



Hardy Garden Ferns: A Toronto Master Gardeners Guide

Ferns are fascinating and ancient plants, one of the first plant groups to adapt to life on land. They are found in a wide variety of habitats, from the Arctic to the tropics, with many species growing on all continents. Unlike most plants, they produce no flowers, fruit or seeds but reproduce by unicellular structures called spores. Usually the spores appear as rusty patches on the underside of the leaves, called fronds, but some species develop showy fertile fronds.



Ostrich Fern (*Matteucia*) is a robust fern for a shady garden. If given adequate moisture, it will also tolerate some sun.

Photo: Helen Battersby

Fronds can be lacy or strap-like and can vary in size from 6" to 4 to 5' in height. Most are varying shades of green but some of the Japanese varieties have remarkable silvery foliage tinged with deep red. Fern leaves unfold from their tightly curled fiddleheads in spring. Fern leaves do not expand in all directions but mature first at the base and then gradually maturing to the tips as the fronds unfurl.

Ferns are generally wild plants that have not been hybridized to the same extent as our garden flowers. They can add beautiful colour, texture and structure to the landscape.

This fact sheet focuses on growing ferns in shady conditions.

Cultural Conditions

Despite their fragile appearance, ferns are tough and adaptable. However, it is important to reproduce their natural habitat as much as possible to ensure success in growing these plants. Most garden ferns are woodland plants that prefer rich organic soils, adequate moisture, and shelter from the hot afternoon sun and drying winds.

Few will thrive in deep shade, though the evergreen varieties are the most tolerant of low light. Some ferns can tolerate some sun, providing the soil is kept adequately moist. Morning or filtered sun is recommended and soil should be moist but well-drained. Only a few ferns, such as the Royal Fern *Osmunda regalis*, will be happy in wet, boggy soil. Some will tolerate fairly dry shade once established but all will require adequate moisture when first planted or in spring when the fronds are developing.

Identifying the ultimate height of the plant and its growing pattern will help to determine its appropriate placement. Ferns spread by underground stems or rhizomes. Those with short rhizomes will develop into a centralized clump while those with longer or creeping rhizomes may spread quickly into a larger colony. Some of vigorous, spreading ferns, such as Ostrich Fern *Matteucia struthiopteris*, can become invasive if given ideal growing conditions. Ferns are shallow rooted and do best where the soil is not compacted by foot traffic.

Uses

Ferns are elegant woodland plants with a long season of interest. They lend an air of lushness and freshness to the summer garden. Ferns can be useful plants for the transition areas of your garden between full sun and shade. They look best in a natural setting, as an under planting for shrubs, or associated with tree

stumps, logs or boulders where the emerging fronds in spring will help cover the foliage of dying spring bulbs. The ferns that thrive in damp soil look natural when planted beside a stream or at the edge of a bog garden and can soften hard edges of water features, rocks and paths.

The texture of their delicate foliage is an ideal foil for some of the larger-leaved plants that also prefer partial shade conditions such as hostas, brunneras, ligularia and rodgersias. They also combine well with more delicate plants such as shade grasses, astilbes and tiarellas.

Some of the smaller ferns, such as the Lip Ferns (*Cheilanthes*), can be tucked into protected crevices in walls or by steps or included in a sheltered rock garden. Some ferns are suitable as ground cover plants.

Maintenance

Ferns are best planted in early spring before the fronds uncurl. Keep the crown above or at surface level. Amend the soil with lots of organic matter – compost and/or leaf mould – to give the plants the airy soil they prefer. Water regularly and deeply until the plants are established and watch for browning tips or wilting because both signal drought stress.

An annual spring mulch with organic matter will improve the soil quality, help retain moisture in the soil and provide the nutrients that the plants require. An additional layer of chopped leaves in winter will help the plants overwinter. In spring, tidy the plants by cutting off the dead fronds near the crown being careful not to damage the crown of the plant where the fronds and roots develop.

Clump-forming ferns may need dividing after a few years. If the clumps are congested and raised above soil level, dig them up, discarding dead or decaying parts, and replant just above soil level in amended soil.

