GREEN FORESTS WORK &
PENNSYLVANIA GAME COMMISSION PARTNERSHIP
2026 STATE GAME LANDS UNDERPLANTINGS REPORT



Green Forests Work's (GFW) mission is to restore healthy, productive, native forest types on formerly mined lands across the Appalachian region and beyond. Our projects address two needs: stimulating the economy and improving the environment. Jobs are provided for equipment operators, seed collectors, seedling nursery workers, and tree planters, stimulating the regional economy. The environment is improved through eradicating invasive, exotic species and restoring the ecosystem services that forests provide to wildlife and society.

ACKNOWLEDGMENTS

We at GFW are grateful to the Pennsylvania Game Commission (PGC) and all our donors and supporters, without whom none of this important work would be possible. We would like to thank the PGC employees who identified and planned priority projects, provided project descriptions, helped us with seedling pickups, and provided field and background support this season, including: from the Northwest Region, Scott Wolbert, Dave Smerkar, Steve Meredith, Ben Caun, Colton Singleton, Shane Brenneman, Ryan Thompson, and others; from the Southwest Region, Tom Respet and Josh Fuqua; and folks at Howard Nursery for providing 38,385 seedlings to the 2026 projects. For funding support we'd like to thank the Arbor Day Foundation, One Tree Planted, Suntory Global Spirits, The Nature Conservancy, and many GFW donors and supporters that make these projects a reality. Thank you to Dave Saville of Appalachian Forest Restoration, LLC and to Fremer Reclamation for growing and delivering high quality, locally sourced tree seedlings for our many PA projects. Thanks, as always, to the Appalachian Regional Reforestation Initiative. And last but not least, we thank our contract planting crew from Napieralski Forestry Enterprise for their continued quality work planting Pennsylvania projects for us year after year.



The professional planting crew from Napieralski Forestry Enterprise. The unsung heroes of reforestation.

PROJECT DESCRIPTION

The majority of GFW's reforestation sites, thus far, have been unproductive reclaimed mined lands that are not able to advance through natural succession due to heavy compaction and competition with exotic grasses or invasive shrubs. Increasingly, over the last six years, we have also been supporting projects on non-mined lands that have incurred other types of disturbances. These plantings are important for maintaining forest health, resiliency, and connectivity in the face of climate change and exotic pests and pathogens, and are critical for the long term protection of watersheds.

The projects on PA State Game Lands (SGLs) have varying percentages of forest cover, but the forests have been disturbed or degraded by exotic/invasive insect or plant invasion, storm blow-downs, or are threatened by Hemlock Woolly Adelgid (HWA) invasion detected nearby. Most of these SGL plantings are in riparian areas adjacent to high-quality cold water streams that depend on tree canopy shading. Underplanting below the mature hemlocks prior to canopy loss due to HWA, planting after heavy loss due to storm blowdown, and planting after invasive species removal and treatment protects water resources and the wildlife that inhabit the forests, prevents invasive plants from quickly taking over the openings, and ultimately increases the resiliency of the forest ecosystems. Trees also uptake water and prevent flash-flooding, add stability to stream banks and organic material to stream habitat, and provide habitat to a diverse suite of native wildlife.

ECOLOGICAL BENEFITS

Benefits of these underplanting projects include increased resiliency of the forest against invasive plants and insects, increased biodiversity, improved structural diversity, improved wildlife habitat for targeted species, shading of streams, reduction of erosion, and maintenance of cold water fisheries.

Many of the PA Game Lands have large populations of deer, which play a significant detrimental role in natural forest regeneration. The stressor of constant deer browse limits regeneration of the understory, allows invasive plants to flourish and spread when deer reject them as a food source, and as a result, reduces biodiversity over time. Without understory regeneration, degraded forests have little resiliency in the face of invasive plant and insect invasion and are lacking in quality wildlife habitat. The streams in degraded forests are at risk without the buffer provided by abundant trees. The forest system as a whole suffers when trees are not sufficiently regenerating, and this is why underplantings are so important.

In the short-term, the young forests that are enhanced through these underplantings will benefit American Woodcock, wild turkey, and other species that rely upon young forest habitat for foraging and breeding. As the planted seedlings grow, they will create patches of young forest habitat that many songbirds, game birds, reptiles, and large and small mammals rely on. As the forests mature over time and biodiversity increases through the process of succession, different species will benefit, including those that benefit from larger tracts of unbroken forest.

One long-term goal of this project is to reduce forest fragmentation and increase the extent of contiguous forest to benefit Neotropical songbirds such as Cerulean warblers, Scarlet Tanagers, Ovenbirds, and other forest interior dependent species. Cerulean warbler populations declined by an estimated 2% per year from 1996 to 2023 based on the North American Breeding Bird Survey. The species was petitioned for listing as threatened under the Endangered Species Act, but were not warranted for listing in 2006. Cerulean warbler is considered a Bird of Conservation Concern by the US Fish and Wildlife Service and is a Species of Greatest Conservation Need in the Wildlife Action Plans of numerous states. Underplanting degraded forests is a long-term approach to benefit Cerulean warbler and other forest interior dependent bird populations by increasing the extent and resiliency of contiguous tracts of forest. Once the forest matures, exfoliating bark from pines and snags will also provide roost sites suitable for several bat species including the endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), which has been recently listed as threatened. It is also anticipated that the forest will benefit numerous large mammals, including bobcats and black bears.

GFW, the Appalachia Regional reforestation Initiative (ARRI), and others (e.g. the Central Appalachian Spruce Restoration Initiative) have been working to create a corridor of red spruce influenced forests along the Allegheny Front, extending from West Virginia into PA. Prior to the industrial logging era of the late 1800s and early 1900s, red spruce influenced forests were much more prevalent in the Alleghenies. Widespread clearcutting and wildfires removed the red spruce forests, which were eventually replaced with hardwood forests and the tracts of red spruce that remained were highly fragmented. These plantings will complement red spruce restoration efforts and create habitat for the endangered Northern Flying Squirrel, which requires red spruce forests for foraging and shelter. Ten of the 2026 SGLs projects included red spruce in the species mix and will benefit Northern Flying Squirrels by improving their current habitat and by creating future habitat. The planted conifers will provide year-round thermal protection of surface waters and benefit additional species, such as Pine Warblers. The thermal protection and reduced sedimentation provided by forest cover reduces heating of downstream waters which increases water's capacity to hold dissolved oxygen, benefiting aquatic life.

