



A NATURE ALBERTA
CHECKLIST

SUPPORTING NATURE AND BIODIVERSITY IN URBAN YARDS

Use this Checklist of beneficial management practices as your guide to better understanding and supporting nature and biodiversity in your yard.



NATURE
ALBERTA

A COMMUNITY CONNECTED BY A LOVE OF NATURE

The year was 1970. Six nature clubs came together to form the Federation of Alberta Naturalists. Five decades later, and now known as Nature Alberta, we are grateful for the clubs, the people and the history that has enabled this organization to become the voice for the greater appreciation and conservation of Alberta's natural environment. We strive to connect Albertans with the natural world that exists all around us. By encouraging Albertans to learn more about and understand natural history and ecological processes, we help ensure that Alberta's natural heritage and its biodiversity is widely enjoyed, deeply appreciated and thoroughly protected.

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Project Partner: Edmonton Federation of Community Leagues

Advisory Committee Members:

- Alberta Amphibian and Reptile Conservancy
- Alberta Community Bat Program
- Birds Canada
- Edmonton and Area Land Trust
- Edmonton Native Plant Society
- Edmonton Nature Club
- WILDNorth

SOURCES

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THE URBAN NATURE INITIATIVE

SUPPORTING NATURE AND BIODIVERSITY IN URBAN YARDS

Habitat loss and fragmentation are the greatest threats to biodiversity in the world. As urban areas grow and natural areas are lost, greenspaces within cities (e.g. private yards and neighbourhood parks) represent a substantial opportunity for conserving biodiversity, reconnecting people with nature and addressing the issues that contribute to loss of biodiversity. Nature Alberta firmly believes that nature has a purpose and a place within an urban environment. So, in 2020, we launched a pilot project called the Urban Nature Initiative (UNI).

According to the 2016 Census of Canada, approximately 83% of Albertans live in urban settings. In this we see untapped potential and a substantial opportunity to enhance urban yard habitat in a way that will benefit urban wildlife, human health and provide communities with a much-needed connection to nature.

The goal of this initiative is to inspire urban homeowners to take action in their yards by encouraging them to implement beneficial management practices (BMPs) that help enhance nature and biodiversity. Actioning these BMPs will also create a ripple effect of positive impacts when individuals and communities implement them and inspire others to do the same.

This initiative will help property owners transition their urban yards into better functioning ecosystem spaces where nature and biodiversity can thrive. Nature takes time and biodiversity will gradually develop in your yard as plants grow and wildlife travels.

DEFINITIONS

The following terms may be used frequently throughout the booklet. The definitions help provide clarity and a common understanding of the principles and practices within.

Beneficial Management Practices: Specific actions that can be implemented by individuals or groups that reduce or eliminate negative impacts to the natural environment. Referred to as BMPs.

Bioasis: A term that merges the meaning of “biodiversity” with “oasis” and which refers to a pleasant, well-functioning ecosystem that supports nature and biodiversity.

Biodiversity: Diversity among and within plant and animal species in an environment; the foundation of a productive, healthy ecosystem that is fundamental to sustain life on earth.¹

Oasis: A small fertile or green area, that serves as a refuge, relief or pleasant change from other surroundings.

Ecosystem: A system, or a group of interconnected elements, formed by the interaction of a community of organisms with their environment.²

Ecosystem Services: The benefits humans receive from nature. These benefits include provisioning services such as food and clean water; regulating services that affect climate, floods, and water quality; cultural services that provide recreational benefits; and supporting services such as soil formation.³



Photo credit: D. LeBlanc

Extirpated: When a species or population no longer exists within its historical geographical location.

Extinct: When a species no longer exists on earth.

Invasive Species: An organism (plant or animal) that has been introduced to an area that it did not originally inhabit. The organism adapts to the new area easily and reproduces quickly, dominating habitat needed for native species. Invasive species can harm property, the economy, and displace the native plants and animals of the region.⁴

Rain Garden: A type of depressed garden that is designed to absorb and cleanse runoff. Rain gardens incorporate water loving plants and can provide habitat for various types of wildlife.⁵

Urbanization: The process by which large numbers of people become permanently concentrated in relatively small areas e.g. cities or metropolitan areas.⁶

¹ abmi.ca/home/biodiversity/what-is-biodiversity.html

² environmentalmonitoring.alberta.ca/activities/biodiversity-and-land/

³ ecoservicesnetwork.ca/areas-of-work/

⁴ abinvasives.ca/invasive-species/

⁵ alidp.org/assets/pdfs/CRAG_RAIN_GARDENS.pdf

⁶ britannica.com/topic/urbanization



Photo credit: D. Godkin

GETTING STARTED

You may believe that because your property is relatively small your actions do not have a significant impact on the landscape. However, as an urban landowner you make decisions every day that ultimately affect your yard. Having a basic understanding of your property, its various components and how they function, will help you make more informed decisions about your property in order to better support nature and biodiversity.

Before you begin making changes and implementing beneficial management practices (BMPs), there are several steps you should take first that will help get you started and help you create a plan to guide your journey.

- 1. Set goals:** It is important to acknowledge what your interests are and identify a vision for your property (e.g. what you want to achieve).
 - a. Think about what the inspiration is behind supporting nature and increasing biodiversity in your yard.
 - b. Think about and set long-term goals for your yard. This is what you want to ultimately achieve in your yard. A long-



Photo credit: T. Haracsi

term goal example would be to increase the variety of wildlife that visit your yard. Keep in mind, some BMPs may take a few seasons to put in place and show results.

- c. Identify your short-term goals. Select readily achievable activities from the BMPs outlined in this book or from other resources you may consult. A few examples of short-term goals include planting more native shrubs and trees, diversifying your yard's natural spaces, establishing a compost pile, etc.
- d. Use the *Setting Goals for Your Property* form on page 42 to help you document what you want to achieve with your property.

2. Evaluate your property: Enhancing biodiversity on your property will require a thoughtfully planned out assessment and inventory of your yard.

