



**Native Prairie and Meadow
Gardens and Landscapes**
for homes, businesses and institutions

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photo: Natvik Design Inc.



The Lorne Park Prairie is a small remnant prairie in Mississauga.

Native Prairies and Meadows

“Before manicured lawns, with their chemicals, mowers, and blowers, there were ecological meadows, with their butterflies, birds, and bees.” Penny Lewis, Executive Director, Ecological Landscaping Association, USA.

Along with vast forests, wetlands, lakes and rivers, southern Ontario once contained large areas of tallgrass prairie that stretched across to the mid-west. **Tallgrass prairie** is a distinct ecosystem mainly comprised of tall grasses and wildflowers. This type of prairie differs from shortgrass and mixed grass prairies also found in North America’s mid-west. Tallgrass prairies were valued by First Nations and early European settlers for their diversity of plants and animals. They were a source of food, fuel, dyes, bedding and healing plants. Due to expanding human settlement, tallgrass prairie, along with many of the plants and animals species that call it home, have become increasingly rare in Ontario. It is estimated that less than three per cent of Ontario’s original tallgrass prairie remains.

The Credit River Watershed and surrounding area historically contained pockets of tallgrass prairie as well as oak savanna, a related woodland ecosystem. Some remnant prairie plants and small prairies are still found in the Credit River Watershed. You can help protect and restore prairie and savanna by planting prairie plants, prairie gardens or larger areas of prairie. This will create habitat for the birds and other animals that call these ecosystems home.

Meadows are more common ecosystems that also consist mainly of wildflowers and grasses. Some plant species are found in both meadows and prairies, while others have adapted to the specific conditions of just one. Most wet meadows are sustained by periodic flooding, while drier meadows are typically transitional, meaning they grow in open areas and set the stage for forest regeneration. Although not as unique as tallgrass prairies, meadows are equally important in the mosaic of ecosystems that create a healthy environment. You can grow or enhance meadows on your property by planting appropriate native grasses or wildflowers in gardens or larger landscapes.



photo: Jon Clayton

Benefits

Prairie or meadow plants can be colourful additions to your garden while also contributing to biodiversity. Native plants have adapted to our local weather, soils, insects and other wildlife, and many are drought-tolerant. Once established, native prairie and meadow plants require less maintenance than lawns or annual flower beds. This saves time, money, energy, water, fertilizers and pesticides.

Other benefits of growing native prairies or meadows:

- Creates habitat for native birds, animals and pollinating insects such as butterflies
- Contributes to habitat linkages and safe movement corridors for wildlife
- Improves soil, air and water quality
- Reduces soil erosion
- Improves water infiltration into the ground, reducing flooding and improving water quantity
- Costs less than planting annuals every year
- Provides an alternative to manicured lawn for hard to mow slopes
- Many wet-moist prairies and meadow plants can be integrated into rain gardens and other stormwater features (refer to the Low Impact Development section on CVC's website)
- Provides an environmental education opportunity for the community

Prairie and meadow plants provide natural, beautiful alternatives to lawns and horticultural beds and can sometimes be grown on balconies and rooftops. These gardens are green oases teeming with life - a legacy for future generations.



photo: Jen Cooper

biodiversity

Biodiversity is the “variety of life”. In this case, it refers to the number of different plant species growing in your landscape. Planting many different species can help increase the overall survival of the prairie or meadow planting: if one species dies, others are there to take its place. Increasing plant biodiversity increases the habitat (food and shelter) that, in turn, supports a wider variety of birds and pollinating insects such as butterflies and bees.



photo: Natvik Design Inc.

Activia Sportplex green roof

planting rare species: handle with care!

Many prairie plants are rare within Ontario and sometimes within Canada. Some meadow species are also rare and deserve special attention. Using rare plants sourced from distant locations can lead to cross-breeding and weakening of local plant populations that are adapted to the local environment. When selecting rare plants, it is important to purchase them from a nursery that provides regionally sourced materials as noted on CVC’s *Native Plant Nurseries and Seed Sources* list. Once planted, please maintain these special plants and ecosystems to ensure that they thrive!

Note: If your project is part of a larger permit application to Credit Valley Conservation, contact CVC Planning staff for guidance on appropriate species selection. Common native species may be most appropriate in these locations.

