Potomac Highlands CWPMA

2016 Accomplishments Report

Table of Contents

PHCWPMA field crew and AFHA AmeriCorps members Owen Peet and Angela Burdell cut branches and spray herbicide to combat an infestation of bush honeysuckle and autumn olive near Spruce Knob Lake.

Introduction

Nestled within the Central Appalachian Mountains, the Potomac highlands is part of one of the most biologically rich areas in the United States. This high-elevation landscape allows many Northern species such as red spruce and snowshoe hare to survive well South of the majority of their range. Moreover, changes in elevation cause wide temperature and rainfall gradients which create a multitude of microclimates allowing specialists to flourish. This naturalists' paradise contains over 120 rare plants, animals, and natural communities, including some like the Cheat Mountain salamander which can be found nowhere else on earth. Unfortunately, non-native pests, pathogens, and smothering weeds live here as well, and these invasive species pose a significant threat to the beauty and diversity of this region.

The Potomac Highlands Cooperative Weed and Pest Management Area (PHCWPMA) is a partnership between federal, state, and local agencies, community groups, non-profit organizations, and private landowners working to fight non-native invasive species. The PHCWPMA includes Bath, Highland, Augusta, Rockingham, Page, and Shenandoah counties in Virginia and Grant, Hardy, Pendleton, Randolph, Pocahontas, and Tucker counties in West Virginia.

PHCWPMA Partners

- Appalachian Forest Heritage Area (AFHA)
- Pendleton County Farmland Protection Board
- West Virginia Forestry Association
- West Virginia Conservation Agency (WVCA)
- Fairmont State University—College of Science and Technology
- WesMonTy Resource Conservation and Development Project, Inc. (WesMonTy RC&D)
- George Washington and Jefferson National Forests (USFS– GWJ)
- Monongahela National Forest (USFS– MNF)
- Natural Resources Conservation Service (NRCS)
- The Nature Conservancy (TNC)
- Private landowners
- U.S. Fish and Wildlife (USFWS)
- U.S. Forest Service—Northeastern Area State and Private Forestry (USFS NA S&PF)
- U.S. Forest Service—Northern Research Station (USFS– NRS)
- West Virginia Rivers Coalition (WVRC)
- West Virginia Department of Agriculture (WVDA)
- West Virginia Division of Forestry (WVDOF)
- West Virginia Division of Highways (WVDOH)
- West Virginia Division of Natural Resources (WVDNR)
- West Virginia Native Plant Society (WVNPS)

2016 Highlight Projects

Viva la Résistance

AFHA AmeriCorps Member Joe Lancaster stands with the chestnut seedlings he helped bring to the Forest Service building

The American chestnut tree, once a symbol of the vitality of the Appalachians, was driven to near extension in the early 20th century by a fungal-borne disease called chestnut blight. Today, the American chestnut serves as an example of the devastation that can be caused when humans introduce non-native species.

But the script is starting to change again. On October 31st 2016, two American chestnut trees were planted in front of the Monongahela National Forest Headquarters in Elkins, WV. Far from constituting a revitalization of this species, these two trees are nonetheless a testament to how far we've come in our fight against invasive pests, because these trees have been engineered to be blight-resistant.

Through the tireless work of geneticists, activists, and countless others, the last decade has produced several strains of hybrid chestnuts. These chestnuts, the result of selective breeding with European or Asian chestnut trees, are usually upwards of 98% genetically identical to the American chestnut, but are not susceptible to the blight fungus. Large planting stocks of blight-resistant chestnut are still years away, but these two chestnut trees are evidence of our coming to understand how to combat the pathogen.