- a. Start by creating an inventory of existing structures in your yard (front and back), including sidewalks, power lines, sheds, etc. along with the features of your yard that are beneficial for biodiversity, including existing wildlife habitat, large growth trees and shrubs, surrounding natural spaces, water features, etc.

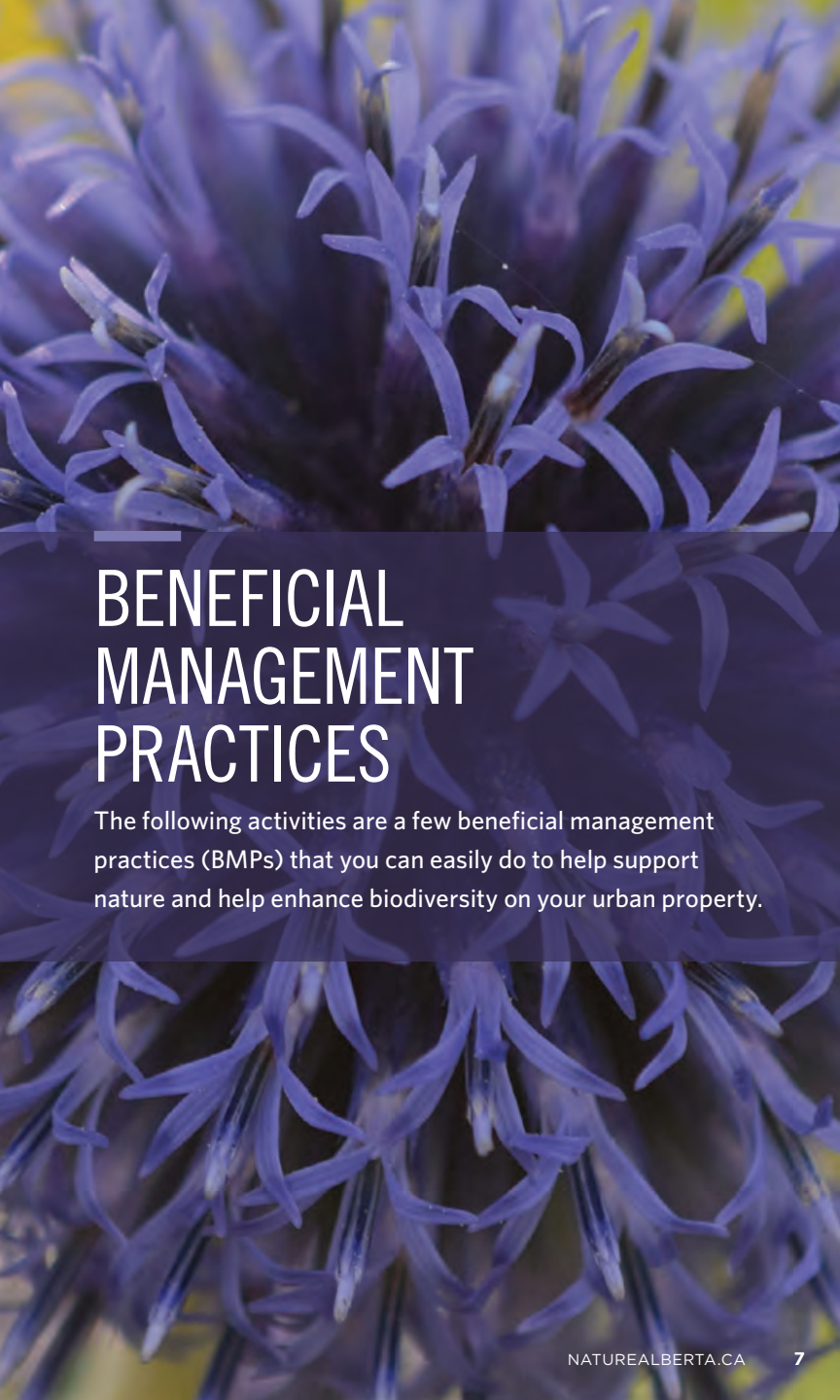
- b. Use the *Property Inventory Checklist* on page 46 as a guide to help you create this inventory.

3. Create a property map: Lay out the dimensions and locations of the features around your yard and create an image of your property that helps you visualize the state of your property and what you want to achieve.

- a. Use the information from your initial assessment to create your property map.
- b. Be sure to include buildings fences, trails, plants and any building facilities.
- c. Use the *Sample Property Map* on page 50 as a guide to developing your own property map.

4. Keep a journal: Maintain a record of your Urban Nature Initiative journey to record the actions you have implemented and track the progress you have made.

- a. Use the *BMP Checklist* on page 51 to document the specific BMPs from this book that you have implemented. Use a separate notebook to record more details and the specifics of how you implement these BMPs and others.
- b. Take photographs of your property and any changes you make over time. Date the pictures to create a record of your progress.
- c. Make note of wildlife species that utilize your yard for food and habitat.
- d. As you record your observations, think about how your yard has become a special place for biodiversity and the positive impact it has had on yourself, your community and nature.

A close-up photograph of a dense cluster of small, purple, star-shaped flowers. The petals are thin and pointed, creating a complex, textured pattern. The background is blurred, showing more of the same flowers. A semi-transparent dark purple horizontal band is overlaid across the middle of the image, containing the title and a paragraph of text.

BENEFICIAL MANAGEMENT PRACTICES

The following activities are a few beneficial management practices (BMPs) that you can easily do to help support nature and help enhance biodiversity on your urban property.



CREATE A BIRD BIOASIS

Canada's and Alberta's birds are in trouble; in fact, some species have declined by over 90%. Some human-caused mortality factors are due to habitat fragmentation and loss, which is believed to be the number one threat to bird populations.⁷ Some indirect causes to the decline in bird populations cause an estimated 270 million birds to die each year due to collisions with windows, buildings and other structures, and cats are thought to cause 75% of those deaths.⁸

⁷ abcbirds.org/threat/habitat/

⁸ catsandbirds.ca

WHY ARE BIRDS IMPORTANT

Not only are birds beautiful to watch in your yard, they are also important indicators of biodiversity and contributors to healthy ecosystems. Birds eat significant quantities of insects every year, helping to control pests. Many birds also support plant reproduction through their services as pollinators or seed dispersers.

