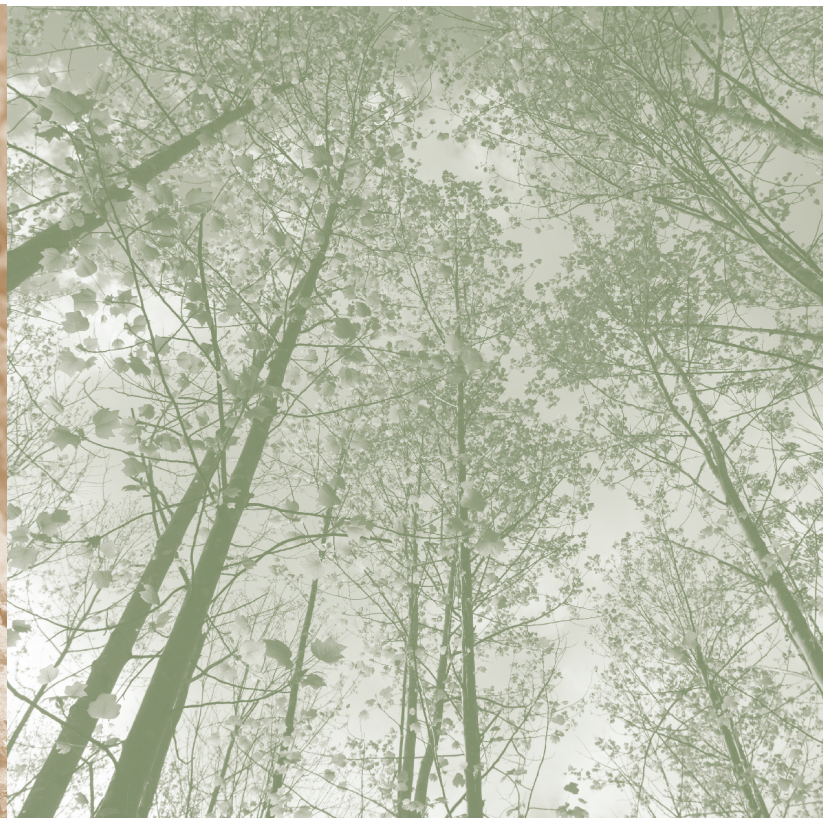
Green Forests Work

2018

Annual Report



air

water

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soil

plants

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(left) GFW Director of Operations, Michael French, stands next to a 14-year-old sycamore planted on a ripped mine site.

A Letter From The President

In 2009, the Science Team of the Appalachian Regional Reforestation Initiative submitted a proposal to President Obama for creating a Green Forests Work program for the people of Appalachia through the reforestation of mined land. Built upon decades of scientific research and field implementation, Green Forests Work could guide successful reforestation efforts that would create economic opportunities and enhance local and global environments. Neglected mined lands present significant environmental challenges for Appalachia but also provides opportunities through the creation of green jobs, environmental enhancement, and climate change mitigation.

Nearly ten years later, Green Forests Work is realizing its goals and thousands of acres of legacy mine lands have been reforested. We have developed great partnerships to make this work a reality and we have invested heavily in the central Appalachian coal region. As we enter into our second decade we propose to take our initiative to the next level. In the next 10 years, GFW hopes to plant 68,000,000 trees on 100,000 acres of surface mined lands. Scaling up our effort is anticipated to have the following impacts:

ECONOMIC IMPACT

- Employment
  - Create 30 full-time jobs within GFW
  - Support 500-600 site preparation and forestry jobs, including tree and native plant seed collection, tree nursery employees, heavy equipment operators and tree planters
  - Create future employment opportunities through timber stand improvement and forest management, invasive species control, carbon verification, harvesting of timber and non-timber forest products and bioenergy production
- Economic Returns
  - $150 million in timber
  - Carbon or water quality improvement credits
  - Increased property values, through selling of hunting leases, easements, and others
  - Revenue from non-timber products

ENVIRONMENTAL IMPACT

- Sequestration of 6.7 million tons of carbon
- Water and air purification
- Increased biodiversity
- Improved habitat, breeding areas, and food supply for wildlife and pollinators

SOCIAL IMPACT

- Renewal of cultural heritage
- Therapeutic and recreational experiences
- Education and outreach through volunteer planting events

This goal is achievable based upon the projects we have accomplished to date through our existing network of community, industry, and agency partners. If implemented, Green Forests Work will not only create multi-use, sustainable forests, but also provide education and guidance to help revitalize local economies that are in transition from the former coal-based economy of the region. None of this work could have been realized without the help of many individual donors, organizations, and partners. We would like to thank all who have made our previous work possible. Your continuted support is needed to make our vision a reality.

