

A Guide to

Woodland Plants

in the Niagara Peninsula Watershed



Indicators of Forest Health



**Credit Valley
Conservation**
inspired by nature



**NIAGARA PENINSULA
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AUTHORITY

Woodland Plants in the Niagara Peninsula Watershed

Plants of southern Ontario forests are not only beautiful, but essential to maintaining the diversity and health of our forests. They support wildlife from small insect pollinators to larger wildlife dependent on them as a direct food source. Many non-native plants, which have been introduced, simply do not provide the same ecological benefits. Year-round, these forest plants provide an endless display of colour from spring (ephemeral) flowers and late season bloomers to perennially graceful ferns.

But, all is not well as threats from development and other human activities are affecting the health of our forests. Some of these threats include:

- Changes in drainage (e.g. ditches, straightening of waterways) to facilitate new land uses such as the construction of new roads, buildings and agricultural production.
- Picking and trampling of plants.
- Introduced invasive alien plants that out-compete native plants and take over woodlots.
- Impacts of pollution (both air and water borne).
- Clearing of the forest understory to make things look 'tidier'.

This booklet presents some common forest plants. This selection represents a community of plants, when found abundantly, indicate a healthy forest. Forests that begin to suffer from some of the above noted threats tend to lose many of these plants as a first indicator of their decline or poor health. If you find these plants abundantly in your area, celebrate this; you're doing something right. Continue to protect and enjoy them.

Additional Resources

Learn more about woodland plants, your natural areas and the challenges they face.

Invasive species

www.creditvalleyca.ca/invasives

About natural areas and wildlife

www.creditvalleyca.ca/naturalheritage

Countryside Stewardship

www.creditvalleyca.ca/countrysidestewardship

Books recommended for further plant identification

[Newcomb's Wildflower Guide](#)

[Peterson's Field Guide to Wildflowers](#)

[Peterson's Ferns of Northeastern and Central North America](#)

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 - *D. intermedia*
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Plant Terminology and Glossary

Leaf edges



entire



toothed/serrated

Arrangement



opposite



alternate

Leaf shapes



lance shaped



heart shaped



tear drop shaped



egg shaped



compound leaf



lobed leaf

Plant/leaf form



whorled leaves



stemmed plant



plant with basal leaves only

Plant Terminology and Glossary

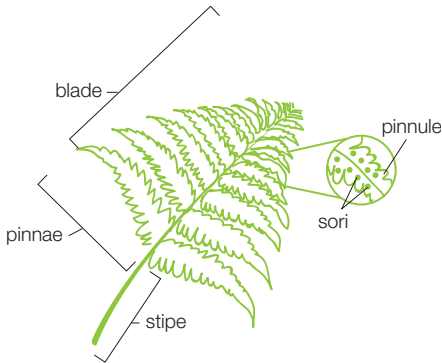


Illustration of a fern frond

Leaf axil - The point at which the leaf joins the main stem.
Leaflet - Term used when referring to one of the individual leaf blades of a compound leaf.

Fertile frond - Leaves of a fern that are reproductive in that they bear the fertile spores of the fern.

Sorus (Sori-plural) - A cluster of reproductive spores borne on a frond of a fern.

Scales - Paper-like flakes that can be found on the stems of ferns.

Rachis - The central stem of the fern.

Stipe - The portion of the rachis (stem) that arises from the rhizome (roots) up to where the leafy fronds begin.

Coniferous forest - Forest dominated by evergreen trees e.g. cedar, hemlock, pine and spruce.

Deciduous forest - Forest dominated by trees that lose their leaves annually or each autumn e.g. sugar maples, oaks, birches, ashes, hickories etc.

Mixed forest - Forest composed of both deciduous and coniferous trees. The more minor component (deciduous or coniferous) should be at least 25 per cent of the trees present.



Flowers



Fruit



Flower close-up

Blue bead-lily
Clintonia borealis

Blue bead-lily

Clintonia borealis

Leaf arrangement: Basal leaves only.

Leaf shape: Lily-like lance shaped leaves (three to four) with distinct parallel veins running to the tip; glossy looking and thick (almost succulent). Leaves have a pointed tip, margins smooth.