WHAT YOU CAN DO

- **Prevent window collisions.** Approximately 25 million birds are killed each year in Canada by window collisions and 90% of all collisions are with household windows.⁹ Windows that reflect foliage or sky can confuse birds by making them look like an inviting place to fly. Ultimately, you are trying to disrupt the reflection of sky and foliage on a window so, to reduce this threat, add indicators, decals or a decoration that swings in the wind.
- **Keep birds safe from cats.** To ensure your cats do not have an opportunity to harm birds, keep your cats inside. If allowed outdoors, put cats on a leash, consider creating an outdoor enclosure in your yard for them or use a cat collar cover (such as Birdsbesafe®) which has been shown to be highly effective at reducing bird deaths.¹⁰

⁹ naturecanada.ca/cats-collisions/8-tips-to-help-birds/

¹⁰ sciencedirect.com/science/article/pii/S2351989415000050



Photo credit: Stock



Photo credit: D. Godkin



Photo credit: D. Godkin

- **Learn about birds.** There are 426 different species of birds in Alberta¹¹. To better connect with urban nature, learn to identify the birds that visit. Purchase an appropriate bird guide. Consider joining your local nature club on a bird walk or participate in Birds Canada's citizen science initiatives, including the Great Backyard Bird Count, Project FeederWatch and eBird Canada.
- **Plant native vegetation.** Growing native shrubs and trees provides preferred habitat and even a reliable food source for birds. Fruit bearing varieties, such as saskatoon, raspberries and currants, attract birds.
- **Install a bird feeder.** Feeders provide an additional source of food for birds in your yard and can increase the diversity of bird species in an urban setting. During periods of cold weather, birds may use them as a critical source of nutrition. Providing birds with the proper nourishment can help build their fuel reserves prior to and during long migrations. Purchase food specific for the bird species in your area. Once you have regular visitors, you will need to continue feeding them as birds will begin to rely on that food source.
- **Install a bird house or nest box.** Certain species of birds require different types of homes. Some create their own nests while some use old cavities within trees. When natural nesting sites are not readily available, bird houses or nest boxes provide a safe place for birds to build their nests, protected from the elements and predators.

- **Set up a bird bath.** A bird bath provides a ready source of drinking water. Birds also need water to preen, a daily routine during which they straighten, clean and remove loose feathers.
- **Support bird nesting.** Birds are amazing architects and they can build nests capable of withstanding rain and wind, and which are safe to raise their young. Appropriate nesting materials for most urban birds include:
 - **Twigs or small sticks:** Birds can find these on their own but providing them as a ready source, either loosely bundled or piled, helps them use less energy in their search for nesting materials.
 - **Leaves and grass:** Leave some leaf fragments and grass clippings on your lawn instead of removing them all. This also provides habitat for insects which are a great food source for many species. Also avoid using fertilizers, pesticides or other chemicals on your grass so it isn't transferred onto the birds.

¹¹ royalalbertamuseum.ca/collections/life-sciences/ornithology/birds-list/taxonomy



Photo credit: D. Godkin



Photo credit: D. Godkin

GOOD YARD HABITS

- **Bird structure placement.** Putting your bird feeder in the wrong location can be harmful to birds. In fact, incorrectly placed bird feeders can cause bird strikes on windows and increase ambushes by cats. Place bird feeders either less than one metre or more than 10 metres from your home. Put other bird structures, such as houses and bird baths, in places that prevent predators from reaching them.
- **Bird structure maintenance.** Once any of these structures have been set up, they must be maintained. Bird feeders should be cleaned before every seed refill to avoid the spread of disease. Nest boxes should be cleaned out every fall once the birds have migrated. Keep bird baths full of fresh water and clean them regularly.
- **Put litter in its place.** Placing your garbage in a bin with a secure lid help prevent birds from scavenging, ingesting harmful substances or becoming trapped.



ADDITIONAL RESOURCES

Alberta Native Plant Council

anpc.ab.ca

Birds Canada

birdscanada.org

Keep Cats Safe and Save Bird Lives

catsandbirds.ca

NestWatch: All About Birdhouses

nestwatch.org/learn/all-about-birdhouses

Royal Alberta Museum: Official List of Birds of Alberta

*[royalalbertamuseum.ca/collections/life-sciences/
ornithology/birds-list](http://royalalbertamuseum.ca/collections/life-sciences/ornithology/birds-list)*



ATTRACT POLLINATORS

Pollinators come in all shapes and sizes and include bees, wasps, flies, butterflies, moths and beetles. Some animals, such as birds, can also be pollinators. The abundance and diversity of pollinators is in decline and some species are at risk of being extirpated or becoming extinct because of habitat fragmentation and loss and the decline of diversity of flowering plants.¹²

¹² fs.fed.us/wildflowers/pollinators/documents/AgCanadaNativePollinators.pdf



Photo credit: T. Harasci

WHY POLLINATORS ARE IMPORTANT

Simply put, pollinators help plants reproduce. Between 75-95% of flowering plants, including agricultural crops, need help with pollination.¹³ Pollinators need secure and diverse food sources to flourish and urban yards that offer appropriate habitat can help pollinators thrive.

WHAT YOU CAN DO

- **Establish a pollinator garden.** When designing habitat for pollinators, choose native plant species. They are better adapted and tolerant to local moisture, soil and light conditions and, once established, will generally require less maintenance. Because native plants are adapted to local environmental conditions, they require far less water, saving time and money.¹⁴ Native species will be lower maintenance as they are adapted to the local climate, requiring less water and potting soil. Choose native flowering plants that are perennial, meaning they will come back every year. Avoid wildflower seed mixes as they may contain flowering plants that are not found in Alberta and potentially invasive species. Diversity is best; choose plant species of different heights with different flower colour and shapes to attract different pollinator species. To provide a stable food source, choose species that flower at different times during the

¹³ pollinatorpartnership.ca/en/about-pollinators

¹⁴ audubon.org/content/why-native-plants-matter

growing season. The area you dedicate for these plants does not have to be large; perhaps start with a one metre by one metre section or add native, pollinator-friendly plants to an existing flower bed.

