Wildlife-friendly Gardening Guide



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Gardens come in all shapes and sizes, from small urban spaces to large country expanses. How we tend these spaces is affected by many factors including our time, lifestyle needs and budget. No matter the situation, all Canadians can benefit from incorporating some wildlife-friendly elements in their outdoor space. This guide will show you how to include these versatile features while still meeting your own needs and preferences. The end result? Healthy plants, vibrant gardens and satisfaction as you play a key role in sustaining the health and well-being of our communities and the ecosystems that support us.

So, whether you're looking to make formal garden beds, spruce up your patio with containers, start a veggie garden or create a small meadow to help butterflies, you can do it both beautifully and beneficially.

Let's have a look at how to enhance your space with the simple elements described in this guide. If you need more help, check out our many online resources at CanadianWildlifeFederation.ca/Gardening. Let's get started!

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What is Wildlife-friendly Gardening?

Wildlife-friendly gardening is simpler than you may think. In fact, you are probably doing a fair bit already. Simply put, it is providing the habitat needs (food, water, shelter) of our wild neighbours and making healthy gardening choices in how we tend the garden to keep this space safe.

For instance, you can provide food by growing plants that bloom at different times of the year and keeping seed heads on perennials over the winter. A simple dish used as a bird bath provides water while shelter includes having different heights and types of plants.

Green gardening practices primarily include avoiding pesticides. This keeps the food supply safe, from plant pollen to small insects that songbirds use to feed their young. If you like, include other natural processes such as using autumn leaves to mulch your garden beds or shredding them with the lawn mower to help return nutrients to the soil and watering your garden in the morning at the base of plants to minimize evaporation and water usage.

As gardening is part of a much bigger picture, working with the natural way of things can often save time and energy as well as increase our enjoyment of our outdoor space.





The Benefits of Wildlife-friendly Gardening

Most people don't realize that their everyday choices really do have an impact – for better or worse. Gardening with wildlife in mind supports local and migratory wildlife and the natural spaces that sustain us. Here's how the seemingly simple acts of wildlife-friendly gardening benefit us all:

- 1. We ensure valuable wildlife services in our garden and beyond:
 - » Pollinating our plants, including fruits and veggies
 - » Keeping potential pest species in check, like aphids, mosquitoes and mice
 - » Returning nutrients to the soil, nourishing and strengthening our plants
- 2. We support our environment near and far in maintaining:
 - » Clean water for drinking, cooking and cleaning
 - » Healthy soil for growing strong vibrant plants and nourishing food
 - » Clean air for breathing
 - » Shade on hot days
 - » A buffer for our homes from strong winds, loud sounds and storm water runoff
 - » Plant roots that keep soil from eroding

- 3. We indirectly look after the places we love for hiking, swimming, fishing, and exploring the natural world. But the feel good benefits don't stop there. Studies are proving that being in or even gazing upon these natural environments can lift the spirits and support physical health.
- 4. Our gardens become a greater source of interest and pleasure as we weave together beautiful plants in varying textures and colours. The wildlife they attract can be exciting to encounter, relaxing to hear and fun to watch.
- 5. Our gardens become a safe place for our families, especially young children who are inherently curious. Pesticide residue is proving to be a significant health problem that we can avoid entirely with wildlifefriendly gardening, putting nature to work for us instead.
- 6. We feel satisfied by doing something good for our families and community while we support these beautiful and important creatures that are part of Canada's heritage.

These benefits show just how imperative it is that we wisely steward the land under our care. Every garden matters as each plays a critical role in keeping nature healthy.

Your efforts are needed more than ever due to increasing habitat loss and degradation, declining species like certain pollinators, songbirds and frogs as well as invasive species that disrupt the local natural environment.

Your wildlife-friendly garden can recreate habitat that existed before the development of your neighbourhood as well as extend existing habitat in your community, such as nature trails. It can also encourage those in your community to increase their tolerance and appreciation for our natural world and make wildlife-friendly garden choices the benefit us all.



How to Create a Wildlife-friendly Garden

Let's look at the four main elements and practices of wildlife-friendly gardening to see which ones can work for your situation. While reading the following pages, think about your garden to see what habitat and gardening practices you currently have while identifying what you wish to add or modify. You can use our checklist on page 17 to keep track and plan your next steps.

