



PRAIRIES AND POLLINATORS

IT'S SIMPLE... sort of. Pollinators need prairies AND prairies need pollinators. Our diverse, native prairies are in danger of disappearing as an ecosystem. Yet, they grow food for many of our insect species. Not only do prairies provide nectar and pollen from wildflowers, they provide shelter and nesting places. Those untidy-looking prairies with their grasses, wildflowers, seed heads, dead plant material and exposed soil provide wildlife with the many resources they need to survive.

In turn, prairie plants need pollinators to create more prairie plants. Of course! AND other prairie wildlife—mammals, birds and reptiles—need insects as part of their diets. Insects are a valuable protein source. It's all connected. But you probably knew that already, right?

EVERY JUNE National Pollinator Week marks a necessary step toward addressing the urgent issue of declining pollinator populations. Pollinator Week has grown into an international celebration of the valuable ecosystem services provided by bees, birds, butterflies, bats and beetles. We invite you to learn more about how to help and celebrate our pollinators and all that they do for us. Join in activities and events in your area, expand your knowledge and take action. To learn more, visit the **Pollinator Partnership** (pollinator.org).

Some other great resources include the **Million Pollinator Gardens Challenge** (millionpollinatorgardens.org) launched by the National Pollinator Garden Network. The Xerces Society's **Bring Back the Pollinators Campaign** (xerces.org/bringbackthepollinators/) includes some steps you can take along with regional information and resources.

WHAT IS POLLINATION ANYWAY?

Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma. The goal of every living organism, including plants, is to create offspring for the next generation. One of the ways that plants can produce offspring is by making seeds. Seeds contain the genetic information to produce a new plant. Since plants can't move around, this process occurs when pollen grains are moved between two flowers of the same species by wind, water or animals.

Flowers are the tools that plants use to make their seeds. Seeds can only be produced when pollen is transferred

between flowers of the same species. A species is defined a population of individuals capable of interbreeding freely with one another but because of geographic, reproductive, or other barriers, they do not interbreed with members of other species. (Source: www.fs.fed.us/wildflowers/pollinators/What_is_Pollination/)

WHY DO POLLINATORS MATTER?

Pollinators are animals (primarily insect, but sometimes avian or mammalian) that fertilize plants, resulting in the formation of seeds and the fruit surrounding seeds. These hard-working animals help pollinate over 75% of our flowering plants, and nearly 75% of our crops. Often we may not notice the bees, wasps, beetles, butterflies, hummingbirds, bats, and flies that carry pollen from one plant to another as they collect nectar. Yet without them, wildlife would have fewer nutritious berries and seeds, and we would miss many fruits, vegetables, and nuts, like blueberries, squash, and almonds, not to mention chocolate and coffee... all of which depend on pollinators. Without pollinators, our diets would be severely limited, and it would be more difficult to acquire the variety of vitamins and minerals that we need to stay healthy.

(Source: Center for Pollinator Research, Penn State College of Agricultural Sciences)

WHO ARE THE POLLINATORS?

BEES AND WASPS are probably the most important pollinators in the world. While honey bees are the most well known, Texas has hundreds of native bee species. Most of these are solitary and not aggressive. Bees and wasps can't see reddish colors very well, but they can see ultraviolet light. Thus flowers visited by bees and wasps are typically yellow, purple, pink or blue with ultraviolet nectar guides. Bees and wasps have an excellent sense of smell, so the flowers they visit are often fragrant. (www.pollinator.org/bees-vs-wasps)

BUTTERFLIES AND MOTHS are the most beautiful pollinators with patterned, often brightly colored wings. Many butterflies depend on plants not just for nectar, but also as food for their larvae. Milkweed butterflies, including the monarch, lay eggs on the same plants that they visit for nectar as adults. Since butterflies are active during the day, they will visit brightly-

colored flowers. Moths, which are mostly active at night, tend to favor white flowers as they can be seen more easily in dim light. Butterflies and moths have long tongues, which helps them drink nectar from flowers with deep tubes or spurs. (www.fs.fed.us/wildflowers/pollinators/animals/butterflies.shtml)

