

Pollinators Need Our Help!

“Humanity, for its own sake, must attend to the forgotten pollinators and their countless dependent plant species.”

E. O. Wilson, foreword to *The Forgotten Pollinators*

What is Pollination and Who Does It?

Pollination is a vital stage in the life cycle of all flowering plants. When pollen is moved within a flower or carried from one flower to another of the same species it leads to fertilization. This transfer of pollen is necessary for healthy, productive native and agricultural ecosystems.

Pollination ensures that a plant will produce full-bodied fruit and a full set of fertile seeds.

Without pollination most plants could not produce fruit nor set seed and many of the foods we eat would not be available for us. The plants that many wild creatures rely on for food or shelter would also disappear.

A small percentage of plant species rely on wind or even water to transfer pollen, but the vast majority—88 percent of all plant species—need the help of animals. There are up to 200,000 different species of animals across the world that act as pollinators. Of these, about 1,000 are vertebrates, such as birds, bats, and small mammals; the rest are invertebrates, such as flies, beetles, butterflies, moths, and bees, which are particularly important.

Why Pollinators are Important to Us

The work of pollinators ensures full harvests and seed production from many agricultural crops, and provides for healthy plants grown in backyards, community gardens, and other urban areas.

- Worldwide, of the estimated 1,330 crop plants grown for food, beverages, fibers, condiments, spices, and medicines, approximately 1,000 (75 percent) are pollinated by animals. It has been calculated that one out of every three mouthfuls of food we eat and beverages we drink is the result of pollinator activity.
- More than half the world’s diet of fats and oils comes from oilseed crops. Many of these, including cotton, oil palm, canola, and sunflowers, are pollinated by animals.
- In the U.S., pollination by insects produces \$40 billion worth of products annually.

Pollinators are essential components of the habitats and ecosystems that many wild animals rely on for food and shelter.

- Approximately 25 percent of birds include fruit or seeds as a major part of their diet.
- Plants provide egg laying and nesting sites for many insects, such as butterflies.
- Berries and other fruit form a significant part of the late-summer diet of animals, such as grizzly bears, which fatten themselves in preparation for winter hibernation.

Why Pollination Issues are Worthy of Attention

Pollinators are keystone species—their presence in an ecosystem literally holds it together. Yet they are largely overlooked. The biggest threat to most pollinators is the destruction and fragmentation of their habitat due to human activity. The habitat that remains is often in small, isolated patches and degraded by invasive plant species and changes in land management. This has led to the loss of two important things that pollinators need: wildflowers for nectar and pollen, and nesting sites. In addition, the extensive use of pesticides impacts both the pollinators

and their habitat—insecticides kill pollinator insects, and herbicides reduce forage plant diversity by killing wildflowers. Bacterial and fungal diseases and parasites also threaten pollinators.

What Can be Done?

Pollination and the conservation of pollinators are important issues that unite urban and rural areas, and which touch all of our lives. We can all contribute to a solution to this important emerging conservation issue by making common sense decisions, such as choosing what we buy and how we manage lands, whether we manage a ½ acre yard or a million acre installation. Together, we can work to better understand the needs of our pollinators and to help keep them, and their habitats, healthy.

What the Department of Defense is Doing to Help Pollinators

DoD is concerned about the state of our pollinators, and recognizes that the management of both pollinators and pollinator habitats must be addressed in our Integrated Natural Resource Management Plans (INMRPs). To help DoD natural resource managers and others properly address the issue of pollinators and pollination, the DoD Legacy Resource Management Program funded the *Pollinator & Native Plant Habitat Restoration: A Demonstration Project* at Dyess AFB (see www.dodlegacy.org, AF project #01-104).

The technical report developed for this project, while focusing on Dyess AFB, provides practical information and guidelines that can be used at installations around the world. Study plots were established at a picnic area, marginal lands behind base housing, in non-play areas of the golf course, and in a training field that was unusable due to mesquite infestation.

As the steward of nearly 25 million acres of land, it is important for DoD to promote biodiversity and restore degraded lands to benefit native flora and fauna, and to support mission readiness by providing more realistic and more easily-maintained training lands. The management plan developed for the four different ecosystems at Dyess can serve as a model for other DoD lands with similarly degraded and disturbed systems, and can help installation resource managers increase biodiversity at their facility.

As the report specifies, “Habitat restoration through carefully-planned removal of invasive plant species and augmentation of the native floral population provides a more realistic training environment and advances biodiversity, especially of native invertebrate pollinator populations... It is the interaction between native pollinators and their native plant hosts that sustain and regenerate native plant communities.”

A detailed technical report is available on the DENIX under Conservation – Natural Resources – Animals & Birds

For more information on pollinators and the work being done to protect them, please visit www.nappc.org.