Plant height: Leaves upright to cascading over; height up to 20 cm, 40 cm if the flowering stalk is included.

Flowers/Fruit: Flowers yellow with six petals on a single flowering stalk. Fruit is a bluish round berry ripening in August.

Flowering period: June.

Habitat: Found in both coniferous and mixed forests.

Other notes: Also known as yellow clintonia.



Flowers and spring plant



Fruit



Mature plant

Giant blue cohosh
Caulophyllum giganteum

Giant blue cohosh

Caulophyllum giganteum

Leaf arrangement: Three to five sets of compound leaves that alternate on a central stalk.

Leaf shape: Each set of leaves is divided into three leaflets. Each leaflet irregularly shaped with two to five lobes.

Plant height: 40 to 65 cm tall.

Flowers/Fruit: Small purplish flowers with six 'petals' (actually sepals, the petals are somewhat smaller and less obvious). Fruit is a round blue berry.

Flowering period: Early May.

Habitat: Plant of deciduous forests.

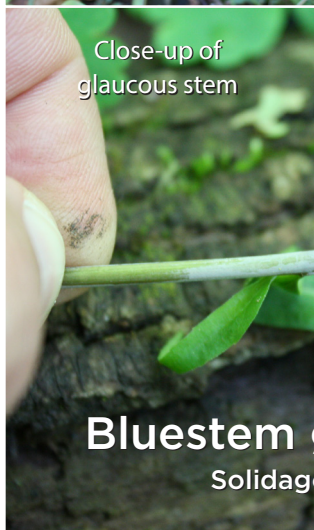
Other notes: *Caulophyllum thalictroides* (Blue cohosh) is a similar species and rare in the Credit River Watershed being more common in southern parts of Ontario. Often it is only distinguishable from *C. giganteum* in spring by its smaller flowers which appear more yellowish-green, not purplish.



Whole plant



Close-up of flowers



Close-up of
glaucous stem



Zigzag goldenrod

Bluestem goldenrod
Solidago caesia

Bluestem goldenrod

Solidago caesia

Leaf arrangement: Alternate leaved.

Leaf shape: Lance-shaped leaves with serrated teeth that hug the stem.

Plant height: Range in size from 20 cm to 70 cm.

Flowers/Fruit: Very small (<1 cm) flowers densely clustered along a terminal leafy spikelet. It has four to five yellow petals.

Flowering period: August.

Habitat: Grows in deciduous forests. Sometimes it is found in mixed forests with a strong deciduous component.

Other notes: Could be mistaken for zigzag goldenrod (*Solidago flexicaulis*) which has much broader leaves that are distinctly stalked (do not hug the stem). Most other native goldenrods are either sun loving, much taller or found in wetlands. Stem of bluestem goldenrod is also a distinctive bluish-green colour with what almost appears to be a milky covering (glaucous) that can be wiped away (see photos).



Flowers



Fruit



Non-native
lily-of-the-valley

Canada mayflower
Maianthemum canadensis

Canada mayflower

Maianthemum canadensis

Leaf arrangement: Alternate leaves that hug the stem.

Leaf shape: Heart-shaped with smooth margins.
Leaves are glossy looking.

Plant height: 10 to 15 cm.

Flowers/Fruit: Small white flowers clustered on a terminal spikelet. Berries are small round and green with darker speckles, ripening to red.

Flowering period: Late May to mid June.

Habitat: Found most often in coniferous and mixed forests.

Other notes: Also known as wild lily-of-the-valley. Not to be confused with the non-native garden plant lily-of-the-valley (*Convallaria majalis*) which is considered an invasive plant in Ontario.



Cutleaf toothwort in flower



Broadleaf toothwort in flower

Cutleaf and Broadleaf toothwort

Cardamine concatenata, *C. diphylla*

Cutleaf and Broadleaf toothwort

Cardamine concatenata, *C. diphylla*

Leaf arrangement: Opposite with compound leaves. Sometimes it may appear to be only basal leaves. *C. concatenata* with three compound leaves in a whorl and *C. diphylla* usually with two compound leaves on the stem.

