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January 4, 2016

UTAH TECHNICAL GUIDE
450-III
NOTICE UT238

SUBJECT: Pollinator Habitat Guidance

Purpose: To provide guidance for developing pollinator habitat area in Utah.

Effective Date: Begin using immediately.

Background: Over 30% of our food relies on insect pollination which is overwhelmingly provided by bees. The annual value of crops pollinated by wild, native bees in the U.S. is estimated at $3 billion. Native bees have declined due to many factors including habitat loss and the careless use of pesticides. At the same time, managed colonies of European honey bees have suffered a 50% decline and face immediate threats from invasive diseases, pests, and Colony Collapse Disorder.

Wild native bees number more than 4,000 species in North America and over 1,000 species in Utah. Recent research has shown that these native bees can contribute substantially to crop pollination on farms where their habitat needs are met. As European honey bees become scarcer and hives become more expensive, restoring habitat for native pollinators becomes even more important. Individual native bee species are susceptible to specific pests, but diverse communities of pollinator species have been shown to provide consistent pollination services. Declines in one species can be buffered by other species that are flourishing.

With the 2014 Farm Bill, Congress again recognized that pollinators are a crucial part of healthy agricultural and natural landscapes. The 2014 Act retains all of the pollinator conservation provisions of the 2008 Farm Bill and adds targeted support for the creation of honey bee habitat. For more information, see *Using 2014 Farm Bill Programs for Pollinator Conservation* (Biology Technical Note No. 78, 2nd Ed., May 2015) http://plants.usda.gov/pollinators/Using_2014_Farm_Bill_Programs_for_Pollinator_Conservation.pdf.

Resource Concerns

Pollinator resource concerns should be considered in context of forage (floral resources), nest sites, and pesticide use. The appropriate assessment tools for pollinator resource concerns, functioning as pollinator WHEGs, are the Pollinator Habitat Assessment Form and Guide Natural Areas and Rangelands (2014), and Pollinator Habitat Assessment Form and Guide Farms and Agricultural Landscapes (2015) located in eFOTG/ Section I/ References and Tools/ Pollinators. While an increase in the assessment score is desirable, planners should work with the producer to identify and address as many of the limiting factors to pollinators as possible that are under the participant's control. For example, while planting of flowering plants and management of nest sites would

increase the Pollinator Habitat Assessment Form score, inappropriate use of pesticides could have an overall negative effect on pollinators. All of these considerations should be assessed and documented on the CPA-52 under the resource concern *Animals: Inadequate Habitat for Fish and Wildlife* and/or *Degraded Plant Condition – Undesirable Plant Productivity and Health.*

Conservation Practices

Numerous planting, structural, and habitat management practices may be used to benefit pollinators. For a complete list see *Using 2014 Farm Bill Programs for Pollinator Conservation* (link above).

Planting, Maintenance and Management of Pollinator Plantings

Prior to planning any plant establishment, existing desirable native flowering plants should be inventoried, retained and managed for, if feasible. Many plant species already present onsite may be difficult to find as seed or establish from seed and may be expensive. These established plants represent local genotypes and have phenology that is most likely to match the needs of local native bees and other pollinators.

Crop, pasture, or hayland planning areas over 10 ac must have at least 0.5 acres designated and managed for pollinators. If the planning area is between 5 ac and 10 ac, then at least 0.25 acres must be designated and managed for pollinators. If the planning area is less than 5 ac, then at least 0.1 acre must be designed and managed for pollinators. On crop, pasture or hayland that receives greater than 16 inches of precipitation or has supplemental irrigation, a minimum of three early, three mid and three late blooming species should be present. If not, develop a seed mix to meet this goal. On crop, pasture or hayland that receives less than 16 inches of precipitation and is not irrigated, a minimum of two early, two mid and two late flowing species as well as one additional species from any blooming period should be present. If not, develop a seed mix to meet this goal. Remember, when inventorying the number of species and the bloom period, consider the pollinator plant species already present. If those species can be maintained in the pollinator habitat area, they may be counted toward the bloom period totals. Seeded pollinator plant species should be native to the MLRA if possible and should make up at least 60% of the total seeds/ft^2 in a pollinator habitat area. Perennial bunchgrasses, for weed competition and bumblebee nesting, may also be seeded at equal to or less than 40% of the total seeds/ft^2. Use the applicable conservation practice specification sheet located in eFOTG (section-4) for choosing appropriate pollinator plants and bloom periods.

