Cheerful Native Ferns for Landscaping

by Jane Warren

June 2012

Ferns have been on earth for about 400 million years whereas flowering plants have been around a mere 90 million years. Thirty-three families, 300 genera, and 11,000 species of ferns exist around the world. Ferns occupy diverse habitats, including fields, forests, deserts, mountaintops, swamps, and especially tropical rain forests. Unlike flowering plants that bear seeds, ferns have spores that are almost too tiny to see and can travel enormous distances. Large numbers of spores are contained in sporangia; a cluster of sporangia is called a sorus. The life cycles of ferns are very complex.

A frond has 2 parts, the leafy part called the blade and the stalk called a stipe. If the blade is divided once, the lobes are called pinnae or leaflets. If the blade is cut twice, each lobe is a pinnule or sub-leaflet and the blade is called bipinnate. If the blade is cut three times, the lobes are called segments or pinulets. The more times the blade is cut, the finer and more delicate it appears. Many ferns have fronds that fulfill both infertile (vegetative) and fertile (reproductive) functions, but some have these functions on different fronds.

Though ferns aren't generally thought to provide much food or shelter for wildlife, they do have a place in nature's web. Many of the ferns discussed in this article provide shelter for insects and amphibians, including toads, frogs, salamanders, and newts. Larger ferns also provide shelter for birds, small mammals, and snakes. Hummingbirds, warblers, and some other birds use fuzz from the fiddleheads of cinnamon ferns to line their nests. Some ferns provide food for wild turkey, ruffed grouse, deer, and other wildlife. I was surprised to learn that species in three fern genera are larval hosts to caterpillars that turn into moths.

The Plant Materials Guide for Lexington MA (see www.clclex.org) lists ferns native to Lexington. Several Lexington ferns make good groundcovers because they are relatively short. Larger ferns look beautiful as a backdrop for smaller flowering plants or placed in front of shrubs.

Groundcovers

The bright green, once-cut fronds of the **rock polypody** (Polypodium virginianum) have a slightly upward curve. They are 6–12 inches long and may have as many as 20 leaflets. The evergreen blades are cheerful even in winter. These ferns have a random growth pattern and creep around rocks and grow on mossy rocks. The sori are on the underside of the blades. Rock polypody grows in dry or moist well-drained acidic or neutral soil that is often rocky. Though these ferns are difficult to establish, when adapted, they grow well and may form large colonies. The light should be partial to full shade.

The **northern maidenhair** (Adiantum pedatum) has graceful, deciduous fronds that grow 1–2 feet high. The fronds are quite unusual in shape. Burgundy fiddleheads appear in early spring. The stipes are dark, thin, wiry stems that display 5 or more delicate bright-green leaflets horizontally in an arc. The spores are on the outer edges of the leaflets. Its native habitat is rich, moist woodlands usually in limestone areas. It may help to add lime to the soil for maidenhair ferns. They do well in partial to full shade, but are slow in spreading.

Christmas fern (Polystichum acrostichoides) has evergreen blades that range from 1–2 feet high and about the same width. The once-cut, rich green fronds (below, left) with pointed pinnae have a nice sheen and fine teeth on the margins. The sori are on the undersides of the upper leaflets of the blade. After winter battering, the foliage looks less perky, but the silvery fiddleheads (below, right) emerge in early spring and new fronds unfurl. Christmas ferns flourish in both dry and moist woods so they are easy to grow in gardens. They prefer partial shade, but will tolerate some direct sunlight if the soil is moist.