FLIES are probably the most under-appreciated pollinators. Despite the fact that they are the next most abundant group of pollinators (after bees). This is because many pollinating flies closely resemble native bees, with black and yellow bodies and sometimes dense hair-like bristles. The difference is that flies only have one set of wings while bees have one large set and one smaller set. Flies have shorter tongues than other pollinators and tend to favor plants with small, shallow flowers. Some fly-pollinated plants smell pungent or like rotting meat! (discoverpollinators.org/all-about-pollinators/flies/)

BEETLES are unlike other insects because they have one hard pair of wings called an elytra and one pair of membrane-like wings. Beetles are the most diverse insects on earth: one in every five species of animal is a beetle! Only a few groups of beetles are actually effective pollinators. Plants visited by beetles tend to have shallow flowers, pale colors and a strong scent. Beetles prefer eating pollen to drinking nectar. (discoverpollinators.org/all-about-pollinators/beetles/)

HUMMINGBIRDS play an important role in pollination. They have a poor sense of smell but can see reddish colors very well. For this reason, they are attracted to red, pink or orange flowers. They have long, slender bills and tube-like tongues that allow them to drink nectar from tubular flowers. The nectar gives them the energy they need to fuel their high metabolism and they spread pollen in the process. (www.nps.gov/articles/hummingbirds.htm)

BATS visit flowers that are typically open at night, large in size, pale in color, very fragrant (a fermenting or fruit-like odor), and/or contain lots of nectar. Bats feed on the insects in the flowers as well. Over 300 species of fruit depend on bats for pollination. These fruits include mangoes, bananas, and guavas. The agave and the saguaro cactus also depend on bats for pollination. To learn more, visit www.batcon.org.

HOW YOU CAN HELP THE POLLINATORS

ADVICE from the Xerces Society:

- Don't use pesticides. Most pesticides are not selective. You are killing off the beneficial bugs along with the pests. If you must use a pesticide, start with the least toxic one and follow the label instructions to the letter.
- Use native plants local to your climate and soil. Research suggests native plants are four times more attractive to native bees than exotic flowers. They are also usually well adapted to your growing conditions.
- Plant flowers in clumps. Flowers clustered into clumps of one species will attract more pollinators than individual plants scattered through the habitat patch.
- Provide a range of plants that will offer a succession of flowers, and thus pollen and nectar, through the whole growing season.

(In Texas that is almost year round!) Patches of foraging habitat can be created in many different locations, from backyards and school grounds to golf courses and city parks. Even a small area planted with good flowers will be beneficial for local bees because each patch will add to the mosaic of habitat available to bees and other pollinators.

ADDITIONAL ADVICE from Pollinator Partnership:

- Know your soil type and select appropriate plant material.
- Select a site that is removed from wind, has at least partial sun, and can provide water.
- Allow material from dead branches and logs to remain as nesting sites; reduce mulch to allow patches of bare ground for ground-nesting bees to utilize; consider installing wood nesting blocks for wood-nesting natives.

CREATE A POCKET PRAIRIE!

Want to help pollinators and learn by doing? Native prairies are great habitats for our insects. For those of you with small garden spaces, a pocket prairie may be the way to go. Even a small plot can provide food and shelter for butterflies, bees and other insects. Check out Katy Prairie Conservancy's "**Building a Pocket Prairie**" at www.katyprairie.org/buildpocketprairies/. Find tips on selecting and preparing a site, finding plants and seeds, getting others involved, and telling your story.

In Texas, late summer and fall are the best times to plant a native garden. And summer is a good time to plan it and work on site preparation. Our mild winters give seeds and young plants time to become established before the long, hot summer hits.

Check out the **Pocket Prairie Teachers** on Facebook. This group was formed by NPAT Director of Education, Della Barbato to create a network of folks working to create pocket prairies.

One of the best books for inspiration is "**Native Texas Plants: Landscaping Region by Region**" by Andy and Sally Wasowski. A great resource for native seeds for your region is Native American Seed [seedsources.com]. Check out some of the articles at that site while you're there.

To increase your plant knowledge, visit the Lady Bird Johnson Wildflower Center in Austin or go to wildflower.org. Under the Learn section, you'll find information about planting a meadow.

Have fun with your prairie and share your stories with us!

Help Native Prairies Association of Texas with our mission to "Keep Texas Prairie!" Your donation helps fund our mission and outreach programs to help the many grasslands and prairies across this amazing and large state. Visit texasprairie.org to find out more. To learn more,



NATIVE PRAIRIES ASSOCIATION OF TEXAS

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