Leaf shape: Each leaf is split into three main lobes (leaflets). *C. concatenata* leaflets are toothed, lance-shaped and deeply incised (cut) with leaves having three to five distinct lobes. *C. diphylla* leaflets are egg-shaped and toothed.

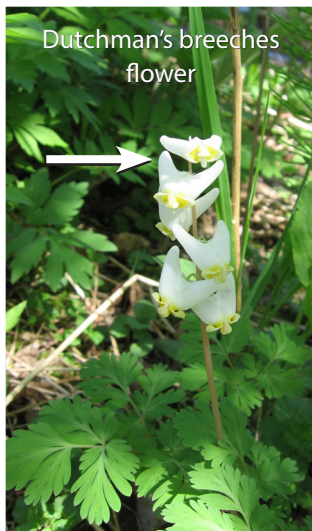
Plant height: 15 to 20 cm.

Flowers/Fruit: White to slightly pink flowers with four petals. Flowers emerging above the leaves in a terminal spikelet. Seed is contained in a long slender pod-like capsule.

Flowering period: Mid to late May.

Habitat: Deciduous forests, sometimes in mixed forests with a strong deciduous component.

Other notes: A true spring ephemeral. By July the plant has all but disappeared from the forest floor.



Dutchman's breeches
flower



Squirrel-corn flower



Corm of Dutchman's
breeches



Seed pods



Corm of
Squirrel-corn

Dutchman's breeches & Squirrel-corn

Dicentra cucullaria & *D. canadensis*

Dutchman's breeches & Squirrel-corn

Dicentra cucullaria & *D.canadensis*

Leaf arrangement: Basal leaves.

Leaf shape: Deeply divided lacy looking leaves.

Plant height: Height up to 10 cm (leaves only).

Flowers/Fruit: White flowers on both species are situated on a terminal spikelet. Wings or pant-legs of the flower are spreading on Dutchmen's breeches (see arrow on photo). Wings are not spreading on Squirrel-corn. Fruit is a long-tapered pod.

Flowering period: Early May to mid May.

Habitat: Found most often in rich deciduous forests, sometimes in mixed forests with a strong deciduous component.

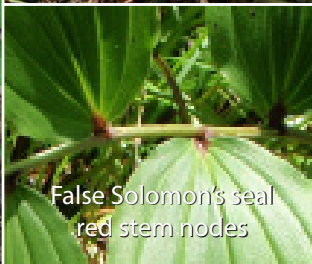
Other notes: When not in flower the two plants are difficult to distinguish. However if you are extremely gentle you can push the soil away from around the stem to reveal the small corm which is yellowish on Squirrel-corn and pinkish-white on Dutchman's breeches. It is found most often in rich deciduous forests. A true spring ephemeral. By July the plant has all but disappeared from the forest floor.



False Solomon's
seal in flower



False Solomon's
seal fruit



False Solomon's seal
red stem nodes



Starry false
Solomon's seal



Starry false Solomon's
seal fruit

False & Starry false Solomon's seal

Maianthemum racemosum & *M. stellatum*

False & Starry false Solomon's seal

Maianthemum racemosum & M. stellatum

Leaf arrangement: Alternate leaves on a central drooping stalk.

Leaf shape: Lance shaped leaves with entire margins.

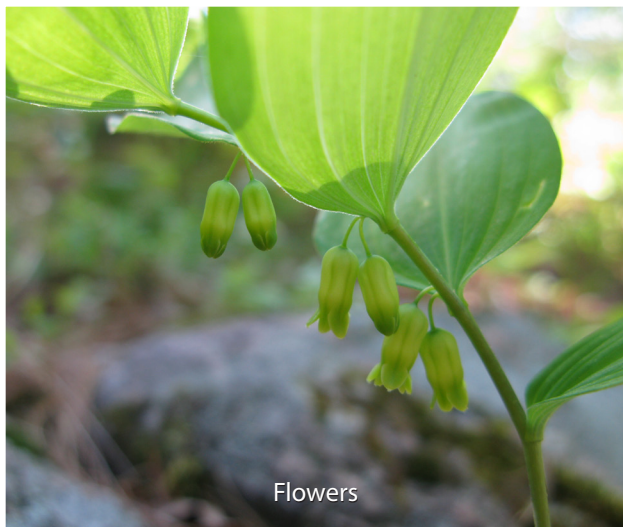
Plant height: M. racemosum (40 to 60 cm tall).
M. stellatum - smaller (15 to 40 cm tall).

