Vernalization
Seeds of most temperate plants need to be vernalized, which is a fancy way of saying that they need cold treatment. The best way to give the required vernalization is through stratification. To stratify seeds place them in cold, moist potting soil (sterilized soil is best but not required) in a dark place for several weeks or even months. Since most people would like to avoid placing potting soil in their refrigerators, an alternative is to place the seeds between moist paper towels in a reclosable plastic bag. This works well, and with the paper towel method there are fewer fungi and bacteria available to attack the seeds. After the vernalization period the seeds should be planted in warm (70˚F), moist soil. Without vernalization / stratification, the percentage of seeds that germinate is usually low. Seeds from tropical plant species do not require this treatment.

ADDITIONAL PLANT SPECIES
The following plants can add diversity to your Monarch Waystation habitat as larval host plants and/or nectar sources for monarchs and other pollinators:

**Annuals**
Lantana (Lantana camara) - Nectar source. Varied-colored flowers bloom from summer to fall in temperate regions. Lantanas will grow 18-30 inches tall and 24 inches wide. Perennial in subtropical regions where it can grow much larger.

Pentas (Pentas lanceolata) - Nectar source. Pentas are a warm season annual that will bloom from summer to early fall. The flowers vary in color from white, pink, purple, to red. There are numerous varieties ranging from 10-36 inches in height.

Salvia (Salvia spp.) - Nectar source. Flowers range from blue to red. Many different annual and perennial species ranging from 12-30 inches in height. Most attract butterflies and bees; however, S. cocinea is especially attractive to butterflies.

**Perennials - Herbaceous**
Fennel (Foeniculum vulgare) - Host plant for black swallowtail butterflies (other hosts include parsley, dill, and rue). This herb grows to a height of 4 feet.

Garden Phlox (Phlox paniculata) - Nectar source. Fragrant flowers range in color from white to pink to red, and blue to purple. Grows to 20-40 inches in height. Blooms during midsummer to fall and attracts Hawk moths as well as butterflies.

Ironweed (Veronia spp.) - Nectar source. Purple flowers bloom during the summer months. Ironweed will reach heights of 3-6 feet.

Mallow (Malva spp.) - Host plant for painted lady butterflies. Hardy perennial; produces pink to purple flowers during the summer. Grows to 3-4 feet.

Sedum (Sedum spp.) - Nectar source. Sedums are hardy perennials 18-24 inches tall. They attract numerous butterflies and moths. The fall blooming Sedum spectabile attracts numerous butterflies and moths.

Vetch (Vicia spp.) - Host plant (sulfur butterflies) and nectar source (bees). These have a viney growth form and purple pea-like flowers in early summer.

**Perennials - Shrubs**
Blue Mist Spirea ( Caryopteris spp.) - Nectar source. Produces light-blue flowers in late summer to fall. 24-36 inches in height. Attracts a broad variety of insects.

Butterfly bush (Buddleia davidii) - Nectar source. Blooms continuously from early summer to fall. Color varies by variety from purple to white and yellow. Should be pruned back in the spring. Will grow to 6-8 feet tall. Reported to be invasive in several Atlantic coast states and in Washington and Oregon.

Buttonbush (Cephalanthus occidentalis) - Nectar source. White flowers will bloom for several weeks in midsummer. Can grow to a height of 6-10 feet. Requires a low spot or lots of watering. Highly attractive to many seldom seen insects.

Chaste tree (Vitis) - Nectar source. Summer to fall blooming shrubs and small trees 3-8 feet tall with white to blue flowers. Grows best in southern regions and may die back in the winter. Must be pruned in the spring before new growth begins.

Leadplant (Amorpha canescens) - Host plant for dogface butterfly. Purple flower spikes appear in early summer when plants reach 2-4 feet tall.

Wild Plum (Prunus americana) - Host plant (several butterfly species) and nectar source. White flowers in spring and yellow fall color on small trees of up to 15 feet in height. Can produce unwanted suckers from roots and form clones. The plums attract wildlife.