- Dr. Chris Barton, President

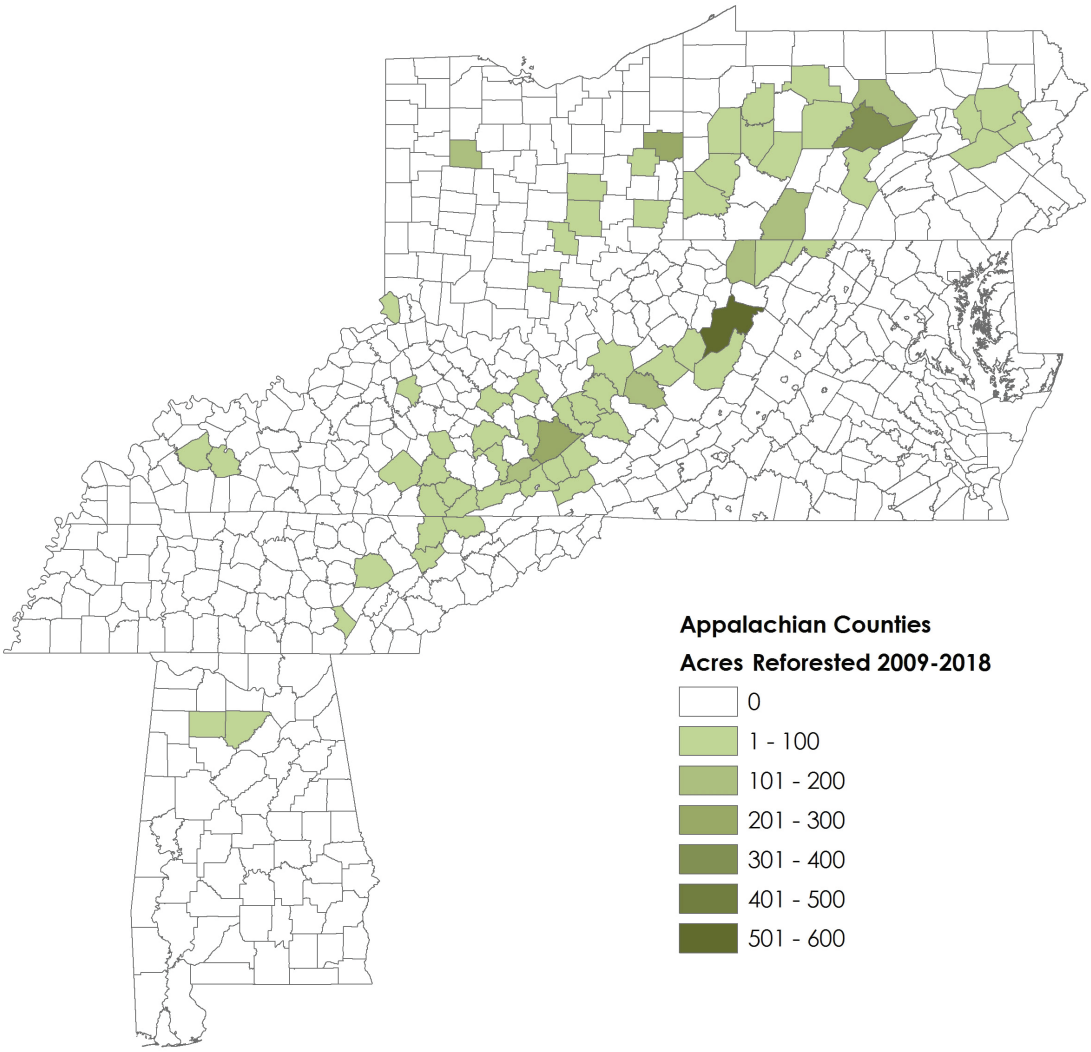
Background

Who We Are

Green Forests Work (GFW) is a non-profit organization whose mission is to reforest surface mined lands in Appalachia that were previously reclaimed using practices that prevent effective reforestation. GFW's vision is to create a renewable and sustainable multi-use resource that will provide economic opportunities while enhancing the local and global environment. By converting reclaimed, non-native grasslands and scrublands into healthy, productive forestland, GFW is effectively addressing two needs of the region. Our reforestation projects improve the environment by eradicating exotic species and restoring the ecosystem services that forests provide to society, and we create employment opportunities for equipment operators, nurserymen and women, and tree planters. With the help of our partners and volunteers, our vision is quickly becoming a reality—since 2009, we have planted nearly 2.5 million trees across approximately 4,000 acres, but there are nearly one million acres left to reforest.

The Need for Reforestation

Eastern US lands that have been mined for coal and reclaimed under the federal Surface Mining and Reclamation Act of 1977 (SMCRA) constitute a significant land resource. Since 1930, approximately six million acres have been disturbed by surface mining across the United States, with more than one million of those acres occurring in the Appalachian region of the eastern US. The vast majority of surface mined land in Appalachia was forested before mining. However, since the implementation of SMCRA, most surface mined land has been reclaimed to a hay/pastureland or wildlife habitat post-mining land use, resulting in the conversion of approximately one million acres of forest into other cover types. Until recently, common reclamation practices consisted of heavily compacting soils and planting aggressive and primarily non-native grass and shrub species. Compacted soils have long-term effects on water quality by limiting infiltration, and the compacted soils and aggressive grasses and legumes hinder the establishment of native tree establishment. When left unmanaged, a series of unproductive, and often mostly non-native, plant communities will persist until hardwood species ultimately re-invade the sites, but the timeframe for that to occur may be in the order of centuries. During this time they act as reservoirs for invasive, exotic species, which then have a seed source which can disperse into undisturbed forests.



