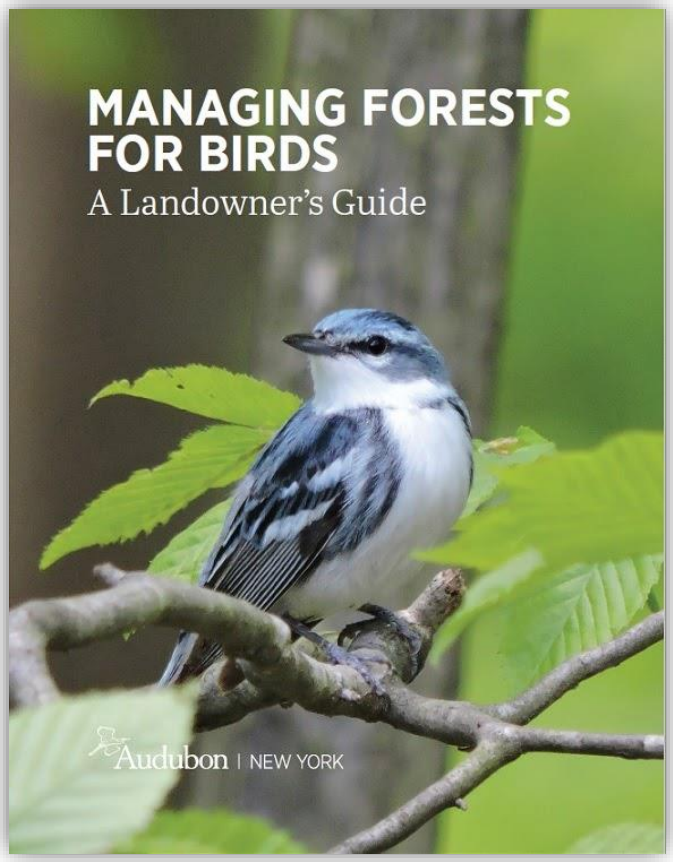
Harvests for Habitat is funded by the Delaware River Restoration Program, administered by the National Fish and Wildlife Foundation.

Managing Forests for Birds: A Landowner's Guide

By Suzanne Treyger, Forest Program Manager, Audubon New York

This work overlaps the Allegheny Highlands (PA/NY) Focal Landscape

Audubon NY recently published Managing Forests for Birds: A Landowner's Guide, a companion guide to Forest Management for New York Birds: A Forester's Guide. The guide provides information about the habitat needs of forest birds at the landscape and stand level and includes next steps for landowners to follow when interested in forest habitat management.



Cover of Managing Forests for Birds: A Landowner's Guide

Photo by DJ McNeil/USDA

A young forest project area at Tioughnioga WMA in central New York.

Photo by Adam Perry/DEC

Young Forest Initiative on Wildlife Management Areas

By Katherine Yard, Wildlife Biologist, and Sandy Van Vranken, Wildlife Biologist, New York State Department of Environmental Conservation

New York State DEC's Young Forest Initiative continues to create and improve habitat for woodcock, grouse, turkey, whip-poor-will, Golden-winged Warbler, and other wildlife on over 90 Wildlife Management

Areas (WMA) throughout New York. The following updates are for the 24 WMAs located within the AMJV region. Over the past year, we completed the Habitat Management Plan (HMP) for Honeoye Inlet WMA and have scheduled a public meeting for March 2020. Overall, we've completed 15 HMPs and are currently developing another six. We completed eight young forest projects (135 acres) on six WMAs in 2019, including clearcuts, seed tree cuts, and shelterwood cuts. Since 2015 when our program began, we have completed 21 projects (>500 acres) on 12 WMAs. Currently, 18 projects (>800 acres) on nine WMAs are under contract and are expected to be completed within about three years. An additional 18 projects (>1,100 acres) on 8 WMAs are currently in the planning stages. Beyond even-aged management for young forest, an additional 230 acres of timber stand improvement and 100 acres of shrubland management are planned on five WMAs. We've also been continuing outreach efforts, including a hike through Tioughnioga Wildlife Management Area where YFI staff highlighted recent management activities that increase young forest habitat.

A YFI biologist leads a tour of habitat management at Tioughnioga WMA.

Photo by Larry Ferris

For more information about our program, please visit http://www.dec.ny.gov/outdoor/104218.html.

Golden-winged Warbler Habitat Management on NY State Parklands in the Hudson Highlands

By Ed McGowan, Director of Science and Trailside Museums and Zoo, New York State Office of Parks, Recreation, and Historic Preservation; Max Garfinkle, Palisades Region Stewardship Specialist, New York State Office of Parks, Recreation, and Historic Preservation; and Matt Shook, Director of Development and Special Projects, Palisades Interstate Park Commission

In 2013, the Palisades Interstate Park Commission and New York State Office of Parks, Recreation, and Historic Preservation (NYS OPRHP) initiated a Golden-winged Warbler (GWWA) management project in the Hudson Highlands region of southeastern New York. Building off John Confer's long-term research, the project aims to assess the distribution and abundance of *Vermivora* sp. across the landscape to inform targeted habitat management.

State parklands in the Hudson Highlands contain large matrix forests with numerous palustrine wetlands historically used by breeding GWWA. With the exception of powerline ROW maintenance, Park policy has not allowed for active forest management at a meaningful scale to benefit early successional species. Consequently, to improve conditions for GWWA, we have focused on restoring natural, shrubby wetlands degraded by invasive phragmites and thus made unsuitable for GWWA nesting. These include sites within wetland systems formerly (Confer, pers comm) and currently supporting breeding GWWA.

Spot-treating remnant Phragmites australis at a managed wetland with historic Golden-winged Warbler breeding in Sterling Forest State Park.

Photo by Max Garfinkle/NYS OPRHP

Small scale experimental restoration began at six sites in 2013. By 2019, restoration efforts had gradually expanded to 25 sites totaling 212.5 acres. These sites were chosen from over 200 wetland complexes surveyed for *Vermivora*. Through a combination of targeted herbicide treatment and geotextile (and helpful flooding by beavers!), phragmites has been reduced to <5% of its pre-treatment abundance at most sites.

Unlike upland systems where succession occurs rapidly following silvicultural treatments, several years are required for low herbaceous growth to establish in these wetlands following phragmites control. The scattered shrubs and large sedge tussocks typical of the pre-phragmites condition may need a decade or more to develop in the absence of plantings. However, once established, these wetland habitats provide a longer successional window for GWWA breeding than typical upland sites.

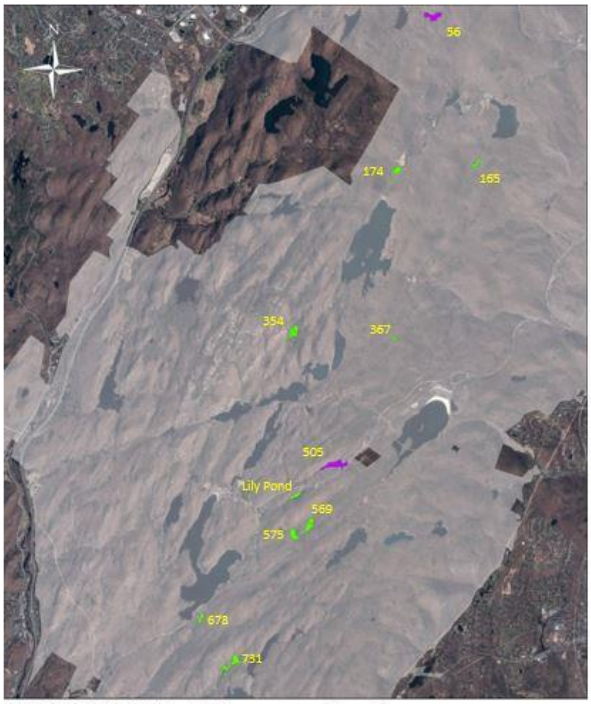
Our breeding bird survey results since spring 2013 indicate a troubling trend, similar to that seen in neighboring NJ (see NJ highlights). Overall GWWA numbers have declined since 2013, while both Blue-winged Warbler (BWWA) and hybrids have increased on the landscape. While our wetland restoration has been successful based on vegetation metrics (monocultures of phragmites have been replaced by diverse native plants communities), and most sites now have the structural complexity preferred by GWWA, downward population trends seem to be curtailing occupation of restored habitat. Our breeding GWWA results are equivocal. Some managed sites have retained GWWA, while others support a changing cast of hybrids and BWWA or are unoccupied. It remains to be seen if local *Vermivora* will fully recolonize the sites, whether as phenotypically pure Golden-wings, hybrids, or Blue-wings.

Managed (foreground) and unmanaged (background) wetland in Sterling Forest State Park. Left unmanaged, dense monocultures of phragmites eliminate the diverse herbaceous and woody growth favored by breeding Golden-winged Warbler and other early successional species.

Photo by Max Garfinkle/NYS OPRHP

Even without the return of GWWA, our restoration program has greatly enhanced the habitat value of these wetlands for species across many taxa – including numerous NY species of Special Concern. The landscape context of these wetlands - located within

expansive mature forests - and local rarity of early successional habitat, adds to their significance as conservation targets and meets our overarching goal to protect and enhance biodiversity on NY State Parklands.



(Above) Max Garfinkle, Palisades Region Stewardship Specialist, listens for Golden-winged Warbler in a wetland shrub-thicket on New York State parklands.

Photo by Rachel Guerrieri/NYS OPRHP

(Left) New York State Office of Parks, Recreation, and Historic Preservation Wetland Management Locations: Harriman State Park

NORTH CAROLINA

Conservation and Restoration on Private Lands

By Jamie Harrelson, Private Lands Technician, Audubon North Carolina

This work overlaps the Southern Appalachian High Country (NC/TN/VA) Focal Landscape

Audubon North Carolina expanded outreach efforts to private landowners in western North Carolina as part of the Working Lands program. We provided technical assistance for managing and restoring habitat for Golden-winged Warblers and assisted landowners through the process of applying for NRCS cost-share payments. Audubon staff engaged with and provided technical assistance to landowners through the Forest Landbird Legacy Program, an internal cost-share initiative with a focus on forest interior birds. The following stories illustrate Audubon's recent work and partnerships with private landowners:

- Letting it grow: how landowners are helping birds by mowing less
- For one western North Carolina landowner, retirement is for the birds
- Longtime Audubon volunteer revives his own property for the birds

ForestHer NC

By Jamie Harrelson, Private Lands Technician, Audubon North Carolina

This work overlaps the Southern Appalachian High Country (NC/TN/VA) Focal Landscape

Audubon North Carolina has partnered with other conservation nonprofits and government agencies on a new initiative to engage women woodland owners and natural resource professionals through a workshop series called ForestHer NC. We hosted two workshops in each of the three regions of the state in 2019 and engaged more than 460 participants on topics ranging from mapping and tree identification to balancing management objectives and obtaining a forest management plan. The series was planned to continue in March (with a sold-out crowd again for March) and May, but those workshops, as well as tentatively-planned workshops in August, were postponed due to COVID19; workshops will be held virtually September through December 2020, and the feasibility of in-person workshops will be reevaluated in January. Through this series, Audubon and partners hope to provide tools to women landowners to help them steward their land for their families and for future generations. You can follow ForestHer NC on Facebook and Instagram @foresthernc.

We are ForestHers! Participants at a ForestHer NC workshop in Morganton express their enthusiasm for stewarding woodlands.

