Gardening for Pollinators

By Susi Algrim

Why should we care about pollinators?

There are many reasons why we should care about pollinators! From food, to health, to the overall stability of the planet's ecosystems, our connections with nature makes all the difference and a pollinator garden is a great place to start. Providing wildflower-rich habitat is the most significant action you can take to support pollinators. Whether you have a few feet on your apartment balcony or several acres to spare, you can make a difference!

Great Spangled Fritillary on Common Milkweed © Susi Algrim

Reasons to care & start your garden:

- Pollinators pollinate up to a third of our planet's food.
- Native bee, honeybee and Monarch butterfly numbers are declining, along with many other insect species. (1)
- Healthy pollinator populations advance the health of the greater ecosystem by supplying us with food, habitat, and a livable planet.
- Gardening improves human health-physically, mentally, and spiritually, and can reduce depression, anxiety, and stress. (2)
- Community gardening can lead to environmental resilience. (3)
- Native pollinator plants are easy to care for and low maintenance once established.
- Native pollinator gardens provide many survival resources for wildlife: food, breeding, nesting, and overwintering habitat.

Ok! So, you're convinced that a pollinator garden is for you! But there are SO MANY plants out there. How do you know what your pollinator friends will like best? Native plants are the way to go! (5)

Why Choose Native?

- Native plants are adapted to local soil and climates. This means a hardier plant and easier to maintain once established.
- They provide the best source of nectar and pollen for local native pollinators. Nectar is the primary food source for adult bees, butterflies and more. Pollen is the primary food source collected by bees for their offspring.
- They serve as host plants for multiple pollinator species. A host plant is like a nursery for pollinators. Eggs are laid on these plants and once they hatch, the plant provides the food source for the larvae.
- Incorporating native wildflowers, shrubs, and trees into any landscape promotes biological diversity by providing shelter and food for wildlife.
- Once you start learning about native plants, it makes hikes and outdoor adventures more exciting because you can identify wild plants that you may have missed before.
- Non-native plants do not support wildlife needs as well as native plants, and they can also be invasive.

Starting your own pollinator garden

A successful pollinator garden will not only provide for pollinators and other wildlife, but it will also provide us with the beauty of plants and flowers, a healthy activity, a connection with nature, and the joy and satisfaction of making a difference. Careful planning and preparation are essential to creating a successful pollinator garden. Follow these easy steps to make sure you have everything covered; you want your investment to be well worth it!

Step 1: Plan your garden.

1. **Garden Size**

   The larger the pollinator garden, the better it is for our pollinator friends. However, a small garden or a few well-appointed containers can make a difference too!
   Gardening should be fun and enjoyable, so don't over-commit. Starting small with the option to grow your garden even larger in the future is better than becoming overwhelmed and giving up altogether.

   Generally, it's estimated that a 100-square foot garden (10' x 10') will take 4 to 6 hours to till, prepare, plant and mulch. Once planted, it will require 10 to 20 minutes a week to weed, and just a little time to set up watering outside of rainy season.

2. **Garden Location**

   For the best pollinator habitat consider the following:
   - Ground gardens: Find a location with little to no root competition from trees and shrubs.
   - Determine the amount of sun exposure the are gets per day. This will affect the plant types you choose. An area with both full sun and partial sun/shade options are great and allow for more plant selection.
   - Consider your pollinator audience! Butterflies and other pollinators often enjoy sunbathing and appreciate protection from the wind if possible.
   - Providing a water source can be extremely beneficial to pollinators as well. A bird bath could be a perfect addition.

   If possible, seek out spots next to neighboring patches of habitat. This provides pollinators with more options than those that are small and isolated. If this isn't possible, don't worry! A simple container garden on an apartment balcony will still attract attention and provide support!