State[1]	Acres Reforested	Trees Planted	Volunteers
AL	16	10,633	54
KY	938	605,596	4,839
MD	90	57,910	746
OH	744	512,976	1,153
PA	919	591,463	5,024
TN	77	48,858	1268
VA	134	75,152	2,703
WV	1075	557,265	1,446
TOTAL	**3,993**	**2,460,141**	**17,320**

[1] *Table excludes non-Appalachian state projects (<1 acre).*

The Benefits of Reforestation

The Appalachian region is a biodiversity hotspot for salamanders and mussels, and its forests provide critical habitat for migratory birds and a suite of mammals, reptiles, amphibians, and insects. Its forests also sequester carbon, filter particulates from the air, and provide clean water for its inhabitants. In addition to their ecological value, Appalachian forests are a valuable economic resource. The harvesting of timber and non-timber forest products (e.g. ginseng, mushrooms, etc.) provides tens of billions of dollars in revenue annually and creates employment opportunities throughout the region. The region draws tourists who come to appreciate the ruggedness and sheer beauty of the Appalachian forests and mountains. Surface mining poses a significant threat to this rich forest and the numerous services (ecosystem and economic) it provides. Reversals of damages from mining activities need to be implemented in order to steward the region's forests into the future.

Reforestation provides many benefits, both ecological and economic. Wildlife habitat is improved and forest fragmentation is reduced by reforestation. Climate change is mitigated by the sequestration of carbon in forest biomass and soils. By relieving soil compaction and planting native vegetation, flash flooding can be mitigated and downstream water quality improved because the deep ripped ground allows for greater water infiltration and storage. A growing forest also intercepts rainwater and utilizes soil moisture via transpiration, which greatly affects water budgets in central Appalachian watersheds and dampens storm flow response. Employment opportunities are created for local equipment operators, who use heavy machinery to eradicate invasive, exotic species and loosen compacted ground, as well as seed collectors, nursery workers, and tree planters who produce and plant hundreds of thousands of native tree seedlings every year. Forest restoration also creates a resource base for future sustainable wood products industries.

Many of GFW's projects have an educational and outreach component. We engage local communities with the actual work of planting the trees by recruiting volunteers from nearby K-12 schools, colleges, churches, and other volunteer sources. Volunteers gain the satisfaction of helping restore the rich natural heritage of this area, as well as physical exercise and a sense of community. Since its inception in 2009, the GFW army of tree planters has included more than 15,000 volunteers and more than 18,000 total participants. Our volunteers learn everything from the benefits of individual tree species to the true value of native forests to the ecosystem as well as the correct way to plant a tree, all under the watchful eyes of professional foresters.

Our Approach

To mitigate the landscape impacts of conventional mine reclamation, various combinations of site preparation are used, including vegetative competition control and deep ripping treatments. Exotic, invasive shrubs, grasses, and legumes are controlled so that they do not out-compete the planted native tree and shrub seedlings. Deep ripping loosens soils to create a better rooting medium for trees and improves site hydrology. Some exposed soil results after ripping, which may be quickly colonized by native plant species, initiating the natural succession process. Although GFW's site preparation activities are intensive, we have found that this gives the seedlings the best chance of successful establishment. These practices have been tried and tested with very favorable results by GFW and our partners on more than 75 mine land restoration projects throughout Appalachia in the last nine years.

The first step in the reforestation process is to control the established, unwanted vegetation which would out-compete or severely impact native tree survival and growth. Depending on the length of time since reclamation and vegetation present, different vegetative control techniques may be required. On some mined lands, many native species have established, and no treatment is necessary prior to ripping. On others, aggressive grasses and legumes may need to be treated with herbicides through a broadcast application of a non-selective herbicide. When much time has elapsed and large patches of invasive shrubs or exotic trees have established, removing the vegetation and seedbank entirely may be required. This is often accomplished by "scraping" off the brush, roots, and top few inches of soil, which contains a seedbank of unwanted species, into piles at the perimeter of the project area.

After unwanted vegetation is controlled, compacted ground must be loosened to improve water infiltration and gas exchange, and to allow seedlings' roots to easily extend through the soil. Ripping will be conducted by pulling one or two, three foot ripping shank(s), fully immersed in the soil, behind a large bulldozer. Flat areas, rolling terrain, and gentle slopes are cross ripped by first ripping perpendicular to the slope then ripping parallel to the slope. Slopes over 40 percent will not be ripped for safety and erosion reasons. When areas are narrow or small, or there are a lot of steeper slopes, cross-ripping can be conducted by an excavator equipped with a single shank ripper. Ripping is best accomplished in the fall when the ground is dry. This maximizes fracturing of the soil and allows the equipment operator to rip steeper slopes safely. The rips will be spaced 8 feet apart, and cross-ripping prevents surface water from running down the furrows during storm events and it allows tree roots to extend in multiple directions. The ripping creates a rough ground surface and exposes large rocks, creating microsites that will provide cover for insects, ground-nesting birds, small mammals, reptiles, and amphibians.

2018 Highlights

In 2018, Green Forests Work and our partners reforested 665 acres, planting more than 400,000 trees with the help of nearly 1,700 volunteers (Table 1). While GFW helped support many other projects in 2018 (Figure 1), this annual report only highlights the following projects:

Rockcastle River Wildlife Management Area (KY)

Public land managed by the Kentucky Department of Fish and Wildlife Resources within the Daniel Boone National Forest.

Regional Conservation Partnership Program (OH)

This program aims to create future Cerulean Warbler habitat by reforesting privately owned land in Kentucky and Ohio.