Photo by Aimee Tomcho/Audubon North Carolina

Golden-winged Warbler Field (and Forest!) Trips

By Christine Kelly, Mountain Wildlife Diversity Biologist, North Carolina Wildlife Resources Commission

This work overlaps the Southern Appalachian High Country (NC/TN/VA) Focal Landscape

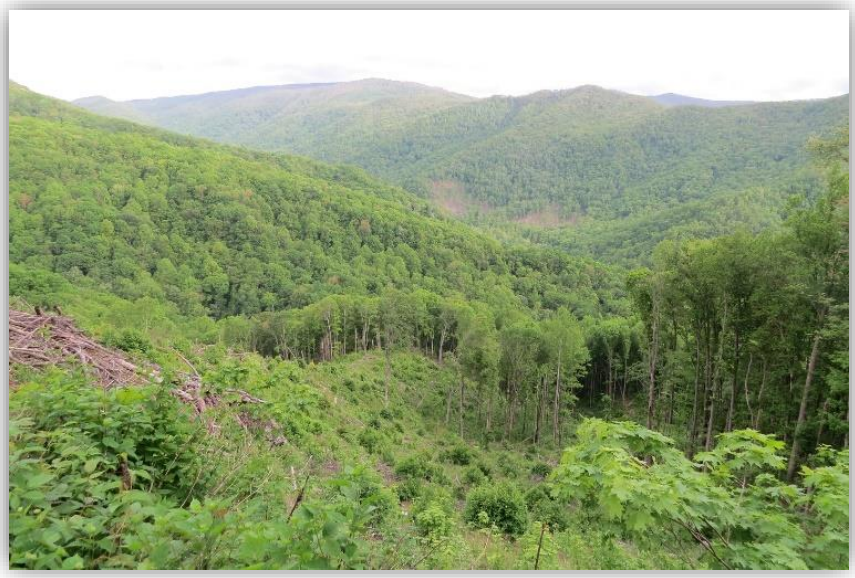
In April 2019, the North Carolina Wildlife Resources Commission (NCWRC), Southern Appalachian Highlands Conservancy, and the Appalachian Trail Conservancy co-hosted the spring Southeast Golden-winged Warblers partners meeting. Partners toured old field habitat in Roaring Creek Valley (Avery County) to see sites recently managed for Golden-winged Warbler. Then, with the Best Management Practices for Golden-winged Warblers in hand, they put their heads together to develop tentative prescriptions for areas needing habitat management and for the broader landscape. In June, partners from the Forest Service, National Wild Turkey Federation, and Audubon NC joined us for our final bird survey of timber harvest units in the Cheoah Mountains. For some of the silviculturists

in attendance, it was their first time seeing and hearing a Golden-winged Warbler! While watching the birds sing from tall residual oak trees and skulk through low thickets of pokeweed and goldenrod, we developed novel modifications to traditional silviculture prescriptions, intended to maximize habitat features such as song perches, food, and nest sites for Golden-winged Warblers. Armed with useful feedback, partners set to work improving habitat for 2020 soon after the birds headed back to South America for the winter.

Members of the Southeast Golden-winged Warbler Partners Group design a management plan during a field trip to Roaring Creek Valley.

Photo by Chris Kelly/NCWRC

A small cluster of Golden-winged Warblers in the Unicoi Mountains of Graham County was given room to grow. NCWRC biologists anticipated the cluster on the Cherohala Skyway serving as a source for colonizing new timber harvest units in the U.S. Forest Service's nearby Santeetlah project area. Indeed, at least one of the harvest units was occupied in May. However, just as new habitat associated with the Santeetlah project became available, habitat along the Skyway became unsuitable or "aged out" beyond what Golden-wings will use. The section of Skyway between mileposts 14 and 15 has supported Golden-winged Warblers for many years, but Sue Cameron of the U.S. Fish and Wildlife Service found none during her annual surveys in 2019. Fortunately, NCWRC and partners had identified habitat improvement along the Skyway as a priority to maintain and grow this cluster. NCWRC and the U.S. Forest Service developed a project to set back succession along this part of the Skyway. They used Google Earth leaf-off satellite imagery from 1993 and 2013 to compare the extent of canopy closure for each time-period and then delineated potential treatment areas. In November, a team of six sawyers from the NCWRC Wildlife Diversity Program (WDP) and the Cherokee and Nantahala National Forests treated approximately eight acres by felling small trees in open areas where a young forest canopy was closing. In December, a team of five sawyers from



Wildlife Diversity biologists found a Golden-winged Warbler on territory in this two-year-old harvest unit on the Cheoah Ranger District, Nantahala National Forest.

Photo by Chris Kelly/NCWRC

NCWRC's Land and Water Access Division and WDP, and from the Nantahala National Forest cut stump sprouts below Shute Cove overlook. Completion of remaining work at the Obadiah overlook will restore 10+ acres of habitat. We anticipate a much better outcome in the spring 2020 bird survey.

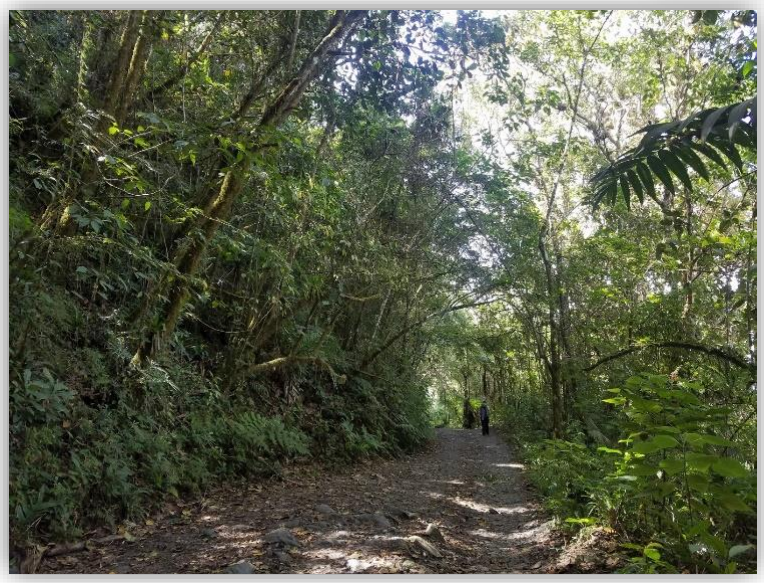
(Top Right) Pre- and (Bottom Right) post-treatment conditions along the Cherohala Skyway.

Photos by Chris Kelly/NCWRC

NCWRC Wildlife Diversity Technician Clifton Avery spent November and December in Colombia with his family. The excursion took him to regions needing Golden-winged Warbler surveys, including the Santa Marta Mountains and Antioquia region. He completed 26 surveys for Golden-wings, documenting two individuals.

(Below) Forest in the Santa Marta Mountains of northern Colombia where Clifton Avery documented a Golden-winged Warbler in a mixed species flock.

Photo by Chris Kelly / NCWRC

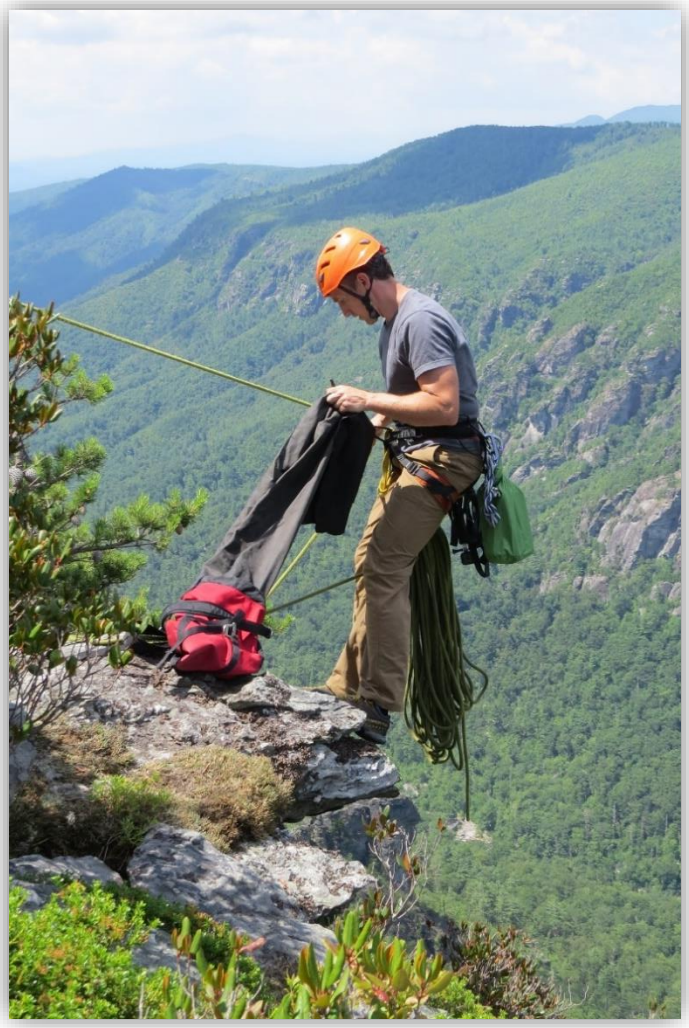


Peregrine Falcon Management
By Christine Kelly, Mountain Wildlife Diversity Biologist North Carolina Wildlife Resources Commission

This work overlaps the Southern Appalachian High Country (NC/TN/VA) Focal Landscape

Since publishing a summary of Peregrine Falcon breeding performance in NC during the federal post-delisting period, NCWRC biologists have been focused on improving falcon nest success. Biologists don't interfere with factors like competitors (e.g., common raven) or predators (e.g., great-horned owl). However, factors contributing to nest failure that can be controlled, such as human disturbance, should be mitigated. Seasonal cliff closures are set annually by land

managers, and NCWRC works with climbing organizations such as the Carolina Climbers Coalition (CCC) to spread the word and collect important data. The CCC and Appalachian Mountain Rescue Team (AMRT) helped us address problem sites in 2019. In July, two CCC climbers investigated a nest ledge in Linville Gorge and in November, AMRT climbers examined the historic eyrie at Chimney Rock. In the fall, NCWRC developed a new project to train and enlist climbers to help survey for falcons at Hanging Rock State Park, a nest site which is difficult for NCWRC staff to monitor. These collaborative efforts are already paying off. In the spring, CCC members discovered a new peregrine nest on a cliff owned by the CCC. They immediately cordoned off the nest with closure signs and the pair successfully raised one nestling. The best part of all these collaborations with CCC and AMRT is the growing awareness in the climbing community about peregrine nesting and NCWRC's willingness to work with climbers so that the falcons have the best chances at nest success, data collection is improved, and the climbers get time on the cliffs. The CCC featured this collaboration and their new stewardship role in a recent article.



(Above) Mike Reardon, president of the CCC, begins his rappel into a peregrine nest ledge in Linville Gorge.

(Left) Joel McCombs of the AMRT documents prey remains scattered on the roof overhanging the historic peregrine eyrie at Chimney Rock.

Photos by Chris Kelly/NCWRC

(Right) Mary Caldwell, of the CCC, climbs to the new nest ledge on Laurel Knob to collect a peregrine eggshell and prey remains from a ledge where peregrines re-used a former raven stick nest.

Photo by Tom Caldwell/CCC.

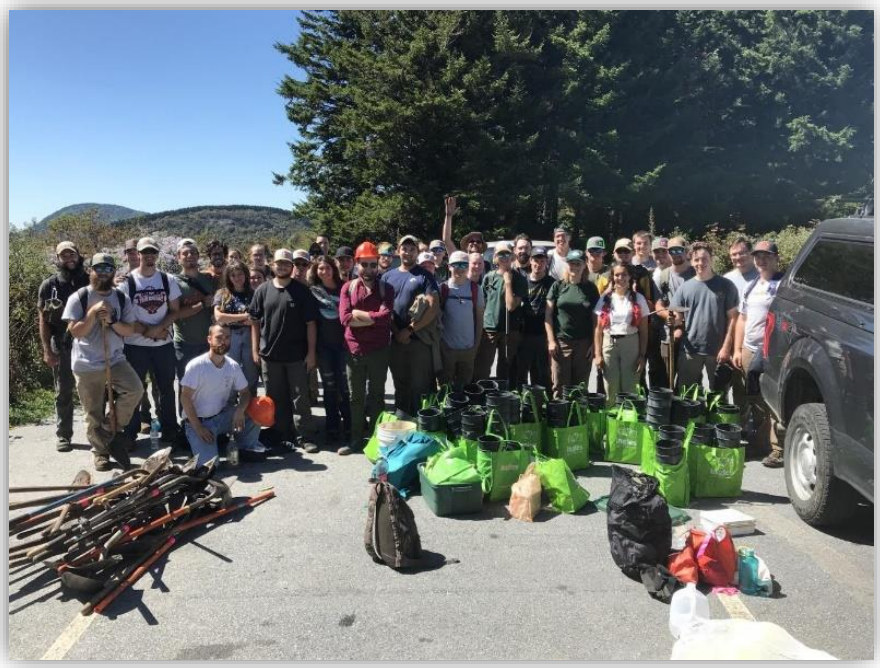
(Sky) Island Hopping

By Christine Kelly, Mountain Wildlife Diversity Biologist North Carolina Wildlife Resources Commission

This work overlaps the Southern Appalachian High Country (NC/TN/VA) Focal Landscape

At the annual meeting of the Southern Appalachian Spruce Restoration Initiative in October 2019 in Asheville, partners gathered into Sky Island Teams to begin planning restoration projects.

Photo by Chris Kelly/NCWRC



Silviculture students from Haywood Community College at the end of a workday in the Great Balsams.