- **Support solitary bees.** Solitary bees are important pollinators that make their nests in cavities. To help these bees, first avoid disturbing open soil patches on the ground as these can be typical nesting sites. You can also purchase or build artificial nesting structures or bee hotels. Structures should be made of untreated wood with an overhanging eave in the front. They should include holes and tubes of various sizes. Bee houses can contain bamboo stalks or paper straws as nesting sites, but bees will also nest in tunnels drilled into logs or blocks of wood. Place bee hotels off the ground preferably over a garden and facing the south morning sun, and where it will be sheltered from wind and rain.
- **Make bumble bees welcome.** Depending on the species, bumble bees' nests can be found under piles of rock or deadfall, in the hollows of trees, in thick bunch grasses or in abandoned rodent burrows. Bumble bees can also find refuge in well-designed, properly installed bumblebee houses placed above or below ground. Install your bumble bee house near diverse and secure food sources consisting of flowers, shrubs and trees nearby.¹⁵

¹⁵ [awes-ab.ca/wp-content/uploads/2018/04/Building-and-Installing-Bumblebee-Houses-1.pdf](https://www.awes-ab.ca/wp-content/uploads/2018/04/Building-and-Installing-Bumblebee-Houses-1.pdf)



Photo credit: L. Mentz



Photo credit: D. Godkin



Photo credit: M. Sellman

GOOD YARD HABITS

- **Be curious.** Do not be anxious of insects; be careful not to disturb them, but also be curious and get to know them. To learn more about the insects in your yard, get an insect viewer kit or photograph them and then identify the pollinators that visit your yard.
- **Reduce or eliminate the use of pesticides and chemical fertilizers on your property.** In addition to causing mortality, pesticides and other chemicals can affect the mobility, navigation and feeding behavior of insects leading to the loss of biodiversity among pollinators. If you need to, consider using alternative, natural products such as compost for fertilizer.
- **Maintain your pollinator garden.** In the fall, avoid disturbing the soil or digging in flower beds, as this will disturb overwintering insects. Leave dead plant material in the garden as it provides shelter for overwintering pollinators, food sources for birds, and fallen leaf matter creates an insulating layer of mulch. In the spring, remove any large clumps of leaves and other loose plant material and add it to your composter. Consider adding new and different plants to your garden and divide and replant perennials that have outgrown their space. Throughout the year, water and replenish mulch as needed, remove weeds and prune or thin any plants that become overgrown.

ADDITIONAL RESOURCES

**Alberta Agroforestry & Woodlot Extension Society:
Building and Installing Bumblebee Houses**

awes-ab.ca/publications/building-and-installing-bumblebee-houses/

**Alberta Agroforestry & Woodlot Extension Society:
Pollinator Friendly Plants for the Aspen Parkland
Region of Alberta**

awes-ab.ca/publications/native-pollinator-friendly-plants/

Alberta Invasive Species Council

abinvasives.ca

Alberta Lepidopterist Guild

albertalepguild.ca

Alberta Native Bee Council

albertanativebeecouncil.ca

Alberta Native Plant Council

anpc.ab.ca

**Edmonton and Area Land Trust:
Protecting Pollinators**

ealt.ca/protecting-pollinators

Edmonton Native Plant Society

edmontonnativeplantgroup.org

Pollinator Partnership Canada

pollinatorpartnership.ca



ASSIST AMPHIBIANS AND REPTILES

Alberta is home to native species of amphibians including salamanders, toads, frogs as well as reptiles including snakes, lizards and turtles. Their populations are declining as they are extremely sensitive to changes in the environment.

Amphibians are small vertebrates that need water or a moist environment to survive. Most of their populations are at risk due to chemical use on land and habitat loss.¹⁶ Reptiles are covered in scales and they mostly live on land and enjoy sunbathing to regulate their body temperature. There are nine different reptile species in Alberta, including seven species of snakes, one species of lizard and one species of turtle (mainly in Southern Alberta).¹⁷ Development contributes to an increase in road mortality and habitat loss.

¹⁶ savingalbertasherps.org/Species.html

¹⁷ ab-conservation.com/downloads/educational_materials/brochures/aca_reptiles_of_alberta.pdf



Photo credit: D. and A. Godkin



Photo credit: D. Godkin

WHY AMPHIBIANS AND REPTILES ARE IMPORTANT

As predators of insects, small mice and worms, amphibians and reptiles play a key role in healthy ecosystems. In turn, they are also a food source for various animals. Due to their importance within an ecosystem, the decline or extinction of an amphibian population can have significant impact on other organisms.¹⁸

WHAT YOU CAN DO

- **Create amphibian and reptile-friendly structures.** Amphibians and reptiles can be found moving through your yard. They may be found in odd places such as window wells, swimming pools and potted plants, however these spots are not ideal or safe. Creating small, natural habitats for amphibians and reptiles in your yard helps keep them safe within an urban environment. In an area away from your house, establish a small structure that incorporates rocks, logs and leaves. Using these materials will also allow for a small amount of water to gather, providing amphibians especially with some needed moisture. Adding these structures to your yard will also encourage insects to move through the habitat, creating a secure food source.
- **Leave the leaf.** Amphibians will burrow and over-winter in fallen leaves. Insects also find shelter within leaf litter, providing a source of food for amphibians, therefore leave some fallen leaves in your yard over winter.

¹⁸ seawa.ca/amphibians-in-alberta-maggie-romuld/

GOOD YARD HABITS

- **Avoid handling amphibians.** Amphibians are largely nocturnal and spend a lot of time underground in burrows, so while they are widespread in Alberta, you might not see them regularly. Avoid handling amphibians and only pick them up if it is necessary, e.g. only if they are injured or need to be relocated from an unsafe area.¹⁹ If the situation calls for handling, ensure your hands are wet and clear of substances such as oils, lotions and repellents.

