USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Honey Bee

What is the honey bee and beekeeping?

The European honey bee (*Apis mellifera*) is one of the most familiar insects in North America. This iconic insect is unlike any other bee in the United States (U.S.), with its queen, tens of thousands of workers, and perennial colonies that can persist in a hive year after year.

Introduced to the U.S. in the early 1600s, today over 2 million honey bee colonies are managed by commercial beekeepers who earn their living producing honey or renting their hives to farmers for crop pollination. To meet the pollination needs of farmers, beekeepers move hives all across the country, following the bloom of citrus, almonds, tree fruit, berries, vegetable seed, squash, and melons. At the end of pollination season, each beekeeper returns to a home base where the hives are rested and – if all goes well – a honey crop is produced. The Dakotas are the most important honey bee resting ground in the U.S.

Where in South Dakota do they call home?

Honey bees live in colonies, also known as hives. They are considered domesticated livestock when living within the colonies. While many beekeepers are year-round residents, most honey bees are transported to the state to recuperate after being shipped to other states for pollinator services. Beekeepers maintain apiaries (groups of 20 to 32 hives) in most counties within the state from late spring (May) through fall.

The ideal honey bee apiary is located near high-quality "bee pastures." A bee pasture is any grassy cover containing suitable flowering plants that provide abundant nectar and pollen for honey bees to collect. The nectar is made into honey and the pollen provides protein and nutrients to raise new bees. Beekeepers prefer to locate their apiaries less than two miles from high quality bee pasture and/or an agriculture crop such as sunflower or canola if they know their bees will be protected from insecticide use.

Honey Bee Planting Mix

What is happening to the honey bee?

Recent introduction of numerous honey bee pests, diseases, and widespread insecticide use have taken a toll on honey bee numbers. Neonicotinoid class insecticides are widely used as seed treatments, taken up by and protecting growing plants from insect damage. Neonicotinoids may disrupt the immune system of non-target honey bees, Colony Collapse Disorder (CCD) has decimated populations (>30 percent annually in recent years) of honeybees. Causes of CCD are unknown, but may be caused by a mutated virus, insecticides, travel stress or any combination of stressors.

What are the threats?

- Loss of foraging habitat (bee pastures) to cultivated agriculture (nonforaging crops).
- Loss of foraging plants within bee pastures –indiscriminate use of broadleaf herbicides.
- Loss of foraging plants within bee pastures due to lack of (or inappropriate) management(grasses take over and wildflowers cannot compete).
- Honey bee mortality due to indiscriminate use of insecticides or lack of bee-safe Integrated Pest Management (IPM).

What are the opportunities?

There are several suitable forage species to choose from. Three of the most common commercially available preferred foraging plants are Rocky Mountain bee plant, purple prairie clover, and white prairie clover.

Specific actions landowners can take are:

Wild Forage Establishment/ Enhancement:
Establishing honey bee-friendly forage in cropland and/or enhancing grassy cover within two miles of a known apiary (beekeepers hives) may help this species.

Inter-seeding (stand enhancement seeding) honey bee-friendly flowering plants into existing grassy cover provides honey bee forage.

Ensure that native prairie restoration is developed and implemented that addresses both livestock and honey bee needs. The Natural Resources Conservation Service (NRCS) can help develop a management plan that provides livestock forage and bee habitat.

Cover Cropping:
Establishing cultivated forage in cropland may help this species. Blocks of honey bee-friendly cover crops provide honey bee forage when the cover cropping occurs within two miles of a known apiary (beekeepers hives). The cover crop must be allowed to flower for its full bloom period. The cover crop may be harvested for livestock forage after the bloom period ends.

The NRCS can help develop a cover cropping system that provides preferred honey bee forage and potential livestock grazing.

Integrated Pest Management (IPM):
Since pesticide use on all crops may drift onto adjacent habitat, all agricultural producers play an important role in honey bee protection and conservation, not just growers of fruits, berries, seeds, and nuts. Managed honey bees cannot always be moved out of agricultural areas to protect them from pesticide applications.

Integrated Pest Management is a decision-making framework that uses least hazardous pest management options only when there is a demonstrated need, and takes special precautions to reduce the hazards of pest management activities to people, other living organisms, and the environment. It employs a four-phase strategy: 1) Reduce conditions that favor pest populations, 2) establish an economic threshold of how much damage can be tolerated before pest control must occur, 3) monitor pest populations, and 4) control pests with the most specific pest control option when the pre-established damage threshold is reached.

The NRCS, in collaboration with IPM specialists, can help you identify potential pesticide hazards to honey bees, incorporate honey bee protection into IPM plans, and help you prevent or mitigate identified hazards to honey bees.

Maintain and Improve Healthy Grazing Lands:

Grazing maintains grassland habitat; however, to benefit honey bees, grazing needs to be managed in a manner that encourages honey bee-friendly forage plants.

The NRCS can help develop a grazing system that maintains and/or increases plant health and livestock forage production while also providing abundant flowers for honey bees.

The NRCS has partnered with the Xerces Society's Pollinator Conservation Program to develop the best guidance available for supporting honey bees, as well as, native bees and other pollinators. For more information on the technical support provided by Xerces, visit **www.xerces.org**.

To locate state honey bee information and to find an apiary map please go to **http://arcgis.sd.gov/server/ag/sensitivesites/default-map.aspx**

To learn more please contact your local NRCS office, or go to **sd.nrcs.usda.gov**