

PA- Supplemental Guidance

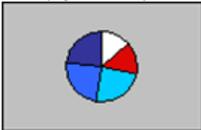
PLT-08 **Habitat Development for Beneficial Insects for Pest Management – To develop a seeding mix for beneficial insects:**

- 1) Identify pest insect (prey species).
- 2) Identify beneficial insect that attacks the prey species.
- 3) Identify plant that supports the beneficial insect.
- 4) Enhance PA Pollinator Seeding Mix with plant species that will support the identified beneficial insect(s).

Use the PA Pollinator Seeding Mix as a base for developing a seeding mix to attract beneficial insects. A beneficial insect habitat planting will remain undisturbed following establishment, except when controlling noxious or invasive weeds. Herbicide and pesticide applications will be minimized. The planting will be managed for maximum bloom of pollen producing species throughout the growing season.

PA Pollinator Seeding Mix:

Dry Site Mix-- to be used for: *upland areas, dry sites, or other well-drained sites.*
(Well drained and Moderately well drained soils)

	% of	bloom color	bloom period	Color composition (by bloom period)
Alsike clover* (<i>Trifolium hybridum</i>)	3.0		early	
Crimson clover* (<i>Trifolium incarnatum</i>)	3.0			
Blue flax* (<i>Linum perenne</i>)	5.0			
Wild blue lupine (<i>Lupinus perennis</i>)	5.0			
Virginia spiderwort (<i>Tradescantia virginiana</i>)	5.0			
Yellow sweet clover* (<i>Melilotus officinalis</i>)	3.0		mid	
Blue false indigo (<i>Baptisia australis</i>)	8.0			
Partridge pea (<i>Chamaecrista fasciculata</i>)	6.0			
Spotted beebalm (<i>Monarda punctata</i>)	7.0			
Butterfly weed (<i>Asclepias tuberosa</i>)	8.0			
Tall white beardtongue (<i>Penstemon digitalis</i>)	8.0			
Milkweed, common (<i>Asclepias syriaca</i>)	6.0			
Purple giant hyssop (<i>Agastache scrophulariifolia</i>)	5.0		late	
Mistflower / Wild ageratum (<i>Conoclinium</i>)	7.0			
Virginia mountain mint (<i>Pycnanthemum virginianum</i>)	3.0			
St. John's wort, common (<i>Hypericum perforatum</i>)	4.0			
Blazing star / Gayfeather (<i>Liatris spicata</i>)	7.0			
New England aster (<i>Aster novae-angliae</i>)	7.0	p c		

p = petal, c = center

Wet Site Mix-- to be used for: *flooded riparian borders, wet sites, poorly drained sites.*
(Somewhat poorly drained and Poorly drained soils)

	% of	bloom color	bloom period	Color composition (by bloom period)
Alsike clover* (<i>Trifolium hybridum</i>)	4.0		early	
Crimson clover* (<i>Trifolium incarnatum</i>)	5.0			
Virginia spiderwort (<i>Tradescantia virginiana</i>)	5.0			
Bee balm (<i>Monarda didyma</i>)	4.0		mid	
Monkey flower (<i>Mimulus ringens</i>)	6.0			
Yellow sweet clover* (<i>Melilotus officinalis</i>)	4.0			
Swamp milkweed (<i>Asclepias incarnata</i>)	5.0			
New York aster (<i>Aster novi-belgii</i>)	11.0	p c		
Great blue lobelia (<i>Lobelia siphilitica</i>)	5.0		late	
Common boneset (<i>Eupatorium perfoliatum</i>)	10.0			
Cardinal flower (<i>Lobelia cardinalis</i>)	4.0			
Blue vervain (<i>Verbena hastata</i>)	11.0			
Wingstem / yellow ironweed (<i>Verbesina alternifolia</i>)	11.0			
Joe-pye weed (<i>Eupatorium fistulosum</i>)	10.0			
Mistflower / Wild ageratum (<i>Conoclinium</i>)	5.0			

p = petal, c = center

Due to seasonal changes in seed availability, not all seed will be available year round. As a result, apply the following guidance to all pollinator seed mixes:

1. Include at least **three plants from each bloom period** (early, mid, or late) in the mix.
2. **Include as many different plants as possible** from each group in the mix. Increasing the diversity of plants will increase the variety and number of pollinators that use the planted area.
3. The % of each plant in the mix will vary based on the total number of plants used. However, the % of seed identified in the table is the **minimum** allowable percentage. For non-native species (marked with an *), only the percentage of the

- seed listed above should be used – no more, no less. For example, clover will only be 2% of the final mix, purple giant hyssop will only be 8% of the mix, etc.
4. Seed will be planted at a minimum rate of 2 lbs/ac, maximum rate of 4 lbs/ac.

For additional information regarding specific beneficial insects and their habitat requirements, refer to:

Cornell University Biological Control – A Guide to
Natural Enemies in North America

<http://www.nysaes.cornell.edu/ent/biocontrol>

Manage Insects On Your Farm: A Guide to Ecological Strategies

<http://www.sare.org/publications/insect/insect.pdf>

University of California UC IPM Online Statewide Integrated Pest
Management Program

<http://www.ipm.ucdavis.edu/PDF/PESTNOTES/pnbiocontrol.pdf>

Cropland – Actual/acre

Not compatible with ANM04, ANM05, ANM06, ANM07,
ANM08, ANM12, ANM13, ANM14, ANM19, ANM21, ANM22, PLT01,
PLT14

The unit in which this enhancement will be scheduled will be based only on the acres of habitat developed. You must identify the actual acreage and location where this enhancement will be adopted.

Additional Guidance for 2011-1

**Additional compatibility issue, see enhancement in Green.