

2015 Accomplishments Report

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Potomac Highlands Cooperative Weed & Pest Management Area

2015 Accomplishments Report



PHCWPMA field crew member and AmeriCorps member Rob Orr contemplates the beauty of his workplace and the rewarding nature of his job from a treatment site above Big Bend Campground. (Photo Credit: V. Woltz)

INTRODUCTION

The Potomac Highlands Cooperative Weed and Pest Management Area is a partnership between federal, state, and local agencies, community associations, non-profit organizations, and private landowners working to fight non-native invasive species.

The PHCWPMA originally served Grant, Hardy, and Pendleton Counties in West Virginia and portions of Highland County in Virginia that fall within the Potomac River Watershed. As of 2015, the PHCWPMA boundaries expanded beyond the Potomac Highlands to include Randolph, Pocahontas, and Tucker Counties in West Virginia and Bath, Highland, Augusta, Rockingham, Page, and Shenandoah Counties in Virginia.

Nestled within the Central Appalachian Mountains, this landscape is part of one of the most biologically rich landscapes in the continental United States. Many species here exist nowhere else on Earth, flourishing due to the variation in topography, elevation, geology, climate, and drainage patterns. The Potomac Highlands region contains a diverse mix of pine/heath barrens, rocky summits, cliffs and balds, and subalpine coniferous and northern hardwood forests. Over 120 rare animals, plants and natural communities have been identified in this area.

Counties in the PHCWPMA are economically dependent on forest products, agriculture, and natural resourcebased tourism, and are well-known for their natural resources, recreational resources, and scenic beauty. Invasive plants are a serious threat to all of these values and uses.

WHO WE ARE

The PHCWPMA is proud to include the following 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)



2015 proved to be an extremely productive and fruitful year for the PHCWPMA, both in terms of outreach and onthe-ground work completed. A total of 4,314 acres were treated for invasive species in 2015, adding to an overall total of nearly 10,000 acres since 2013.

2015 HIGHLIGHTED PROJECTS

PHCWPMA Field Crew Continues to Dominate Invasive Species

The 2015 field crew was combined with the new Ecological Restoration Team (ERT), expanding the traditional CWPMA work area to include numerous sites in Randolph and Pocahontas Counties. Operating out of The Nature Conservancy's (TNC) office in Elkins, the combined crew treated non-native invasive species (NNIS) on 42 sites totaling 1,575 acres. This is an increase from the 2014 field season, when the crew treated 31 sites totaling 1,433 acres. The total adjusted acreage was 2,183 acres, as compared to 3,200 acres last year. (Adjusted acreage is calculated by acreage per species, so 10 acres treated for 3 species equals 30 adjusted acres.)

The expanded geographic boundary combined with more ambitious treatment goals lead to longer drive times and a need for a faster-paced, focused approach. In past years, previous crews had time to treat a wider variety of species at each location. However, this year the crew continued to refine their techniques, making several improvements to their methodology. These innovations allowed them to eradicate NNIS more thoroughly and efficiently. The sections below highlight several such success stories from the 2015 field season.

Limestone Glades and Barrens

The Smoke Hole Canyon is lined by a number of limestone glades and barrens—rocky outcrops characterized by thin, dry, nutrient -poor soils. These unique ecosystems are home to many rare and endemic plants such as yellow nailwort (*Paronychia virginiana*), Kate's Mountain clover (*Trifolium virginicum*), and limestone adder's-tongue (*Ophioglossum engelmannii*). Limestone habitats also host far less desirable species like spotted knapweed (*Centaurea stoebe*), a non-native invader that displaces native plants by aggressively colonizing, competing for already-scarce resources, and exuding toxins into the soil.







Dead spotted knapweed two weeks after treatment. Several healthy yellow nailwort are visible in the background.