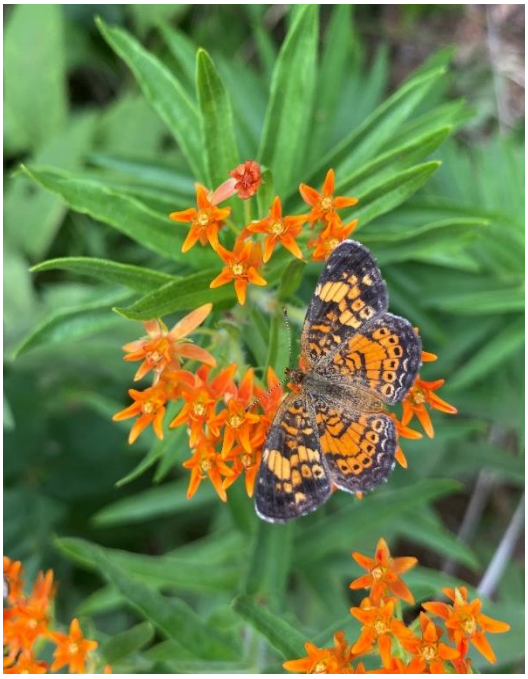
   For Sunny Areas:
   These plants need at least six hours of direct sunlight per day. These prairie, sun-loving plants will likely be where you'll observe the greatest amount of pollinator traffic.

   For Shady Areas:
   Not all pollinator plants require full sun. There are many pollinator-friendly plants that do not. Refer to our plant list for guidance on plants that prefer shady areas. (5) Consider planting woodland plants, spring ephemerals (short-lived, typically with several generations), herbs and bulbs. Plants that prefer shade often provide very useful services to pollinators such as:
   - Some serve as host plants where butterflies can lay their eggs
   - Some are earlier bloomers that provide much needed nectar before their sun-loving counterparts
   - Some tree species creating the shade can also provide pollinators with nectar and places to lay their eggs

Preparation is the best for success!!

3. Make Your Garden Bed or Container Garden

It's very important to get the area prepped prior to planting, as plants will have a very difficult time getting established in unprepared soil.



Pearl Crescent on Butterfly Milkweed © Susi Algrim

A. Kill existing turf

Ideally done WITHOUT chemicals. You can use one of the following methods:

- *Easiest:* Cover the area with thick cardboard layers for 2-3 weeks, ideally for a season
  - You can also use a clear tarp that uses solar radiation to burn up the grass beneath, this may take a few months
- *Medium work:* Till the turf from scratch (you will have to weed out resprouting grass over time)

B. Till the soil

This helps aerate and break up the soil and is necessary for new garden plots.

- Till when the soil is slightly moist
- If the soil is to dry, it is hard to break up the clods
- If the soil is too wet, it creates heavy, sticky clods that can harm the soil texture

Container gardening:

- Plants do dry out faster in containers then in the ground so they will be watered more frequently
- Container plants also require fertilizer and should be applied according to the package
- Drainage is key: Too much water and your plant can drown. Keep an eye on the soils water retention and adjust as needed
  - ½-inch diameter drainage hole for small/medium containers
  - 1-inch diameter drainage hole for large containers

4. Prepare Your Soil with Organic Matter

Identify your soil type.

Many sites around Manhattan are high in clay and low in organic matter and are often heavily compacted from foot traffic. Despite this, there are many pollinator-friendly plants that grow well here if you till your soil and mix in organic matter.

For the best, most consistent results, consider contacting Riley County Extension Office at 785-537-6350 (K-State Research and Extension) (4) and ask about having your soil tested. This is an inexpensive and useful tool that will give you exact results and educate you on how to improve your soil conditions with professionals.

Choose your organic matter.

The right organic matter will make a huge difference in the success of establishing your plants. At the zoo, we prefer partially composted bark and compost from the Riley County transfer station. High-fertility compost alone isn't ideal for most plants, so a 50/50 blend of high-fertility compost with a low fertility compost is ideal to mix in your soil.

- High Fertility: Compost or well-rotted manure
- Low Fertility: Partially composted bark

Once you've made two passes tilling as deeply as you can, spread 2 to 3 inches of organic matter over your entire bed and till it as deeply as possible. Then repeat this again. Once tilled, try to tread on the garden bed as little as possible, to avoid compaction.