COMMUNITY BENEFITS

GFW's projects provide direct employment for seed collectors, equipment operators, nursery workers, and tree planters. Since many tree planting crews consist of migrant workers, these projects stimulate local economies by bringing work into the region, benefitting retail, transportation, hospitality, service, and other secondary industries. The healthy and productive native forests that are restored will provide sustainable economic development and opportunities for entrepreneurship through future management actions, recreation, and harvesting of timber and non-timber forest products. An additional benefit of these projects is the restoration of ecosystem services, which helps all of society. Ecosystem services provided by forests include improved water quality, improved air quality through increased deposition of airborne particulates, and climate change mitigation through increased carbon accumulation.

GFW projects in degraded riparian areas have the potential to improve downstream water quality. Reforestation of upland sites influences water quality and quantity by sheltering ephemeral streams and buffering water release from sites through increased infiltration and reduced surface runoff, potentially reducing flash flooding. Water quantity contributed to downstream waters is also reduced through increased evapotranspiration as the forests mature, which can reduce loading of sediment, metals, and salts (when present), improving water chemistry. Certain trees also have the ability to accumulate metals in their tissues, which may reduce inputs to the watershed over time as the forest matures.

Table 1. Trees planted over the years in partnership with the PGC. Altogether, GFW has planted trees on 19 PA SGLs.

Year	Number of Trees	Acres
2015	26,330	39
2020	10,150	14
2021	123,260	262
2022	153,515	540
2023	304,750	1,039
2024	219,270	687
2025	186,100	591
2026	339,560	1,155
TOTAL	1,362,935	4,327

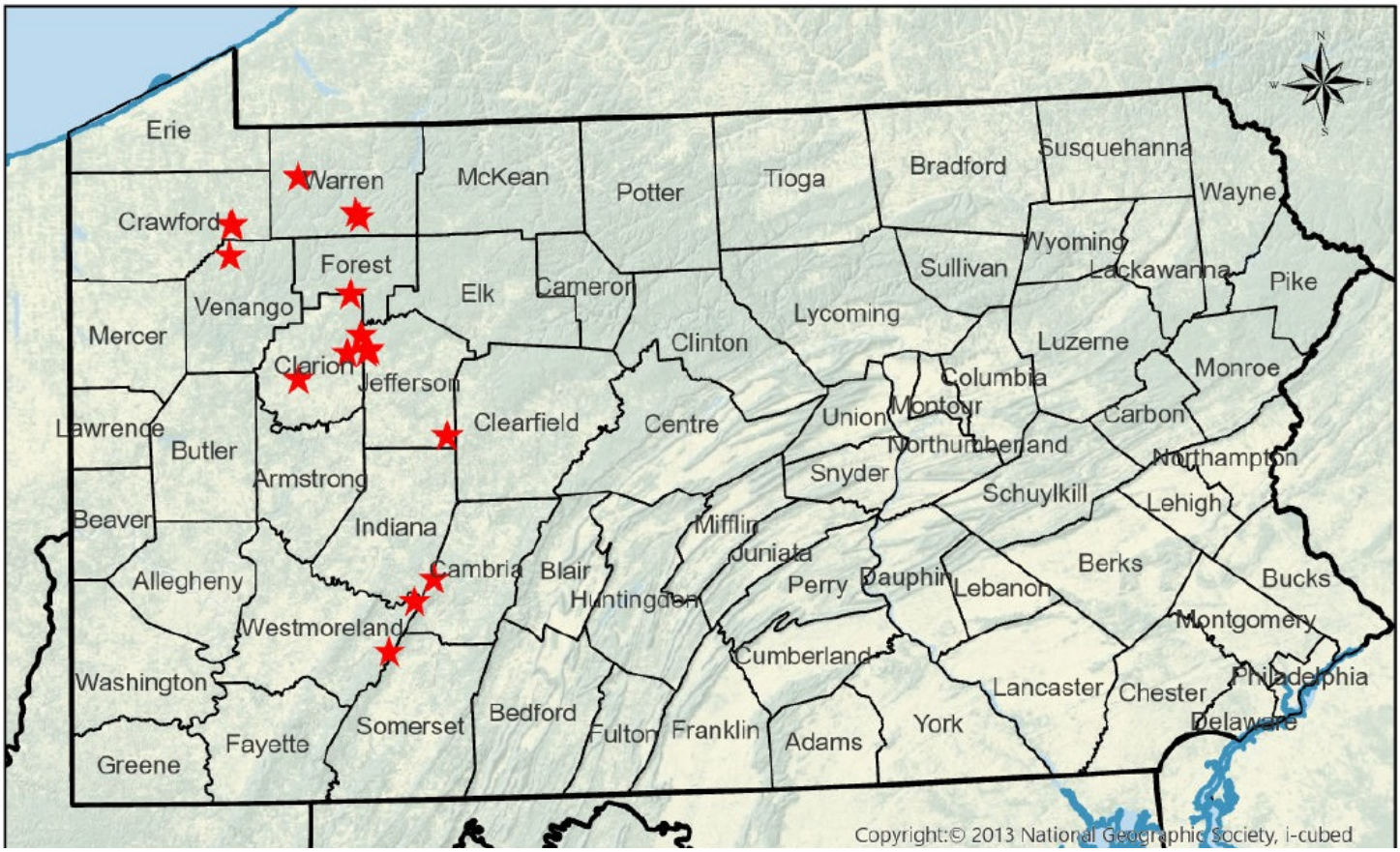


Figure 1. Locations of the projects planted in 2026.

PENNSYLVANIA STATE GAME LANDS PROJECTS 2026

PA SGLs are biologically diverse landscapes with several forest types, such as northern hardwoods and eastern hemlock forests. Streams and riparian areas crisscross the SGLs, contributing to important watersheds that lead to large rivers such as the Clarion and Allegheny Rivers in the Northwest Region. When areas in PA SGLs become degraded for any number of reasons (see below) our PGC partners let us know that they are in need of under planting trees, and we work together to make it happen. Through our partnership, since 2015, GFW and the PGC have planted nearly 1,363,000 native tree seedlings on more than 4,300 degraded acres on 19 different PA SGLs.

SUMMARY

In 2026 we planted 15 projects across 11 SGLs, the majority of which fell within the PGC Northwest Region. Projects were planted across 8 PA Counties: Clarion, Forest, Crawford, Warren, Jefferson, Venango, Westmoreland, and Cambria. A total of 339,560 tree seedlings were planted on 1,155 acres. Project species lists were variable in 2026; 4 projects included the typical conifer mix (red spruce, white spruce, white pine, and balsam fir) and the rest had diverse mixes of conifers and/or oaks, hickories, and fruit and nut trees.