Monongahela National Forest (WV)

Public land manged by the United States Forest Service. This project is part of a multi-year effort to create young forest habitat, restore red spruce-dominated forest types, and improve water quality.

The Wilds (OH)

The Wilds is a private, non-profit conservation center where we have been assisting with experimental plantings.

Year Planted	Acres Reforested	Trees Planted	Number of Volunteers
2018	665	401,728	1,679

Table 1. Summary of 2018 reforestation effort.

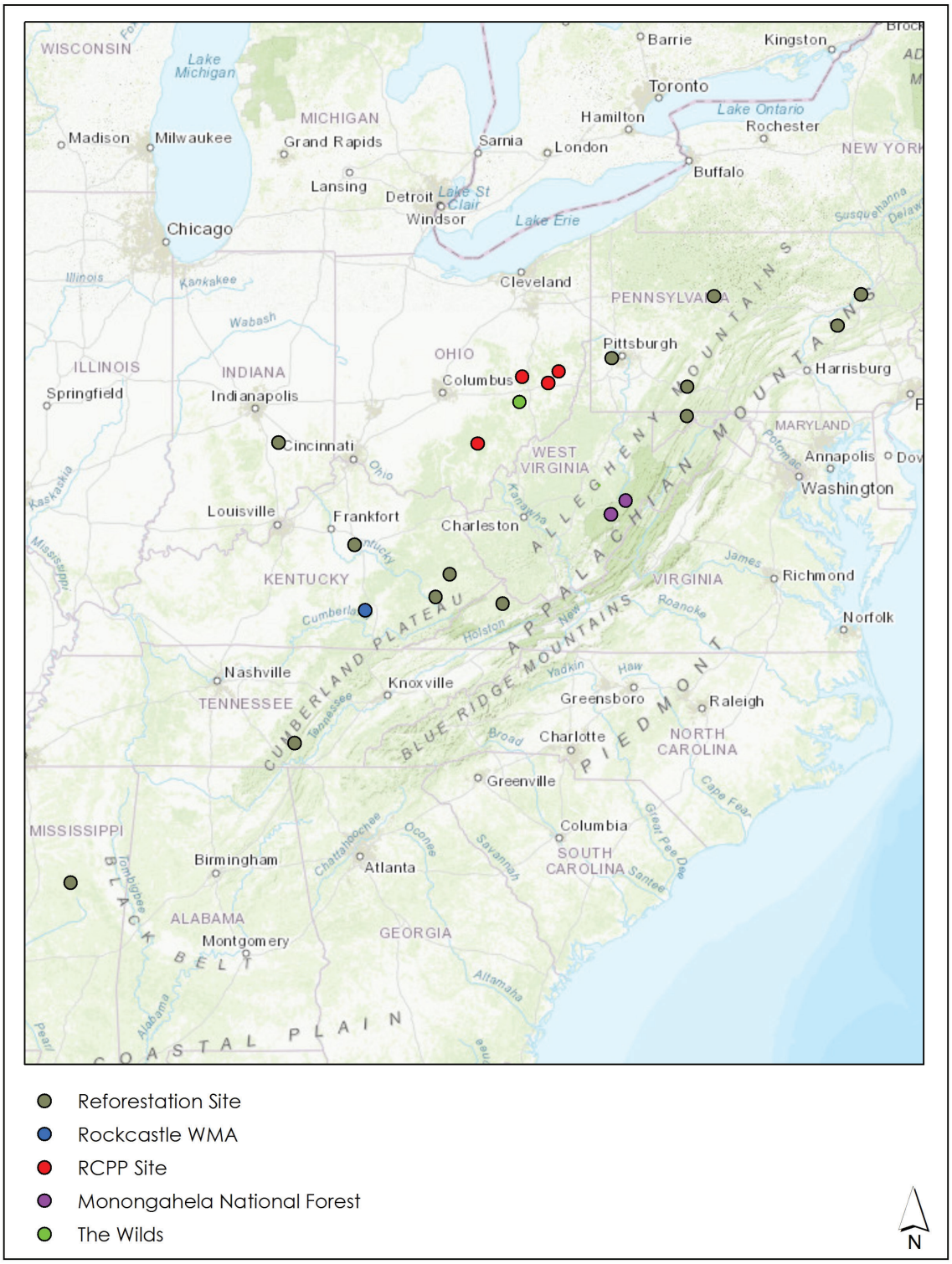


Figure 1. 2018 reforestation sites.

Rockcastle River Wildlife Management Area

This project was a collaborative effort by the Kentucky Department of Fish and Wildlife Resources, Green Forests Work, The Arbor Day Foundation, the Appalachian Regional Reforestation Initiative, Angel's Envy, Snowy Owl Foundation, and The American Chestnut Foundation to convert 22.1 acres of strip mined land in the Rockcastle River Wildlife Management Area (WMA) into an oak-hickory forest to make the site more productive for wildlife. Due to the heavy compaction and non-native grasses on the mined areas, natural tree regeneration was limited and would not have occurred in a reasonable time frame without intervention. The site is in close proximity to the Daniel Boone National Forest and other recent reforestation projects undertaken with support from the Arbor Day Foundation (Figure 2).

