



PENNDOT POLLINATOR HABITAT ESTABLISHMENT JOB SHEET

Pollinator Job Sheet

November 2019

Description

The purpose of this practice is to enhance vegetative cover with habitat for pollinators. By establishing this cover, butterflies, bees, other insects and some birds which are important for the pollination of many plant species will have a variety of food and nectar sources.

The vegetation established will be a diverse mix of at least 9 pollinator-friendly shrubs (optional), legumes or wildflowers; it must provide at least three species in each of the bloom periods (early, middle, and late). Forbs and wildflowers shall be planted at the rate of 25-30 pure live seed (PLS) per square foot (minimum).

Grasses may be used in mix at no more than 25% of mix based on PLS per square foot. Only Native Grasses should be used. Little Bluestem and/or other "short" Native Grasses are highly recommended. Tall grasses such as Indiangrass and Big Bluestem are not recommended to be used.

Perennial Establishment

Given the nature of perennial plants these stands will take time to develop. In most cases it takes 3-4 years before a stand is considered established and most of the species from the seed mix will be visible. Some species may even take longer. Patience is a must when establishing native perennial plants.



Establishment Overview

Because some of the seeds are light, hairy or fluffy, the best results are obtained using a specialized drill. Broadcast seeding may also be an option for the small areas planted to the legumes or wildflowers found in the pollinator mix. The germination times may vary between the many species included in the mix.

Site Preparation and Planting

Apply soil amendments as needed and described on the specifications sheet. Soil amendments, if needed, shall be applied prior to seedbed preparation or before planting if a no-till drill is used. Normally, the application of lime and/or fertilizer is not needed when establishing native legumes and forbs on roadsides, infields, and facilities.

Because planting depth is critical for these plants, a firm, level seedbed is necessary. Also, because some species germinate later than most other plants typically found in fields, it is important to have a weed-free seedbed. In some cases, site preparation may be necessary the year before seeding. Seeds should be planted no deeper than ¼ inch. If planted properly, it is acceptable to see some seed on the surface after planting. If drilling, ensure that the drill is properly calibrated and set up.

See the species listed on the specifications sheet. Seed at rates and according to the methods described on the specifications sheet.

No-till Planting The first step is to kill or suppress existing vegetation. If planting into an existing sod, treatment will need to begin the year before planting. Mow the existing sod and follow with a fall application of appropriate burndown herbicide to control grasses and broadleaved plants. New growth will occur in the spring prior to planting, so an additional burndown treatment may be necessary. If the previous crop was a row crop, use a nonselective burndown herbicide to control existing vegetation at the time of planting. Once competing vegetation is controlled, use a drill designed for no-till seeding these kinds of plants. Seed should be drilled uniformly at a depth no greater than ¼ inch.



Maintenance during Establishment

Tilled Seedbed A firm seedbed is important when seeding native grasses. Initial tillage (plow, chisel, disc) should begin at least a month prior to seeding. About 2 weeks should be planned between initial tillage and final seedbed preparation to allow the weeds to germinate and be killed by the final seedbed preparation. A nonselective herbicide can be used prior to seeding to control weeds, especially the perennial weeds. The final seedbed should be cultipacked until firm enough to leave footprints only 1/4 to 1/2 inch deep. Once the seedbed is prepared, seed the area by:

- Drill Seeding – Uniformly drill the seed ¼ inch deep

OR

- Broadcast Seeding – Use an “air- flow” fertilizer applicator or broadcast seeder capable of handling these seeds to uniformly seed the area. A carrier may be needed if using a fertilizer spreader. Cultipack again after broadcast seeding to achieve seed coverage and seed-to-soil contact. Rolling or cultipacking before broadcasting seed will be required for all broadcast seedings that occur outside of the dormant seeding period. Tillage is not needed or recommended for dormant seedings. All slopes must be smooth and free of gullies and/or rills

Seeding Dates

The best time to seed the forbs and legumes is April 15 until May30. Dormant seedings may be done from December 15 until March 1st.

Mow, clip or spray during the growing season to control weeds, insects or other undesirable species. Do not mow shorter than 10-12 inches. The goal of the seeding year is to reduce the shade pressure that weeds can exert on the plant seedlings. The seeding should be mowed at least once before early August. This period can last 2 to 3 years depending on the site.