OBJECTIVES OF THE 2026 PROJECTS

Increasing, retaining, or restoring the conifer component of PA's forests, often in the face of Hemlock Woolly Adelgid invasion, is a common theme of these projects. Conifer under plantings aim to ensure a long-term native conifer presence to mitigate the loss of eastern hemlock to HWA, and to maintain forest diversity and shade in riparian areas. Increasing species diversity primarily through the planting of red spruce, white spruce, white pine, and balsam fir is an important goal. Enhancing habitat for both terrestrial and aquatic life is of utmost importance in these project areas, while expanding suitable habitat for species of greatest conservation need.

PROBLEMS CONTRIBUTING TO FOREST DEGRADATION IN THE 2026 PROJECT AREAS

TREE DISEASE

In recent years, forest health has been threatened by widespread decline of American beech due to beech bark and leaf diseases. This is particularly apparent in the project areas in SGL 024. These diseases have reduced hard mast availability for wildlife and allowed dense brush to replace mature trees. While dying beech provide snags, cavities, and additional sunlight to the ground, the loss of this important mast-producing tree continues to decrease habitat quality.

In the SGL 096 project area, white spruce has suffered significant decline from Rhizosphaera needle cast. The loss of healthy conifers has reduced the availability of critical riparian

thermal cover, and has allowed invasive species and undesirable trees to take hold in the resulting canopy gaps.

INVASIVE SPECIES

HWA threatens the long-term health of PA game lands with an eastern hemlock component or hemlock dominant stands. There are heightened concerns about potential widespread mortality of PA's state tree. Among the SGLs where we have 2026 projects, HWA is currently present in SGLs 024, 074, 029, 195, 195, and 283, and is a growing ecosystem threat in SGLs 122 and 330. PA Game Commission Foresters are trying every effort to retain PA's state tree across the landscape as HWA spreads through the surrounding forests. These forest stands and riparian areas are at risk of losing critical evergreen thermal cover to streams and creeks which provide habitat for birds such as ruffed grouse, black-throated green warbler, Louisiana waterthrush, and scarlet tanager. These waterways also support breeding populations of native brook trout and wild brown trout, making conifer canopy cover vital for maintaining cool water conditions.

OTHER INVASIVE INSECT AND PLANT SPECIES

Emerald ash borer is another threat to forest health, especially across SGL 24, where forest health has declined in recent years due to widespread white ash mortality caused by the invasive insect.

In recent years in SGL 024, the spread of glossy buckthorn, an invasive tree, has degraded portions of the forest by forming dense thickets that suppress native vegetation and reduce habitat quality. This problem has been especially noticeable in riparian areas, drainages, and tributaries.

Conifer under plantings aim to mitigate the effects of these problems while ensuring a long-term native conifer presence and maintaining forest diversity and canopy cover.

SITE PREPARATION PRIOR TO UNDERPLANTINGS

Treatments such as herbicide and mechanical cutting efforts to control invasive glossy buckthorn and other invasive plants have been performed, as well as hack-and-squirt or stem injection herbicide treatments to remove undesirable midstory and understory growth such as sweet birch, diseased beech brush, and striped maple which compete for sunlight. Less commonly, we will plant project areas that have been timber harvested and are not regenerating well, or areas where tree felling into streams has taken place to support stream habitat and provide erosion control.

WATERSHED BENEFITS

Important regional watersheds are positively impacted by conifer under plantings through benefits to aquatic systems and water quality in and around the project areas. Restoring healthy forest canopy cover helps to reduce soil erosion, and tree roots stabilize stream banks.

LONG-TERM GOALS

Long-term goals of these projects are to diversify vertical forest structure, reestablish healthy conifers in the canopy to suppress invasive vegetation and provide riparian thermal cover, contribute to forest health and resilience, provide habitat benefits for wildlife, restore ecosystem integrity and increase resilience for both terrestrial and aquatic systems, and contribute to watershed stability.



Professional tree planters with tree bags filled with native conifers are ready to plant the project area at SGL 029.



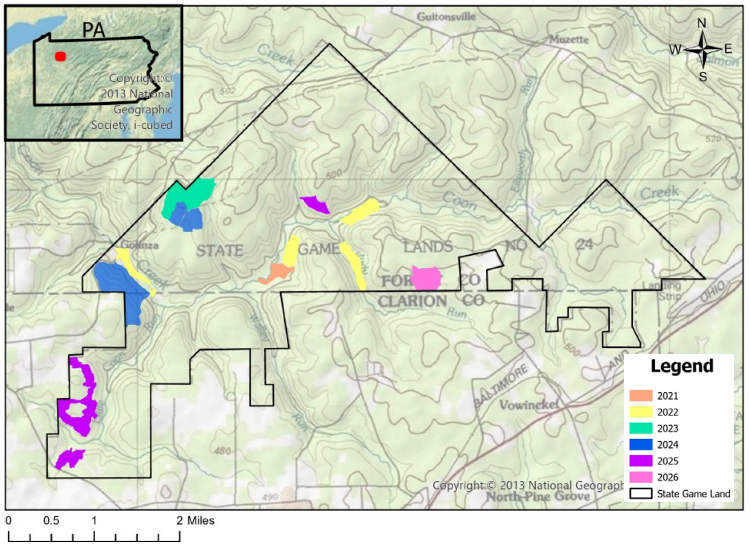
Professional tree planters plant a mix of hardwoods, shrubs, and conifer seedlings at SGL 024.