METHODS

To control the unwanted vegetation, the site was "scraped" by a D8 bulldozer equipped with a blade in the winter of 2018. This process involves removing the top few inches of spoil containing the seed bank and pushing the material to the project perimeter (Figure 3). These loose spoil piles make an excellent planting medium; as such, they were planted with a mix of pollinator-friendly species, including devil's walking stick, whose seed was locally collected, wild plum, and dogwoods. Following scraping, the site was ripped by a D9 bulldozer equipped with two, 4-foot long ripping shanks mounted behind each track in the winter of 2018. The site was ripped on an 8-foot by 8-foot spacing to mitigate soil compaction.

RESULTS

The 22.1-acre site was entirely planted by approximately 164 volunteers with nearly 14,000 trees (Table 2). Volunteer groups included students from Drew, Xavier, Appalachian State, and Radford Universities, as well students from the Universities of North Carolina and Delaware. Other volunteer groups included the Catholic Committee of Appalachia, the Kentucky Department for Natural Resources, Kentucky Writers and Artists for Reforestation, Boy Scouts of America, the Sierra Club, and Angel's Envy. (Figures 4-6) Volunteers planted the following species: white oak, chestnut oak, American chestnut (provided by TACF), persimmon, yellow poplar, black oak, northern red oak, shortleaf pine, roughleaf dogwood, black cherry, black walnut, sycamore, silky dogwood, wild plum, blackgum, and roughleaf dogwood.

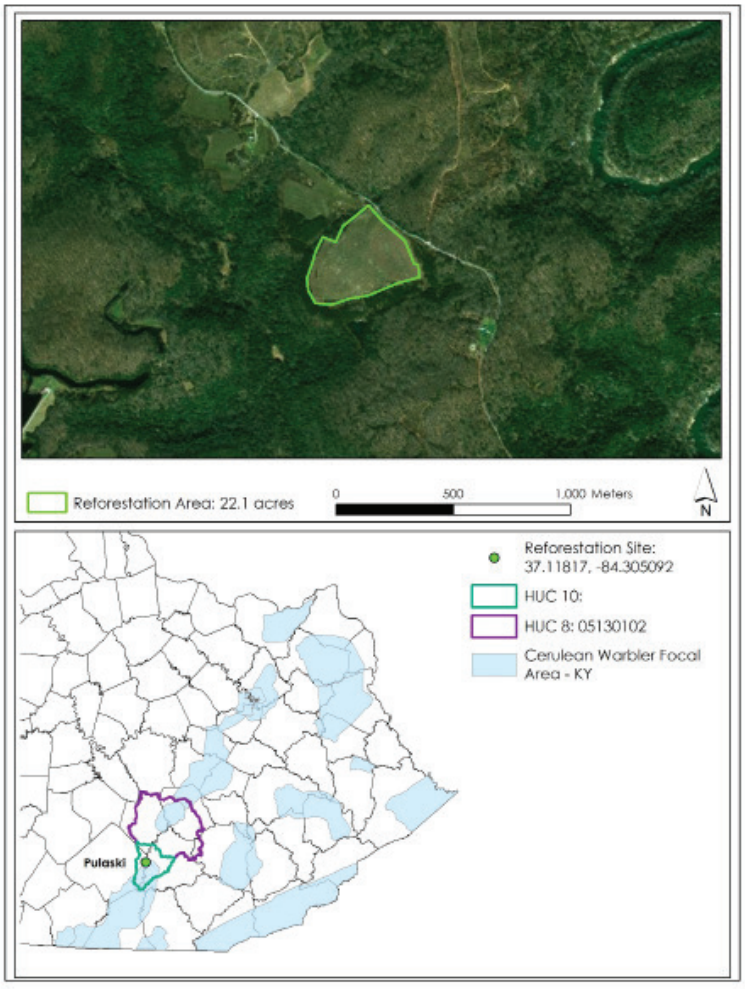


Figure 2. Rockcastle River WMA reforestation area and locater map.

Figure 3. A bulldozer scrapes the unwanted vegetation and seed bank to the project perimeter.

Figure 4. Project partners with Kentucky Department of Fish and Wildlife Resources participate in tree planting.

Figure 5. Angel's Envy employees raised funding for the planting of 12,030 white oaks in 2018 and helped plant the site. However, some of the white oaks were planted on other projects to keep the planting prescriptions diverse and balanced.

Figure 6. Students participating in an alternative spring break program that teaches about mountaintop removal give back by planting trees.

Acres Reforested	Trees Planted	Number of Volunteers
22.1	13,775	164

Table 2. Summary of 2018 reforestation effort on the Rockcastle River WMA.

Regional Conservation Partnership Program

This Regional Conservation Partnership Program is a multi-year, multi-state grant that was awarded to the American Bird Conservancy, the Appalachian Mountains Joint Venture, Green Forests Work, and other partners by the USDA – Natural Resources Conservation Service in 2015. This grant is intended to improve and create forest habitat for Cerulean warbler (*Setophaga cerulea*) and other songbirds in Kentucky, Maryland, Ohio, Pennsylvania, and West Virginia, with mined land reforestation efforts focused in Kentucky and Ohio. In 2018, 355 acres of privately owned land were reforested in four Ohio counties at five different sites as part of this program.