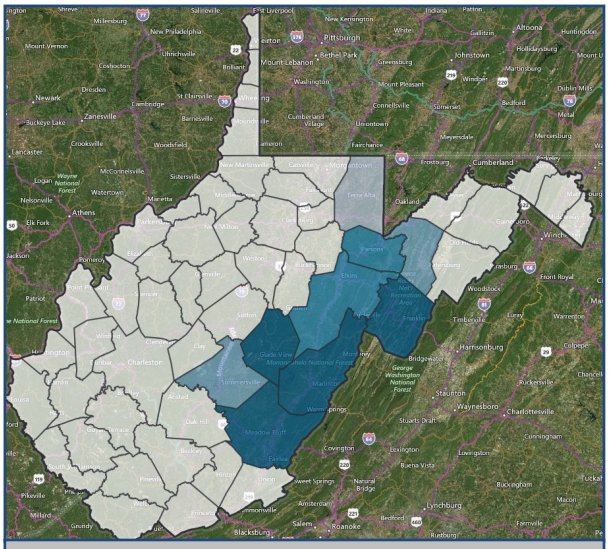
In late 2015, ten beech trees were delivered to Parsons, WV and planted at the U.S. Forest Service (USFS) Timber and Watershed Laboratory. The hopes of many conservationists rest on these ten young trees because they are resistant to another dangerous fungal-borne pathogen—beech blight. These trees, identified as survivors of the blight in the wild have been further challenged with the pathogen by the West Virginia Department of Agriculture, and those that continued to show resistance were grafted to grow new trees. After further study, the trees grown from the grafts were brought back to the Monongahela National Forest and planted in Parsons. The hope is that offspring from these trees will inherit their parents' resistance and help revive the forest's native beech population.

West Virginia Department of Agriculture (WVDA) Plant Industries staff planting a blight-resistant tree in the beech orchard in Parsons, WV.

The PHCWPMA pours hours of human effort into controlling invasive weeds on the ground, but these are not the only threat. Behind the scenes, researchers from multiple agencies, across many disciplines are working harder and smarter than ever before, and they are starting to see results. Two chestnuts and ten beech trees may not seem like much, but they are emblematic of work that may someday save species.

iMapInvasives: A New View of Invasive Species

The Potomac Highlands CWPMA has begun to use iMapInvasives to track the spread of invasive plants in West Virginia. The program, A GIS-based database used now by over a dozen states and territories, allows users to precisely mark locations where they have found infestations of invasive plants. Once recorded, these infestations are reviewed by local experts to ensure the user has made an accurate identification, and are then added to a searchable database which allows PHCWPMA partners to visualize how invasive species are spreading throughout the state.



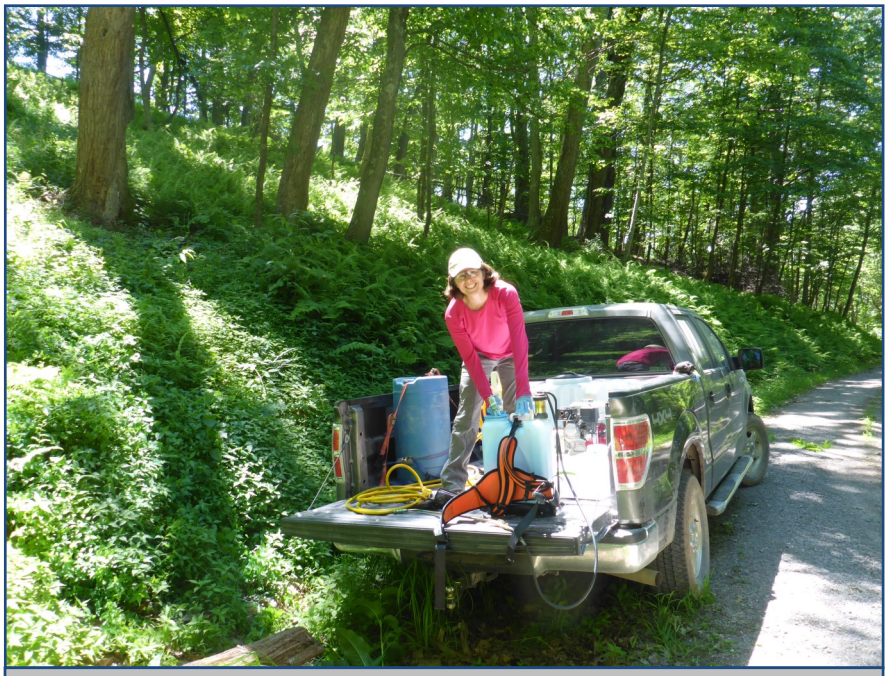
Distribution of Garlic Mustard (Alliaria Petiolata)

In 2016, The Nature Conservancy began consolidating non-native invasive species data from partner organizations. Already, 3,520 entries have been added, including 32 species across 12 counties. The Nature Conservancy continues to accumulate data, both from work done by their own crews, and by collecting more data from federal, state, and non-government organizations. The final goal is to have a comprehensive map of where infestations are popping up. Having such a map would allow PHCWPMA crews and partners to more quickly respond to new infestations. An iMapInvasives app has recently been developed, and PHCWPMA is hoping to eventually get individuals living in the PHCWPMA boundary involved in tracking invasive species.

