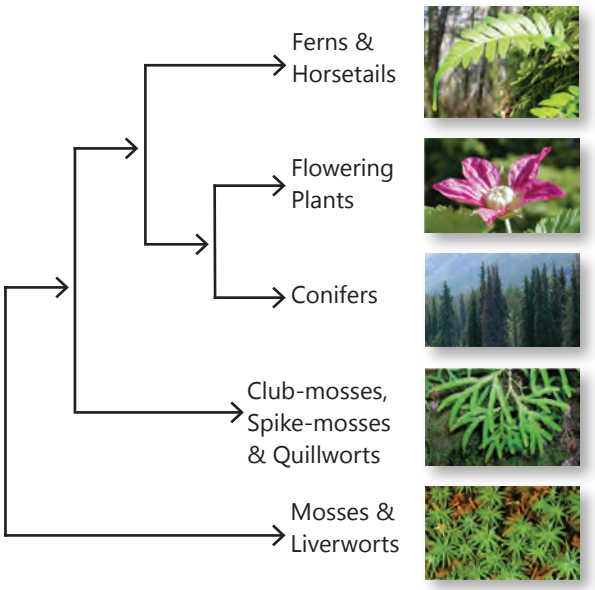
Ferns of the National Forests in Alaska

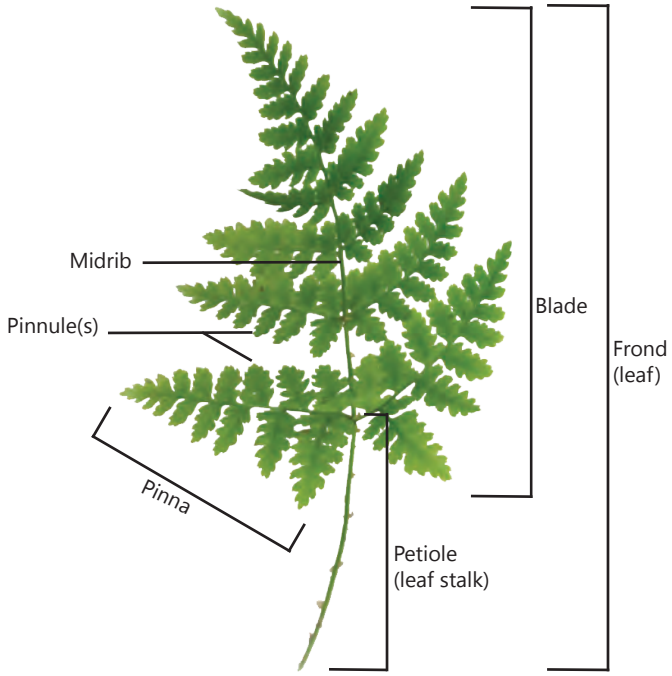
USDA United States Department of Agriculture
Forest Service Alaska Region
R10-RG-182 June 2010

Ferns abound in Alaska's two national forests, the Chugach and the Tongass, which are situated on the southcentral and southeastern coast respectively. These forests contain myriad habitats where ferns thrive. Most showy are the ferns occupying the forest floor of temperate rainforest habitats. However, ferns grow in nearly all non-forested habitats such as beach meadows, wet meadows, alpine meadows, high alpine, and talus slopes. The cool, wet climate highly influenced by the Pacific Ocean creates ideal growing conditions for ferns.

In the past, ferns had been loosely grouped with other spore-bearing vascular plants, often called "fern allies." Recent genetic studies reveal surprises about the relationships among ferns and fern allies. First, ferns appear to be closely related to horsetails; in fact these plants are now grouped as ferns. Second, plants commonly called fern allies (club-mosses, spike-mosses and quillworts) are not at all related to the ferns. General relationships among members of the plant kingdom are shown in the diagram below.



Thirty of the fifty-four ferns and horsetails known to grow in Alaska's national forests are described and pictured in this brochure. They are arranged in the same order as listed in the fern checklist presented on pages 26 and 27.



Parts of a fern frond, northern wood fern (p. 21).

Fern structure

Ferns and horsetails reproduce via spores instead of by seeds, and don't have secondary growth, in other words, they do not make wood.

Ferns generally have relatively large leaves **(fronds)**, composed of a **blade** and **petiole** (leaf stalk). Frond shape, size, petiole length, texture and degree of leaf cutting vary considerably from species to species. In the spring, when new fronds emerge, they unroll. These unrolling fronds are commonly called fiddleheads.

Fern leaves

The blade may be variously divided into segments called **pinnae**; a single segment is a **pinna**. A pinna may be further divided; the smallest segments are called **pinnules**.

Blades can be **simple**, where the blade is undivided (no ferns in Alaska have simple blades) or **pinnate**, where the blade is divided into segments completely separated from each other, e.g. green spleenwort (p. 15), deer fern (p. 19).