Ferns that will Tolerate Some Sun

- ***Asplenium scolopendrium* (Hart's-tongue Fern)**; Zone 4-9: Hart's-tongue fern is unusual for its undivided, strap-like fronds up to 2' tall. This species likes alkaline soil with good drainage and can be grown in part sun. There are some decorative cultivars, among them: A.s. 'Cristatum', A.s. 'Laceratum Kaye' and A.s. 'Undulatum'.
- ***Athyrium filix-femina* (Lady Fern)**; Zone 4-9: Lady ferns are showy and vigorous, forming dense, lacy clumps which spread slowly reaching a height of 1-3 feet. They prefer moist, humus-rich soil but adapt well to drier garden conditions. On moist sites, they will tolerate more sun. Because of their size and vigour, they are good for massing as groundcovers. Some showier cultivars include: *Athyrium filix-femina* 'Cristatum', *Athyrium* f. -f. 'Frizelliae', *Athyrium* f. -f. 'Victoriae' and *Athyrium* f. -f. 'Lady in Red'.
- ***Cheilanthes* (Lip Fern)**; **Zone 6-9**: This group of small ferns (6"-12" tall) is unusual, as they prefer dry habitats and full to part sun. A rock garden in partial sun, with loose, gritty soil and a cool area for roots to run among rocks is ideal. They are also good for wall gardens. Look for *C. lanosa* – the Hairy Lip Fern and *C. argentea* – the Silvery Lip Fern.
- ***Dennstaedtia punctiloba* (Hay-Scented Fern)**; Zone 4-8: Hay-scented fern is a bright green, fast-growing groundcover up to 18" when mature, turning soft yellow in autumn. This species will grow among rocks and in poor, sandy soil,

- including fairly dry shade. Plants in full sun may go dormant if the soil is too dry.
- ***Dryopteris filix-mas* (Male Fern)**; Zone 4-9: This is a stately native fern growing 2 – 3' tall, and one of the easiest to grow, forming large clumps. Male ferns will tolerate sun if the soil is moist but also grows in dry shade. Some cultivars of *Dryopteris filix-mas* include: 'Barnesii', 'Crispatissima', 'Grandiceps' and 'Linearis Polydactyla'.
- ***Matteucia struthiopteris* (Ostrich Fern, Fiddlehead Fern)**; Zone 1-9: This very hardy native fern, reaching 3-4' in height, develops fronds that provide fiddleheads in the spring. It is easy to grow and can become invasive but will form a good groundcover. Although this plant likes moist humus-rich soil in shade, it will tolerate sun if in a moist, cool location.
- ***Onoclea sensibilis* (Sensitive Fern)**; Zone 2-9: This tough, native plant with large, deeply cut fronds reaching 1-2', will thrive in a variety of conditions but needs frequent division to keep them in bounds. They like moist soil and will tolerate considerable sun if given adequate moisture.
- ***Osmunda cinnamomea* (Cinnamon Fern)**; Zone 3-9: This statuesque, long-lived plant, growing to 5', has erect dark green fronds surrounding fertile fronds that mature to a cinnamon-brown colour. They need moist to wet, humus-rich soil in sun or shade conditions. If the soil is dry, they will become dormant or die out.
- ***Osmunda claytonia* (Interrupted Fern)**; Zone 3-9: Slightly smaller than *O. cinnamomea*, (to 2 _'), this species enjoys similar conditions.
- ***Osmunda regalis* (Royal Fern)**; Zone 3-9: This spectacular native fern, growing 3-5', is good as an accent plant. It requires consistently moist soil in sun or shade but tolerates more alkaline soils than *O. cinnamomea*. There is a European variety with reddish stems and purple new growth – *O. r. 'Purpurascens'*.
- ***Polystichum acrostichoides* (Christmas Fern)**; Zone 4-9: This native, evergreen fern produces stiff, deep green fronds 12-18" tall, that will remain erect until late fall. The Christmas fern prefers moist, humus-rich soil, in light to full shade, but tolerates dense shade and dry soil. If soil is moist, they will tolerate considerable sun.

Ferns that Prefer Shady Locations

- ***Adiantum pedatum* (Northern Maidenhair Fern)** ; Zone 3-9: Northern Maidenhair Fern has airy, delicate fronds on wiry black stems and slowly spreads by branching rhizomes to form a medium-sized clump up to 2' tall. These ferns prefer moist, humus-rich soil in partial to full shade, preferably in a sheltered position, but once established they will tolerate some drought. Plant them in drifts at the front of a woodland border, under shrubs and with small spring-flowering bulbs.
- ***Asplenium ebenoides* (Dragon's-tail Fern, Scott's Spleenwort)**; Zone 4-9: This is a good fern for a shady rock garden with bright green fronds, up to 12" tall.
- ***Athyrium niponicum v. pictum* (syn. *A. goeringianum*; syn. *A. metallicum*) (Japanese Painted Fern)**; Zone 4-8: This is one of the showiest ferns for the garden with its silvery grey fronds ribbed with red veins. It is smaller than the lady fern reaching up to 2', but clumps up well in