The PHCWPMA field

crew has fought spotted knapweed on limestone glades and barrens for years, experimenting with different treatment methods to eradicate the invader without harming the nearby rare plants. The 2015 field crew perfected their technique: using sponges, they wiped herbicide directly onto each knapweed stem. Doing so maximizes the amount of herbicide applied to the knapweed and minimizes the chance that it will drift onto non-target plants via air or soil. This method achieved a 93% kill rate with no non-target damage—a significant improvement from past years—and took less time than many previous techniques. This should give future crews a great chance to eliminate spotted knapweed from Smoke Hole's limestone habitats.



The CWPMA field crew removes invasive plants with Germany Valley in the background.

Pike Knob

TNC's Pike Knob Preserve near Circleville, WV stretches several miles along the crest of North Fork Mountain. Pike Knob itself, a 4290-foot peak, dominates the southern end of the property. From the summit, it is only a short walk to the centerpiece of the preserve: a grassy bald with a breathtaking 360degree view of the surrounding countryside. From this vantage point, visitors can see landmarks like Spruce Knob and Nelson Rocks and look down the length of Germany Valley all the way into Virginia. In addition to the gorgeous panorama, the grass bald is a unique ecosystem, and its rocky outcrops are home to a number of rare wildflowers.

This one-of-a-kind preserve is threatened by a diverse assortment of seven invasive plant species ranging from cheat grass (Bromus tectorum) to viper's bugloss (Echium vulgare). The PHCWPMA field crew has battled these invaders since 2011. The main challenge has been that as one species is beaten back another often spreads to take its place. To combat this effect, the 2013 crew spread native grass seed into the dead areas left by their treatments. Some of those grasses have become established, occupying space that would otherwise be infested with invasive plants. The 2015 field crew, in an effort to give these patches of native grass a competitive advantage, employed a diverse arsenal of treatment methods, each one tailored to a specific invader. Several species were removed by hand; others were targeted with specialized herbicides that affected them but not the surrounding native



The CWPMA field crew removes invasive plants from Pike Knob. Spruce Knob, the highest point in West Virginia, is visible in the background.

plants. As a result, all seven invasive species were greatly reduced while limiting non-target damage. This treatment style should allow native plants to spread, gradually replacing the invaders.

Gandy Ranch

The 2015-2016 field crew started work in September. One of their first projects was to remove Tatarian honeysuckle (*Lonicera tatarica*) and other invasive woody plants from the riparian area of TNC's Gandy Ranch conservation easement. To clear the dense thicket, they first had to cut paths through it using power saws. From these paths, they could access the bulk of the infestation. All of the invasive plants were cut at the base and their stumps were sprayed using an aquatic-approved herbicide. Most of the dense patches and many of the outlying clumps of plants have been treated. Next year's work should consist primarily of mop-up around the remainder of the flood-plain.

In addition to the work of our field crew TNC also had help at Gandy Ranch from our New York City interns participating in the LEAF program. LEAF (Leaders for Environmental Action in the Future) students came to WV from high schools in NYC that focus on science with a special emphasis on environmental sciences. This year the students also worked on the Gandy Ranch floodplain to remove Tatarian honeysuckle. While working at the site they also planted native Big Toothed Aspen (*Populus grandidentata*) and Swamp Milkweed (*Asclepias incarnate*) obtained



LEAF students take in the view at Gandy Ranch.

through a partnership with the Monongahela National Forest and the Natural Resources Conservation Service. This native tree will provide a quick growing shade tree to cast shade and eventually cool the waters of a high quality stream found on the property. Swamp milkweed is a native pollinator that will provide food and habitat for species such as monarch butterflies, hummingbirds and other butterflies.