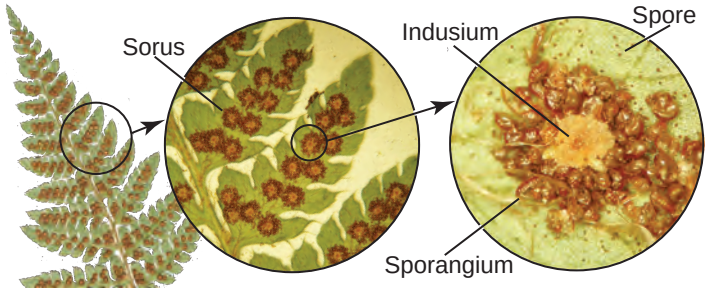
Many ferns are known for their lacy appearance because the blades of these ferns are even further divided;

2-pinnate blades are divided two times and **3-pinnate** are blades divided three times. In most cases, the ultimate divisions (often called segments) don't cut to the pinna axis, so the term **pinnatifid** is added to the degree of cutting to describe this type of blade dissection. Examples of various degrees of leaf divisions include **pinnate-pinnatifid**, e.g. northern beech fern (p. 15) and **3-pinnate-pinnatifid**, e.g. western oak fern (p. 19).

Pinnate | Pinnate - pinnatified | 2-Pinnate | 2-Pinnate - pinnatified

Fern sori

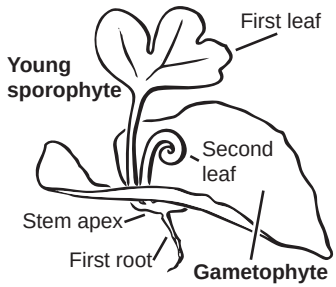
Sori (singular = **sorus**) are groups of **sporangia** (singular = **sporangium**), which contain **spores**. Sori are usually found on the underside of the blade. Young sori are commonly covered by flaps of protective tissue called **indusia** (singular = **indusium**). The shape and arrangement of the sori and indusia are often useful characters for identifying ferns. But, depending on the time of year, sori and indusia may not be useful characters because they may be too immature or too mature to reveal their diagnostic features.



Some ferns, such as the moonworts (p. 8-9), have modified leaf segments producing only sporangia. Deer fern (p. 19), parsley fern (p. 15) and ostrich fern (p. 21) bear two kinds of leaves; sterile leaves with no sporangia, as well as highly modified fertile leaves with sporangia. Ferns with two kinds of leaves are called dimorphic.

Fern and Horestail reproduction

Ferns and horsetails have two free-living generations; a diploid **sporophyte** (spore-producing plant) and a haploid **gametophyte** (gamete-producing plant). Plants we see as ferns or horsetails are the sporophyte generation. The sporophyte generally releases spores in the summer. Spores must land on a suitable surface, such as a moist protected area to germinate and grow into gametophytes.



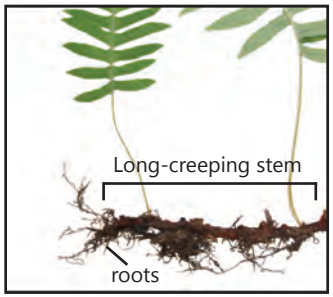
The mature gametophyte of many of our ferns looks like a little flat green heart, about the size of a fingernail, as illustrated here. Male and female reproductive structures develop on the lower surface of the same, or more often, on different gametophyte plants. At sexual maturity the male structures release sperm that swim through the film of water of the moist habitat to fertilize the egg in the female structure. Horsetail gametophytes are similiar, but appear more like little green mounds.

Usually, many gametophytes grow in close proximity to each other, and in most ferns and horsetails the sperm of one gametophyte is most likely to fertilize the egg of a different gametophyte. This fertilized egg develops into an embryo, which is the beginning of the diploid sporophyte generation. The first tiny leaf of the sporophyte emerges from the bottom of the gametophyte (which disintegrates) and grows upward and soon becomes a plant we see as a fern or horsetail.

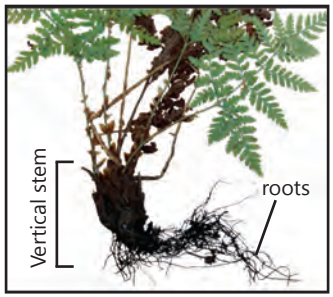
Fern Stems and Roots

Fern stems **(rhizomes)** are inconspicuous because they generally grow on or below the surface of the substrate on which the fern grows. This substrate can be soil, moss or duff. Because the stems are in direct contact with the soil people often confuse stems with roots.

Stems can be **short-creeping,** with fronds that are somewhat scattered along the stem, such as the fragile fern (p. 17); stems can be **long-creeping** resulting in fronds scattered along the stem, exemplified by the licorice fern (below left). Stems can also be **vertical**, producing rosettes of leaves, as shown by the northern wood fern (below right), and as displayed by the sword ferns (p. 22-25).



Long-creeping stem of licorice fern.



Vertical stem of northern wood fern.

