

# Gardening for Pollinators

Planning, Creating, and Maintaining  
a Pollinator Garden: A Five-step Guide



**Native  
Plant  
Trust**  
Conserving and promoting  
New England's native plants

# Getting Started on Your Pollinator Garden

Native plants are the cornerstone of the Earth's ecosystems and provide the food and shelter that pollinators of all kinds need to thrive.

This five-step guide is intended to help you plan and plant a garden that supports native bees, butterflies, beetles, hummingbirds, flies, and moths. With pollinators in a state of decline, gardeners have a unique opportunity to create productive habitats in our own backyards and community spaces.

Whether you are adding a new garden or adjusting existing beds, we will provide you with the tools, tips, and techniques you need. Regardless of your level of gardening experience, we recommend tackling the five steps in order.



# Step 1

## Collect Data about Your Site

The first step is to assemble key information about your outdoor conditions.

The information you observe and record will provide an accurate, up-to-date assessment of your garden conditions to help you determine the best location for your pollinator garden and make sure you choose the right plants for your growing conditions.

### 1. Hardiness zone

These are geographical temperature ranges mapped by the US Department of Agriculture (USDA). Go to the USDA Hardiness Zone Map ([planthardiness.ars.usda.gov](http://planthardiness.ars.usda.gov)) to see which zone you live in. When it's time to buy your plants, check the hardiness zone on the plant label. For example, if you live in Zone 6a, you should look for plants that are hardy in zone 6 or lower.

### 2. Soil type

Do you have sand, silt, clay, or something in between?





Here are two easy ways to gauge your soil's texture:

- Rub a small amount of moist soil between your fingers. If it feels coarse and gritty, the soil is probably dominated by sand. If it feels smooth and velvety, it is most likely a silt soil. If the soil clings together and feels sticky, it probably is largely composed of clay.
- Squeeze a moist soil sample in your hand and examine it. If soil clods resist crumbling and do not change shape when squeezed, you are likely working with a heavy clay soil. If clods break into individual particles, like cake mix, the soil probably is predominantly sand. Loam soils tend to stay together when squeezed, but unlike heavy clay soils, they change shape easily.

If you have predominantly clay soils, you will want plants that can withstand wet or flooded conditions. If you have sandy soils, you will want plants that are adapted to live in dry, nutrient-poor soils. If you have loam, or relatively even concentrations of sand, silt, and clay particles, you want plants for average soil.

### 3. Sun exposure

As a general rule, pollinator gardens do best in full sun:

 **Full sun** = more than six hours of direct sunlight per day

 **Part shade** = three to six hours of sunlight per day

 **Full shade** = less than three hours of direct sunlight per day

### 4. Water

How water travels, drains, or remains standing on your garden site is a big factor affecting which plants will thrive there. Observe where and how water travels through your garden site in a rainstorm, tracking where it flows and puddles, and noting how long it remains in the spots where it collects. If you find especially wet or dry areas, you will need to select plants that are adapted to those conditions. Also consider how accessible your garden site is to auxiliary water, such as a hose.



**As a general rule, pollinator gardens do best in full sun.**



## 5. Existing plants

Perhaps you have plants growing on the pollinator garden site that you would like to relocate and preserve, or incorporate into the pollinator garden. If you're unsure what the existing plants are, one of the identification tools available is Native Plant Trust's Go Botany website ([gobotany.nativeplanttrust.org](http://gobotany.nativeplanttrust.org)), an online database with photos and detailed descriptions of native plants and common invasive species.

Preparing the new garden area can take extra time and effort. After settling on a site, you can start clearing out existing plants in advance, because some methods require several months. Consider these methods for removing lawns and herbaceous weeds:

- **Solarization** – This is a preferred method because it maintains the soil health. Start by mowing and watering the garden area. Next, cover the area with sturdy, clear plastic. Bury the edges to create an air- and water-tight seal. This is most effective during the summer months. About six weeks of summer heat will kill the turf. The grass is dead once it is brown and the blades are no longer attached to the roots. Then remove the plastic. No need to till the soil; just dig the hole for each plant and mix in the dead grass as you backfill the hole. The dead grass will add nutrients to the soil.
- **Smothering/Sheet Mulching** – This method also maintains soil health and takes about six months to one year. Begin by mowing the grass to the lowest height possible. Then, cover the ground in four to six layers of black-and-white, non-glossy newspaper or cardboard. Overlap the edges to ensure full coverage. Wet the newspapers/cardboard thoroughly and cover with a one-inch layer of a nitrogen source like manure or compost. Top the nitrogen with an inch of dried leaves, straw, bark, or other carbon material. Add an inch-thick layer of nitrogen—such as kitchen vegetable scraps, or manure. Cover with another layer of carbon material: straw, shredded paper, or dried leaves. Continue to add alternating layers of nitrogen and carbon until you reach a final height of 18 inches to 3 feet. Always end with a carbon layer to discourage flies from laying eggs. The bed is ready to plant when the layers have decomposed to the point where the original materials are no longer distinguishable.



**Avoid using chemicals to remove turf and weeds. While these can be fast and effective, broad-spectrum herbicides, whether synthetic or organic, pose risks to both humans and pollinators.**

- **Mechanical** – You can mechanically remove turf with a sod-cutter or do it yourself by hand with a shovel and garden fork, which loosens as much soil as possible from the grass roots. The crown of the plant (where the roots and blades meet) must be removed to prevent regrowth. This method is relatively quick, but it's hard work. And after the soil is disturbed, any weed seeds present will be exposed and begin to sprout. Weeding will need to be a priority after the garden is installed.

Avoid using chemicals to remove turf and weeds. While these can be fast and effective, broad-spectrum herbicides, whether synthetic or organic, pose risks to both humans and pollinators. These chemicals also can remain in the soil for an extended period of time.

## 6. Pollinator preferences

Native plants and pollinators have evolved together, establishing a mutually dependent relationship. If you want to attract specific pollinators to your garden, learn what they need in all parts of their life cycles.

For mature insects seeking pollen (bees) or nectar (moths and butterflies), flower color is often a critical attractor. The shape of the flower and its landing platform are essential for gaining access to the food. Other traits also play a role. The table on the page 7 (TABLE 1) provides some general characteristics known to appeal to particular pollinators.