METHODS

To control unwanted vegetation, herbicide was applied to all the sites either before or after planting. While one site allowed for the use of a large boom sprayer, the others required an ATV equipped with a sprayer and backpack sprayers. Small stands of large shrubs were treated using the "cut-stump" method., and large thickets of unwanted shrubs were "brushed" to the project perimeter (Figure 7) and re-sprouts were sprayed. To mitigate soil compaction, the sites were ripped by a D9 bulldozer equipped with two, 4-foot long ripping shanks mounted behind each track on an 8-foot by 8-foot spacing (Figure 8).

RESULTS

All the sites were professionally planted (Figure 9) in the spring of 2018 with 241,769 trees (Table 3). Each site included five American chestnuts (provided by TACF) per acre as part of the planting prescription. Planting prescriptions were developed with the assistance of the Ohio Division of Forestry. Some of the other species included in the planting mixes included the following species: white oak, northern red oak, yellow poplar, persimmon, black cherry, bur oak, sugar maple, red maple, black locust, hackberry, hazelnut, silky dogwood, eastern redbud, roughleaf dogwood, sweetgum, shumard oak, chinkapin oak, and sycamore (Figure 10).

Figure 7. A pure stand of autumn olive was brushed to the project perimeter (background) at the Guernsey County site.

Figure 8. The cross-hatch pattern following ripping is readily noticeable at the Vinton County site.

County (OH)	Acres Reforested	Trees Planted
Coshocton	35	23,920
Harrison	140	95,400
Guernsey	97.8	66,689
Vinton	82	55,760
TOTAL	**355**	**241,769**

Table 3. Summary of 2018 reforestation efforts for the Regional Conservation Partnership Program.

Figure 9. Professional planters plant along the ripped rows at the Coshocton County site.

Figure 10. A follow-up site visit revealed that the sycamore were growing rapidly - this seedling put on 6" of growth from spring to summer.

Monongahela National Forest

Since 2010, Green Forests Work has partnered with the United States Forests Service - Monongahela National Forest, The American Chestnut Foundation, the Arbor Day Foundation, American Forests, Mennen Environmental Foundation, the United States Department of Agriculture - Natural Resources Conservation Service, the West Virginia Division of Natural Resources, the National Forest Foundation, Snowshoe Resort, The Nature Conservancy, and many others to restore 706 acres of mined land in the Mower Tract of the Greenbrier Ranger District. In 2018, 200 acres were restored within the Mower Tract (Figure 11), and efforts expanded into the Marlinton Ranger District, where an additional 35 acres were reforested and eight new wetlands were created (Table 4). These projects aim to create young forest habitat for Golden-Winged Warblers and other migratory songbirds, restore red spruce-northern hardwood forests, and improve water quality in the Monongahela National Forest, where previous reclamation practices have prevented the re-establishment of red spruce and native trees.

METHODS

Prior to ripping, non-native red pines and Norway spruce were removed with an excavator at the Greenbrier Ranger District site and redistributed across the area after ripping to provide organic matter and perch locations for songbirds. To mitigate soil compaction, the Greenbrier Ranger District site was ripped was ripped with a D8 with one shank mounted between the tracks on an 8-foot by 8-foot spacing in winter 2018, while the Marlinton Ranger District site was ripped with a D9 bulldozer equipped with two shanks. The seed for many of the species planted were collected from areas close to the site, so the majority of plants are locally adapted.

RESULTS

The 200-acre site in the Greenbrier Ranger District was primarily professionally planted with nearly 93,000 trees, although a group of 14 volunteers assisted with tree planting. The Marlinton Ranger District site was also primarily planted by professionals and included volunteer planting events with volunteers from Snowshoe Mountain, who also helped fund the project, and local children (Figure 12). The following species were planted at the sites: American chestnut (provided by TACF), red spruce, dogwoods, blackhaw, sunflower, skunk current, staghorn sumac, aspen, arrowwood, blueberry, chokeberry, winterberry holly, speckled alder, swamp rose, wild raisin, speckled alder, hawthorn, mountain ash, mountain holly, quacking aspen, bigtooth aspen, fraser magnolia, mapleleaf viburnum, black cherry, hazelnut, sugar maple, red maple, chokeberry, elderberry, and serviceberry. A follow-up visit at the Marlinton Ranger District site in October 2018 revealed that a host of native plants have taken root in the loosened soil (Figure 13).

Ranger District	Acres Reforested	Wetlands Created	Trees Planted	Number of Volunteers
Greenbrier	200	175	92,843	14
Marlinton	35	8	14,800	57
TOTAL	**235**	183	**107,643**	71

Table 4. Summary of 2018 reforestation efforts on the Monongahela National Forest.

