

Planting Pollinator Friendly Trees and Shrubs



By: Gary Johnson

Angiosperms, the single largest group of plants in North America, comprised of 257,000 species in 14,000 genera worldwide, provide almost all of the food we eat or the food for the other things we eat. Just imagine what our world would be like without those plants: no apples or asparagus, no tomatoes or tulip poplars, no zucchini or zerkova trees. Most of those plants propagate and spread primarily by seeds, which leads to the topic of this little story.

In light of these numbers, imagine the losses if pollination and/or fertilization of those floral parts were inhibited or even modestly reduced...lot of grumbling tummies and fewer offspring.

Some plants depend on wind to carry the pollen from one male floral part to the matched female organ, thank goodness. This is true for the grain crops, grasses and even some trees such as ash (*Fraxinus*). Sometimes the winds and weather is favorable for effective pollination, but other times there can be long periods of rain during the pollination period, making it tough for those teeny pollen grains to find the right home. There's not a lot that can be done for that. However, the vast majority of angiosperms are less reliant on wind.

Birds and the Bees...the other story

Aside from those plants that are largely wind-pollinated (about 10%), many of the tastiest fruits, the most nutritious seeds and the most beautiful landscape plants also rely on pollination to effectively transport those male gametes contained in the pollen grains to the genetically correct partners, those plant of like species. Once that pollen grain lands or is placed on the sticky stigma of the female floral part, the magic begins and the male gamete begins the "long" trek to the ovary and the awaiting female gamete/s.

If the male gamete makes it all the way, finds and unites with that female gamete (fertilization), a zygote is formed which eventually becomes an embryo, aka a seed. If a peanut is the end goal, this is kind of important. However, even if fertilization doesn't complete, the action of pollination and the acceptance of that pollen grain's gamete by the stigma is enough to set in action the "ripening" of the ovary. Reflecting back on that botany course taken years ago, a ripened ovary is botanically classified as a "fruit." If a cherry is the end goal, who cares whether or not the seed is viable (alive)?

Okay, before the purists complain, this is admittedly an overly simplified story of a beautiful, life-saving act, but peer through the clutter and focus on what started it all...pollination. Now, back to the birds and the bees.

It's More Than Honey

For better or worse, honeybees seem to get all of the attention and credit as the premier pollinators. They are pretty good but there are many, many other pollinators; some are specialists while others generalists...they just like pollen. For example:

- About 200,000 different species of animals (worldwide) serve as pollen vendors.
- Of those, 1,000 (more or less) are birds, bats, and small mammals.
- The rest are bees...and flies...and beetles...and butterflies...and moths...and, oh yes, lots of bees. Big bees, small bees, teeny-tiny bees.

Wow! With all of those options, why worry about declining numbers of pollinators? Because pollinators need plants as much as plants need them.

There's No Altruism in Nature

For every favor that pollinators give to plants, there's a return on the investment, ranging from "simply" providing nectar, an essential food for many of the pollinators to overall habitat for feeding, protection and completing life cycles.

There are more than 4,000 species of bees that are native to North America, along with 700+ species of butterflies and moths, 45 species of bats, hummingbirds, and thousands of species of flies and beetles...pollinators all as well as grateful recipients of all that plants have to share. Birds, bats, bees, butterflies and moths use nectar as a food source. Bees in particular use pollen to nurture (feed) their developing young. Moths use pollen as part of their lifecycle to stick their eggs to plant stigmas. And birds, moths, butterflies, flies and beetles use other parts of the host plants as food, protection from predators and breeding grounds.

A Few Easy Steps

It's not hard to create a pollinator attractive landscape. Often, it's more about what is not done rather than what is done. Here are a few basic practices that will help lessen the decline of native pollinators as well as enhance just about any landscape.

1. Water is essential. Small ponds or other water features are essential for the lives of not just people, but every single pollinator. It doesn't need to be elaborate, but it is needed.
2. Lower the expectations for a "picture perfect" landscape. There's beauty in diversity and chaos, and those landscapes are much healthier and better for pollinators than monocultured lawns and evergreen foundation plants. Plant from the ground up with angiosperms that provide a full growing season of constant flowering. Trees and shrubs are part of it. Choose those woody plants that add the interest of fruits and seeds to a landscape: roses, catalpas, serviceberry, any viburnum, black chokeberry. If they have fruits and seeds, they have flowers with pollen and nectar.
3. Dial back on pesticides. This is not just about herbicides that kill dandelions, clover, creeping Charlie, creeping thyme, etc. Any pesticide has the potential for collateral damage, so minimize or avoid fungicides, insecticides, herbicides unless the overall health of the landscape is threatened without their judicious use.
4. Think low-mow whenever it's possible. There are some wonderful (fescues) low maintenance turf grasses and ornamental grasses (sedges) that don't need to be mown every five days, and can be mixed in with clovers, creeping thyme, and prairie forbs that can complete a landscape.

Want More Information?

There are some excellent resources and plant references available on the internet, but these are some of the best:

Native Pollinators. May 2005. A Fish and Wildlife Habitat Management Leaflet. Number 34. From NRCS. This is fascinating. Lots of history and details on pollinators, what they like and how they use plants.

Native Trees and Shrubs for Pollinators. Heather Holm at www.pollinatorsnativeplants.com. A sweet, two-page reference that should be in everyone's notebook. It's set up as a matrix so it's fast and easy to use.

Selecting Plants for Pollinators. A regional guide for farmers, land managers, and gardeners in the Prairie Parkland, Temperate Province. My favorite. Chock full of information and references for plant materials.

M.L. 2014-05i, Wild Bee Pollinator Surveys in Prairie-Grassland Habitats. Appendix 1. Preliminary State Species List of Minnesota Bees. The perfect reference for data-geeks! If you're looking for factoids to spice up the next family dinner, this could be the best thing you ever read. Not much about plants, but overwhelming information on the native bees of Minnesota.

***Note.** I don't provide URL addresses anymore, except in rare occasions (as with Heather Holm's pub). It's just as easy if you type in the name of the pub and source as it is to type in a URL string.

Join us at the August, Minnesota Shade Tree Advisory Committee (MnSTAC) and the MN Urban Forestry Outreach Research and Extension (MN-UFore) open house every year on the Saint Paul campus. Third Thursday of August. Research reviews from 10 a.m. until noon, free lunch, informal tours and classes in the afternoon, scores of pollinator-friendly plants to check out for ideas.

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