Wild bergamot (*Monarda fistulosa*) has been a historic favorite, treasured for its herbal properties and for its pretty blooms. Supporting a variety of bees and butterflies, this readily spreading, aromatic plant blooms pink in summer, favoring average, well-drained soils.  
© Native Plant Trust

TABLE 1. POLLINATOR PREFERENCES

## POLLINATOR

		BEE	BEETLE	HUMMINGBIRD	BUTTERFLY	FLY	MOTH
PLANT TRAIT	COLOR	Bright white, yellow, blue, or ultraviolet	White or green	Scarlet, orange, red, or white	Bright red and purple	Pale or dark brown, purple	Pale red, purple, pink, or white
	FLOWER SHAPE	Shallow; with landing platform; also tubular	Large and bowl-shaped	Large, funnel-like; strong perch support	Narrow tube with spur; wide landing pad	Shallow, funnel-like or complex with trap	Regular, tubular without a lip
	ODOR	Fresh, mild, pleasant	Ranges from none to strongly fruity or foul	None	Faint but fresh	Putrid	Strong and sweet; emitted at night
	NECTAR GUIDE	None	Present	None	Present	None	None



**Native plants and pollinators have evolved together, establishing a mutually dependent relationship.**

A wonderful mountain mint for the meadow garden, Broad leaf mountain-mint (*Pycnanthemum muticum*) is a hugely pollinator-friendly plant with an inconspicuous flower, but emanates a gentle minty aroma and offers lovely contrast with its silvery bracts and blueish leaves. © Arthur Haines

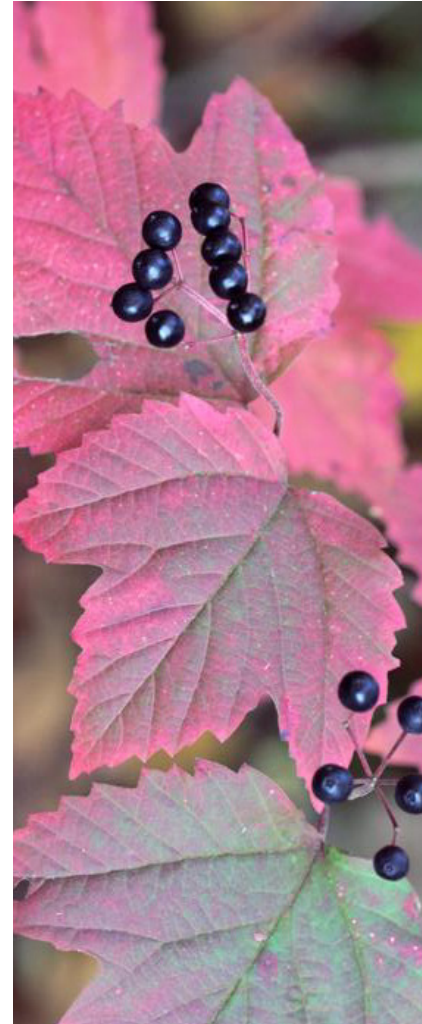


# Habitat Is More than Flowers

The various animals we want to support with a pollinator garden have needs similar to ours: food, shelter, water, and adequate space. In a word, habitat. While flowers provide the food for adult insects, other parts of the plant, such as foliage, offer shelter and food for their larvae, such as moth and butterfly caterpillars. Species with overlapping bloom times provide foraging opportunities throughout the season and through all stages of a pollinator's life cycle.

A diverse selection of native plants is the most effective way to create a healthy habitat for pollinating birds, bats, and insects. Include trees and shrubs (woody plants) as well as perennials and grasses (herbaceous plants). By creating plant diversity, you will attract a greater diversity of pollinators. Here are some specific suggestions:

- Include between 8 and 20 species of plants with various flower characteristics. You can certainly choose fewer species and include more individuals of each plant, but aim to include a minimum of 8 species to encourage a diversity of pollinators.
- Include flowers that bloom across the seasons—early spring through fall—for continuous pollinator support. Try for three different species of plants in each season, when possible.
- Include at least one species of native warm-season grass or sedge to serve as a habitat plant.
- An assortment of plants with different flower sizes, shapes, and colors, as well as varying heights and growth habits will support the greatest diversity of pollinators.
- Consider including woody shrubs and trees if you have room, as they serve as host plants for many butterflies and moths.



The three lobed, maple-like leaves lend this plant its common name, maple leaf viburnum (*Viburnum acerifolium*). White flowers in the spring are followed by berries, maturing to a deep blue color. Its fall foliage is a vibrant red. From sun to shade, moist to dry, maple-leaved viburnum tends to grow anywhere. Dan Jaffe Wilder © Native Plant Trust

- Understanding which plants attract pollinators is only one consideration in choosing your plants. Another is to figure out which plants will thrive in your garden conditions. Native Plant Trust's two online plant databases make this task easier:

### 1) GARDEN PLANT FINDER

[plantfinder.nativeplanttrust.org/Plant-Search](http://plantfinder.nativeplanttrust.org/Plant-Search)

This database enables you to search for the right plants for your conditions, based on New England ecoregions and your desired characteristics (such as purple flowers or fine foliage texture), or to learn more nuances about the plant. Locating your ecoregion in Garden Plant Finder focuses the choices for native plants suitable for your area.

### 2) GO BOTANY

[gobotany.nativeplanttrust.org](http://gobotany.nativeplanttrust.org)

This plant identification tool provides a keying system for leaves, flowers, fruits, and so on. If you know the common or botanical name of a plant but little else about it, enter the name in Go Botany's search field to find images, descriptions, and other botanical specifications.

Use a sheet of paper to note suitable plants as you search the Garden Plant Finder. Create columns with headings including common and botanical name, height, spread, light requirements, flower or foliage color, and month of bloom. This will come in handy later.