Checking in with the Crew

Building New Partnerships

Several years ago the Forest Service discovered an infestation of mile-a-minute weed on Sandy Ridge in Hardy County. This location is within the George Washington National Forest (GWNF), a large portion of which falls within the PHCWPMA's new boundary. As its name suggests, mile-a-minute (Persicaria perfoliata) grows incredibly fast, climbing over native plants and shrubs, and up tree trunks using the recurved barbs on its leaves and stems. When left untreated, it creates a dense mat of vines that shades out other vegetation. One part of the infestation was a large strip of open land that extended uphill, bordered on two sides by forest and one side by a road. The abundance of sunlight made for great growing conditions, and due to timing logistics, it wasn't until this past year that treatment could be started.



AFHA AmeriCorps Breezey Snyder prepares to tackle the mile-a-minute infestation

From June 13th to 16th the PHCWPMA strike team, operated out of The Nature Conservancy, collaborated with a team of field technicians from the GWNF to tackle the infestation.

The combined crew numbered thirteen people. Some crew members used the powerful truck-mounted herbicide sprayers to control dense monocultures near roads. The other members attacked the infestation on foot using highly precise backpack sprayers to control patches that were less accessible or more closely intermixed with native vegetation. The patches were so dense at times that the backpack sprayers needed to be refilled from the tanks in the truck several times per day. Even though the infestation continued beyond what the field crew could cover, by the end of the fourth day they had treated approximately 30 acres, a great first treatment for this site.

TNC AmeriCorps members and George Washington and Jefferson National Forest technicians work together sprayng mile-a-minute

Not only was this the first treatment of this infestation, it was also the first time that the PHCWPMA field crew has worked with GWNF technicians, and it made for a different experience. Firstly, the TNC field crew is normally only three people. Thirteen crew members split between different locations for the same infestation puts the treatment on a larger scale and requires greater communication and planning. Secondly, there wasn't a single leader. The TNC crew brought knowledge of the invasive species and how to treat it, as well as experienced crew members. The GWNF technicians knew the land, had a general strategy of where to attack the infestation and how to split the work, and could set goals. Both knowledge bases were necessary to implement the treatment, so there had to be a partnership between the leaders. While it was hard to break the usual patterns of conversation and work style to include the new technicians, when fighting for the same team toward a common purpose, the larger crew found its own rhythm and found the time productive and rewarding.

This endeavor was a learning experience for everyone. The TNC crew found themselves in new territory, and the GWNF seasonal technicians were operating as an invasive species field crew for the first time, so sharing information was key. One tip that was greatly appreciated by the GNNF crew was the use of blue dye in the herbicide solution. The dye dries on the leaves which clearly marks what parts of the infestation have been sprayed, making planning easier and preventing redundant treatments. In the end, everyone had fun, worked well together, and came away with ideas of how to make the next treatment even better. Hopefully this project is just the first of many collaborative ventures.

Blue-dyed herbicide makes it clear which areas have been treated

Breezey Snyder
AFHA AmeriCorps, The Nature Conservancy

Successful Treatments in Critical Habitat

This past summer, the PHCWPMA field crew was deployed to Cheat Mountain to tackle an 88-acre infestation of reed canarygrass (RCG), an invasive grass in danger of spreading further into the Monongahela National Forest. One treatment occurred in a 2.1 acre wildlife opening on Whitemeadow Ridge.

Left: the wildlife opening pre-treatment, Right: Post-treatment (Photo Credit: Ben Rhodes, The Nature Conservancy)

The pictures above present a before/after view of the infestation. The grey-brown areas in the after photo (right) are areas of dead RCG. The remaining green spots are native plants, including large patches of milkweed (an important food source for monarch butterflies) which was previously being outcompeted by the RCG. All in all, the treatment was highly accurate and effective, with a 95-99% success rate killing RCG, while leaving native plants unharmed. With the canarygrass removed, milkweed and other native plants should be able to spread across the wildlife opening, providing crucial habitat for pollinators.