Upper Tract Area

The town of Upper Tract, WV is home to large infestation of mile-a-minute weed (*Polygonum perfoliatum*). This aggressive non-native vine grows extremely rapidly, climbing over native vegetation and shading it out. The field crew has been carrying out herbicide treatments on mile-a-minute in and around Upper Tract since 2011. However, the vine forms dense mats that cover huge swaths of fields and forests, meaning that chemical or mechani-



Mile-a-minute vines have overrun this old farm near Upper Tract.

cal treatments tend to be timeconsuming and potentially harmful to nearby native vegetation. A new treatment method has therefore been introduced in the Upper Tract area: 1,700 adult *Rhinoncomimus latipes*—a type of weevil that feeds exclusively on mile -a-minute-were released as a biocontrol. It will take several years, but over time the weevils will multiply, spread, and begin to control the infestation on their own. Bio-control methods typically do not achieve full eradication, but they will greatly reduce the weed population and keep it suppressed indefinitely. This should reduce the spread of mile-a-minute, onto the adjacent lands of Upper Tract farmers and the nearby Monongahela National Forest.

Another Great Year for Education and Outreach

This year, the Education & Outreach subcommittee organized and executed several new projects as well as continuing successes from previous years. Many of these projects were made possible using funding provided by the Slow the Onward Movement of Pests (STOMP) II Grant.

7th Annual Garlic Mustard Challenge

Throughout the 2015 Garlic Mustard Challenge, the CWPMA hosted a total of thirteen successful events including one pull in Tennessee and one pull in Virginia. Pulls in West Virginia were hosted in areas such as Seneca Rocks Discovery Center, Pocahontas 4-H Camp, Blue Bend Recreational Area, Greenbrier State Forest, Ice Mountain Nature Center, and Nelson Rocks Outdoor Center. Together, volunteers served over 600 hours and removed 12, 885 pounds of garlic mustard!

Discover Nature Day

On May 9, 2015, the second annual "Discover Nature Day" event was held at Seneca Rocks Discovery Center. Each year, this event highlights the amazing natural wonders found in West Virginia and focuses on one of the most



Volunteers pose proudly with a heaping bag of garlic mustard pulled as part of the Garlic Mustard Challenge at Discover Nature Day.

significant threats to these resources, non-native invasive species. Volunteers spent the morning pulling 3,115 pounds of garlic mustard, a noxious non-native invasive species from the grounds around the Discovery Center. Afterwards, the afternoon sessions began with hands-on activities and live animal presentations.



Discover Nature Day attendees, sporting Asian longhorned beetle headbands, exchange glances with WV's state fish, the brook trout, at Trout Unlimited and the Forest Service's native fish tank.

The West Virginia Raptor Rehabilitation Center put on two amazing presentations about the work they do to rehabilitate and release injured birds of prey. The crowd also enjoyed Roy Moose's program focused on teaching everyone about the physiology and habits of native West Virginia snakes. Everyone had the opportunity to participate in a series of interactive games and hands-on activities from 1:00 to 4:00 p.m. Activity booths focused on aquatic organisms, pollinators, wildlife, stream quality, bats, the red spruce ecosystem, wetlands, and non-native invasive species, including the Asian longhorned beetle, emerald ash borer, didymo, Japanese knotweed, and garlic mustard.

Over 900 people attended this year's event and enjoyed all of the different activity booths and live animal presentations. This event could not have succeeded without the help of each volunteer, sponsor, and partner organization, including the U.S. Forest Service, U.S. Fish & Wildlife Service, West Virginia Division of Natural Resources, Trout Unlimited, Save Our Streams, West Virginia Department of Environmental Protection, Canaan Valley Institute, West Virginia Department of Agriculture, West Virginia Division of Forestry, U.S.D.A. Animal and Plant Health Inspection Service, and the Natural Resources Conservation Service.

Citizen Science Program

This year, 95 5th grade students from Petersburg Elementary School became successful citizen scientists for invasive species in West Virginia. Over the course of four weeks, these students, along with 15 adult volunteers learned what invasive species are, how to identify 10 different invasive species, and how to use GPS units to collect and report their data. They concluded the program with a garlic mustard pull at Seneca Rocks Discovery Center in May. Over the course of two days, the Petersburg citizen scientists pulled 106 bags of garlic mustard, totaling over 3,700 pounds! These students also contributed the most volunteer hours, 260 hours, in the 2015 Garlic Mustard Challenge.