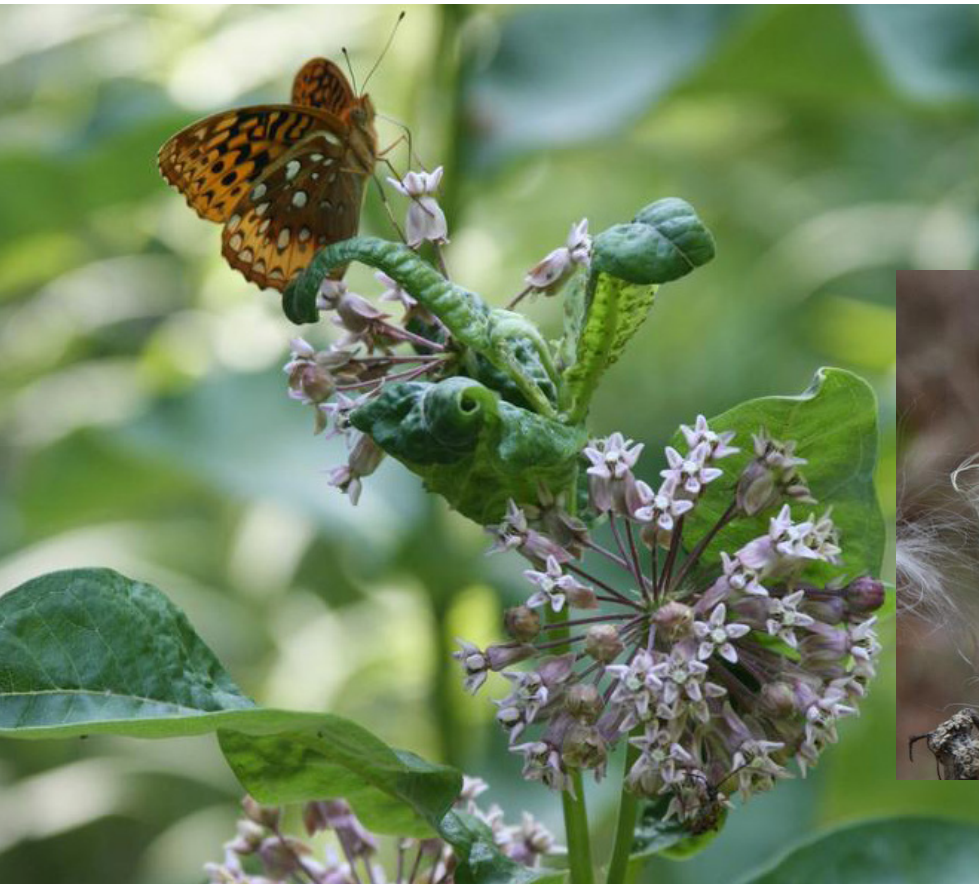


Cardinal lobelia (*Lobelia cardinalis*) is a great late-summer stunner, growing well in moist, sandy soils in sun to partial shade. Its incredible red flowers attract more than just human eyes – it's also a great pollinator plant for bees, butterflies and hummingbirds!  
© Arthur Haines



### Other things to keep in mind:

- Bees and wasps can sting, but only if provoked (albeit accidentally). Learn about your allergic tolerance to bee stings and take appropriate medical precautions.
- One of the functions of your garden is to provide food, so if you see signs of munching it means you're doing a good job. This may require reframing your aesthetic accordingly. For example, before transforming into butterflies, caterpillars often feed on the leaves of the plant on which they hatch, called a host plant. A well-known example is milkweed (*Asclepias spp.*), the host plant for monarch butterflies. During their development, monarch caterpillars feed exclusively on milkweed leaves and cannot feed on any other plants, so milkweeds are essential for their survival. The leaves won't be attractive after being ravaged, but the plant will survive.



The common milkweed is a favorite of monarchs and many other pollinators, and naturalizes quickly in a range of soil conditions. This plant produces multitudes of sweetly scented, edible, and absolutely beautiful flowers in midsummer, and contributes winter interest with its dry seedpods in fall and winter. (*Asclepias syriaca*), Dan Jaffe Wilder © Native Plant Trust





# Step 2

## Make a Garden Plan

With the information you've gathered about your site and possible plants for it, you're ready to design your pollinator garden.

That includes:

- defining the garden area
- determining the number of plants you need and where to place them
- laying out your ideas in a rough planting plan.

After choosing the spot with the most sun, figure out the shape of your garden. You can use a garden hose to try out different sizes and shapes. If you are new to gardening, consider starting small and expanding your garden over time.

Next, determine the garden area. Multiply the length of the plot times the width to get the total square footage. For rounded beds, you can approximate by dividing the area into roughly rectangular sections to estimate the square footage of each. Then add the totals together.



Here's how to determine the number of plants you need:

- Plant perennials and grasses in single-species groups of three plants each, with about a foot between each plant, measured from the center of the plant. Grouped plantings make foraging efficient for the pollinators. Each group will be about 3 feet in diameter.
- Divide your square footage by 3 (that's the 3-foot diameter of each group). A 40-square-foot garden divided by 3 comes to 13 plant groups.
- With 3 plants in each group, times 13 groups, you'll need 39 plants.
- Spacing of shrubs and trees depends on the height and spread of the mature plant. You can find the dimensions of mature trees, shrubs, and perennials on the Garden Plant Finder ([plantfinder.nativeplanttrust.org/Plant-Search](http://plantfinder.nativeplanttrust.org/Plant-Search)). You can then adjust the number of herbaceous plants to accommodate the shrub or tree. For example, a mountain maple, whose canopy can spread up to 10 feet wide, would take the place of three perennial groupings.

This native geranium is adaptable, resilient, and blooms repeatedly from spring through late summer and fall. The seeds are forcibly ejected from the plant making for an intriguing show during the later months of the season. Important pollinator plant for native bees. Wild geranium, (*Geranium maculatum*), © Native Plant Trust



# Make a Planting Plan

Now that you know how many plants your garden can hold, you can make a final selection and lay out the plants on paper in a simple design. Only you will need to see this—it is simply a tool to help you place the plants in a logical order and allow enough room for them to grow. It also will serve as a map to follow during installation. Have a look at the two sample plans on page 15. Meanwhile, here are some guidelines for your design:

- Plant in odd numbers for a pleasing visual aesthetic. A group of 3 to 5 plants of the same species is a simple guideline.
- Consult your sheet with the column headings to arrange plants by height. Depending upon your viewing perspective, either place the tall plants in the back of the garden or in the center, to avoid blocking or shading any shorter plants.
- Repetition draws the eye through the garden. For mid-sized or larger gardens, consider repeating groups of the same species across the garden area.
- During the summer, the sun is harshest for plants facing west. Plants selected for western exposure should be able to tolerate part-sun.
- Pollinators like their privacy when foraging. Place the most active pollinator plants a step or two away from the edges of pathways and gathering spaces.



