

GARDENING

NATIVE PLANT UNDERSTORY GARDEN

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Design Templates

Tips & Tricks

Healthy
Garden
Series



KAWARTHA
CONSERVATION



GETTING STARTED

PREFERRED CONDITIONS

- 3 hours of direct sun per day.
- Dappled shade.
- Average to fast-draining soil. You can amend very sandy or very heavy clay soils with compost. For information on soil types, see the **Additional Resources** section on page 8.



SHEET MULCHING

- Layer newspaper across the planting area, making sure the pages overlap.
- Water the surface.
- Sprinkle with soil (5cm) and a layer of mulch (5cm).
- For best results, let rest for a few months. Alternatively, you can plant into it right away.

You've decided to plant a garden to diversify your shady yard. Now what? There are a few things to do before you begin.

Step 1: Placement

Where will you place your garden? Consider ease of access, preferred sight lines, and the overall style and function of your yard.

Step 2: Requirements

Does your space meet the requirements? Pick a day to observe the sun's movement. Does the space receive limited sunlight, 3 hours or less, per day? Is shade dappled or dense? Check out your soil. Measure soil drainage with an infiltration test. For soil texture, use the ribbon method or mason jar test. Sandy, fast-draining soils typically contain less organic matter and provide fewer nutrients than slower-draining loam or clay soils. See the **Additional Resources** section on page 8 for information on how to conduct these tests.

Step 3: Space

How big is your space? Determine how many repetitions of the **Garden Plan** on page 4 will fit within the space, and arrange to your liking (see examples of **How to Use the Template** on page 3).

Step 4: Supplies

What supplies do you have? What supplies do you need? Use the **Materials** table on page 6 to make a list.

Step 5: Mark Out Your Space

Get crafty! Mark out the planting space using flags, string, or even a long garden hose. Your space does not need to be level.

Step 6: Prepare Your Space

Get rid of your grass! Sheet mulching is a quick and easy way to do this. Alternatively, you can remove grass by hand using a spade or a rented sod skimmer. Most landfills and municipal yard waste programs will not accept sod - compost or repurpose it elsewhere on your property. Use hand tools when you get close to existing trees to avoid harming their roots.

Step 7: Compost

If using, work compost into the top 10 - 15cm of soil.

HOW TO USE THIS TEMPLATE



This garden guide uses a modular template. The **Base Unit** is a 2m x 2m (4m²) garden that can be planted on its own, or multiplied to create a larger garden. You can repeat, mirror, and rotate the base unit to create gardens of all shapes and sizes. The possibilities are endless! A detailed version of the **Garden Plan** is provided on page 4.

If you already have a garden that you want to enhance, select a couple species from the **Plant Species** list on page 5 and work them into your existing space. Dense, biodiverse gardens are loved by native pollinators and reduce maintenance needs.

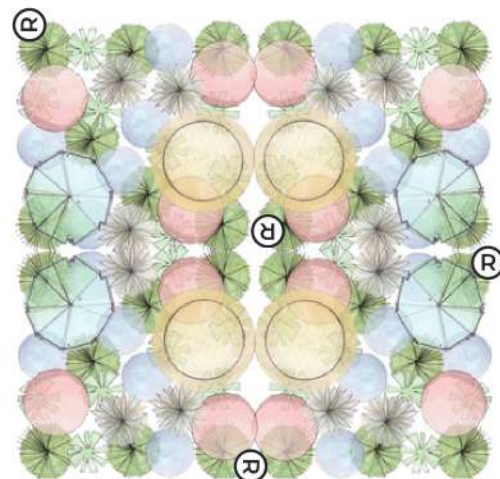
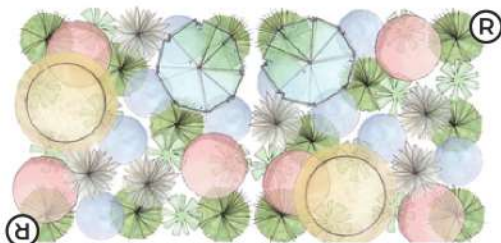
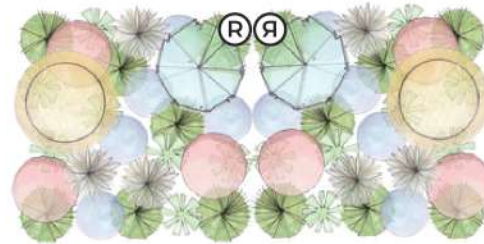
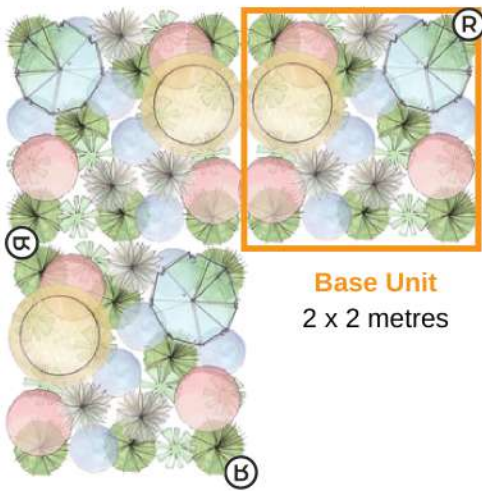