Photo by Alex Storm

At the annual meeting of the Southern Appalachian Spruce Restoration Initiative (SASRI) in October 2019 in Asheville, partners gathered into Sky Island Teams to begin planning restoration projects. We started with SASRI Goal #3: to refine mapping and field criteria to determine appropriate restoration sites. Teams gathered around plotter maps and circled low hanging fruit project sites and shared local knowledge about rare species, restoration need, and specific objectives. Next, we worked on SASRI Goal #1: to restore spruce to natural abundance in ecologically appropriate locations where canopy density has been reduced. For this, SASRI partners requested guidance on how to restore spruce. Using a worksheet to guide their discussion, teams described current conditions, site history, and possible silviculture prescriptions (e.g., planting, releasing canopy-suppressed spruce, etc). Perhaps the best part of this exercise was gathering team members together to share their enthusiasm about high elevation forests. Teams are at different stages of progress but will use a checklist developed by the Steering Committee to work their way through a project from start to finish.

The next phase of the Flat Laurel Collaborative Spruce project was implemented in September in the Great Balsams. Hiking clubs and horses hauled 300 seedlings down the trail, and silviculture students from Haywood Community College planted them in one afternoon. Next, NCWRC will begin the Graveyard Ridge project, restoring logged and burned areas in the vicinity of Graveyard Ridge. NCWRC then had an opportunity to bring spruce restoration efforts to the attention of National Forests in North Carolina leaders in October. At the Forest Leadership Team meeting, the NCWRC biologist highlighted SASRI's efforts and then took the team on a tour of seedlings planted in 2013. The forest leadership was so impressed with SASRI's collaborative approach to high priority conservation efforts and proven track record that they committed resources to spruce restoration, including helicopter delivery of seedlings to backcountry restoration sites.

Virginia Gibbs (USFS) stands next to a spruce that was planted as a seedling in a tree fall gap in 2013.

Photo by Chris Kelly/NCWRC

OHIO

Ohio Bird Conservation Initiative Update

By Matthew Shumar, Program Coordinator, Ohio Bird Conservation Initiative

This work overlaps the Southeastern Ohio Focal Landscape

This past fall, Ohio began the process of updating the state's All-bird Conservation Plan. The first plan was published in 2010, through the Ohio Bird Conservation Initiative and was meant to step down Joint Venture management plans, but also provide more detailed information at a finer resolution. Since the first plan, new datasets have become available, including the Second Atlas of Breeding Birds in Ohio, and there will be an increased focus on habitat needs throughout all portions of the full-life cycle. The plan is targeted for completion in 2021.

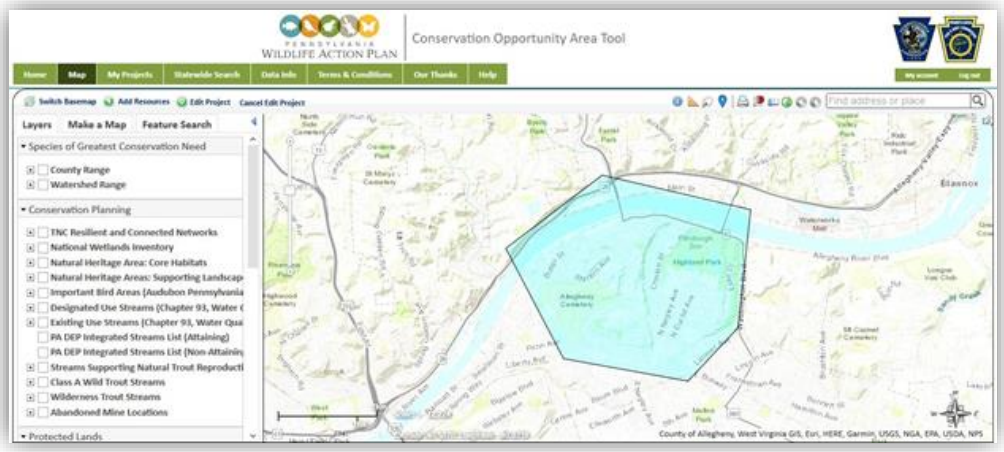
PENNSYLVANIA

The Virtual Pennsylvania Conservation Opportunity Tool Operationalizes the PA State Wildlife Action Plan

By Catherine Haffner, Wildlife Diversity Conservation Planning Coordinator, Pennsylvania Game Commission

This work overlaps the Allegheny Highlands (PA/NY) Focal Landscape

The Pennsylvania Conservation Opportunity Area (COA) tool, which effectively makes the 2015-2025 Pennsylvania Wildlife Action Plan available through a web-based map, was released in August 2019.



A screenshot of the new COA tool shows some of the features and map layers available to users.

A few notable features of the COA tool include: discovering Species of Greatest Conservation Need in a user-defined area of interest; developing an output report with actions identified to support the species and habitats in an area of interest; producing a list of Species of Greatest Conservation Need by county or watershed; and seeing range maps for most Species of Greatest Conservation Need.

The COA tool was developed to expand access to core components and facilitates use of the Pennsylvania Wildlife Action Plan. The Pennsylvania Wildlife Action Plan guides conservation actions to secure Species of Greatest Conservation Need and their habitats and is filled with important information about species, habitats, environmental stressors, needed conservation actions and more. Everyone who has interest in the conservation of Pennsylvania's at-risk species can use this tool. Whether expanding one's knowledge of a species or gathering information for on-the-ground actions, the COA Tool can be a useful resource.

New users must register for a free account, which will allow them to create and save projects and generate reports. A Quick Start Guide and Help menu area available.

The COA Tool is the collective effort of species and habitat experts from the Pennsylvania Game Commission, Pennsylvania Fish & Boat Commission, Pennsylvania Natural Heritage Program and numerous conservation partners. Extensive data management, prototype development and non-federal match were provided by Western Pennsylvania Conservancy. The Pennsylvania Department of Conservation and Natural Resources provided web development technical assistance. NatureServe developed the final web application. The Wildlife Action Plan, COA Tool and this fact sheet were produced by the Pennsylvania Game Commission, Pennsylvania Fish & Boat Commission and statewide partners, with support from State Wildlife Grant funds administered by the U.S. Fish and Wildlife Service, Wildlife and Sportfish Restoration Program.

Spotted Wing Drosophila and Avian Ecology Project

By Daniel Roche, MS Student, West Virginia University; Dr. Christopher Lituma, Assistant Professor, Division of Forestry and Natural Resources, West Virginia University; William Oldland, Entomologist, State and Private Forestry; and Scott Stoleson, Research Wildlife Biologist, Northern Research Station, U.S. Forest Service

This work overlaps the Allegheny Highlands (PA/NY) Focal Landscape

Spotted wing drosophila (SWD) is a nonnative invasive insect pest that, unlike native fruit flies, parasitizes both the ripe and ripening fruits of over 100 documented plant species in the U.S. Since its recent introduction to California in 2008, SWD has spread to every state in the eastern U.S. While

it can cause entire crop failures for fruit growers, its impacts in invaded forested ecosystems are unknown. SWD populations increase dramatically at a time when fruit resources critical to native wildlife become abundant. For Neotropical migratory birds, this coincides with the post-breeding season, when birds are under high energetic demand to prepare for fall migration. A loss of soft mast to SWD parasitism could reduce food sources for meeting those energetic demands and lead birds to alter their habitat use during the post-breeding season and fall migration, which could have negative consequences for migration success.

To investigate how songbirds respond to SWD, West Virginia University (WVU) has partnered with the U.S. Forest Service (USFS), with support from the Allegheny Forest Health Cooperative and the Pennsylvania Department of Conservation and Natural Resources, to conduct surveys during their post-breeding and migratory seasons at Allegheny National Forest (ANF). The ANF spans Warren, McKean, Elk, and Forest counties in northwestern Pennsylvania, and it is one of the largest contiguous tracts of forest in the Appalachian Region, making it an important region for many Neotropical migratory songbirds. The ANF also contains many regenerating timber harvests, which provide valuable vegetative cover and abundant fruit resources for many birds. The USFS has also provided funding for this project through the Forest Health Protection "Emerging Pest" Grant. West Virginia University provided funding support as part of a Faculty Senate Grant and through the National Institute of Food and Agriculture (NIFA); WVA00128 Accession #1011563.

In 2019, we conducted mist-netting, fruit surveys, and SWD trapping across twelve timber

(Above) A spotted wing drosophila trap hung adjacent to a mist net in a regenerating timber harvest at Allegheny National Forest.

(Below) A bird bag covered by spotted wing drosophila during mist netting in August of 2019 at Allegheny National Forest.

Photos by Dan Roche/WVU

harvests distributed throughout the ANF and Clear Creek State Forest located just south of the ANF. From July to October, we banded a total of 1,733 birds and gathered data to investigate the body condition and fruit consumption of birds in timber harvests. We also placed 350 SWD traps to estimate abundance of SWD in timber harvests. In addition to traps, we also collected 137 fruit samples to investigate extent of fruit infestation in timber harvests by SWD. During the field season, more than 20 volunteers from the ANF, USFS, and general public assisted with netting birds and trapping SWD. Student groups, including the Clarion University Summer Academy, joined on public outreach days to learn about forest and wildlife management, post-breeding bird ecology, and SWD pest ecology.

With this project, we will explore how native bird communities respond to this recently introduced invasive fruit pest. WVU and USFS will continue this collaborative field work in summer and fall 2020.

(Top Left) A hatch-year ovenbird captured during mist netting in a regenerating timber harvest at Allegheny National Forest.

(Bottom Left) An after-hatch-year Black-throated Blue warbler captured during mist netting in a regenerating timber harvest at Allegheny National Forest.

(Below; From left to right) Volunteers Auston Swanson and Flo McGuire, wildlife research biologist Scott Stoleson (U.S. Forest Service), and technician Kim Geissler (West Virginia University) band birds captured while mist netting at a regenerating timber harvest at Allegheny National Forest.

Photo by Dan Roche/WVU

**See Tracking Swainson's Thrush Habitat Use with Nanotag Technology in the International Highlights section to read about a project that begins in Pennsylvania and tracks habitat use across a species' full annual life cycle.*

TENNESSEE

3,157 Acres Have Been Connected the Tennessee River Gorge!

By Eliot Berz, Business and Access Director, Tennessee River Gorge Trust

Fog resting over the Tennessee River Gorge from Signal Mountain, TN. Through a series of priority land acquisitions, the 3,157 acres are now connected, creating a 7-mile corridor of protected forest.

Photo by Kevin Livingood/Livingood Photography

The Tennessee River Gorge Trust (TRGT) is pleased to announce the recent addition of 409 acres of land in the western portion of the Tennessee River Gorge. The Tennessee River Gorge is a 27,000-acre gorge at the southern end of the Appalachian Mountains just downstream of Chattanooga, Tennessee. Through a series of priority land acquisitions, conservation lands now span nearly 7 continuous miles along the south side of the Tennessee River. These acres represent six new parcels added to currently protected properties within the Tennessee River Gorge. Since 1981, TRGT has been actively protecting undeveloped lands and now owns over 6,000 acres in fee simple ownership. Overall, TRGT helps protect and oversee 17,000 acres in the gorge through ownership, Memorandums of Understanding and conservation easements. As a community land trust, TRGT also strives to educate the public about the value of open space and implement science-based land stewardship.

These six newly-acquired tracts were secured through generous support from the Open Space Institute's (OSI) Southern Cumberland Land Protection Fund, Tucker Foundation, the Pineapple Fund, a major anonymous gift, and the many other longstanding supporters of the Tennessee River Gorge Trust. The new properties will connect existing TRGT tracts to provide perpetual corridors for wildlife to adapt to our changing environment. These new acquisitions are also home to beautiful waterfalls, mature forests, high-quality streams, and the federally threatened large-flowered skullcap plant. The forested slopes and streams of this corridor serve as summer homes to a variety of Neotropical migratory birds, such as the Louisiana Waterthrush and Worm-eating Warbler.

"The protection of these six properties is a phenomenal win for both the people and wildlife of the Chattanooga region and beyond," said Peter Howell, executive vice president at OSI. "We commend the Tennessee River Gorge Trust on their tireless efforts to safeguard the Tennessee River Gorge, so that it can be available for future generations." TRGT is committed to protecting these lands and the cultural heritage associated with them. "Conservation efforts in the modern era are a partnership driven process. We cannot successfully protect the special places within our community without the support of organizations like OSI, the Tucker Foundation, and the countless other members of our community that give of themselves and their resources every day," says Executive Director Rick

Huffines, "these properties will be essential to future community access projects and our scientific understanding of this magical place."

