

## **Plants Enhancement Activity – PLT08 – *Habitat Development for Beneficial Insects for Pest Management***



### **Enhancement Description**

Establishment of habitat to attract and support populations of beneficial insects that provide natural suppress of undesirable insects or other pests. Beneficial insects used for pest management include insect arthropod, predators and parasitoids. Habitat requirements include shelter and food that attract and support beneficial insects. These can include trap crops and insectary strips (both permanent and annual.)

### **Land Use Applicability**

This enhancement is applicable on cropland including orchards and vineyards.

### **Benefits**

Environmental benefits will be operation specific. Benefits may include but are not limited to improved water quality through a reduction in the amount and type of pesticides used, reduced risk of chemical residue on farm products and less exposure of farm worker to pesticides. Increase in habitat for beneficial organisms will also provide food and shelter for pollinators and other wildlife species creating a more biologically diverse farm.

### **Criteria for *Establishing Beneficial Organism Habitat***

#### Planning Criteria

(Should be based on information available through the state land grant university or other known reputable sources such as “Appropriate Technology Transfer for Rural Areas (ATTRA)

- Identify pest species and associated beneficial insects targeted for control
- Inventory existing conditions on the farm to determine habitat needs of selected beneficial, include:
  - Permanent Insectary sites
  - Augmentation of existing hedgerows, field borders or other odd areas adjacent to fields
  - Trap crop areas
- Plant selection matched to attract identified beneficial insect
- Amount of habitat required based on the beneficial insect dispersal ability and can be either annual or perennial cover.
- Lists of plants suitable for beneficial insect habitat will be developed by NRCS at the state level. The lists must emphasize as many native species as practical.



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#### Planting Criteria

- Site selection should consider existing weed pressures and available methods of control, delay planting if weed pressure requires excessive treatment.
- Site preparation and plant establishment shall be accomplished according to the appropriate NRCS conservation practice and specifications.
- Successful establishment is determined by comparing field conditions with published plant density recommendations for the species for the region.

#### Operation and Maintenance

- 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.
- Insecticides and herbicides should not be used in the habitat planting area. Even non-synthetic herbicides and botanical insecticides can harm beneficial insects. If adjacent crop areas are treated use one or more of the following actions to limit insecticides in the pollinator habitat area:
  - Create insecticide free buffers in the first 25 feet of crop area,
  - Use application methods that minimize drift to the adjacent habitat,
  - 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 method least damaging method.
- If habitat is part of an organic farming operation, only materials allowed according to the USDA National Organic Program's National List of Allowed and Prohibited Substances may be used.

#### Documentation Requirements

##### Written plan documenting

- Targeted pest with associated beneficial insects
- A map showing the location and dimension of the beneficial habitat areas.
- A list of beneficial insect habitat species planted.
- List of maintenance activities carried out

**ALABAMA SUPPLEMENT TO ENHANCEMENT PLTO8 HABITAT DEVELOPMENT FOR BENEFICIAL INSECTS**

**PLANTS THAT SUPPORT BENEFICIAL INSECTS IN ALABAMA**

Name Of Beneficial Insect	Prey	Plants and Methods To Attract
Ladybugs	Adults and larvae eat aphids, scales, mites, and eggs of some pest insects.	Grow pollen and nectar plants like buckwheat, butterfly weed, crimson clover, cinquefoil, coriander, dill, goldenrod, yarrow, cosmos, hairy vetch, sweet alyssum, native grasses, rye, coreopsis. Spray non-crop plants with sugar water. Provide water in a pan filled with gravel during dry periods.
Hover flies	Larvae feed on aphids and small caterpillars.	Grow pollen and nectar plants in the Umbelliferae family such as fennel. Other plants include buckwheat, yarrow, dill, spearmint, parsley, cinquefoil, coriander, or Queen Anne's lace. Allow some broccoli to flower. Plant tall plants like sunflower so flies can hover.
Robber flies	Adults capture flying insects. Larvae live in soil and feed on soil pests like grubs.	Plant flowering plants as a nectar source.
Ground beetles	Feed on snails, slugs, cutworms, and other caterpillars, and on potato beetle eggs and larvae.	Grow pollen-providing plants. Grow dense cover crops to provide shelter. Incorporate grass or stone walkways between garden beds. Also include clovers, and amaranths.
Big-eyed bugs, flower bugs	Adults eat aphids, small caterpillars, mites, turf pests, thrips, and other small insects.	Grow pollen and nectar plants like sweet alyssum, alfalfa, goldenrod, and caraway, fennel, spearmint, goldenrod, marigold and knotweed, cosmos. Cool-season plants such as berseem or subterranean clovers
Assassin bugs	Both nymphs and adults use their needle-like stylets to suck fluids from and kill aphids and other small insects and their eggs. Larger wheel bugs attack large caterpillars.	Grow perennials to provide permanent shelter plantings such as in hedgerows.
Lacewings (green and brown)	Larvae eat aphids, scales, thrips, mites, and eggs of some pest insects.	Plant dill, sunflowers, caraway, coriander, cosmos, fennel, sweet alyssum, and Queen Anne's lace, goldenrod flowers or sunflowers. Spray sugar water on non-crop plants to attract adults.

Tachinid flies	Larvae are parasites of squash bugs, cutworms, Japanese beetles, and many caterpillars.	Grow plants in the Umbelliferae family and other small-flowered plants like sweet alyssum, parsley, buckwheat, pennyroyal and spearmint.
Wasp parasites (non-stinging to humans)	Adults inject eggs inside caterpillar prey; wasp larvae develop, eventually killing the host. Some species parasitize insect pest eggs.	Grow pollen and nectar plants in the Umbelliferae family, also coriander, caraway, fennel, mustard, dill, yarrow, mints and herbs. White clover and other legume cover crops planted adjacent to garden beds also attract parasites. Provide shelter with tall plants like sunflowers. Let some broccoli and radishes flower.
Aphid midge Aphid parasites	Aphids Aphids	Dill, mustard, thyme, sweet clover, Anise, caraway, dill, parsley, white clover, mustard family, Queen Anne's lace.
Damsel bug	Aphids, thrips, small caterpillars, leafhopper	Sunflower family of plants, goldenrod, yarrow, alfalfa.
Minute Pirate Bug	Thrips, spider mites, corn earworm, small caterpillars, leafhoppers	Queen Anne's lace, coriander, sunflower family, hairy vetch, crimson clover, buckwheat, willows, shrubs. Maintain permanent plantings in hedgerows.

References:

Garden Bugs, ANR-1045, <http://www.aces.edu/pubs/docs/A/ANR-1045>

Plants That Attract Beneficial Insects, [http://www.farmerfred.com/plants\\_that\\_attract\\_benefi.html](http://www.farmerfred.com/plants_that_attract_benefi.html)

Farmscaping to Enhance Biological Control <http://attra.ncat.org/attra-pub/PDF/farmscaping>

**ALABAMA SUPPLEMENTAL INFORMATION FOR THIS ENHANCEMENT**  
**PLT08 – *Habitat Development for Beneficial Insects for Pest Management***

<b>Producer Name:</b>	<b>Date:</b>
<b>Tract Number (s):</b>	<b>County:</b>

Attach plan that documents:

- Targeted pests with associated beneficial insects
- Map showing locations of plantings
- List of beneficial insect habitat species planted
- List of maintenance activities conducted

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The attached documentation accurately represents the implementation of this enhancement.

**SIGNATURE:** \_\_\_\_\_