Prairie and Meadow Communities: Plants, Animals and Unique Characteristics

Prairies and meadows are two of many ecological communities found in the province and the Credit River Watershed. Ecological plant communities consist of various plants that often grow together because they are adapted to similar site conditions such as soil, water and temperature. Certain animals prefer to live in these areas too, and thus form part of these ecological communities.

Even the evolution and maintenance of these communities is sometimes unique. For example, fire historically played an important role in sustaining prairies.

Prairies and meadows are both comprised of grasses and wildflowers, but they each have a different mix of species, largely due to differing site conditions. The existing conditions on your site will help you to decide whether prairie or meadow plants are more suitable for your landscape.

Prairie

- Nutrient-poor, sandy soils
- Mainly drier areas, although there are some wetter prairies
- 50 per cent grasses, 50 per cent wildflowers
- In nature, maintained mainly by fire and grazing (can be maintained by mowing)

Meadow

- Low-nutrient to richer soils
- Can be wet, moist or dry
- 30 per cent grasses, 70 per cent wildflowers
- In nature, maintained by flooding, grazing and tree/shrub damage from windfall, disease or other natural causes
- In the absence of fire, drought, disturbance or management, meadows will eventually transition to woodlands, but you can choose to sustain your meadow for aesthetic and habitat purposes, mainly through mowing

Prairie or Meadow Landscape: a large area covered with randomly growing prairie or meadow species including both grasses and wildflowers.

Prairie or Meadow Garden: a smaller, more formal space with plants selected and placed carefully; requires regular maintenance to maintain the more manicured look.



Bobolink



photo: Bob Morris

Twelve-spotted skimmer

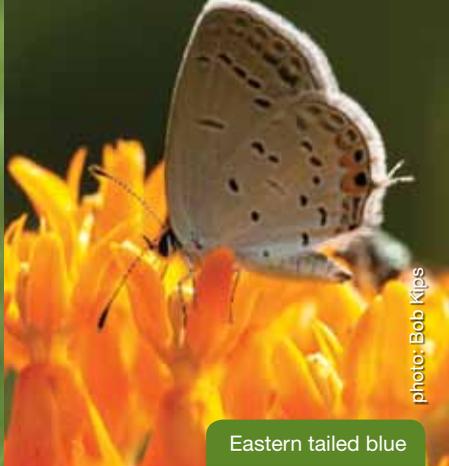


photo: Bob Kijas

Eastern tailed blue

Some birds prefer open spaces such as prairies and meadows and will not live in woodlands. Bobolink is one bird that is now considered rare because of declining meadows, prairies and fields.



photo: Melanie Kramer

High Park in Toronto is one site where black oak savanna is being restored.

Oak savanna ecosystems are related to prairies in that they are a transition between prairies and oak forest, typically found in areas with similar site conditions. They mainly contain oak trees spread relatively far apart among grasses, wildflowers and, to a lesser extent, shrubs. Depending on site conditions and nearby forests, pine or other trees may also grow. Pockets of oak savanna were historically found in the Credit River Watershed and surrounding area, mainly in sandy areas such as near the Lake Ontario shoreline and on the Oak Ridges Moraine.

Steps to Establishing a Prairie or Meadow

Planting can take place on large or small areas and can be sustained or expanded over time. If you do not have room for an entire meadow or prairie, it is easy to grow a few plants in small groupings. Either you or a landscape company can plant a prairie or meadow.

The basic steps are the same regardless of your choice of plants and who does the installation.

1. Understand Your Site

There are many locally native flower and grass species that lend themselves to different site conditions. Meadows may evolve along wetter stream banks, in the rich soil of formerly wooded areas, or on clay soils commonly found south and east of the Niagara Escarpment and Oak Ridges Moraine. Prairies are more specialized and tend to grow in sandier or calcareous areas (soils with high levels of calcium carbonate, high pH and low nutrients) primarily found near Lake Ontario. Observing your landscape can help you decide what to plant. It is best to grow plants that are suited to your specific site conditions, rather than trying to replace soils or water regularly to accommodate certain plants.

Gathering the information below is a good place to begin your planning.

How Many Hours of Sunlight Does Your Site Receive?

- 0-4 hours = full shade
- 4-6 hours = part shade
- 6+ hours = full sun

Prairies and meadows generally prefer sunlight. If your site gets less than six hours a day of direct sunlight, consider a woodland garden. To add visual appeal to woodlands and to create micro-habitats, prairie or meadow plants can be planted along the edges of woodlands or in small groupings in sunnier spots. Refer to CVC's woodland guides noted in the Resources section.