Food

Diversity is key. When adding plants for food, include as much variety as possible with flower colours, shapes and bloom times as well as plant types from trees and shrubs to vines and perennials. This supports a greater diversity of animal species. These plants will also attract small animals that are food for others. For example, insects, spiders and snails are food for birds, small mammals, salamanders, frogs, toads and snakes while small mammals, amphibians and reptiles are food for hawks, owls and large mammals like foxes.

Plants and Natural Elements

Flowers are a source of pollen and nectar for beneficial insects such as bees, flies, butterflies, moths, wasps and beetles as well as hummingbirds. These pollinators help sustain our food supply both in our garden and with commercial crops. Have a variety of flower shapes to suit their many sized and shaped mouths. For instance, long tubular flowers like lilies and penstemons suit hummingbirds, hummingbird moths, some butterflies and bee species with long tongues. Short tubular and open flowers, like verbenas, asters, wild roses and sunflowers are perfect for short-tongued insects like small bees and flies including the Flower Fly.



Berries, nuts and seeds are the meal of choice for countless birds and mammals. Blue Jays eat acorns from oak trees while chickadees, juncos and finches will eat seeds from trees and perennials and robins, woodpeckers and waxwings will eat berries from various shrubs, trees and vines.

Sap, bark, leaves, buds and roots are important food for mammals and some birds as well as butterfly larvae (caterpillars) who need specific leaves to eat in order to become butterflies. Mourning Cloak Butterflies lay eggs on poplars and willows, Tiger Swallowtail and White Admiral caterpillars eat birches, Pine Elfins eat pine needles while Monarch Butterflies need milkweed leaves for their young. Sap is food for Yellow-rumped Warblers, hummingbirds, butterflies and Yellow-bellied Sapsucker. Grouse eat tree buds while mammals like deer and hares eat leaves and bark.

An open area of sand, compost or manure creates a place for certain species of butterflies, such as the Canadian Tiger Swallowtail, to drink minerals. Make a "mud-puddling" spot with a sunny patch of bare earth (i.e. not mulched), perhaps in a garden bed between two shrubs or at the edge of a flower bed. This area may then be visited after a rainfall or watering the garden.

Bird Feeders

So many of us enjoy watching birds come to a feeder, to see their beauty and antics up close. Keep in mind, however, that bird feeders can only supplement natural habitat.

Make sure feeders are placed in a safe place where birds won't fall prey to lurking cats or fly into windows. Feeders need to be kept clean in order to prevent disease and food needs to be stored in a dry place. Check out our bird feeding handout for more information.

Suet bird feeders provide a high energy food for insect eating birds that appreciate animal fat in the winter months, such as woodpeckers, chickadees and nuthatches. You can make your own or buy it. If you decide to buy it in store, avoid those with preservatives.

Seed bird feeders will attract many types of birds. Before you choose what seeds to buy, consider which birds you want to attract and if there are any you really want to avoid.

A sugar water feeder can provide a food source for hummingbirds although it is imperative to also have a natural food source from flowers as this is their perfect food needed for optimum health. They also need about 20 per cent protein which they get from insects and spiders, another reason to avoid pesticides in the garden. Do not use alternative sweeteners like honey and do not add dye as both are harmful to their health. Biodiversity is the key to life on our planet. It is the variety of plants and animals from the smallest soil organisms to the tallest trees. As the biologist and Pulitzer Prize winner E.O. Wilson said "... We study and save it to our great benefit. We ignore and degrade it to our great peril."





Water

There are various options for providing water that can require as much or as little money or time as you wish.

A bird bath in the warmer months provides a place for birds to clean themselves and drink water. You can use a dish from the kitchen, a planter tray or a bird bath from the store. It is very important to change the water often and periodically clean the dish. This prevents bacteria from growing and mosquitoes from breeding. Most of us in Canada have very cold winters so keep in mind that bird feathers can freeze soon after a splash or feet can freeze to metal fences or posts. If you still wish to have a bird bath and use a heater, cover with a plastic grid that only lets in their bills rather than bodies.

An insect dish with pebbles and stones gives our beneficial insects a place to perch and drink on those hot summer days. You can create this with any shallow dish such as a planter tray. Add some stones, shells, pebbles or sticks then fill with water. As with bird baths, change the water and clean the dish periodically.