**Pollinators like their privacy when foraging. Place the most active pollinator plants a step or two away from the edges of pathways and gathering spaces.**

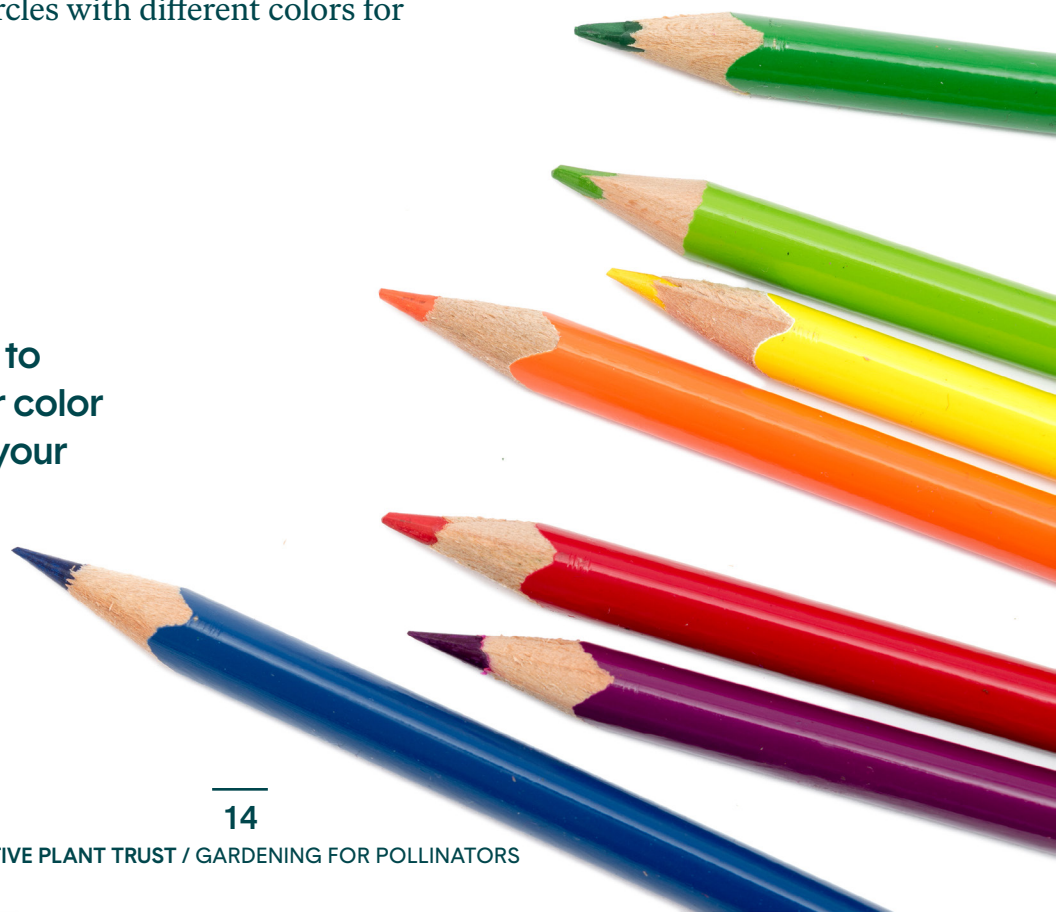
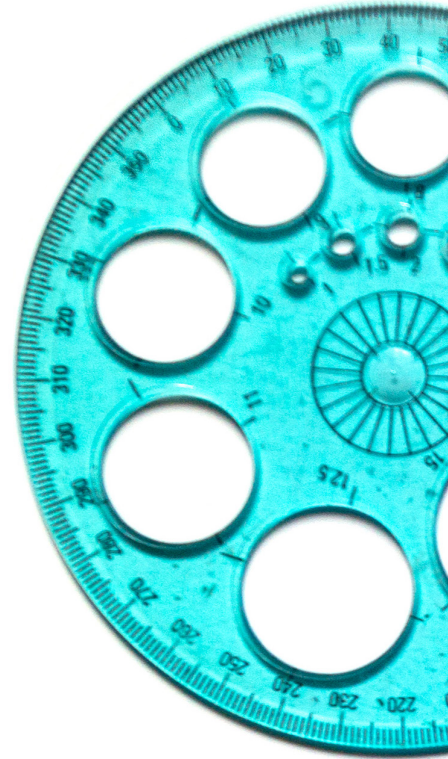
Goldenrods normally like it sunny and dry, but wreath goldenrod grows happily under the shade of deciduous trees. It does fine in less well-draining soils, brightening up late-season woodlands with its vibrant flowers. This is a pollinator powerhouse. Wreath goldenrod (*Solidago caesia*), © Native Plant Trust



Here's how to draw your plan:

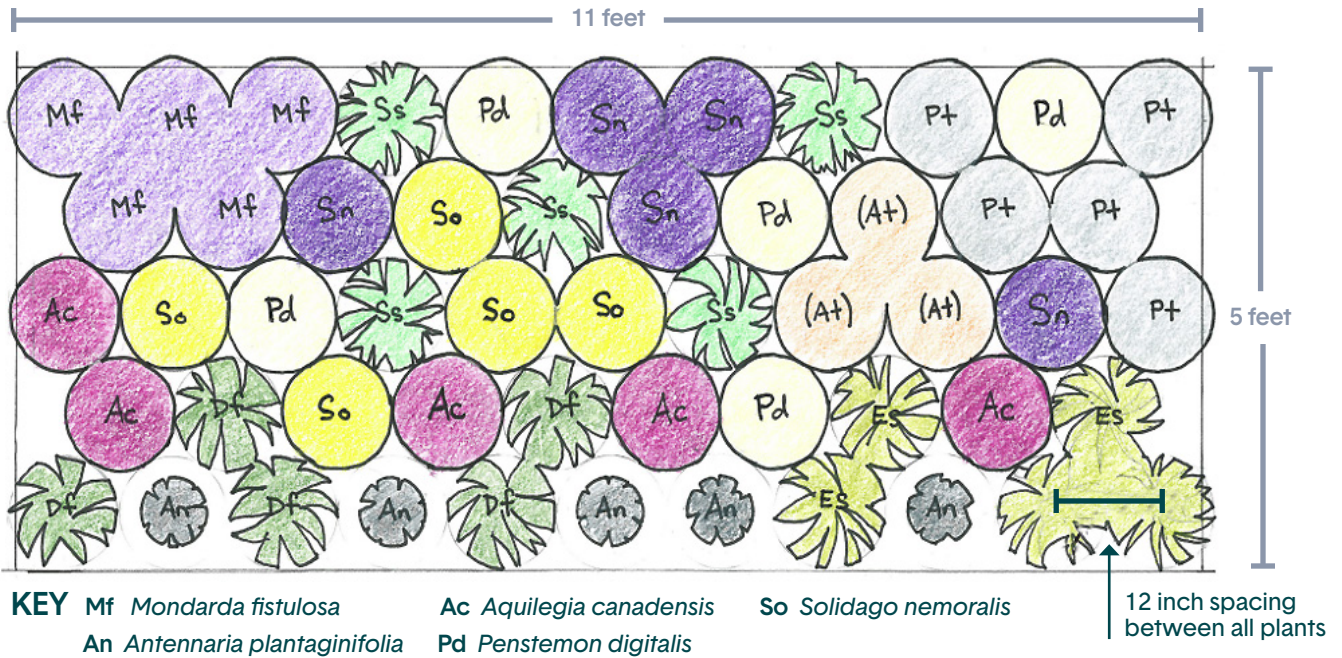
1. To prevent over- or underestimating the number of plants you'll need, determine your drawing's scale. If your garden is small, use one inch on the ruler to equal 1 foot—it's that simple. A larger garden may require a smaller scale to fit on the page. In that case, use either  $\frac{1}{2}$  inch or  $\frac{1}{4}$  inch to represent one foot. (For example, at  $\frac{1}{4}$ -inch scale, 2 inches = 8 feet.)
2. Draw the outline of your garden to scale on plain paper or graph paper.
3. Draw the location of existing and not-yet-planted trees, shrubs, or large herbaceous plants that will provide visual structure in the garden. Draw a circle for each plant, with the diameter representing the plant's spread or canopy. A circle template makes this easier.
4. Add the grasses and perennials. Remember that the space between herbaceous plants is typically one foot, measured from the center of each plant. Use colored pencils to keep track of flower color.
5. Create a key that includes all the plants on the plan. You can use abbreviations for the plant names, unique symbols, or fill in the circles with different colors for each species.