2016 Recap

2016 saw an across-the-board increase in acreage and infestations tackled by the PHCWPMA invasive species strike team, operated out of The Nature Conservancy. Altogether, the team completed 1820.7 acres of non-native invasive species removal. The team worked at 44 different sites this year, treating 19 species of plant with variety of physical and chemical removal techniques.

In September of this year, the 2015/16 strike crew packed away their saws and their sprayers after a year of hard work. At the same time, the PHCWPMA happily welcomed their new 2016/17 crew, pictured to the right.

2016/17 TNC Crewmembers. From left to right: Ben Rhodes, Owen Peet, Liza Morse, Breezey Snyder, Angela Burdell

Training the Next Generation of Weed Warriors

The Mountain State Forest Festival once again played home to the Conservation Village. This October, several PHCWPMA partners brought activities and displays to Elkins City Park to raise awareness of conservation issues. This year, the theme was non-native invasive species, and each organization had their own booth describing the work they do towards controlling the spread of invasive species while promoting the health of native flora and fauna.

AFHA AmeriCorps Becky Conway teaches students how invasive seeds can be transported via articles of clothing (like socks!)

U.S. Fish and Wildlife had examples of invasive plants and activities to show visitors the differences between common invasive weeds and their native look-alikes. The U.S. Forest Service partnered with master naturalist, Dave Saville, who came with a display on native berries and their seeds. Trout Unlimited brought live brook trout and taught visitors about how invasive weeds can diminish stream quality. West Virginia Division of Natural Resources brought a collection of games and activities for kids to learn about West Virginia's incredible biodiversity.

Other partners included the Youth Environmental program, Natural Resources Conservation Service, Appalachian Forest Heritage Area (AFHA), and Canaan Valley National Wildlife Refuge.

The first day of the Conservation Village was kids' day. Approximately 400 students from local schools came through the Conservation Village, and AFHA AmeriCorps members put on the one-act-play, *Detective Sally Dods and the Case of the Spikeytop Stinkweed.* The play taught students about what makes a plant invasive, the dangers of letting invasive plants go unchecked, and how they can help prevent invasive species from spreading. Following the play, students were asked to become "weed warriors" and stay conscious of their effect on the environment.

Finally, booths at the Forest Festival came prepared with knowledgeable personnel and informational materials on invasive species. This was a good opportunity for the PHCWPMA to connect with West Virginia landowners looking to become active fighting invasive species on their own land. Public outreach goes a long way towards stopping the spread of invasive species, and PHCWPMA looks to continue promoting its message in the Potomac Highlands in 2017 and beyond.

Action shot from *Detective Sally Dods and the Case of the Spikeytop Stinkweed*…
"It smells like my Dad's underwear"

PHCWPMA Accomplishments

2016

The projects highlighted above serve to show one of the central tenets of the PHCWPMA: The whole is greater than the sum of its parts. This partnership's strength comes from the willingness of its members to reach out to one another. In this spirit, the accomplishments listed below are written not only to show PHCWPMA's progress in the last year, but also to share achievements between member organizations themselves in order to catalyze new partnerships.

