



Choosing Native Plants

November 2025

NATIVE PLANTS

The plants considered native to a local region are the species of **trees, shrubs, wildflowers, grasses and groundcovers** that have evolved over time in response to climate, conditions and interactions with other species inhabiting the local environment. Native plants possess specific traits that make them uniquely adapted to local soil, climate conditions and levels of rainfall.

Canada is a country with a rich diversity of natural habitats and climates. There are 15 different ecological regions that have been identified, including regions such as the Atlantic maritime, Boreal shield, Prairies and Northern arctic.



We recommend these companion resources to support the various stages of your school ground greening project:

[*All Hands in the Dirt*](#)

[*Designing for Shade*](#)

[*Landscape & Child Development*](#)

[*Digging It: A Guide for Greening School Grounds in Peel Region*](#)



According to the United Nations Convention on Biological Diversity, **invasive species** pose the second most dangerous threat to biodiversity, trailing only habitat destruction in a list that includes pollution, overconsumption, climate change, and human population increase.

Learn more at:

Parks Canada: Manages and controls invasive species within Canada's national parks and protected areas, working to protect ecosystems and native wildlife.

Canadian Council on Invasive Species (CCIS): A national not-for-profit organization that works to mobilize action and coordinate efforts to prevent, detect, and manage invasive species.

Environment and Climate Change Canada (ECCC): The federal department responsible for promoting biodiversity and ecosystem resilience, with a focus on invasive alien species.

INVASIVE PLANTS

Plants that are not native to a local region, intentionally or unintentionally introduced by human activities, whose presence poses a threat to environmental health or society are considered invasive. Non-native species are not always invasive, but they can become invasive if uncontrolled.

Non-native plants compete with native species for resources like sun, water and space and harm ecosystems. Many invasive species, including plants, wildlife, fish, pests and pathogens, are expected to expand their range and disperse, taking advantage of weakened ecosystems and to outcompete native species due to climate change.

If you find invasive species on your school grounds, do these three things:

1. **Dig out invaders with care:** Put uprooted plants into a black garbage bag and leave in the sun for a week. This will prevent sprouting and growing in other areas.
2. **Dispose properly:** Discard yard waste through your municipality. Do not dump yard waste in nearby natural areas.
3. **Keep invaders out of the compost:** Even when uprooted, invasive plants can spread seeds and grow roots in a compost pile. Some invasive plants can regenerate from very small fragments.

Why Plant Native Species?

Native species—whether large canopy or small trees, shrubs or wildflowers — provide **a wide range of benefits to the environment, climate resilience, student learning and community life.** Planting a diverse mix of native species creates a rich and layered habitat that supports a wide range of wildlife with varied food sources and shelter.

Increasing biodiversity on school grounds helps restore ecosystems to function more effectively. Greater diversity strengthens resilience by reducing the risk that a pest or disease affecting one species will disrupt the entire community.

Native plants produce oxygen, filter and store clean water, and play a direct role in climate regulation by capturing carbon and storing it in their tissues and soils. They enrich the soil— legumes fix atmospheric nitrogen into plant-available forms, and other plants and soil organisms break down organic matter into healthy, fertile soil.



Native Plants: Big-Picture Benefits

Environmental	Climate resilience & mitigation	Student learning & wellbeing	Community impact
Support biodiversity by providing food and habitat for birds, pollinators, and other wildlife.	Absorb and store carbon from the atmosphere.	Turn school grounds into outdoor classrooms for hands-on learning.	Strengthen community connections through planting and stewardship activities.
Strengthen ecosystems that supply clean air, water, and healthy soil.	Provide shade that reduces the urban heat island effect and cools play areas.	Create opportunities to study local ecology, plant-animal relationships, and climate systems.	Support food systems when fruit- or nut-bearing native trees are included.
Increase resilience to pests, diseases, and climate extremes.	Reduce energy use for nearby buildings by lowering heating and cooling demands.	Support mental health and stress reduction through daily contact with nature.	Connect people to cultural and Indigenous plant knowledge.
Restore ecological balance by re-establishing natural plant communities.	Manage stormwater by absorbing rain, reducing flooding.	Encourage physical activity and imaginative play in shaded, biodiverse environments.	Provide cost savings through reduced maintenance and energy use over time.
Prevent soil erosion and improve water infiltration.	Act as windbreaks that protect school grounds and buildings.	Build care and stewardship in youth.	Build care and stewardship in the wider school community.