**Use colored pencils to keep track of flower color or plant species on your planting plan.**

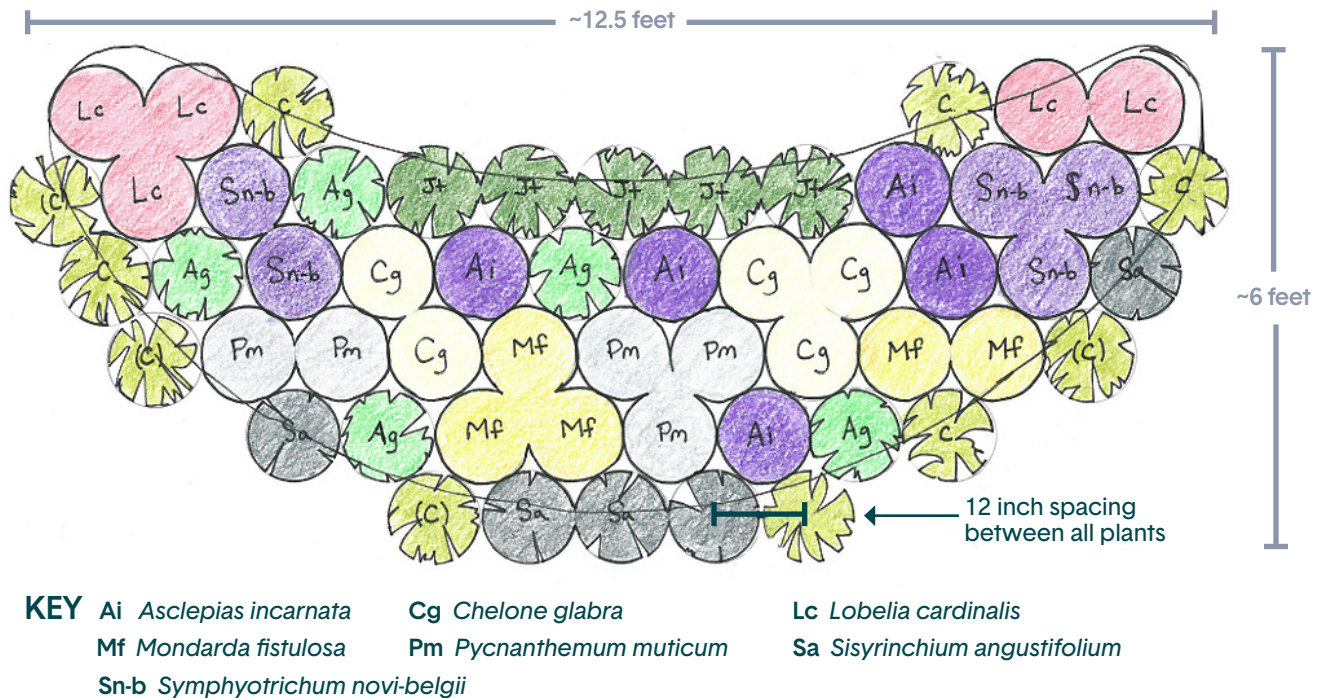


# Planting Plan Examples, Using Native Plant Trust's Pollinator Kit Species

## POLLINATOR KIT #1: Full Sun, Average to Dry



## POLLINATOR KIT #3: Full Sun, Moist to Wet





# How to Shop for Plants

## Select Sizes

Plants are sold in all sizes and stages of development, from seeds on up. A two-gallon container holds a plant with a well-developed root system, but it will be expensive. If it holds a shrub or a tree, the plant might be well established, yet still immature. The same size container may hold a mature or nearly mature perennial. Many gardeners like to mix the sizes and growth phases of plants when establishing a garden. The key is to understand the rate of growth for the sizes you select. Note the sizes on your planting plan.

- **Seeds** – Establishing a garden from seed requires knowing which plants grow easily from seed and which take longer periods to germinate. Most seeds require some form of stratification, an artificial process to break down the seed coat and /or break the dormancy that set in once the seeds were fully formed. To establish a garden from seed, you'll need to research the stratification and germination requirements of the individual species. (Native Plant Trust and Wild Seed Project, in Maine, offer classes on growing plants from seed.)
- **Plugs** – Many herbaceous plants and some woody plants are available as plugs, which are seedlings grown in deeper cells (the pockets in a tray or individual pots) to enable the seedling to root more deeply. This is an economical option when planting a groundcover or a large garden, because plugs will grow faster than smaller seedlings. Most local retail nurseries and garden centers do not sell plugs, but some mail-order nurseries do.



**Many gardeners like to mix the sizes and growth phases of plants when establishing a garden.**

Foxglove beardtongue (*Penstemon digitalis*) is well known for a tough-as-nails, grow-anywhere attitude. The flowers are sizeable compared to others in the genus, and the floral stems range in color from green to red. Great for native bees, and also a host plant for the chalcedony midget moth.  
© Native Plant Trust



- **Pots** – Both woody and herbaceous plants can be purchased in plastic pots in a range of sizes. Our earlier plant calculations are based upon smaller sizes.
- **Balled and burlapped (B&B)** – Trees and shrubs sold as larger specimens have their roots rolled into a ball and wrapped in burlap secured with a wire. Balled-and-burlapped plants are more mature, larger, and heavier to transport and install than woody plants in pots. If this is your choice, you will likely need help from a landscape professional with some heavy equipment.

