

Plant Enhancement Activity – PLT01 – Establish pollinator habitat



Enhancement Description

Seed nectar and pollen producing plants in non-cropped areas such as field borders, vegetative barriers, contour buffer strips, waterways, shelterbelts, windbreaks, conservation cover, and riparian forest and herbaceous buffers.

Land Use Applicability

Cropland, pastureland, rangeland and forestland

Benefits

Increased habitat for pollinators will improve fruit set, size and quality, productivity per acre, biodiversity, beneficial insect populations, and the food base for many wildlife

species. The increased plant diversity of pollinator habitat will enhance wildlife habitat and may increase populations of other beneficial insects, reducing the need for pesticides.

Criteria

Pollinator habitat areas must be at least ½ acre in size for each 40 acres of cropland, pastureland, rangeland or forest land. Where the applicable land use is greater than 40 acres, the 0.5 acre habitat areas must be interspersed in the larger land use areas. For example, for an 80 acre cropland parcel, the required 1 acre of habitat should not be located in one corner of the 80 acre field. The pollinator habitat areas must include a minimum of nine flowering plant species including forbs, legumes, vines, shrubs, and/or trees.

1. Lists of plants suitable for pollinator habitat will be developed by NRCS at the state level. The lists must emphasize as many native species as practical.
2. The habitat planting will include (as a minimum) three early, three mid, and three late flowering species from the NRCS state list. Plants that produce toxic nectar will not be planted.
3. Site preparation and plant establishment shall be accomplished according to the appropriate NRCS conservation practice and specifications. Management and/or maintenance activities such as mowing, haying, burning, or grazing must be conducted outside of the growing season or bloom period. Maintenance should be done on less than 1/3 of the acreage during any given year.
4. Insecticides and herbicides should not be used in the habitat planting area. Even natural herbicides and botanical insecticides can harm bees and other pollinators. If adjacent crop areas are treated use one or more of the following actions to limit insecticides in the pollinator habitat area:
 - a. Create insecticide free buffers in the first 25 feet of crop area,
 - b. Use application methods that minimizing drift to the adjacent habitat,



- c. Apply active ingredients in the evening when most insect pollinators are not active.
5. The planted habitat areas must be regularly inspected for invasive and/or noxious plants or other plants that may compromise the purpose of this enhancement. Undesirable species should be controlled using the least damaging method.
6. Any other use of the pollinator habitat area must not compromise its intended purpose.

Documentation Requirements

1. A map showing the location and dimension of the pollinator habitat areas
2. A list of pollinator species planted
3. List of maintenance activities carried out to manage the pollinator habitat areas

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Pollinator Areas Overview

Habitat for pollinators can be encouraged by the use of nectar producing plant corridors in non-cropped areas such as field borders, vegetative barriers, contour buffer strips, waterways, shelterbelts, windbreaks, riparian forest and herbaceous buffers.

Agricultural productivity is directly dependent on pollinators. Approximately 75% of all cultivated crops require pollination to produce seed and fruit. The majority of pollinators are insects but some birds and bats also play a major role. The services of native pollinators are worth an estimated \$4.1 billion dollars a year to U.S. agriculture. Both native and domestic pollinators are disappearing, largely due to habitat loss. Nectar corridors can provide the proper habitat for pollinators as well as other resource benefits.

Benefits

Increased habitat for pollinators will increase plant health and vigor, improve fruit set and overall quality, increase fruit size, increase productivity per acre, increase biodiversity, increase the population of beneficial insects, decrease the use of pesticides, enhance wildlife habitat, and increase the prey base for many wildlife species.

Criteria for Pollinator Areas Enhancement Activity

This enhancement requires site preparation and the planting of flowering trees, shrubs, forbs, legumes, and vines. It will also require management and maintenance of the activity.

Planting and Maintenance

If the area to be planted has introduced grasses, such as bahiagrass, bermudagrass, centipede, or other grasses that form thick sods, then it must be sprayed with an appropriate herbicide to kill these grasses before planting. Seedbed should be prepared by disking. Broadcast seed on the surface of very finely-disked and firmly rolled (fully settled) conventional seedbed, then roll seed into the top 1/4 to 1/2 inch of topsoil. Do not disk or rake in seed, as this would cover the small seeds too deeply preventing germination. Do not apply fertilizer at planting, as this increases unwanted competition.

Once established, management or maintenance activities such as burning or grazing should be conducted to maintain the habitat but outside the nesting dates of April 1 – July 15 and they must be done outside of the growing season or period of bloom. For example, incidental grazing will only be allowed during winter as part of gleaning of crop stubble in adjoining fields. Burning is the preferred method of maintaining habitat.

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Most economical and available

Early Flowering Species

Illinois Bundleflower (<i>Desmanthus illinoensis</i>)	1 pound per acre
Smooth Beardtongue (<i>Penstemon laevigatus</i>)	1/8 pound per acre
Butterfly Weed (<i>Asclepias tuberosa</i>)	1/8 pound per acre
Lanceleaf Tickseed (<i>Coreopsis lanceolata</i>)	2 pounds per acre
Purple Coneflower (<i>Echinacea purpurea</i>)	2 pounds per acre