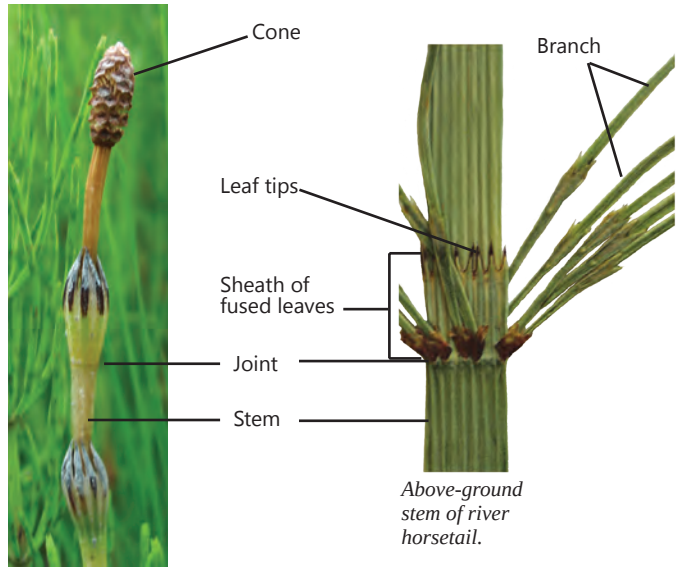
Fern roots are generally thin and wiry in texture and grow along the stem. They absorb water and nutrients and help secure the fern to its substrate.

Horsetail Structure

Horsetails have prominent stems and minute leaves. Leaves arise at the joints of the above-ground stem. Since the leaves are fused to each other around the stem, they form a sheath extending a short way up the stem from the joint. The color, number and leaf tip shape of these ensheathing leaves are good characters for distinguishing horsetails from each other (p. 10 and 11). Most horsetails also have slender, soft branches radiating from the joints. These branches give many horsetails their "horsetail" look.

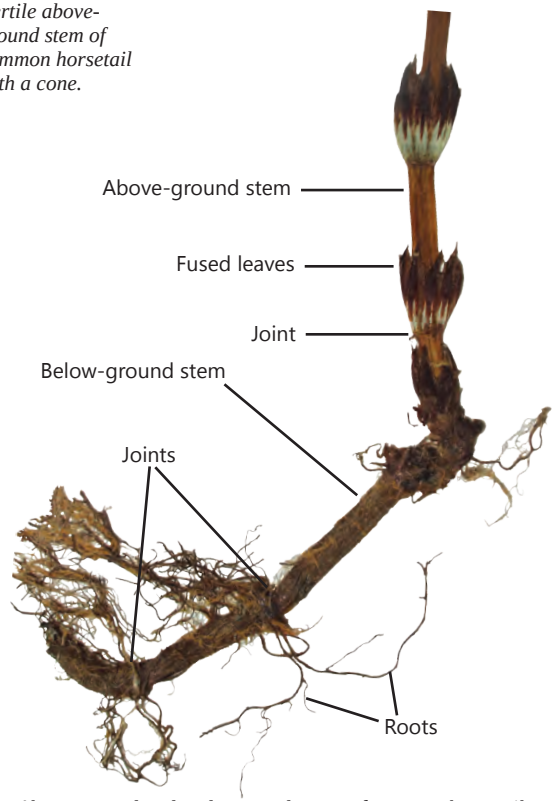
The above-ground stem is vertically grooved and hollow. Silica is incorporated in the stem's outside surface, giving horsetails their characteristic rough feel; in fact, they have been used as scouring pads. The underground stem is short to long-creeping, with wiry roots radiating from the underground-stem's joints.

Horsetails can have one kind of above-ground stem (monomorphic), or be dimorphic, with fertile and sterile above-ground stems. Spores are produced by cones that are situated at the tops of above-ground stems.



Above-ground stem of river horsetail.

Fertile above-ground stem of common horsetail with a cone.



Above-ground and underground stems of common horsetail.

The moonworts, grapefern and rattlesnake fern are unusual-looking ferns. Their vertical underground stem produces a single leaf each year. This leaf is divided into a sterile segment and a fertile segment. The sterile segment is blade-like in appearance. The fertile segment bears numerous spherical sporangia that collectively look like clusters of tiny grapes. The genus name, *Botrychium*, is derived from a Greek word referring to a bunch of grapes.

Triangle moonwort fern
Botrychium lanceolatum
subsp. *lanceolatum*

This uncommon fern grows throughout south coastal Alaska on upper beach meadows, well drained meadows, subalpine and alpine meadows, and areas of historical human disturbance such as landing strips or roadsides. The deciduous leaf ranges in height from 1 to 8 inches. The blade-like sterile segment is somewhat leathery, triangular and pinnate-pinnatifid to 2-pinnate-pinnatifid. The fertile segment is short-stalked and often divided into several stalked branches.

Common moonwort fern
Botrychium lunaria

An unusual-looking and relatively uncommon fern that grows across southern Alaska. It is often overlooked because it blends in so well with surrounding vegetation. This charismatic fern grows in habitats similar to those occupied by the triangle moonwort (described above). The deciduous leaf ranges in height from 1 to 8 inches. The blade-like sterile segment is somewhat leathery, narrowly egg-shaped and pinnate with 2 to 6 pairs of fan-shaped pinna. The fertile segment is moderately long-stalked. The name moonwort comes from the pinna's resemblance to a crescent moon. Several other moonworts are similar in appearance to this fern.