PLANTINGS IN THE PGC'S NORTHWEST REGION

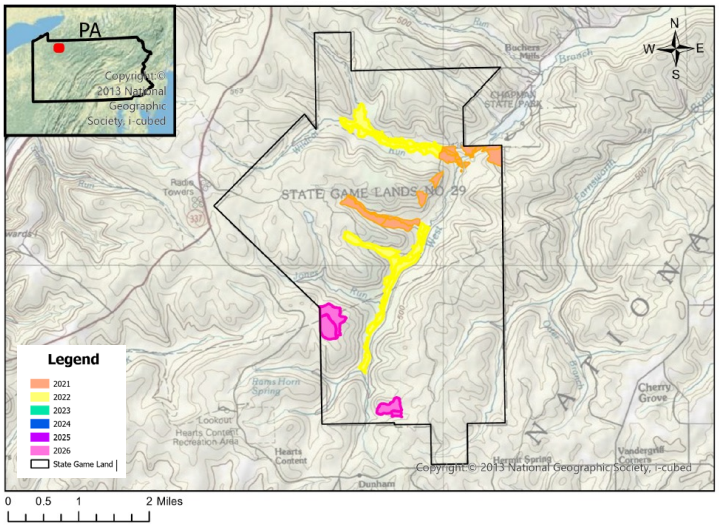
SGL 024 Underplantings

For the 6th year in a row we underplanted trees at SGL 024 in Forest and Clarion Counties. SGL 024 is located within the Allegheny River watershed which is part of the Ohio River Basin in PA. SGL 024 is drained predominantly by Coon Creek, a Cold Water Fishery that flows into Tionesta Creek. The 2026 project area is a 54 acre stand that was recently fenced due to increasing deer impact in order to grow woody species and enhance the understory for wildlife. American beech health has declined in this area due to Beech bark disease and Beech leaf disease, as well as widespread ash mortality from the emerald ash borer. This has caused degradation of forest stands across SGL 024. Losing mature beech trees results in an influx of beech brush without the mast/nuts that wildlife rely on. On the other hand, the dead and dying beech and ash trees provide large snags and cavities, and added sunlight to the forest floor. HWA infestation is another challenge that SGL 024 faces and has been found in surrounding areas.

Project objectives are to enhance wildlife habitat and species diversity, diversify vertical structure, increase the conifer diversity, and to increase the health, vigor, and resiliency of the stand. A total of 16,250 hardwood, shrub, and conifer seedlings were planted. Species included: White Pine, Balsam Fir, American Plum, Black Chokeberry, Blackhaw Viburnum, Elderberry, Red Chokeberry, Red Oak, Shagbark Hickory, Silky Dogwood, Spicebush, Swamp White Oak, White Oak, and Winterberry Holly.



Over the last 6 years, over 215,000 trees were planted on nearly 760 acres across SGL 024.



Between 2021 and 2026, nearly 161,850 trees were planted on 590 acres across SGL 029.

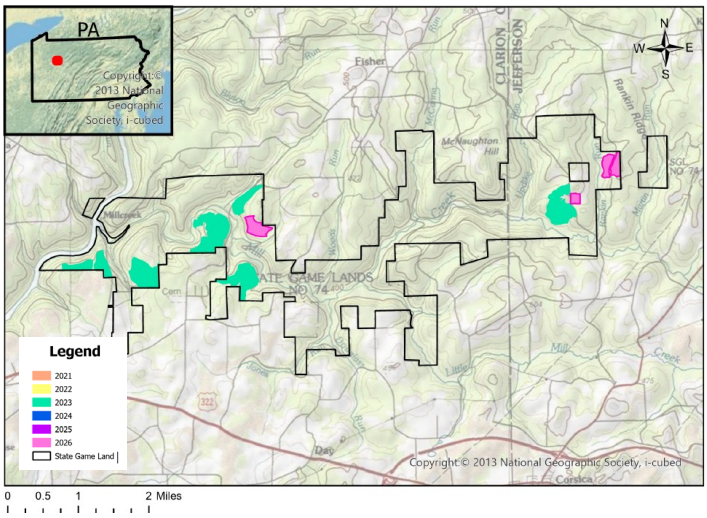
SGL 029 Underplanting

In 2026, two project areas were underplanted in SGL 029 in Warren County, PA. The first project, Compartment 6, was 40 acres where 12,300 seedlings of a conifer mix were planted. This area includes 30 acres of hemlock-dominated forest in upland sites, and 10 acres that were historically conifer stands and were replaced by hardwoods after wind throw events and salvage cuts. HWA was recently detected and Forest Managers will determine a pest management solution to save some of the hemlocks while mitigating the loss of hemlock through underplanting other native conifers. Northern Flying Squirrel and Snowshoe Hare are present in SGL 029 and depend on conifers for habitat. Restoring connectivity of conifer habitat was one goal of this project. A total of 12,300 Red Spruce, White Pine, and Balsam Fir mixed equally were planted at 12 ft by 12 ft spacing over the 40 acres.



Tree bags are filled with hardwoods ready to be planted at the SGL 029 Salsgiver Road project.

The second project in SGL 029, Salsgiver Road, was an oak hickory mix underplanting on 77 acres. A wind event occurred in the summer of 2023 which required a salvage operation that was completed in 2025. The salvage reduced the desirable seed sources, but it also altered light levels and made tree planting a viable option. A deer exclosure fence was installed around the perimeter of the planting area. A total of 15,450 seedlings of hard mast producing species were planted. Species included Pignut Hickory, Red Oak, Shagbark Hickory, and White Oak. Allegheny woodrats have recently been reintroduced to the area and will benefit from the increased diversity of hard and soft mast food sources.



In 2023 and 2026, a total of 152,325 trees were planted on over 500 acres across SGL 074.

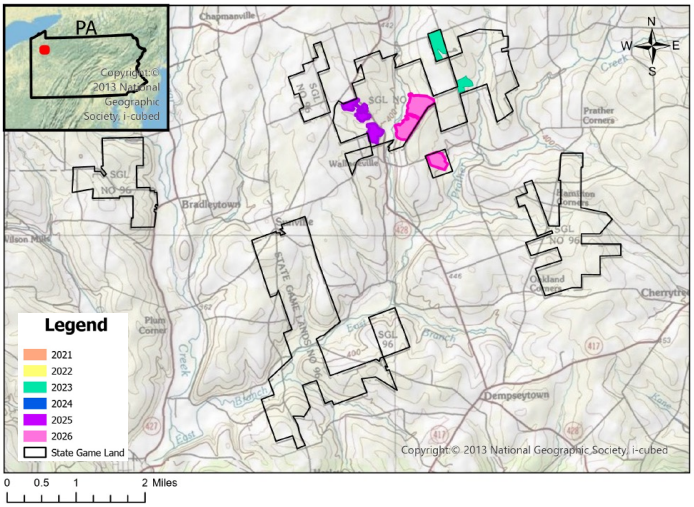
SGL 074 Underplanting

SGL 074 is located in Clarion and Jefferson Counties. Drainages on SGL 074 are cold water fisheries, high-quality fisheries and exceptional value. A recent HWA discovery, along with high deer browse, prioritized 4 blocks totaling 98 acres for deer fence installation and underplanting. Shared objectives of the projects were to enhance wildlife habitat and species diversity, and to increase conifer presence and diversity in the face of impending hemlock mortality.