A pond with sloping sides allows a myriad of creatures, from birds and mammals to amphibians and reptiles to get a drink. If the sides aren't sloped, add some rocks or a log along each edge to help smaller animals climb out safely if they fall in.

A recirculating stream attracts birds as they love the sound of moving water and will come to drink and bathe in a shallow stream. You can create this with the help of your local garden centre and a few supplies such as a water pump, reservoir to hold the water if it doesn't circulate through a pond, a liner and stones for the path of the stream.

If you live along **a shoreline** – river, lake, stream, pond or ocean – this also counts as a source of water. Remember to leave the edge as natural as possible and if you need to make an area for swimming, for instance, disturb as small an area as possible.





Shelter

Shelter provides cover from the elements and predators, nesting and resting spots as well as perches to spy the next meal. You can support a great diversity of animals with varying layers of vegetation using plant heights and types.

Plants

Evergreen trees and shrubs are important year round, for nesting in the early spring as well as for shelter from the cold in the winter. Some are cultivated to grow in narrow or small round forms that accommodate smaller spaces.

Deciduous trees and shrubs are important when birds have a mid-summer brood of eggs as these trees let air circulate while still providing some shade and protection from rain. Even without leaves, they are useful for perching and spying a bird's next meal (such as flycatchers looking for insects or hawks looking for small animals). Some bats will even live in cracks in larger trees. If you have the space to plant a tree, it can serve as one of the foundations of your garden. If not, try a smaller shrub, around which you can add other smaller plants. **Flowering plants** aren't often considered shelter but their leaves can be shelter (and food) for small creatures that live along the lower layers of a garden. At times, flowers provide shelter as with the Prairie Crocus whose cup-shaped flower creates a warmer spot than the surrounding cool spring air and has appeared to shelter the occasional bee. Other flowers, like those in the squash family, can sometimes be seen with a napping bee in its blossom.

Host plants for caterpillars are critically important if we want to support the butterflies they become. While these plants serve as food, they are also hiding and resting places, too.

Grasses and ferns offer great cover for small animals from frogs and toads to birds that feed and/or nest along the ground as well as small mammals, beneficial insects and spiders.

Vines can be used by small birds for nesting and escaping predators and the hot sun. Insects may also find refuge in a vine. Grow a vine along a fence to create more space and layers in your garden.



Natural Elements

Snags are dead or dying trees and are critically important for many Canadian birds, from woodpeckers and chickadees to some species of ducks and owls. The cavities (holes in trees) are needed for raising their young and as roosting (sleeping) spots during other times of year. As more and more people remove snags for various purposes (firewood, safety, aesthetics, development), there are fewer homes for these important birds. In fact, experts say that keeping three or four snags per acre of forest is critical for many organisms in that ecosystem, including birds. Where possible leave snags standing and remove any potentially dangerous branches if the tree is near areas of human activity. If the tree trunk itself is a concern, consider having a tree company lop the top off to allow the stronger lower portion of the tree to remain standing for several more years. This is especially important with mature trees as large birds, like Pileated Woodpeckers, need bigger homes.

Brush piles are found in forests and along shorelines. They provide cover for many animals including ground nesting birds. If the pile is high enough, it can attract songbirds like Common Yellowthroats and Grey Catbirds. House Wrens will feed on the bugs that are found within brush piles and many more birds will use these piles to hide from passing hawks. Snakes, frogs, toads and chipmunks as well as insects and spiders will also make good use of brush piles.



You can make a brush pile by placing thick branches or logs along the bottom, then adding rounded branches on top in order to raise the pile, provide stability to the structure and create spaces for animals to move about. Continue to layer and weave smaller branches on top. If you have them, use prickly branches on the lower part to discourage larger animals like cats from entering.

If concerned about appearances, grow plants around it or place it behind a fence or shed. Keep it at a distance from the house as it could be a fire hazard in hot dry weather and/or lightly spray with a hose in hot weather to wet it enough without soaking any nests that may be within.

Open ground of exposed soil and sparse sections of lawn are important nesting and overwintering spots for ground nesting bees. These native insects are docile, partly as they live a solitary life rather than in a hive, which would be more strongly protected. Thanks to them our fruit trees, vegetables and perennials are pollinated.