Note: We do not recommend buying bags of "topsoil," as there is no legal definition of what that is and therefore, no certain way of knowing the quality or content of the product.

Step 2: Choose the best plants.

As we discussed in the beginning of caring about pollinators (*see "why chose native" above*), native plants are best suited to local soil, lighting, and pollinators conditions, so native is best! We have included a list of milkweeds and wildflowers native to our area. You can find it here. (5)

Common Buckeye on a Wild Hydrangea © Susi Algrim

For ease of maintenance, you will want to plant perennials which will come back every year (not annuals, unless you have a container garden). These will require the least amount of upkeep once established. Be sure to consider more than just the summer growing season. Pollinators need nectar early in the spring, throughout the summer and even into the fall. Choosing plants that bloom at different times will help you create a bright and colorful garden that both you and pollinators will love for months!

It's essential to choose plants that have not been treated with pesticides, insecticides, or neonicotinoids. Most nurseries in Manhattan carry plants like their native (distant) cousins but are usually hybrids designed for a more "suburban" look.

The Kansas Forest Service has an Eastern Pollinator Bundle that includes native shrubs and trees to our area that serve as host and nectar plants for our native pollinators.

Lastly, but one of the most important things to mention; there are several nurseries in the surrounding area that specialize in heirloom native plants, but none in Manhattan *currently*. We are in communication with outside nurseries to try and get a supply of local native plants to our area for easier purchase.

Step 3: Plant your Garden

There are a few factors to consider before deciding to plant seeds or buying plugs (baby transplants found at nurseries and garden centers). Whichever you choose, following the proper planting guidelines is vital.

To have the greatest chance of success with seeds, follow the packet instructions word for word. Temperature and soil depth is critical to your success.

When choosing plugs, be sure to follow frost guidance to avoid planting to early. Dig holes just big enough for the root system, then cover and reinforce the roots with soil or compost. You can add mulch to reduce weed growth and help keep in moisture when the temperatures rise.

Though personal preference does play part in the way a garden is designed, take into consideration flowers clustered into clumps of one species tend to attract more pollinators than individual plants scattered through a habitat patch. Where space allows, try to plant clumps of the same species within a few feet of one another.

Seed	Plug
Pros: • Cheaper • Greater diversity of plants • Good alternative to plants that transplant poorly • Create a more natural look • Extremely satisfying to grow from seed Cons: • Requires more time and energy • Lower survival rate than plugs • Can take several years and cycles for plants to fully establish • The timing of spreading seeds is critical	Pros: • Easier to plant • Quicker to establish • Higher survival rate • Can create a pattern type design for personal preference Cons: • More expensive • Limited plant selection • Not all plants do well as transplants • Sudden weather changes risk killing new transplants

If you choose to seed your garden, the ideal time to do so is between October and January, as many native wildflower and grass species must be cold-stratified, meaning they must go through at least one freeze prior to germination.

Once you've planted or seeded your garden, have patience. It may take two seasons for some seeds to sprout. It is well worth the wait!

Swallowtail Caterpillar on Parsley in a container garden © Susi Algrim

Container Gardening

Annuals are usually the best and easiest choice for growing in container gardens. You can use any kind of plant in a container, including perennials, shrubs, trees, ferns, and grasses if you meet those plants requirements for thriving in a container. Overwintering perennials can be risky and require extra work and maintenance that generally results in a less hardy plant (one or two hardiness zones less hardy). This should be taken into consideration for Kansas unpredictable weather and if you plan to put your container garden back outside first thing.

Planting or seeding your own garden will provide valuable food, shelter, and habitat for pollinators and it can be extremely rewarding! Once the plants are in the ground or in their container, the pollinators will visit them. All you need is some planning, preparation and you will soon reap the benefits, alongside our pollinator friends!

**** The elimination of herbicides and pesticides is critical to a thriving ecosystem, including your pollinator garden****

Sources:

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