



How to restore a native grass meadow

Horton Grove Nature Preserve Success Story

Conservation goal

The objective of this project is to establish native grasses and herbaceous vegetation on an open early succession site in the Piedmont of North Carolina. Restoring prairie-like habitat is a priority for many state and local partners because native Piedmont prairies are one of the least represented priority habitats in the Piedmont ecoregion.

Benefits to wildlife

Diverse native grasslands provide forage and habitat for native wildlife. The project will benefit early successional migratory bird species such as loggerhead shrike, prairie warbler, and grasshopper sparrow and may provide stopover or wintering habitat for American woodcock. The endangered smooth coneflower (*Echinacea laevigata*) occurs on the nearby Penny's Bend Nature Preserve (about 5 miles south) and also near Butner in adjacent Granville County (about 5 miles to the east) and may become established on this site one day.

Strategies

A multi-year approach was used to convert a 25 acre abandoned agricultural field into a native grassland community. Removing sweetgum and loblolly pine was the first action. Yearly prescribed fires encourage and promote growth of endemic native warm season grasses and forbs as well as upland hardwoods and shortleaf pines. Fires expose areas and reduce competition from woody shrubs and trees, creating a transitional zone between prairie and forest. Additionally, fire reduces fuel loads in the adjacent forest and controls invasive plants.

Site description

The 25 acres site was a historic pasture dating back at least to the 1800's when it was part of the Stagville Plantation, North Carolina's largest plantation. In 2010, when restoration began, the site was an overgrown field dominated by sweetgum and loblolly pine trees and



FWS, 2005

False blue indigo is one of the native wildflowers used for restoration.

non-native grasses. Today, the site is a native grassland, located within The Triangle Land Conservancy's 700 acre Horton Grove Nature Preserve in Durham County, North Carolina. The high quality forest that surrounds the grassland is dry oak hickory on the upland areas and mesic oak beech on the lower areas. The Horton Grove Nature Preserve is west of Old Oxford Road and adjacent to Falls Lake Game Land and Stagville State Historic Site.

Specific plan:

- Remove sweetgum and other volunteer trees.
- Treat fescue, lespedeza, and other non-desirable species thoroughly with herbicides.
- Reintroduce a fire regime during fall/early winters
- Plant native warm season grasses and forbs.
- Establish a trail, an educational kiosk, and learning stations.

Challenges

Challenges include continued control of fescue, sweet gum, lespedeza, and hardwoods, finding suitable burning days, and lining up people and materials to complete the tasks. Also, good and reliable sources of native plants are limited. The biggest challenge has been figuring out exactly what to do and when to do it. Each site is unique and presents in own set of challenges, so finding expert advice to help with planning, logistics and plant sources is pivotal to success.



Warm season grasses and forbs	
Common name	Latin name
Schizachyrium scoparium	<i>Little bluestem</i>
Andropogon ternarius	<i>Splitbeard bluestem</i>
Chasmanthium latifolium	<i>Wood oats</i>
Solidago pinetorum	<i>Early Goldentop</i>
Solidago rugosa rugosa	
Solidago rugosa cagosa	
Eurthamia graminifolia	<i>Goldentop</i>
Tripsacum dactyloides	<i>Gamagrass</i>
Pityopsis graminifolia	<i>Narrowleaf silkgrass</i>
Pychanthemum muticum	<i>Clustered Mountain Mint</i>
Helianthus divaricatus	<i>Woodland sunflower</i>
Boltonia caroliniana	<i>Carolina doll's daisy</i>
Baptisia australis	<i>Blue false indigo</i>
Eryngium yuccifolium	<i>Rattlesnake master</i>
Liatris spicata	<i>Blazing star</i>
Liatris squarrosa	<i>Scaly blazing star</i>
Lonicera sempervirens	<i>Coral honeysuckle</i>
Monarda fistulosa	<i>Wild bergamot</i>
Oenothera fruticosa	<i>Sundrops</i>
Parthenium intergrifolium	<i>Wild quinine</i>
Passiflora incarnata	<i>Purple passionflower</i>
Penstemon digitalis	<i>White beardtongue</i>
Physotegia virginiana	<i>Obedient plant</i>
Pycnanthemum tenuifolium	<i>Narrowleaf mountain mint</i>
Symphotrichum patens	<i>Late purple aster</i>
Sorghastrum nutans	<i>Indian grass</i>

Actions to date

2011

1. Used equipment to clear the site of sweetgum and other trees.
2. Met with partners to discuss the restoration.
3. Applied herbicide to fescue, lespedeza, and undesirable woody species.

2012

1. Received advise from the University of North Carolina Botanical Garden on design, management, prescribed fire regime, native-plant selection, and invasive plant removal strategy.
2. Conducted first prescribed burn.
3. Applied herbicide treatment
4. Established walking trails.
5. Installed interpretative signs.
6. Celebrated a public opening of the Nature Preserve with a planting.

2013

1. Planted over 750 native grass plugs grown from locally sourced seeds at Hoffman's Nursery in Bahama, NC.
2. Applied herbicide treatments.
3. Conducted second prescribed burn.
4. Assessed the progress.
5. Planted over 500 native plugs
6. Mapped locations for seed collection.

2014

1. Conducted third prescribed burn on half of the restoration site and several acres of oak/hickory understory adjacent to the site to help open up the understory and create a more gradual transition zone between the habitats.
2. Planted 640 Indian grass plugs.
3. Built a wildlife observation area
4. Applied herbicide treatment.

2015

1. Conducted fourth prescribed burn in late fall on the southern half of the site, the section that was not burned the previous year.
2. Planted several hundred short leaf pines to create a pine savanna.
3. Planted native flowering plants over the fall grown from locally sourced seeds at Niche Gardens in Chatham County.



Indian grass, ©Tom Potterfield, Longwood Gardens, August, 2014

Loggerhead shrike, Dave Menke, FWS.

Next steps

- TLC will continue to monitor progress.
- Periodic prescribed burns, herbicide treatment and seed collection will continue as part of the long term management plan.

Lessons Learned

- Plan prescribed burns between October and March.
- Divide the site into smaller burn blocks using trails as fire breaks.
- Alternate burning blocks yearly.
- Place kiosk outside burn area.
- Pick photo points to show annual progress.
- Survey plants after the site is opened up to sunlight, after fire.
- Conduct bird surveys in the spring.

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