Native Plants: Adaptive and Hardworking

Planting native trees and shrubs is an important climate adaptation strategy that supports ecological, economic and health goals. These hardworking species provide shade from summer sun and shelter from harsh winds, improving comfort and safety on school grounds. Their deep root systems absorb heavy rainfall, reduce runoff and help replenish the natural water table, lowering the pressure on stormwater systems.

Because native plants are adapted to local conditions, they rarely have pest problems and reliably thrive in local soils, even in poor or compacted conditions. This makes them a long-term, low-maintenance choice requiring less water, fertilizer and pest control than ornamental species.

Native Plants: Naturally Nurturing

Native species have evolved with local insects and wildlife, providing food and a nurturing habitat. Many native plants serve as important local seed sources, helping maintain resilient, self-sustaining plant diversity and regeneration.

PLAN AHEAD FOR PROJECT SUCCESS:

- ❑ **Align the size and scope of your project** with your ability to maintain the project throughout the seasons.
- ❑ **Consult A Local Expert** to help select plant species for your project and to learn how to plant in natural patterns like the natural communities in your region.
- ❑ Preserve existing trees and support mature tree growth through a care plan that includes **weeding, mulching and watering** and strategies to respond to heat and drought.
- ❑ New **trees will require protection** for their roots from harmful soil compaction, as well as watering approaches to optimize water to reach tree roots.
- ❑ **Planting trees in groves** will create shade and make watering more efficient. If planting on a school ground, ask your caretaker to help identify the building's hose bib locations.
- ❑ Choose a **diversity of species** for resistance to disease, pests and pollution, and optimize tolerance to increasing heat and drought conditions.

What To Consider When Choosing Native Trees



Research the tree communities in your province to **learn how different species grow together in nature**. Consider selecting both deciduous and coniferous species for your project and recreating these natural groupings right on your school ground!

When selecting species and planting locations for your site, plan for:

- Size** – How will the size and shape of the mature tree canopy impact your site?
 - Are there any obstructions overhead which your tree will grow into?
 - Will it hang over a neighbour's yard?
 - Could someone climb onto the roof of your school from the planting location?

- Shade produced** – Do you want people to be able to enjoy the shade?
 - Where and when will the shade be cast? Is heavy or filtered shade desired?
 - Where does the shade of neighbouring trees fall – will this affect the new trees?
 - How does your spot affect the energy needs of surrounding buildings? E.g. provide a windbreak or sun block to reduce energy needs.
 - Are you planning for shade in your planting order plan? E.g. When planning a forest-like grouping, plant canopy trees first (such as pioneer species), then under-story species, and finally the forest floor.

- Leaf drop** – Where will the leaves drop (e.g. neighbours' property)?
 - Will raking and disposal be needed? If this is a concern, consider trees with small leaves that will blow away i.e. honey locust.

- Soil compaction** – How will you protect trees from soil compaction (e.g. tree cages, woven fences, planting ground cover, building seating, etc.)?

- Safety** – Have you considered allergy exposure? Some schools cannot plant nut trees due to severe nut allergies (anaphylaxis).

Choosing Native Trees: Does tree form matter?

- ✓ **Yes!** When designing for shade and cooling, consider **tree size and form** at maturity.

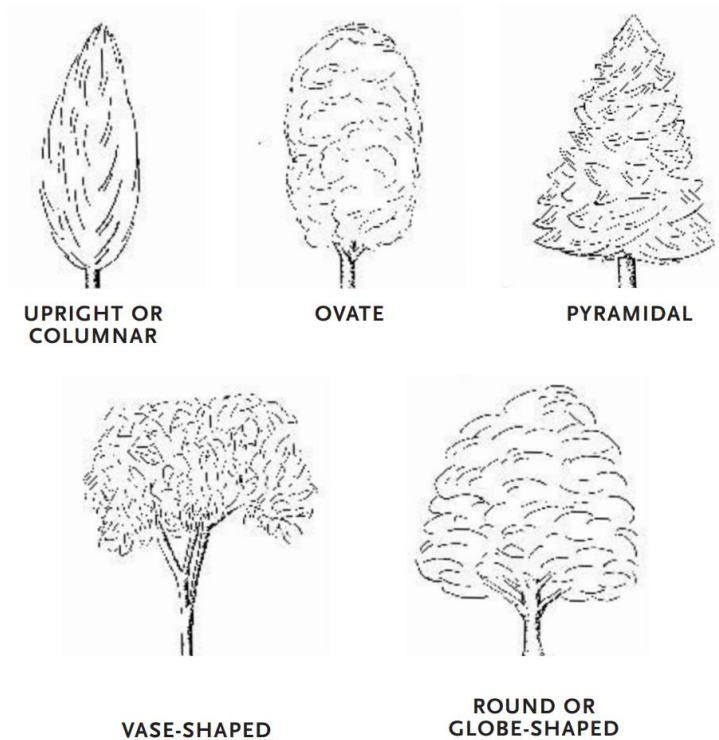


Illustration by Samara Newman

Native trees with broad crowns and dense foliage provide the best protection from extreme heat and UVR. However, planting trees in groups, specifically a mix of trees with narrow and broad shapes can achieve higher rates of **shade coverage**, shelter and establishment benefits.