On rangelands, native plant communities should not be disturbed to establish pollinator habitat areas. If the requisite number of pollinator plants exist, then at least 5% of the planning areas could be designated as a pollinator habitat area and managed for pollinators. In disturbed areas, seeding or planting may be done to increase pollinator plant species. When seeding rangelands, one of the following must be met: 1- Develop a seed mix for 5% of the treated acres that will result in 3 early, 3 mid, 3 late flowering plant and one other flowering specie. 2- Develop a seed mix for entire area that will result in a minimum of 5 flowering species with at least 1 early, 1 mid and 1 late flowering specie. Seeded pollinator plant species should be native to the MLRA if possible and include a max of 70% grass and a minimum of 30% flowering plants (by seeds/ft^2).

Management of designated pollinator habitat areas may be accomplished under Upland Wildlife Habitat Management (645), Restoration and Management of Declining Habitats (643) and/or Prescribed Grazing (528). On all land uses, management or maintenance activities disruptive to habitat in pollinator habitat areas such as mowing, haying, or burning must be conducted outside of the growing season or period of bloom and should be neutral or beneficial to pollinator habitat. Grazing may occur on the pollinator habitat area, but must be done as part of a prescribed grazing plan that incorporates the pollinator habitat considerations outlined in this document. Any use of the pollinator habitat areas must not compromise its intended purpose. Guidance, including weed control (see below), should be included on the Operation and Maintenance portion of the conservation practice specification sheets.

Insecticides kill pollinators and should not be used in the pollinator habitat area. Herbicides destroy plants that provide food and shelter for pollinators. Even natural herbicides and botanical insecticides can harm bees. Follow all pesticide labels and minimize use near pollinators. If pesticides are used in adjoining fields, consider applying them in the evening when most insect pollinators are not active. Pollinator plantings should not be established adjacent to crop fields without a 30' spray buffer. Consider use of the Integrated Pest Management (595) conservation practice. The pollinator habitat areas should be regularly inspected by the participant for the presence of invasive or noxious plants which may compromise the intended purpose. Guidance to the participant should be included in the specification sheet on the appropriate practice. Invasive species should be controlled using the least intrusive method. Avoid treatments that will disturb flowers and pollinators during blooming.

Nest Sites

Nest sites are essential to native bee pollinators and should be provided or managed for within or adjacent to the floral resources in the pollinator habitat areas. Native bees require untilled ground, tree snags, downed wood, plants, and small cavities for nest construction. Approximately 70% of native bees are ground nesting, and require nest areas that are sunny, well-drained, minimally disturbed and either bare or sparsely vegetated. The remaining native bees (30%) are cavity nesting, and nest in narrow tunnels in wood or stems. Lack of safe nest sites can be a limiting factor for native bees. Planners should identify existing and potential nest sites as part of the inventory process.

If ground or cavity nest sites are determined to be insufficient, then actions should be planned to increase nest sites. Sufficient nesting sites are indicated by scoring at least half of the available points in the nesting section on the appropriate pollinator WHEG. Small areas with appropriate soil should be set aside and managed for ground nesting. If lacking, snags and downed wood can be used to meet cavity nesting needs. Artificial nest blocks and other nesting structures may also be used to enhance natural nesting habitat.

Technical guidance on providing nest sites may be found in: Agroforestry Note – 34: Enhancing Nest Sites for Native Bee Crop Pollinators. M. Vaughan and S. Black. 2007. USDA National Agroforestry Center. http://plants.usda.gov/pollinators/Enhancing_Nest_Sites_For_Native_Bee_Crop_Pollinators.pdf

More Information

NRCS Utah Pollinator webpage: http://www.nrcs.usda.gov/wps/portal/nrcs/main/ut/plantsanimals/

NRCS "How NRCS is Helping Pollinators" webpage: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate/
NRCS technical documents and online trainings developed to support pollinator conservation efforts: http://plants.usda.gov/pollinators/NRCSdocuments .html
Xerces Society Pollinator Conservation Resource Center: http://www.xerces.org/pollinator-resource-center/

Filing Instructions: This notice will be filed in the FOTG **Section I/ FOTG Notices and Updates/Utah Technical Guide Notices/Pollinator Tech Note 238-2016**

Contact: NRCS Utah State Biologist, (801) 524-4566.

Expiration Date: None.

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