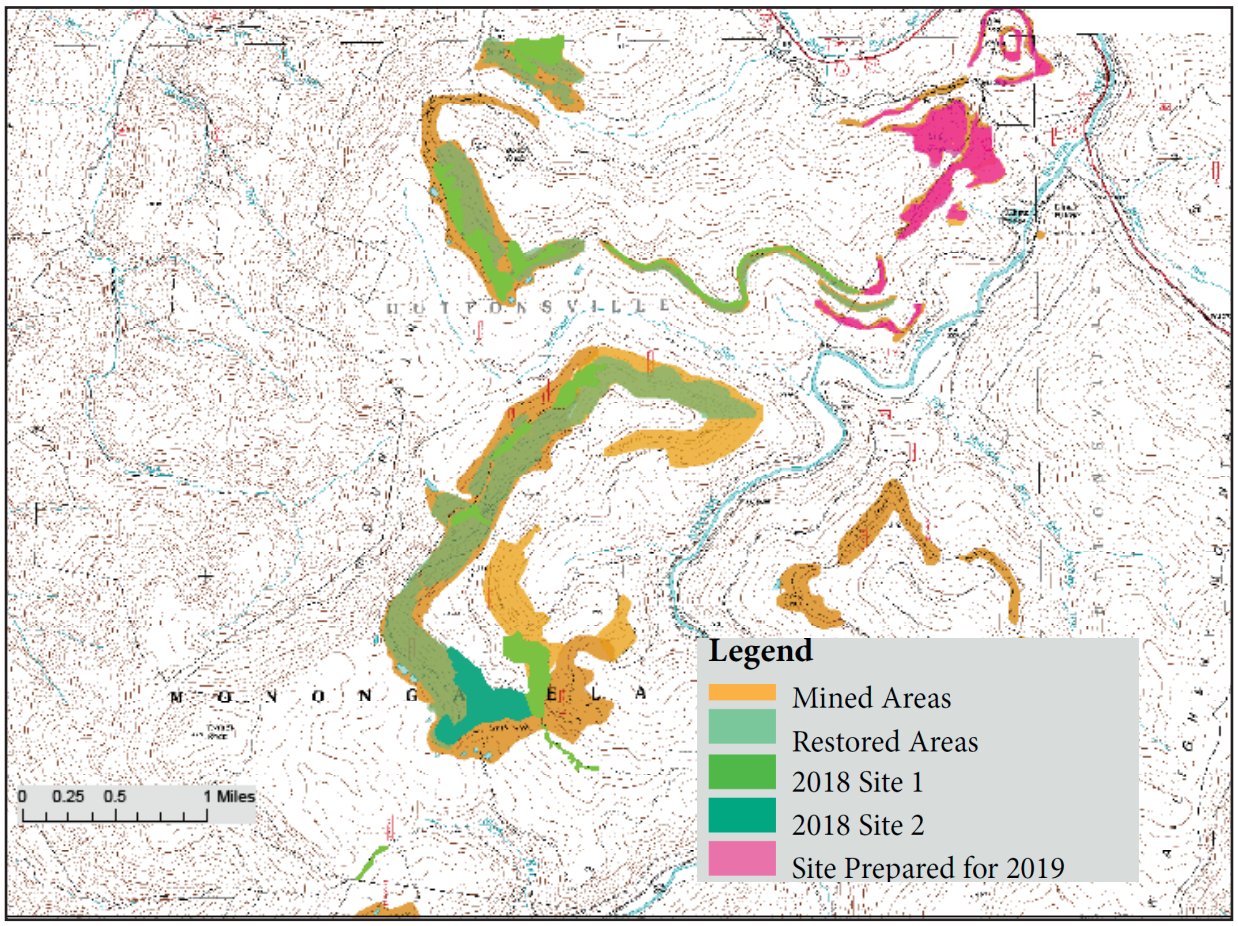


Figure 11. Greenbrier Ranger District reforestation areas 2011-2018.

Figure 12. Kids from a local school help plant red spruce along the dozer rips at the Marlinton Ranger District site.

Figure 13. A host of native plants were identififed at the Marlinton Ranger District site in the fall following the planting season. This is alrady a major improvement in the site's diversity, as it was previously primarily non-native grasses.

The Wilds

Arborgen has been a strong advocate for ARRI's and GFW's efforts to restore native forests on mined lands across Appalachia and has generously donated high-quality bare root seedlings to ARRI and GFW since 2009. In 2016 and 2018, a part of Arborgen's donations were used to assist the Wilds in their efforts to improve the success of their plantings. Because their previous reforestation efforts had shown only poor to fair survival, Rebecca Swab, Director of Restoration Ecology at the Wilds, reached out to ARRI and GFW for technical and financial assistance to install an experiment to evaluate techniques for improving success rates of future plantings. An experiment installed in 2016 examined how 5 species of Arborgen's seedlings performed when planted in ripped ground with various treatments applied. The treatments included a control, as well as: dipping the roots in moisture-retaining gel prior to planting, fertilization at the time of planting, and spot herbicide application after planting. Overall survival was greater than 90% after 1 year, with no experimental treatment or species experiencing less than 80% survival after 1 year. This experiment will be tracked into the future and the results will be disseminated through conferences and/or publications. A follow-up experiment was installed at the Wilds in 2018 to examine potential effects on seedling survival and growth due to site preparation techniques and the use of tree shelters. The first treatment for the site preparation study was standard ripping on an 8' x 8' spacing using a Caterpillar D9 bulldozer. The second treatment for site preparation was the "Polster" or "Flipping" method (Figures 14-15), in which an excavator scoops a bucket-full of soil and dumps the loosened soil adjacent to the hole, then takes another scoop adjacent to the first hole and then dumps the loosened soil into the first hole. This process was repeated across the site until the entire 5-acre area was loosened. For each site preparation treatment, half of the seedlings were protected with shelters to determine their effectiveness in preventing herbivory. A total of 3,500 seedlings were planted with the help of 101 volunteers. Arborgen's donations have been of great value in these experiments, as they have provided multiple species of quality seedlings that were sourced from a single nursery.