- than dense shade. It is late to reappear in spring. Japanese painted fern is a good accent plant when used with some of the dark red heucheras.
- Its cultivars include: *Athyrium niponicum* v. *pictum* 'Applecourt', *Athyrium* n. v. p. 'Burgundy Lace' and *Athyrium* n. v. p. 'Ursula's Red'. There are several hybrids of *Athyrium filix-femina* x *Athyrium niponicum* 'Pictum', including: *Athyrium* 'Branford Beauty', *Athyrium* 'Branford Rambler' and *Athyrium* 'Ghost'.
- ***Cystopteris bulbifera* (Bulblet Fern)**; Zone 4-7: Bulbet fern is a small native fern with lacy fronds growing to 1' tall. This fern spreads rapidly by creeping rhizomes. Grow in rocky soil in partial to full shade.
- ***Dryopteris* (Wood Fern, Shield Fern)**: Wood ferns are generally medium sized ferns, forming vase-shaped clumps that are evergreen well into autumn. There are many garden varieties within this group that are mostly native to northern temperate regions where they are found in cool, moist woodlands. As garden plants, they thrive in deep to partial shade but will adapt to more sun if kept slightly moist. Some of the more common species are:

Dryopteris dilatata (Broad Buckler Fern); Zone 4-9

This is a European species, reaching about 2' tall, that adapts well to both wet and drier soils. There is a 'Recurved Form' and a Lacy Crested form – 'Lepidota Cristata'.

Dryopteris erythrosora (Japanese Red Shield Fern); Zone 4-9

This species is sometimes named the Autumn fern because of the "fall-like" bronze colour of the developing fronds and later fall colour. It grows up to 2' and can be massed as groundcover. This species will remain evergreen in protected locations.

Dryopteris marginalis (Leather Wood Fern, Marginal Wood Fern); Zone 3 – 9

This tough, adaptable native species forms a medium-sized clump up to 2' tall and will grow in dry shade.

Dryopteris wallichiana (Wallich's Wood Fern, Himalayan Fern)

This is a tall fern reaching 2-4' in height and capable of forming large clumps. A winter mulch is recommended because this fern may not be as hardy as other ferns.

Other garden varieties of *Dryopteris* to consider include *Dryopteris affinis* 'Cristata' (Crested Wood Fern), *Dryopteris carthusiana* (Toothed Wood Fern) and *Dropteris goldiana* (Goldie's Wood Fern).

- ***Polypodium virginianum* (Rock Fern)**; Zone 4-9: These native, evergreen ferns will form a carpet 8-10" tall, grow in walls, along steps or in rock gardens. They need moist soil with excellent drainage, in partial to full shade. Once established, they are drought tolerant.
- ***Polystichum braunii* (Braun's Holly Fern)**; Zone 4-9: This species is another native, semi-evergreen fern, growing 12-30" tall, with a dense upright form. They require moist, acidic, humus-rich soil, in partial to full shade, but established plants will tolerate drier conditions.
- ***Polystichum setiferum* (Soft Shield Fern)**; Zone 4-9: This European native

- produces clumps of arching, deeply cut 2' tall fronds. Plant in moist, humus-rich soil, in light to full shade. There are many varieties including P. s. 'Herrenhausen', P. s. 'Congestum Cristatum', P. s. 'Plumosummultiloba' and 'Plumosum'.
- ***Thelypteris noveboracensis* (New York Fern)**; Zone 4-8: This native fern grows bright green fronds, 1-2' tall that turn gold in autumn. This species has fast-creeping rhizomes. The New York fern likes moist, humus-rich soil, in shade or part shade. Look also for *T. palustris* (Marsh Fern).

Pests and Diseases

Generally, ferns are free of pest and disease problems but slugs or snails may eat delicate emerging fronds in spring and are particularly attracted to the maidenhair fern. Pick off by hand or set out beer traps. (See the garden guide on slugs and snails.)

Scale insects can also be a nuisance and spoil the appearance with sooty mould. Cut off infected fronds at the soil line and discard. Spray the remaining stubs, crown and soil surface with an alcohol/water/soap solution. Some ferns, such as the Japanese painted fern, are damaged by insecticidal soap. As a result, always test the plant's tolerance for insecticidal soaps on a small area before applying it to the entire plant.

References

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