Stone piles absorb and retain heat and so attract cold-blooded animals like toads, turtles, snakes, salamanders and crickets. You don't need a lot of stones, especially if they are large, but if you pile them, ensure they are stable.

Logs help moisture-loving animals, like salamanders, which both hide, overwinter and feed in and around logs and leaf litter. Leave or place a log in a shady spot in your garden, perhaps as an accent to spring wildflowers or under a shrub.

Leaves on the ground provide shelter for small creatures like spiders, beetles, salamanders, shrews, frogs and toads. Simply let your leaves remain where they fall or pile them up around trees or garden beds.



Plant stems can be valuable when they have hollow or pithy plant stems such as elderberry, raspberry, sumac and annual sunflowers as they provide nesting and overwintering sites for many native solitary bees.

Artificial Shelter

Bird nesting boxes help many of Canada's birds who rely on snags (see 'Shelter') for homes. Where snags are not available, you can buy or make a nesting box to put up in your garden.

Bird roosting boxes are places for cavity nesting birds (see 'Shelter') to rest and escape winter storms. Their design differs from nesting boxes in that they can accommodate several birds at once and retain heat more effectively.

Bat houses, especially large ones, benefit bats who need homes once they wake from their winter rest.

Bug hotels support beneficial insects in your garden by providing shelter for them to nest and raise young. Use hollow stems such as sunflower stalks and bamboo and/or drill holes in wood and keep together within a small wooden frame, basket or other similar non-toxic container.



Green Gardening Practices

In addition to leaving or adding elements such as plants and water sources, how we garden is also key to the health of our local and migratory neighbours. Here are some important ways we can support the wildlife in our garden and as they move about our community in surrounding ecosystems.

Avoid pesticides to ensure that your garden is a safe place for local and migratory wildlife and that the plants and animals needed as food for wildlife are available and safe to ingest. You can keep weeds and pest insects to a minimum with these alternative methods:

- Grow a diversity of plants to distract pest insects. Strengthen plants with mulch, compost and suitable growing conditions to ensure they thrive. Some insects detect weak plants and will eat those rather than vibrantly healthy ones.
- Attract allies such as toads, bats, snakes, ladybugs, solitary wasps, dragonflies and birds that will feed on aphids, moths, slugs and snails, for instance.
- Use companion planting (growing certain plants together) to either deter pests or lure them away from desired plants.
- For garden plants, make a spray by mixing a litre of water and a squirt of environmentally-friendly dish detergent. For lawns, pick up some nematodes (microorganisms that feed on lawn pests) from your local garden centre and spray on your lawn once the weather warms up in spring.
- Minimize lawn weeds by oversowing grass seed with types that match your growing conditions. Leave your clippings on the lawn to nourish and strengthen grass roots. Use weed seed inhibitors like corn gluten meal. Mow grass as high as you can tolerate as the length of the blade is matched with the roots below and deeper roots avoid summer heat while taller grass prevents weed seeds from germinating.

Composting in the garden directly supports important decomposer organisms that break down material for our plants and who are in turn food for other garden animals. Home or municipal composting also supports local ecosystems by helping our landfills last longer which in turn prevents the costly need to destroy natural habitat in creating a new landfill. Composting at home gives you the benefit of a free, nourishing soil amendment that improves any soil with drainage and nutrients.

There are a variety of styles from open piles to building a square frame with old pallets or buying a plastic composter from a local home and garden store or your municipality. The term "organic" has different meanings. In this context we mean "organic materials" which are natural items, such as organic fertilizers (ex. compost, manure, nettle tea) or organic mulches (ex. wood chips).

"Organic gardening" is gardening without the use of synthetic (manmade) chemicals such as insecticides, herbicides and fertilizers.







Any organic material will decompose in time, but if composting above ground, avoid animal products such as eggs, bones and fat. These items can go in a composter that covers a hole dug in the ground instead, keeping odours and animals out.

For above ground composters, layer dry materials high in carbon such as dry grass and old flower stalks with moist items like vegetable scraps and fresh leaves.