Larger ferns

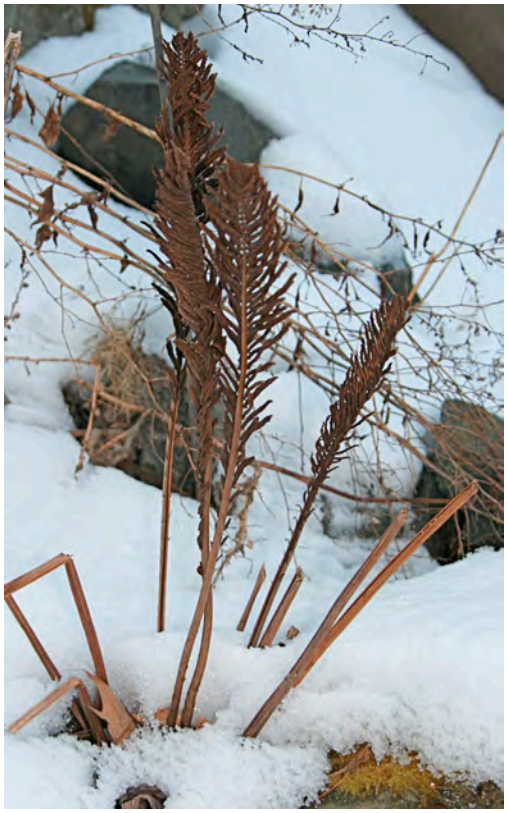
Lady fern (Athyrium filis-femina) grows to 2–3 feet high and up to 9 inches wide. The arching bright green, deciduous fronds have finely toothed pinnules, giving a delicate look to this large fern. Sometimes these blades are called 2-cut or sometimes 3-cut, if the small cuts in the toothed pinnules are counted. The sori are on the undersides of the fronds. Lady ferns grow in rich soil with medium moisture in partial to full shade, but can tolerate full sun if the soil is kept wet. In the wild they grow in moist woodlands and thickets.

The fronds of **eastern hay-scented fern** (Dennstaedtia punctilobula) are 1–3 feet tall and about 1 foot wide. The light-green, deciduous fronds, 3-times cut, look lacy and have a soft, hairy surface. The fronds turn a pretty bronze color in the fall. The round sori are on the undersides of the blades. If the blades are crushed, a sweet scent of fresh mown hay is emitted. These ferns grow well in moist, well-drained, acidic soil. They like partial to full shade, but will tolerate full sun with enough moisture. In the wild, hay-scented ferns form large colonies.

The handsome **cinnamon fern** (Osmunda cinnamomea) grows 2–5 feet tall. As shown on the left, the fertile fronds look much different than those of the infertile green fronds. The fertile fronds first emerge as fiddleheads that have golden fuzz (below) and then unfurl into a dark-green stick covered with specialized pinnae that produce bumpy clusters of sporangia. The sporangia turn a rich cinnamon color when they mature. The infertile, deciduous fronds emerge later and envelop the fertile fronds. Cinnamon ferns grow in moist or wet acidic soils, including clay, sand, and loam. They prefer partial or full shade, but can grow in full sun if they are in standing water.

The enchanting **royal fern** (Osmunda regalis var. spectabilis) grows 2–6 feet tall and about 18 inches wide. The thin light-green, infertile pinnules resemble compound tree-leaves with each leaflet usually having 10 or more sub-leaflets. The ends of the upper fronds have fertile leaflets that are oblong clusters of small sub-leaflets that are bead-like in shape. Each sub-leaflet has numerous sporangia that turn golden brown and split open to release the spores. The protruding golden clusters look like flowers, hence another common name for this fern is "flowering fern." The normal habitat of royal ferns is wet soil along streams, bogs, and wet meadows. These ferns like moist, acidic, sandy or loamy soil, and partial or full shade.

The glorious, deciduous, infertile fronds of the **ostrich fern** (Matteuccia struthiopteris) form conical clumps 3–6 feet tall. The feather-shaped fronds are made up of long, thin pinnae that taper at both ends of the stipe. The separate fertile fronds (below, right) are rigid and much shorter than the infertile fronds (below, left). The edges of the fertile pinnae are highly modified and curl over the sporangea — they look like they are covered with brown beads. They develop in fall and persist through winter, releasing spores. Ostrich ferns grow in moist soils with near-neutral pH. They like partial to full shade and do not do well if the soil is dry. Ostrich ferns are aggressive so you have to be diligent if you don't want them to take over your yard.



Most of these ferns can easily be found at Mahoney's Garden Center in Winchester, Russell's Garden Center in Wayland, Garden in the Woods in Framingham, and many other places.

References

New England Wild Flower Society, Conservation Notes of New England Wild Flower Society, "Ferns of New England," Volume 6, No. 3, 2002

Lady Bird Johnson Wildflower Center (www.wildflower.org)

Missouri Botanical Garden (www.missouribotanicalgarden.org)

Connecticut Botanical society (www.ct-botanical-society.org)

Illinois Wildflowers (www.illinoiswildflowers.info)

About Ferns (www.aboutferns.com)