

# Establishing Native Grasses

## Conservation Reserve Program Job Sheet

CP2

### INTRODUCTION

Native grasses include both cool-season and warm-season grasses. Cool-season grasses grow best in the spring and fall when soil and air temperatures are cooler. Warm-season grasses grow best during the warmest months of the year, typically from June through early September.

Native cool-season grasses are an excellent option when shorter native grasses are desired. Native cool-season grasses provide more wildlife value than **introduced** cool-season grasses. Wildryes are the most common native cool-season grasses sown in Pennsylvania.

Bluestems, Indiangrass, and switchgrass are the most common native warm-season grasses sown in Pennsylvania. Many warm-season grasses are deep rooted, long-lived perennials with considerable tolerance to relatively low pH, low fertility, and drought.

Native grasses, either alone or in combination with native forbs or wildflowers, can be planted to reduce soil erosion and sedimentation, improve water quality, and provide wildlife habitat. Stiff-stemmed native warm-season grasses can serve as a barrier to erosion and can trap sediment carried by water and wind. Native grasses with a bunch-type growth form provide excellent nesting and protective habitat for many species of birds, as well as a source of seeds and insects.

Native grasses can play an important role in conservation and agricultural production. However, establishment and maintenance requirements are significant and should be considered. First-time users of native grasses must pay special attention to the details of managing these grasses while they are becoming established (mowing, weed control, etc.). Once established, mature stands may pose a fire hazard. Firebreaks of **introduced** cool-season grasses should be established and maintained around buildings, woodlands, etc.

This job sheet provides instructions for planting and maintaining native grasses so they can serve their intended purpose. Using proper planting and management techniques, especially during the establishment years, will significantly improve plant health, reduce weed problems, and increase the likelihood of success.



### SITE PREPARATION

Before planting, it is essential to reduce competition from other vegetation that may be present, such as other grasses or broadleaved weeds. Native grass seedlings are slower to establish, and can be easily out-competed in the spring by faster growing **introduced** cool-season grasses and many broadleaved weeds. The type and density of the existing vegetation will determine how much pre-planting control is needed.

It's important to allow adequate time to complete this process. If significant quantities of noxious or aggressive weeds or invasive plants are present, be aware that you may need a year or more to control them before you can plant, especially if you will be planting a large area.

#### Sites without Existing Vegetation

If native grasses will be planted into a clean, relatively weed-free area (such as cropland that was planted during the previous growing season), then competition from existing vegetation should not be a concern. However, a cover crop may be needed for erosion control and/or to reduce future weed competition (see page 3).

Take into account any noxious or aggressive weeds on the site that have been suppressed (but not killed) with previous herbicide applications. If live root systems are present, these weeds may be very difficult to kill in a new planting without destroying the desirable plants. If you think you have a significant weed problem, it may be prudent to plant a temporary

cover crop such as spring oats and use an appropriate herbicide to treat weeds for one full growing season. Then plant the native grasses the following year.

## Sites with Existing Vegetation

If native grasses are going to be planted into existing vegetation such as other grasses or broadleaved weeds, you will need to reduce competition before planting. For sites that need extensive preparation, much of the work can be done during the fall prior to spring planting, or in late spring before a fall planting. Mow the field or planting site and treat the area with herbicide to reduce competition.

**Using herbicides.** Choose a non-selective herbicide such as glyphosate. A selective herbicide such as 2,4-D may be used instead, if you only need to control broadleaved weeds. Follow all label directions when using herbicides, and consider herbicide persistence (carryover) as it may affect new plantings.

For extremely vigorous turf or weeds, you should plan to make one application of herbicide in early fall, followed by another the next spring before planting.

Do not plant the native grasses until the competing vegetation is sufficiently controlled. It is much easier to control the competition before planting than afterward.

**Using cultivation only.** If you do not want to use herbicides, then you will need to cultivate the field or planting site. Cultivation is usually less effective than herbicides for killing heavy sod or persistent weeds. Also, bare ground produced by cultivation may be subject to erosion and can provide a good seedbed for more weed growth. If necessary, use a cover crop (see page 3) to control erosion and help suppress weeds.

## Herbicide Carryover

Carryover from herbicide treatments in prior years can pose a threat to new plantings. Seedlings are particularly sensitive to herbicide carryover. Herbicides such as glyphosate have very short persistence and generally do not pose a risk for carryover. Herbicides such as atrazine have medium to long persistence and can pose a risk of carryover. The persistence of herbicides is directly affected by factors such as soil pH and moisture. To assess risks before planting, read the herbicide label or contact the manufacturer for specific information on persistence.

## PLANTING

### Planting Dates

Recommended planting dates for native cool-season grasses typically range from late winter to late spring, and late summer to mid-fall. Summer heat and the lack of moisture is very stressful for native cool-season grasses. Their survival is dependent on a well-developed root system.

Recommended planting dates for native warm-season grasses range from late winter to late spring. Even though native warm-season grasses need a soil temperature of at least 50° F in order to germinate, many warm-season grass seeds benefit from freeze-thaw action to improve germination. Late winter/early spring seeding may improve germination.

Before deciding on the best planting date for a site, consider the need for weed control vs. the likelihood of having sufficient moisture for germination and growth of grass seedlings. Where weeds are likely to be a problem, planting in mid to late spring will allow more time for emergence and control of cool-season weeds before planting. On droughty sites, plantings made during late winter to early spring are more likely to have the soil moisture necessary for seedling establishment.

To obtain recommended planting dates for your area, contact your local NRCS Field Office.

### Types of Seed

Many native warm-season grasses such as big bluestem, little bluestem, and Indiangrass have fluffy or chaffy seeds that are best planted by using a specially designed native grass drill. Native grass drills have picker wheels in the seed box that stir the seed and push it down into the large drop tubes.