**See Guatemalan Conservationists Visit the Tennessee River Gorge in the International Section to read about a TRGT project that tracks Louisiana Waterthrushes throughout their full annual cycle and includes a cultural exchange component to connect communities on each end of the bird's migration.*

VIRGINIA

Evaluation of private landowner attitudes toward high elevation shrubland management for the benefit of wildlife

By Lesley Bulluck, Assistant Professor, Center for Environmental Studies at Virginia Commonwealth University and Sergio Harding, Nongame Bird Conservation Biologist, Virginia Department of Wildlife Resources

This work overlaps the Virginia Highlands Focal Landscape

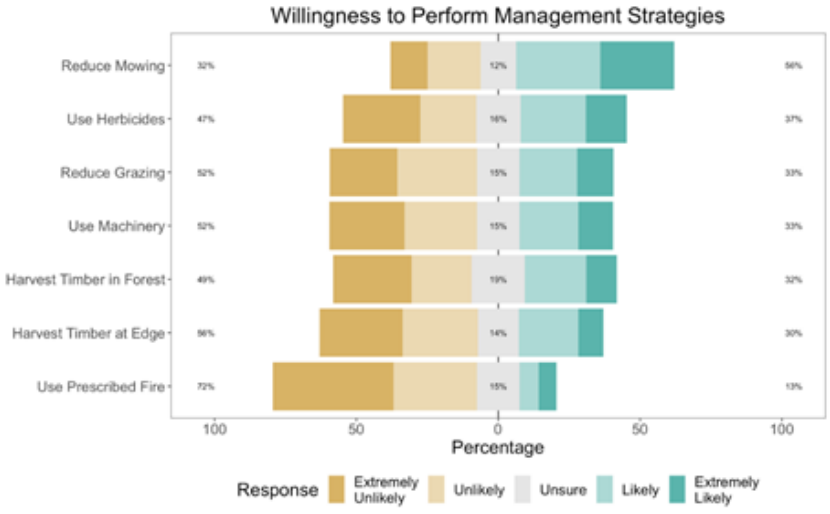
(Left) Male Golden-winged Warbler.

Photo by Baron Lin/VCU

The majority of Golden-winged Warblers (GWWA) in Virginia are found on private lands, and efforts to work with private landowners are increasingly important to their conservation. Such efforts include initiatives like the Natural Resources Conservation Service's (NRCS) Working Lands for Wildlife, which supports the creation and maintenance of shrublands favored by GWWA and other species. However, data are lacking on what factors motivate landowners to carry out different types of shrubland management, and therefore on how to best engage such landowners. In response to this need, the Virginia Department of Wildlife Resources (VADWR) partnered with the Virginia Commonwealth University's (VCU) Center for Environmental Studies to carry out a survey of private landowners in western Virginia in 2018; survey results were analyzed in 2019. The survey was distributed to landowners who owned at least 25 acres that are at or above 2,000 ft elevation within 5 counties in the Virginia GWWA breeding range. Over 500 landowners (28% response rate) participated in the survey.

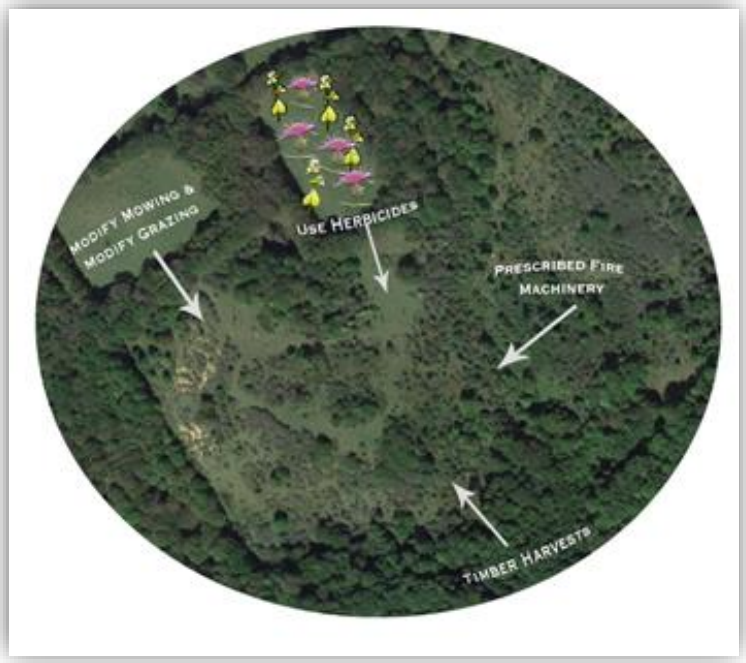
The survey investigated landowner attitudes toward a diversity of shrubland management options, including but not limited to traditional timber harvests. This was particularly of interest because private lands with significant pasture cover in an otherwise forested landscape are known to support significant densities of GWWA in the highlands of Virginia. Based on survey responses, these lands present an additional opportunity to create and maintain shrublands. Survey respondents said they

were just as likely to carry out pasture management options (reduced mowing or grazing intensity) as harvesting timber. Landowners willing to modify mowing and grazing practices tended to value factors such as water quality, pollinator habitat, and presence of wildlife on their lands; landowners most likely to harvest timber tended to value hunting and revenue from production on their land. Across all management options, landowners with past wildlife management experience were most likely to manage in the future.



Landowners differ in their willingness to carry out different management strategies to promote shrubland habitat (from a survey of Virginians in five western counties).

These results suggest that outreach efforts to engage landowners in shrubland management should include pasture management options alongside forest management options; and that highlighting the benefits of shrub habitat to pollinator species and water quality, as well as to both hunting and non-hunting recreation, could engage more landowners. With these findings in hand, DGIF and VCU are working with NRCS and other partners to develop and refine outreach campaigns that we hope will ultimately result in increased shrubland acreage for the benefit of Virginia's wildlife.



(Left) High quality shrubland habitat can be created and maintained through various management techniques, including timber harvests, decreasing mowing and grazing intensity, using herbicides to control invasive species, and prescribed fire and machinery to thin dense shrubs.

The 2nd Virginia Breeding Bird Atlas – 2019 Summary

By Sergio Harding, Nongame Bird Conservation Biologist, Virginia Department of Wildlife Resources

This work overlaps the Southern Appalachian High Country (NC/TN/VA) and Virginia Highlands Focal Landscapes

In 2019, Virginia completed the 4th year of its five-year 2nd Breeding Bird Atlas (VABBA2), a project of the Virginia Department of Wildlife Resources (VADWR), Virginia Society of Ornithology and the Conservation Management Institute at Virginia Tech. To date, over 1,200 volunteers have logged over 60,000 field hours and submitted over 515,000 breeding bird records to the VABBA2 eBird

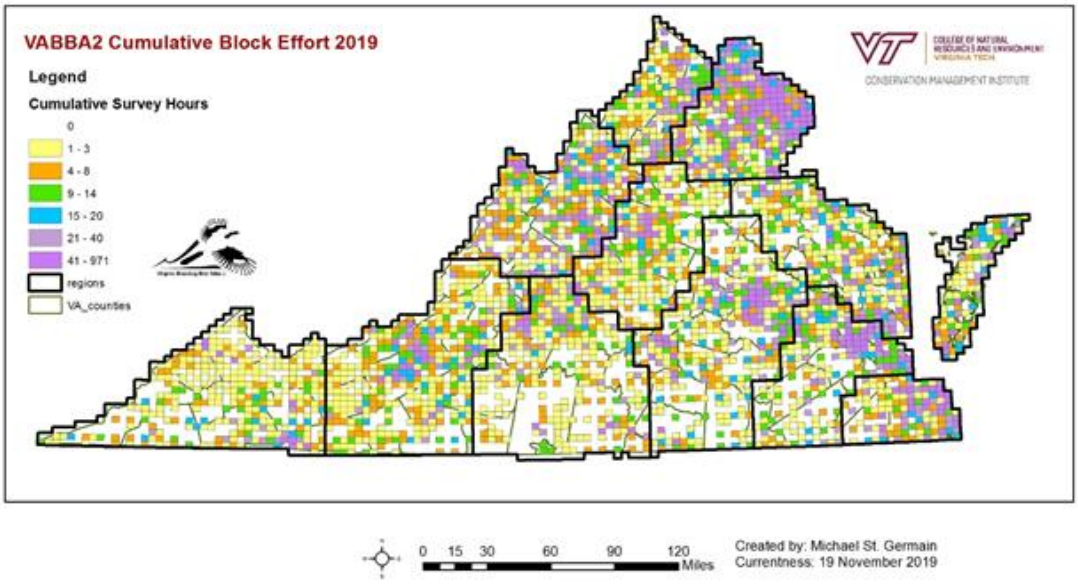
Volunteers participating in the Natural Tunnel VABBA2 Blockbusting Rally.

Photo by Ashley Peele/Conservation Management Institute.

portal, translating to over 200 breeding species reported and 191 species having been confirmed as breeders. Led by our inimitable Atlas Coordinator, Ashley Peele, over 50 volunteers participated in 4 'blockbusting' rallies that targeted under-surveyed areas of south-central and southwest Virginia. Paid blockbusting technicians contributed additional data for those regions. The goals for 2020 are to fill in remaining gaps in block coverage through volunteers and paid technicians, and to finish priority blocks that are close to completion (i.e., that meet the threshold criteria for survey activity in the block to end). Volunteers unable to travel to target blocks will be directed to survey public lands and quality, accessible habitats closer to home, such as wetlands, grasslands and high-elevation habitats, which to date have received less survey effort.

A companion project that will provide valuable data for the VABBA2 is a quantitative assessment of Virginia's breeding birds, which completed its third of four years in 2019. Paid technicians are collecting abundance data by conducting point counts along secondary roads across the Commonwealth, following a block-based sampling design. To date, nearly 14,500 points of a target 16,500 have been surveyed, with 5,500 points surveyed in 2019 alone. The surveys have resulted in a cumulative count of close to 195,000 birds since the project's inception. These data will be used to model density heat maps for species with sufficient observations, and to derive credible population estimates for those same species.

Map of cumulative statewide survey effort (hrs/block) by VABBA2 volunteers since 2016. Increases in effort in rural parts of the state helped to significantly reduce the 'white space', or areas with zero breeding bird observations, across the state in 2019.



Southwest Virginia *Vermivora* Surveys and Land Cover Classification

By Sergio Harding, Nongame Bird Conservation Biologist, Virginia Department of Wildlife Resources and Lesley Bulluck, Assistant Professor, Center for Environmental Studies at Virginia Commonwealth University

This work overlaps the Southern Appalachian High Country (NC/TN/VA) Focal Landscape

In 2019, the Virginia Department of Wildlife Resources (VADWR) contracted with Virginia Commonwealth University (VCU) to expand upon *Vermivora* bird surveys conducted in 2018 by DGIF in southwest Virginia. The 2019 surveys were primarily conducted on private lands and well away from roadsides in 5 focal counties. A total of 271 points were surveyed in May - June 2019, leading to Golden-winged Warbler (GWWA) detections at 63 points (23.3% occupancy), Blue-winged Warbler detections at 45 points (16.7% occupancy), and hybrid (Brewster's Warbler) detections at 3 points (1.1% occupancy). Additional target birds were detected incidentally outside of the official survey. Collectively, the two surveys pointed to the previously under-surveyed counties of Smyth and Tazewell as areas with relatively high GWWA abundances. Adjoining portions of Russell and Bland counties also had *Vermivora* occurrences.

In addition to the surveys, VCU is developing a land cover classification map for the five counties through a rigorous machine-learning process. The output will include an accurate classification of shrubland habitat, which is typically underrepresented in national and state-level land-cover layers. The resulting map will be used in conjunction with the 2018-2019 survey data to model GWWA occupancy/abundance, evaluate GWWA habitat use from a landscape perspective, and generate GWWA population estimates for the focal counties. This GWWA status assessment in this geographic area will significantly add to our knowledge of the species within its VA breeding range and raise the profile of southwest VA for future GWWA conservation and outreach work.

Male Golden-winged Warbler in Tazewell County, VA.

Photo by Baron Lin/VCU

**See Golden-winged Warbler Wintering Grounds Surveys in Colombia* in the International Section to read about how Virginia Department of Wildlife Resources partnered with various organizations to fund Golden-winged Warbler surveys in Colombia in an effort to track the species throughout its full annual life cycle.*

Virginia Tech Continues NFWF Private Lands Conservation Research

By Rebecca O'Brien, PhD Candidate, Dr. Ashley Dayer, Assistant Professor, and Dr. Bill Hopkins, Professor, Department of Fish and Wildlife Conservation at Virginia Tech

An eastern hellbender sitting on the creek bottom.