Flowers/Fruit: Small white flowers in a terminal spikelet. Fruit are speckled (M. racemosum) or striped (M. stellatum) with berries turning red in late summer.

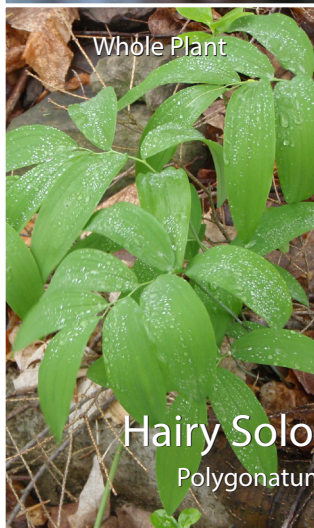
Flowering period: Early to mid June.

Habitat: Both can be found in deciduous and some mixed forests.

Other notes: False Solomon's seal can be differentiated not just by its larger size, but by reddish/purplish colouration on the stems and more distinctly at the joints of the leaves and the stem. Starry false Solomon's seal leaves are also somewhat glossier and darker green in colour.



Flowers



Whole Plant



Fruit

Hairy Solomon's seal
Polygonatum pubescens

Hairy Solomon's seal

Polygonatum pubescens

Leaf arrangement: Alternating leaves on a central drooping stalk.

Leaf shape: Lance-shaped leaves, but not sharply pointed. Leaves are pale green in colour and slightly hairy along the veins underneath.

Plant height: 20 to 30 cm.

Flowers/Fruit: Yellow green tube-like flowers at leaf axils that hang below the leaves. Fruit turns from green to blue when ripe, just under 1 cm in size.

Flowering period: June.

Habitat: Found primarily in deciduous forests, sometimes in mixed forests with a strong deciduous component.

Other notes: Differentiated from False and Starry false Solomon's seal (pg. 18 -19) by the fact that the flowers are in the axils of the stem. Plant is also much smaller in size and more delicate looking. Another similar native plant is rose-twisted stalk, but its leaves are much more succulent and sharp pointed with fine hairs around their margins and a stem that zigzags.



Red baneberry in flower



White baneberry fruit



Red baneberry flower
close-up



Red baneberry fruit

Red & White baneberry

Actaea rubra & *A. pachypoda*

Red & White baneberry

Actaea rubra & *A. pachypoda*

Leaf arrangement: Alternate leaves.

Leaf shape: Compound leaves. Each leaflet has a serrated edge. Leaflets vary from egg-shaped to slightly lobed.

Plant height: 30 to 70 cm tall.

Flowers/Fruit: Flowers are small, fine and white on a central spikelet emerging from above the leaves. *A. rubra* has red berries on thin stalks and *A. pachypoda* has white berries on thick stalks.

Flowering period: Mid May to mid June.

Habitat: Found mainly in deciduous forests, sometimes in mixed forests with a strong deciduous component.

Other notes: Berries are poisonous.

White trillium flower



Red trillium fruit



Red trillium flower



Red trillium leaves



Jack-in-the-pulpit



Red & White trillium

Trillium erectum & *T. grandiflorum*

Red & White trillium

Trillium erectum & *T. grandiflorum*

Leaf arrangement: Three leaves in a single whorl on a central stem.

Leaf shape: Tear-drop to lance-shaped leaves with entire margins. Red trillium leaves are much broader across the middle. On mature plants they are almost overlapping.

Plant height: 15 to 35 cm tall.

Flowers/Fruit: Red (*T. erectum*) and white (*T. grandiflorum*) flowers with three petals emerging on a central stalk from the single whorl of leaves. As white trillium flowers age they can turn pinkish, but never red. Fruit is a round-shaped pod with ridges. *T. erectum* has a red pod while *T. grandiflorum* has a greenish-white coloured pod.

Flowering period: Mid to late May.

Habitat: Deciduous forests and sometimes in mixed forests with a strong deciduous component.