Block 1 is 39 acres where 12,800 seedlings were planted (Red Spruce, White Spruce, White Pine, Flowering Dogwood, Pignut Hickory, Red Oak, Shagbark Hickory, White Oak). Block 2 is 13 acres where 4,175 seedlings were planted (Red Spruce, White Spruce, White Pine, Balsam Fir, American Hazelnut, American Plum, Eastern Red Cedar, Pignut Hickory, Quaking Aspen, Shagbark Hickory, Virginia Pine). This area was once a field which has converted to forest; tree diversity is low and understory conditions are poor. Block 3 is 23 acres where 7,475 seedlings were planted (Red Spruce, White Spruce, White Pine, Flowering Dogwood, Pignut Hickory, Red Oak, Shagbark Hickory, White Oak, Witch Hazel). Block 4 is 23 acres where 6,500 seedlings were planted (White Pine, American Hazelnut, Black Oak, Chestnut Oak, Eastern Red Cedar, Flowering Dogwood, Pignut Hickory, Quaking Aspen, Virginia Pine, White Oak).



Professional planting crew plants trees at SGL 074.



Between 2023 and 2026, a total of 78,100 trees were planted on over 250 acres on SGL 096.

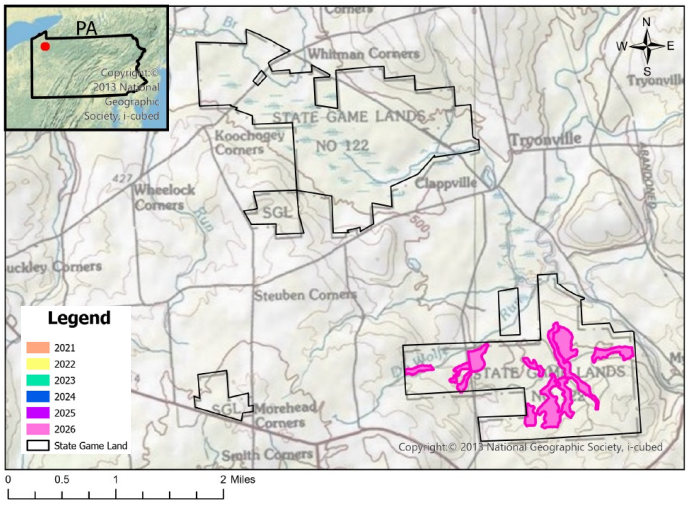
SGL 096 Underplanting

SGL 096 is located in Venango County. The first 3 tracts purchased for SGL 096 were originally owned by a paper mill, were dominated by Norway Spruce plantations with White Spruce, and were formerly utilized for pulpwood. In recent years, White Spruce health has declined due to Rhizosphaera Needle Cast, and mature Norway Spruce offers very little to wildlife. At SGL 096, conifers are very important for species diversity and thermal cover. Dead and dying White Spruce no longer offer thermal cover to streams and the increase in sunlight is allowing undesirable seedlings and invasive species to occupy the space. Though dead trees act as snags and cavities for wildlife, their most important benefit of thermal cover has been lost. The 2026 project area is 134 acres with many gaps due to past forestry practices and natural mortality and now provides partial sun for planted seedlings to thrive. Objectives of the underplanting were to enhance wildlife habitat and conifer diversity, diversify vertical structure, and increase the conifer component, especially in riparian areas. A total of 40,600 seedlings were planted of Red Spruce, White Spruce, White Pine, and Balsam Fir.



At SGL 096, the crew plants conifers to replace white spruce that died due to Rhizosphera needlecast infestation.

This project is supported by One Tree Planted.



In 2026, two projects were planted at SGL 122 totaling 52,700 trees on 173 acres.

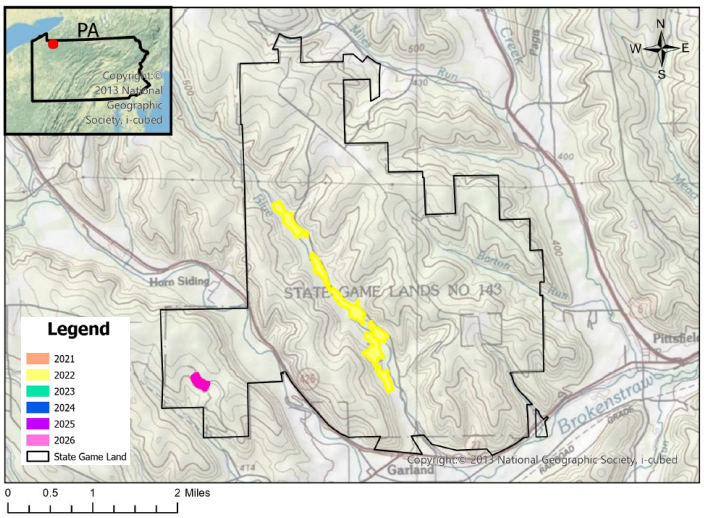
SGL 122 DeWolfe Run and Free Forty Underplantings

In 2026, two projects were planted at SGL 122 in Crawford County. The first project was at DeWolfe Run, a native brook trout stream, and includes 147 acres of hemlock dominated riparian areas threatened by HWA. A total of 44,900 seedlings of Red Spruce, White Spruce, White Pine, and Balsam Fir were planted to help diversify the forest in the face of HWA. A large wood stream project was implemented after the planting to create pool habitat, protect the stream from erosion, promote better light conditions for the planting and provide late successional characteristics throughout the drainage area while increasing stand structure. Together, the planting and stream work will promote late successional bird species, small mammal habitat and macro invertebrate habitat.

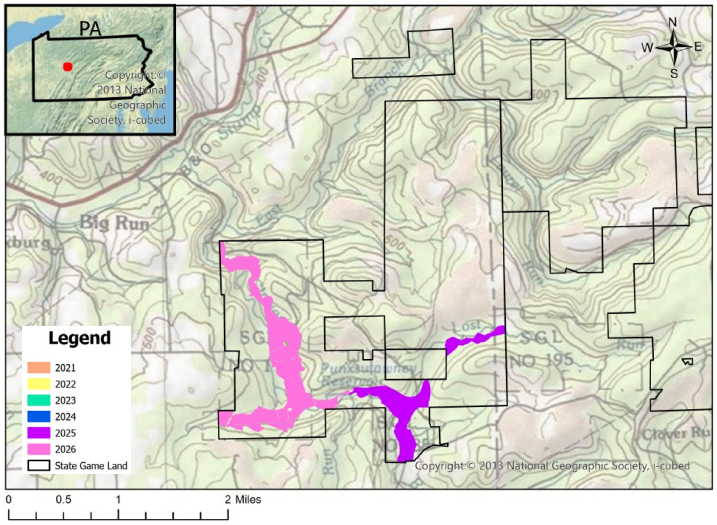


At SGL 122, professional tree planters plant conifers to improve forest health.