Know Your Soil

If you have a sunny location, the existing soil largely determines whether or not you should plant prairie or meadow species. Do you have sand, clay or loam soils? Although some species can thrive in various soil types, prairie plants generally prefer dry, sandy soils, where many other plants struggle to succeed. Meadow plants usually tolerate a range of soil conditions and tend to exist in slightly more nutrient-rich soils. Refer to CMHC's Get to Know Your Soil fact sheet noted in the Resources section if you are uncertain about your soil type and moisture. If you want to test your pH (acidity), purchase a simple gauge available from most garden centres or landscaping supply shops.

where would prairie or meadow species thrive on your site?

Aerial photographs are excellent tools to help you understand the history of your site, its current layout and how it connects to nearby natural areas. Aerial photographs can be obtained through Google Maps, Google Earth or Bing Maps. The City of Mississauga's website has aerial photos available for all of Mississauga. Look for both current and historic aerial photographs to get a sense of how the site has changed over time and what historic features might be able to be restored. Local libraries or municipalities are also sources of aerial images.



Aerial photo of Greening Corporate Grounds participant, Teck Metals, Mississauga



Aerial photo of residential land, Mississauga

Slopes and Drainage

Slopes can be sunny or shady, steep or shallow and may be a bit drier than surrounding low-lying areas. This may affect the type of plants that do well in each location. Observe and choose your plants appropriately.

Existing Plants, Neighbouring Plants

What is growing nearby? Are there any native prairie or meadow plants? What is growing nearby may give you clues as to what will thrive and what may not survive in your landscape. Also consider whether there are any invasive plants that should be removed before planting.

Available Space

Consider how you and others will use this space, vantage points for viewing your landscape, and any nearby activities that may affect your site. A small, highly visible space may be suited to a prairie or meadow *garden*, planted with plants, or “plugs” that will fill in and mature quickly. A large area may be a good site for a prairie or meadow *landscape* planted with a mix of appropriate grasses and wildflowers.

Infrastructure

Under and above-ground infrastructure such as pipes, hydro wires and utility boxes may need to be easily accessible. This often works well with wildflowers and grasses, but care may still need to be taken when planning and when digging. Read *Digging on Your Site* on p. 17 for more information.

Special Challenges

Poor air quality, de-icing salt use, foot traffic and other conditions could present challenges on your site. Some plants tolerate these conditions better than others. Be sure to consider all factors influencing your site and plan with them in mind.

Refer to CVC’s *Native Prairie and Meadow Plants for Landscaping* to begin selecting plant species that are appropriate for your site.

Prairie or meadow gardens and landscapes are two environmental landscaping options you can consider for your site. CVC has several programs to help you learn about and initiate various landscape projects. For business, corporate and institutional sites, you can learn more about your landscape options by joining CVC’s *Greening Corporate Grounds* program, now offered throughout Peel Region as part of the Partners in Project Green program. Visit CVC’s website or call staff to learn more about how we can help to determine what options would work best for your site. For home gardens in the Credit River Watershed check CVC’s website for *Your Green Yard* resources. For larger rural lands, refer to *Countryside Stewardship*.



photo: John P. Morgan, Prairie Habitats Inc.

2. Select Your Preferred Community and Specific Plants

You can observe native prairies, savannas and meadows growing in or near the Credit River Watershed. In Jack Darling Memorial Park, The City of Mississauga has an area of prairie restoration underway, as does University of Toronto at Mississauga. High Park in Toronto has a remnant oak savanna where restoration is also in progress. In Mississauga, a small remnant tallgrass prairie can be found in Lorne Park. In rural areas of our watershed, meadows bursting with the gold and purple blooms of late summer are a familiar sight. These natural areas can provide clues as to what might grow best in the Credit River Watershed and on your site.

Be aware that many natural areas in our watershed and beyond have been altered, so some plants in natural areas will be non-native and some may be undesirable invasive species. A truly native plant community will only include native plant species, but if desired you can include some “friendly” non-native plants. Do not plant any invasive plants or cultivars of native plants (i.e. native plants that have been genetically altered for specific traits). For additional information on invasive plants see the Resources section.