¹⁹ www.calgaryzoo.com/sites/default/files/2018-06/amphibian_translocation_guidelines.pdf

ADDITIONAL RESOURCES

Alberta Amphibian and Reptile Conservancy
savingalbertasherps.org

Alberta Conservation Association
ab-conservation.com/avamp/identification-keys/juvenile-and-adult-amphibians-of-alberta/more-information-amphibians/

Edmonton and Area Land Trust: Create a Mini Habitat
ealt.ca/kids-blog/mini-den



Photo credit: Alberta Amphibian and Reptile Conservancy



MAKE BATS WELCOME

Although they are rarely seen because of their nocturnal habits (active at night), bats are among the most common wildlife in urban communities and they are strongly affected by how we manage these areas. In Alberta, there are at least nine species of bats. Bats do not build nests; they rely on pre-existing structures such as mature forests, dead trees, rock crevices and in some cases built structures called “roosts.” Habitats altered by urbanization have resulted in loss of roosting areas for bats and natural structures can be rare in urban areas. In urban areas, collisions with windows and predation from cats also negatively impact bat populations.²⁰

²⁰ albertabats.ca/bathouses/

WHY BATS ARE IMPORTANT

All bats in Alberta are insectivores, which means they only eat insects. Bats help to maintain balanced ecosystems and provide natural pest control, an important ecosystem service. They feed heavily on moths, flies and mosquitoes and consume forest and farm pests. Bats can consume up to 600 mosquitoes in one hour and nearly 3,600 mosquito-sized insects every night.²¹

WHAT YOU CAN DO

- **Educate yourself and others about the value of bats.** Bats are the only flying mammals on earth. They provide a beneficial ecosystem service by helping to control insect populations, consuming up to half their weight every night in moths, mosquitoes, beetles, crickets, grasshoppers and flies.
- **Keep your yard dark at night.** Bats are most active at night. Artificial lighting at night disrupts bats in many ways, including affecting their movement or migration patterns, disturbing their feeding periods and making them vulnerable to predators. Use no more light than necessary in your yard. Use motion sensor lights, minimize the spread of light and face lights downward instead of upward.

²¹ alberta.ca/bats.aspx



Photo credit: C. Olson



Photo credit: C. Olson



Photo credit: C. Olson

- **Install a bat house.** Only two species use bat houses. Bat houses are an easy way to provide roosting habitat for bats when natural bat roosts are not available. A bat house provides a safe spot for bats to roost during the summer months or a place to stop over during their winter migration. Use a multi-chambered bat house design as it allows for varied environmental conditions, temperature gradients and roosting spots. When choosing a spot to install your bat house, be sure to place it where guano (bat feces) will not cause issues, such as over a flower bed or shrub. Hang it on a proper structure, tree or post at least three to four metres above the ground. Install it facing east and ensure there are no obstructions within the flight path. Do not install a bat box on your house or on other buildings in your yard. If you are not successful at attracting bats, experiment with different house designs, colors and sun exposures – aim to have both warm (sunny) and cool (shaded) bat houses. In addition to installing bat houses, planting trees can also help provide long-term habitat.
- **Encourage your neighbours.** Bats regularly move roosts and may need many different roosting options to support their needs. Consider teaming up with your neighbors or community group to install several bat houses around your community.

GOOD YARD HABITS

- **Create a safe yard for bats.** If you successfully attract bats to your yard, it will be exciting to watch them, but do not disturb them as they will waste considerable amounts of precious energy. Be aware that cats are known to prey on bats emerging from roosts and some cats can even specialize in hunting bats.²² Keep rain barrels covered as bats are unable to climb out of them. Put screens over chimneys and vents in your house to prevent bats from roosting in these openings.²³ Avoid using sticky fly traps as bats can become entangled in them.
- **Reduce or eliminate the use of pesticides and chemical fertilizers on your property.** Use of these chemicals can negatively impact bat habitat, water and food sources.
- **Retain dead and decaying trees.** If there are no safety concerns, rather than removing the entire dead tree, consider retaining as much of the standing trunk as possible (at least three metres). This can provide a roosting site for bats and can attract insects (food source).

²² researchgate.net/publication/235661616_Curiosity_killed_the_bat_Domestic_cats_as_bat_predators

²³ albertabats.ca/wp-content/uploads/Alberta_Bats_in_Buildings.pdf

ADDITIONAL RESOURCES

Alberta Community Bat Program

albertabats.ca

Alberta Community Bat Program: Building and Installing a Bat House

albertabats.ca/bathouses/

Alberta Community Bat Program: Citizen Science Project

albertabats.ca/citizenscience/

Edmonton and Area Land Trust: Bat Boxes

ealt.ca/bat-boxes



IMPROVE SOIL HEALTH

The condition of soil degrades with urbanization. As such, the small organisms that biodegrade organic matter, which are the foundation for fertile soil, have been vanishing. As urban areas are developed, good quality soil and the beneficial organisms in it are usually stripped away completely. Pesticide use can also wipe out beneficial organisms that aid in decomposition of organic matter, which provides valuable nutrients for plants.

WHY SOIL IS IMPORTANT

Soil plays a vital role in ecosystem health and without it life would be very different. Soil is used to grow food for humans and animals alike, but it also filters our water, provides essential nutrients to our flora and helps regulate the Earth's temperature.²⁴ Healthy soil contains small and large organisms that aid in the breakdown of material into nutrients that support the larger ecosystem.