## Shop Using Scientific Names

Common names for plants vary greatly, so use the scientific plant name to ensure you’re getting the right plant when you shop. Scientific names are two-part, with the genus first, then the species, e.g., *Rosa* [genus] *blanda* [species]. *Rosa blanda*’s many common names include smooth rose, meadow rose, early wild rose, meadow wild rose, and Labrador rose, among others.

## Stick to True Species

If you see a plant label with three names with the third name in single quotation marks—such as *Actaea rubra* ‘Filkins’—you are looking at a cultivar, short for “cultivated variety.” Today, many plant breeders are creating native plant cultivars that emphasize aesthetic features desirable to gardeners, like purple foliage or larger flowers. Some cultivars are even marketed as “pollinator favorites.” However, pollinators have a longstanding relationship with true native plants, and in most cases it is not known if a cultivar will attract or nourish pollinators as effectively as the true species (a.k.a straight species). For the pollinator’s sake, stick to the true species.



Blue-eyed grass (*Sisyrinchium angustifolium*) is closely related to Iris, and blooms continuously all summer, opening during the day and closing at night. This versatile clumper will thrive in average to moist soils, attracting numerous pollinators. © Arthur Haines

## Shun Plants Grown with Systemic Pesticides

System pesticides are applied to the soil and absorbed by the roots of the plant. From there, the pesticide travels to all parts of the plant, rendering some or all parts—including pollen, nectar, leaves, and stems—toxic to insects that feed on plant tissue. The pesticide does not discriminate between benign and pest insects, and it remains in the plant’s system for varying lengths of time, depending on the plant species and chemical used. Common systemic insecticides sold for consumer use include acephate (Orthene®), imidacloprid (Bayer’s Tree & Shrub Insect Control™, Merit®) and dinotefuran (Greenlight Tree and Shrub Insect Control™, Safari®). We recommend using no pesticides of any kind in your garden before, during, and after planting.

According to the Xerces Society for Invertebrate Conservation, “Systemic insecticides include neonicotinoids [a.k.a neonics], which have been widely recognized for their risk, in part because they are far more toxic to bees than most other insecticides and are also very persistent. However, nearly 40 other systemic insecticides are in use in the U.S.... Some systemic insecticides are toxic enough to kill adult or larval (juvenile) honey bees, bumble bees, and/or solitary bees at very low concentrations.”

Many large wholesale growers now use systemic pesticides on their plants, which then are sold to consumers in retail nurseries. Some plants carry labels saying they were grown without systemic pesticides. If you don’t see such a label, ask a salesperson. However, workers in most retail nurseries or big-box garden centers have no easy way to find out that information. We encourage you to shop in garden centers that track where their plants come from and how they are grown.

“

**Some systemic insecticides are toxic enough to kill adult or larval (juvenile) honey bees, bumble bees, and/or solitary bees at very low concentrations.**

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Xerces Society  
for Invertebrate  
Conservation

# Step 3

## Prepare Beds

It's finally time to get into the dirt!

### Pre-installation Tasks

1. Identify underground utilities before you dig. New England states have created a vital service called Dig Safe to mark underground utilities. Contact Dig Safe at least 72 hours in advance of digging. Call 811 or visit [digsafe.com](https://digsafe.com) for instructions.
2. Lay out the shape and size of your garden bed on the ground. You can begin by using a garden hose to get the shape and measurements just right. Then, mark the edges using stakes or landscape paint to make it easier to cut the edges when you're ready.
3. If you have not already done so, remove the existing plants you want to relocate or eliminate from your garden site.
4. Improve the soil. The one soil amendment that is necessary for plant growth is organic matter, such as decomposed compost or leaf mulch. Unless your soil test indicates a low level of organic matter, it may not be necessary to add it when you plant. Instead, you can make this part of your maintenance routine. (This approach will be discussed in Step 5.) Chemical fertilizers are not necessary for native plant gardens. Stick to the principle of right plant–right place, and match species requirements with the soil, sunlight, and available water in your garden. If you've had your soil professionally tested, ignore the fertilizer recommendations.
5. Avoid tilling the soil, which can enable weed seeds to get the sun exposure they've been waiting for. Tilling can also disrupt beneficial fungal (mycorrhizal) relationships in the soil.



**Identify  
underground  
utilities before  
you dig.**

# Step 4

## Plant Your Garden

The objective for planting day is to get the plants into the ground and watered in.

Planting is best done during spring and fall, when your new garden will undergo less stress. Planting in spring allows roots to establish before the heat and dryness of summer. Planting in early fall allows new plants to take advantage of warm soil temperatures for root growth before winter sets in. Avoid planting in midsummer, because the plants will require more water and aftercare.

Choose a dry day after the weather has been clear for a few days, preceded by rain. Planting in wet soil can cause compaction, which can impair root development. Plant in the early morning before midday sun.

Grab your tools and planting plan to lay out the plants. Place all the plants before dig. This way you can adjust spacing as needed. Mark spots where you plan to sow seeds, if you are using any.





## BEST PLANTING PRACTICES

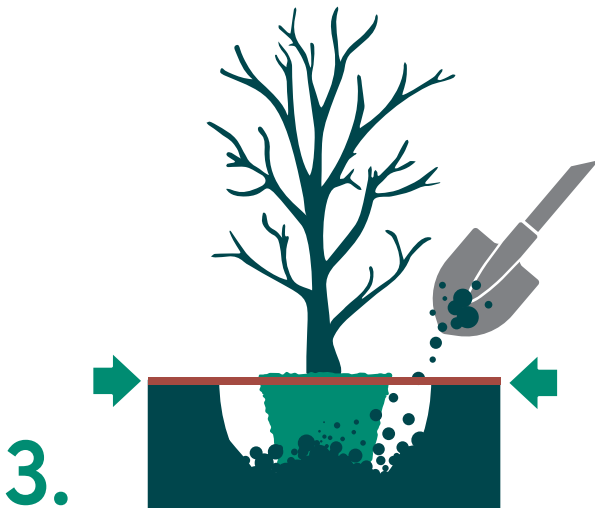
# Planting a Container Tree or Shrub



- Plant high. Dig the hole two to three times wider and slightly less deep than the container.



- Remove plant from its container and place in hole.
- Remove a layer of soil from the top of the root ball to expose the root flare. Inspect the root system for girdling (encircling) and/or crossing roots and loosen or tease the roots out to open the growth path. If necessary, cut encircling roots to avoid girdling the plant.



- Once the plant is placed in the hole, be sure the top of the root ball is slightly above the existing grade. If not, add some soil in the bottom of the hole and tamp it down to avoid the root ball settling due to loose soil at the base.
- Backfill with the existing soil. Tamp down gently to eliminate air pockets. Avoid compacting the soil by tamping too hard.