Other native grasses such as switchgrass and wildryes have relatively "clean" seeds that can be planted using a conventional grass drill or seeder. A grain drill may also be used for these types of native grasses if it can be properly calibrated to plant small seeds at the recommended rate. Eastern gamagrass has a large, clean seed that can be planted with a corn planter.

Native grasses are sold in pounds of Pure Live Seed (PLS).  $PLS = (purity \times germination) / 100$ . PLS is important because native grass seed tends to be significantly lower in purity and germination than introduced cool-season grass seed.

## Seed Availability

Seeds of many species may only be available in the fall and early winter. Don't wait to buy seed until the day you are ready to plant. Local seed suppliers may not stock native grass seed, but should be able to order them for you. Or, you may need to order your seeds by mail or on the Internet. Contact your local NRCS Field Office if you need the names of suppliers. Store all seeds in a cool dry place before planting.

## Using a Cover Crop

If erosion is a concern use a cover crop of barley or wheat. Plant the small grain in the fall prior to spring planting native grasses. When erosion is not a concern, a cover crop may still be planted to help suppress weeds. Nurse crops are not recommended with native grasses because of the competition they may create.

## Planting Methods

The best method for establishing native grasses is to use a no-till drill to seed into existing cover (for example, into a cover crop, crop residue, grasses and weeds killed by herbicides, etc.). No-tilling into undisturbed soil greatly reduces the germination of weeds and minimizes soil erosion, especially where slopes are six percent or more (6 ft. of fall per 100 ft.).

**No-till planting into plant residue.** On sites where existing vegetation was killed with herbicide or there is crop residue from previous years, no-till the grasses directly through the dead residue.

**No-till spring planting into a fall cover crop.** In the spring, no-till the native grasses into the cover crop. If aggressive or noxious weeds have developed since the previous fall, use an herbicide to treat them before planting.

**Broadcast planting.** Only as last resort should native grasses be seeded broadcasting onto a conventionally prepared seedbed. Broadcast seed onto a well-prepared, firm seedbed. Grasses with fluffy seeds and small seeds such as native forbs or wildflowers may need to be mixed with a filler to achieve an even distribution of seed. Lightly incorporate the seed into the soil 1/8 to 1/4- inch deep by cultipacking, raking, or dragging (do not disc). Broadcasting is usually less successful than no-tilling because it is more difficult to get good seed placement in the soil. Do not broadcast eastern gamagrass. It needs to be planted 1/2 to 1-inch deep.

## Lime and Fertilizer

Native grasses are much more tolerant of poor site conditions than most **introduced** cool-season grasses. It is usually not necessary to add lime to native grass

plantings, provided the soil pH is 5.0 or above. A pH of 5.5 to 6.5 is ideal for most species.

Similarly, phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) should only be applied if a soil test indicates that these nutrients are in the low range. For additional information, consult with your local Pennsylvania Cooperative Extension specialist or nutrient management consultant.

Warm-season grasses need very little nitrogen. Do not apply any nitrogen at the time of planting because it will only encourage the growth of other grasses and broadleaved weeds.

## PROTECTING PLANTS

Use fences and other exclusion devices as needed to keep livestock out of the planting. Many types of fences and exclusion devices are available. Contact your local NRCS Field Office for recommendations for your site.

## ESTABLISHING THE PLANTING

While native cool-season grasses only take one to two years to fully established, native warm-season grasses usually take two to three years to become fully established. With the longer establishment period, there may need to be additional weed control.

The goal of weed control is to reduce (not necessarily eliminate) competition from other grasses and broadleaved weeds such as foxtail, crabgrass, mare's tail, ragweed, etc. Many of these plants provide good food and wildlife cover, but if they get too tall and dense, they will shade out the cool-season grass seedlings. Don't wait until weeds are a few feet tall before trying to control them. Mowing the weeds at that stage will produce so much plant litter that you may smother the seedlings.

## MAINTAINING ESTABLISHED PLANTINGS

CRP participants must maintain enrolled practices for the life of the contract. "Maintenance" refers to activities that are carried out as needed to keep plantings in good condition so they will continue to function as planned.

## MANAGING ESTABLISHED PLANTINGS

CRP Participants will be required to perform specific management activities to ensure long-term plant diversity and wildlife habitat benefits. Participants can receive up to 50% cost-share after completing the management activities.

Control noxious weeds by spot treatment, using mechanical methods or appropriate herbicides. If it becomes necessary to control noxious weeds during the nesting season, contact the FSA County Committee. Spot treatment is limited to the immediate area of infestation. In an established planting, you must request and receive approval from the FSA County Committee before spraying or mowing during the nesting season.

For more information about controlling specific weeds, contact your local office of Pennsylvania Cooperative Extension..

Periodic mowing for cosmetic purposes is prohibited at all times, and annual mowing for generic weed control is also prohibited.

PLANTING PLAN for WARM-SEASON GRASSES					
<b>Name:</b>		<b>Farm No.:</b>		<b>Tax Map:</b>	
		<b>Tract No.:</b>		<b>Parcel:</b>	
<b>Address:</b>		<b>Primary Purpose(s):</b> <input type="checkbox"/> Erosion Control <input type="checkbox"/> Water Quality <input type="checkbox"/> Wildlife Habitat for:		<b>Recommended Planting Date(s):</b>	
		<b>Assisted by:</b>			
		<b>Date:</b>			
Planting Area (Field # , Firebreak, etc.)	Acres	Species	Cultivar (if any)	Seeding Rate (PLS lbs/ac)	Total Quantities Needed

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