Mid-Season Flowering Species

Partridge Pea (<i>Chamaecrista fasciculata</i> / <i>Chamaecrista nictitans</i>)	2 pounds per acre
Golden Tickseed (<i>Coreopsis tinctoria</i>)	1 pound per acre
Tall Tickseed (<i>Coreopsis tripteris</i>)	1/8 pound per acre
Swamp Milkweed (<i>Asclepias incarnate</i>)	1/8 pound per acre
Black-Eyed Susan (<i>Rudbeckia hirta</i>)	1 pound per acre
Joe-Pye Weed (<i>Eupatorium fistulosum</i>)	1/8 pound per acre
Milkweed (<i>Asclepias syriaca</i>)	1/8 pound per acre
Maypop Vine (<i>Passiflora incarnate</i>)	1/8 pound per acre

Late Flowering Species

Swamp Sunflower (<i>Helianthus angustifolius</i>)	1/2 pound per acre
Cardinal Flower (<i>Lobelia cardinalis</i>)	1/8 pound per acre
Heath Aster (<i>Aster pillosus</i> / <i>Symphotrichum pilosum</i>)	1/8 pound per acre
Blue Verbena (<i>Verbena hastata</i>)	1/2 pound per acre
Pine Barren Goldenrod (<i>Solidago fistulosa</i>)	1/8 pound per acre

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Additional Plants Include*:

<u>Species</u>	<u>Bloom period</u>	<u>Shade tolerance</u>	<u>Site Condition Range **</u>
Crabapple (M. angustifolia)	March-April	Full sun	Moist, well drained
Apple	March-April	Full Sun	Moist, well drained
Dogwood, silky (C. amomum)	March-May	Shade tolerant	Moist to poorly drained
Plum, Chickasaw	March-May	Shade tolerant	Dry, well drained
Spicebush (L. benzoin)	April	Prefers shade	Moist, somewhat poorly drained
Plum, American (wild)	April-May	Shade tolerant	Moist, well drained
Peach	March-May	Full Sun	Moist, well drained
Chinkapin (C. pumila)	April-June	Partial shade	Dry, well drained
Indigobush (A. fruticosa)	April-June	Full sun	Moist, moderately well drained
Sumac, fragrant (R. aromatica)	April-June	Partial shade	Dry, well drained
Sumac, shining (R. capallinum)	June-July	Full sun	Dry, well drained
Sumac, staghorn (R. hirta)	June-July	Shade tolerant	Dry, well drained
Beautyberry (C. americana)	May-July	Partial shade	Moist, moderately well drained
Elderberry (S. canadensis)	May-July	Partial shade	Moist, somewhat poorly drained
Persimmon (D. virginiana)	May-June	Sun to partial shade	Dry to Moist
Viburnum, mapleleaf	May-August	Shade tolerant	Moist, well drained to dry
White Clover ***	April – Oct.	Shade tolerant	Moist
Crimson, Ball Clovers***	April – June	Full Sun	Moist, well drained
Chicory***	May- Oct.	Full Sun	Moist, well drained

* A minimum of ¼ ac of tree/shrubs mixed with above early-, mid-, or late-flowering species. Refer to NRCS Conservation Practice Standard, 422, Hedgerow Planting for guidance on planting recommendations.

** Moist = wetter than moderately well drained soil; good moisture holding capacity; generally not hydric.

Dry = Drier than a well drained soil, tending toward droughty.

Poorly drained = generally a hydric soil due to persistent high water table sometime in growing season.

Somewhat poorly drained = Wetness limited soil (2w or 3w) but usually not hydric.

*** When Crimson or Ball clovers are planted as pure stands, they should be managed to promote mature seed production and natural reseeding.

**** Seeding rates should be reduced by 66% when planted in a mixture. Use full rate when planted separately as a pure stand within the plot. Refer to NRCS Conservation Practice Standard, 512, Pasture and Hayland Planting, for planting guidelines.

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Producer Name:					Date:	
Tract Number:					County:	
Total Cropland Acres in Tract:			Total Forestland Acres in Tract:		Total Pasture Acres in Tract:	
Field Number	Planned Habitat Acres	Planned Habitat Type *	Planned Mixture	Planned Shrub Species	Cropland Insecticide Setback Required? (Y or blank)	Grazing Plan Required? (Y or blank)

* Habitat Types are (1) field border, (2) contour buffer strips, (3) hedgerow, (4) waterway, (5) odd field areas, (6) add to riparian zone.

The submitted information accurately represents the implementation of this enhancement.

SIGNATURE: _____ **Date:** _____

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References:

The following references provide additional guidance for plant selection for implementing this enhancement:

Pollinator Partnership. Selecting Plants for Pollinators, A Regional Guide for Farmers, Land Managers and Gardeners in the Southeastern Mixed Forest Province.

<http://www.pollinator.org/PDFs/SoutheastMixedForest.rx4.pdf>

Pollination: Plants for Year-round Bee Forage

<http://www.ent.uga.edu/Bees/pollination/plants-year-round-forage.html>

Fruit Culture in Alabama, Fruitfulness and Pollination, ACES Publication ANR-0053-E

<http://www.aces.edu/pubs/docs/A/ANR-0053-E/>

Georgia Coastal Plain Native Plants For Butterflies and Moths (Lepidopteron Pollinators)

<http://www.coastscapes.org/Library/Georgia%20Coastal%20Plain%20Native%20PlantsButterfliesandMothsNoReference.pdf>

Beyond Butterflies: Gardening for Native Pollinators

http://pubsadmin.caes.uga.edu/files/pdf/B%201349_1.PDF

DRAFT: Native Understory Forbs and Grasses for Pollinator and Insect Utilization in Southeastern Longleaf Pine Ecosystems (USDA NRCS publication, Jimmy Carter Plant Materials Center and East National Technology Support Center). This document also contains information on seed costs and suppliers.