

CHAPTER 13

FORBS

Common cow parsnip

Heracleum maximum (lanatum) • Apiaceae

This robust suffrutescent perennial herb occurs throughout North America except for the Deep South. It often occurs in wet sites along streams, moist meadows, on avalanche chutes and beaches, from sea level to montane sites. It is a facultative wetland species. On Mount St. Helens, it occurs mainly in wetlands. Plants can be over 2 m tall. Leaves are very large, up to 35 cm long, with 3 large palmately lobed segments with coarse serrations; surfaces hairy. Flowers are white, arranged in a terminal, flat umbrella-shaped inflorescence (umbel) that is 10 to 20 cm broad. Fruits are flat, oval to ovoid and about 1 cm long with ribs and large wings; seeds are typical wind-dispersed gliders.



Cascade desert parsley

Lomatium martindalei • Apiaceae

This small glabrous perennial herb is restricted to the Cascades from Oregon north well into British Columbia. It is a disturbance-responsive species, common on talus and dry meadows, but also in dry forests. On Mount St. Helens, it is common only on tephra and lahars on the south slope, but it occurs sporadically elsewhere. Leaves are prostrate from a deep taproot; pinnately compound; bluish-green leaflets that are deeply cleft. Flowers are white to dingy yellow, forming an umbel. Fruits are elliptic, 1-1.5 cm long, containing a single flattened seed with prominent wings. Dispersal of this species is by wind-aided gliding and tumbling.



Common yarrow

Achillea millefolium • Asteraceae

This widespread rhizomatous perennial herb is found throughout North America and around the world in many varieties. It occurs from coastal regions to the alpine, often as an introduced weed and typically in dry habitats. It is a facultative upland indicator. On Mount St. Helens, it is widespread, found in all open habitats, usually on dry pumice and lahars; it can persist in open forests. Leaves feathery, alternate, aromatic; plant trailing to erect, growing up to 50 cm. The flowering head is a flat cluster of few-flowered heads; rays usually 5, white to occasionally pink; disks 10-25, cream-colored; bracts dry, multi-series, overlapping. Achenes are tightly enclosed, forming a bur that may help in dispersal; seeds are wind dispersed by parachute.



Natural History—Forbs

Orange agoseris

Agoseris aurantiaca • Asteraceae

This deciduous perennial develops from a rosette and taproot. It is widespread throughout western North America, primarily at higher elevations in moist to dry meadows. On Mount St. Helens, this facultative upland species is common in open, more mature meadows that had been impacted by tephra. Plant is up to 50 cm tall. Leaves are basal, lance-shaped up to 30 cm long and 2 cm wide; milky sap; hairs lacking. Flower heads are solitary; of a distinctive orange color composed entirely of ray flowers. Seeds (achenes) topped by a white pappus that provides excellent wind dispersal by parachute action.



Pale agoseris

Agoseris glauca • Asteraceae

This small, tap-rooted perennial occurs widely throughout the north-central and western states and most of Canada. It occupies open forests and meadows up to the subalpine habitats. This is a facultative species, but very rarely, it occurs in wet areas. On Mount St. Helens, it is restricted to refugia and moist pumice areas at higher elevation. The plant is variable, growing to 40 cm tall, with milky sap. Leaves form a basal rosette; lance-shaped, slightly toothed, waxy looking, and often moderately hairy. Flowers bound into a solitary head composed of intensely yellow ray flowers. The achenes are about 1 cm long and are topped with large pappus of white hairs affords considerable lift, a classic parachute species.



Pearly everlasting

Anaphalis margaritacea • Asteraceae

This late-blooming, short-lived, rhizomatous perennial occurs throughout North America except for the southeastern states. It is common on barren surfaces in dry, open sites up to the montane zone. On Mount St. Helens, it is the leader of the pioneer species, capable of spreading growth. Found in disturbed habitats in general, it invaded pumice and pyroclastic sites; it is less abundant in moist meadows and on lahar deposits. Plants typically reach 70 cm in height and are erect. Leaves are distinctive, narrow and lance-shaped arising from bunched, solitary stems. Leaves are greenish above and white-wooly below; about 10 cm long, 2 cm wide, lacking a stalk. Flowers are wrapped in heads less than 1 cm wide; yellow disk flowers surrounded by papery, set of dry, white, overlapping bracts. The heads form a dense platform. The achenes are tiny, with white pappus composed of narrow bristles; they are wind dispersed by parachute action.



Umbrella pussytoes

Antennaria umbrinella • Asteraceae

This mat-forming stoloniferous perennial herb is relatively uncommon in the western states. It is scattered in dry, exposed habitats. On Mount St. Helens, pussytoes are scattered on tephra impacted meadows and small lahars. Plants can reach 40 cm tall. Stolons layer and spread close to the ground. Leaves near the base are oblanceolate; stem leaves are lanceolate; silver in color; about 5 cm long. Leaves are wooly throughout. The inflorescence contains several flower heads with male and female flowers on different plants. Flowers greenish to white, composed only of disk flowers, enclosed by whitish bracts. Each fruit is a single achene that is about 1 mm in length, with a long hairy pappus. Dispersal is by parachute-assisted wind. Related species on Mount St. Helens include small-leaf pussytoes (*A. microphylla*) and rosy pussytoes (*A. racemosa*).