There are herbicides labeled for some native forbs and legumes. These have proven to be very effective in helping the seeding get established. However, some caution must be used so that these materials do not harm desirable species included in the mix.

Areas that fail to become established should be re-seeded during the next seeding period.

Stand Evaluation

Native forbs and legumes often have slower germination than typical introduced cool-season grasses and legumes. It is appropriate to give the stand sufficient time to develop when evaluating stand success.

The Initial Evaluation should be made 6-8 weeks after planting. Check and record seedling density (plants per square foot) and distribution in several areas of the field. This is also a time to check weed pressures. If it appears that undesirable cool season grasses and legumes are overtaking the desired species, consider using an Imazapic or Clopyralid herbicide over the top to kill or suppress the cool season grasses.

The Second Evaluation should be made in late summer of the seeding year to evaluate stand adequacy based on density of established plants. An average of at least 2-4 strong seedlings per square foot should be the minimum acceptable stand.

The Final Evaluation should be made during the early summer of the second year. If an average of 2 healthy plants are found per square foot, a successful stand and cover should be accomplished.

Maintenance after Establishment

After the initial establishment is completed, maintain the planting according to your conservation plan. Maintenance activities should only be performed between July 16 and February 28 (outside the primary nesting and brood-rearing season) for wildlife concerns and prior to May 1st and or after October 15th for Monarch Butterfly concerns.

Scout fields in May to early June to identify problems such as thistle, johnsongrass, other noxious weeds or trees. These may need treatment to control.

Spot treatment necessary to control noxious weeds or pests that will damage the cover may need to be performed. Try to avoid treating affected areas during the primary nesting season (March 1 to July 15); and during the Monarch management window (May 1 to October 15). If treatment is necessary during either of these periods the method used should be the least damaging to nesting wildlife, Monarch, and Pollinator Habitat.

Mow no shorter than 10-12 inches. Mowing shorter than 10 inches will also damage or kill the desired species and promote cool season grasses. The same considerations apply to mowing that applied to spot treatment.

Periodic mowing, mowing for cosmetic purposes and annual mowing for generic weed control are not recommended and can be detrimental to the stand.

If prescribed burning is to be used, it should be conducted in accordance with all applicable state or local regulations.



POLLINATOR HABITAT SPECIFICATIONS SHEET

For:	County:
Field(s):	District:
Planned By:	Date:

GRASS/WILDFLOWER/LEGUME SEEDING

Acres to be seeded:					
Recommended Species and Seeding Rates					
Grasses			Wildflowers		
Species	Rate PLS lb./ac	Total PLS lb./ac	Species	Rate PLS lb./ac.	Total PLS lb./ac.
Bluestem, Little			Aster, Frost		
Deer Tongue Grass			Aster, New England		
Purple Top			Aster, Smooth Blue		
Switchgrass (Blackwell)			Beardtongue, Foxglove		
..			Beardtongue, Hairy		
..			Bergamot, Wild		
..			Coneflower, Grayhead		
..			Coneflower, Prairie		
..			Coneflower, Purple		
..			Coreopsis, Lanceleaf		
..			Culvers Root		
..			Goldenrod, Gray		
..			Goldenrod, Stiff		
..			Narrow Leaf Mountain Mint		
..			Partridgepea		
..			Sunflower, False or Oxeye		
..			Susan, Black-eyed		
..			Susan, Brown-eyed		
..			Wingstem		
..			Clover, Alsike		
..			Clover, Crimson		
..			Clover, Ladino or white		
..			Milkweed, Common		
..			Milkweed, Swamp		
..			..		
..			..		
..			..		
Total Grasses (lbs./acres)			Total Wildflowers (lbs./acre)		

ANNUAL WILDFLOWER SEEDING

Acres to be seeded:

Recommended Species and Seeding Rates

Species	Rate PLS lb./ac.	Total PLS lb./ac.
Blanketflower		
Cosmos		
Coreopsis, Plains		
Susan, Blackeyed		
Total Wildflowers (lbs./acre)		

Practice Implementation Contacts:			
Name:	Email:	Affiliation:	Phone:
Mowing:			
Herbicide:			
Seeding:			
Special Notes:			
Maintenance Agreement Contacts:			
Name:	Email:	Affiliation:	Phone:
Special Notes:			
Additional Contacts:			