CERTIFY YOUR MONARCH WAYSTATION
To show that you are contributing to monarch conservation, you may choose to have your new or existing monarch habitat certified as an official Monarch Waystation. Upon certification your site will be included in the International Monarch Waystation Registry, an online database of Monarch Waystations, and you will be awarded a certificate bearing your site’s Monarch Waystation ID number. Furthermore, you become eligible to display a weatherproof sign that identifies your monarch habitat as an official Monarch Waystation. This display helps convey the conservation message to those who visit your Monarch Waystation and may encourage them to create their own monarch habitat.

Additional information about the Monarch Waystation program, including certification, Monarch Waystation Seed Kits, brochures, and other support materials, is available on our website at:

www.MonarchWatch.org/ws

or by writing to us at: Monarch Watch, University of Kansas, 1200 Sunnyside Avenue, Lawrence, KS 66045

Good Luck with your Monarch Waystation!

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primary viewing area. If you create a garden that allows viewing from all sides, i.e., a rounded bed, place the tallest plants in the center, with decreasing heights toward the edges. It is usually easier to manage a garden in which the perennials are toward the back, or center, with the annuals closer to the edge. Most of the annuals used in butterfly gardens bloom throughout the growing season while some of the perennials have shorter blooming periods. By careful placement of the continuously blooming annuals and perennials, the garden can have the appearance of always being in bloom.

Specialized Areas in the Garden
Monarchs do not need the water sources and nectar/fruit feeding sites that are known to attract numerous other species. If you would like to add these features to your garden to attract other species, please visit us online for information.

Germinating, Growing and Transplanting
The seeds in our Monarch Waystation Seed Kit can be planted in prepared beds outdoors or started indoors in flats. We recommend the latter approach since germination rates are generally higher indoors and it is easier to establish your garden with transplanted seedlings that are well-rooted and therefore more resistant to weather extremes and pests.

Germinating from Cuttings
When seedlings emerge, the battle with the weeds begins. Weeds will compete for light, space, and soil nutrients. The key is to control weeds by cultivation and mulching. Carefully cultivate around or near your seedlings for light, space, and soil nutrients. The key is to control weeds by cultivation and mulching. Carefully cultivate around or near your seedlings for light, space, and soil nutrients. The insect most likely to get out of balance in your monarch habitat is Apis neri, the orange-colored Oleander aphid, which feeds on milkweed. This species does not affect monarch larvae but can retard the growth of plants. The insect most likely to get out of balance in your monarch habitat is Apis neri, the orange-colored Oleander aphid, which feeds on milkweed. This species does not affect monarch larvae but can retard the growth of plants.

Fertilizing
If your soil has been properly amended with additives recommended by your county extension agent to see if your soil needs to be enhanced (amended) with soil additives before planting the seeds. A smooth, chum-free, weeded soil bed will virtually guarantee a successful start for germination and seedling establishment. If vegetation exists in the future habitat location, it can be removed by using a tiller or by hoeing the area. To reduce clumping, do not work the soil when it is wet. The soil should be worked to a fine consistency to ensure good soil-to-seed contact.

Dead-Heading
If you would like to keep your plants producing an abundance of flowers throughout the season, you should pinch back (or otherwise remove) old withering flowers, developing fruits, or seed heads.

Pest Control
Pest control in a butterfly garden or monarch habitat can be tricky. Avoid pesticides of any kind, regardless of how selective or safe they are. Most treatments for pest species will also negatively affect the caterpillars and butterflies you are trying to attract and protect. The good news is that with proper planning and maintenance, you will probably not have to control insects. When you plant your Monarch Waystation, you are creating an ecosystem that has its own system of checks and balances. The insect most likely to get out of balance in your monarch habitat is Apis neri, the orange-colored Oleander aphid, which feeds on milkweed. This species does not affect monarch larvae but can retard the growth of plants. If you would like to keep your plants producing an abundance of flowers throughout the season, you should pinch back (or otherwise remove) old withering flowers, developing fruits, or seed heads.

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