Photo by Jordy Groffen/Virginia Tech

With the support of AMJV, Virginia Tech was able to secure funding from The National Fish and Wildlife Foundation (NFWF) to continue our private lands research in the Copper Creek watershed. The project is broadly focused on the effect that involving landowners in hellbender research has on landowner attitudes, cognitions, and behaviors regarding conservation. In fall of 2018, we began this research with a mail survey sent to all watershed residents. In 2019, we built on these results by conducting in-person interviews with 37 landowners throughout the watershed, and we began engaging these landowners in our hellbender research. This engagement took one of two forms, with landowners either accompanying us to the field to observe our research or participating in a water quality citizen science project. We're looking forward to re-connecting with these landowners as our field season begins again in the summer of 2020.

WEST VIRGINIA

Partnerships for Conservation Focus Areas in West Virginia

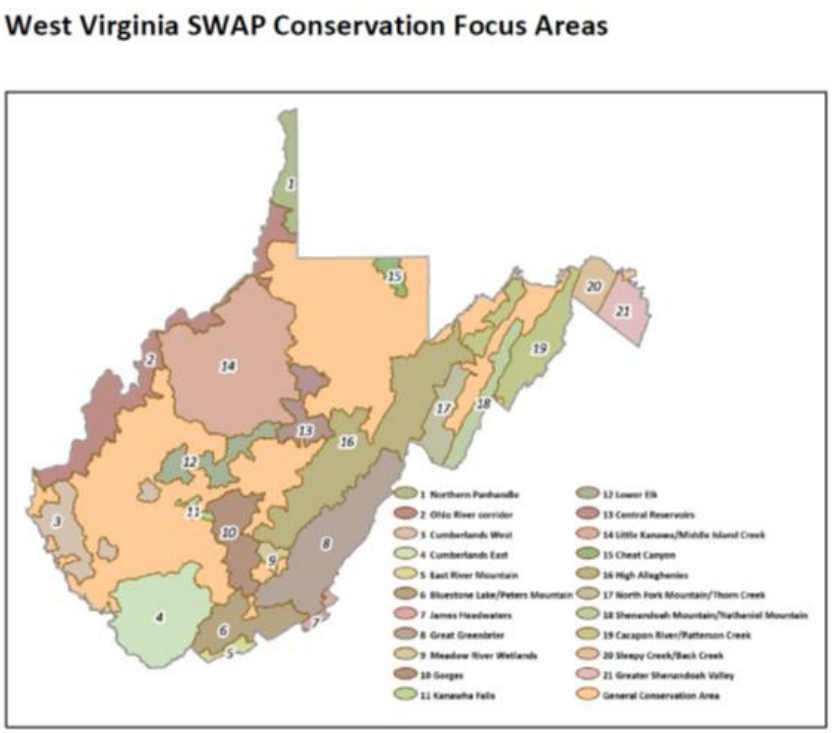
By: Todd Miller, Director of Conservation, West Virginia chapter of The Nature Conservancy and Rich Bailey, State Ornithologist, West Virginia Division of Natural Resources

This work overlaps the Greenbrier/Alleghenies (WV) Focal Landscape

The West Virginia chapter of The Nature Conservancy (TNC) is working with the West Virginia Division of Natural Resources (WVDNR) to develop Action Plans for 16 of the Conservation Focus Areas (CFAs) designated in the West Virginia State Wildlife Action Plan (SWAP). CFAs are key components of the 2015 SWAP. CFAs are designated based on their importance to the state's wildlife across all taxa, and they enable agencies and their partners to more efficiently target their conservation work. To this end, each CFA will have its own conservation action plan that promotes engagement with local partners and landowners.

As part of the planning process, TNC and WVDNR staff gathered partners and held meetings for five CFAs in the Potomac Basin, as well as the High Alleghenies, Greater Greenbrier, and Meadow River Wetlands CFAs over the last year to gather and share input on priority species, habitats and stresses, and partners who could assist landowners with conservation actions to address those stresses.

Two of the CFAs are of high importance to the AMJV: the High Alleghenies and Greater Greenbrier CFAs, both of which are within the Allegheny Mountains ecoregion and the AMJV's West Virginia Focal Landscape. The meeting for the Greater Greenbrier CFA was held on 6/25/19 in Lewisburg, and the High Allegheny CFA meeting was held on 7/17/19 in Elkins. Both meetings included overviews of respective draft CFA conservation plans, presentations by partner organizations, and brainstorming sessions to identify partner roles, opportunities for collaboration, and next steps. In addition to WVDNR, important partners that were in attendance included, but were not limited to: WV Department of Environmental Protection, WV Division of Forestry, WV Rivers Coalition, WV Land Trust, US Fish and Wildlife Service, US Forest Service, USDA Natural Resources Conservation Service, National Wild Turkey Federation, American Bird Conservancy, and TNC.



WV SWAP Conservation Focus Areas

TNC is now working on draft Action Plans for each CFA which list priority species for conservation in each habitat type with a supporting implementation plan of management actions and effectiveness measures for potential partners. For example, the draft Action Plan for the Cacapon River & Patterson Creek CFA in the Potomac Basin lists 21 priority bird species of greatest conservation need, including the American Woodcock and the Cerulean Warbler, and suggests 10 management actions for enhancing habitat.

WVDNR, USDA Natural Resource Conservation Service, Potomac Valley Audubon Society and several other partners have already been engaged in efforts to protect and improve habitat for bird species of greatest conservation need. This planning process has already galvanized new and collaborative efforts by partners. For example, local land trusts and county farmland protection boards are using CFA Action Plans to justify proposals for land protection, and considering priority wildlife habitat in land protection projects; DNR is working with the West Virginia Conservation Agency and Sleepy Creek Watershed Association on projects to protect wood turtle habitat; and DNR and the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program are working with TNC to protect habitat for spotted turtles.

Each CFA Action Plan emphasizes the importance of protecting the regional network of resilient, connected landscapes identified by TNC in order to enable climate adaptation by priority wildlife species. Together, collaborative partner efforts on a local level will fortify the protection and management of the regional priority landscapes. The Action Planning process and subsequent implementation efforts will continue to galvanize and focus partner efforts for significant benefits to wildlife.

Private Landowners Drive Conservation Efforts in West Virginia

By Kyle Aldinger, Natural Resource Specialist, USDA Natural Resources Conservation Service; Tiffany Beachy, Golden-winged Warbler Partner Biologist, WV Division of Natural Resources & USDA Natural Resources Conservation Service; Matt Aberle, Cerulean Warbler Partner Biologist, WV Division of Natural Resources & USDA Natural Resources Conservation Service; and Liz Brewer, WV Outreach Forester, Appalachian Mountains Joint Venture & National Wild Turkey Federation

This work overlaps the Greenbrier/Alleghenies (WV) Focal Landscape

Mr. Cobb at his EQIP contract signing with NRCS employees Thomas Wilsoncroft (middle) and Zomarys Dumeng (right).

Photo by John Cobb

2019 was a busy year for the Cerulean Warbler Appalachian Forestland Enhancement Project and the Golden-winged Warbler Working Lands for Wildlife initiative in West Virginia. This past year saw the addition of 475 acres of Cerulean Warbler habitat and 236 acres of Golden-winged Warbler habitat. Three new private-land specialists came onboard during 2019, including Tiffany Beachy in February as the WVDNR/NRCS Golden-winged Warbler Partner Biologist, Liz Brewer in June as the WV Outreach Forester, and Matthew Aberle in August as the WVDNR/NRCS Cerulean Warbler Partner Biologist.

West Virginia landowners have been instrumental in the success of these programs, enrolling 2,120 acres for Cerulean Warblers and 853 for Golden-winged Warblers since the projects started. Many landowners go above and beyond to advocate for the importance of the work being conducted. One such landowner is John Cobb of Ireland, West Virginia.

(Right) A clearcut next to a field with a tree planting on Mr. Cobb's property in Ireland, WV.

Photo by John Cobb

Mr. Cobb bought his first parcel of land in 2006 and has been expanding ever since. He currently owns 365 acres of land,

which includes four waterfalls and multiple forest improvement projects. In 2009, he enrolled in a Forest Stewardship Plan and began working with the West Virginia Division of Forestry (DOF). His top priorities for his property were to improve the property for wildlife and future generations and increase the value of timber. That led him to the Cerulean Warbler Forestland Enhancement Project, a Regional Conservation Partnership Program (RCPP) project that involved Appalachian Mountains Joint Venture (AMJV), National Wild Turkey Federation (NWTF), West Virginia DOF, and Natural Resources.

Conservation Service (NRCS). Foresters and biologists helped Mr. Cobb put together a management plan to create habitat for the declining songbird and other wildlife. In addition, Cobb started an EQIP contract in 2018 to cull American holly and grapevines on his property. This effort is well underway and will continue through 2020. He also actively works to remove dead ash trees from his property to improve the forest health.

John Cobb stands with Shelley Moore Capito with Tree Farmer of the Year resolution.

Photo by John Cobb

Travis Miller, WV DOF (in uniform) presenting to a group of professional foresters at a Forestry Workshop held on Mr. Cobb's property.

Photo by Kyle Aldinger/NRCS

"NRCS is the best kept secret in the U.S.," Mr. Cobb said about his experience working with EQIP programs. He has received financial assistance through the EQIP programs he's enrolled in and appreciates that the work keeps him active and motivated in his retirement. Now, he wants to give back to help others by being an active advocate for natural resource professionals, NRCS, and Farm Bill programs.

Mr. Cobb hosts workshops on his property for natural resource professionals to train on forest management practices and for landowners to get involved in conservation. This past year he worked with Dave McGill, a professor and extension specialist with West Virginia University, to apply for a grant from the American Tree Farm System. This grant will allow them to host workshops throughout the state

starting in 2020 to promote the Tree Farm System and encourage landowners to register as tree farmers. Mr. Cobb is a staunch political advocate for these programs as well. He has written letters and spoken to state and federal government officials about the value of foresters. He joins AMJV every year to visit D.C. and offer a landowner's perspective to congress.

In addition to his many personal outreach projects, he has worked with NRCS, NWTF, and WVDNR to create short TV spots that highlight the importance of a healthy forest and how the Cerulean Warbler Forestland Enhancement Project works. See the links at the end of this article for more information and to watch the videos.

With the support of landowners like Mr. Cobb, who go beyond their contracts to advocate and educate, state and federal programs that focus on forest and wildlife management continue to thrive and create habitat for declining songbirds. It is this combined effort of specialists and passionate landowners who drive conservation efforts in West Virginia. We hope to continue working closely with our landowners to expand outreach efforts in 2020.

Mr. Cobb's work on his property has been featured in short TV spots on WCHS TV. From left to right: Brandon Stover (WCHS TV), John Cobb, Art Shomo (WVDNR), Brad Rice (WCHS TV).