If you have limited space, consider planting a small prairie or meadow garden or select a few species to add as accents within existing garden beds. For larger areas, you can plant a full complement of species to create a prairie or meadow landscape. All prairie and meadow plants provide habitat but you can choose to select plants that are known to attract birds, butterflies or other desirable animals. A few low flowering shrubs, such as wild roses and wild raspberries, can also enhance meadows, provided you limit their spread over time in order to sustain the meadow. Whatever your goals, it is best to select species that grow together naturally in plant communities.

Refer to CVC’s *Native Prairie & Meadow Plants for Landscaping* to help you choose the right plants for your site. Other sources of information include:

- “Plants, Animals & Communities” under Watershed Science on CVC’s website
- Mississauga *Natural Areas Survey* on Mississauga’s website
- CVC’s Ecological Landscaping Resources on CVC’s website
- Tallgrass Ontario - noted in the Resources section
- Outside Mississauga, check with your local Municipal Parks Department or Naturalists’ Club for additional resources in your area
- CVC’s *Native Plant Nurseries & Seed Sources* list includes nurseries that specialize in locally sourced native plants

Note that many municipalities have property standards by-laws that restrict growing grass over a certain height. Check with your local municipality to ensure you meet by-law requirements and remember to keep your landscape neat and attractive.



Wild lupine



Indian grass

photo: Bob Klips



photo: Bob Klips

Big bluestem



photo: Bob Klips

Cardinal flower

3. Consider Other Design Elements

Other helpful things to consider when designing your prairie or meadow:

- For added visual appeal, plant brighter, showier native plants in more visible places such as the entrance to a building.
- In nature, plants seldom grow in large masses of a single species. You can mimic this blend by combining species from the start (mixing seed together or placing plants randomly). Alternatively, you can plant groups of specific plants together or sow the seeds of a single species in patches, waves or drifts. Note that areas with single species planted will mix together over time; you can allow this to happen, or transplant “rogue” plants.
- For a more natural look, avoid planting in straight lines. If you only have space for a small grouping, plant in odd numbers.
- Create privacy or beautify fences and less attractive parts of your property with tall plants.
- If planting in a small bed, place tall plants at the back or centre and shorter plants at the front. To create a “neater” appearance in a large area, grow shorter plants along the edge. You may need to occasionally pull or transplant taller plants that migrate to the edges.
- Keep edges looking “neat” by using a border of decorative stones, bricks, mowed grass or other edging material.
- Choose plants that will add interest and colour through the seasons, such as asters and goldenrods for vibrant fall colours or tall grasses for winter texture and structure.
- Create focal points with large stones, sculptures, or a unique plant grouping.
- Add places for rest or reflection such as benches, large boulders or even a swing.
- Consider all uses of your site. For example, do people take a shortcut across your site? Plant taller species to prevent this, or mow a path to allow it.
- Plan for activities that can negatively impact your plants. For example, is salt spread on your driveway or parking lot in the winter? Is this near your future planting area? If so, choose plants that are salt tolerant and try to use less salt by switching to a salt alternative or a salt-sand mixture.
- For safety and security reasons, do not block vehicle sight lines or other desired views.
- Mow more frequently in select areas where attracting insects or other wildlife is not desired.

After selecting the best areas for your prairie or meadow plants and considering other design factors, measure the space(s) to determine how many plants or how much seed you will need.



Mown areas can create a more maintained look where needed.



photo: Natvik Design Inc.

Meadow and prairie plants look great in borders and near entrances.

make a good green impression

You can help dispel the idea that native gardens and landscapes are “messy” and promote them as naturally beautiful alternatives to more manicured spaces by following a few simple guidelines:

- **Maintain a neat edge.** Mow edges or add a decorative border such as wood edging, mulch or stones.
- **Make the area look well-designed and inviting.**
- **Do not block street views.** Prune or thin as needed.
- **Talk to your neighbours.** Explain what you are doing and the environmental and personal benefits of your new landscapes. They may want to try it too.
- **Control the spread of invasive species.** Weeds can be a problem in many gardens, but some are more invasive than others. Refer to the Maintenance section for options regarding removing weeds and invasive plants. For information on invasive species, refer to the Resources section of this guide.

To keep your landscape attractive and safe, see more tips in the Maintenance section.

4. Prepare Your Planting Area

As noted in *Digging on Your Site* (p.17), check with your municipality and, where relevant, your organization's operations staff before digging.

