

Saving the Southeast's Forgotten Grasslands



Grassy bald, Roan Mountain (TN/NC border). Photo by A. Krakowiak.

Imagine a grassland. You will likely picture a vast, open, treeless expanse as far as the eye can see, perhaps like the Great Plains of the Midwest. While extensive prairies once existed in parts of the Southeast, there are a multitude of other, lesser known types of grasslands in this region as well.

The Southeastern Grasslands Institute (SGI) classifies grasslands into ten major types: prairies, savannas, barrens, glades, balds, riverscours, meadows, fens, montane bogs, and depression ponds. The key unifying trait for these grassland types is their occurrence in places where woody plants are unable to form a closed canopy. For example, the shallow, rocky, and nutrient-poor soils of glades and barrens and the waterlogged soils of bogs and fens impede the growth of trees, while prairies and savannas are kept open by regular cycles of disturbance, including fire and grazing by bison and elk.

Grassland Conservation is Critical

Southeastern grasslands are hotspots of biodiversity that are rich in endemic and undescribed species. In fact, 60% of the 6,000 or so native plant species of the Southeast require or prefer

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Dense Blazing Star (*Liatris spicata*) in Montgomery County, VA. Photo by J. Coscia.

grassland habitats. However, over 90% of Southeastern grasslands have been lost as a result of centuries of degradation and destruction, and the surviving remnants are disappearing at an alarming rate. Because the majority of grasslands were lost early in the nation's history, the fact of their existence has largely fallen out of our collective consciousness.

To prevent our grasslands from being forgotten, SGI is dedicated to rebuilding the formerly extensive grasslands of the Southeastern United States. Across our 24-state focal region, which we call

the “biogeographic Southeast,” we are engaged in a wide variety of projects (<https://www.segrasslands.org/grasslands-restoration-program-projects>) including a hyperdiverse prairie planting at Google's data center in Clarksville, Tennessee, “vertical grassland” surveys along cliffs in the Cumberland Gap, and wet meadow restoration in the Chesapeake & Ohio Canal National Historical Park (C&O Canal) near Spring Gap, Maryland. Because broadscale grassland conservation will require a massive collaborative effort, we welcome the opportunity to work with private landowners, government agencies, corporate entities, and other partners.

What Happened to Southeastern Grasslands?

When European colonists arrived in the American Southeast, grasslands and other open habitats were often the first places they settled. Prairies and open grasslands with rich soils were converted to crop fields, while other grasslands and meadows that were too wet or too rocky for cultivation were often converted into pastures for livestock. As colonists



Woodland maintained by fires lit as a result of military training activities, Fort Barfoot, Nottoway County, VA. Photo by J. Coscia.

Nashville Basin
Limestone Glade,
Couchville Cedar Glades
State Natural Area,
Davidson County, TN.
Photo by A. Krakowiak.



Grassland maintained by fires lit as a result of military training activities, Fort Barfoot, Nottoway County, VA. Photo by J. Coscia.



Wet meadow, Chesapeake and Ohio Canal National Historical Park, Allegany County, MD. Photo by J. Coscia.

spread, the natural disturbance regimes that maintained native grasslands were altered or altogether eradicated. Native Americans were pushed off of their lands, cultural and wild fires were suppressed, and large herbivores were driven to extinction across the region.

Without these disturbance regimes, open woodlands and savannas were gradually replaced by shrubs and trees that shaded out the sun-loving grassland plants. Between the intentional conversion of grasslands into agricultural land and the unimpeded overgrowth of trees, over 90% of the native grasslands and open habitats in the Southeast have been lost.

