

Native Ferns

Adapted to diverse regions of North America, native ferns draw gardeners into the shade with their soothing green hues and intricately patterned foliage.

BY C. COLSTON BURRELL

PRIZED FOR their filigreed foliage, ferns add texture and graceful motion to gardens and glades. Some gardeners may equate their dainty appearance with a fussy nature, but plenty of native species adapt well to garden culture. When properly chosen and sited, these ferns will enliven shady spaces with their forms and subtle hues.

In discussing ferns native to North America, it's important to understand that many of our "natives" are also found in other parts of the world. "There is a lot of overlap of the same species between

eastern North America, eastern Asia, and western Europe," says Robbin C. Moran, curator of botany at New York Botanical Garden and author of *A Natural History of Ferns* (Timber Press, 2009).

This overlap resulted from the migration of flora southward from high northern latitudes some 55 million years ago. "As the earth's climate cooled and became more seasonal in the latter half of the Tertiary Period, the once-continuous circumboreal flora migrated southward and became fragmented into three great blocks: eastern North America, eastern Asia, and western

Europe," explains Moran. "That is basically why the plant species that occur in these regions are similar today."

In this article, I am focusing on the North American range of each species.

FERN TERMINOLOGY

Ferns are grown for their foliage; in fact, they produce no flowers at all (see "Fern Reproduction," opposite page). They also have their own taxonomic terminology. A **frond** is a complete leaf, composed of a stalk, called a **stipe**, and the **blade**, which is often dissected into leaflets called **pinnae** (singular, pinna). The unfurling fronds are called **croisiers** or fiddleheads.

DIVERSE HABITATS

Ferns grow wild in varied settings, from open woodlands, swamps, and dappled banks, to bare cliff faces, sheltered overhangs, and along the margins of pounding waterfalls. Among the ground-dwellers are the best all-around garden ferns. Most are readily obtained and easy to grow. Many of the choicest rock ferns are best left to experts, although a few are good garden performers (see the chart on page 33).

By far the most popular garden ferns are those with evergreen foliage. So much so that veteran fernophile, Judith Jones, who owns Fancy Fronds Nursery in Gold Bar, Washington, laments that it is impossible to sell a deciduous fern. That is a shame, as deciduous and semi-evergreen ferns are standouts in the spring and summer garden. They maintain good foliar constitution with minimal care as long as the soil stays moist. During severe drought, plants may defoliate but will re-sprout when sufficient water is restored. Many species present russet, yellow, or straw-colored fronds once nights become frosty.

MOISTURE REQUIREMENTS

While some ferns require consistently moist, or even wet soil to look their best throughout the growing season, the majority of ferns, once established, are quite drought tolerant. That said, prolonged water deprivation will induce dormancy or can even be fatal.

Plant ferns in water-retentive soil amended with compost. The addition of a light organic mulch helps conserve moisture, but a heavy bark mulch may deprive



Maidenhair ferns like these flanking a water feature at the Butchart Gardens on Vancouver Island, British Columbia, thrive in a shady, consistently moist site.

the shallow roots of sufficient nitrogen for healthy growth. Ferns take a year or two to become established, and this period is critical to the success of plantings. Consistent moisture is needed until young transplants develop enough roots and rhizomes to tolerate drought.

TOP CHOICES

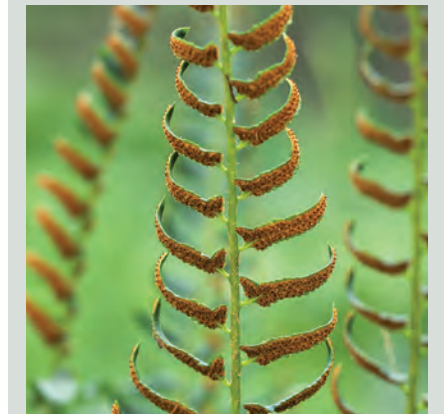
The characteristics of some of the most tough, indestructible ferns are thick water-storing rhizomes, leathery evergreen fronds, and a tenacious root system. These qualities are typical of many ferns in two genera—*Dryopteris* and *Polystichum*—which I will be highlighting along with other good garden ferns on the following pages. (For regional recommendations for native ferns, visit the AHS website and follow the link to the web special for this article.)