The **Ⓡ** in the corner of each base unit indicates the reference corner. It is marked as the base unit is repeated, mirrored, or rotated.



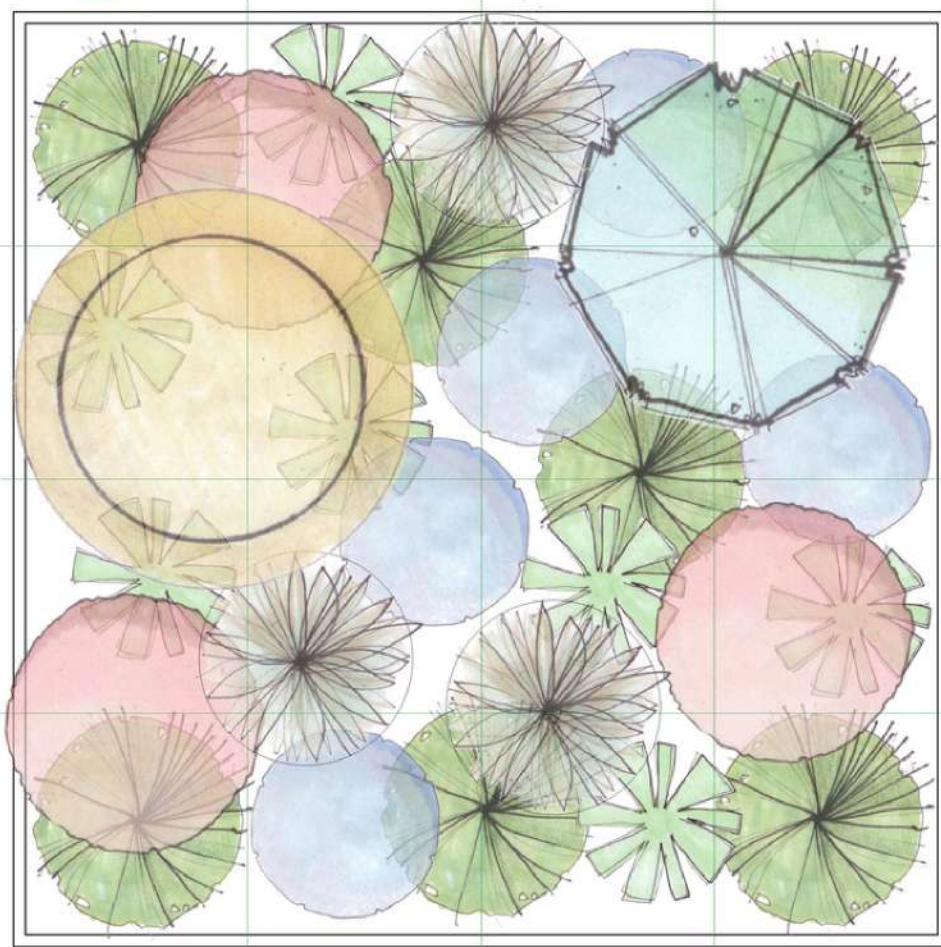
GARDEN TIP

Save yourself a trip to the garage or potting shed by stashing a spare set of hand tools and garden twine in a waterproof container in your garden.