Some Hope for Grasslands

Despite massive habitat loss, Southeastern grasslands are not entirely gone. Small grassland remnants can be found in places that have escaped plowing or development and are sustained by environmental or soil factors that limit tree growth. As such, some of our highest quality grassland remnants can be found in surprising places: narrow, rocky riversides periodically scoured by high-energy floods, powerline rights-of-way that are maintained in an open, treeless state through mowing or spot-spraying of herbicides, rural cemeteries that are mowed irregularly, and military firing ranges that are subjected to fire. In addition to providing critical habitat for a multitude of rare and declining native plant and animal species, these remnants are also key to our goal of rebuilding Southeastern grasslands. High-quality grassland remnants are the last surviving examples of these once common habitats, and they serve as irreplaceable sources of seeds that we can use to bring them back.

Restoring and Reconstructing Grasslands

In addition to locating and identifying grassland remnants, SGI works to restore unhealthy grassland remnants and to reconstruct new native grasslands in areas where they have been destroyed. Grassland restoration involves making changes in land management practices

and reinstating natural disturbance regimes to return once-healthy native grasslands to a more stable state.

The most common problems observed in grassland remnants are encroachment by unwanted trees and shrubs, invasion by non-native plants, and the suppression of natural wildfires. By removing excessive woody vegetation, managing invasive plants, and/or introducing prescribed fires, our restoration crews promote the growth of the native grassland plants already present at the site. In contrast, grassland reconstruction involves the total recreation of a native grassland on land that is heavily degraded, previously converted to agricultural fields or other land uses, or lost to woody encroachment. SGI accomplishes this through the removal of woody and invasive plants followed by seeding and planting native grassland species.

Rebuilding Healthy Grasslands in National Parks

SGI has partnered with the National Park Service (NPS) to restore and reconstruct native grasslands in over 40 national parks, monuments, and battlefields. In Maryland, we are restoring and reconstructing grasslands across 24 sites at Antietam National Battlefield, Catoctin Mountain Park, C&O Canal, and Monocacy National Battlefield. In each park, we have worked closely with NPS staff to design and implement grassland restoration and reconstruction plans that align with both the natural and human history of each site.

At restoration sites, SGI is removing encroaching woody plants and treating invasive species that are outcompeting native grassland plants. For example, in the Spring Gap fields of C&O Canal, we have removed invasive Autumn Olive (*Elaeagnus umbellata*) and planned prescribed fires to maintain a unique wet meadow containing one of Maryland's largest populations of the state-rare Virginia Mountain Mint (*Pycnanthemum virginianum*).

At reconstruction sites, SGI is partnering with Roundstone Native Seed to convert old pastures and battlefields



Carolina Sedge (*Carex caroliniana*)



Sallow Sedge (*Carex lurida*)



Nodding Sedge (*Carex gynandra*)



Bush's Sedge (*Carex bushii*)



Yellow-Fruited Sedge (*Carex annectens*).



Eastern Star Sedge (*Carex radiata*)



Squarrose Sedge (*Carex squarrosa*)



Broom Sedge (*Carex scoparia*)

All photos taken in Chesapeake and Ohio Canal National Historical Park, Allegany County, MD, by A. Krakowiak.

dominated by non-native, cool-season grasses to diverse, native grasslands with custom native seed mixes tailored to each site. For example, at Monocacy National Battlefield, in the creekside Lower Gambrill East field, we have designed a seed mix that includes five sedge species that are well adapted to thrive in wet meadow conditions: Longhair Sedge (*Carex comosa*), Frank's Sedge (*Carex frankii*), Bladder Sedge (*Carex intumescens*), Squarrose Sedge (*Carex squarrosa*), and Tussock Sedge (*Carex stricta*).

In Maryland and beyond, SGI is dedicated to preserving and restoring the grassland remnants and rebuilding

grasslands where they have been lost. Grassland loss is the single greatest conservation issue currently facing eastern North American biodiversity. While reversing the tide of grassland loss is a monumental task, we believe that with hard work and dedication, it will be possible. Visit the SGI Website to learn more and to see how you can help!

To Know More:

Southeastern Grasslands Institute:
www.segrasslands.org

A Guide to Grasslands of the Mid-South:
tinyurl.com/2pp97sy7