The western counterpart of this species is *A. aleuticum* (Zones 3–8, 8–1), which has asymmetrical fronds with elongated pinnae that resemble fingers. Jones says that many commercial growers do not differentiate between *A. pedatum* and *A. aleuticum*. "I find the latter to be a more variable species that occurs in a wider range of environments, making it an excellent choice for a wide climate range. It is well worth the time to establish it," says Jones.

For adaptability, you can't beat **Christmas fern** (*Polystichum acrostichoides*, Zones 3–8, 8–1), whose stiff evergreen fronds form dense, dependable clumps in a variety of settings. "There are few truly evergreen ferns hardy in the Northeast, but Christmas fern comes awfully close," says Wil-

FERN REPRODUCTION

Most ferns flourish in moist soils, not simply because they require constant moisture, but because they demand water for reproduction. Ferns reproduce from spores, not seeds. Unlike seeds, spores germinate not into seedlings, but into an intermediate stage called



Rather than seeds, ferns reproduce with spores like these rust-colored ones on the undersides of Christmas fern fronds.

the gametophyte generation, that produces a small, filmy prothallus, which bears both the male and female sex organs. It is here that water is critical to the survival of the fern, as fertilization can only occur when the sperm cells can swim freely on a film of water to reach the egg cells. After fertilization, a young plant is produced that eventually grows into a fern.

—C.C.B.

liam Cullina, executive director of Coastal Maine Botanical Gardens and author of *Native Ferns, Moss & Grasses* (Houghton Mifflin, 2008). The cast-iron character of this eastern and central North American native adapts to clay soil or humus. Given a little shade, it is well behaved, long lived, and increases in beauty with time. “In bright light, the narrow, 12- to 16-inch fronds are carried nearly vertically, while in deep shade they splay out horizontally,” says Cullina. The stiff fronds remain erect until hard frost or heavy snow pushes them over. Combine Christmas fern with other ferns in foundation plantings, along walks and steps, or in woodland gardens with bulbs, wildflowers, and groundcovers.

At first glance, **silvery glade fern** (*Deparia acrostichoides*, Zones 4–8, 8–1) may look like many other ferns, with its deciduous, moderately dissected fronds, but a second look reveals a tidy, medium green clump with arching fronds clustered on a slow-creeping rhizome. The fronds open chartreuse and fade to green with age. Since fronds are produced in succession through early summer, clumps always look fresh. They turn straw-colored in fall. In the garden, plants form robust two- to three-foot-wide clumps. They require constant moisture and neutral to acidic soil for best growth. They tolerate consid-



Christmas ferns have coarsely textured fronds that remain evergreen through winter.

erable sun if the soil stays moist. Silvery glade fern is native from Nova Scotia and Ontario, south to Georgia and Arkansas.

With its elongated pinnae arranged like stair steps up the arching fronds, the **narrow glade fern** (*Diplazium pycnocarpon*, Zones 4–8, 8–1) evokes the tropics. Found on limy soils throughout eastern and central North America, this architectural gem

looks stunning in the shade garden among drifts of wildflowers or bold-leaved plants such as hostas. The fronds turn russet in autumn. Plant in constantly moist, nearly neutral, humus-rich soil in part to full shade. Fronds will turn brown quickly if the soil gets too dry.

Another native of eastern and central North America, **Goldie’s wood fern**



Left: Silvery glade fern will slowly form colonies in evenly moist sites. The three- to four-foot-long fronds emerge chartreuse and turn green with age. Its common name refers to the silvery appearance of its spores. Above: The long, slender fronds of narrow glade fern have a tropical appearance.

FERNS FOR WET SOILS

A small group of desirable ferns tolerate or demand constant moisture, and a few will even grow in standing water.

Name	Height/Spread (inches)	Ornamental Attributes	Native Range in North America*	USDA Hardiness Zones, AHS Heat Zones
<i>Adiantum capillus-veneris</i> (Southern maidenhair fern)	12–24/12–18	Deciduous, cascading triangular, fronds chartreuse to sea green, fan-shaped pinnae	Southern U.S., west to California	7–10, 11–7
<i>Dryopteris carthusiana</i> (Spinulose wood fern)	18–30/18–30	Glossy, semi-evergreen fronds are deeply dissected, emerging in a tall arching vase from a stout rhizome	Canada, northern U.S., south to South Carolina and west to Missouri	2–7, 7–1
<i>Dryopteris ludoviciana</i> (Southern wood fern)	24–48/24–36	Stiff, erect narrow fronds, tapered at both ends, are evergreen in mild climates	Southeastern coastal plains west to Texas	6–9, 9–5
<i>Onoclea sensibilis</i> (Sensitive fern)	12–30/24–48	Deciduous chartreuse sterile fronds form carpet; fast-creeping rhizomes; beaded fertile fronds persist through winter	Eastern and central North America, from Labrador and Manitoba, south to Florida and Texas	4–9, 9–1
<i>Osmunda cinnamomea</i> (Cinnamon fern)	24–60/24–48	Statuesque deciduous fern with arching sterile fronds that emerge after the cinnamon-colored spore-bearing fronds	Eastern North America Labrador to Ontario, south to Florida and Texas	3–9, 9–1
<i>Osmunda regalis</i> (Royal fern)	24–60/24–48	Tall, deciduous fronds emerge purple-tinged and fade to green; partially fertile fronds bear clusters of rusty-brown sporangia	Newfoundland and Saskatchewan, south to Florida and Texas	2–10, 9–1