GARDEN PLAN

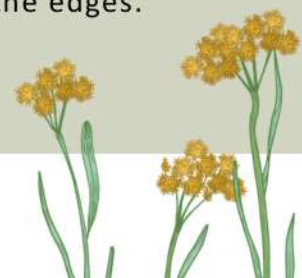


-  **Wild Ginger**
Asarum canadensis
-  **Oak Sedge**
Carex pensylvanica
-  **Bottlebrush Grass**
Elymus hystrix
-  **Big-leaved Aster**
Eurybia macrophylla
-  **Woodland Sunflower**
Helianthus divaricatus
-  **Hairy Beardtongue**
Penstemon hirsutus
-  **Woodland Phlox**
Phlox divaricata

Note: Base Unit is 2m x 2m (4m²). Grid lines are set at 0.5m intervals.

TIME TO PLANT

- Lay out your plants, using the base unit above for reference. Make adjustments to the design if desired. Some plants will be close together, this is intentional.
- Using a spade, dig a hole the same depth and twice as wide as each plant. Remove each plant from its container and loosen the roots if they appear stuck (gently squeezing the sides of the container can help). Place each plant in its hole, tucking roots downward and ensuring the top of the soil surface is level with that of the surrounding soil (not too deep, not too shallow).
- Using your hands, fill in the gaps around the plant with soil, tucking down along the edges.
- Water as soon as possible, until soil is saturated.
- After planting, layer 5cm of mulch in gaps between plants (not on them).



PLANT SPECIES



Wild Ginger



Qty: 7

Nursery size: 10cm pots
Mature size (h x w): 30 x 45cm
Bloom time: Spring
Benefits: Supports mycorrhizae interactions in the soil
Alt: Woodland Strawberry

Oak Sedge



Qty: 7

Nursery size: 10cm pots
Mature size (h x w): 30 x 45cm
Bloom time: Spring
Benefits: Larval host for moths and butterflies; feeds songbirds
Alt: Rosy Sedge, especially if **MM**

Bottlebrush Grass



Qty: 3

Nursery size: 10cm or 1 gal. pots
Mature size (h x w): 100 x 45cm
Bloom time: Midsummer
Benefits: Larval host for Northern Pearly Eye Butterfly
Alt: Christmas Fern in **DS** or for a more **DF** option

Big-leaved Aster



Qty: 1

Nursery size: 10cm pots
Mature size (h x w): 60 x 60cm
Bloom time: Fall
Benefits: Supports insects with nectar & pollen late in season.
Alt: Blue Wood Aster, or Bluestem Goldenrod if **MM**

Woodland Sunflower



Qty: 1

Nursery size: 10cm pots
Mature size (h x w): 160 x 90cm
Bloom time: Midsummer to Fall
Benefits: Feeds insects, birds and mammals
Alt: Maple-leaf Viburnum in **DS** or for a **LA** option

Hairy Beardtongue



Qty: 3

Nursery size: 10cm pots
Mature size (h x w): 60 x 60cm
Bloom time: Spring to Summer
Benefits: Attracts bumblebees, carpenter bees & hummingbirds
Alt: Bowman's Root in sunnier sites or if **MM**

Woodland Phlox



Qty: 5

Nursery size: 10cm pots
Mature size (h x w): 45 x 30cm
Bloom time: Spring
Benefits: Source of early nectar for native butterflies
Alt: Wild Geranium, especially if very dry



*PET HAZARD

The awns of some grass seeds are sharp and can occasionally become lodged in dogs' throats. To be safe, substitute with Christmas Fern as suggested above.

ACRONYM KEY

- DF** = Dog Friendly*
- DS** = Dense Shade
- LA** = Less Aggressive
- MM** = More Moisture Available





MATERIALS

MULCH ALTERNATIVES

Shredded dry leaves saved from the previous autumn. Wait to shred until the threat of frost has passed in the spring.

Arborist woodchips, which can often be obtained for free from arborists. Note that you cannot usually control when or how much is delivered.

Landscape fabric is not recommended. It prevents plants from spreading as intended and fails over time.