Conserving water is another way gardeners can indirectly benefit wildlife – and ourselves. Whether your water is municipal, needing pumping and cleaning to and from a local river, or whether you rely on groundwater via a well, we all benefit in not wasting or polluting this precious resource. Here are some ideas to consider:

- Collect rainwater from roofs with a rain barrel.
- Minimize evaporation by mulching garden beds, adding compost to the soil and watering in the morning at the base of plants.
- Refrain from watering your lawn or, if you do, water as minimally as possible, keeping in mind the amount of rain water received that week. Keep in mind that grass naturally goes dormant in dry summer heat and comes back with rain and cooler weather.
- Use drought-tolerant plants.

Mulching garden beds has many benefits. So while it is important to leave some ground exposed for the nesting of many solitary bees, adding mulch suppresses weeds, retains moisture, returns nutrients to the soil and improves soil structure, provides places for small animals to overwinter and feed as well as helps keep plant roots cooler on hot sunny days.

You can create a layer of mulch with leaves, wood chips, straw and other natural materials. Avoid chemically-dyed bark and try to match the mulch with your plants' needs. For instance, acid loving blueberries might do well with wood chips or pine needles while more pH neutral plants will do better with straw.



Other Important Considerations

Choosing Wildlife-friendly Plants

Native Plants

Part of creating natural habitat is including some of the species that were growing here in the first place so where possible, include plants native to your area. They can be stunningly beautiful and suit a variety of garden styles but more importantly, they have coevolved with wildlife over the centuries and are their perfect food.

As exotic species take over natural areas, many animals experience reduced food options and are pushed out along with native plants. As gardeners, we have a wonderful opportunity to maintain as much regionally native habitat as possible.

Invasive Plants

Avoid invasive plants that can spread and eventually push out the native plants which are an important food source for animals. Some examples include Goutweed, Garlic Mustard, Common Periwinkle, Asian Bush Honeysuckles, Glossy Buckthorn and Purple Loosestrife.

While the term 'invasive' can have various connotations, for this purpose we mean plants that are not naturally growing in a given area, have the ability to spread quicker than it is feasible to manage and are known to disrupt our existing ecosystems.

You can find out more by checking with your provincial or territorial agency responsible for monitoring invasive plants.

Over Cultivation

Where possible, avoid plants whose pollen and nectar producing abilities are lost. Likewise keep to a minimum plants that are bred to have many layers of petals which can be problematic for pollinators. While not meant to be a deterrent from growing your favourite plants, these are simply points to consider when selecting the majority of plants for your wildlife-friendly garden.

Poison in Plants

Avoid plants grown with neonicotinoids (neonics) as the pollen and nectar from these plants can seriously harm pollinators. Read the label or ask nursery staff. Some nurseries specialize in native plants and wildlife-friendly gardening whose policies exclude the use of neonicotinoids.



Ease and enjoyment

This can be as simple as you like, incorporating new elements and methods as gradually as you are comfortable. Perhaps that means adding two more native plants this season, getting a composter next season and replacing 10 per cent of your lawn next year with a shrub or flower bed.

Proportions and diversity

If you have a very small space, you can still help with a few beneficial plants and a dish of water. As the property size increases, however, there is more opportunity to meet your lifestyle needs and fill the space beyond with wildlife habitat. In addition to helping the environment, this creates a variety of food and layers (with heights and shapes) the way rooms and furniture create unique spaces in our homes for different activities. Songbird species, for example, feed, nest and rest along their own unique layers and sections of trees. So while lawns are an important part of many Canadian gardens as paths, playing areas and contrasting garden beds, see if you can balance your space with as much life supporting habitat as possible and watch what wildlife comes to enjoy your garden with you!





Assessing Your Outdoor Space

Now it's time to look at your garden and see which wildlife-friendly elements you've already got in your garden and which elements or actions you'll want to include for the coming growing seasons.

For small spaces, you'll want to have at least one element from each category. Although when it comes to bird feeders, remember that they are supplemental to natural food sources. Also keep in mind that certain potted plants may serve as both food and shelter if you only have a small balcony or patio. Of course, the larger your outdoor space, the more opportunity you have to include additional elements.