The second project at SGL 122 was a hard mast mix planting within a 26 acre deer exclosure fence. This planting project will help add diversity to the stand and add resiliency in the face of future threats, such as forest pests. 7,800 trees of hard mast producing species were planted, including Red Oak, Shagbark Hickory, and White Oak. Wildlife species of greatest conservation need that will benefit from this project are Black Throated Green Warbler, Brown Creeper, Scarlet Tangier, Winter Wren and Wood Thrush. These species are known to breed at this property. Ruffed Grouse, Turkey, Deer, Squirrel, and Bear are the PA Game Commission's focal game species that will benefit from these plantings.



In 2022 and 2026, a total of 38,550 trees were planted on over 100 acres at SGL 143.



In 2025 and 2026, a total of 120,175 trees were planted on nearly 397 acres at SGL 195.

SGL 143 Underplanting

At SGL 143 in Warren County we planted a 7-acre project that was to be fenced later in 2026. This forested stand was impacted by Emerald Ash borer and salvage cut in 2014. Due to large amounts of white ash in the overstory being salvaged or dying from infestation, few overstory trees are left to provide a seed source. Deer have heavily browsed any new regeneration to the point that installing a deer deterrent fence and underplanting trees was the best decision for bringing this stand back. The primary goal of the underplanting was to increase the hard mast availability to improve conditions for wildlife. A total of 2,150 seedlings were planted of Pignut Hickory, Red Oak, Shagbark Hickory, and White Oak.



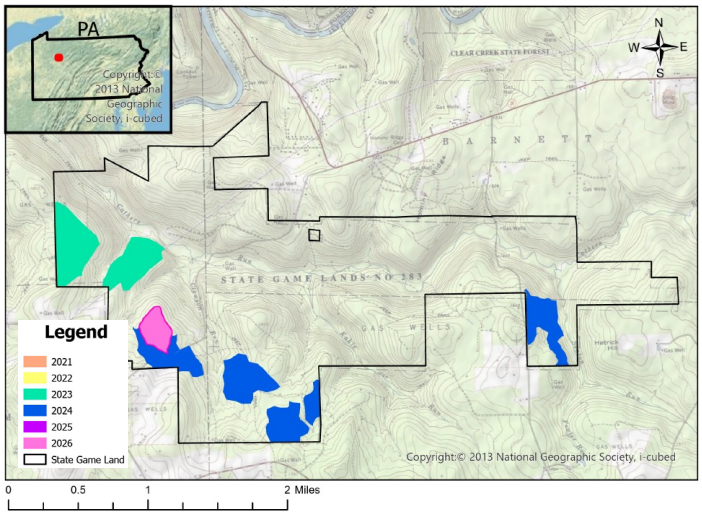
At SGL 143, the crew plants trees in advance of a deer fence installation in an Emerald Ash borer salvage cut area.

SGL 195 Underplanting

The largest of our 2026 PA projects, a 267-acre riparian underplanting in SGL 195 in Jefferson County was a follow up to a 130-acre 2025 planting project, which connects to it. SGL 195 is located within the Allegheny River watershed, with all drainages on SGL 195 designated as High Quality streams. Both Clover and Lost Run that are within the planting area are listed as trout reproduction streams and hold breeding populations of wild Brook Trout and Brown Trout. Clover Run is used for public water supply. The drainage and tributaries are heavily dominated by eastern hemlock with mixed large white pines and scattered hardwood species. HWA is present on the SGL and surrounding area. Many bird species are known to be present in the area like Ruffed Grouse, Black- throated Green Warbler, Broad-winged Hawk, Louisiana Waterthrush, Scarlet Tanager, Sharp-shinned Hawk, and others. Many of these species rely on coniferous forests at certain points throughout the year. A total of 80,200 seedlings of Red Spruce, White Spruce, White Pine, and Balsam Fir were underplanted to help mitigate future hemlock loss and maintain the important evergreen component in the riparian areas. These underplanting projects will not only increase tree species diversity and improve habitat and vertical structure, but will help to retain thermal cover on streams that wildlife rely on.



Tree planters have reloaded their tree bags and hike back to SGL 195.



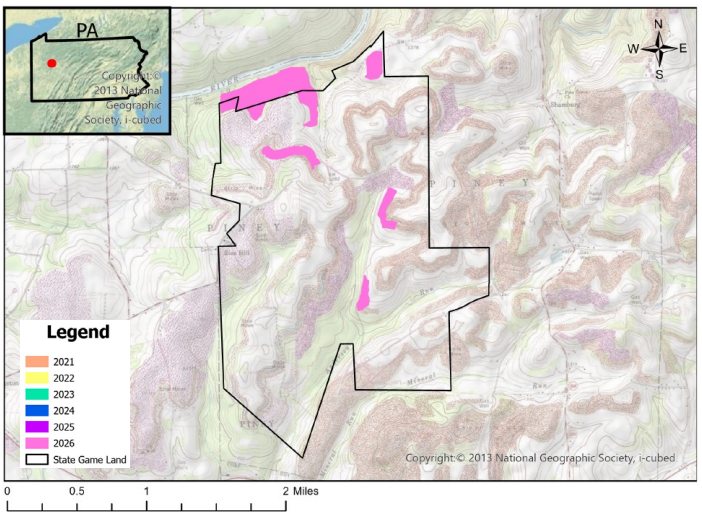
Between 2023 and 2026, a total of 120,815 trees were planted on 385 acres at SGL 283.

