United States Department of Agriculture

NRCS Natural Resources Conservation Service

Conservation Cover - 327

Herbaceous Plantings for Pollinator Habitat

Conservation Practice Job Sheet ***March 2010***

INTRODUCTION

Pollinators perform key roles in natural ecosystems and for agricultural production. By helping to keep plant communities healthy and able to reproduce naturally, native pollinators assist plants to provide food and cover for wildlife, prevent erosion, and keep waterways clean. Animals pollinate approximately 75 percent of the agricultural crops grown worldwide for food, fiber, beverages, condiments, spices, and medicines. As such, agricultural products that are produced with the help of pollinators make a significant contribution to the economy.

All of the plants in the following tables are Maryland native species. The grasses all have a bunch-type growth form, are suitable for sites with low fertility, and are relatively non-competitive in a mix of grasses and forbs. The wildflower mixes contain species that support beneficial insects and have been selected to provide flowering throughout most of the growing season.

SELECTING A MIX

Select an appropriate mix of grasses and wildflowers based on site conditions and desired height of grasses. A grass-wildflower mix needs to contain at least three native grass species, of which at least two are warm-season grasses. The combined seeding rate of all grasses planted cannot exceed 5 lbs/ac. The maximum ratio of grasses to wildflowers is provided for each wildflower mix. For example, when using the mix for dry sites, if you will be planting 4 lbs/ac of grasses, then use at least 2 lbs/ac of the wildflower mix. The basis of the ratio is for the wildflowers to account for at least 50% of seed being planted.

ESTABLISHING THE POLLINATOR PLANTING

Refer to the Maryland NRCS ***Warm-Season Grasses Job Sheet*** for establishment, maintenance, and management of a native grass-wildflower pollinator planting.

Native wildflowers can also be interseeded into an existing grass-dominated planting to enhance vegetative diversity. Interseeding of wildflowers must be preceded by prescribed burning or disking of the grasses (see instructions in the Warm-Season Grasses Job Sheet) to ensure adequate seed to soil contact. Interseeded wildflowers may be broadcast seeded or no-till drilled at a depth of ¼- to ½-inch.

NRCS, Maryland

PLANTING PLAN for HERBACEOUS PLANTINGS FOR POLLINATOR HABITAT		
Name:	**Farm No.:**	**Tax Map:**
	Tract No.:	**Parcel:**
Address:		
Assisted by:	**Recommended Planting Date(s):**	
Date:		

Planting Area (Field # , Fire-break, etc.)	**Acres**	**Species or Mix**	**Cultivar (if any)**	**Seeding Rate (lbs/ac)**	**Total Quantities Needed**
Nurse/Cover Crop		**Oats, Barley, or Wheat** *(oats are preferred because they are less competitive)*		**20 - 40**	

Additional Recommendations/Notes:

TABLE 1: PLANTING MIXES FOR POLLINATOR HABITAT

Grasses				
Select at least 3 grasses, at least 2 of which are warm season grasses[1]:	**Seeding Rate (lbs/ac)**	**Warm or Cool Season**	**Soil Drainage Class[2]**	**Remarks**
Big Bluestem *Andropogon gerardii*	1 – 2	W	E – MW	This species and Indiangrass are the tallest (6 – 8 feet) of the grasses listed here. (The other grasses are 2 - 3 feet tall.) Prefers dry sites.
Broomsedge *Andropogon virginicus*	1 – 2	W	E – SP	Often volunteers in idle crop fields with low fertility and low pH.
Deertongue *Dicanthelium clandestinum*	1 – 2	W	E – SP	Usually slow to establish, but tolerates a wide range of site conditions.
Indiangrass *Sorghastrum nutans*	1 – 2	W	E – SP	This species and Big Bluestem are the tallest (6 – 8 feet) of the grasses listed here. (The other grasses are 2 - 3 feet tall.)
Little Bluestem *Schizachyrium scoparium*	1 – 2	W	E – MW	Similar in appearance to Broomsedge. Prefers dry sites.
Purpletop *Tridens flavus*	1 – 2	W	E – MW	Best suited for dry, sandy areas or sites with shallow soils. Does not compete well with cool-season grasses or heavy weed pressure.
Canada Wild Rye *Elymus Canadensis*	2 – 3	C	E – MW	Both species prefer partial shade. Seedlings are vigorous and establish quickly, but are not highly competitive with other grasses. Good in a mix with warm-season grasses & forbs, but will not persist if prescribed burning is used.
Virginia Wild Rye *Elymus virginicus*	2 – 3	C	MW –P	
Wildflower Mixes				
Select one mix:	**Maximum Ratio of Grasses to Wildflowers, by Weight**		**Soil Drainage Class[2]**	**Remarks**
Dry Site Wildflower Mix (see Table 2)	2:1		E - MW	Higher seeding rate for dry site mix because it contains less seeds on a per lb basis.
Mesic Site Wildflower Mix (see Table 3)	3:1		MW - SP	Mix contains species for a broader range of moisture conditions than the dry mix.
Wet Site Wildflower Mix (see Table 4)	6:1		SP - VP	Mix is for a site with wetland hydrology. This mix is expensive compared to mixes for dry and mesic sites.