- Using some excess soil, create a temporary dirt dam around the planting hole to contain water and direct it to the root ball to establish the plant.
- Water the plant deeply after planting. Use a garden hose at a trickle or slow rate for a period of 30 minutes. Let the dam around the plant fill but not overflow. Let the water drain completely.
- Add natural mulch to the area. Make sure mulch is two inches away from stem and root flare.
- Prune any dead wood or crossing branches.

Best planting practices for perennials and groundcovers:

- Planting principles are the same as for container trees and shrubs.
- Plants grown in plastic pots are often “pot bound” and require some manipulation prior to planting. Don’t be afraid to tear or mangle the roots to ensure they are able to radiate out into the soil. This prevents the roots from growing in a circle and girdling the plant.
- Dig a hole that’s wider than but not too deep for the plant. Remove any rocks.
- Place the plant in the hole and backfill with the existing soil. Gently tamp down the soil.
- Water the plant completely at the base.
- Add a natural mulch to the area. Make sure it does not touch the base of the plant.

## Watering in

When you have completed planting, the garden will require a thorough watering. This entails gently watering the base of each plant with a watering can (without a sprinkler spout attachment) or a garden hose at a slow rate. You do not want to soak the leaves, since this can encourage fungal growth. In general, apply water at the base of the plant until it starts to puddle, wait for it to sink in, then water again to the puddle point.

For seeds, add the sprinkler attachment to the watering can and keep the spout moving across the bed of seeds. You do not want the water to puddle, because this can move the seeds around. Think of this action as a gentle rain. Water thoroughly, and do not apply mulch until the plants have emerged and grown to a height of about 6 inches.



Pennsylvania sedge (*Carex pensylvanica*) supports dozens of butterfly and moth species, and is a prime lawn alternative for dry shade and moist sun. This short sedge spreads gradually to form a dense mat. Needing neither irrigation nor mowing, it grows quite nicely where traditional turf struggles.  
© Native Plant Trust

## Applying Mulch

After planting, it is important to spread 2 to 3 inches of an organic mulch to suppress weeds, retain moisture, and prevent soil erosion. There are many types of mulch, including natural materials like shredded fallen leaves, compost, wood chips, or pine needles that can be sourced locally. In the fall, you can use the lawn mower to shred some of the fallen leaves to use as an organic mulch. Whatever mulch you choose should decompose and contribute organic matter to the soil over time.

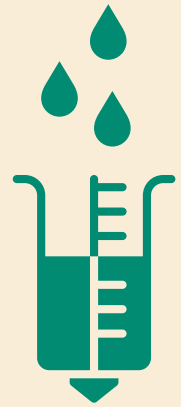
When applying mulch, leave about 2 inches around the stem of the plant, so no mulch is touching it. This applies to both woody and herbaceous plants. Renew the layer of mulch when it breaks down into soil, typically on an annual basis.

## Garden Establishment

### Watering

Although drought-tolerant plant species will not need supplemental water once established, all new plantings will need supplemental moisture until they grow root systems large enough to sustain themselves. Herbaceous plants need supplemental water for the first growing season after planting, and woody species require supplemental water for up to three years after planting.

Set up a regular watering schedule. For newly planted trees and shrubs, water daily with about full one watering can around the base of the tree or shrub, for the first two weeks—skip days when it rains. After the first two weeks, move to weekly watering. Leave a hose on a slow trickle for several hours to deeply water an establishing tree or shrub.



**Set out a rain gauge to keep track of natural rainfall. Ensure all establishing plants get the equivalent of at least one inch of water a week throughout the growing season.**

Run overhead sprinklers in the early morning for an hour or more to water new perennial beds. Water on the leaves isn't a concern if you water in the morning, since it will evaporate relatively quickly. Set out a rain gauge to keep track of natural rainfall. Ensure all establishing plants get the equivalent of at least one inch of water a week throughout the growing season.

## Weeding

Disturbing the soil exposes weed seeds, which can then germinate. Keep an eye out for newly sprouted weeds and remove them before they can establish. Weeds will compete with your native plants for water, nutrients, and space. The first growing season after planting will require you to dedicate more time to weeding, but as the garden fills in, the plants will suppress weeds. Avoid using herbicides and any chemicals to get rid of weeds.

Preventing weeds from producing seeds is important for long-term weed control. Be sure to keep weeds with seed heads out of the compost pile.



The blue-purple flowers of sundial lupine (*Lupinus perennis*) range in their degree of coloration, and in patches this plant has a calico effect. This plant is the chosen host of the Karner blue butterfly, the frosted elfin butterfly, and a food source for native bees and monarch butterflies. To establish a population, mow annually in fall to score the seed coats and promote germination. Dan Jaffe Wilder © Native Plant Trust



# Step 5

## Maintain Habitat

Now that you have begun to attract pollinators to your garden, your last step is to enhance the environment to sustain them.

Whether your garden is designed to attract butterflies and insects, birds, or bees, you'll want to know their lifecycles and what conditions each requires. The flowers you've just planted are a great start. Methods you use to maintain your garden become essential in creating a habitat for pollinator development.



# Clean-up Time – Messy Is Good

Once fall arrives, most homeowners think about garden clean-up. It can be tempting to clean out and cut everything back in fall to prepare the beds for new spring growth. And it looks so tidy. But by doing so, we miss the habitat opportunity to give birds, insects, and other wildlife a place to shelter and forage. Doing less clean-up creates a natural habitat for wildlife to use during garden dormancy.

## Leave the Leaves

Fallen leaves on the ground are important for

- enabling insects and other animals to overwinter
- building soil health
- retaining nutrients on site
- insulating plants through the winter months

As pointed out earlier, shredded leaves make an excellent organic mulch. This finer material will break down more quickly and can be spread back into the garden beds or piled up to decompose into compost for soil enrichment. However, there are usually plenty of leaves to go around. In order to create an overwintering wildlife habitat, let some leaves remain intact in the landscape. Once the garden wakes up in spring and the insects and other animals move out, let the remaining leaves dry out before shredding them.

## Selectively Cut Back Perennials

Ideally, you would leave every stem standing. Alternatively, try retaining plants with a solid ornamental structure and strong stems as well as plants with seed heads. For plants that you do not want to self-sow, cut those back before the fruits/seeds mature in the fall.

Tall ornamental grasses can provide nesting habitat for birds when the grasses are part of a larger open area. In spring, cut them back to four to six inches high as soon as the snow melts. If new growth has already begun to emerge, cut above the new green shoots to avoid damaging them.



