



Watersheds
CANADA

MANITOBA

WILDFLOWER GARDEN GUIDE





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Pollinator species, particularly bees, are essential for 15-30% of food production.



What is a Wildflower Pollinator Garden?

A wildflower garden is a visually spectacular, self-maintaining, low cost garden that truly brings the beauty of nature to your backyard. Native wildflower species are easier, cheaper, and more ecologically beneficial than using non-native wildflower plants.

Being native, wildflower species are well adapted to the local conditions and climate so they are often hardier and easy to maintain. They also reproduce on their own, are more resistant to diseases, do not require fertilization, are easy to propagate, share, and are a low cost alternative to ornamental non-natives. Most importantly, native wildflowers attract and protect native pollinator species.

Pollinator species, such as bees, butterflies, and hummingbirds, are integral to both natural ecosystems and human food production. These pollinators, especially bees, are responsible for pollinating approximately one-third of the world's crops that we consume. This underpins 35% of global food production and contributes to 87 of the leading 115 food crops worldwide (IPBES, 2016).

*The population of Monarch
Butterflies has declined by
84% between 1996 and
2015.*



Why is it Important?

Unfortunately, many of our pollinating species are declining due to habitat loss, climate change, invasive species, new diseases, and pesticide use.

Honey bees around the world have been experiencing a phenomenon called Colony Collapse Disorder (CCD). It occurs when the worker bees suddenly disappear, leaving behind the queen bee, nurse bees, and immature bees. Once the food runs out, the remaining bees die and the colony collapses. It is unknown what the exact cause of CCD is. Researchers believe it may be due to climate change, loss of habitat, the invasive varroa mite, pesticide poisoning, stress caused by the transportation of hives for pollination services, or a combination of all these factors (VanEngelsdorp et al, 2009).

Butterfly species have also been declining, notably the now endangered Monarch Butterfly. The population of Monarch Butterflies has declined by 84% between 1996 and 2015 (Thogmartin et al, 2017). One of the major reasons for the decline is the loss of Milkweed plants available to Monarchs. Milkweed is the major source of food for both the caterpillars that eat the leaves and the adults that eat the nectar. Common Milkweed was long considered a noxious weed and has been largely removed for agriculture production.

Thus, to protect these valuable and declining species, it is critical that property owners preserve and create pollinator habitat wherever they can. The best way to do this is to build your own wildflower garden!

How to Build a Wildflower Garden

While wildflower gardens are easy to create and maintain, there are some important steps to take to ensure the success of your new wildflower garden.

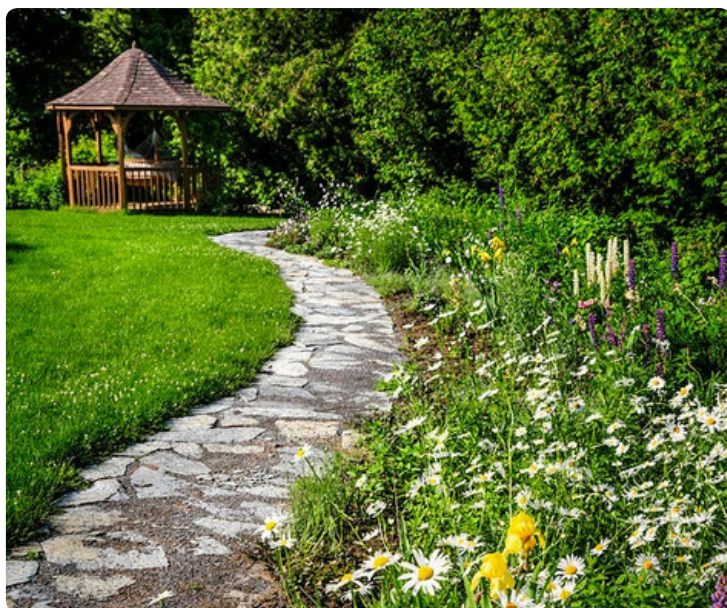
Choosing Your Garden Location

The great thing about wildflower gardens is they can be planted anywhere on your property, along your house, in an open area, among trees, or along shorelines. They can also range in size and appearance based on the space available and species selected.

Choose the area you are planting in and determine its soil type, moisture level and sun exposure. Consider these land characteristics when deciding what species you are going to include. Generally, most wildflower species will thrive in an area with full to partial sun exposure, sand to loam soil types, and good drainage. However, some wildflowers require significant moisture to survive. You will want to use species that have similar growing conditions so that all your flowers are successful.

Choosing Your Wildflower Species

You can choose from many different native wildflower species. To select the best species for your garden, consider your goals and preferences. Perhaps you have a favorite color or shape of flower or perhaps you would like to attract specific pollinator species to your garden.