Leathery grapefern
Botrychium multifidum

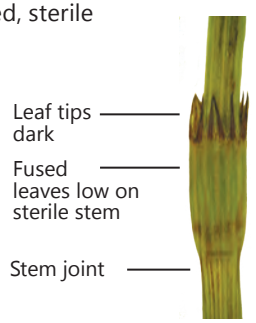
Occasional throughout southern Alaska this robust fern grows in muskegs, upper beach meadows, lake margins and subalpine meadows. The blade-like, sterile leaf segment is evergreen, leathery, broadly triangular, 3-pinnate and averages about 6 inches wide. This sterile leaf segment has a very short stalk, so it is often nestled down in the moss. The fertile segment is long-stalked and can grow up to 14 inches tall.

Rattlesnake fern
Botrychium virginianum

Occasional across southern Alaska. But, in some places this fern is abundant. It grows in upper beach meadows, forest edges and under open forest. This fern is locally abundant on Prince of Wales Island, along some roadways with a limestone substrate. The deciduous leaf ranges in height from 5 to 20 inches. The blade-like sterile segment is thin-textured, broadly triangular and 2-pinnate-pinnatifid. It is placed about half way up the plant and appears to be lateral to the long-stalked fertile leaf segment.

Common Horsetail
Equisetum arvense

This morphologically variable, deciduous horsetail is common throughout south coastal Alaska. It occupies a wide array of habitats, from wet to dry; and in disturbed areas can be weedy. Dimorphic; fertile stems are yellowish and branchless, and arise late in the spring, followed by the bright green, heavily-branched, sterile stems.

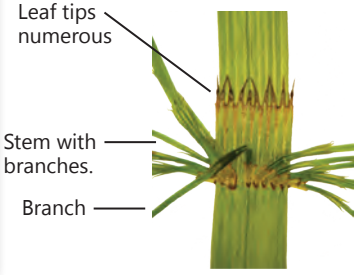


Wood horsetail
Equisetum sylvaticum

A beautiful horsetail of the Chugach and northern Tongass Forest. Branches are branched again, giving this plant a very soft and lacy look. Our only horsetail with branched branches. It thrives best in areas with damp soil or in marshy situations. The deciduous stem grows to about 2 feet tall. Dimorphic, fertile stems are brownish; after spore release, becoming green and similar to sterile stems. Leaf tips are light brown, papery and connected in groups.

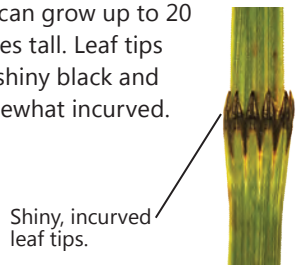
River horsetail
Equisetum fluviatile

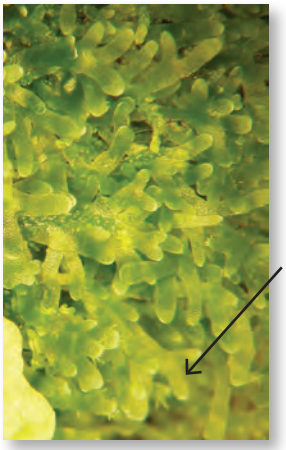
A very neat and organized-looking horsetail, grows across southern Alaska. Usually found growing in shallow fresh water or marshy areas. The deciduous stem can grow to over 3 feet tall and they may or may not bear branches. The earliest stems to arise in the spring do not have branches. Numerous fused leaves (12-20 leaf tips).



Variegated scouring rush
Equisetum variegatum subp. *alaskanum*

Unbranched horsetails are called scouring rushes. This slender, unbranched plant grows across southern Alaska in many habitats, including gravel and sand bars, sandy lake shores, forest, moist meadows, alpine meadows; often in very wet situations. Stems are evergreen and quite variable in height and width, but can grow up to 20 inches tall. Leaf tips are shiny black and somewhat incurved.





Gametophytes

Photo by Jiro Hayashi

Sporophytes

Wright's filmy fern
Hymenophyllum wrightii

A minute evergreen fern, common as a gametophyte in the southern 3/4 of the Tongass. It is difficult to find because of its tiny size and mossy habitat. Gametophytes tangle with moss in the darkest areas on tree bases, the undersides of rotting logs and wet rock faces in wet lowland forests. The minute strap-like and branching "fronds" are less than 1/32 inch wide and one cell thick. They look like tiny thalloid liverworts. Sporophytes have not been found in Alaska but they are suspected to occur on the southern Tongass. These delicate 2-pinnate-pinnatified triangular fronds are about 2 inches long, petiole and blade each about 1 inch long. The petiole and veins are dark brown. Sporangia are borne within bivalved structures on leaf lobe tips. The stem is long-creeping, thin and tangled, forming mats of fronds.