Other notes: In areas heavily browsed by deer, plants may become smaller over time (reaching a height of only 10 cm) and eventually disappear. Some white trilliums can be affected by a plant virus that causes greenish streaking in white flowers. Plants without flowers could be confused with Jack-in-the-pulpit.



Leaves



Hairs on leaf/stem



Flowers

Rose twisted-stalk

Streptopus roseus

Rose twisted-stalk

Streptopus roseus

Leaf arrangement: Leaves alternate on a single stem. There can be several branching stems on larger mature plants.

Leaf shape: Lance-shaped leaves with smooth margins. Leaf edge and stem are covered in many fine hairs. Leaves closely hug or appear to wrap around the stem.

Plant height: 10 to 25 cm in height.

Flowers/Fruit: Small pink to white bell-shaped flowers on slender stalks coming from the leaf axils along the stem. Flowers hang below the leaves. Fruit is a round red berry when ripened.

Flowering period: Mid May to mid June.

Habitat: Found in both coniferous and mixed forests.

Other notes: Also known as Rosybell. Could possibly be confused with False (pg. 18-19), Starry (pg. 18-19) or Hairy Solomon's seal (pg. 20-21).



Flowers and leaves



Flowers



Seed pod

Sharp-lobed hepatica
Anemone acutiloba

Sharp-lobed hepatica

Anemone acutiloba

Leaf arrangement: Basal leaves.

Leaf shape: Each leaf has three distinct main lobes with smooth margins. Leaves are very hairy. Leaves are purplish underneath, green on surface with darker green-purplish mottling.

Plant height: 5 to 15 cm tall, up to 20 cm if the flowering stalk is included.

Flowers/Fruit: Five to twelve white or pink to bluish coloured flower petals on solitary stalks. Seeds are in a small hairy tapered pod.

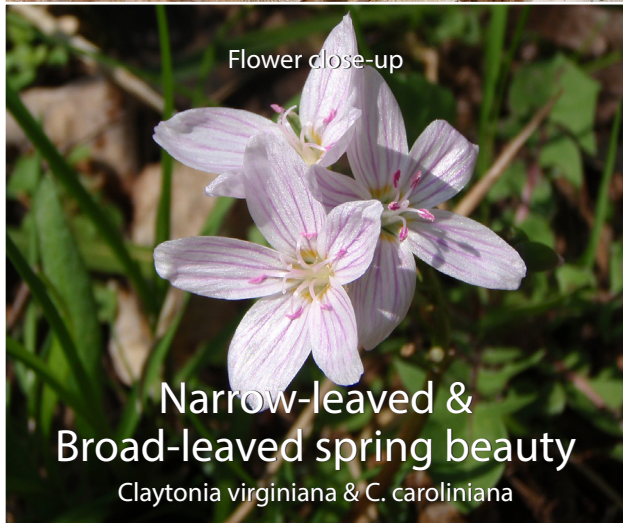
Flowering period: Early May.

Habitat: Found primarily in deciduous forest, sometimes in mixed forests with a strong deciduous component.

Other notes: Flowers often seen before full emergence of the leaves.



Leaves and Flowers



Flower close-up

Narrow-leaved & Broad-leaved spring beauty

Claytonia virginiana & *C. caroliniana*

Narrow-leaved & Broad-leaved spring beauty

Claytonia virginiana & *C. caroliniana*

Leaf arrangement: Leaves are opposite and may appear basal at first glance.

Leaf shape: Long slender strap-like leaves.

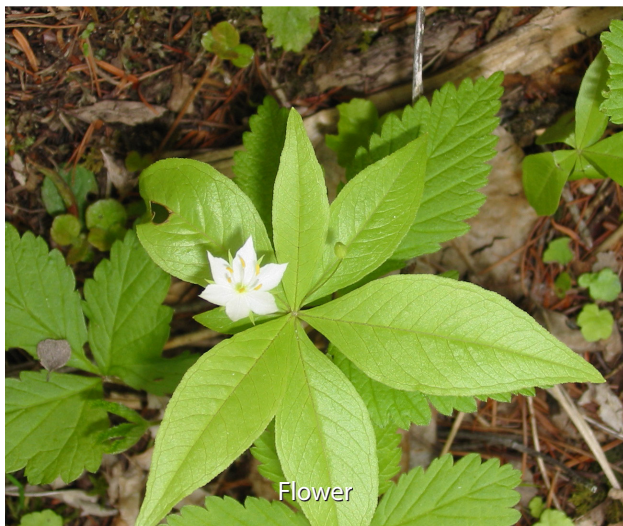
Plant height: 5 to 12 cm in height including flower emerging on terminal raceme.

