Gardening Basics

Building a Garden for Pollinators

Introduction

Courtesy Alan Cressler, Lady Bird Johnson Wildflower Center

People enjoy hosting pollinators, like butterflies and bees, in their home gardens, but beyond appreciating their beauty and grace, there's significant value in providing a proper habitat for them. According to the USDA's Natural Resources Conservation Service, three-fourths of the world's flowering plants and approximately 35% of the world's food crops depend on pollinators to produce fruits, grains, and vegetables, so a third of what we eat is the result of busy bees, birds, butterflies, bats, and other small insects like ants, beetles, flies, moths, and wasps.

Pollinators require three things: food, water, and shelter. Pollinator-friendly gardening practices include maintaining a wide variety of native plants that are hosts for egg, larvae, pupa, and adult stages. Other practices include ensuring windbreaks and overwintering sanctuaries, furnishing a shallow damp area, and reducing or eliminating chemical usage by employing Integrated Pest Management (IPM)*. The larva or caterpillar stage provides food for young songbirds. Caterpillars may chew leaves from some of your garden plants, but a chewed leaf means your garden is participating and your efforts are successful! Bees may nest in the stalks of plants, in piled dried plant material, or in the ground.

Plan Your Garden

Plan your new garden site keeping in mind the focus is to create a habitat for pollinator insects, birds, and other wildlife.

- **What is the size and location of your site?** Is it located near the home or in the middle of the yard? Is it viewable from the front only or from multiple sides? This will help you to decide how many plants you need, what plant heights are best, and where to locate the plants in the site.

- **Understand the light conditions**. Do that by observing the site at various times of the day about 3 to 4 hours apart and noting how much sunlight the area is receiving.
    - Sun = Direct sun all day. Plants labeled as full sun require 6 or more hours of direct sunlight each day
    - Part Sun = Two to three hours without sun. Plants labeled as part sun require at least 3 hours but up to 6 hours of direct sunlight each day.
    - Part Shade = Four to five hours without direct sun. Plants labeled as part shade require some relief from the intense heat of the afternoon sun.
    - Full Shade = No direct sunlight, only reflective or dappled sunlight under trees.
    - Dense Shade = Dark with no reflective sunlight. Shade-loving plants are best in Full or Dense Shade.

- **Understand the surrounding plants**. Is the site under mature trees whose roots must be considered? Are those trees natural hosts for some butterflies' caterpillars (elms, oaks, redbuds, hackberries)? Is the site bordered by a

lawn? The turf can influence what type of edging to use. For example, Bermuda grass will put out runners into your landscape beds so a buried type of landscape edging may be best.

- **How do you plan to irrigate** – drip irrigation (preferred method), sprinkler system, by hand? It is best to design the landscape for water efficiency by using native and adaptive plants, manage the slope to avoid water run-off, and apply mulch to conserve soil moisture and control weeds.

- Plan in a **water source** for the wildlife. It can be simple like a shallow birdbath or pond.

- Include **nesting sites** such as dead or dying branches, some bare earth for ground nesting bees, and nesting boxes.

- **Soil test**. Texas A&M AgriLife Extension provides instructions for taking soil samples and sending them in for analysis to get recommendations for any amendments your soil might need to grow healthy plants – http://soiltesting.tamu.edu/webpages/forms.html

- **Layout your design on paper**. After selecting your plants, add their locations to your design. You may want to use colored markers or pencils to represent the different flowers.

Prepare Your Garden

Courtesy Bruce Leander, Lady Bird Johnson Wildflower Center

Fall is a great time to prep your garden site and plant native and adaptive perennials to give them time to get well established in the cooler temperatures.

Prepare the Soil

- **Remove all spring/summer plants** that have run their course. The plant material should not be composted if it has any fungal or bacterial pathogens.
- **Dig out, do not till under, any weeds or grass** that may have grown in the garden.
- **Turn under the soil** 10” to 12” with a shovel.
- **Replenish the soil** with 2” to 3” of organic material such as fully composted manure and/or finished compost.
- **According to the recommendations of your soil test, add appropriate slow-release fertilizer**.
- **Work compost and fertilizer into the soil** 4” to 6” with a garden fork. Tilling the soil is not recommended as it breaks down the soil structure.

Establish Irrigation

- **Install drip irrigation or adjust your automatic irrigation system** for your new garden.
- **Deeply water the area** for about 2 hours, then allow to dry for 2 days. Now your garden is ready!

Plant Selection

- **Design the garden with a selection of plants that bloom in succession**, from early spring through fall, so pollinators will have a reliable food source. Include evergreen plants in your landscape to provide cover in winter. Consider alternatives for each plant in case your first choice is not available.

- **Consider the height and width at maturity** of the plants in your design.

- **Shop local nurseries and garden centers** to lessen the plants’ travel time to your location

- **Buy seeds from reputable vendors** dealing in native plants. Their catalogs/websites often have a wealth of information about each plant’s size, bloom time, sun exposure needed, and wildlife benefits.

- Monarch Watch's thorough list of butterfly host plants and nectar plants for all the Texas eco-regions. See the column marked "NT" for North Texas plants: https://www.monarchwatch.org/garden/plant-list-tx-monarchwatch.pdf
- Texas A&M AgriLife Top 100 plants for N. Texas: https://www.ntmwd.com/wp-content/uploads/2016/11/top100.pdf
- Trinity Forks Chapter (Denton) of the Native Plant Society of Texas' Plant List for a Butterfly Garden: https://npsot.org/wp/trinityforks/files/2020/03/1-Plant-List-For-Butterfly-Garden.pdf
- Elm Fork Chapter (Denton), Texas Master Naturalist's Enticing North Texas Butterflies: https://txmn.org/elmfork/enticing-north-texas-butterflies/

Courtesy Lynn Pyle, Lady Bird Johnson Wildflower Center

- This link from "Butterflies and Moths of North America" lists those found in Denton County. Click on the name of the butterfly/moth to see which plants they prefer: https://www.butterfliesandmoths.org/checklists?species_type=All&tid=47728

Additional Resources

About Native Bees – from Texas Parks & Wildlife:

https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/native-pollinators/augment-resources.phtml

*Landscape IPM – from Texas A&M AgriLife Extension:

Cultural Practices https://landscapeipm.tamu.edu/what-is-ipm/ipm-practices/cultural-practices/

Biological Practices https://landscapeipm.tamu.edu/what-is-ipm/ipm-practices/biological/

Mechanical Practices https://landscapeipm.tamu.edu/what-is-ipm/ipm-practices/mechanical-practices/

Chemical Practices https://landscapeipm.tamu.edu/what-is-ipm/ipm-practices/chemical/

Water is Awesome -from Trinity River Water District, Dallas Utilities District, & North Texas Municipal Water District: https://waterisawesome.com/