SOLAR ARRAY POLLINATOR HABITAT ESTABLISHMENT

Pollinator Job Sheet

January 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 PLS per square foot(minimum).

Grasses may be used in mix at no more than 25% of mix based on PLS per square foot. Native Grasses should be used. Little Bluestem is highly recommended. Only “short” Native Grasses should be used. Tall grasses such as Indiangrass, and Big Bluestem tend to outcompete other species and therfore shouldn't be used.

Perrennial Establishment

Given the nature or 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 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.

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.

Seed the species listed on the specifications sheet. Seed at rates and according to 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 non-selective 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.

Prepared 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 or construction final grading and final seedbed preparation to allow the weeds to germinate and be killed by the final seedbed preparation. A non-selective herbicide can be used prior to seeding to control weeds, especially the perennial weeds. The final seedbed if tilled should be cultipacked until firm enough to leave footprints only1/4 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 and after broadcasting seed should be performed for all broadcast seedings that occur outside of the dormant seeding period. 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 1 until May 30. Dormant seedings may be done from December 15 until March 1.

Maintenance during Establishment

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 the seeding year is to reduce the shade pressure that weeds can exert on the plant seedlings, and reduce any annual weed seed introduction. The seeding should be mowed at least twice before mid August. The use of herbicides labeled for some native forbs and legumes 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

The 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

This 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

This 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 between July 16th -20th, October 1st and February 28 (This follows the monarch mowing schedule and is outside outside of the primary nesting and brood-rearing season for Ohio).

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 treated. Try to avoid treating affected areas during the primary Wildlife and Monarch nesting and season (March 1 to October 1): If treatment is necessary during the primary nesting seasons the method used should be the least damaging to nesting wildlife and Monarch habitat.

Mow no shorter than 10-12 inches. Do not mow after August 15th in order to allow regrowth for winter cover and nectar for pollinators. Mowing shorter than 10 inches will also damage or kill the desired species and promote cool season grasses.

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

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POLLINATOR HABITAT SPECIFICATIONS SHEET

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

3' SOLAR 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.
Little Bluestem	0.500	0.000	Alexander, Golden	0.250	0.000
Prairie Dropseed	0.100	0.000	Aster, Calico	0.011	0.000
Prairie Junegrass	0.050	0.000	Aster, Frost	0.020	0.000
Sideoats Grama	0.700	0.000	Aster, Sky Blue	0.035	0.000
..			Beardtongue, Hairy	0.012	0.000
..			Beardtongue, Pale	0.016	0.000
..			Cinquefoil, Prairie	0.020	0.000
..			Clover, Alsike	0.060	0.000
..			Clover, Crimson	0.400	0.000
..			Clover, Ladino / White	0.080	0.000
..			Coneflower, Upright	0.075	0.000
..			Coreopsis, Plains	0.045	0.000
..			Coreopsis, Lanceleaf	0.150	0.000
..			Goldenrod, Gray	0.015	0.000
..			Lobelia, Great Blue	0.008	0.000
..			Lobelia, Pale Spiked	0.005	0.000
..			Milkvetch, Canada	0.175	0.000
..			Milkweed, Butterfly	0.030	0.000
..			Milkweed, Whorled	0.012	0.000
..			Mint, Narrow Leaf Mountain	0.008	0.000
..			Mint, Virginia or Mountain	0.015	0.000
..			Partridgepea	1.000	0.000
..			Prairieclover, Purple	0.200	0.000
..			Seedbox	0.003	0.000
..			Susan, Black-eyed	0.105	0.000
..			Vervain, Hoary	0.100	0.000
..			Yarrow	0.050	0.000
..			..		
..			..		
Total Grasses (lbs./acres)	1.350	0.000	**Total Wildflowers (lbs./acre)**	3.300	0.000

POLLINATOR HABITAT SPECIFICATIONS SHEET

2' 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.
Prairie Junegrass	0.100	0.000	Alsike Clover	0.500	0.000
..			Crimson Clover	1.500	0.000
..			Hairy Beardtongue	0.015	0.000
..			Ladino or White Clover	0.400	0.000
..			Pale Beardtongue	0.008	0.000
..			Seed Box	0.020	0.000
..			Yarrow	0.150	0.000
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Total Grasses (lbs./acres)	0.100	0.000	**Total Wildflowers (lbs./acre)**	2.593	0.000

Practice Implementation Contacts:			
Name:	Email:	Affiliation	Phone
Mowing:			
Herbicide:.			
Seeding:			
Special Notes:			

Maintenance Contacts:			
Name:	Email:	Affiliation	Phone
Special Notes:			

Additional Contacts:

Ohio Pollinator Habitat Initiative

For more information about the Ohio Pollinator Habitat Initiative Check out our website: *http://www.ophi.info/*

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Field Number	Planned Activity	Date Activity Will Take Place	Extent of Activity	Specifications