

### Do you have a problem with...

- Blossoms that don't make fruit
- Badly shaped fruits
- Undersized fruit
- Fruits having poor taste

### Your crops may not be getting adequate pollination.



*Native pollinators can improve crop production and quality*

Animals or insects that move pollen from the anthers of a flower to the stigma of the same flower or another flower so that seeds are produced are known as pollinators. Common pollinators include bees, butterflies, hummingbirds, moths, some flies, and nectar feeding bats. Unfortunately, populations of these essential animals are declining. Managing areas to benefit pollinators will help them to survive, reproduce, and adequately pollinate your crops.



*Southeastern Blueberry Bee. Photo: University of Georgia*

### Why manage for pollinators?

- Pollination is required by approximately 75 percent of crops.
- Native pollinators are free, and their numbers can be increased in simple and inexpensive ways.
- An increase in pollinator populations may improve the quality of your crops.
- Pollinators help to keep the ecosystem healthy.
- Habitats used by pollinators are attractive to other beneficial insects.
- Practices that benefit pollinators also produce wildlife habitat, reduce soil erosion, and improve water quality.
- Potential for additional farm income.

### How much does it cost?

In order to attract native pollinators, an area must have adequate sources of food, shelter, water and nesting sites. These can be provided through a number of common conservation practices. Costs may vary widely depending upon the habitat already existing on the farm and new practices added.

Typical costs might include:

- Equipment time, fuel, maintenance
- Labor for establishment and annual maintenance
- Purchase and planting of flower and other seeds, shrubs, and trees
- Less crop production area if some areas are no longer cropped

# Managing for Native Pollinators



*Adult butterflies feed on nectar and pollinate flowers and crops in the process.*

## Farming for Crop Pollinators

A study of various native bees in the pollination of watermelons, cherry tomatoes, and hybrid sunflowers in California found that native bees are more effective in pollinating watermelons than the honey bees that farmers routinely rented to pollinate their crops. Although tomato plants are self-fertile, the study showed that cherry tomato plants visited by native bees produced larger and more numerous fruits than those pollinated by wind. Populations of native bees on organic and conventional farms were also studied, with the greatest number of bees found on organic farms where fewer pesticides were applied and where native habitats were nearby.

Management on and around your farm will determine the abundance of native bees and other pollinators. To increase the numbers of pollinators on your farm, three resources are needed: nesting sites, a variety of flowering plants to provide pollen and nectar, and a refuge from insecticides. These can occur, and may already be present, in small patches or marginal areas on your farm. A variety of wildflowers and grasses will provide food; shrubs and dead trees can provide shelter. Focus your efforts on sunny, open, undisturbed meadows, field margins, sunny patches of bare soil, roadsides, ditch banks, and

woodland edges. Open areas can be managed and maintained by mowing, harrow disking, or prescribed burning a portion each year, disturbing part of the area and allowing vegetation from two to three years old to remain on the rest (early successional habitat management).

The first steps to managing habitat for pollinators are simple and inexpensive. First, look for areas on the farm that can support native pollinators. Then, protect flowering plants and nest sites that pollinators are already using. If possible, allow leafy crops to flower if they don't need to be tilled right away. This will provide additional pollinator food sources.

Consider implementing the following practices to further enhance habitat for native pollinators:

- Plant a variety of native wildflowers, trees, and shrubs
- Provide water sources that do not contain pesticides (e.g., bird bath, fountain, dripping faucet, small pond, mud puddle)
- Minimize tillage (conservation tillage/strip till/no till)
- Plant cover crops that include flowering plants (e.g., clover and other legumes)



*Clover cover crops can provide habitat for pollinators*

# Managing for Native Pollinators

## Farming for Native Pollinators

- Leave some areas fallow and/or sow with wildflowers.
- Leave areas next to fields and road edges untilled and unsprayed.
- Create hedgerows with a variety of plants that have overlapping flowering periods.
- Leave some dead trees (snags) standing for shelter and nesting.
- Make and install “bee blocks” for wood-nesting bees.
- Leave piles of bare, mounded soil where ground-nesting bees may build nests
- Develop and follow an Integrated Pest Management (IPM) plan



*An undisturbed wildflower meadow is attractive to people, pollinators, beneficial insects, and other*

## Native Plants

If you decide to plant flowering plants to create foraging habitat, choose native plants that provide flowers, and thus pollen and nectar, throughout the growing season. A sequence of plants providing a diversity of flowers throughout the growing season will support a wide range of pollinator species that feed at different times. Locally native plants are adapted to grow in the climate and soils of your region, are good sources of pollen and nectar for pollinators, and should require very little maintenance. If purchasing plant or seeds, ask where the seed originated and buy those from local sources when possible.

## Pest Management is Important

To protect pollinators, pesticide use should be minimized, especially when crops are flowering. An insecticide applied to eliminate a crop-eating insect may also kill the native pollinators. An Integrated Pest Management (IPM) plan is a critical component of managing habitat for pollinators. This plan can help you to reduce the use of insecticides and herbicides, while maintaining crop yields and populations of pollinators and other beneficial insects.

## Other Benefits

Taking action to protect or provide habitat for native pollinators ultimately impacts the farm’s bottom line. An increase in pollinators should improve the quality of harvested crops. Management changes may also allow you to promote your farm and its products as “wildlife friendly” or sustainable.

There may be additional opportunities to harvest the native flowers and shrubs attractive to pollinators as a source of seeds or cuttings for other habitat restoration efforts. If such a market exists in your area, it could provide another revenue source for your farm.



*Managing for pollinators provides habitat for other wildlife species, such as quail and beneficial lady beetles.*

## SMALL SCALE SOLUTIONS FOR YOUR FARM

### Technical Help Is Available

Your local Natural Resources Conservation Service (NRCS) office has experienced conservationists that can assist you with managing for native pollinators. They can also help you develop a Conservation Plan to solve other problems you have identified on your farm.

There is no charge for our assistance. Simply call your local office at the number listed below to set up an appointment and we will come to your farm.

You may also be eligible to receive financial assistance, through a state or federal program. Your NRCS office will explain any programs that are available so you can make the best decision for your operation. All NRCS programs and services are voluntary.



*Helping People Help the Land*

For More Information Contact the:

**Natural Resources Conservation Service**

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