Different flower types can attract different pollinator species:



To attract hummingbirds, consider planting Smooth Aster, Blue Flag Iris, or Fireweed.



To attract bees, consider planting Prairie Crocus, Prairie Sunflower, Canada Anemone, or Harebell.



To attract butterflies, consider planting Wood Lily, Blanket Flower, or Black Eyed Susan.

Starting on page 14 of this guide, there are descriptions of some popular, attractive, and hardy wildflower species that you may consider for your garden.

* Make sure to research wildflowers native to your region. Check out the native wildflower database at naturaledge.watersheds.ca/



Purchasing Your Wildflowers

Once you have decided where you want to build your garden and what species you would like to use, you will need to obtain your plants. There are two different methods to plant wildflowers: Seed Mixes or Plugs/Potted Stock.

Alternatively, you could combine these two methods by purchasing seeds, planting them in pots in a controlled environment, and then allowing them to grow to a larger size before planting. This method is cost-efficient while also improving survival success.

Visit a local nursery or garden centre to purchase seeds, potted stock or plugs. You can also purchase seeds online to be delivered but make sure they are from a local source or you may inadvertently plant non-native species.

Find a local native plant retailer near you:

beebettermb.ca/





Seed Mixes

- ⊕ Low cost
- ⊕ More potential plants
- ⊕ Easy to spread and plant
- ⊖ Takes longer to establish and begin blooming
- ⊖ More difficult to choose precise location of species
- ⊖ Once seeds begin growing, more susceptible to stresses, like weed competition and drought

This is the best option for gardens covering a large area, such as a field or meadow.

Potted Stock or Plugs

- ⊕ Takes less time to establish and bloom
- ⊕ Allows you to choose precise location of each plant
- ⊕ Ensures plants are in good condition and produces a higher survival success rate
- ⊖ Higher cost
- ⊖ Fewer individual plants
- ⊖ More physically demanding to plant

This is the best option for gardens covering a smaller area.

Preparing Your Garden

Begin preparing your wildflower garden in the early spring or early fall.

It is best to remove all of the grass/sod within your garden area. This is important for your new plants because it reduces competition with grasses that would otherwise compete with your wildflowers for food, water, and sunlight.

If your garden is small, you can remove the sod using a hand shovel. However, if your garden is too large to remove the sod by hand you can use a sod cutter. Once the sod is removed, turn, till, and/or rake the dirt in order to loosen up the soil.

Next, add a layer of good quality soil to your garden. We recommend a mixture of black earth and compost. The new soil will provide nutrients to your new plantings as well as good root coverage. It also ensures that there are no other seeds in the soil before planting your wildflowers.

This is also a good time to add structure or some decoration to your wildflower garden. Using materials like rocks, logs or ornaments can further enhance the aesthetic appeal of the area. Additionally, by placing rocks and logs throughout your garden you are creating resting areas for pollinators and birds. Similarly, you may choose to create a border around your garden. This can be done with fencing, bricks, small rocks, a few logs, or even short shrubs. It can be useful to designate the garden area with a border to prevent accidental mowing or trampling of the plants.

Peat is a soil made of partially decayed plant material in acidic or oxygen-poor environments. Peat takes thousands of years for a single meter to form, while trapping carbon to keep the planet's climate stable. During peat harvest, the exposed layer is provided with oxygen it needs to decompose quickly, releasing stored carbon into the atmosphere. Peat harvest negatively impacts water quality by impeding nutrient absorption and degrades important habitats for migratory birds and specialized plants that thrive with low levels of nutrients and oxygen. To protect Manitoba's peatlands and important habitat for native species, consider peat-free soil options like coconut coir-block and regenerative potting soil.



Planting Your Wildflowers

Finally, the last, most important, and most enjoyable step is planting your new wildflowers.

If you decided to spread wildflower seeds:

- Place your seeds in a bag and mix with sand. Many seeds are very small and mixing it will help to spread the seeds evenly. Gently drop the mixture evenly throughout the planting area.
- Rake the area lightly to shuffle the seeds into the soil.
- Add a light layer of mulch composed of straw or other materials to retain moisture and protect the seeds from birds and mammals. Do not over mulch or the seeds may not receive enough sunlight to germinate.
- Water the whole area well and maintain moisture.
- Germination should occur between 20 and 30 days.
- Depending on the species selected, other specific instructions may be required to initiate germination. For example, many seeds require cold stratification or overwintering to germinate.

