

# Case Study: Black Rock Sanctuary

## Establishing a Native Meadow

### Background

In 1999 Chester County Parks and Recreation converted 42 acres of the Black Rock Sanctuary into a native warm season grass meadow. The area was formerly a repository for coal silt dredged from the Schuylkill River. Consequently, the soils had very little nutrient value. The existing top growth was a mixture of cool season grasses and seasonal and perennial *forbs* (herbaceous flowering plants other than grass). Warm season grasses thrive in this environment so there was no need for soil amendments prior to establishing the warm season grass meadow.



### For More Information Contact

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### The Process for Replanting

The existing cool season grasses and forbs were suppressed with glyphosate at 1 quart per acre. Warm season grass seed was acquired with funds from the U.S. Fish and Wildlife Service and Pheasants Forever. A Truax Seed Drill (made specifically for warm season grasses), loaned from the Pennsylvania Game Commission Southeast Region, was used to plant the seed mix in July of 1999, which happened to be during one of the worst droughts in recent history. The warm season grass seedlings were not evident until May of 2001; taking two full growing seasons for the seeds to germinate. This is not unusual, but can certainly be a cause for concern.

July is not the optimum time of year to plant. Target planting for mid-May to early June, as ground conditions are typically more conducive to seeding via drill given better moisture content in the soil. However, because of outside grant funding the project had to happen when it did.

### Type of Seed Used

A seed mix native to Pennsylvania was chosen. The mix included big bluestem, little bluestem, Indian grass, and switchgrass. The County used 420 pounds of seed (42 acres at 10 pounds of seed per acre). The mix per acre was 3pounds big bluestem, 3pounds little bluestem, 3pounds Indian grass, and 1pound cave-n-rock switchgrass. The approximate cost for the seed was \$5,800.

### Maintenance Plan

An established stand of warm season grasses, after about 3 to 5 years of development, is nearly self-sustaining. Annual maintenance is required to mediate competition of cool season grasses, forbs/weeds and woody vegetation. Mowing, using selective herbicides to control herbaceous and woody competitors and prescribed fire are all part of the County's short and long-term management. The County contracts with a local farmer to harvest the warm season grasses annually as a hay crop and staff use prescribed fire on a rotational basis to invigorate the grasses and kill their native and invasive competition. Chemical treatment should be used sparingly because the more effective chemicals can also kill the desired plants.

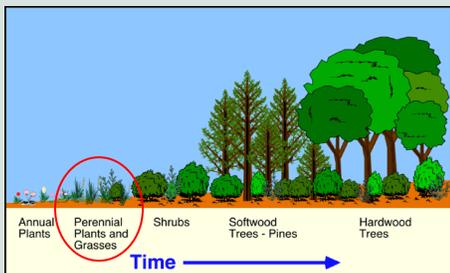
### Tips

- Seasonal timing of seed planting is important. It is best to plant warm season grasses from March to May. Mid-May is optimal planting time for southeastern Pennsylvania.
- Be patient! Even with perfect timing germination may take one or more growing seasons.
- Implement a long term meadow management plan.
- Warm season grasses provide valuable nesting habitat and winter cover for wildlife. Plan to mow once a year after the nesting season.
- Consider prescribed fire. It is a huge tool in the long term management and health of a warm season grass meadow. *Note: Prescribed burning should be done only by well-trained personnel and in accordance with federal, state and local laws.*

## Step-By-Step Guide

Please keep in mind the following instructions are generalized for the purpose of this guide. Each site will have its own set of conditions that affect the approach taken and the project's ultimate success.

1. Choose a suitable location for the meadow to be established; preferably an open, sunny area that gets at least six hours of sun each day.
2. Seek funding assistance and equipment rental if necessary.
3. Contact a local seed company to help determine the perennial seed mix that will best meet your needs.
4. Treat site in the fall with an herbicide that will kill existing vegetation.
5. Plant seed the following spring (March to May) using a drill seeder or track seeder.
  - a. During the first growing season most growth of warm-season grasses is downward to establish roots.
  - b. Depending on when the seeds are planted some will remain dormant until the second growing season.
6. Manage the area
  - a. A meadow is typically a short-lived successional habitat therefore it must be managed to prevent woody vegetation from becoming established.



- b. Management of weeds during the first three years may be necessary
  - i. Mow at 6-10 inches before the warm-season grasses are very tall.
  - ii. Spot treat with herbicides.
  - iii. Use mechanical or manual means of weed removal until the desired

plants get established.

- c. Once the meadow becomes established, usually from the 3<sup>rd</sup> year forward, mow the meadow once a year after the nesting season. A general rule is never clip more than the top third of a warm season grass.

## Technical Assistance

Partner with regional agencies and organizations for funding, equipment loans and labor, etc. For example:

- Pennsylvania Game Commission
- PennState Cooperative Extension
- USDA Natural Resources Conservation Service
- County Conservation Districts
- Local land conservation organizations
- Local state park maintenance and education staff
- Private organizations (for example, Pheasants Forever)
- Scout groups and other local service groups who might be looking to do a conservation project

For other Technical Guidance please refer to the following documents by the PennState Cooperative Extension:

- PA Wildlife No. 5- Meadows and Prairies: Wildlife-Friendly Alternatives to Lawn  
<http://pubs.cas.psu.edu/freepubs/pdfs/uh117.pdf>
- PA Wildlife No. 12- Warm-Season Grasses and Wildlife  
<http://pubs.cas.psu.edu/freepubs/pdfs/uh158.pdf>



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