Bracken fern
Pteridium aquilinum var. *pubescens*

In Alaska this fern is known only from southeastern, where it is relatively common. It grows in meadows, open areas, muskegs and open forests. Deciduous, with very large fronds from 1 to 3 feet tall. The leathery, triangular blade ranges from 8 inches to 2 feet long (and broad), 3-pinnate-pinnatified to 3-pinnate; atop a long tough petiole (8 inches to over 2 feet long). Sori are continuous along, and covered by, the inrolled leaf margin and an inconspicuous indusium. Fronds rise from a long-creeping horizontal stem. Considered to be a weedy fern, bracken often thrives in disturbed areas such as the roadside habitat shown here.

Western maidenhair fern
Adiantum aleuticum

A relatively common fern of south coastal Alaska, it is more common on the Tongass than the Chugach. It grows on moist rock faces, near streambanks and meadows from sea level to the alpine. Delicate, deciduous fronds range from 6 to 30 inches long with the fan-shaped, dichotomously-branched blade up to 18 inches long, often as broad as long. The blade is often at a right angle to the erect shiny dark brown petiole. The thin, papery pinnules are asymmetrical, with the lower side unlobed and upper side lobed. Sporangia are on the ends of the lobes, covered by the reflexed pinnule margin. The stem is short to long-creeping, resulting in scattered fronds. The distinctively shiny deep-brown petioles are sometimes used as decorative elements on Native baskets.

Fertile pinnules (rolled margins).

Sterile pinnules (toothed margins).

American parsley fern
Cryptogramma acrostichoides

Generally infrequent across southern Alaska but can be abundant in some places. This small (4 to 9 inches tall) evergreen fern grows in rock crevices and talus slopes, especially in the mountains. The leaves are dimorphic. Sterile blades are narrowly triangular and leathery, 2 to 3 inches long, 2 to 3-pinnate, giving them a parsley-like look; pinnules have teeth or shallow lobes. The petioles are spreading, 2 to 4 inches long. Fertile blades with narrow pinnae; the inrolled margin of the pinnule covers the sporangia. These petioles are upright and longer (2 to 6 inches). Because of the short-creeping to erect stem, this fern often grows in bushy little clumps.

Photo by Karen Dillman

Green spleenwort

Green spleenwort fern
Asplenium trichomanes-ramosum

Relatively rare on the Tongass and suspected to occur on the Chugach. This delightful fern grows in cracks in rocks, especially limestone. Its leaves are evergreen, small, up to 6 inches in length, less than 1/2 inch wide. The blade is long and narrow, pinnate, with numerous oval pinnules; the petiole is relatively short. The midrib and upper part of the petiole are green. Little clumps of fronds arise from short-creeping to vertical stems.

Maidenhair spleenwort fern
Asplenium trichomanes subsp. *trichomanes*

Maidenhair spleenwort

Extremely rare on the Tongass and not known on the Chugach. Similar to the green spleenwort, with the main difference being its shiny dark brown midrib and petiole.

Northern beech fern
Phegopteris connectilis

A relatively common fern across southern Alaska. Habitats include forests, forest edges, rock faces, subalpine meadows and areas near rivers. The deciduous fronds average 5 to 16 inches long. The narrowly triangular, pinnate-pinnatifid blade tapers gracefully toward the tip and is somewhat hairy. It is shorter than the very thin petiole and often held at right angles to the petiole. A distinguishing character of the northern beech fern is the reflexed lowest pinna pair, which point away from the tip of the blade. Fronds are widely scattered because they grow from long-creeping stems.

Mountain wood fern
Thelypteris quelpaertensis

A common fern across southern Alaska. Grows at forest edges, open areas and meadows from sea level to the subalpine. On the Tongass it is abundant in the subalpine meadows; on the Chugach it is also abundant at forest edges at sea level. A handsome fern with deciduous fronds to 3 feet long. The blade is lance-shaped, widest at the middle, pinnate-pinnatifid; with a very short petiole. A dense crown of fronds rises from a vertical to short-creeping stem. Similar in appearance to the northwestern lady fern (below), but the mountain wood fern's pinnae are pinnate-pinnatified without further divisions. The lady fern's pinnae are 2-pinnate-pinnatified.

Northwestern lady fern
Athyrium filix-femina
subsp. *cyclosorum*

One of the most common ferns in southern Alaska. Grows in forests, at forest edges and meadows from sea level to the subalpine. It can dominate the vegetation in some subalpine meadows. The deciduous fronds grow to 5 feet long. The blade is lance-shaped, widest at the middle, lacy, 2-pinnate-pinnatified; petiole is very short. Crowns of fronds arise from vertical to short-creeping stems. Similar to the mountain wood fern (above), but mountain wood fern is pinnate-pinnatified without further divisions, whereas lady fern's pinnae are 2-pinnate-pinnatified.