If you decided to use potted stock or plugs:

- Dig a hole approximately an inch or two wider and deeper than the pot.
- Gently remove the plant from the pot by lifting the root ball and stem base. Be careful not to pull too hard on the top of the plant, as many wildflowers are very fragile. If you have difficulty, try squeezing the pot to loosen up the soil or simply cut the pot open with an exacto knife.
- Once the plant is out of the pot, use your fingers to massage the root ball and loosen up the soil. This will allow the roots to spread easily once in the ground. However, do not remove all of the soil off the roots because too much air exposure can stress the plant.
- Place the root ball into the center of the hole, making sure the roots are pointed down and the stem is straight up.
- Fill the hole with soil then firmly press the soil down around the base of the plant to remove air pockets in the hole.
- Once all of your potted stock are planted, cover your garden with a thick layer of natural mulch. This further inhibits grasses from growing and outcompeting your new plants. It also helps to retain water, insulate the roots in the winter, and indicate the planted area.
- Finally, give your plants a generous amount of water immediately after planting. This will further remove air pockets in the hole as well as give each plant a good start to grow!



Maintaining Your Wildflowers

Water your new plants regularly for the first year or two. It is best to water in the early morning and late evening to reduce evaporation. It is also best to water directly around the base of the plants. Once your wildflowers have become established, watering should only be necessary during periods



of drought in the summer. Observable signs of drought are drooping and colour change of flowers and leaves. Depending on the species selected and the site conditions, additional watering may be necessary. Pulling weeds and grasses will likely be necessary for the first year or two before the wildflowers become established. While removing sod, adding new soil, and adding mulch will greatly

reduce the amount of weeds and grasses that grow, they can still quickly overwhelm and outcompete your new flowers if left unattended.

Re-mulching can be beneficial every year or two for preventing grasses and weeds from establishing. Mulch may blow away or wash away overtime. However, once your wildflowers have grown and filled in the open areas, further mulching is not necessary.



Popular Wildflower Species to Plant in Manitoba Gardens

- Black Eyed Susan
- Wood Lily
- Blanket Flower
- Prairie Crocus
- Prairie Sunflower
- Smooth Aster
- Canada Anemone
- Blue Flag Iris
- Fireweed
- Harebell



Black Eyed Susan

Rudbeckia hirta

- Have bright yellow petals and dark brown centers. Leaves are grayish green coloured, lance shaped, and are covered in hairs.
- Easy to grow, low maintenance, water occasionally during the first year. Tolerates heat, drought, and a variety of soil types.
- Short-lived perennial but usually self-seeds.
- Plant seeds in early spring. Full to partial sun exposure.
- Long lasting blooms throughout the summer.
- Attracts pollinator species, such as butterflies and bees.
- Canada Hardiness Zone: 2b-8a



Wood Lily

Lilium philadelphicum

- Features showy, bright reddish-orange flowers with yellow and dark spotted bases, arranged 1-3 at the tip of a stiff stem. The leaves are narrow, elliptic, alternately arranged, and have entire margins.
- Low maintenance, prefers normal to moist conditions and well-drained, loamy or sandy soil types.
- Plant in full or partial sun.
- Blooms from June to August, offering a bright splash of colour throughout the summer.
- Attracts a variety of pollinator species, including hummingbirds, bees, and butterflies.
- Canada Hardiness Zone: 1b-7b



Blanket Flower

Gaillardia aristata

- Features showy, reddish-orange flowers with yellow tips on the end of a long hairy stem with alternate lance-shaped leaves. Typically grows about 1 meter tall.
- Hardy and adaptable, prefers sandy or loamy soil types but can tolerate drought, acidity, and infertile soil, making it valuable for rehabilitating disturbed sites. However, it does not do well in wet or clay soil.
- Plant in full sun. Tolerates a neutral to acidic pH level.
- Blooms from June to September, providing a long display of colour.
- Attracts a variety of pollinator species, like bees and butterflies, and the seed heads benefit bird species.
- Canada Hardiness Zone: 1b-7b



Prairie Crocus

Pulsatilla nuttalliana

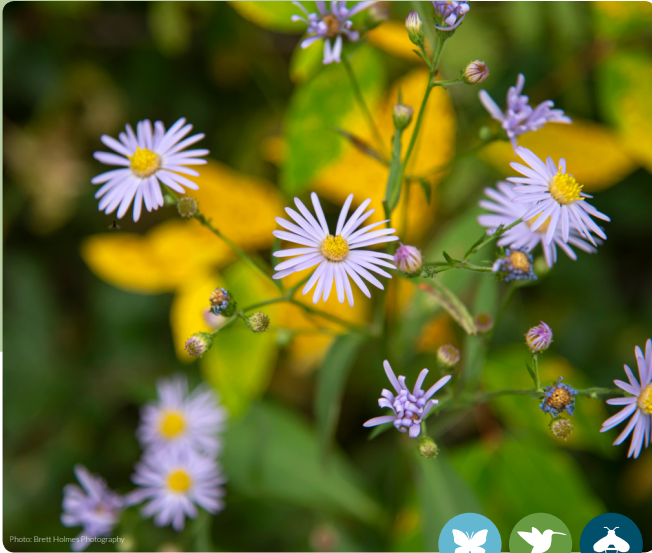
- Features blue-violet flowers about 3-6 cm wide, with 5-8 petal-like hairy sepals arranged in a bowl-shape. These low-growing perennials are the provincial flower of Manitoba!
- Hardy and drought adaptable. Prefers well-drained, sandy or rocky soil types. This wildflower can be found naturally in dry meadows, prairies, open forests, or rocky upland slopes.
- Plant in full to partial sun. Tolerates a neutral pH level.
- Blossoms in early spring, providing one of the first splashes of colour after winter.
- Attracts pollinators like bees and butterflies, providing early nectar sources.
- Canada Hardiness Zone: 0a-7a