This is a tool for planning changes to your garden, but if you are thinking of applying for CWF's Garden Habitat Certification (see next section) then you may prefer to use that form instead.

and to contract the	What	What	N .
Habitat Element	l have	I'll add	Notes
Food			
Flowering plants			
Nut and/or Seed bearing plants			
Fruit bearing plants			
Bark, sap, leaves, buds and roots			
Open area of soil/sand/ compost/manure			
Optional:			
Suet bird feeder			
Seed bird feeder			
Hummingbird feeder			
Water			
Bird bath			
Insect dish			
Pond			
Recirculating stream			
Shoreline			
Shelter		·	·
Evergreen tree			
Deciduous tree			
Evergreen shrub			
Deciduous shrub			
Flowering plants			
Host plant for caterpillar			
Grasses, ferns, vines etc.			
Snag			
Brush pile			
Open ground			
Rock/stone pile			
Log			

Habitat Element	What I have	What I'll add	Notes		
Leaf litter					
Plant stems					
Water body					
Bird nesting box					
Bird roosting box					
Bat house					
Bug hotel					
Green Gardening Practices					
No pesticides					
Compost					
Conserve water					
Mulch					
Keep in Mind					
Include native plants (for food and ecological impact)					
Include diversity of plants (for food and shelter during all seasons)					
Include layers (as space for many species to coexist)					
Avoid invasive plants					
Avoid plants grown with neonicotinoids					

Celebrate Your Efforts and Get Official Status

When you join Canadians who make their gardens wildlife-friendly, as outlined in this guide, you help increase suitable habitat for local and migratory wildlife, some of which may be species at risk. As more land is developed for human activities, each wildlife-friendly garden is a haven that can act as a stepping stone between larger areas of habitat, essential for many species' survival.

The Canadian Wildlife Federation's Garden Habitat Certification recognizes Canadians who make their home, school, business or community gardens suitable for wildlife by certifying their outdoor space as a "Wildlife-friendly Habitat".

Why certify?

When you certify your garden, we'll add your wildlife-friendly habitat to CWF's map that shows our collective impact. Then we can all see Canada's wildlife-friendly habitat grow! Sharing your certified garden with family, friends, neighbours or on social media platforms (using #cwfgardens) can raise awareness in your community about the importance of wildlife-friendly gardens. It can also inspire others to see real life examples of different kinds of gardens that provide wildlife-friendly habitat.

Here are some more perks! You will:

- Receive official recognition from CWF, including a certificate and window decal
- Be subscribed to Grow Wild, our gardening e-newsletter
- Be among the first to learn about new garden content, opportunities and programs
- Be eligible to purchase an exclusive garden sign

There is no charge to apply for certification. Applicants who meet the criteria receive a certificate and window decal to indicate the outdoor space is "Certified Wildlife-friendly Habitat". They will also be eligible to purchase an exclusive garden sign. By purchasing and displaying a sign, you raise awareness and inspire others in your community while supporting CWF's conservation education programs.

Visit **CanadianWildlifeFederation.ca/Certification** and either fill out the form online or print it and mail it in.





Resources

The Canadian Wildlife Federation (CWF) has a wide variety of information, much of which can help support your wildlife-friendly gardening efforts.

CanadianWildlifeFederation.ca/Gardening is the main gardening section to find relevant information. Some of the more popular sections within it include:

- Garden Habitat Certification Here you will find all you need to certify your garden as well as ideas to help you along your way.
- Native Plant Encyclopedia When looking for regionally native plants that suit your garden conditions and will support certain species, our encyclopedia, with over 500 entries, can help you out.
- Native Plant Supplier List A list of Canadian nurseries that sell some degree of native plants and/or seeds.

Some other CWF related web resources include:

iNaturalist.ca – This is a fantastic resource that can help scientists monitor populations of various species by sharing your wildlife observations and photos. You can also benefit with its image recognition feature (or have an expert identify your image), connecting with like-minded people and using it to keep a list of what you see in your garden and beyond!

HelpTheMonarchs.ca – Here you will find information on Monarchs and how you can help them.

HelpTheBats.ca – This section of our website features plans to build a bat house, species information and more.

HelpTheTurtles.ca – Here you will find information about Canada's turtles and what you can do to help them.

LoveYourLake.ca – Here you will find many great resources for anyone living along a freshwater shoreline, including a shoreline self-assessment to determine the health of your shoreline.

Happy gardening!

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