WHAT YOU CAN DO

- **Educate yourself and other about the value of soil.** About 95% of all living species are hidden from view in the soil, including worms, ants, fungi and microscopic organisms.²⁵ In Alberta, we have different types of soil across the regions. For example, soil in the Parkland region is high in organic matter (plant residue and other materials in various stages of decomposition). Soil containing organic matter has favorable physical and chemical properties that help reduce soil erosion, enhance workability, enhance seedling emergence, and store and supply nutrients essential to plants and soil microorganisms.²⁶
- **Make composting part of your routine.** Composting is a simple way to recycle food and other organic waste from your household and enhance the health of soil in your yard. The composting process produces a natural fertilizer that can be applied to all areas of your yard, making it a great alternative to chemical-based fertilizers. Depending on the size of your yard, you can create a compost pile or use a compost bin. When selecting a composting site for your yard, be sure to consider location and accessibility, and ensure the area has good drainage. Compost requires some maintenance, such as turning your pile regularly and adding water from time to time. Make sure to add an even amount of greens (e.g. food, green plant material, eggshells, coffee grounds) and browns

²⁴ soils.org/files/science-policy/sssa-marketing-2013.pdf

²⁵ open.alberta.ca/publications/3972484

²⁶ open.alberta.ca/publications/3033430



Photo credit: Stock

(e.g. dead leaves, sticks, paper material) for your compost to function correctly. Compost is ready to use when it has an earthy smell, is dark in colour and most of the original materials are unrecognizable. The composting process can take up to a few weeks, months and even two years, depending on the materials used and the effort involved.²⁷

- **Reduce or eliminate the use of pesticides and chemical fertilizers.** Overuse and/or improper application of pesticides and chemical fertilizers can lead to contamination of and/or cause harm to soil as well as other parts of your yard ecosystem (including animals, plants, water, etc.).

²⁷ calgary.ca/UEP/WRS/Pages/Recycling-information/Residential-services/Organics-recycling/Composting-Troubleshooting-Guide.aspx#composter

ADDITIONAL RESOURCES

City of Edmonton: Composting

edmonton.ca/residential_neighbourhoods/gardens_lawns_trees/composting.aspx

City of Edmonton: Do it Yourself Composting Bins

edmonton.ca/residential_neighbourhoods/Do_it_yourself_composting_bins.pdf

City of Edmonton: Master Composter Recycler Program

edmonton.ca/programs_services/volunteer/master-composter-recycler-course.aspx



LANDSCAPE FOR BIODIVERSITY

Landscaping for biodiversity involves a conscious decision to create more natural areas that provide greater habitat variety and improve habitat quality.



Photo credit: K. Johnson

WHY LANDSCAPING IS IMPORTANT

Urban development diminishes available natural spaces which results in habitat loss and habitat loss is the number one reason for the decrease in biodiversity.²⁸ In most urban areas, non-native grass lawns have typically been the ground cover of choice in yards and little to no native vegetation remains. Fragmented by the occasional ornamental trees and shrubs or flower beds, these types of yards are not very biodiversity-friendly. Urban yards can be aesthetically pleasing, culturally enriching and nature-friendly if we are willing to alter our landscapes to provide the types of habitat and food sources that support biodiversity.

WHAT YOU CAN DO

- **Plant native plants, shrubs and trees.** Landscaping your yard with native trees, shrubs, grasses and other plants, rather than non-native species, helps provide natural food sources and habitat for wildlife. To increase the biodiversity of wildlife, choose species of plants that offer foraging benefits for wildlife; choose plants that produce fruit and seeds. Increasing the diversity of plants in your yard will also improve air quality, reduce noise pollution and decrease summer temperatures.²⁹

²⁸ alberta.ca/biodiversity-risk.aspx

²⁹ sciencedirect.com/topics/earth-and-planetary-sciences/urban-vegetation



Photo credit: Stock

- **Add mulch.** Mulch comes in different forms, from shredded woody material and bark to grass and leaves. Whichever natural mulch you choose, spread it around the bases of trees and shrubs. In the spring, it only needs to be two inches thick to deter weeds. Mulch also stores water, decreasing how much you need to water your plants. In winter, increase the thickness to four inches of mulch; this will reduce the chances of frost damage to roots.³⁰
- **Limit the non-native grass lawn in your yard:** Kentucky Blue-Grass is a traditional non-native species of grass that is typically used to landscape yards and can out compete native plants. It requires high maintenance and a lot of water. Consider removing some areas of your traditional lawn and replacing them with a more natural landscape consisting of trees, shrubs, groundcover and grasses which are native to the geographic area.
- **Build a rain garden.** Well-constructed rain gardens are low maintenance landscape options that provide significant biodiversity benefits. A rain garden allows for more diverse plant possibilities, such as moisture-loving plants that might otherwise not be able to grow in yards and can be a great habitat for different types of wildlife.³¹

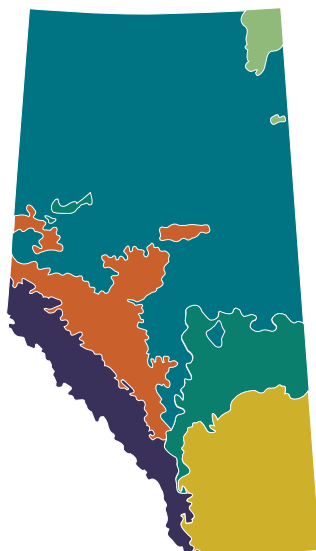
³⁰ albertaarborists.com/News/Want-to-Protect-Your-Perennial-Flower-Bed-Mulch-Might-be-the-Answer

³¹ alidp.org

GOOD YARD HABITS

- **Leave the leaves.** When the leaves fall or after you have cut your lawn, leave grass clippings and leaves on the ground. Leaves and grass clippings break down and decompose; this reduces the need to water lawns and replenishes the soil with carbon, nitrogen and phosphorus, which are important compounds for productive soil.³² This also provides important habitat for insects. During the winter, insects and worms can be protected from extreme temperatures under a blanket of leaves. These insects and worms are a critical source of food in the spring for hatchling birds and other wildlife.
- **Reduce or eliminate use of pesticides and chemical fertilizers.** Overuse and improper application can lead to contamination of and/or cause harm to soil, water, air, animals, plants and even people. Healthy native plants can compete with weeds for sunlight, water and nutrients. Remove weeds by pulling them. Diversifying the plants in your yard can control pests naturally. Allow natural predators like ladybugs and ground beetles to help you take care of pest problems.
- **Keep your lawn healthy.** Aerating your lawn will add oxygen to the soil and will help you maintain healthier grass without the need for excess water or the need for fertilizer. Avoid cutting your lawn too short; longer grass blades can grow and support more roots and develop a deeper root system that is better able to find water and nutrients in the soil.
- **Study your plants.** Alberta consists of distinct natural regions, including: Grassland, Parkland, Foothills, Boreal Forest, Rocky Mountains and Canadian Shield. It is important to understand that different plants are adapted to growing in the different regions and biodiversity in each area will also vary. Use an appropriate plant guide and other resources to study and understand the plants currently growing in your yard. You may find some that are invasive (introduced, not native) or considered weeds in Alberta.