Fragile fern
Cystopteris fragilis

This small deciduous fern is somewhat common across the region. It is most often found growing from cracks on rock faces from sea level to the alpine. The leaves are bright green, very soft and range in length from 2 to 12 inches. The leaf blade is narrow, pinnate-pinnatified to 2-pinnate, and somewhat longer than the petiole. The stem is short-creeping, usually tucked well into the rocks. This results in loose sprays of the lax fronds emerging from the rocks.

Western oak fern
Gymnocarpium disjunctum

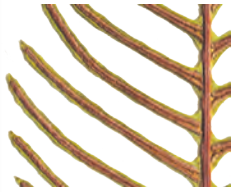
Very common across southern Alaska. It grows in open forests, forest edges and open areas from sea level to alpine. Fronds are deciduous and relatively small. The triangular blade averages 6 to 8 inches long (about as wide), 2 to 3-pinnate-pinnatifid. The blade is held at a right angle to the petiole (photo looks straight down on the blade). The petiole is thin, straight and less than two times as long as the blade. Fronds arise from long-creeping stems. The common oak fern (*Gymnocarpium dryopteris*) also grows here; it is similar but less abundant. Its blade is generally smaller than the blade of western oak fern.

Photo by John Maunder.

Rusty cliff fern
Woodsia ilvensis

Rare in southern Alaska, although several populations can be seen at Mendenhall Glacier near Juneau. This distinctive fern grows in open rocky areas or cracks in open rock faces in dryer areas from sea level to the alpine. The leaves are deciduous, to 7 inches long. The blade is narrowly lance-shaped, pinnate-pinnatifid. The underside is fuzzy with rust colored scales and hairs. The petiole is 1/5 to 1/3 the length of the leaf. At the base of the leaf there is a distinctive joint where the leaf breaks off when it falls. Tufts of fuzzy fronds and old leaf bases arise from the vertical stem.

Sterile pinnae



Fertile pinnae

Deer fern
Blechnum spicant

Common across southern Alaska. Deer fern can be found in nearly all habitats but is most robust in open coniferous forests. Plants range in size from 8 inches to 2 feet tall. Leaves are pinnate and dimorphic. Sterile leaves are evergreen, shiny and somewhat spreading. The blade is long and narrow, widest at the middle; the petiole is relatively short. Fertile leaves are erect, deciduous, long and narrow. The petiole of fertile leaves is long, making them much taller than the sterile leaves. The rolled margins of the fertile pinnae give the fertile pinnae a skeletonized look. The stem is short-creeping to vertical, making a circular crown of fronds as shown here in a mature plant. Note the thin, erect fertile fronds rising from the center of the fern.

Note the short, dark-brown fertile frond arising from the center of the ostrich fern.

Ostrich fern
Matteuccia struthiopteris

In Alaska, known only from Southcentral, including the Chugach. An uncommon dimorphic fern; it grows in open forests and in areas associated with streams. Sterile leaves are bright green, large and up to 4 feet in length. The blade is bright green, broadly lance-shaped, widest above the middle and pinnate-pinnatifid. The petiole is very short. Fertile leaves are shorter than the sterile leaves. They are erect, brown and club-like in appearance because the fertile pinnae are pressed together toward the frond tip. Ostrich fern is used as a landscaping plant in Southcentral Alaska.

Northern wood fern
Dryopteris expansa

A very common fern across southern Alaska. Abundant in open forests and forest edges from sea level to the subalpine. The fronds are late-deciduous and can reach a length of 3 feet. The narrowly triangular, 2-pinnate-pinnatified to 3-pinnate blade is a little longer than the petiole. Open crowns of fronds arise from vertical stems. In the past, Northwest Coast natives cooked and ate these stems as a survival food. The cutting and texture of the leaf blade is similar to the northwestern lady fern (p. 17) but the triangular blade shape makes it easy to distinguish the northern wood fern from the broadly lance-shaped leaves of the northwestern lady fern.

Photo by Rob DeVilice

Fragrant wood fern
Dryopteris fragrans

This evergreen fern grows in the western part of the Chugach Forest, especially on the Kenai Peninsula and in the Chugach Mountains. Habitats include rocky bluffs, talus and scree slopes from sea level to the alpine. The leaves are deep green, somewhat leathery and very scaly on the lower surface. They range in length from 3 to 12 inches, with an average of about 7 inches. The leaf blade is narrow, pinnate-pinnatified to 2-pinnate and about three times as long as the petiole. The withered and curled remains of fronds from previous years remain attached to the stem at the base of the fern. These withered fronds are visible at the bottom of the photo. The stem is short-creeping, resulting in dense tufts of fronds among the rocks.

Bulblet located near tip of leaf.

Anderson's sword fern
Polystichum andersonii

Rare on the Chugach, known only on the east side of that Forest. Generally uncommon on the Tongass but common in the appropriate habitat. Found in well drained areas associated with rivers, often among rocks in well drained slopes under alder. Shiny evergreen fronds grow to 3 feet in length. The blade is lance-shaped, widest at the middle, pinnate-pinnatifid. The petiole is about 1/6 of the leaf in length. This fern is distinguished from the other *Polystichum* by the bulblet produced toward the tip of the frond. When pressed to the ground the bulblets grow into new plants; therefore this fern often grows in colonies (note small ferns in the upper left photo). The crown of fronds arises from a vertical stem.