Photo by Kyle Aldinger/NRCS

Additional information:

https://wchstv.com/community/west-virginia-wildlife/wv-wildlife-cerulean-warbler

https://wchstv.com/community/west-virginia-wildlife/wv-wildlife-how-you-can-help-the-cerulean-warbler-bird-habitat-and-get-paid-for-it

USDA is an equal opportunity provider, employer, and lender

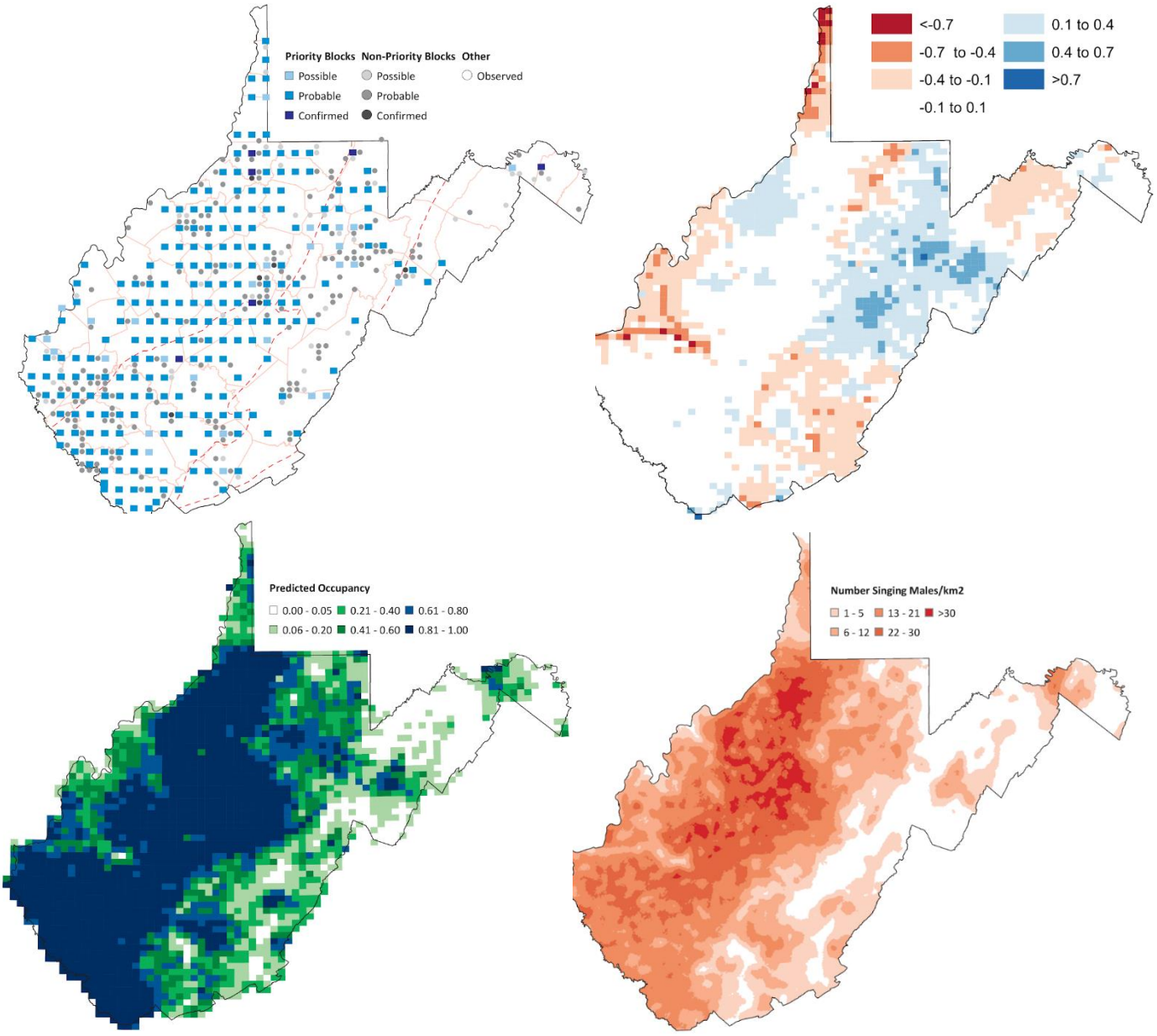
West Virginia Breeding Bird Atlas
By Rich Bailey, State Ornithologist, West Virginia Division of Natural Resources

This work overlaps the Greenbrier/Alleghenies (WV) Focal Landscape

In 2019, WVDNR staff and volunteers began their final push towards completion of a book manuscript for the state's second Breeding Bird Atlas. The project included 6 years of intensive fieldwork (2009-2014) documenting the occurrence and abundance of the state's breeding bird life. Following the field period, staff proofed datasets, conducted analyses, created numerous maps, graphs, and tables, compiled photographs, and wrote hundreds of pages of text. During 2019, peer review was completed on nearly all sections of the book, which will total roughly 600 pages; the manuscript was delivered to Penn State Press in spring 2020. During 2020, WVDNR staff will work with Penn State Press on design and proofing of the book, which is expected to go on sale in 2021. The species is a highest

priority for the AMJV, and no state hosts a larger percentage of the global breeding population than West Virginia.

Shown below are four maps depicting breeding evidence (Top Left), estimated change (Top Right), estimated occurrence (Bottom Left), and estimated density (Bottom Right) for the Cerulean Warbler.



Managing Forest Bird Communities in Energy Rights-of-way Landscapes

By Eric L. Margenau, Graduate Research Assistant, West Virginia Cooperative Fish and Wildlife Research Unit/West Virginia University and Petra B. Wood, Adjunct Professor of Wildlife and Fisheries Resources, USGS West Virginia Cooperative Fish and Wildlife Research Unit/West Virginia University

This work overlaps the Greenbrier/Alleghenies (WV) Focal Landscape

The central Appalachian region is an extensively forested region of the United States, with the majority of stands aged >60 years old. These forests support a diverse bird community. However, species specialized in exploiting the nascent stages of forest succession (young forest species) have

Cut-back border along a gas pipeline at Allegheny Wildlife Management Area, WV one-year after treatment.

Cut-back border along a utility powerline at Beury Mountain Wildlife Management Area, WV two-years after treatment.

Photos by Eric L. Margenau / West Virginia University

experienced precipitous declines as a result of changes to disturbance regimes (e.g., suppression of wildfire, reduction of large-scale timber management) over the past century. To investigate potential strategies to help reverse declining young forest populations in the region, researchers at West Virginia University, USGS West Virginia Cooperative Fish and Wildlife Research Unit, and West Virginia Division of Natural Resources examined different management approaches to increase the amount of young forest habitat. One potential approach to create young forest habitat is the use of cut-back borders (i.e., linear tree cutting) along abrupt forest edges of rights-of-ways (ROW; e.g., gas pipelines and utility powerlines). This technique creates young forest habitat for a suite of species that requires specific vegetation characteristics (e.g., high woody stem densities, vertical forest structure) that are often not met within the ROW corridor, where periodic mowing and herbicide spraying prevent development of young forest habitats. Partnering with the West Virginia Division of Natural Resources (WVDNR), we examined different cut-back border width (i.e., how deep into the adjacent forest) and intensity (i.e., number of trees cut) prescriptions throughout West Virginia on WVDNR wildlife management areas to develop management guidelines meant to inform land managers interested in using this approach. We found that young forest species' abundances and species richness increased one-year and two-years after treatment, particularly in the 15-m wide borders, likely due to the increase of young forest habitat in conjunction with existing habitat in ROW corridors. Additionally, we found that forest interior species, a group that is often negatively affected by ROWs in forested landscapes, did not decrease in cut-back borders following treatment likely because the retention of canopy trees in combination with

adjacent mature forests retained suitable habitat conditions. These results suggest that cut-back borders along abrupt forest edges of ROWs create suitable habitat conditions for young forest avifauna without negatively affecting forest interior avifauna. Cut-back borders, particularly those 15-m in width, appear to be a viable management option for managing forest bird communities in ROW landscapes.

(Right) Plant regeneration in a cut-back border along a gap pipeline at Burnsville Lake Wildlife Management Area, WV two-years after treatment.

Photo by Eric L. Margenau/West Virginia University

Monitoring Cerulean and Golden-winged Warbler Farm Bill Conservation Projects

By Lincoln Oliver, M.S. Student, West Virginia University; Dr. Christopher Lituma, Assistant Professor, Division of Forestry and Natural Resources, West Virginia University; and Dr. Petra Wood, USGS West Virginia Cooperative Fish and Wildlife Research Unit, West Virginia University

This work overlaps the Greenbrier/Alleghenies (WV) Focal Landscape

(Left) A male Cerulean Warbler banded by WVU M.S. student Dan Roche in Albemarle County, VA.

Photo by Dan Roche/West Virginia University

The creation and maintenance of breeding habitat on private lands is a significant component for effective conservation of Cerulean and Golden-winged Warblers. Extensive habitat management efforts for each species are underway on private lands in priority areas of the Appalachians to address population declines. The Cerulean Warbler is the focal species of the Regional Conservation Partnership Program Cerulean Warbler Appalachian Forestland Enhancement Project (AFEP), which was initiated in 2016 and uses forest management to improve Cerulean Warbler habitat in portions of Kentucky, Maryland, Ohio, Pennsylvania, and West Virginia.

Adult male, female, and fledgling Golden-winged Warblers in Pocahontas County, WV.

Photo by Liz Stout/West Virginia University

The Working Lands for Wildlife Golden-winged Warbler Initiative (WLFW) began in 2012 and targets the creation and maintenance of high quality early successional habitats within Appalachian Golden-winged Warbler breeding range. Each project incorporates science-based management guidelines that recommend various context-specific management practices to create or improve breeding habitat quality with the goal of reversing population declines.

An extensive body of literature and recent research findings are informing on-the-ground management for these species, but the effectiveness of these conservation practices for increasing Cerulean Warbler and Golden-winged Warbler populations on private lands has not been examined. West Virginia University, the USGS West Virginia Cooperative Fish and Wildlife Research Unit, the Natural Resources Conservation Service (NRCS), and the West Virginia Division of Natural Resources (WV DNR) have partnered to monitor the effects of AFEP and WLFW management on sites throughout West Virginia to evaluate the effectiveness of each program at creating, improving, or maintaining Cerulean Warbler and Golden-winged Warbler habitat. We also are evaluating the effects of AFEP and WLFW management on the overall avian community to assess each conservation project's capacity to create habitat for other birds. Findings from this research will be useful to refine and improve each project's existing management guidelines for effective adaptive management.

(Right) WVU field technician, Caden Haines, conducts point count survey on one-year post-treatment WLFW site in Randolph County, WV.

Photo by Lincoln Oliver/West Virginia University

In 2019, songbird data were collected on 236point count locations at 23 properties throughout West Virginia. Pre-treatment data was prioritized in 2019 and were collected on 7 AFEP sites and 7 WLFW sites. Post-treatment data were collected on 2 AFEP sites and 7
WLFW sites. We detected 96 bird species total; with 31 Cerulean Warblers and 3 Golden-winged Warblers detected during point count surveys in 2019. All Cerulean Warblers on AFEP sites were detected on pre-treatment sites, whereas all Golden-winged Warbler detections were on one post-treatment WLFW site where a Brewster's Warbler was also detected.

Post-treatment sites will be prioritized for the 2020 field season. We plan on revisiting 2019 pre-treatment sites that are now post-treatment as well as different post-treatment sites in 2020 to maximize the number of post-treatment sites visited. Thus, we expect to have a larger sample size for evaluating post-treatment response after collecting the 2020 data.

(Above) One-year post-treatment AFEP site in Pendleton County, WV.

(Below) One-year post-treatment WLFW site in Randolph County, WV.

Photos by Lincoln Oliver/West Virginia University

**See Spotted Wing Drosophila and Avian Ecology Project to read an update from West Virginia University regarding a study that the University and the USFS, along with support from the Allegheny Forest Health Cooperative and the Pennsylvania Department of Conservation and Natural Resources, conducted on the Allegheny National Forest in Northwestern Pennsylvania in an attempt to better understand the impacts of an invasive insect that is threatening the food sources of migratory birds.*

REGIONAL

NFWF Central Appalachia Habitat Stewardship Program Update

By Todd Fearer, Coordinator, Appalachian Mountains Joint Venture

The National Fish and Wildlife Foundation (NFWF) awarded more than $1.5 million in funding in December to restore the quality of forest and freshwater habitats in the Central Appalachian-Allegheny Plateau landscape, including the Appalachian regions of New York, Pennsylvania, Ohio, Maryland, West Virginia, and Virginia through the use of on-the-ground restoration and planning. The grants were awarded through the Central Appalachia Habitat Stewardship Program, a partnership between NFWF, USDA's Natural Resources Conservation Service, the American Forest Foundation, and, in western Pennsylvania, the Richard King Mellon Foundation. Additional funding is provided by Shell Oil Company, the U.S. Forest Service, and U.S. Fish and Wildlife Service. This is the third year of the program. Five of the selected projects, totaling over $688,000 in funds from NFWF and matched with over $732,000 from grantees, are focused on enhancing forest age and structural diversity and will benefit the suite of our AMJV priority forest birds. Todd Fearer, AMJV Coordinator, and Amanda Duren, AMJV Habitat Delivery Coordinator, are part of the advisory team for this program. The AMJV collaborated on and provided letters of support for seven proposals, three of which were selected for funding, and we will work with NFWF and all grantees to facilitate coordination and collaboration across all forestry projects to maximize their collective impact across the Central Appalachia region. Four of the projects are in Pennsylvania, and the remaining project is in Virginia. The 2020 request for proposals for the Central Appalachia Habitat Stewardship Program closed on June 25th and proposals are currently under review.

1019 Grantees of the Central Appalachia Habitat Stewardship Program at the Grants Announcement Ceremony in Petersburg, PA.

Photo by Amanda Duren/AMJV

THEME 2: FULL ANNUAL CYCLE CONSERVATION

INTERNATIONAL

American Bird Conservancy Central and South American BirdScape Updates

By Andrew Rothman, Migratory Birds Program Wintering Grounds Director, American Bird Conservancy

In the past two years, American Bird Conservancy (ABC) has been working with local partners across Central and South America to develop multiple new BirdScapes, priority habitat areas that are large

enough to increase the number of target species but small enough to measure the results. Here we report on some of the key activities in ABC Birdscapes within Colombia, Guatemala, Nicaragua, and Venezuela, areas where many AMJV priority bird species winter or use during migration.