Flowers/Fruit: Flowers with five petals that are white and veined with pink.

Flowering period: Early May.

Habitat: Found mainly in deciduous forests, sometimes in mixed forests with a strong deciduous component.

Other notes: A true spring ephemeral. By July the plant has all but disappeared from the forest floor. The two species (*C. virginiana*, *C. caroliniana*) are almost identical with the latter having slightly wider leaves. They can often be found around the base of large trees.



Flower



Flower close-up



Seed

Starflower
Trientalis borealis

Starflower

Trientalis borealis

Leaf arrangement: Single whorl of leaves at the end of the stem.

Leaf shape: Lance-shaped leaves with prominent veins. Glossy and smooth margined.

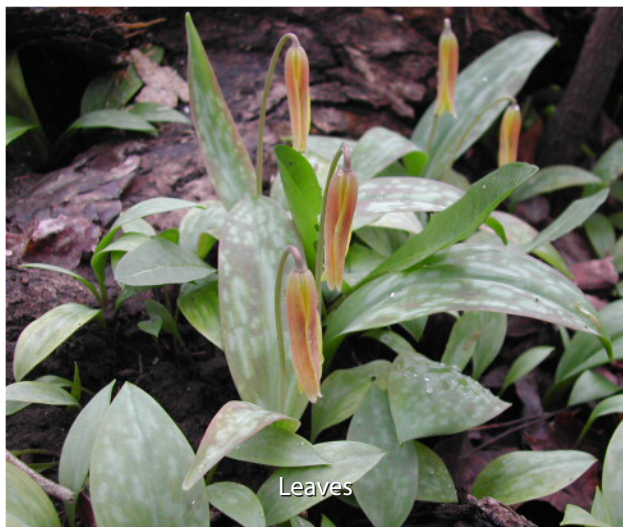
Plant height: Height up to 20 cm.

Flowers/Fruit: One to three white flowers on stalks that grow from the centre of the whorl of leaves. There are six to seven petals on each flower.

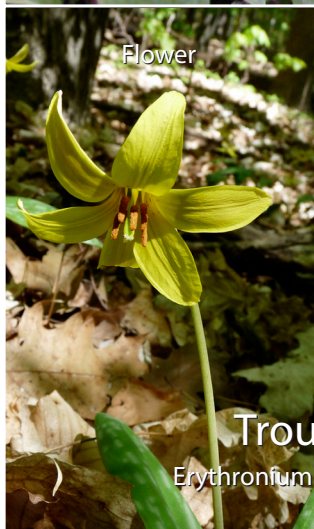
Flowering period: Mid May to mid June.

Habitat: Found most often in coniferous and mixed forests.

Other notes: Also known as northern starflower.



Leaves



Flower



Seed

Trout lily
Erythronium americanum

Trout lily

Erythronium americanum

Leaf arrangement: Basal leaves.

Leaf shape: Elongated lance shaped leaves that are slightly glossy, often with light brown mottling.

Plant height: 10 to 15 cm tall including flower. Leaves are generally 10 to 18 cm long.

Flowers/Fruit: Flowers are yellow, nodding with six petals. Fruit a blunt-tipped greenish pod.

Flowering period: Early to mid May.

Habitat: Found mainly in deciduous forests, sometimes in mixed forest with a strong deciduous component.

Other notes: Often one of the first spring plants to emerge. It is a true spring ephemeral that by July, has all but disappeared from the forest floor. There is a white trout lily (*Erythronium albidum*) which is quite rare in the Credit River Watershed, having a white not yellow flower.



Flowers



Entire plant



Hairs on leaf/stem

Wild ginger
Asarum canadense

Wild ginger

Asarum canadense

Leaf arrangement: Basal leaves.