Bulblet developing into a new fern. Note the tiny fern frond above the bulblet.

Braun's holly fern
Polystichum braunii

This fern is generally uncommon across southern Alaska but it is more common on the Tongass than on the Chugach. It grows in well drained areas associated with rivers, often among rocks in well drained slopes under alder. The somewhat shiny evergreen fronds grow to 3 feet long. The blade is lance-shaped, widest at the middle and 2-pinnate (pinnate-pinnatifid toward leaf tip). The petiole is about 1/6 of the leaf in length. The vase-like crown of fronds arises from a vertical stem. Distinguished from Anderson's sword fern (see above) by its 2-pinnate pinnae and lack of bulblet; distinguished from Alaska sword fern (p. 25) by its 2-pinnate blade, and duller foliage.

Photo by Karen Dillman

Holly fern
Polystichum lonchitis

Generally uncommon across the southern Alaska but more common on the Tongass than the Chugach. It grows from cracks in rocks, among boulders and on cliff faces from sea level to alpine. Holly fern is often associated with limestone. The fronds are glossy, stiff and evergreen, to 18 inches long. Deep green blades are narrowly lance-shaped, widest at the middle or just above the middle and pinnate. The petiole is extremely short; essentially the entire frond is blade. Fronds are often erect, arising from a vertical stem. It is distinguished from the common sword fern (p. 25) by its shorter, narrower fronds, smaller stature and an extremely short petiole.

Common sword fern
Polystichum munitum

The iconic fern of the northwest coast. Common on the Tongass from Frederick Sound south. It grows at forest edges, scree at the bases of cliffs and well drained forests. Fronds are deep green, arching, evergreen, to 4 feet long. The blades are narrowly triangular and pinnate. The lowest pinnae are long and nearly the same size as the adjacent pinnae. The petiole is about 1/4 the length of the leaf. Fronds arise from a vertical stem. Since fronds can stay green for several years these ferns can be impressive in the number of new and old fronds they bear. Somewhat similar to the holly fern (p. 23), but the western sword fern is distinguished from it by its large fronds, long basal pinnae and longer petiole.

Alaska sword fern
Polystichum setigerum

This fern is uncommon on the Tongass and not known to occur in the Chugach. It can be common in appropriate habitat. It grows in well drained areas associated with rivers, often among rocks in well drained slopes under alder. The attractive, glossy evergreen fronds to 2 feet long. The blade is lance-shaped, widest at the middle with pinnae pinnate-pinnatifid to 2-pinnate. The petiole is relatively short, about 1/8 to 1/6 the length of the leaf. The crown of fronds arises from a vertical stem. Distinguished from Anderson's sword fern (p. 23) by the lack of a bulblet; distinguished from Braun's holly fern (p. 23) by glossy foliage and pinnate-pinnatifid pinnae.

Licorice fern
Polypodium glycyrrhiza

Common on the Tongass, but not as common on the Chugach. Often grows among moss on rocks or on trees (sometimes high in the trees), frequently near the beach. Grows from sea level to subalpine. Fronds are evergreen and vary considerably in size from 2 to 22 inches long, averaging about 8 inches long. The pinnate blade is narrowly egg-shaped. Pinna shape can be variable with rounded or pointed tips and various degrees of toothing along the margins. The petiole is relatively long, about 1/3 the length of the leaf. Leaves are often widely spaced, arising from a thick long-creeping stem. The stem tastes like licorice, thus the name, licorice fern.

Growing on red alder

Growing on rocks

Checklist of the Ferns of the Alaska Region

Scientific and common names are shown. Names are listed alphabetically by scientific name within the fern families. Families are arranged according to Smith et al., (*Taxon* 55: 705-731. 2006). Ferns discussed in detail and pictured in this brochure are marked with an asterisk.

OPHIOGLOSSACEAE
Adder's Tongue Family

- ☐ *Botrychium alaskense*, Alaskan grapefern
- ☐ *Botrychium ascendens*, Ascending moonwort fern
- ☐ *Botrychium lanceolatum* subsp. *lanceolatum*, Triangle moonwort fern*
- ☐ *Botrychium lunaria*, Common moonwort fern*
- ☐ *Botrychium minganense*, Mingan moonwort fern
- ☐ *Botrychium montanum*, Mountain moonwort fern
- ☐ *Botrychium multifidum*, Leathery grapefern*
- ☐ *Botrychium pinnatum*, Northwestern moonwort fern
- ☐ *Botrychium simplex*, Least moonwart fern
- ☐ *Botrychium spathulatum*, Spatulate moonwort fern
- ☐ *Botrychium tunux*, Moosewort fern
- ☐ *Botrychium virginianum*, Rattlesnake fern*
- ☐ *Botrychium yaaxudakeit*, no common name