SGL 283 Dart Throw Underplanting

SGL 283 is located in Clarion and Jefferson Counties in the Clarion River watershed. The Clarion River is listed as a cold water fishery. All of the named drainages on SGL 283 are listed as high quality. A recent discovery of HWA on SGL 283 in combination with high deer browse impact has prioritized the 32-acre 2026 project area for deer fence installation and underplanting in order to grow woody species and enhance the understory for wildlife. The project area has canopy gaps throughout due to past forestry practices and natural mortality and provides partial sun for planted seedlings. Two fences were installed in 2024 to protect naturally occurring seedlings and will protect planted seedlings and add diversity to the stand. The understory conditions in this stand were poor and there were very few seedlings and woody stems so it was a good candidate for underplanting conifer, shrub, and hardwood seedlings that will become part of the future stand. The objectives of this planting project were to occupy growing space with planted conifer and hardwood seedlings to enhance wildlife habitat and species diversity, diversify vertical structure, and increase conifer diversity and resiliency of the degraded stand. A total of 11,050 seedlings were planted of Red Spruce, Black Oak, Flowering Dogwood, Pignut Hickory, Red Oak, Scrub Oak, Shagbark Hickory, White Oak, Winterberry Holly, and Witch Hazel. Once planted seedlings are past the height of deer browse, the fences will be removed and the stand will be able to achieve desirable late successional characteristics.



Planting project area at SGL 283.



Between 2023 and 2026, a total of 120,815 trees were planted on 385 acres at SGL 283.

SGL 330 Plantings

SGL 330 is located in Clarion County in the Clarion River watershed. All drainages on SGL 330 are listed as impaired and are impacted by acid mine drainage, except those bodies of water that are formed by surface water sources. SGL 330 was extensively mined for coal beginning during WWI and continuing through its peak in the 70's. As a result of this mining and reclamation process the farm fields and woodlots of yesterday have been replaced with extensive cool season grasslands interspersed with shrub and pine plantations. This has created a unique landscape and habitat that is attractive to many species of wildlife. Active forest management since the PGC's acquisition of the land has focused on increasing the amount of young forest habitat and early successional conditions on the landscape. A long list of threatened/endangered and species of greatest conservation need are present on SGL 330 due to the variety of habitat types.



At SGL330's Stover Tract project area streams lead directly into the adjacent Clarion River.

Five Minute Planting Project

The Five Minute planting blocks were red and white pine plantations that were considered poor habitat due to their average diameter, crown health, and tight spacing. The planting areas, which total 36 acres, were harvested in the winter of 2024/2025 allowing suitable light conditions for a tree planting. The objectives of this planting project were to occupy growing space with planted conifer, hardwood, and shrub seedlings to enhance wildlife habitat and species diversity. The planting will jump start the regeneration process in these stands. Species selected for this planting will add more diversity to the seedlings,

grasses, and forbs that were noted during the first growing season after the timber harvest. A total of 3,700 seedlings were planted at a 20 ft by 20 ft spacing and included Virginia Pine, Jack Pine, Scrub Oak, Chestnut Oak, Chinquapin Oak, Eastern Red Cedar, and Eastern Redbud.

Red Barren Planting Project

Similar to the Five Minute planting, the Red Barren planting block was a red and white pine plantation considered poor habitat. The mature pine plantation was also directly adjacent to SGL 330's Important Bird Area (IBA) where several grassland obligate species utilize the open habitat. The 20-acre planting area was harvested in winter of 2024/2025 and resulted in better light conditions for planting seedlings. A total of 2,400 seedlings were planed of Scrub Oak, Northern Bayberry, Black Chokeberry, Mixed Hickory, Shortleaf Pine, Highbush Cranberry, and Virginia Pine. The objectives of this planting project were to occupy growing space with planted conifer and shrub seedlings to enhance wildlife habitat and species diversity and to jump-start the establishment of trees and shrubs that grow low to the ground. This will keep a "soft" edge adjacent to the grassland IBA and provide wildlife with an additional habitat type not currently found on SGL 330.



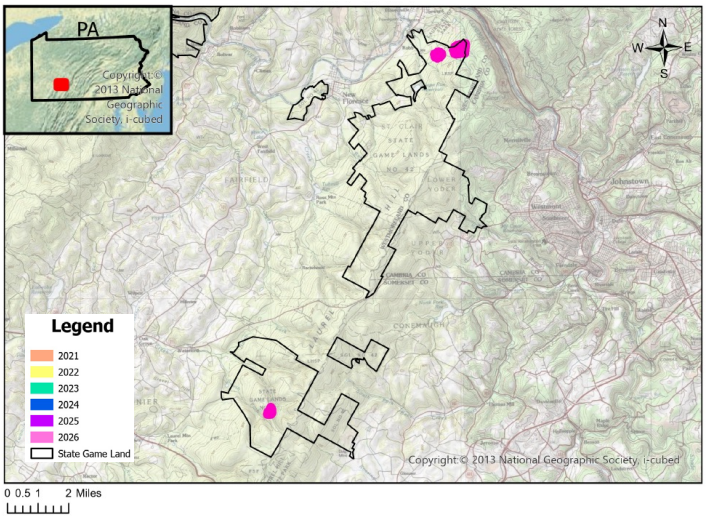
Conifers are loaded into tree bags before planting SGL's Stover Tract.

Stover Tract Underplanting Project

In recent years, HWA has been found along the Clarion River corridor. The 91-acre Stover Tract planting area is an Eastern hemlock/northern hardwood forest within this corridor. Future management in this area includes adjusting light levels through variable density thinning and treating residual hemlock trees to combat HWA. The objectives of this planting project were to mitigate the loss of hemlock by planting other native conifers to enhance wildlife habitat and species diversity, to diversify vertical structure, and to increase the conifer understory component within this stand. A total of 31,600 seedlings were planted of Red Spruce, White Spruce, White Pine, and Balsam Fir. A variable density thinning targeting sweet birch, red maple, and poor-quality hemlock will be conducted to further increase available sunlight to the planted seedlings. This material will be cut and left on site to increase the amount of coarse woody debris; this will help protect the planted seedlings as well as provide valuable wildlife habitat.

This project is supported by One Tree Planted.

PLANTINGS IN THE PGC'S SOUTHWEST REGION



In 2026, two projects were planted at SGL 042 totaling 33,960 trees on over 110 acres.

SGL 042 Plantings

SGL 042 is located in Westmoreland County. Most of SGL 042 lies on the west slope of Laurel Mountain. Laurel Ridge State Park adjoins, and the Laurel Highlands National Scenic Trail traverses through the three southern parcels of this game land. SGL 042 contains the watersheds of several municipal water supplies. This game land has two water reservoirs: Sugar Run Reservoir and New Florence Borough Reservoir and Water Filtration Plant. There are numerous water reservoirs located off the SGL that are supplied by water from the SGL. Protecting these reservoirs and their watersheds from disturbance continues to be a consideration in game land habitat management plans. Some of the creeks on SGL 042 are listed as PA Wilderness Trout Waters and/or Class "A" Wild Trout Waters.