Possibly the most widely planted native grass in America, switchgrass (*Panicum virgatum*) is a reliable and attractive rhizomatous plant, supplying dense vertical structure that blows attractively in the breeze and bears delicate red seed heads above the stem starting in late summer. A pollinator powerhouse plant!  
© Native Plant Trust

## Allow Woody Stems to Stand

Pithy or hollow stems of elder, raspberry, blackberry, and several species of Joe-Pye weed make excellent winter homes for cavity-nesting bees. Leave some stems up for their seed and structural interest, and cut others back to about 18” high to open up the stems for bees. Many native solitary bees, such as sweat bees, will lay 20 to 30 layers of eggs in these chambers.

## Compost Yard Waste

The vegetative material that you cut back during and after the growing season has the ability to improve your garden’s soil health once it decomposes. Look into the many methods available to choose the right composting method for you.

## Add More Amenities

As you continue to develop and maintain your pollinator garden, consider providing a few more habitat amenities:

- Water feature – a water source is important for butterflies, beneficial insects, and birds.
- Muddy area – great nesting material for some bee species
- Unplanted bare soil in a sunny location – necessary for solitary nesting bees
- Standing dead trees (or a portion thereof) – used by bees and insects to create holes for nesting
- Host plants specific to the butterfly, moth, and other insect species. These plants serve as the nesting and nutrition source for all or part of the life cycle.



**Several species of Joe-Pye weed make excellent winter homes for cavity-nesting bees.**

Hollow stem Joe-Pye weed (*Eutrochium fistulosum*) is a tall, ecologically important wetland and wet-meadow flower, serving as a host plant and nectar source for a variety of insects. It thrives in soggy, sunny sites, from roadside swales to meadow gardens. © Native Plant Trust





# Worksheets

## Garden Habitat Care by the Season

Many gardeners create a seasonal timeline for garden maintenance tasks. This will vary depending on where you live and the plans you have for your pollinator garden. Use the following tables to develop your own schedule. The tasks listed here should get you started. Placing an X in the boxes will help you organize and schedule the tasks.

## WINTER (December–March)

Plan for next growing season.

TASKS	DECEMBER	JANUARY	FEBRUARY	MARCH
Take a class to expand your native plant knowledge				
Construct a Possible Plants list				
Identify pesticide free sources for native plants and seeds				
Order plants				

## SPRING (April–May)

Prepare gardens for new growing season.

TASKS	BEGINNING TO MID-APRIL	MID-TO END APRIL	BEGINNING TO MID-MAY	MID - TO END MAY
Cut and remove last season's plants and debris. Clean up garden beds.				
Prepare new planting areas				
Plant early season wildflowers				
Direct-sow seeds				
Plant woody trees or shrubs				

## EARLY SUMMER (June)

Start working in the dirt.

TASKS	JUNE WEEK 1	JUNE WEEK 2	JUNE WEEK 3	JUNE WEEK 4
Plant herbaceous perennials				
Set up a watering schedule				
Refresh the mulch layer				
Prepare new garden beds – remove existing vegetation				
Add a water feature				

## SUMMER (July–August)

The height of the growing season. Water, water, water; weed, weed, weed!

TASKS	BEGINNING TO MID-JULY	MID-TO END JULY	BEGINNING TO MID-AUGUST	MID - TO END AUGUST
Water plants deeply				
Monitor drought warnings				
Weed garden beds				
Make a list of the pollinators visiting				
Photograph the garden development				



## FALL (September–November)

Prepare the habitat for dormancy, and get a head start on the next growing season.

TASKS	BEGINNING TO MID-SEPTEMBER	MID-TO END SEPTEMBER	BEGINNING TO MID-OCTOBER	MID-TO END OCTOBER	NOVEMBER
Plant woody trees and shrubs					
Plant naturalizing bulbs					
Shred fallen leaves					
Apply a layer of organic mulch to beds					
Create a compost pile					
Selectively cut back plants					
Prepare new garden beds – remove existing vegetation					

## Spread the Word!

Let others know how you are helping to save our planet. Share your experience and encourage friends and family to do the same.

As our climate and environment continue to change, it is more important than ever to let others know about the threats to pollinator survival. In the face of habitat degradation and loss, harm from pesticide use, and invasive plants and insects, creating a pollinator garden is an action everyone can take to reverse these trends. Together, we can build pollinator habitat, one garden at a time.



**Together, we can build pollinator habitat, one garden at a time.**

# Resources

## Native Plant Nurseries

1. Native Plant Trust

[nativeplanttrust.org](http://nativeplanttrust.org)

- Garden in the Woods, 180 Hemenway Road, Framingham, MA
- Nasami Farm, 128 North Street, Whately, MA

2. Plant Native Nursery Database

[plantnative.org](http://plantnative.org)

## Websites

1. Native Plant Trust

Garden Plant Finder

[plantfinder.nativeplanttrust.org](http://plantfinder.nativeplanttrust.org)

Go Botany

[gobotany.nativeplanttrust.org](http://gobotany.nativeplanttrust.org)

2. USDA Plants Database

[plants.sc.egov.usda.gov](http://plants.sc.egov.usda.gov)

3. Natural Resources Conservation Service

[www.nrcs.usda.gov](http://www.nrcs.usda.gov)

4. BugGuide

[bugguide.net](http://bugguide.net)

# Books

## Pollinator Identification

1. *A Field Guide to Your Own Backyard* (Mitchell, 1985)
2. *Kaufman Field Guide to Butterflies of North America* (Brock & Kaufman, 2003)
3. *Peterson Field Guide to Moths of Northeastern North America* (Beadle & Leckie, 2012)

## Plant Identification

1. *Wildflowers of New England* (Elliman, 2016)
2. *Flora Novae Angliae* (Haines, 2011)
3. *Sibley Guide to Trees* (Sibley, 2009)
4. *Weeds of the Northeast* (Uva, Neal, DiTomaso; 1997)

## Ecological Gardening Practices

1. *The Northeast Native Plant Primer* (Lorimer, 2022)
2. *Bringing Nature Home: How You Can Sustain Wildlife with Native Plants*, updated and expanded edition (Tallamy, 2007)
3. *Teaming with Microbes: The Organic Gardener's Guide to the Soil Food Web*, revised edition (Lowenfels & Lewis, 2010)
4. *Insects and Gardens: In Pursuit of a Garden Ecology* (Grissell, 2001)

## Garden Installation and Maintenance

1. *Native Plants for New England Gardens* (Jaffe & Richardson, 2017)
2. *The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden* (Darke & Tallamy, 2014)
3. *Book of Field & Roadside: Open-Country Weeds, Trees, and Wildflowers of Eastern North America* (Eastman, 2003)



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