Notes:

1/ Do not exceed a combined total of 5 lbs/ac for the grasses portion of the planting.

2/ Soil Drainage Class (refer to the county soil survey): E - Excessively Drained; W - Well Drained; MW - Moderately Well Drained; SP - Somewhat Poorly Drained; P - Poorly Drained; VP - Very Poorly Drained.

TABLE 2: Maryland Native Wildflower Mix - Dry Sites

This mix is appropriate for sites with dry soil moisture conditions, including sites with the following drainage classes: Excessively drained, somewhat excessively drained, and well drained. All seed should be ordered by weight in pure live seed (PLS). Order mixes using the percent by weight column. The approximate percentage of species in the mix is for informational purposes and is based on the number of seeds.

Common Name	Scientific Name	% by Wt.	% by Seed	Duration	Legume	Flowering Period							
						M	A	M	J	J	A	S	O
American Senna	*Senna hebecarpa*	20.0	2.1	Perennial	Yes								
Aromatic Aster	*Symphyotrichum oblongifolium*	1.0	3.6	Perennial	No								
Black-eyed Susan	*Rudbeckia hirta*	3.0	24.0	Biennial	No								
Butterfly Milkweed	*Asclepias tuberosa*	6.0	2.1	Perennial	No								
Common Milkweed	*Asclepias syriaca*	2.0	7.1	Perennial	No								
Gray Goldenrod	*Solidago nemoralis*	1.0	5.1	Perennial	No								
Ohio Spiderwort	*Tradescantia ohiensis*	0.5	4.4	Perennial	No								
Partridge Pea	*Chamaecrista fasciculata*	20.0	6.6	Annual	Yes								
Showy Tick Trefoil	*Desmodium canadense*	16.0	5.9	Perennial	Yes								
Smooth Blue Aster	*Symphyotrichum laeve*	1.0	5.1	Perennial	No								
Smooth Oxeye	*Heliopsis helianthoides*	18.0	10.6	Perennial	No								
Stiff Goldenrod	*Oligoneuron rigidum var. rigidum*	1.0	5.1	Perennial	No								
Tall White Beard Tongue	*Penstemon digitalis*	4.0	8.1	Perennial	No								
White Heath Aster	*Symphyotrichum ericoides*	0.5	1.8	Perennial	No								
Wild Bergamot	*Monarda fistulosa*	1.0	6.5	Perennial	No								
Wild Blue Lupine	*Lupinus perennis*	4.0	0.4	Perennial	Yes								
Wild False Indigo	*Baptisia australis*	1.0	1.5	Perennial	Yes								
The following alternative species can be used in place of similar species in the dry mix:													
Purple Bergamot	*Monarda media*	1.0		Perennial	No								

TABLE 3: Maryland Native Wildflower Mix - Mesic Sites

This mix is appropriate for sites with a broad range of soil moisture conditions, including sites with the following drainage classes: Well drained, moderately well drained, and somewhat poorly drained. All seed should be ordered by weight in pure live seed (PLS). Order mixes using the percent by weight column. The approximate percentage of species in the mix is for informational purposes and is based on the number of seeds.