The habitat management goal for SGL 042 is to maintain mixed successional conditions with a focus on practices that favor habitat requirements for white-tailed deer, wild turkey, and ruffed grouse. Hunting for these species, as well as for bears and squirrels, is popular in this area. Prominent fur taking opportunities include raccoon and fox. In addition to practices geared toward game species, all management activities on SGL 042 consider avian and mammalian species of greatest conservation need and habitat improvements that can be made to support them. On SGL 042 specific attention is paid to the habitat needs of Golden-Winged Warbler, which are known to occur near this game land. Other emphasis is placed on enhancing local habitat for forest interior bird species of concern, providing roosting opportunities for a variety of bat species of concern, and improving denning and basking habitat for timber rattlesnakes.

Big Springs Fenced Underplantings

The two Big Springs planting areas total 93 acres and have deer exclosure fences around their perimeters. The fences were initially installed in February of 2006. Prior to installation, herbicide applications were performed in both areas in September 2005. Fence 1 is 25 acres and was installed to provide protection to established regeneration and to prevent deer from over-browsing. Typically, this fence would have been removed once the trees were out of browse height. Forest understory conditions have been stagnant, causing this fence to stand far too long. Fence 2 is 68 acres and, like Fence 1, it was installed to protect established tree regeneration and to prevent deer from browsing. It was also meant to be removed when trees grew to above browse height. Red maple present in the stand is causing mesophication, converting it from the dry oak site that it was. A total of 28,860 seedlings were planted of Red Spruce, White Pine, Flowering Crabapple, American Hazelnut, Eastern Redbud, Elderberry, Pin Oak, Red Oak, Mixed Hickory, and Mixed Oak. The objective of these plantings was to recruit tree seedlings in the understory to enhance wildlife habitat, tree species diversity, diversify vertical structure,



A variety of native trees are planted at the SGL Big Spring site.

and increase the conifer component within these stands, now and into the future, while they can be protected inside deer exclosure fencing.

This project is supported by One Tree Planted.

Scrub Shrub Planting

Historically, scrub oak grew readily across the land that comprises SGL 42. Currently, only small remnant scrub oak patches are found. Lack of fire across the landscape is likely the cause of this, allowing mountain laurel to take its place. Scrub oaks are vital, keystone species providing critical food, shelter, and nesting habitat for diverse wildlife species. They produce high-energy acorns, support numerous insects like caterpillars and offer thick, protective cover for birds, small mammals, and bears. The surrounding landscape is composed of varying age classes of maturing to mature forest. Transitional stand structure will be created between the habitat conditions found present and will be utilized by a multitude of wildlife species.

The "Scrub Shrub" project area is considered to contain poor quality forest conditions due to the stocking density, species composition, individual stem quality, and other interference present that was caused by spongy moth mortality from decades prior, and the stand has never been able to fully recover.

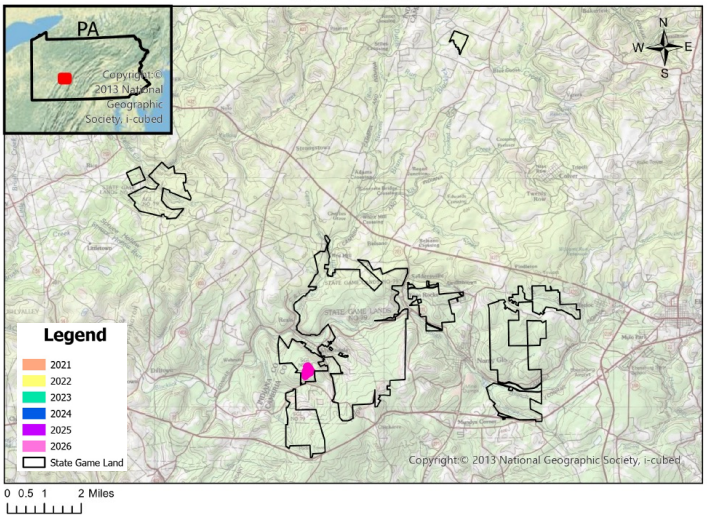


At SGL 042 Scrub Shrub tree planters line up and plant evenly across the project area.

Planting trees was the second project implemented in a multi-step process to rehabilitate the low-quality Red Oak/Mixed Hardwood forest stand with stressed and degraded conditions into a highly desirable, productive habitat. In 2021 the project area was treated with prescribed fire. In the winter of 2025/2026 a forestry mulcher was used to reduce undesirable trees, add organic material to the forest floor, and to open up sunlight to the ground for seedlings that would be planted. In spring 2026 we partnered with PGC to plant a total of 5,100 seedlings of Red Oak and Scrub Oak on 18 acres within the greater restoration project area. Planted trees were grown by PGC's Howard Nursery. The objective of this planting was to recruit scrub oak seedlings to replace a degraded forest stand with a more desirable, productive habitat for wildlife similar to conditions historically found in this landscape.

"I want to thank you again for the opportunity to work with you and Green Forests Work to help better wildlife habitat within our region. I am very excited for the opportunity to have the scrub oak planted because of the historical significance of it being found upon the landscape."

— Tom Respet, PA Game Commission's Southwest Region Forester



In 2026 a project was planted at SGL 079 totaling 19 acres and 6,050 trees.

SGL 079 Wagner Fence Underplanting

The 19-acre SGL 079 planting project is located in Cambria County. SGL 079 contains an estimated 26.3 miles of cold-water fisheries, 5.2 miles of tributaries, and 2.7 miles of High-Quality Waters. A deer fence was installed in the project area in summer 2024 to help protect and aid in establishment of desirable regeneration. The objectives of this proposed planting project are to recruit tree seedlings in the understory while they are protected inside deer fence to enhance wildlife habitat, species diversity, diversify vertical structure, and to increase the conifer component within these stands while deer exclosure fence is in place. Through this project, species diversity will be greatly enhanced and will in turn help create a more resilient stand in the future. A total of 6,050 seedlings were planted of Red Spruce, White Pine, Flowering Crabapple, American Hazelnut, Eastern Redbud, Elderberry, Pin Oak, Red Oak, Mixed Hickory, and Mixed Oak species.



Trees are planted in and around blackberry and greenbriar vines.

This project is supported by One Tree Planted.

green forests work

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