Leaf shape: Heart-shaped leaves that are finely hairy on the underside and top (at least along the veins).

Plant height: 10 to 20 cm.

Flowers/Fruit: Burgundy coloured flowers on solitary stalk beneath the leaves close to the ground and not prominent. Tube-like flower ends in what appears to be three folding petals. Flower stalk and surface of bloom covered in dense hairs.

Flowering period: May.

Habitat: Grows in deciduous forests. Sometimes it is found in mixed forests with a strong deciduous component.

Other notes: Handling the leaves can cause dermatitis in sensitive people. Stem and roots have a strong ginger scent. The plant also spreads through ground stems.



Whole plant



Fruit



Flower close-up

Wild sarsaparilla

Aralia nudicaulis

Wild sarsaparilla

Aralia nudicaulis

Leaf arrangement: Three compound leaves atop a central stalk with three to seven leaflets on each compound leaf.

Leaf shape: Each leaflet is lance-shaped and widest at or just above the middle. Leaflets have toothed edges.

Plant height: 40 to 70 cm.

Flowers/Fruit: Separate flowering stalk emerges from the base of the plant. Flowering stalk ends with usually three, but sometimes two to seven, globe-like flower clusters. Each globe-like flower cluster is comprised of 25 or more small white flowers. Fruit are a cluster of berries less than 1 cm in size, green turning purple-black in mid to late summer.

Flowering period: Early June.

Habitat: Found in deciduous and mixed forests, it can also often be found growing on dry hummocks in swamps.

Other notes: Often goes by many common names such as small spikenard, aralia, false sarsaparilla, wild sarsaparilla or wild licorice.



Close-up of bulblets and pinnae



Entire plant

Bulblet fern
Cystopteris bulbifera

Bulblet fern

Cystopteris bulbifera

Leaf arrangement: Pinnae or leaflets alternate on a central stem (rachis). Pinnae near the base of the frond can be opposite.

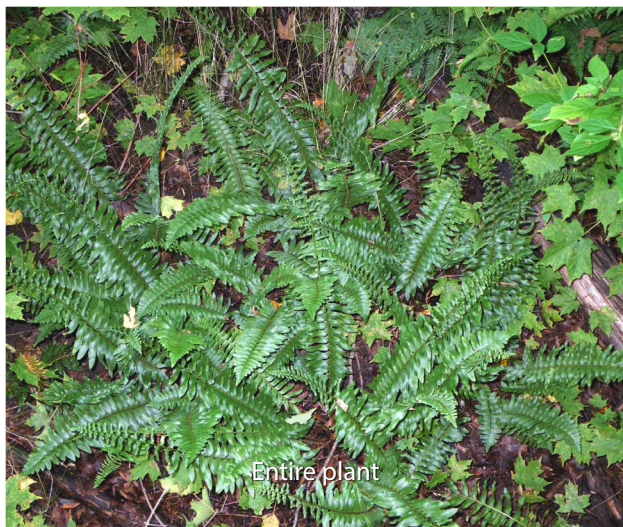
Leaf shape: Pale green to yellow-green ferns broadest at base and long tapering to a point. Each pinna has many lobed pinnules.

Plant height: 20 to 45 cm long fronds that sprawl on the ground.

Reproductive structures: Bulblets (green, globe or bulb-shaped pods) are produced along the undersides of fertile fronds. Bulblets usually found at the base of each pinna (these later drop off to produce new plants). Sori are also found on the undersides of each pinna.

Habitat: In our region it is often found in fresh (not dry) to moist lowland white cedar forests. More widely found in fresh to moist coniferous and mixed forests.

Other notes: Rachis shiny yellow. Stipes are often red to pink coloured when young, turning a straw colour as it matures. Scales (paper-like flakes) sometimes present at the base of stipe.



Entire plant



Leaves/stem

Christmas fern
Polystichum acrostichoides

Christmas fern

Polystichum acrostichoides

Leaf arrangement: Pinnae alternate on the stem of the fern frond.

Leaf shape: Lance shaped pinnae have a small thumb or ear at the base. Margins are minutely toothed. Pinnae or 'leaves' are glossy in appearance. Frond is lance shaped and tapers at the base and tip.