Central Andes Birdscape, Colombia

In the Central Andes Birdscape of Colombia, we are working to improve habitat quality and connectivity for migratory birds by working with coffee farmers and raising awareness of migratory birds. While Colombia's coffee-growing region spans multiple departments, we are focused on employing a variety of conservation activities on private lands within focal areas for Cerulean Warblers, in the Caldas and Tolima Departments in particular. The overall goal is to increase habitat protection and availability by: 1) reforesting degraded lands on private lands and increasing habitat connectivity through reforestation; 2) promoting coffee production and management practices that reduce environmental impacts; 3) increasing local to assess the project's conversation efforts and effectiveness for migratory birds; and 4) engaging communities through outreach activities to promote awareness and support for migratory bird conservation.

Workshop at Las Jaras to discuss the BioCenter and agroforestry systems.

Photo by Andrew Rothman/ABC

For example, the Caldas department contains multiple focal areas for Cerulean Warbler, Golden-winged Warbler, and Canada Warbler, plus another 74 neotropical migratory bird species. With support from Southern Wings in 2019, and matching support from other donors, ABC and our partners VivoCuenca, Fundacion Ecologica Cafetera and Comité Departamental de Cafeteros de Caldas began to set objectives, such as planting 264,500 native trees across 729 hectares (1,749 acres) in the Río Chinchiná watershed. Our goal is to expand the production capacity of the nurseries, and work with a group called "Mujeres Cafeteras," or Women Coffee-Growers. The Mujeres work on reforesting the headwaters of important rivers throughout Caldas. We will work to increase their capacity for this work, and provide training in the management of nurseries, which will help us greatly in achieving our tree planting goals.

Also in 2019, with matching funds from CWS, we completed a socio-economic survey that was administered in person through individual visits with 354 people. The survey helped gather coffee production data, insights on market factors that impact yields positively or negatively, methods of production and sales utilized in this region, level of environmental knowledge, and other demographic information. The survey results are giving us a baseline from which we can evaluate the impacts of our project when it has been finished. Our work with funding from Southern Wings, and with match from our partners has helped ABC secure a new NMBCA grant that will be implementing in the Río Chinchiná watershed over the next two years.

In addition to the work being conducted in the Caldas department, we are also working on the east side of the central Andes in the Tolima department. Here we are collaborating with nonprofit group SELVA to work with coffee growers and promote sustainable landscapes that enhance habitat for the migratory birds. We are targeting an area in Tolima that has been identified as a priority conservation area for the Golden-winged Warbler in the non-breeding conservation plan. SELVA is identifying farmers and providing technical assistance for best practice implementation, and over the next year plans to conduct outreach to local producers on nursery creation and maintenance and forest restoration techniques, and will facilitate transportation and purchase of trees as match to the work on going in Caldas. Here, we would like to increase the number of farmers engaged in the project and conduct a survey for migratory bird species in the Libano area to identify specific populations, mainly Golden-winged and Cerulean Warblers, to target future conservation action.

Conservation Coast BirdScape, Guatemala

ABC and Foundation for Eco-Development and Conservation (FUNDAECO) are implementing a long-term conservation strategy of preserving stopover and wintering habitats along Guatemala's Caribbean migratory funnel. ABC and FUNDAECO call this region the Conservation Coast and include it in ABC's BirdScape initiative. In 2018 FUNDAECO acquired the Finca Perdomo property in the Sierra Santa Cruz, which provides pristine tropical submontane forest important for wintering Wood Thrush, Kentucky Warbler and Worm-eating Warbler and spring stopover habitat for Cerulean Warblers.

Our current goal in the region is to promote bird-friendly agriculture with private landowners in the buffer zones of these protected areas. To help educate landowners on farming practices that will benefit birds, ABC and FUNDAECO are acquiring properties that can serve as outreach and training centers, living classrooms where we will actively produce shade-grown products such as black pepper, rubber, cacao, and cardamom. These areas are called BioCenters, and FUNDAECO has established seven of them to date; the most recent acquisition is Santa Marta, located near the Cerro San Gil Reserve. To date, ABC has helped FUNDAECO secure the protection of 11,262 acres of habitat for migratory birds in the Conservation Coast Birdscape.

Moises Siles of Reserva El Jaguar holds a Wood Thrush with MOTUS nanotag attached via harness

Photo by Andrew Rothman/ABC

Bosawas Birdscape, Nicaragua

Over the past two years ABC has been working with local partners in the Bosawas BirdScape to protect remaining forests, connect and increase forest fragments using shade agriculture and silvipasture, and increase local understanding of natural resources to reduce threats to remaining habitat for wintering migrants including the Golden-winged Warbler, Wood Thrush and others. In 2019, the majority of our work took place around Saslaya National Park within the Bosawas Biosphere Reserve with our partners Wildlife Conservation Society (WCS) and the

University of the Autonomous Regions of the Caribbean Coast of Nicaragua (URACCAN). Our focus was on reducing the amount of land being used for cattle production, promoting reforestation, and providing technical assistance for sustainable cacao and cattle production through workshops. WCS has worked with more than 10 communities in three indigenous peoples' territories to create conservation agreements covering greater than 250,000 ha (600,000 acres). With one group, 90 ha of cattle lands have been converted to silvipasture through tree planting, corral installation and forage banks for cattle. URACCAN has also helped establish a model farm for their students and local residents which includes a model silvipasture plot and small test plots of new disease resistant cacao varietals. URACCAN has also begun working with 19 landowners, having helped to improve cacao production through improved management on 26.6 ha (65.7 ha), and secured conservation agreement on another 134 ha (331 ha).

(Above) Planting of Native Trees in coffee plantation at Finca La Cima

(Below) Tree Nursery at Botancial Gardens of Libano

Photos by Lozano-Baez/SELVA

In addition, ABC helped to install the first MOTUS tower in Nicaragua in 2019 and are conducting migratory species monitoring across the GWWA Focal Areas to improve our understanding of the migratory behavior of several species. At the El Jaguar Reserve, with support from the Missouri Department of Conservation we installed a MOTUS tower with the assistance of SELVA, to gather additional data on migratory birds. With support from the Pennsylvania Game Commission we were able to deploy our first set of Motus system-based nano-tags. Ten were deployed on Wood Thrush, and ten tags on a Louisiana Waterthrush, in early 2020. Our hope is to get data from the recently installed Motus tower at El Jaguar on local movement of Wood Thrush over the winter, the pre-migration period, as well as potential migration or breeding ground linkage information for these two species.

(Right) Georges Duriaux, owner of The El Jaguar Reserve, in former pasture that was planted with native trees and coffee about 2013.

Photo by Andrew Rothman/ABC

Northern Venezuela Coastal Mountain Birdscape, Venezuela

The long-term goal of this project is to slow the rate of deforestation in northern Venezuela and restore and convert 1,000 acres of degraded land and sun-grown plantations to shade-grown coffee plantations, all this while improving people's livelihoods. Over the next year, we aim to restore 40 acres of land in the Northern Venezuela Coastal Mountain BirdScape and create a buffer zone between the remaining primary forest and sun-crop agriculture. We will need to build capacity among farmers to promote and enable sustainable farming practices. This project would also contribute to creating a corridor between the Henri Pittier and Macarao National Parks.

Table 1. Migratory species found in NVCM Birdscape.

Species	Abundance (2018-2019)	Abundance (2019-2020)
Broad-winged hawk	5	13
Turkey vulture		55
Olive-sided flycatcher	2	4
Eastern wood pewee		24
Gray-cheeked thrush		7
Swainson's thrush		3
Canada warbler		9
Black-and-white warbler	11	23
Tennessee warbler	15	19
Northern waterthrush	28	10
Rose-breasted grosbeak	3	9
Summer tanager	2	32
Cerulean warbler	39	25
Blackburnian warbler	41	111
American redstart	155	65
Blackpoll warbler	4	3
Bay-breasted warbler		1
Kentucky warbler		2
Mourning warbler		8
Golden-winged warbler		4
Blue-winged warbler		1
Yellow-throated vireo	1	1
Red-eyed vireo		1

During 2019, with matching funds from Provita and ABC, 89 farmers in the communities of Piedra de Cachimbo and La Florida were trained on topics such as sustainable farming practices and organic and Bird-Friendly® techniques over 14 workshops. In addition, 35,000 native trees and coffee bushes (shade-grown varieties) were successfully planted to convert nearly 400 acres (160 ha) of sun crop coffee to shade-grown coffee and restore 100 acres (40 ha) of degraded lands. Lastly, Provita helped a group of nearly 40 farmers establish a cooperative and hired a coffee certifier from Peru to assess and certify their farms. As a result, 38 farmers in the newly formed Piedra de Cachimbo and La Florida Cooperative got certified as Organic by the USDA standard and the Organic Standard of the European Economic Community. Eleven of these 38 farmers also got certified as Smithsonian's Bird-Friendly Coffee. These 38 farmers own a total of 400 acres, which will be managed with sustainable and organic farming practices.

Through the Southern Wings Program in 2018, 2019, and 2020, ABC received funding from the Tennessee Wildlife Resources Agency to conduct surveys for Golden-winged Warbler in Venezuela. During the winter of 2018-2019, ABC partner Provita surveyed three sites, two of them in the BirdScape and one to the west of the BirdScape, with the main goal of finding wintering grounds for the Golden-winged Warbler. No GWWA were observed. However, the surveys proved to be successful to identify other species of migratory birds in the NVCM BirdScape (Table 1). The locations with the highest richness and abundance of migratory species were in or near coffee farms.

In the winter of 2019-2020, similar surveys were conducted at four different sites closer to Colombia by Provita.A total of three Golden-winged Warblers and one Golden-winged/Blue-winged Warbler hybrid were observed in Venezuela. The locations with the highest richness and abundance of migratory species were disturbed secondary forests.

Cerulean Warbler

Photo by Tessa Nickels/Courtesy of ABC

Tracking Swainson's Thrush Habitat Use with Nanotag Technology

By David Yeany, Avian Ecologist, PA Natural Heritage Program, Western PA Conservancy

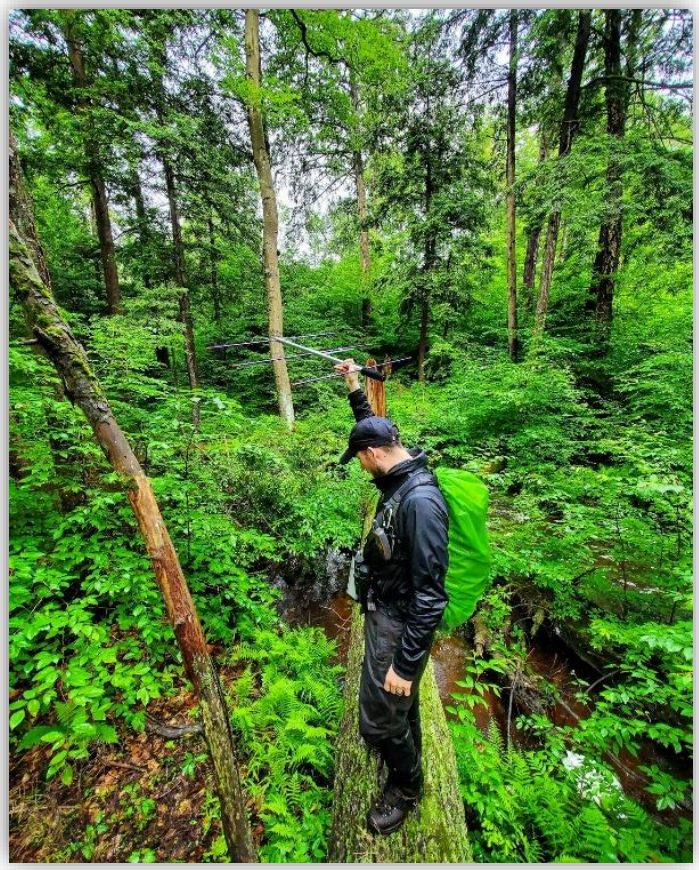
This work overlaps the Allegheny Highlands (PA/NY) Focal Landscape

(Left) Swainson's Thrush color-banded and outfitted with a nanotag transmitter just before release.