Choosing Native Trees: Selecting Nursery Stock

Shrubs are usually sold in containers or bare root, while trees are usually sold as bare root, ball and burlap, wire basket or container stock.

Larger trees are sold as ball and burlap and wire baskets and are measured by trunk diameter (caliper) in mm or by height in cm.

- Work with local nurseries on species availability and learn about growing trends.
- Reject poor nursery stock with girdled roots and poor branch structure to prevent future susceptibility to storm damage and failure.

Deciduous Trees

- Trees should be a minimum of 45mm caliper in remote parts of the school ground where vandalism is not a concern and 70mm caliper in high activity and/or vandalism-prone areas.
- Prune trees 2m from ground to the lowest branches to prevent children from swinging and tearing the branch away and to allow good visual penetration when tree is mature.
- Smaller trees, whips and seedlings may be considered for nature study areas and/or vegetated mounds where mowing is carefully managed, and students can do the planting.

Coniferous Trees

- Should be 2.5 to 3 metres tall, depending on their susceptibility to vandalism or proximity to high-activity areas.

What To Consider When Choosing Native Shrubs



Native shrubs can provide beautiful spring colour when they bloom and their berries provide a valuable source of food for birds.

- ❑ If young children visit the site, consider planting **only edible berries** such as serviceberry and elderberry.
- ❑ Start with **small stock** (i.e. bare root) and plant in a wood-mulched bed at least 15cm deep.
- ❑ Place **cardboard** (or thick newspaper sections) under the mulch to help keep aggressive weeds under control.
- ❑ For the first few years of growth, the space between these shrubs can be planted with **reseeding annuals** such as cosmos, poppies and calendula. Sunflowers or nasturtiums can be planted until the shrubs have filled in. This will get you over the “is this all there is?” stage.
- ❑ Consider planting a **theme garden** such as bird food, butterfly, colour, scent, kitchen (herbs, salad, veggies), cereal bowl (oats, wheat, buckwheat, corn), medicinal, herb, pizza (toppings or looks like pizza) or giant (large plants).



Elderberry (top photo)
and calendula



What To Consider When Choosing Native Wildflowers



- Plant for diversity, imitating natural patterns.
- Choose plants with soil, sun and moisture requirements that closely match the conditions of your site.
- Native flowers already growing on local sites are indicators of suitable species.
- Learn about the flower's bloom time, colour and height from a grower's catalogue.
- Use plants that provide year-round interest and that flower in spring and fall.
- Consider wildflowers that are known to attract wildlife such as butterfly gardens.
- Use species that are drought-tolerant to minimize summer maintenance requirements.
- Pay attention to edge vegetation. Does it need to be low growing? Does it need to be vigorous to maintain an edge? Can spreading varieties be easily controlled?
- Safety** – poisonous berries or sharp thorns are unsuitable for school grounds.





Deciding Where to Plant

Be sure to get all necessary approvals on your planting plan and consider the following:

- Fire routes
- Snow clearing and storage
- Service-access routes
- Future building/parking expansions
- Portable additions & move-in/move-out routes
- Sightlines for student safety/security
- Building envelope maintenance & construction access
- Access to a water source

Recommended tree planting distances from built objects:

To help ensure student safety, maintenance and emergency access, and healthy growing conditions for your tree plantings, these distances are measured as a radius and are expressed as minimum distances in metres.

- 2 m from a bench, seating stone or rock
- 2 m from a fence
- 2 m from asphalt areas and walkways
- 5 – 7 m from other trees
(or appropriate to the selected species)
- 7 m from a building
- 7 m from a fence of an adjacent neighbour
- 7 m from a running track
(no trees planted inside track area)
- 6 m from soccer and football boundary lines
- 6 m from a fire hydrant
- 7 m from a flagpole
- 3 m from underground utilities
- 3 m from aboveground utilities.