Figure 14. An aerial view of the "Polster" or "Flipping" technique beside ripped ground. Photo courtesy of Rebecca Swab.

Figure 15. The volunteers are informed about the experimental design prior to planting. Photo courtesy of Scott Eggerud.

GFW STAFF & PARTNERS

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Tammy Horn-Potter— State Apiarist for the Kentucky Department of Agriculture and founder of Coal Country Beeworks
Mary Miller—Private Citizen
Dick Whitaker—Private Citizen

Operational Collaborators

Patrick Angel—USDI, Office of Surface Mining Reclamation & Enforcement
Scott Eggerud—USDI, Office of Surface Mining Reclamation & Enforcement

Partners

Corporate Partners

Angel's Envy
ArborGen
Benevity
Big Sandy Coal
Central City Subway
Dropseed Nursery
Kroger
Luburgh, Inc.
Monsanto
Mountain Ridge, LLC
Napieralski Forestry Enterprise
New Forest Services
RidgeWater
Snowshoe Mountain, Inc.
Telenations, Inc. - TreeMedia
Treecycler
Union Concrete, Division of RBS, Inc.
United Affiliates Corporation
Williams Forestry and Associates

Educational Organizations

Appalachian State University
Bridgewater College
Danville High School
Drew University
Green Bank Middle School
Indiana University of Pennsylvania
Indiana University of Pennsylvania-Research Institute
Pennsylvania State University-Altoona
Pennsylvania State University-Dubois
Philo High School
Pocahontas County High School
Radford University
Richwood High School
University of Delaware
University of Kentucky
University of Kentucky, Appalachian Center
University of Kentucky, College of Agriculture, Food and Environment
University of Kentucky, Department of Forestry
University of Kentucky, Department of Mining Engineering
University of Kentucky, Robinson Center for Appalachian Resource Sustainability

Educational Groups cont.

University of North Carolina-Chapel Hill
West Virginia University
Xavier University

Government Groups

AmeriCorps
Appalachian Regional Commission
Appalachian Regional Reforestation Initiative
Kentucky Department for Natural Resources
Kentucky Department of Fish and Wildlife Resources
Kentucky Division of Abandoned Mine Lands
Kentucky Division of Conservation
Kentucky Division of Forestry
Kentucky Division of Mine Permits
Kentucky Division of Mine Reclamation and Enforcement
Kentucky Division of Mine Safety
Kentucky Division of Oil and Gas
Ohio Department of Natural Resources
Pennsylvania Department of Conservation and Natural Resources
Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry
Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation
Pennsylvania Department of Environmental Protection, Bureau of District Mining Operations
Pennsylvania Game Commission
Tennessee Department of Environment and Conservation
United States Department of Agriculture, Forest Service-Allegany National Forest
United States Department of Agriculture, Forest Service-Daniel Boone National Forest
United States Department of Agriculture, Forest Service-Monongahela National Forest
United States Department of Agriculture, Natural Resources Conservation Service
United States Department of Agriculture, Natural Resources Conservation Service, Appalachian Plant Materials Center
United States Department of Interior, Fish and Wildlife Service
United States Department of Interior, National Park Service, Flight 93 National Memorial
United States Department of Interior, National Park Service, National Parks of Western Pennsylvania
United States Department of Interior, Office of Surface Mining Reclamation and Enforcement
United States Environmental Protection Agency
Virginia Department of Forestry
Virginia Department of Mines, Minerals, and Energy
West Virginia Department of Environmental Protection
West Virginia Department of Natural Resources
West Virginia Division of Forestry

Non-government Organizations

American Association of Zookeepers
American Bird Conservancy
American Forests
American Rivers
Appalachian Headwaters
Appalachian Mountains Joint Venture
Appalachian Stewardship Foundation
Arbor Day Foundation
Art For Trees
Baum Foundation
Boy Scouts of America, Blue Grass Council
Boy Scouts of America, Troop 14 - Versailles, KY
Boy Scouts of America, Troop 1789 - Lexington, KY
Cambria Rotary Club
Camp Hidden Meadows
Canaan Valley Institute
Catholic Diocese of Lexington, Catholic Committee of Appalachia-Kentucky
Central Appalachian Spruce Restoration Initiative
Christian Theological Seminary
Coal Country Beeworks
Coal Creek Watershed Foundation
Flight 93 National Memorial Volunteers-In-Parks

Non-government Organizations cont.

Foundation for the Carolinas
Friends of Flight 93 National Memorial
Kentucky Writers and Artists for Reforestation
Mennen Environmental Foundation
National Fish and Wildlife Foundation
National Forest Foundation
National Park Foundation
Norfolk Southern Foundation
Office of Kentucky Reclamation Guaranty Fund
Pennsylvania Environmental Council
Rockefeller Family Fund
Sierra Club – Bluegrass Chapter
Snowy Owl Foundation
The American Chestnut Foundation
The Mountain Institute
The Nature Conservancy
The Wilds
West Virginia Highlands Conservancy
Western Pennsylvania Conservancy

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Kay Hazelett
Kenneth Schmidt
Kevin Henry
Luke Geiger
Nana Lampton
Nathan Blan
Otto Luburgh
Preston Gibson
Richard Roth
Sally Cogan
Stephen Parson
Thomas Lawrence
Timothy Gilboe
Tom and Kathryn Brannon

Thank you!


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work
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