

Xerces Society Resources

The Xerces Society is a non-profit organization that protects biological diversity through the conservation of invertebrates. We work with farmers and scientists across the country to protect habitat that supports pollinators and to increase populations of native bees so that they can play a larger role in crop pollination. More information at www.xerces.org, where you can download plant lists, fact sheets for specific crops, or a copy of *Farming for Bees*, our detailed guidelines for protecting and providing native bee habitat on farms. You also may purchase the popular *Pollinator Conservation Handbook*, an award-winning book written for a more general audience.



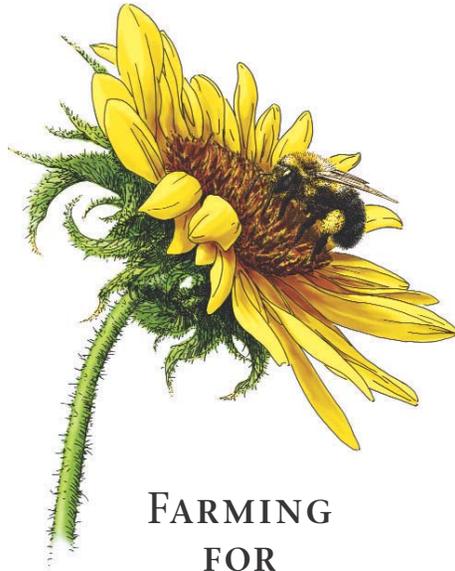
The Xerces Society for Invertebrate Conservation
4828 Southeast Hawthorne Boulevard
Portland, Oregon 97215
503-232-6639

NRCS Programs

The USDA's Natural Resources Conservation Service (NRCS) provides financial and technical assistance to support conservation efforts for pollinators and other wildlife on farms. NRCS programs—such as the Environmental Quality Incentive Program, the Wildlife Habitat Incentives Program, the Grasslands Reserve Program, the Wetlands Reserve Program, and the Conservation Security Program—can help agricultural producers establish pollinator-friendly native species plantings. For information on NRCS conservation programs, contact your local NRCS or conservation district office. The office nearest you can be located at www.nrcs.usda.gov.



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FARMING FOR POLLINATORS

Native Bees and Your Crops

Native bees can be valuable crop pollinators. These wild bees help increase crop yields, and may serve as important insurance when honey bees are hard to come by. In addition, work you do on behalf of pollinators will support other beneficial insects and wildlife, and improvements to pollinator habitat may be eligible for financial support from government programs.

There are simple and inexpensive things you can do to increase the number of native bees living on your land. Inside you'll find more information and a visual guide to identifying and enhancing native bee habitat on your farm.

Principles of Farming for Crop Pollinators

- 1. Know the habitat on your farm.** Using the illustration in this brochure as a guide, look for areas on and around your land that can support native bees.
- 2. Protect flowering plants and nest sites.** Once you know where bees are living and foraging, do what you can to protect these resources from disturbance and pesticides.
- 3. Enhance habitat with flowering plants and additional nest sites.** Adding flowers, leaving some ground untilled, and providing tunnels drilled into wood are all ways to increase the number of native bees on your farm.

I was surprised to learn how native pollinators can make honey bees much more effective at pollinating our sunflowers. As we continue working to increase biodiversity on our farm, we'll be adding features for the wild bees.

—Charlie Rominger
Rominger Brothers' Farms
Winters, California

Three Critical Requirements of Native Bees

Food. Bees eat only pollen and nectar and, in the process of gathering these resources, pollinate our crops. They rely on an abundance and variety of flowers, and need blooming plants throughout the growing season.

Shelter. Native bees also need places to nest, which vary depending on the species. *Solitary* bees construct nest tunnels under bare ground or use narrow beetle tunnels in trees. *Social* bumble bees make use of small cavities, such as old rodent burrows.

Protection from pesticides. Most insecticides are deadly to bees, and unnecessary herbicide use can remove many of the flowers that they need for food.

Insects pollinate two-thirds of all crop species. In the U.S. alone, crops pollinated by insects sell for close to \$20 billion each year.

We have the good fortune of being home to many native pollinators, including blue orchard bees. We believe that our being chemical free helps our bees flourish, and they in turn help produce some of the sweetest berries in the whole country.

—Mandy McCormick
Blue Tara Organic Blueberry Farm
Poplarville, Mississippi

Getting Started

Here are two things that you can do to begin improving habitat for native bees on your land:

Minimize tillage. Many of our best crop pollinators live underground for most of the year, sometimes at the base of the very plants they pollinate. To protect them, turn over soil only where you need to.

Allow crops to bolt. If possible, allow leafy crops, like lettuce, to flower if they don't need to be tilled right away. This gives bees additional food sources.

Going Further

If you want to do more to increase the number of native bees pollinating your crops, you can plant hedgerows with a variety of flowering plants and shrubs, reduce or eliminate your use of pesticides, or work with your neighbors to protect natural areas around your farm.

Exercising Care with Insecticides

If you must use insecticides, choose the most targeted ingredients (for example, Btk for pests like cutworms) and the least harmful formulations (granules, or solutions without emulsifiers). Spray soon after dark, when bees are not active. Keep in mind that even when crops are not in bloom, some of your best pollinators are visiting nearby flowers, where they may be killed by drifting chemicals.

Most native bees are unlikely to sting. The yellowjackets and other wasps you see eating rotting fruit and hanging around picnics are not bees, nor are they significant pollinators.



Riparian Buffers
Food and Shelter

Habitat along streams should contain a diversity of plants. Willows, in particular, will nourish bumble bee queens in the spring so that large numbers of workers are available when crops begin to bloom.



Snags
Shelter

Keeping dead trees standing provides shelter for native bees. Some solitary bees build nests in abandoned beetle tunnels in snags.



Fallow Fields
Food and Shelter

Even small areas of fallow or unproductive land, especially when sown with native flowers, can offer important resources for native bees.



Hedgerows or Windbreaks
Food and Shelter

Creating hedgerows with a wide variety of plants that have overlapping flowering periods will provide bee habitat throughout the growing season and strengthen populations of natural enemies of crop pests.



Natural or Undeveloped Areas
Food and Shelter

Nearby natural habitat may harbor all the native bees needed to pollinate your farm's crops. Consider inviting your neighbors to help with safeguarding these habitats.



Gardens
Food

A vegetable, flower, or herb garden, with a diverse assortment of plants, is a good source of food for pollinators. Be wary of fancy hybrids that may produce little pollen or nectar.

Pesticides

Insecticides kill pollinators outright, and herbicides may destroy plants important for both food and shelter. It is preferable to minimize your use of pesticides and to carefully choose products and application methods.



Temporary Bee Pasture
Food

Planting fields with canola or other inexpensive seed—or allowing crops such as lettuce, kale, basil, and broccoli to bolt—will supply bees with nectar and pollen.



Ponds and Ditches
Food and Shelter

When you create a pond or ditch, leave the pile of excavated soil. Ground-nesting bees may build nests in stable, bare areas of this mounded earth. Planting clumps of native flowers will attract more pollinators.



Field and Road Edges
Food and Shelter

Leave areas next to fields untilled and unsprayed to support flowering plants and provide nest sites for ground-nesting bees.



Cover Crops
Food

Flowering plants—certain legumes in particular—can be included in cover-crop mixes to supply pollen and nectar.



Artificial Nests
Shelter

Building houses for wood-nesting bees is another way to increase the number of native bees in your landscape.