There are six recommended ways to prepare a planting bed:

- **Cutting:** Remove lawn using a shovel to cut horizontally, or use a sod cutter. Remove all visible root pieces. Some topsoil may need to be added; select the best soil type for your chosen plant community. Plant into the new soil.
- **Smothering:** Cover the lawn using several layers of wet newspaper or cardboard and cover with 10 - 15 cm of the topsoil best suited to your plant community. Plant into this new soil. Roots of new plants will break through the fabric or newspaper. For more deeply rooted plants, cut an "x" in the fabric or paper where you place a plant.
- **Tilling:** For larger sites, tilling can be used but there will likely be more "weeds" for the first two to three years compared to other approaches. To preserve topsoil, shallow tilling is preferable to deep tilling. Methods involving repeated tilling for one growing season can be effective in minimizing weeds before planting. Refer to p.15 of *Planting the Seed*, available online as listed in the Resources section, for more information.
- **Solarizing:** Cover lawn using thick black plastic. Leave on for a full season. Most but not all vegetation will overheat and die. Some more persistent weeds will still need to be removed.
- **Scarifying:** This method works well when converting lawns or enhancing existing meadows. It loosens soil while aiding with weed removal without having to turn the soil over. It can be done with a scarifier, a tool available at landscape equipment sales or rental firms, or by hand with a rake or pitchfork. Tines go into the ground to loosen the soil and pick up some weeds. Pull any remaining visible weeds and roots. Follow by over-seeding or planting.
- **Direct Planting and/or Seeding:** Plant or seed directly into garden beds or meadows. It is best to plant relatively close together to reduce unwanted plants or weeds. Plant plugs or mow and over-seed with native plants. Like tilling, this method may result in more weeds and more maintenance for the first two to three years.

Simply "letting the grass grow" is not recommended in highly visible spaces, as it may result in the growth of "weedy" species. It is difficult to successfully add native plants once weeds are firmly established. However, you could try this method in less visible places provided there is a seed source of native wildflowers and native grasses nearby. This approach often results in growth of many thistles for a year or two, followed by asters and goldenrods. Depending on nearby seed sources, you may find some interesting native plants that naturally migrate to your site. You can attempt to enhance the resulting meadow with native seeds and plants over time. You will



photo: Melanie Kramer



photo: Melanie Kramer

Smothering with newspapers and adding suitable topsoil is one way to convert lawns to meadow or prairie beds.

need to watch for and remove invasive plants from time to time. Be aware of your municipality's property standards by-laws and your neighbours' sensitivities.

Regardless of the method you select, extra weeding will be necessary for a year or two until new vegetation is established.

Adding organic matter (compost, decomposing leaves, etc.) to soil is an option, depending on your soil type and plant selection. Prairies thrive in low-nutrient soils, so adding organic matter to prairie plantings is not advised. Some meadow plants thrive in nutrient-rich soils, however, plants themselves will add organic matter to soil over time, so it is important that you do not add too much organic matter to the soil. Decreasing fertilizer use is one of the many benefits of native plant gardening. If absolutely necessary, work in compost or decomposing leaves to a depth of 10 - 15 cm. Liquid and other artificial fertilizers are not necessary or recommended.

Avoid using toxic herbicides to kill unwanted vegetation. There is a province-wide ban on cosmetic pesticides in Ontario. Although they can be used by qualified applicators to remove some particularly harmful pests, hand pulling weeds and other natural methods of dealing with pests are preferred. Pesticides can kill healthy soil bacteria and nutrients, pollute the air and water, harm wildlife and even pets. Some pesticides are harmful to human health. If you have a large site that is full of invasive plants, you might consider a one-time application of a low toxicity herbicide by a qualified landscape company, as hand removal can be difficult. To ensure invasive plants do not return, replant or seed with native plants as soon as the herbicide is no longer active. For more information on non-toxic pest management see the Resources section.

digging on your site?

Be careful not to dig where you could hit underground pipes, cables or wires. A week or more before you plan to dig call your municipality at 311 or other general information line. They will identify the various utilities you need to call to help you identify digging hazards. In some cases, a representative will come to your site and mark the locations of utility lines for you. In other cases, service providers will give you instructions on how to ensure safety while you dig.



photo: Bob Klips

Prairie plants



photo: John P. Morgan, Prairie Habitats Inc.

