

CHAPTER 15

GRASSES AND LOWER PLANTS

Western needlegrass

Achnatherum (Stipa) occidentale • Poaceae

This short-lived perennial bunch grass occurs widely throughout the drier western states and provinces, mostly in arid regions, but also in montane meadows. It is an upland species rarely found in forests. On Mount St. Helens, it is locally common in open habitats of the blast zone and on lahars. Plants grow to over 80 cm when mature. Culms are stiffly erect, rolled when dry, narrow and covered with white hairs. The flower stalks are long (up to 30 cm), narrow, characterized by long, bent awns (the seed and awn form the threaded needle). Seed dispersal is by wind (inflorescence tumbles along ground) and externally on mammals.



Dune bentgrass

Agrostis pallens • Poaceae

This grass is common in the Pacific coastal states, British Columbia and in the northern inter-mountain regions, typically in open, dry meadows; it is particularly common in coastal southern California. It is very common in meadows and in the blast zone, but not in wetlands or refugia. It is a dominant species in most pumice and pyroclastic sites and has no wetland indicator value. Plant is perennial, from persistent rhizomes with a spreading spike-like inflorescence. Leaves narrow, rolled up, pointed, growing to 30 cm tall. Inflorescence is a compressed panicle up to 8 cm long, with several small yellowish spikelets with a single flower that forms a seed that drops off without the glumes and lacks awns. Dispersal is by wind, along the ground, but is not efficient.



Rough bentgrass

Agrostis scabra • Poaceae

This sparse, roughly hairy grass occurs throughout North America and Asia in many habitats including open forests, subalpine meadows and rocky steam corridors. It is a facultative wetland species. On Mount St. Helens, it occurs in tephra and all primary habitats, but never in wetlands. It benefits greatly from facilitation by lupines. It is a tufted perennial from roots that does not spread and that can grow to 50 cm. Leaves are rough to the touch, basal and narrow. Inflorescence is a diffuse panicle that often turns purple, with small, numerous flowers. Seeds dispersed by wind, tumbling as seeds or inflorescence.



Natural History—Grasses and lower plants

Timber oat-grass

Danthonia intermedia • Poaceae

This dense perennial bunch grass occurs in most of Canada and western U.S. in dry or rocky habitats. On Mount St. Helens, it was common on high elevation tephra and occurs occasionally on lahars. It is a facultative upland species. The culms are hollow and smooth, up to 30 cm tall. Leaves are generally glabrous; blades flat, 2 mm wide. Flowers form a fat, congested inflorescence that looks like a raceme that is about 5 cm long. The bracts that enclose the flowers have hairs on the margin. Awns are prominent, up to 1 cm long. Seeds drop from the fruit to tumble along the surface, or to cling to the fur of a mammal.



Squirreltail grass

Elymus elymoides (*Sitanion hystrix*) • Poaceae

This short-lived bunch grass is common throughout drier, disturbed parts of western North America on dry, often rocky or gravelly places. It ranges mostly in shrub-steppe regions up to alpine zones. It is a facultative upland species. On Mount St. Helens, it occurs sporadically in any open habitat of the blast zone, including lahars, pumice and pyroclastic surfaces. Culms reach 50 cm tall; slightly hairy. Leaves are flat or often rolled, hairy and therefore, white in appearance, with membranous claw-like ligules at base of leaves. Flower stalk is a solitary bristly spike, 5-12 cm long; with very long (up to 10 cm) awns. Spikes disarticulate readily to facilitate tumbling dispersal by wind; seeds often caught in animal fur, and thus transported widely.



Blue wildrye

Elymus glaucus • Poaceae

This tufted perennial grass occurs throughout most of North America, but not in either the northeast or the southeast U. S. It can grow in open forests, meadows and rocky sites up to mid-elevations. It is a facultative upland species. On Mount St. Helens, it occurs sporadically in pyroclastic sites. The plant can reach 1 m in height. Leaves are flat, lacking hairs, 1 cm wide, with clasping membrane (auricle) at base. Inflorescence is an erect spike, 10 cm long; spikelets nearly hairless, 2 per node. Seeds dispersed by wind (tumblers) and by attaching to mammals.