Invasive Plant Treatments

- **The PHCWPMA FIELD CREW, operated out of THE NATURE CONSERVANCY, treated NNIS on 1,820.7 acres, an increase from 1,575 acres in 2015. 1180.7 acres treated were on Monongahela National Forest land, 200 acres were on the George Washington National Forest, and 440 acres were on TNC and private properties in Grant, Hardy, and Pendleton counties.**
- **The WEST VIRGINIA DIVISION OF FORESTRY treated Japanese stiltgrass on 2 acres of critical red spruce habitat in Kumbrabow State Forest.**
- **CANAAN VALLEY NATIONAL WILDLIFE REFUGE monitored 209.52 acres of refuge land for garlic mustard, Japanese stiltgrass, autumn olive, multiflora rose, and Japanese barberry. Garlic mustard was pulled by hand by staff and volunteers. All others were removed through pulling, cutting, or herbicide application by staff and AFHA AmeriCorps members.**
- **The 2016 GARLIC MUSTARD CHALLENGE incorporated 271 volunteers who combined to pull 2,930lbs of Garlic Mustard over 11 volunteer days.**
- **The U.S. FISH AND WILDLIFE SERVICE treated 10.57 acres of Japanese knotweed in Randolph County and gathered coordinates for 2017 treatments.**
- **The NATURAL RESOURCES CONSERVATION SERVICE (NRCS) Performance Results System (PRS) and Integrated Data for Enterprise Analysis (IDEA) reports show 325 acres of Brush Management (Practice Code 314) applied on 43 farms in Grant, Hardy, Pendleton, Tucker, Randolph and Pocahontas counties.**
- **The WEST VIRGINIA CONSERVAION ASSOCIATION (WVCA) completed 18 NNIS removal projects, and paid out a total of $4,919.24 towards removal of invasive weeds and pests.**
- **THE NATURE CONSERVANCY, VIRGINIA, through a contract with Virginia Forestry and Wildlife Group, treated 20 acres of *Ailanthus altissima* (tree of heaven), *Paulownia tomentosa* (Foxglove tree), and *Celastrus orbiculatus* (oriental bittersweet) on TNC's Warm Springs Mountain Preserve in Bath County, including prescribed burn units comprising the cross-jurisdictional Warm Springs Mountain Restoration Project with the George Washington National Forest. Another 10 acres of *Elaeagnus umbellata* (autumn olive) was treated as part of a multi-year restoration project on Berriedale Farm in Highland County. The 366-acre Berriedale Farm is under conservation easement with TNC and borders both the Highland Wildlife Management Area and George Washington National Forest.**

Invasive Pest Treatments

- **TROUT UNLIMITED (TU) in partnership with the U.S. FOREST SERVICE (USFS), treated trees for hemlock woolly adelgid (HWA) at 15 new sites, thereby completing treatment in 40 priority conservation areas initiated in 2013. Treatment involved pesticide application (basal soil or stem injection) to 60 healthy trees per stand in order to protect these trees from the invasive pest.**
- **The WEST VIRGINIA DEPARTMENT OF AGRICULTURE (WVDA) continued to treat high-value and high-visibility HWA infested hemlocks with Imidicloprid by inserting CoreTect tablets into the soil, and trunk injections; 555 hemlocks were treated on state lands in 2016.**
- **The WVDA completed Larval Insecticide Treatments for gypsy moth on 12,156 acres of land across 5 counties as part of the Cooperative State County Landowner Program. The majority of the treatment area fell within PHCWPMA boundaries.**

Resistance & Bio Control

- **The U.S. FISH AND WILDLIFE SERVICE reared and released *Galerucella* weevils across 14.92 acres as purple loosestrife control.**
- **The WEST VIRGINIA DEPARTMENT OF AGRICULTURE (WVDA) received 10 "bullet proof" hemlock saplings. These ten putatively resistant trees, originating from a stand in New Jersey, were planted at Kanawha State Forest in October of 2015 and as of this time, 9 of the 10 trees have survived. This project is funded by the United States Forest Service as part of a cooperative effort with state agencies in the northeastern United States.**
- **The WVDA performed beech scale challenges to identify trees with acquired resistance to beech scale insect boring. In 2016, WVDA staff collected pads from the 2015 challenges and found that resistant trees tended to occur in clusters, indicating true resistance. Challenges were initiated on 37 new putatively resistant trees in 2016.**
- **The WVDA released 500 *Rhinoncomimus latipes* at one site in Grant County to control mile-a-minute weed. One new infestation of mile-a-minute was found in both Hardy and Grant counties, and these sites were marked for future biocontrol work. WVDA staff distributed information about the project to all landowners involved.**
- **The WVDA released 800 *Mecinus janthinus* weevils at two sites in Pendleton County as a biocontrol for yellow toadflax. Staff also conducted surveys at two locations where *M. janthinus* were released in the summer of 2015 and found significantly more *M. janthinus* at these locations then in the past two seasons. WVDA will continue to evaluate these sites during the 2017 season. In addition, staff also found and identified signs of *Brachypterolus pulicarius*, another well-known biocontrol for the plant.**
- **Blight resistant beech trees are being propagated by WVDA personnel at a U.S. Forest Service orchard in Parsons, WV. Seedlings from this stock will be used to sustain the Monongahela National Forest's Beech population.**