Seed of some prairie plants

5. Installation

Choosing to Seed and/or Plant

You can combine seeding (planting seeds) with planting (plants), or choose only one method. Seeding is less expensive and can reduce weed growth, but will take a little longer to establish. Some plants take two or more years to flower after seeding but most are perennials that flower annually once established.

Sourcing: Purchase plants and seeds from native plant nurseries that provide locally sourced plants and seeds. Locally sourced plants are best adapted to local conditions and also contribute to sustaining local native biodiversity. Refer to CVC's *Native Plant Nurseries & Seed Sources*. Watch for plants available in some nurseries and garden centres that are labeled "native" but come from far away. Some plants are native to other regions of Canada but not the Credit River

area. Some plants are cultivars of native species, meaning they are not naturally occurring.

Do not remove native plants from natural areas or public parks. Instead, purchase plants from reputable nurseries as noted above.

Timing: Seeding and planting are best done in spring or fall. Timing is increasingly difficult to predict given climate change. General guidelines are provided below, but you can adjust according to local conditions.

Late April to mid-June is the best time to plant because temperatures are suitable and rainfall is usually abundant. September to early October is also a good time to plant. Planting in summer is not recommended as new plants will require too much water and are vulnerable to heat stress.

Seeding of wildflowers is best done in November or December, when soil is frozen but not yet covered with snow. Seeds will lie dormant until spring and will start to germinate with the spring thaw. Seeding can be done in early spring (April to May) provided seeds are pre-stratified (ask your seed supplier) but germination will likely be lower than seeding in the fall. Grasses are best seeded in early spring. You can seed flowers in the fall and grasses in the following spring. Seeding in summer is not recommended.

Climate change may bring untimely frosts, thaws, flooding or droughts. You may lose some plants and seeds or you may need to provide unexpected maintenance, such as extra watering or a light layer of straw mulch to protect seeds. If your meadow or prairie is patchy, it is best to fill in gaps by scarifying and seeding or direct planting of additional plants. Do not allow a barren patch to sit for more than 2 weeks, as weeds will likely fill in the space.

Spacing: Flowers and grasses will generally be spaced at 15 - 40 cm (6-16"), depending on the size and growth habit of the plants. For example, some grasses are clump-forming, others are single stemmed. Clump-forming grasses can be planted further apart. Before planting, set plants out where they will be planted. Then adjust the plants according to their spacing requirements and your preferences.

Seeding rates will vary depending on the mix of species. Always follow the seeding rates provided by your seed supplier, noting that it is better to over seed than under seed in order to avoid bare spots and discourage weeds. Approximate seeding rates are:

- Grasses - 100 g per 70 m²
- Wildflowers - 100 g per 250 m²
- Mixed grasses, flowers - 100 g per 100 m²

To help ensure even coverage, rates should be increased in small areas. Extra plants can be transplanted if spacing is too dense.



Planting

- Set your plant pots or plugs where you want each plant to go and make any adjustments to location or spacing. If planting with a large group of volunteers some of the plants will likely move regardless of your preferred locations. You can fix this later or leave the plants to sort themselves out.
- Dig your holes slightly larger than the plant pot or plug. Keep the soil you dug beside the hole.
- Gently remove the plant from the pot and place it in the hole. If the nursery will reuse the pots, you can return them.
- Refill the hole around the plant with the soil you removed and gently firm the soil around the roots. Leave a slight depression around your plant to catch water.
- After planting, water the soil well with a light shower. Do not water between 10 a.m. and 4 p.m. If mulching, see below.
- On larger sites, plants can be installed with a machine, depending on available resources. Use a labeled popsicle stick or the nursery's pot marker to identify each plant species. You can also take photos of the plants to help you identify them when they are not in flower. This will give you a reference to make future weeding easier.



Seeding

- Scatter the seed by hand or use a seed broadcaster. For a more even seed distribution, mix the seed with sand before spreading.
- Walk vertically, then horizontally, scattering the seeds.
- Gently rake in the seed.
- Gently press the seed into firm contact with the soil. This can be done using a roller or tamper or by walking lightly on the soil. Some prairie and meadow seeds are very fine, so do not crush seeds when pressing.
- Keep soil moist, but not wet, by watering with a fine mist if it has not rained. Do this until the seeds begin to sprout. Once growing, water only during dry periods.
- Seeds can be installed by machine depending on the size of your site and available resources. Refer to *Planting the Seed* noted in the Resources section.