FERNS FOR ROCK GARDENS

These ferns can grow in the crevices of rock outcroppings or atop boulders with only a veneer of humus or moss.

<i>Asplenium rhizophyllum</i> (Walking fern)	2–6/6–12	Evergreen fern spreads over moist, mossy limestone rocks by rooting at tips of the fronds to form new plants	Limestone regions from Quebec and Ontario, to Georgia and Oklahoma	4–8, 8–3
<i>Asplenium trichomanes</i> (Maidenhair spleenwort)	3–6/3–6	Evergreen or semi-evergreen tufted rosettes of slender deep-green fronds with rounded pinnae and black stipes	Throughout North America	3–9, 9–2
<i>Cheilanthes lanosa</i> (Hairy-lip fern)	6–10/8–15	Dense cluster of olive-green, deer-resistant, evergreen fronds	Eastern and central U.S., south to Florida and Texas	5–8, 8–4
<i>Pellaea atropurpurea</i> (Purple cliff brake)	8–15/8–10	Forest-green fronds bear sparse linear pinnae; winter fronds turn purple	Much of the U.S. and eastern Canada	4–9, 9–3
<i>Pentagramma triangularis</i> (Goldback fern)	5–10/5–12	Dark green triangular fronds, ebony stipes; backs of spore-bearing fronds are dusted with yellow powder	Western U.S., British Columbia	6–9, 9–5
<i>Polypodium virginianum</i> (Rock fern, rock polypody)	8–12/12–24	Leathery, deep olive-green fronds arise from a wandering rhizome; forms evergreen carpet	Newfoundland to Manitoba, south to Georgia and Arkansas	5–8, 8–5
<i>Woodsia obtusa</i> (Blunt-lobed cliff fern)	6–15/8–18	Loose clusters of lacy, deep green fronds from slow-creeping rhizomes	Eastern and central North America, south to Georgia, Nebraska and Texas	3–9, 9–3

* In addition to the North American regions listed, many of the ferns included in this chart are native to other temperate or tropical areas of the world.

TOP: SUSAN A. ROTH; BOTTOM: C. COLSTON BURRELL (2)



(*Dryopteris goldiana*, Zones 3–8, 8–2) is a giant among wood ferns. Upright, arching fronds between three and four feet long arise three to four feet from a stout rhizome with an elevated crown. The flattened pinnae are pale green along the margins, giving young fronds a two-tone effect. Fronds turn pale yellow in autumn. Use Goldie’s fern singly or in small groups for a tall, vertical accent, or combine it with strap-leaved plants such as irises. Plant it in moist, neutral to acidic, humus-rich soil in part to full shade.

Fancy fern, also known as intermediate wood fern, (*Dryopteris intermedia*, Zones 3–8, 8–1) is durable and beautiful. The common name refers to the finely dissected fronds, which grow one-and-one-half to two-and-one-half feet tall and are reliably evergreen. “This fern has lacy foliage with the leaves arranged in a basket shape,” says Moran, who adds, “It stays put, and does



Top: Ostrich fern makes a bold focal point in this mixed bed. Above: Despite its delicate appearance, fancy fern is a durable species.

not creep and spread.” It’s great for massing in a glade, as an accent among rocks, or at the base of a stump. It tolerates drier sites than other ferns, but grows to perfection in moist, humus-rich soil in light to deep shade. It is common throughout eastern

and central North America.