Common Name	Scientific Name	% by Wt.	% by Seed	Duration	Legume	Flowering Period							
						M	A	M	J	J	A	S	O
American Senna	*Senna hebecarpa*	20.0	1.6	Perennial	Yes								
Aromatic Aster	*Symphyotrichum oblongifolium*	0.5	1.3	Perennial	No								
Black-eyed Susan	*Rudbeckia hirta*	3.0	18.0	Biennial	No								
Bur Marigold	*Bidens aristosa*	10.0	5.0	Annual	No								
Common Milkweed	*Asclepias syriaca*	0.5	1.3	Perennial	No								
Flat-topped White Aster	*Doellingeria umbellata var. umbellata*	0.5	1.5	Perennial	No								
Golden Alexanders	*Zizia aurea*	5.0	3.2	Perennial	No								
Golden Tickseed	*Coreopsis tinctoria*	2.0	24.6	Annual	No								
New England Aster	*Symphyotrichum novae-angliae*	0.5	2.1	Perennial	No								
Ohio Spiderwort	*Tradescantia ohiensis*	0.5	3.3	Perennial	No								
Partridge Pea	*Chamaecrista fasciculata*	20.0	5.0	Annual	Yes								
Showy Tick Trefoil	*Desmodium canadense*	10.0	2.8	Perennial	Yes								
Smooth Oxeye	*Heliopsis helianthoides*	15.0	6.7	Perennial	No								
Spotted Joe-Pye Weed	*Eupatoriadelphus maculatus*	1.0	7.6	Perennial	No								
Stiff Goldenrod	*Oligoneuron rigidum var. rigidum*	1.0	3.8	Perennial	No								
Tall White Beard Tongue	*Penstemon digitalis*	3.0	4.6	Perennial	No								
Wild Bergamot	*Monarda fistulosa*	1.0	4.8	Perennial	No								
Wild Blue Lupine	*Lupinus perennis*	5.0	0.4	Perennial	Yes								
Wild False Indigo	*Baptisia australis*	1.0	1.1	Perennial	Yes								
Zigzag Aster	*Symphyotrichum prenanthoides*	0.5	1.3	Perennial	No								
The following alternative species can be used in place of similar species in the mesic mix:													
Calico Aster	*Symphyotrichum lateriflorum var. lateriflorum*	0.5		Perennial	No								
Canada Goldenrod	*Solidago canadensis*	1.0		Perennial	No								
Purple Bergamot	*Monarda media*	1.0		Perennial	No								
Smooth Blue Aster	*Symphyotrichum laeve*	0.5		Perennial	No								

TABLE 4: Maryland Native Wildflower Mix - Wet Sites

This mix is appropriate for wet sites with the following drainage classes: Somewhat poorly drained, poorly drained, and very poorly drained. All seed should be ordered by weight in pure live seed (PLS). Order mixes using the percent by weight column. The approximate percentage of species in the mix is for informational purposes and is based on the number of seeds.

Common Name	Scientific Name	% by Wt.	% by Seed	Duration	Legume	Flowering Period							
						M	A	M	J	J	A	S	O
American Senna	*Senna hebecarpa*	15.0	0.9	Perennial	Yes								
Blue (Swamp) Vervain	*Verbena hastata*	3.0	12.8	Biennial	No								
Boneset	*Eupatorium perfoliatum*	1.0	8.0	Perennial	No								
Bur Marigold	*Bidens aristosa*	25.0	9.2	Annual	No								
Calico Aster	*Symphyotrichum lateriflorum var. lateriflorum*	1.0	2.1	Perennial	No								
Golden Alexanders	*Zizia aurea*	4.0	1.9	Perennial	No								
Golden Ragwort	*Packera aurea*	1.0	1.3	Perennial	No								
Golden Tickseed	*Coreopsis tinctoria*	1.0	9.2	Annual	No								
New England Aster	*Symphyotrichum novae-angliae*	4.0	12.5	Perennial	No								
New York Ironweed	*Vernonia noveboracensis*	4.0	8.0	Perennial	No								
Showy Tick Trefoil	*Desmodium canadense*	2.0	1.7	Perennial	Yes								
Partridge Pea	*Chamaecrista fasciculata*	15.0	2.8	Annual	Yes								
Rough Avens	*Geum laciniatum*	4.0	4.6	Perennial	No								
Rough-leaved Goldenrod	*Solidago patula*	4.0	8.0	Perennial	No								
Showy Tick Trefoil	*Desmodium canadense*	10.0	2.1	Perennial	Yes								
Spotted Joe-Pye Weed	*Eupatoriadelphus maculatus*	2.0	11.4	Perennial	No								
Swamp Milkweed	*Asclepias incarnata*	1.0	2.0	Perennial	No								
Tall White Beard Tongue	*Penstemon digitalis*	5.0	5.7	Perennial	No								

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