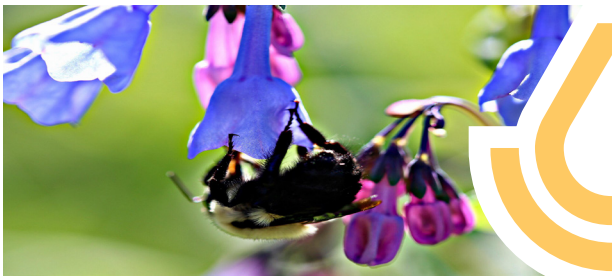
Pollinators

SD-FS-60



WHAT ARE POLLINATORS AND WHY SHOULD YOU CARE?

The majority of pollinators in South Dakota (SD) are insects such as native bees, honey bees, beetles, flies, moths, and butterflies. Through the process of foraging for pollen and nectar, both native and nonnative pollinators provide pollinating services to roughly 85% of flowering plants. Pollinators forage on almost 40 agricultural crop species grown in SD.

Perennial plants such as pollinator-friendly flowering shrubs, legumes, forbs (wildflowers) can provide consistent foraging habitat that supplies abundant pollen and nectar during the spring, summer, and fall. Annual plants, including certain commodity, produce, and cover crops provide abundant pollen and nectar.

Pollen (usually moistened with nectar) is used to feed bee larvae, and nectar is used to fuel the flight of adult pollinators. Many native pollinators, such as native bees, butterflies, and flies, are only active as adults for a few weeks each year. Others, such as bumble bees and European honey bees are active as adults throughout the growing season.

During this active period, adult pollinators need nectar as fuel as they fly and reproduce (generally late April through early October). Larval bees need a ready source of pollen for their development, while butterflies and other groups of pollinators need access to specific host plants and nesting sites.

The average foraging distance for native bees ranges from approximately 200 feet to ½ mile. The optimal foraging distance for nonnative pollinators, such as the European Honey Bee, is less than one mile from the colony, but they can travel much farther if necessary to find the nectar and pollen they need.

Relatively undisturbed conditions with suitable ground, plants, and/or nest structure provide nesting sites. Nest

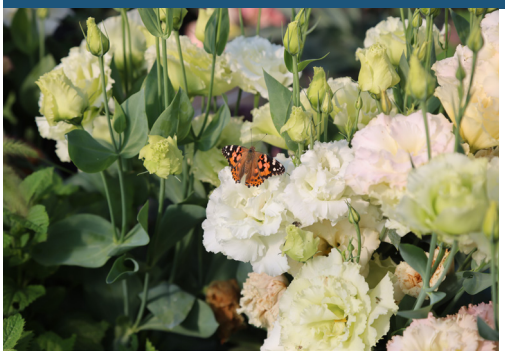
sites located throughout a landscape are important because the further the pollinator must travel the less efficient their foraging and the fewer offspring they can leave behind. If pollinators have to travel long distances for food sources, or if they are stressed (e.g., by exposure to insecticides), then they may be more susceptible to environmental factors such as parasites and disease resulting in possible starvation or reduced populations.

WHAT CAN YOU DO?

A range of methods are available for providing pollinator-friendly foraging habitat and providing or protecting nest site habitats. Visit your local NRCS office for pollinator-friendly plant species and example plant mixes.

Helpful Links

- Service Center Locator: https://www.nrcs.usda.gov/contact/find-a-service-center?state=46&county=
- Field Office Technical Guide (FOTG): https://efotg.sc.egov.usda.gov/#/state/SD/documents
- Bismark Plant Materials Center: https://www.nrcs.usda.gov/plant-materials/ndpmc



Provide pollinator friendly foraging habitat:

- Plant pollinator-friendly conservation cover consisting of large areas of different forb species that bloom during each month of the growing season.
- Plant pollinator-friendly cover crops consisting of large areas of different forbs/legumes that are allowed to go to full bloom during as many months of the growing season as possible.
- Include pollinator-friendly flowering shrubs and trees in shrub-clump plantings and windbreaks.

Provide/protect nest site habitats:

- Provide nest sites such as hollow stems or bare ground within conservation cover, cover crop, and shrub/tree plantings.
- Leave dead wood and standing snags, drill holes in dead wood, and put out trap nests for twig nesting pollinators.
- Install bumble bee nest boxes buried or above ground. Install artificial nest bee boxes.
- Ensure existing odd areas remain undisturbed.

The NRCS' technical specialists can help plan an appropriate seed mix for your operation, Suggested mixes can also be found in the Field Office Technical Guide.

HOW DO PESTISIDES AFFECT POLLINATORS?

Insecticides are differentially toxic to non target species, depending on the active ingredients, the strength and composition of the formulation (dust, powder, liquid), and the behavioral and physiological response of the target

insect. Some pollinator species might not be killed outright by pesticide applications, but they could suffer sublethal effects, including reduced foraging ability that ultimately hampers their productivity.

Short of eliminating insecticide use altogether, producers can reduce risks to pollinators from pesticides in several ways:

- Utilize pesticides as part of a carefully developed "Integrated Pest Management" (IPM) Plan and only when there is a demonstrated need to apply the pesticide (e.g., an economic threshold is reached).
- Choose appropriate pesticides. Some insecticides have active ingredients that are less likely to cause mortality or sublethal effects in pollinators, to have formulations that are less toxic to pollinators (for example, granular powders are less noxious than dust), and to break down more rapidly than others. Microencapsulated formulations should be avoided because they mimic pollen.
- Apply pesticides selectively. Producers may be able to avoid using insecticides during a crop's bloom period, or apply them at night while pollinators are in nests, and apply them on the ground rather than in aerial spray.
- Convert some or all fields to organic production.

For additional Information on how to use Farm Bill programs for pollinator conservation contact your local NRCS office.