Curly bluegrass

Poa secunda • Poaceae

This perennial, densely bunchgrass occurs from Alaska south to California and east to the Rocky Mountains and northeastern Canada. It is widespread in Washington, primarily in open forests and dry meadows at all elevations. This facultative upland plant occurs sporadically on Mount St. Helens in all but wetland habitats. Grass stem (culm) grows from 15 to 80 cm tall and is round in cross-section and wiry. Leaves basal, with a mostly open sheath and large membranous ligule (scale where blade leaves stem); blades narrow, smooth. Flower stock 5 to 20 cm long, and very open; turns red as it matures; scabrous; spikelet ± cylindric with persistent glumes; grains dispersed with pericarp (fruit wall) intact. Grains and inflorescences dispersed by wind.



Natural History—Grasses and lower plants

Spike trisetum

Trisetum spicatum • Poaceae

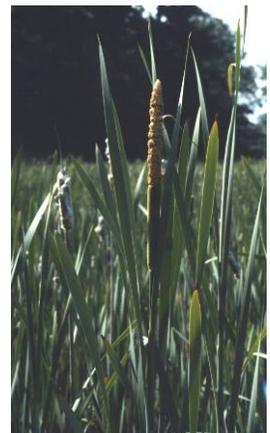
This perennial bunchgrass can reach 40 cm tall and is distributed throughout Canada and Alaska, south throughout the mountains of Appalachia and the western U.S. It thrives in dry, unstable sites including rocky slopes and occurs mainly at higher elevations. On Mount St. Helens, this grass occurs in tephra sites, in exposed blown-down habitats, and in most primary sites. It is rarely common. It is a facultative upland species. The culms are covered with fuzzy hairs. Leaves have open hairy sheaths; blades may fold or be flat, but are narrow, only 3 mm wide. Inflorescence is a tight spike-like terminal panicle typically about 10 cm long, brown when dry, purple to silver otherwise. Grains are topped by a bent awn which helps longer distance transport by latching onto mammals; dispersal is normally by tumbling.



Cattail

Typha latifolia • Typhaceae

This strongly rhizomatous herbaceous perennial is widespread and common throughout North America up to montane elevations. It is aggressive and often dominates marshes, swamp margins and ditches. This is strictly an obligate wetland plant, and on Mount St. Helens it occurs only in wetlands. It is uncommon in wetlands of the Pumice Plain region. Erect stems reach at least 2 m; they are cylindrical with an airy pith. Leaves long, linear and sheathing the culm. Flowers are tiny, terminating a naked stalk in a cylindrical inflorescence; overall brown in color. Fruit a dry achene dispersed in water or by floating in the wind.



SPORE-BEARING PLANTS--FERNS

Deer fern

Blechnum spicant • Blechnaceae

This clumped, rhizomatous evergreen fern is widespread from Alaska to California, primarily in moist forests. It is a facultative species. Although infrequent on Mount St. Helens, it occurred in all habitats except dry tephra sites. Sterile fronds are dark green, lie close to the ground, are about 50 cm long, touch, and have about 50 pairs of 5 cm long, narrow pinnae; fertile fronds are erect, with narrow, often rolled pinnae. Sori are continuously distributed on the pinnae margins. Dispersal is by wind as the spores can glide for several meters.



Bracken fern

Pteridium aquilinum • Dennstaedtiaceae

This strongly rhizomatous, deciduous fern is truly cosmopolitan, found in many habitats including clear cuts, roadsides, bog margins, drier forests, sand dunes, etc. It is a facultative upland species. On Mount St. Helens, it occurs in the blown-down zone, refugia and sporadically on pumice and lahars. Fronds are large, erect, triangular emerge singly from branched; rhizomes are hairy and lack scales on the stalk; they are tri-pinnate, large and usually oriented horizontally to the ground; they die back annually, leaving a persistent litter; may reach 2 m in height. Sori are marginal and continuous, lacking a covering, but protected by rolled in margin of the pinnae. Spores are flung into the air and glide away.



Natural History—Grasses and lower plants

Alpine lady fern

Athyrium americanum • Dryopteridaceae

This deciduous, snow-tolerant fern is common in the mountainous west of North America and in the Canadian northeast. Typical habitats include moist talus, rocky sites and rocky alpine habitats. It is a facultative plant. On Mount St. Helens, it occurs at higher elevations of the blown-down zone, refugia, lahars and barren sites. The fern has many narrow, erect triangular fronds that form a dense cluster. Fronds are triangular and bi-pinnate, with scales on rachis. Sori are generally round and exposed. Spores are released to the air and are wind dispersed (gliders).