Marginal wood fern (*Dryopteris marginalis*, Zones 3–8, 8–1) is a tough, adaptable fern that deserves a place in every garden. “Being one of the most dry-tolerant ferns, it is often found in the wild growing on rock walls and slopes,” says John Manion, curator of the Kaul Wildflower Garden at Birmingham Botanical Gardens in Alabama. The stiff, one- to two-foot arching fronds are olive-green and arise in a vase shape from a central crown.

Pair this fern with rocks along steps or in a rockery. Plants grow in moist, well-drained, neutral to acidic, humus-rich soil in part to full shade. Established plants are drought tolerant and thrive in rocky soil or perched on boulders. It is native to eastern and central North America.

Standing a head above most others, the **Dixie wood fern** (*Dryopteris ×australis*, Zones 5–9, 9–5) sports broad, glossy, three-

to four-and-one-half-foot-tall fronds that remain evergreen in mild climates. This natural hybrid between **log fern** (*D. celsa*) and **Southern wood fern** (*D. ludoviciana*) has a vigorous growth habit. It makes a stunning foundation plant, or can be massed among shrubs or anywhere you want to add a vertical accent. Although it thrives in rich, moist, organic soil, it is widely adaptable to garden conditions and somewhat drought tolerant once established. It has a scattered distribution in southeastern and Gulf Coast states.

Native to northern North America, south to Virginia and west to Nebraska,

thrives in moist, neutral, humus-rich soil in light to full shade.

Interrupted fern (*Osmunda claytoniana*, Zones 2–10, 9–1) is similar in appearance to **cinnamon fern** (*O. cinnamomea*) but the pinnae are broader and pale green in color. The fertile fronds are distinctly different, bearing both sterile and fertile pinnae on the same frond. The congested, ephemeral fertile pinnae occur half way up the frond with sterile pinnae above and below, thus creating an “interruption” in the frond when the spore-laden parts fall off in summer. The one- to five-foot-long fronds emerge from a wiry, crown-form-



Only the pinnae in the middle of the fronds of interrupted fern bear spores. The fronds get their characteristic “interruptions” when the fertile pinnae wither and fall off.

ostrich fern (*Matteuccia struthiopteris*, Zones 2–8, 8–1) is the most popular deciduous fern in cultivation throughout its range and beyond. The three- to four-foot plants produce tall, plume-shaped, sterile fronds that arise in a narrow vase shape from a creeping, crown-forming rhizome. The persistent fertile fronds stand through the winter and release their spores in the spring. Use ostrich fern as a foundation plant or in drifts in the woodland garden, combined with spring-flowering bulbs, wildflowers, and garden perennials. It

thrives in moist, neutral to acidic, average to humus-rich soil in sun or shade. They are native throughout much of eastern and central North America.

Southern beech fern (*Phegopteris hexagonoptera*, Zones 4–9, 9–1) is native throughout eastern North America. It sports broad, triangular fronds held horizontally on thin stipes. The one-and-one-half to two-foot-long fronds are produced in a row or in loose clusters along creeping rhizomes, and turn pale yellow in the

Sources

Fancy Fronds Nursery, Gold Bar, WA. (360) 793-1472. www.fancyfronds-nursery.com.
Fern Ridge Farms, Cedar Bluff, AL. (256) 779-6351. www.fernridgefarms.com.
Prairie Nursery, Westfield, WI. (800) 476-9453. www.prairienursery.com.

Resources

American Fern Society, www.amerfernsoc.org.
The Hardy Fern Foundation, www.hardyferns.org.
Native Ferns, Moss & Grasses: From Emerald Carpet to Amber Wave, Serene and Sensuous Plants for the Garden by William Cullina. Houghton Mifflin, Boston, MA. 2008.
A Natural History of Ferns by Robbin C. Moran. Timber Press, Portland, OR. 2004.
The Plant Lover’s Guide to Ferns by Sue Olsen and Richie Steffen. Timber Press, Portland, OR. 2015.

autumn. Choose southern beech fern as an open groundcover under shrubs and small flowering trees. Combine them with tall wildflowers such as baneberries and black cohosh. Plant southern beech fern in moist, neutral to acidic, humus-rich soil in shade. In fertile garden soils, plants grow rapidly and need dividing to control their spread.

HARD CHOICES

Wading through the vast array of beguiling ferns vying for a spot in your garden can be daunting. Fronds of every description wave seductively from wooded dells and the pages of glossy catalogs. The ferns in this article are only a few of the wonderful options available.

These native species contribute to any garden vignette where the site conditions match their cultural needs; plant them and you will be rewarded.

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