Photo by David Yeany/WPC-PNHP

This past year, Pennsylvania Natural Heritage Program (PNHP) initiated a new project focused on better understanding the ecology and migratory movements of breeding Swainson's Thrush – one of our state's rarest breeding birds and a Species of Greatest Conservation Need (SGCN). PNHP was part of a Competitive State Wildlife Grant award submitted by the organizations in the Northeast Motus Collaboration, including close

partner Powdermill Avian Research Center (PARC) at the Carnegie Museum of Natural History. This group is establishing a network of radio towers that can detect the passage of birds, bats or large flying insects outfitted with small radio frequency transmitters, known as nanotags. Ours was one of eight projects included inthe grant, all using nanotag technology and the Motus Wildlife Tracking System to study SGCN in the mid-Atlantic and to close major geographic gaps in the Motus network. Nanotags weigh as little as 0.2 grams and emit a unique signal used to identify individual animals and their movements. This new, cost-effective technology enables tracking movements of small animals at a fraction of the cost of GPS tags, and utilizes an ever expanding network of Motus radio towers to discover migration routes and stopover habitat usage for many migratory species – allowing us to begin to fill knowledge gaps for many migratory bird species.



(Above Right) Old growth Eastern hemlock (Tsuga canadensis) towers above the dense American beech (Fagus grandifolia) understory at Tionesta Natural Area, McKean County

Photo by David Yeany/WPC-PNHP

(Right) PNHP avian ecologist David Yeany checks the radio signal from a nanotagged Swainson's thrush during tracking at Tionesta Natural Area, McKean County.

Photo by Joel Throckmorton/Powdermill Avian Research Center-CMNH

With an extensive breeding range throughout Canada's boreal forest, populations of Swainson's Thrush breeding in Pennsylvania are disjunct from other eastern populations in New England and near the southern edge of the species' eastern North American range. Only a small population in high elevations of West Virginia is farther south. In Pennsylvania, Swainson's Thrush is found in cool, moist, typically higher elevation hemlock forest, especially those containing older, taller hemlocks. With the Eastern hemlock greatly threatened by the hemlock wooly adelgid, we need to better understand how important this tree species is to this bird. The Allegheny National Forest (ANF) is known for its black cherry and hemlock forests and has been an historic stronghold for the species. During 2015 PNHP surveys we

documented likely the state's largest population in the Tionesta Natural Area, an old growth hemlock- northern hardwoods forest with 500-year old hemlock trees. Thrushes from this site along with two others in the ANF were the focus of our study.

(Left) Nanotag transmitter #014 with a 19.1 second burst interval attached via leg loop harness to a Swainson's Thrush at Hearts Content, Warren County.

Photo by David Yeany, WPC-PNHP

We captured 23 male Swainson's Thrushes in the ANF during June and July. With appropriate permits, we banded and color-banded (for identification of unique individuals in the field) all captured birds and deployed nanotag transmitters on 21 birds. PNHP and PARC biologists used handheld receivers to track birds and recorded high-resolution detection locations, mapping territories held by these Swainson's Thrushes. We will use vegetation assessments and remotely-sensed imagery to measure habitat characteristics in each bird's breeding territory. We continued to track these birds on their breeding grounds through August. We will collect dispersal and migration departure detections from the five Motus stations in the Allegheny National Forest and any additional migratory movements from other Motus stations farther south in the network.

(Right) PNHP avian ecologist David Yeany attaches a nanotag transmitter to a color-banded Swainson's Thrush at Hearts Content, Warren County.

Photo by Joel Throckmorton/Powdermill Avian Research Center-CMNH

Swainson's Thrush is a complete long-distance migrant, wintering from southern Mexico to northern Argentina. Migration routes are assumed to vary by population, and from fall to spring. Knowing what routes our breeding birds take to their wintering grounds and the location of those wintering grounds will further aide in conservation efforts. We will await detection of our nanotagged Pennsylvania breeding Swainson's Thrushes through the Motus network from fall migration and again during spring 2020. This study will allow us to piece together a more complete picture of habitat use through the species' entire annual cycle.

Guatemalan Conservationists Visit the Tennessee River Gorge
By Eliot Berz, Business and Access Director, Tennessee River Gorge Trust

It all started with avian technicians at the Tennessee River Gorge Trust (TRGT) attaching 16 geolocators to a particular Neotropical migratory songbird, the Louisiana Waterthrush. After wearing the tracking devices for a full year, five of these birds returned to the Tennessee River Gorge equipped with geolocators full of fascinating data. The geolocators revealed the migratory pathways and wintering destinations of the five birds; two of which spent their winter around the Petén region of Guatemala. The following year, ornithologists at TRGT, University of Toledo, and Harding University were approved to expand the project by attaching 60 geolocators to Louisiana Waterthrush and 60 to the sympatric Worm-eating Warbler. The aim of this larger study was to investigate the migratory connectivity of distinct local populations and explore the physical effects of geolocators on the species.

A Louisiana Waterthrush tagged with a light-level geolocator.

Photo by Eliot Berz/TRGT

In order to incorporate the human element into this research project, TRGT initiated a cultural exchange component in partnership with La Paz Chattanooga, with the intention of connecting the communities on each end of the birds' migration. In the fall of 2018, TRGT and La Paz Chattanooga traveled to the Petén region of Guatemala to meet with partners and commence this cultural exchange program. TRGT and La Paz staff partnered with the Petén Birders Association and Caoba Birders Club to travel throughout villages in the region to talk with school groups about the project. Letters, artwork, and video messages were shared with Guatemalan students from students in Tennessee. The Guatemalan students then sent the Tennessee crew back home with beautiful artwork of their favorite migratory birds and letters of their own.

The next phase of the project began in the spring of 2019 when TRGT brought 3 members of the Petén Birders Association and Wildlife Conservation Society to Tennessee. The three conservationists flew over the Gulf of Mexico, just as the Louisiana Waterthrush had done earlier that month, and began an exciting two-week adventure. The group met with school groups, presented community lectures, and established relationships with many local groups. The Petén representatives shared artwork and letters between students from Guatemala and Tennessee followed by moving messages about how these migratory birds connect our communities. The group taught science classes about conservation in Guatemala, Spanish classes about Guatemalan culture, and community members about our shared responsibility to protect the environment. But that was not all. Each morning before the crew met with community groups, the Guatemalan partners accompanied the TRGT bird research team into the field to recapture banded Louisiana Waterthrush that had just traveled from Central America themselves.

The Petén Birders Association and Caoba Birders Club work day in and day out to educate their surrounding communities about bird conservation and more broadly, the long-term benefits of

protecting the environment. The group is also leading by example through demonstrating how eco-tourism and birding can provide economic incentives to leave their forests and farms intact, rather than selling the lands for incompatible land uses such as monoculture oil palm plantations. Our other partner, the Wildlife Conservation Society's Flores office, works to use compelling science to inform the protection of Guatemala's unique wildlife. These organizations work to protect many of the same migratory species that we protect here in Tennessee, and in some cases, maybe even the same individual birds! This program is still growing. TRGT has partnered with Velo Coffee Roasters on a microlot coffee sourced from Guatemala. The proceeds from this coffee will support the Petén Birders Association in their mission to promote bird conservation and environmental education in the Petén region of Guatemala. Not only did this exchange highlight our international responsibility to protect the species that call both places home, but it also used migratory birds as a means to demonstrate how we are much more connected and similar than we often realize.

(Above) Marcial Cordova with the Wildlife Conservation Society and Petén Birders Association holding a Louisiana Waterthrush in the Tennessee River Gorge.

(Below) Tennessee River Gorge Trust Executive Director Rick Huffines with the Petén Birders Club in the Tennessee River Gorge.

Photos by Eliot Berz/TRGT

Stay tuned for more exciting news. This is just the beginning!

This project was made possible by the Lyndhurst Foundation and Tennessee Wildlife Resources Agency.

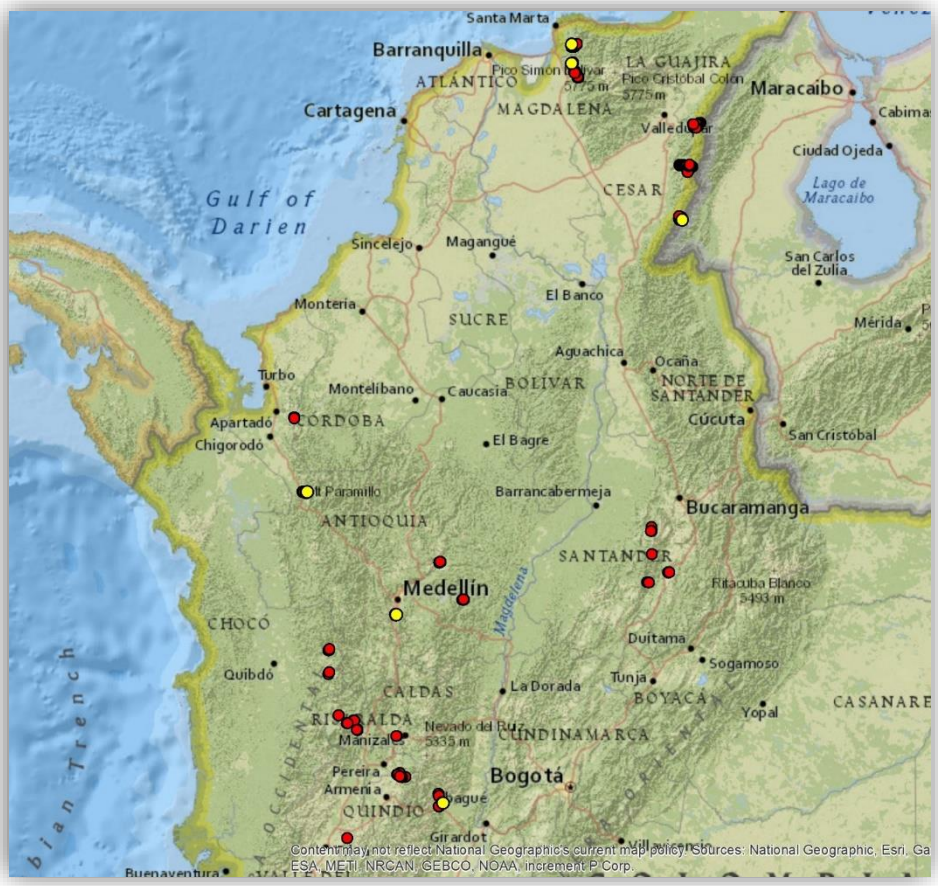
Partners: La Paz Chattanooga, Petén Birders Association, Caoba Birders Club, University of Toledo, Harding University, University of Tennessee Chattanooga, Wildlife Conservation Society.

Special thanks to Marcial Cordova Alvarez, Delfido Noel Vicente, Benedicto Lucas, Roan McNab, Dr. Henry Streby, Gunnar Kramer, Silas Fischer, and Dr. Patrick Ruhl.

Golden-winged Warbler Wintering Grounds Surveys in Colombia

By Sergio Harding, Nongame Bird Conservation Biologist, Virginia Department of Wildlife Resources

The Virginia Department of Wildlife Resources (VADWR) and the Appalachian Trail Conservancy funded surveys for Golden-winged Warbler (GWWA) on its Colombian wintering grounds between Dec 2018 and Feb 2019. The surveys were designed and implemented by SELVA, with input from DGIF and Virginia Commonwealth University. The goal of the surveys was to identify areas with high GWWA concentrations for future monitoring and conservation action by including the wintering grounds in a full life cycle approach to the species. A total of 366 points were surveyed using playback of GWWA song and of neotropical owls in order to increase GWWA detection. Only 6 GWWA (5 males, 1 unknown sex) and 1 hybrid female were detected. Nineteen other migratory landbird species were detected on the surveys, including Canada and Cerulean Warbler.



(Left) Golden-winged Warbler detections (yellow) on points surveyed (red) in Colombia in winter 2018-2019.

Because GWWA occur at low densities in the region, survey methodology was adjusted in order to increase detection rates in preparation for the winter of 2019-2020 survey season. Other project partners include the Cornell Lab of Ornithology, the AMJV and the Association of Fish & Wildlife Agencies' Southern Wings program.

American Forest Foundation

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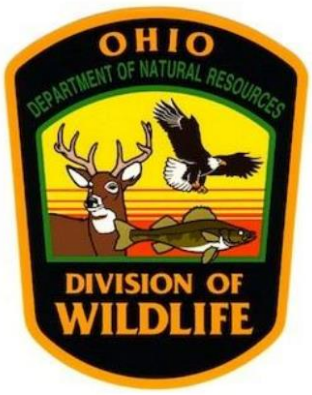

Pennsylvania Natural Heritage Program


The Nature Conservancy


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