Mountain holly fern

Polystichum lonchitis • Dryopteridaceae

This rhizomatous, evergreen perennial fern is common at high elevations in western North America and in northeastern Canada. It frequents talus and crevices in montane and subalpine habitats. It is a facultative species that on Mount St. Helens that occurs sporadically in any barren site having rocky depressions or in small canyons. It is a pioneer in the sense that in the appropriately protected, rocky habitats, it is among the earliest colonizers. Plant grows from a single dense base with fronds growing to 50 cm. It is similar to the common lowland sword fern. It requires moist sites for the establishment of gametophytes. Fronds are leathery and shiny, pinnae are widely spaced; sori containing spores are arrayed in two rows on underside of pinnae. Spores are buoyant and wind dispersed.



Cascade rockbrake

Cryptogramma cascadenis (crispa) • Pteridaceae

This species is common in high elevation, rocky sites throughout western North America and British Columbia, primarily growing in subalpine and alpine rocky sites. On Mount St. Helens, it occurs in dry tephra habitats, some refugia and all primary surfaces except the pyroclastic zone. It emerges in cracks from a scaly rhizome to form dense clusters of fronds. Fronds are dimorphic, both forms with smooth stalks; sterile ones are spreading along surface, 3-pinnate, fertile ones erect with margins curled inward. Sori are all along the margins of fertile fronds. Spores are dispersed by wind, as they are buoyant and released from the top of plant.



SPORE-BEARING PLANTS--HORSETAILS

Field horsetail

Equisetum arvense • Equisetaceae

This long-lived rhizomatous, hollow-stemmed perennial is found throughout the temperate and boreal zones of North America and Eurasia. It is considered a weed in urban situations, but on Mount St. Helens, it is native. It is a facultative species capable of forming dense thickets; less common in wetland understories, where other horsetails are common. Stems are either sterile (most common), up to 60 cm tall or fertile, about 30 cm tall. Sterile stems have many whorled “leaves” at each joint; fertile stems are topped by persistent cones up to 3 cm long that bear spores. Similar horsetails include scouring rush, in which all stems are fertile and unbranched and giant horsetail, with two forms of stems, but fertile ones have cones up to 10 cm long. Cones release spores to be dispersed by wind or water.



Natural History—Grasses and lower plants

Giant horsetail

Equisetum telmateia • Equisetaceae

This tall, rhizomatous horsetail is common in low to mid-elevation wetlands from British Columbia south to California. It is a facultative wetland species that only occurs in lower elevation wetlands of Mount St. Helens, generally in shaded habitats. Hollow stems arise from a black rhizome; stems are either vegetative (green) or sterile (yellow), growing over 1 m in height and 1-2 cm thick with whorls of long branches that simulate leaves. The fertile stems unbranched, and bear a terminal spore bearing cone (strobilis) up to 10 cm long. A related horsetail found on Mount St. Helens is the **scouring horsetail** (*Equisetum hymale*), found in similar habitats. Both of these horsetails disperse their spores both by wind and by water.



SPORE-BEARING PLANTS--MOSSES

Roadside rock moss

Racomitrium canescens • Grimmiaceae

This perennial mat-forming moss is common in North America and throughout the world. It covers dry, rocky sites at high latitudes and high elevations with dense, yellow-green masses, often to the exclusion of other species. On Mount St. Helens, it dominates many dry or exposed primary surfaces, missing from forested habitats, wetlands and refugia. Leaves are 2.5 mm wide and upright; when dry, characterized by a short bristly tip; only loosely attached to surfaces. The sporophyte is rarely present in primary sites; if present, grows from tip of the gametophyte, and are reddish in color. Dispersal is by spores, but more commonly by dispersal of dry fragments.



Juniper haircap moss

Polytrichum juniperinum • Polytrichaceae

This native moss is cosmopolitan in the temperate to boreal northern hemisphere, and is common in disturbed, moist sites, often in forests. On Mount St. Helens, it occurs in all habitats except wetlands, and it can be dominant when associated with lupines. Plants are shiny, with upright, unbranched “stems” growing in tight masses, up to 5 cm, but usually much smaller. Leaves are 6 mm long, narrow and pointed. The fertile sporophyte grows from these green shoots; typically erect, reddish, and persistent. The sporangium opens explosively when dry, expelling many spores to glide away on puffs of wind.