Prairie Sunflower

Helianthus petiolaris

- Features daisy-like flowers with 12-25 bright yellow petals and a central disk that varies from light yellow to brown. The Prairie Sunflower typically grows about 1 to 2 meters tall.
- This wildflower is a drought-tolerant species, which prefers well-drained, sandy or loamy soil types. It is typically found in prairies, open woods, roadsides, and disturbed areas.
- Best grown in full sun, and it can tolerate a wide range of soil conditions, including poor soils.
- Blooms from early summer to early fall.
- Attracts pollinators like bees and butterflies, and the seeds provide food for birds.
- Canada Hardiness Zone: 2b-7b



Smooth Aster

Symphyotrichum laeve

- Features lavender-blue flowers with yellow centers on flowering stems. The leaves are alternately arranged, smooth, and waxy and have entire margins. Typically grows about 1 meter tall.
- Hardy and frost-tolerant; it prefers sandy or loamy soil types and can handle various conditions, including drought. This wildflower naturally occurs in open forests, fields, meadows, prairies, and road ditches.
- Plant in full sun. Tolerates a neutral pH level.
- Blooms from August to October, providing late-season colour.
- Attracts a variety of pollinator species like bees, butterflies and hummingbirds, providing a late-season nectar source.
- Canada Hardiness Zone: 1b-7b



Canada Anemone

Anemone canadensis

- Features 5 showy, white colored, petal-like sepals, with yellow center stamens, on an erect hairy stem. This plant spreads quickly, making it a great groundcover.
- Hardy and can tolerate short periods of drought. Prefers well-drained humus or loam soil types. Often found in prairies, meadows, wet forests, and on shorelines.
- Plant in full or partial sun, although wind sensitive.
- Blooms early from April to July. After blooming, the flowers are replaced by a cluster of achenes, small, dry, one-seeded fruits.
- Attracts pollinator species like bees and butterflies, providing a nectar source.
- Canada Hardiness Zone: 1a-7b



Blue Flag Iris

Iris versicolor

- Features blue flowers with yellow/white centers emerging from a tall stalk with sword-shaped leaves growing in a cluster at the base, reaching up to 1m in height.
- Hardy and flood tolerant. Prefers wet to moist shallow, rocky, humus or loam soil types. Occurs naturally in marshes, swamps, wet meadows and on shorelines.
- Plant in full or partial sun.
- Blooms early May through July, with peak bloom occurring in June.
- Attracts a variety of pollinator species like bees, butterflies and hummingbirds, providing early-season rich nectar source. Seeds provide a food source for birds and small mammals.
- Canada Hardiness Zone: 1a-7b



Fireweed

Chamerion angustifolium

- Features 4-petaled vibrant pink to purple flowers arranged in a cone-shaped cluster, growing 1.5-3m tall. Produces seeds with silky white hairs, known to colonize burned or disturbed areas.
- Hardy and pH adaptable. Prefers moist and well-drained rich sand or loam soil. Found in moist meadows, forest edges, shorelines, and bogs.
- Plant in full or partial sun.
- Blooms from July to September. Flowers bloom from bottom-up, reaching the top when autumn approaches.
- Attracts a variety of pollinator species like bees, butterflies and hummingbirds, providing vital late-season migration energy from the rich nectar source.
- Canada Hardiness Zone: 0b-5a



Harebell

Campanula rotundifolia

- Features nodding bell-shaped light-blue to violet or purple, flowers, 1.5-2.5 cm long, and slightly drooping. It typically grows 10-50 cm in height.
- Winter hardy and drought tolerant once established. Prefers well-drained sandy or rocky loam soil. Does not tolerate highly saturated and compacted soil. It is commonly found in open forests, prairies, rocky bluffs, and shoreline slopes.
- Plant in full to partial sun.
- Long-blooming from June to September.
- Attracts pollinators like bees, butterflies and hummingbirds. Provides a reliable nectar source, and attracts specialized insects such as leafcutter bee species.
- Canada Hardiness Zone: 0a-8b

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