Hiker/Camper/Angler Outreach

People traveling between natural areas, farms, or waterways for recreation can unintentionally spread invasive pests on their vehicles, boats, equipment, firewood, and even clothing. Yet, many of these recreationists know very little about the impacts of non-native pests, how to identify high-consequence pests, or what they can do to prevent the introduction or spread of these species. Through the STOMP II grant, a large-scale effort was implemented to inform travelers, outdoor recreationists, youth, and private landowners about the steps they can take to prevent the introduction and spread of invasive pests.

Throughout the months of May-September 2015, outreach was done on federal, state, and other lands to inform hikers, campers, students, and anglers of ways they can help prevent the spread of invasive species throughout West Virginia.

For campers and hikers, two forest pests (emerald ash borer and Asian longhorned beetle) were the focus. Identifying characteristics of these insects and keys to identifying infestations, as well as the importance of not moving firewood, were emphasized during conversations with these recreationists. After each outreach event, every par-



AmeriCorps volunteer Alex Hodges (see picture).

ticipant received a non-native invasive species field guide and a mini-LED flashlight that featured the PHCWPMA logo and the phrase, "Don't Move Firewood."

For anglers, the focus was on the impacts of Japanese knotweed on fish habitat as well as the negative impact this invasive plant can have on aquatic recreational activities. The importance of cleaning fishing and boating equipment were also highlighted. After every outreach event, every participant received a small fly cube box that featured the PHCWPMA logo with "Stop Aquatic Hitchhikers" written on it. A sticker featuring the aquatic invasive species found in West Virginia was also attached to the box. This sticker was designed by Outreach took place at Seneca Rocks Discovery Center, Horseshoe Campground in Parsons, Seneca Creek Trailhead, Spruce Knob Lake, a children's camp in Marlinton, a Trout Unlimited chapter meeting, and at the Izaak Walton League's Jake's Day event. Overall, 346 individuals were impacted by this outreach as of September 2015.

Boot Brush Station Installation

Two boot brush stations were fabricated as part of the STOMP II grant and were installed in early spring of 2015. The goal of these stations is to prevent the spread of non-native invasive plant species such as Japanese stiltgrass and garlic mustard by removing unwanted seeds from the soles of hikers' shoes and boots. Stations include a framed interpretive sign, mounted boot brush, and a gravel reservoir to catch fallen seeds. To deter new weeds from sprouting up in the soil around the stations, these stations will be cleaned on a regular basis. Each station was designed to require little maintenance. Boot brush stations provide an opportunity to educate outdoor recreationists about the negative effects of non-native invasive plants on the local environment and easy things they can do to reduce this threat.

The first boot brush station is located next to a trailhead at the Mine Road parking lot - a location that receives a large amount of use. This station will be maintained by Forest Service staff and cleaned on a regular basis.

The second boot brush station was installed next to the main trail to Seneca Rocks, just off the old visitor center parking lot. Existing interpretive signage at this location will be combined in the future next to the boot brush kiosk. Each station includes an interpretive panel about the threat of non-native invasive species and the preventative measures that can be taken by cleaning off gear, shoes, and clothing.



A boot brush station at the Seneca Rocks trailhead (left) and the accompanying interpretive panel (right).

2015 Landowner Survey

Using funds from the STOMP II grant, PHCWPMA brochures, surveys, invasive species pamphlets, letters, and return envelopes were sent to 3,000 randomly selected landowners in Grant, Hardy, and Pendleton Counties in WV. The survey asked landowners about their exposure to and interest in PHCWPMA and NNIS outreach, as well as some basic demographic questions. 341 surveys were returned. The results are being used to guide future outreach efforts. Some of the results from the landowner survey include:

- The most effective outreach tool was the Don't Move Firewood Billboard, which was seen by almost 50% of the survey responders.
- The "Fighting Invasive Plants in WV" pamphlet was also well-received, although not as widely viewed. This pamphlet was included in the survey packet, which helped to increase its exposure and encouraged feedback.
- About 50% of landowners had plants/pathogens/insects on their property that they consider undesirable.
- Less than 1/3 of the landowners had taken actions to prevent or control the spread of invasive species on their property.
- Landowners were significantly more likely to consult a county extension agent, family/friends, or a forester than any of the other agencies and sources listed.
- Greater than 50% of landowners were not interested in a 2-4 hour workshop of any kind.
- Landowners were most receptive to workshops on improving wildlife habitat and stream health and identifying invasive species.
- Over 50% of landowners said that they would increase or start actions to control invasive plant species if there were simple written instructions on how to do so.
- There was moderate interest (>100) in all other options.

Moving forward, the PHCWPMA will be using this information to better inform future outreach attempts.

PHCWPMA Accomplishments

2015

The projects highlighted above show some of the PHCWPMA's biggest accomplishments for 2015, but comprise only a part of our partners' ongoing efforts to defend our native ecosystems from the encroachment of invasive species through education, outreach, and on the ground work. The following presents a complete summary of accomplishments for 2015.

NNIS Treatments

- PHCWPMA FIELD CREW—The PHCWPMA field crew, operating out of The Nature Conservancy, treated NNIS on 1,575 acres, an increase from around 1,400 acres last year. The total adjusted acreage was 2,183, as compared to 3,200 acres last year. (Adjusted acreage is calculated by acreage per species, so 10 acres treated for 3 species equals 30 adjusted acres.) Species treated include: mile a minute, garlic mustard, Japanese knotweed, autumn olive, tree of heaven, spotted knapweed, bush honeysuckle, multiflora rose, viper's bugloss, thistle, mullein, yellow toadflax, yellow hawkweed, cheatgrass, and brown knapweed.
- KUMBRABOW SF STILTGRASS TREATMENTS—The West Virginia Division of Forestry treated stiltgrass along 2 miles of road in Kumbrabow State Forest.
- SCENIC HIGHWAY NNIS TREATMENTS—The Marlinton/White Sulphur Ranger District treated 61 acres for autumn olive, bush honeysuckle, multiflora rose, and associated weeds along the Highland Scenic Highway.
- NRCS BRUSH MANAGEMENT—NRCS Performance Results System (PRS) shows 2,070 acres of Brush Management was applied on 105 farms in Grant, Hardy, Pendleton, Tucker, Randolph and Pocahontas counties in WV.
- PARSONS KNOTWEED TREATMENT—U.S. Fish and Wildlife Service, in partnership with the PHCWPMA field crew, treated 8 acres of Japanese knotweed in Parsons, WV.
- USFWS KNOTWEED—The U.S. Fish and Wildlife Service treated 10.57 acres of Japanese knotweed in Randolph County.
- HEMLOCK WOOLY ADELGID TREATMENTS—Trout Unlimited, in partnership with the U.S. Forest Service, treated for hemlock woolly adelgid at 22 Hemlock Conservation Areas (HCA's). An HCA is designated to incorporate stands of trees containing at least sixty mature trees per site with the characteristics of old growth, relative good health, minimal infection and riparian association. A total 1,194 trees were treated.
- TVCD CONTRACTS—30 invasive species contracts worth \$8,781.95 were completed through the Agricultural Enhancement Program by the Tygart Valley Conservation District and the West Virginia Conservation Agency.
- PVCD CONTRACTS—The Potomac Valley Conservation District spent \$7,598.41 on invasive species treatments on approximately 514.26 acres through Agricultural Enhancement Program.

Bio Control

- MILE-A-MINUTE WEEVIL RELEASE—Yun Wu and Dick Rearden with the U.S. Forest Service Forest Health Technology Enterprise Team, Morgantown, WV released 1,700 *Rhinoncomimus latipes* weevils on a landowner's property in Upper Tract, WV to control mile-a-minute. The weevils were collected at White Clay Creek State Park near Newark, DE.
- PURPLE LOOSESTRIFE WEEVIL CONTROL—The U.S. Fish and Wildlife Service reared and released weevils across 14.92 acres as purple loosestrife control.