In understory gardens, fallen leaves mimic woodland conditions. As they break down, they add nutrients to soils and provide pollinator habitat for the winter.

Item	Unit	# / Base Unit	Notes
Plants		27	See Plant Species on page 5 for recommended species and sizes. Some species may only be found at native plant nurseries.
Soil	Cubic yards	0.25	Assumes 5cm depth to replace sod or to spread over newspaper if sheet mulching. If your total soil is less than 0.25cu. yard, it is best to purchase bags. Avoid peat mix.
*Compost	Cubic yards	0.15	Deduct the total 0.15cu. yards from soil order, or purchase a 0.15cu. yard 'double mix' product containing both topsoil and compost. Avoid peat mix.
Mulch	Cubic Yards	0.25	Assumes 5cm depth. If your total mulch is less than 0.25cu. yard, it is best to purchase bags. Avoid dyed mulch. Natural cedar, pine, or 'Ontario Blends' preferred.
*Newspaper	Square metres	10	Required for sheet mulching. Matte 10 cardboard can be substituted, but only use 1 layer and give it 2 - 3 months to break down.
*Edging	Metres	8 (2 per side)	Many materials can be used as edging. You can repurpose existing materials instead of purchasing new. Clean edges can also be maintained using an edging tool or other straight-edged spade on a semi-regular basis.

* *Optional items*

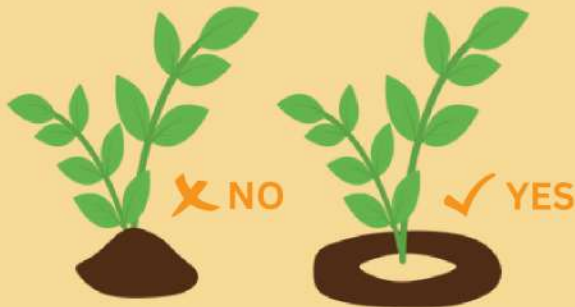
MAINTENANCE



- Water regularly in the weeks and months after planting. Eventually, you will only need to water during droughts.
- Monitor the garden for weeds. The template is designed so that plants knit together at the ground level over time, reducing weed pressure. You may wish to reapply mulch annually.
- Resist the urge to clean up your garden in the fall. Dead plant material provides important habitat for pollinators.
- Cut back dead plant growth each spring to approximately 6" above the ground. You can chop and drop pieces on the ground as mulch, or compost them.



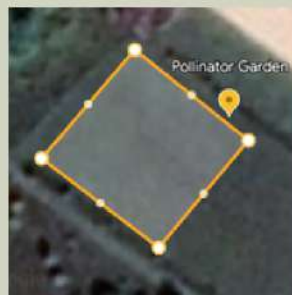
PROPER MULCHING



Remember, when applying mulch - think donuts, not volcanoes! Mulch applied to plant stems can cause dampness and rot.



3D visualization of a potential combination of the understory **base unit** (three repetitions).



MAPPING

You can measure your space with digital tools like Google Earth Online or the City of Kawartha Lakes Maps and Apps Portal:

- earth.google.com
- geohub-kawartha.hub.arcgis.com



ADDITIONAL RESOURCES



This garden guide is one of three guides available through Kawartha Conservation's Healthy Gardens program. If your space does not meet the preferred conditions of the Native Plant Understory Garden guide, or you wish to plant multiple gardens, check out the other guides in the series.

Native Plant Understory Garden
Low Maintenance Rain Garden
Native Plant Pollinator Garden



Check out these additional resources to help you assess your site conditions and prepare your site for planting.

- How to Conduct an Infiltration or Soil Drainage Test (Reep Green Solutions): bit.ly/SoilDrainage
- Ribbon Test for Soil Texture (Grow It Build It): bit.ly/RibbonTest
- Mason Jar Test for Soil Texture (Grow It Build It): bit.ly/MasonTest
- Ontario One Call (Call Before You Dig): OntarioOneCall.ca



Contact Us

Phone: 705-328-2271

Email: GenInfo@KawarthaConservation.com

Online: KawarthaConservation.com/Gardens

Gardening Guide concept developed by Carbon Wise Landscape Design. Guide production and design by Kawartha Conservation.

All renderings and planting plans are provided by Carbon Wise Landscape Design.