Surveys & Mapping

- **THE NATURE CONSERVANCY uploaded data on non-native invasive plants into iMapInvasives. These data, a combination of observations from TNC and Forest Service Personnel, include 3,520 observations of 32 distinct invasive plants across 12 counties. TNC will be working this winter to gather NNIS data from other partner organizations.**
- **The WEST VIRGINIA DEPARTMENT OF AGRICULTURE (WVDA) used Forest Disturbance Monitor (FDM) to locate and map areas of possible Gypsy Moth defoliation. These areas were then ground surveyed for confirmation. As of November, WVDA had mapped 59,616 acres of defoliation in 2016. The final total acreage is expected to be less than the 99,878 acres defoliated in 2015.**
- **In 2016, the WVDA also used FDM to identify, survey, collect, and report all large forest disturbances across the state. Using this method, the WVDA found that 170,636 acres of land statewide showed some type of damage. All areas were verified by site visits. In addition, GPS-enabled tablets with digital data forms and maps are now being used to improve data collection and survey methods. For more information on what pests and pathogens are active in a given area, visit the WVDA online, and see "Forest Health Protection."**

  http://www.agriculture.wv.gov/divisions/plantindustries/Pages/Forest_Health_Protection.aspx
- **The WVDA collected foliar samples from oak trees from 3 sites within the PHCWPMA area, and conducted PCR analysis on these samples. All samples were negative for signs of sudden oak death.**
- **The WVDA inspected 15 nurseries within the PHCWPMA boundaries for the presence of plant pests and noxious weeds. 2 sites were quarantined for white pine blister rust.**
- **The WVDA completed spring trapping for the walnut twig beetle, the vector of thousand cankers disease. 30 traps were set and were monitored for 3 weeks in the spring. Samples were processed and screened by the Forest Pathologist and the Cooperative Forest Health Protection Specialist. All samples screened to date were negative for the walnut twig beetle.**
- **The WVDA, as part of the biocontrol and monitoring program, monitored all West Virginia PHCWPMA counties for mile-a-minute weed, yellow toadflax, Russian knapweed, and purple loosestrife. Two new sites were identified for mile-a-minute and yellow toadflax infestations, and no new sites were identified for Russian knapweed or purple loosestrife.**

Education & Outreach

- **Canaan Valley National Wildlife Refuge hosted an INVASIVE SPECIES WEEK on the CVNWR Facebook page during February 2016. Staff posted pictures of common invasive plants, and provided the public information they could use to identify, manage, and prevent the spread of invasive species.**
- **The Forest Service's Seneca Rocks Discovery Center played host to DISCOVER NATURE DAY 2016. In the morning, visitors of all ages learned about the threat of garlic mustard and how it can be controlled long-term with yearly pulls. Visitors then pulled roughly 960lbs of garlic mustard. In the afternoon, visitors were free to roam to a variety of displays and activities including live snake and raptor presentations. Altogether, 1,300 people attended the event.**
- **The PETERSBURG CITIZEN SCIENCE PROGRAM brought in staff and AmeriCorps members from multiple organizations to teach students from Petersburg Elementary about invasive species as well as the importance of native plants like red spruce. Students participated learned about many kinds of invasive species, the dangers of letting invasive species spread, and how they can help. Students also participated in two garlic mustard pulls, one at Seneca Rocks Discovery Center, and one in Bartow, WV in partnership with the TU/USFS educational snorkeling program. A total of 110 students participated.**
- **Several PHCWPMA partners were present at this year's FOREST FESTIVAL CONSERVATION VILLAGE. The theme for this year's village was non-native invasive species, and each organization came prepared with displays, activities, and informational hand-outs about invasive species within the PHCWPMA region. Over 1050 visitors came through the village over the course of three days.**
- **The West Virginia Department of Agriculture released 500 *R. latipes* weevils on the grounds of Tyler Consolidated Middle School to combat a large infestation of mile-a-minute weed. In addition, 120 students learned about invasive pests and biocontrols.**
- **FACEBOOK PAGE—The PHCWPMA maintains an active facebook page, which currently has 303 likes, a 28% increase since the end of 2015. (https://www.facebook.com/PHCWPMA/?fref=ts)**