Mapping

- I-MAP INVASIVES—Multiple partners' non-native invasive species data is currently being standardized and entered into I-Map Invasives software application.
- USFWS COORDINATES—U.S. Fish and Wildlife Service gathered coordinates for new 2016 treatment areas in Pendleton County. The future treatment areas consist of three miles of Japanese knotweed control on the Dry Fork (North Fork South Branch of the Potomac).
- PHCWPMA EXPANDED BOUNDARIES—The Potomac Highlands CWPMA geographic boundary expanded to include Grant, Pendleton, Hardy, Randolph, Pocahontas, and Tucker Counties in WV and Bath, Highland, Augusta, Rockingham, Page, and Shenandoah Counties in VA.

Education & Outreach

- DISCOVER NATURE DAY—Discover Nature Day 2015 was held on May 9th at Seneca Rocks Discovery Center and had 955 attendees. In the morning, volunteers pulled 3,115 lbs. of garlic mustard. Booths featured during the second half of the day included pollinators, trout, wetlands, benthic macroinvertebrates, fly tying, invasive species, red spruce, and an inflatable bat cave. Many of the PHCWPMA's partners were involved, and the event was a great success.
- GARLIC MUSTARD CHALLENGE—The 7th annual Garlic Mustard Challenge was a success. 12,885 pounds of garlic mustard were pulled and reported from Tennessee, Virginia, Pennsylvania, Wisconsin, and West Virginia.
- CITIZEN SCIENCE PROGRAM—This year, 95 5th grade students from Petersburg Elementary School became successful citizen scientists for invasive species in West Virginia. Over the course of four weeks, these students learned what invasive species are, how to identify 10 different invasive species, and how to use GPS units to collect and report data collected on invasive species infestations. In conclusion of this program, all of the 5th grade students and 15 adult volunteers participated in at least one garlic mustard pull at Seneca Rocks Discovery Center in Seneca, West Virginia on May 14th and/ or May 15th. These students worked hard and over the course of two days were able to pull 106 bags of garlic mustard totaling over 3,700 pounds! These students also contributed the most volunteer hours, 260 hours, in the 2015 Garlic Mustard Challenge!

Education & Outreach

- HIKER, CAMPER, ANGLER OUTREACH—As part of the STOMP II grant, AmeriCorps serving with the U.S. Forest Service outreached to hikers, campers, and anglers at various locations. The goal of the outreach was to raise awareness about the emerald ash borer, Asian longhorn beetle, and Japanese knotweed. Participants were give a flashlight or fly box with the PHCWPMA logo. This is an ongoing effort. To date, 346 people have been reached.
- LANDOWNER SURVEY—Using funds from the STOMP II grant, PHCWPMA brochures, surveys, invasive species pamphlets, letters, and return envelopes were sent to 3,000 randomly selected landowners in Grant, Hardy, and Pendleton Counties in WV. The survey asked landowners about their exposure to and interest in PHCWPMA and NNIS outreach. 341 surveys were returned. The results are being used to guide future outreach efforts.
- NRCS LANDOWNER OUTREACH—The Natural Resource Conservation Service (NRCS) sent the CWPMA fact sheet, a knapweed fact sheet, and a personal note to 8 landowners in the Cunningham Knob area encouraging them to treat knapweed on their property.
- FACEBOOK PAGE—The PHCWPMA maintains an active facebook page, which currently has 237 likes. (https://www.facebook.com/PHCWPMA/?fref=ts)
- BOOT BRUSH INSTALLATION—Two boot brush stations were installed in the Monongahela National Forest, one at the trailhead at the Mine Road parking lot and one next to the main trail at Seneca Rocks. Each station includes an interpretive panel about the threat of non-native invasive species and the preventative measures that can be taken by cleaning off gear, shoes, and clothing.