Plant height: 15 to 60 cm tall.

Reproductive structures: Spores are produced in oblong shaped clusters (sori) on the back of each pinnae in rows along mid-vein.

Flowering period: June.

Habitat: Found in both deciduous and mixed forests.

Other notes: Pinnae at the base of each frond are bent backwards. Fronds are firm, tough, dark green, glossy and evergreen (i.e. still visible at Christmas).



Entire frond



Close-up of pinnae

Oak fern

Gymnocarpium dryopteris

Oak fern

Gymnocarpium dryopteris

Leaf arrangement: Three part frond. The lowest two parts (pinnae) are opposite each other.

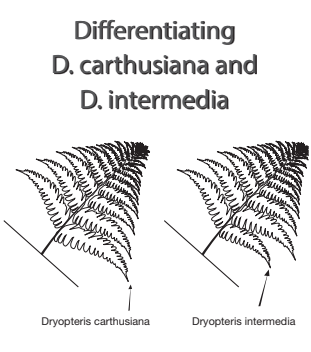
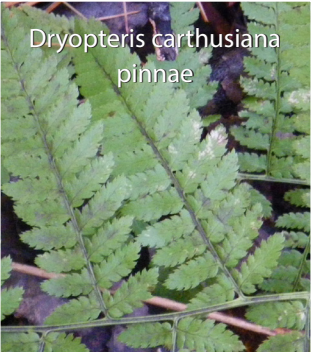
Leaf shape: Frond shape is triangular overall and as wide as it is long. Leaf is light green to 'lime-green' in colour. Edges of pinnules are simply toothed (i.e. slightly toothed, not jaggedly toothed).

Plant height: Diminutive delicate fern, 8 to 15 cm tall.

Reproductive structures: Tiny round sori tucked near the clefts of the lobes on the underside of each pinnule.

Habitat: Found in cool habitats associated with mixed forests or swamps.

Other notes: Fine, wiry, smooth rachis. Stipe is longer than the blade of the fern; light green and darker at the base.



Wood ferns
Dryopteris species

Wood ferns

Dryopteris species

Leaf arrangement: Pinnae or leaflets opposite each other on a central stem (rachis).

Leaf shape: Elongated wedge to triangular-shaped fronds (varies with species).

Marginal wood fern (*D. marginalis*) appearing somewhat glossy and more 'leathery'. Pinnae smoothly toothed.

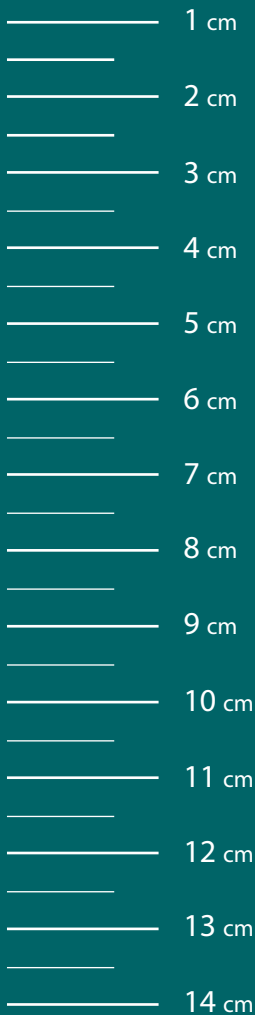
Intermediate wood fern (*D. intermedia*) more lacy looking, and very similar to Spinulose wood fern (*D. carthusiana*) but can be distinguished by examining the lowest pinnae. Here you will observe that the pinnule at the base of the pinnae is shorter on *D. intermedia* (see illustration).

Plant height: 40 to 70 cm in height.

Reproductive structures: Spores produced in clusters (sori) on the back of pinnae in rows along mid-vein (or along the pinnule margins in *D. marginalis*).

Habitat: Can be found in both deciduous and mixed forests.

Other notes: All wood ferns (there are 10 known *Dryopteris* species in the Credit River Watershed) characterized by a stipe covered in fine papery scales.



References/Photo Credits
Rod Krick, Scott Sampson,
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