Source: TDSB EcoSchools School Ground Greening Guide: Designing for Shade and Energy Conservation 12



Watering

Newly planted trees will need summer watering until they become established (approximately three years). Give newly planted trees a deep watering during June, July, August and September. For trees in turf, water each tree for a minimum of 6 minutes twice a week, using a standard 5/8" hose. For trees planted in asphalt, set water flow on low and water for a minimum 10 minutes 3 times per week. Give established trees a drink during dry periods. Use tree watering bags to make watering more efficient. These are used by many municipalities.

Mulching

Mulching trees, shrubs and gardens has many benefits: mulch keeps roots cool, retains moisture by preventing evaporation, protects roots from foot traffic, reducing soil compaction and erosion, prevents runoff and improves the organic content of the soil. It also keeps down weeds around gardens and trees! Apply a minimum of 1/2 a cubic yard, of shredded bark mulch around the base of newly planted trees. (10-15cm deep to a diameter of 2m from the base). Top up the mulch around your trees every year as it will breakdown. For older trees, mulch out to the drip line from the trunk to ensure you are protecting the tree's root system.

Measure the size of the area you want to cover with mulch and then use this easy calculation to determine the amount of mulch you need in cubic yards:

**length x width x depth
(express as a fraction of a foot) / 27 = cubic
yards**

**e.g. 6' x 6' x 6" (.5 of a foot) = 18 cubic feet /
27 = .7 cubic yard**

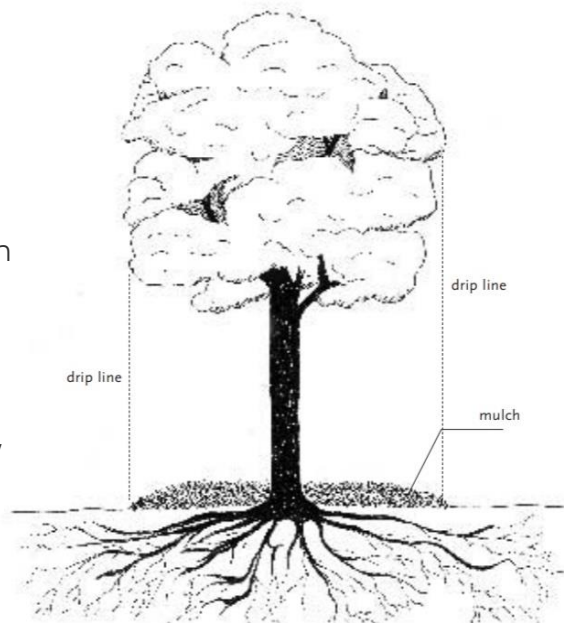


Illustration by Samara Newman

Protecting trees on school grounds

Consider how you will prevent the soil from around the base of trees from becoming compacted by foot traffic and smothering the tree.

In areas of low activity options include:

- Plant in a garden
- Weave a fence around the base
- Plant ground cover
- Block the area off with string
- Surround with a living fence (i.e. oats, wheat, rye, sunflowers, birdseed or corn)
- Build bench seating around the tree



Building a protective wire cage

These cages are highly recommended to **protect large trees planted in active play areas** and can be constructed from materials available from a building supply store.

1. Assemble a cage from 10 gauge galvanized welded 2"x2" wire mesh and 1.5m high.
2. Use three regular T bars that are 2m long evenly spaced around the tree about 30cm out from the trunk of the tree. This helps to protect the trunk of the tree from vandalism and from mechanical damage (e.g. lawnmowers, string trimmers).
3. Overlap the required amount of wire mesh by three squares but make sure that the overlap is located between the T bars. This ensures that the cage will remain round and will not leave a sharp point or ridge along the T bar (a safety issue).
4. The bottom of the cage should be 15cm above grade so that you can weed and clean garbage at the base of the tree. This gap also allows for annual mulching.
5. The tops of the T-bars should be below the top of the mesh. This type of tree cage can stay around the tree for about 8-10 years.