EQUISETACEAE
Horsetail & Scouring Rush Family

- ☐ *Equisetum arvense*, Common horsetail*
- ☐ *Equisetum fluviatile*, River horsetail*
- ☐ *Equisetum hyemale* subsp. affine, Common scouring rush
- ☐ *Equisetum palustre*, Marsh horsetail
- ☐ *Equisetum pratense*, Meadow horsetail
- ☐ *Equisetum scirpoides*, Dwarf scouring rush
- ☐ *Equisetum sylvaticum*, Wood horsetail*
- ☐ *Equisetum telmateia*, subsp. *braunii*, Giant horsetail
- ☐ *Equisetum variegatum* subsp. *alaskanum*, Alaskan variegated scouring rush*
- ☐ *Equisetum variegatum* subsp. *variegatum*, Variegated scouring rush

HYMENOPHYLLACEAE
Filmy Fern Family

- ☐ *Hymenophyllum wrightii*, Wright's filmy fern*

DENNSTAEDTIACEAE
Bracken Fern Family

- ☐ *Pteridium aquilinum* var. *pubescens*, Bracken fern*

PTERIDACEAE
Maidenhair family

- ☐ *Adiantum aleuticum*, Western maidenhair fern*
- ☐ *Cryptogramma acrostichoides*, American parsley fern*
- ☐ *Cryptogramma sitchensis*, Alaska parsley fern
- ☐ *Cryptogramma stelleri*, Steller's rock-brake fern

ASPLENIACEAE
Spleenwort Fern Family

- ☐ *Asplenium trichomanes-ramosum*, Green spleenwort fern*
- ☐ *Asplenium trichomanes* subsp. *trichomanes*, Maidenhair spleenwort fern*

THELYPTERIDACEAE
Female Fern Family

- ☐ *Phegopteris connectilis*, Northern beech fern*
- ☐ *Thelypteris quelpaertensis*, Mountain wood fern*

WOODSIACEAE
Cliff Fern Family

- ☐ *Athyrium americanum*, American alpine lady fern
- ☐ *Athyrium filix-femina* subsp. *cyclosorum*, Northwestern lady fern*
- ☐ *Cystopteris fragilis*, Fragile fern*
- ☐ *Cystopteris montana*, Mountain bladder fern
- ☐ *Gymnocarpium disjunctum*, Western oak fern*
- ☐ *Gymnocarpium dryopteris*, Common oak fern
- ☐ *Woodsia alpina*, Alpine cliff fern
- ☐ *Woodsia glabella*, Smooth cliff fern
- ☐ *Woodsia ilvensis*, Rusty cliff fern*
- ☐ *Woodsia scopulina* subsp. *scopulina*, Mountain cliff fern

BLECHNACEAE
Chain Fern Family

- ☐ *Blechnum spicant*, Deer fern*

ONOCLEACEAE
Sensitive Fern Family

- ☐ *Matteuccia struthiopteris*, Ostrich fern*

DRYOPTERIDACEAE
Wood Fern Family

- ☐ *Dryopteris expansa*, Northern wood fern*
- ☐ *Dryopteris fragrans*, Fragrant wood fern*
- ☐ *Polystichum andersonii*, Anderson's sword fern*
- ☐ *Polystichum braunii*, Braun's holly fern*
- ☐ *Polystichum kruckebergii*, Kruckeberg's holly fern
- ☐ *Polystichum lonchitis*, Holly fern*
- ☐ *Polystichum munitum*, Common sword fern*
- ☐ *Polystichum setigerum*, Alaska sword fern*

POLYPODIACEAE
Polypody Fern Family

- ☐ *Polypodium glycyrrhiza*, Licorice fern*

The Alaska Region of the Forest Service includes the Tongass National Forest, the nation's largest at 17 million acres, and Chugach National Forest, the nation's second largest at 5 million acres. The Tongass encompasses most of southeastern Alaska (Alaska panhandle) and the Chugach roughly surrounds Prince William Sound.

This brochure was prepared by the Forest Service, Alaska Region Botany program. Text, diagrams and photographs by Mary Stensvold unless otherwise noted. For more information about ferns and other wild plants of the Alaska Region go to: http://www.fs.fed.us/wildflowers/regions/alaska/index.shtml

Cover photograph: Aleutian maidenhair fern, western sword fern, western oak fern and maidenhair spleenwort. These ferns are growing on a limestone outcrop near the mouth of a cave in a coniferous forest on Prince of Wales Island on the Tongass National Forest. Photo by Brad Krieckhaus.

Suggested reading

A Field Manual of the Ferns & Fern Allies of the United States & Canada, David Lellinger

A Natural History of Ferns, Robbin Moran

Encyclopedia of Garden Ferns, Sue Olson

Ferns and Fern Allies of Canada, William Cody & Don Britton

Fern Growers Manual, Robbin Moran and Barbara Hoshizaki

Ferns and Gymnosperms, Flora of North America, North of Mexico, Volume 2, Alan Smith and Herb Wagner, Jr., eds;

How to Know the Ferns and Fern Allies, John Mickel.