Mulching: Mulching is generally not recommended for large prairie and meadow plantings. The preferred approach is to plant or seed the entire bed with the appropriate mix of grasses and wildflowers for full coverage. Mulching around a single plant, or small groupings of plants in a prairie or meadow garden may be desirable for a “neat” appearance and to help minimize weeds. In this case, a thin layer of mulch, between 6-8 cm (2-3”) thick, should suffice. Choose natural, undyed mulches free of weed seeds.

To avoid mould, keep mulch slightly away from plant stems. Do not apply mulch on top of seeds as it will bury them. If needed to help retain seeds on a slope, apply a thin straw mulch blanket.

Maintenance

It can take two to three years for a meadow and two to five years for a prairie to become fully established, at which point less maintenance is required.

Watering: For the first six weeks after a spring planting or seeding, water with a light mist every second day when there is no rain. Water for 15-30 minutes until soil is moist but no puddles have formed. It is best to water early in the morning if possible. Never water between 10 a.m. and 4 p.m. in the late spring and summer as the water droplets can intensify the sunlight and damage some plants. Water bans in your municipality or region may extend beyond these hours; be sure to follow those restrictions. If planting



in the fall, wait until the following spring to begin watering and water only when the soil is dry. Continue to water only during dry periods for the remainder of the first season. Water only during prolonged heat or drought in the second season. After that, watering should not be necessary unless there is an extreme drought.

No fertilizer or minimal fertilizer: Do not add fertilizer, topsoil, manure or compost to most prairie or meadow plantings. Prairie and meadow plants thrive and out-compete weeds in low-nutrient soils. As noted, some meadow plants are adapted to higher nutrient soils, but will likely receive all the nutrients they need if you leave some of their own natural debris, such as fallen leaves, on the ground. Add natural fertilizers such as compost sparingly only if meadow plants are failing to thrive. Do not add any fertilizer to prairie plantings.

Weeding: Until your plants are well established you will need to remove unwanted plants (weeds) regularly. Pull the weeds out by hand, ensuring that the whole root is removed. Be careful not to disturb the surrounding soil and young, sensitive plants as they can be easily damaged at this stage. This is easiest after a rainfall when soil is moist. For some weeds, removing and destroying seed heads will also prevent their spread. To keep weeds and woody vegetation at bay on larger sites, see mowing and burning below.

Some desirable native plants that you did not plant may migrate to your site. These enhance biodiversity and should be kept, unless you are attempting to showcase only specific species. Rather than destroying unwanted native plants, please attempt to find a donation site.

Permitted and Supervised Burning: To maintain vigorous and diverse prairies, fire and animal grazing tend to prevent trees and shrubs from growing. Burns were the traditional First Nations approach to maintaining prairies and are still the preferred method in suitable areas. If you plan to conduct a prairie burn, the burn will require supervision and may require a permit. Contact your local fire department and your regional MNR office. In more populated areas and for small gardens, burns are not the best option. Mowing is the main alternative.



photo: Natvik Design Inc.

Burns generally take place bi-annually or every third year in early spring. Watch for nesting birds, insects or other fauna and time the burn before nesting or after young have left. To retain habitat on large sites, you can burn part of your prairie in one year and part in subsequent years on a rotating basis.

Mowing: If burns are not desirable, you can achieve a similar result by mowing or cutting down your prairie plants each spring for the first two to three years, followed by rotational mowing every two to three years in spring. To maintain habitat, rotate mowed areas each year. Follow similar guidelines for timing as for burns. After mowing, gently rake off debris to expose the soil and young seedlings to the warm sun.

Meadow gardens can be maintained by cutting or hand pulling undesirable woody vegetation. On larger sites, occasional mowing of pervasive weeds in early spring may prove helpful. Set your mower to 20 cm (8") or higher to avoid mowing emerging native meadow species. Hand trimming with clippers, a weed trimmer, or a scythe will also work. As noted above, leave different areas unmowed each year. Woody species, especially dogwoods or willows, should be pulled or dug out.

Mulching: If you are using mulch around groupings of plants, maintain a 6-8 cm (2-3") layer on the ground between plants and top up as necessary, usually one or two times per year. Do not let the mulch touch individual plants or plant stems as this can cause disease or moulds. Leave a minimum 6 cm (2") gap around the stem of each plant.