PROTECTIVE TREE CAGE

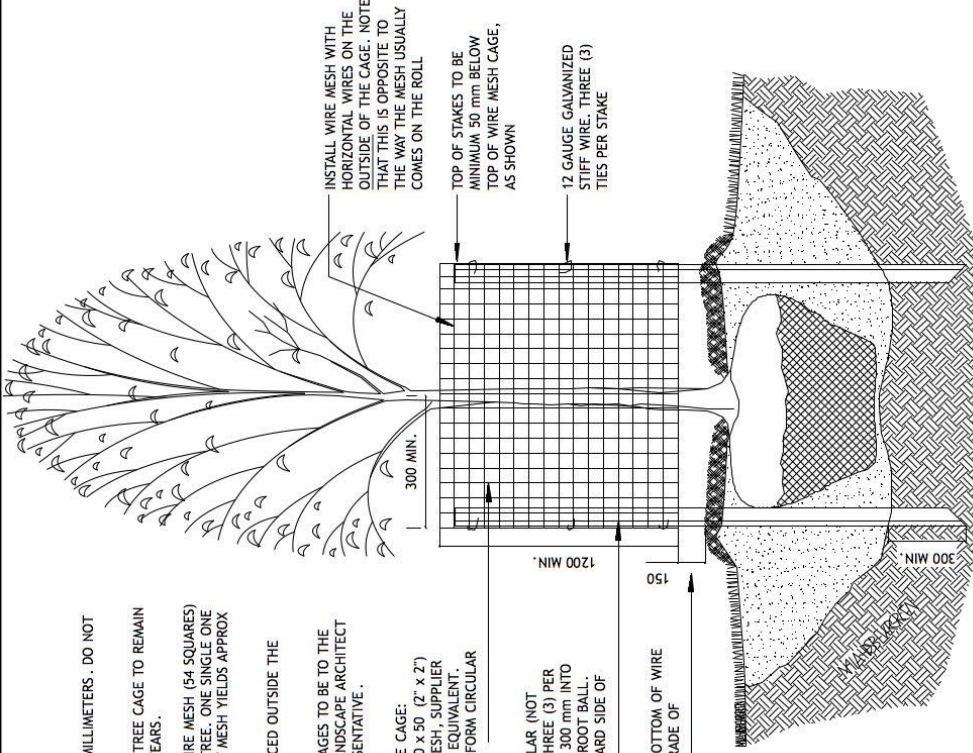
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS . DO NOT SCALE DRAWING .
2. WIRE MESH PROTECTIVE TREE CAGE TO REMAIN IN PLACE FOR TEN (10) YEARS .
3. A MIN 2743mm (9') OF WIRE MESH (54 SQUARES) IS REQUIRED FOR EACH TREE . ONE SINGLE ONE HUNDRED FOOT ROLL OF MESH YIELDS APPROX ELEVEN (11) CAGES .
4. T-BAR STAKES TO BE PLACED OUTSIDE THE ROOTBALL .
5. ALL PROTECTIVE TREE CAGES TO BE TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND/OR OWNERS REPRESENTATIVE .

WIRE MESH PROTECTIVE TREE CAGE:
 1200 (48") HIGH 12 GAUGE 50 x 50 (2' x 2') GALVANIZED WELDED WIRE MESH, SUPPLIER DUPONT WIRE OR APPROVED EQUIVALENT. FASTEN TO T-BAR STAKES TO FORM CIRCULAR CAGE AROUND TREE TRUNK

2400 (8') LONG 40 x 40 REGULAR (NOT LIGHT-DUTY) T-BAR STAKE, THREE (3) PER TREE. DRIVE STAKE MINIMUM 300 mm INTO UNDISTURBED SOIL OUTSIDE ROOT BALL. ONE STAKE TO BE ON WINDWARD SIDE OF TREE

ENSURE 150 GAP BETWEEN BOTTOM OF WIRE MESH CAGE AND FINISHED GRADE OF SURFACE TREATMENT



PLAN

SECTION

THIS DETAIL MAY NOT BE APPLICABLE IN ALL CIRCUMSTANCES AND IS PROVIDED FOR INFORMATION PURPOSES ONLY. SPECIFIC SITE CONDITIONS AND SCHOOL/COMMUNITY REQUIREMENTS MUST BE TAKEN INTO CONSIDERATION. COPY RIGHT JOINTLY BY EVERREEN AND NORTHWOOD ASSOCIATES LANDSCAPE ARCHITECTS LTD. THIS DETAIL IS NOT TO BE REPRODUCED WITHOUT PERMISSION.

Recommended Reading & Research



Native species vary greatly by region across Canada. Search these databases for local information by type and location.

[The Network of Nature](#)

The Network of Nature is a national movement created to restore Canada's biodiversity by motivating, educating and empowering individuals and organizations. Search for plants organized by type such as tree/shrub/vines, herbaceous flowers, ferns/allies and grasses/sedges/rushes.

[North American Native Plant Society \(NANPS\)](#)

This organization promotes the preservation of native plants and has a history dating back to the Canadian Wildflower Society. Their website provides information and resources on native plants.

[Canadian Nursery Landscape Association - National Plant List](#)

The CNLA provides a national list of plants, categorized by type (e.g., trees, shrubs, perennials), serving as a technical resource for the industry.