³² content.yardmap.org/learn/leaf-litter/



Natural Regions of Alberta

- Boreal
- Canadian Shield
- Foothills
- Grassland
- Parkland
- Rocky Mountain

ADDITIONAL RESOURCES

Alberta Invasive Plant Identification Guide: Prohibited Noxious and Noxious

open.alberta.ca/publications/6740590

Alberta Invasive Species Council

abinvasives.ca

Alberta Low Impact Development Partnership

alidp.org

City of Edmonton: Natural Private Property

edmonton.ca/residential_neighbourhoods/gardens_lawns_trees/natural-private-property.aspx

City of Edmonton: Planting and Maintaining a Natural Yard

edmonton.ca/residential_neighbourhoods/gardens_lawns_trees/planting-maintaining.aspx

Edmonton Native Plant Society

edmontonnativeplantgroup.org



LIVING WITH URBAN WILDLIFE

As you take actions to help enhance nature and biodiversity, you are more likely to encounter certain wildlife in your yard and within your community. This can be an enjoyable and exciting experience, but it can also cause problems with pests or problem wildlife. The key is to find a balance between wildlife and enhancing biodiversity in an urban setting.

Urban wildlife adapts best to their habitat and are safer when left alone. The safest way to observe wildlife is from a distance; avoid disturbing or handling wild visitors to your yard. Limit habits and conditions that encourage nuisance or problem wildlife (e.g. keep garbage and compost bins securely covered, keep pet food inside, cover your rain barrel to protect wildlife from falling in and to reduce potential mosquito habitat). Contact a professional wildlife officer, a local wildlife centre or a pest control company if you have concerns with problem wildlife.



Photo credit: D. Godkin



Photo credit: K. Norton



Photo credit: R. Perssons



DOING MORE

Supporting nature and biodiversity in an urban setting is a long-term project in which we want to leave the landscape and our communities in good condition for future generations. The information provided in this booklet is a good starting point. There are many opportunities to support and build on the pursuit to elevate nature and sustain biodiversity in your yard and within the larger urban environment.

Once you've implemented some or all these beneficial management practices, take time to:

- **Reflect on and appreciate how you have contributed** to and supported urban nature and biodiversity in your yard.
- **Monitor your work** to determine if you are achieving your goals or if you need to modify what you are doing.
- **Revisit the original goals** you set and think about setting new goals for and doing more in your newly diversified yard.
- **Research and delve deeper** into additional topics of interest that will help you continue to advance your own urban nature initiative.
- **Share your personal experience** and what you've learned to encourage and inspire others to enhance urban nature.
- **Volunteer with nature organizations or join a local nature club** to learn more about biodiversity and nature from others with different experience and knowledge.
- **Get involved in community programs and events** that support sustainability and green initiatives.



Photo credit: C. Girard



Photo credit: T. Stieben

URBAN NATURE INITIATIVE ADVISORY COMMITTEE

Advisory Committee members include non-profit, charitable organizations that contributed their time, expertise and advice in support of this publication and other key UNI project activities.

Alberta Amphibian and Reptile Conservancy

savingalbertasherps.org

Focuses on conserving and managing habitat for the amphibians and reptiles native to Alberta, educates the general public about the value of all herpetofauna, and promotes respect and enthusiasm.

Alberta Community Bat Program

albertabats.ca

Raises awareness of bat conservation issues, helps residents manage bats in buildings and collects data needed to monitor and better understand bats in the province.

Bird Studies Canada

birdscanada.org

Aims to conserve wild birds through sound science, on-the-ground actions, innovative partnerships, public engagement and science-based advocacy.

Edmonton and Area Land Trust

ealt.ca

Conserves nature in Edmonton and area and engages with people and communities in land conservation and stewardship.

Edmonton Native Plant Society

edmontonnativeplantgroup.org

Grows native plants and promotes their use in gardening and landscaping to a wider public. Takes part in numerous projects in cooperation with the appropriate municipal authorities, aims to enrich the natural flora of various parks and natural areas.

Edmonton Nature Club

edmontonnatureclub.org/index.html

Develops an awareness of and encourages an interest in the natural environment among its members and the community.

WILDNorth

wildnorth.ca

Delivers services to people in northern Alberta with wildlife-related concerns, provides compassionate care to injured and orphaned wildlife, and educates communities about humanely coexisting with wildlife.



Photo credit: K. Norton



ADDITIONAL RESOURCES

ABMI NatureLynx

naturelynx.ca

An app created for and by Alberta's nature enthusiasts. Use NatureLynx to explore the world around you; identify local species, learn about biodiversity hotspots and connect with other curious people.

eBird

ebird.org/home

Managed by the Cornell Lab of Ornithology, eBird is the world's largest biodiversity-related citizen science project. Share your knowledge and experience with their free mobile app.

Edmonton Community Foundation

ecfoundation.org

Strengthens the community by connecting donors to charities and causes that are important to them.

Photo credit: T. Harasci

Edmonton Federation of Community Leagues

efcl.org

Connects, represents and enables Leagues to preserve and promote the Community League way of life.

iNaturalist

inaturalist.org

One of the world's most popular nature apps, iNaturalist helps you identify the plants and animals around you. Log activities and see biodiversity in your area and throughout Alberta.

Nature Alberta Member Clubs

naturealberta.ca/our-clubs

Connect with a nature club in your community.

Things to Do in Nature

naturealberta.ca/explore

Explore and share your experiences with nature in Alberta.

Naturehood

naturecanada.ca/enjoy-nature/your-naturehood/

A Canadian program that connects urban residents, particularly children, to nearby nature.