Over-wintering: Leave dried plants and seed heads standing through the winter. They will provide an interesting feature throughout the snowy months, as well as food and shelter for birds and insects.

Although prairies and meadows will always need and deserve some special care, the amount of maintenance required will reduce over time. You can sit back and enjoy the wondrous habitat that you created and know that you are helping our cities, rural areas and our watershed to remain green and healthy.



photo: Scythe Works

A scythe is a low impact tool that can be used to mow a meadow or prairie.



photo: Natvik Design Inc.

Over-wintering plants provide added attraction and habitat.

References and Additional Resources

Credit Valley Conservation website www.creditvalleyca.ca

- Ecological Landscaping Resources www.creditvalleyca.ca/landscaping
- Greening Corporate Grounds Program www.creditvalleyca.ca/gcg
- Your Green Yard Program www.creditvalleyca.ca/ygy
- Countryside Stewardship www.creditvalleyca.ca/countrysidestewardship
- *Ecological Service Providers (pdf)* www.creditvalleyca.ca/ecoproviders
- *Native Plant Nurseries and Seed Sources (pdf)* www.creditvalleyca.ca/nurseries
- *Native Prairie & Meadow Plants for Landscaping* www.creditvalleyca.ca/prairiameadow
- *Native Woodland Gardens for Homes* www.creditvalleyca.ca/reswoodland
- *Native Woodland and Forest Plantings for Businesses* www.creditvalleyca.ca/corpwoodland
- *The Most Unwanted Invasive Garden Plants (pdf)* www.creditvalleyca.ca/unwanted-invasive-garden-plants
- Low Impact Development (for Stormwater) www.creditvalleyca.ca/low-impact-development-support
- Plants, Animals and Communities www.creditvalleyca.ca/plants-animals-communities

City of Brampton website. *Brampton Grow Green; Trees, Plants and Flowers, Pests and Disease* www.brampton.ca

City of Mississauga website. *Living Green Master Plan; Natural Areas Survey; Urban Forestry* www.mississauga.ca

Region of Peel website. *Peel Climate Change Strategy; Water Smart Peel* www.peelregion.ca

1996. Daigle, Jean-Marc and Donna Havinga. *Restoring Nature's Place: A Guide to Naturalizing Ontario Parks and Greenspace*. Schomberg: Ecological Outlook and Ontario Parks Association. Available from info@ecologicaloutlook.ca

2000. Delaney, Kim et al. *Planting the Seed: A Guide to Establishing Prairie and Meadow Communities in Southern Ontario*. Toronto: Environment Canada. Available at www.on.ec.gc.ca/wildlife/docs/doc-planting-prairie-e.html

2004. Havinga, Donna for Canada Mortgage and Housing (CMHC). *Get to Know Your Soil* fact sheet. Ottawa: CMHC. www.cmhc-schl.gc.ca/en/co/maho/la/la_001.cfm

2004. Healthy Home Services Inc. for Toronto Public Health. "Pest Management the Natural Way" in *Pesticide Free: A Guide to Natural Lawn and Garden Care*. Toronto: City of Toronto. Available at www.toronto.ca/health/pesticides/pdf/natural_lawn_guide5.pdf

1998. Rodger, Lindsay. *Tallgrass Communities of Southern Ontario: A Recovery Plan*. Ontario Ministry of Natural Resources and World Wildlife Fund: Toronto

1992. United Nations. *Convention on Biological Diversity (CBD)*. Available at www.cbd.int/convention

Organizations

Canadian Business and Biodiversity Council. www.businessbiodiversity.ca

Ecological Landscaping Association (USA). www.ecolandscaping.org

Environment Canada. www.ec.gc.ca

Evergreen. www.evergreen.ca

Landscape Ontario. www.horttrades.com

North American Native Plant Society. www.nanps.org

Ontario Ministry of Environment. www.ene.gov.on.ca

Ontario Ministry of Natural Resources. www.mnr.gov.on.ca

Ontario Society for Ecological Restoration. www.serontario.org

Organic Landscape Association. www.organiclandscape.org

Partners in Project Green. www.partnersinprojectgreen.com

Prairie Habitats Inc. www.prairiehabitats.com (seeds are not suitable for S. Ont. but a good source of information and equipment)

Tallgrass Ontario. www.tallgrassontario.org



photo: John P. Morgan, Prairie Habitats Inc.



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