United States Department of Agriculture
Natural Resources Conservation Service

2013 Ranking Period 1

Plant Enhancement Activity – PLT15 – Establish pollinator and/or beneficial insect habitat

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

Land Use Applicability
Cropland, Pastureland, Rangeland, 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.

Conditions Where Enhancement Applies
This enhancement applies to all crop, pasture, range or forest land use acres.

Habitat areas must be at least 0.5 acres for each 40 acres of the selected land use. Where the selected land use is less than 40 acres, the required amount of habitat will be reduced according to the ratio of 0.5 acres to 40 acres. Where the selected land use is greater than 40 acres, the 0.5 acre habitat area(s) may be a single site or interspersed sites in the larger land use area as agreed to by the NRCS State Biologist.

Criteria
Establish habitat for pollinators (A) and beneficial insects (B) as described below:

A. Pollinators
   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 including forbs, legumes, vines, shrubs, and/or trees. Plants that produce toxic nectar will not be planted.
   3. Any other use of the pollinator habitat area must not compromise its intended purpose.

B. Beneficial insects
   1. Identify pest species and associated beneficial insects targeted for control.
   2. Inventory existing conditions on the farm to determine habitat needs of selected beneficial insects, including:
      a. Permanent insectary sites,

   b. Augmentation of existing hedgerows, field boarders or other odd areas adjacent to fields, and/or
   c. Trap crop areas .
3. Plant selection should be matched to attract identified beneficial insects.
4. Beneficial insect habitat may include either annual or perennial cover. If annual cover is used, the cover must be replanted each year during the life of the contract.
5. 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.

C. Planting Criteria for both pollinators and beneficial insects
1. Site selection should consider existing weed pressures and available methods of control, delay planting if high weed pressure requires aggressive treatment.
2. Site preparation and plant establishment shall be accomplished according to the appropriate NRCS conservation practice and specifications.
3. Successful establishment is when the planting is providing at least 80% soil cover, visually estimated, and that the resultant cover consists primarily of the early, mid, and late blooming species planted for pollinators and/or other beneficial insects.
4. Insecticides should not be used in the habitat planting area.
5. Herbicides are allowed during site preparation (prior to planting) when it is necessary to eliminate competing weeds from a planting area in order for nectar and pollen producing plants to establish.
6. After a pollinator enhancement has been planted, herbicides may be spot-sprayed to remove broad-leaf weeds, or grass-selective herbicides may be applied to larger areas to eliminate persistant weedy grasses. Similarly, the entire site may be mowed in the first year post-planting to reduce annual or biennial weeds that persist (site should be mowed just before dominant annual weeds flower).

D. Operation and Maintenance for both pollinators and beneficial insects
1. 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, except during the first year post-planting.
2. Insecticides should not be used in the habitat planting area. Even non-synthetic botanical insecticides can harm beneficial insects. If adjacent crop areas are treated with insecticides 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 minimize drift to the adjacent habitat,
   c. Apply active ingredients in the evening when most insect pollinators are not active.
3. 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, for example, spot-spraying with herbicide or physical removal.
4. 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.

Adoption Requirements

This enhancement is considered adopted when pollinator or beneficial habitat has been established that meet or exceed the above criteria, respectively, and the established habitat is maintained and functioning as intended.

Documentation Requirements

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

References

Mader, E., M.D. Shepherd, M.Vaughan, S.H. Black and G. LeBuhn. 2011. Attracting Native Pollinators: Protecting North America's Bees and Butterflies. Storey Publishing. North Adams, MA. pp 372.

Winston, M. 1987. The Biology of the Honey Bee. Harvard University Press. Cambridge, MA. pp 281.

Spivak, M., E. Mader, M. Vaughan, N.H. Euliss Jr. 2010. The plight of bees. Feature Article. Environmental Science & Technology. 10.1021/es101468w

Mader, E, M. Vaughan, M. Shepherd and S. Hoffman-Black. 2010. Alternative Pollinators: Native Bees. ATTRA. IP126.

Delaplane, K.S. and D.F. Mayer. 2000. Crop Pollination By Bees. CABI Publishing. New York, NY. 344 pp.

Reidl, H., E. Johansen, L. Brewer and J. Barbour. 2006. How to Reduce Bee Poisoning from Pesticides. Pacific Northwest Extension Publication 591. Oregon State University. Corvallis, OR. pp 28. http://extension.oregonstate.edu/catalog/pdf/pnw/pnw591.pdf

National Research Council – Committee on Status of Pollinators in North America. 2007. Status of Pollinators in North America. Washington, D.C.: The National Academies Press. pp 307.

Society for Range Management. 2011. Pollinators in Rangelands. Special Issue. Rangelands. Society for Range Management. Volume 33. Number 3 (June).

Mader, E., M. Spivak and E. Evans. 2010. Managing Alternative Pollinators: A guide for growers, beekeepers, and conservationists. Sustainable Agriculture Research and Education. Handbook 11. Beltsville, MD.

USDA-NRCS Plant Materials Program. Plants for Pollinators. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/plantsanimals/pollinate/?cid=nrcs143_022326

Xerces Society Pollinator Conservation Program. Pollinator Conservation Resource Center. http://www.xerces.org/pollinator-resource-center/

PLT15 - Establish pollinator and/or beneficial insect habitat:

- Only establishment of pollinator habitat will be used in Indiana.
- Select species mixes from Tables 4a, 4b, 5 and 6 from the IN FOTG Upland Wildlife Habitat Management (645): http://efotg.sc.egov.usda.gov/references/public/IN/645_Upland_Wildlife_Habitat_Management.pdf

  Note that species which are 1) beneficial to pollinators, 2) have matching flowering periods, and 3) meet site soil moisture conditions, are acceptable substitutes. See the IN NRCS Seeding Tool (http://efotg.sc.egov.usda.gov/references/public/IN/IN_NRCS_Seeding_Calculator.xlsm) or the IN Biology Technical Note - Upland Wildlife Habitat (http://www.in.nrcs.usda.gov/intranet/TechnicalNotes/technicalnotes.html) for additional species.