Native Grasslands for Native Pollinators

A Natural Resources Conservation Service Regional Conservation Partnership Program (RCPP) for Tennessee & Kentucky

Pollinators are essential to modern agriculture, and native pollinators are now more essential than ever, but they too are declining.

Early successional habitats such as barrens, prairies, grasslands, shrub-scrub communities, and wet meadows support large and diverse pollinator communities throughout the Southeast.

Our "Native Advantage" RCPP will boost conservation efforts on private lands, especially near existing wildlife management areas and bobwhite focal areas. The RCPP combines funding support from the Natural Resources Conservation Service (NRCS) with expertise, services, and organization from regional nonprofit conservation groups and state wildlife agencies.

Our Goals

- Assist interested landowners in recovering native grassland plants and animals, which can benefit their operation's value and bottom line.
- Recover some of the hundreds of species of plants and animals, particularly grassland birds, that enrich our lives by making their homes in the native grasslands of Tennessee and Kentucky.

Why be concerned about native pollinators?

- Beyond honeybees and butterflies, many of our native pollinators are less well known. These include species of moths, beetles, flies, bats, and hummingbirds, but the most numerous are solitary bees, such as sweat and carpenter, and bumble bees, which nest in social groups.
- Colony collapse disorder has decimated honeybees across the country. The best pollination alternative to honeybees is the native bees already present in the local environment.
- Around the world insect abundance seems to be declining precipitously, even in places where they have not suffered from habitat loss or competition from invasive species. Native pollinators are no exception, having declined by 23% from 2008 to 2013, based on habitat availability.
- Sadly, the first bumblebee species was recently added to the nation's list of endangered species: the Rusty Patched Bumblebee (*Bombus affinis*) shown at right. This bee, the Monarch butterfly, and a host of additional species have all experienced rapid declines in recent years.
- The majority of native bee species are important pollinators of our food crops.

The "Native Advantage" RCPP for Tennessee & Kentucky

Habitat management for native pollinators

Advantages

- With nearly 3,500 bee species in North America, the diversity of different sizes, pollen-strategies, and behaviors (such as timing of emergence or daily foraging) provides an effective **native bee pollinator for every fruit, nut, and vegetable crop.**
- Managing for **native bee habitat is a good risk management strategy** for farmers of the more than 100 North American crops that require pollination (1 out of very 3 bites of our food). Even meat and dairy industries depend on bee pollination to produce forage seed (alfalfa and clover).
- In many cases, native pollinators are, on a bee-for-bee basis, **more efficient than honey bees**.
- Native bee pollination results in **~$3 billion worth of crop production** annually in the U.S.

Management Practices

- Bee habitat boils down to two major components: **sites for nesting and flowers for foraging**.
- About 70% of native bees excavate underground nests; the remaining 30% nest in wood tunnels.
- **Provide suitable nesting locations** and some additional areas for **foraging outside the period of crop bloom**. Diverse native grasslands are ideal for this purpose.
- **Reduce use of pesticides**, or apply directly to plants in a liquid form rather than aerial spraying or using dust formulations. Avoid pesticide application of crops in flower. **Reduce the use of herbicides**, which can eliminate pollinators' alternative foraging habitats.
- **Provide refugia** from pesticides, such as windbreaks, hedgerows, native grasslands and riparian buffers to serve as safe havens for pollinators to access both foraging habitat and unpolluted nesting sites.

- **Avoid tillage or flood irrigation of bare/partially bare areas**, which may be filled with bee nests.
- **Avoid fumigants** for soilborne crop pathogens or covering large areas with **plastic mulch**.
- **Grazing can be a valuable tool** for managing pollinator habitat. It is most beneficial at low to moderate levels for a short period, followed by ample recovery time.
- Provide brush or stone piles for bumblebees, or allow dead trees to stand for use by wood-nesting bees. Alternatively **build ground nest sites** for ground nesters or purchase commercially available **"bee blocks"** for wood-nesting bees. **Maintenance is essential** to prevent the buildup of parasites or disease.
- Large areas in which **~30% of land is maintained as natural habitat** (e.g. native pasture) appear to result in the greatest increases in pollination by native bees.

Primary source: "Alternative Pollinators: Native Bees," a publication of ATTRA.

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