Photo credit: K. Norton

SETTING GOALS FOR YOUR PROPERTY

LONG-TERM GOALS

What are your long-term goals for your property?	What resources do you need?	What is your timeline to complete the work?
<i>Example: Increase biodiversity and create better wildlife habitat</i>	<ul style="list-style-type: none">▪ Native plant species▪ Professional advice on landscaping with native species and where to buy them	<i>Two years</i>

LONG-TERM GOALS

What are your long-term goals for your property?	What resources do you need?	What is your timeline to complete the work?

SHORT-TERM GOALS

What are your short-term goals for your property?	What resources do you need?	What is your timeline to complete the work?
<i>Example: Plant a pollinator garden of native flowers and grasses</i>	<ul style="list-style-type: none">▪ <i>Design and planning instructions</i>▪ <i>Locally sourced native plants</i>	<i>Design and planting completed late summer 2020</i>
<i>Example: Install a bee hotel</i>	<ul style="list-style-type: none">▪ <i>List of retail locations that sell bee hotels, or</i>▪ <i>Instructions on how to build my own bee hotel</i>	<i>Late spring 2020</i>

SHORT-TERM GOALS

What are your short-term goals for your property?	What resources do you need?	What is your timeline to complete the work?

PROPERTY INVENTORY CHECKLIST

What buildings, facilities, natural assets or problem areas are on your property?

Building	Yes	No
House		

Description:

Building	Yes	No
Garage		

Description:

Building	Yes	No
Shed(s)		

Description:

Building	Yes	No
Other (specify)		

Description:

Facility	Yes	No
Garden		

Description:

Facility	Yes	No
Lawn		

Description:

Facility	Yes	No
Fences		

Description:

Facility	Yes	No
Driveway		

Description:

Facility	Yes	No
Sidewalks		

Description:

Facility	Yes	No
Natural trails or paths		
<i>Description:</i>		

Facility	Yes	No
Other (specify)		
<i>Description:</i>		

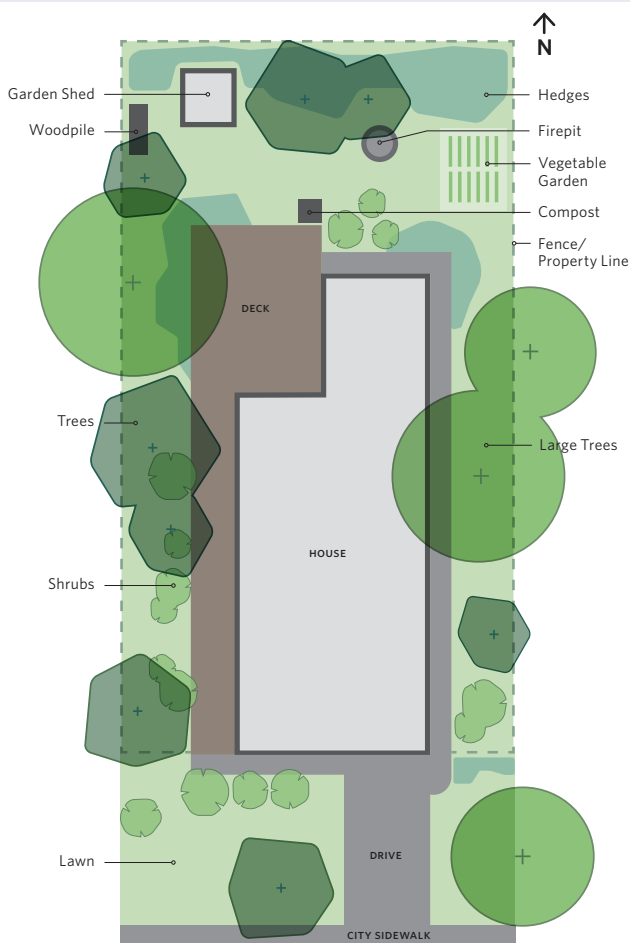
Natural Assets	Yes	No
Tree or shrubs		
<i>Description:</i>		

Natural Assets	Yes	No
Ponds or other water features		
<i>Description:</i>		

Natural Assets	Yes	No
Areas of natural vegetation		
<i>Description:</i>		

SAMPLE PROPERTY MAP

A property map is a visual representation of your property that lays out dimensions and locations of the various features associated with your yard. Creating a map can help you better visualize the state of your property and what you want to achieve. It is easier to set goals and develop a plan if you know what you have and where things are located relative to other features.



BENEFICIAL MANAGEMENT PRACTICES (BMP) CHECKLIST

CREATE A BIRD BIOASIS

BMP	Yes	Date
Prevent window collisions		
Keep birds safe from cats		
Learn about birds		
Plant native vegetation		
Install a bird feeder		
Install a bird house or nest box		
Set up a bird bath		
Support bird nesting		
Properly place structures (feeders, houses)		
Properly maintain structures (feeders, houses)		

ATTRACT POLLINATORS

BMP	Yes	Date
Establish a pollinator garden		
Support solitary bees		
Make bumble bees welcome		
Be curious; learn about pollinators		
Reduce or eliminate the use of pesticides and chemical fertilizers on your property		
Maintain your pollinator garden		

ASSIST AMPHIBIANS AND REPTILES

BMP	Yes	Date
Create amphibian and reptile-friendly structures		
Leave fallen leaves in your yard		
Avoid handling amphibians		

MAKE BATS WELCOME

BMP	Yes	Date
Educate yourself and others about the value of bats		
Keep your backyard dark at night		
Install a bat house		
Encourage your neighbours to learn about bats		
Create a safe yard for bats		
Reduce or eliminate the use of pesticides and chemical fertilizers on your property		
Retain dead and decaying trees		

IMPROVE SOIL HEALTH

BMP	Yes	Date
Educate yourself and others about the value of soil		
Make composting part of your routine		
Reduce or eliminate the use of pesticides and chemical fertilizers		

LANDSCAPE FOR BIODIVERSITY

BMP	Yes	Date
Plant native shrubs and trees		
Add mulch		
Limit the non-native grass lawn in your yard		
Build a rain garden		
Leave fallen leaves in your yard		
Reduce or eliminate use of pesticides and chemical fertilizers		
Keep your lawn healthy		
Study your plants		

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