Natural History—Forbs

Broadleaf arnica

Arnica latifolia • Asteraceae

This perennial, rhizomatous herb is common in montane forests throughout western North America, particularly in moist habitats and along streams. It is a facultative species that occurs in the blown-down zone, some refugia and sporadically lahars and pumice deposits on Mount St. Helens. Best growth is in open, moist meadows, but it is very persistent, even when under significant drought stress, and occurs sporadically on pumice fields. Plants reach 50 cm in height; and then die back each year. Basal leaves are elliptic (not heart-shaped as in the related heart-shaped arnica), stem leaves opposite (in contrast to groundsels), 3-4 pairs of lance-shaped blades along a branch, tapering towards the top; slightly toothed and lightly hairy. Flower heads 1-2 cm wide and formed of 8-12 yellow ray flowers surround yellow disk flowers; head enclosed by single rank of bracts long, hairy bracts. Achenes lack hairs, but have a pappus of stiff capillary bristles. Clearly a species dispersed by wind, aided by a parachute.



Comon woolly sunflower

Eriophyllum lanatum • Asteraceae

This persistent, herbaceous to slightly woody perennial sunflower grows throughout western North America. It is typical of dry sites and open meadows in montane and subalpine habitats and rarely exceeds 40 cm. On Mount St. Helens, it is common on tephra, throughout the blown-down zone, in refugia and in the pyroclastic zone. Leaves are woolly and grey, linear on upper stems, pinnately lobed near the base. Flower heads of yellow rays and disks, 5 cm wide, a single head on each stalk. Achene is large relative to scaly pappus, so wind dispersal is relatively limited.



Cascade aster

Eucephasis (Aster) ledophyllus • Asteraceae

This perennial herb regrows each year from its base and is common in meadows and open forests in the montane and subalpine habitats of the Oregon and Washington Cascades. On Mount St. Helens, it persisted in blown-down sites and survived tephra burial. It is scattered in blasted meadows, pumice and pyroclastic deposits, but may have been reduced by the large elk population. Plants grow to 50 cm tall. Leaves are lance-shaped and extend densely up the flowering stalk; lack petiole, 5 cm long, up to 2 cm wide with tiny serrations; green on upper surface, gray cotton-like hairs on lower surface. Several heads per branch, with yellow disk flowers; ray flowers purple to lavender, 13-21 per head; bracts are pointed, overlapping, 8-10 mm long. Fruits are hairy achenes with pappus of white bristles. Dispersal is by the wind-aided parachute method.



Natural History—Forbs

White-flowered hawkweed

Hieracium albiflorum • Asteraceae

This moderately long-lived herbaceous perennial from a rosette occurs throughout open habitats throughout western North America. Scattered in open, generally dry and barren sites, it is a widespread native pioneer species. On Mount St. Helens, it occurs on any open, disturbed habitat, and is in dry pumice, pyroclastic and lahar deposits. Basal leaves are 10 cm long, lance-shaped, with rigid hairs that are often black-splotched and arise from a delicate taproot. Leaves decrease in size up the stem; sap is milky white. Flower stalks typically 50 cm tall, terminating in several small white-flowered heads composed of 15-25 ray-like disc flowers. Slender hawkweed (*H. gracile*), a small yellow-flowered perennial, is common in more established meadows. The achenes are topped with stiff tawny bristles that facilitate parachute dispersal.



Hairy cat's ear

Hypochaeris radicata • Asteraceae

This coarse perennial tap-rooted weed came to us from Europe. Now it is common in disturbed habitats throughout North America, often in lawns. This facultative upland indicator is widespread on Mount St. Helens, pioneering many habitats. It is found in all habitats except on all primary surfaces. The plant develops a rosette and produces multiple leafless stems that bear floral heads. Leaves basal, oblong to lance-shaped with hairy, wavy or toothed leaf margins; may reach 30 cm; up to 5 cm wide, with a milky sap; hairs relatively sparse, but stiff. Heads yellow, composed only of ray flowers. Achenes 5 mm long, topped with plummy bristles that promote parachute-type dispersal.



Little leaf silverback

Luzula hypoleuca • Asteraceae

This very white-wooly stemmed perennial herb occurs from British Columbia to northern California, in the Olympics and Cascades. It thrives in open, rocky sites at moderate to high elevations. On Mount St. Helens, it occurs in tephra impacted forests on the south side, dry meadows, dry refugia, pumice and lahars. Plants produce several stems up to 40 cm tall. Leaves are arranged alternately, elliptical, lack petioles; 5 cm long and 3 cm wide; green on top and characteristically silver-wooly on the bottom. Several heads aggregate into flat clusters. Heads comprised solely of dull yellow disk flowers; bracts white-wooly. Achenes topped with pappus of fine hairs, indicating that wind wafts these parachute-type seeds.



Arctic sweet coltsfoot

Petasites frigidus var. *palmaris* • Asteraceae

This very white-wooly stemmed perennial herb occurs from British Columbia to northern California, in the Olympics and Cascades. It thrives in open, rocky sites at moderate to high elevations. On Mount St. Helens, it occurs in tephra impacted forests on the south side, dry meadows, dry refugia, pumice and lahars. Plants produce several stems up to 40 cm tall. Leaves are arranged alternately, elliptical, lack petioles; 5 cm long and 3 cm wide; green on top and characteristically silver-wooly on the bottom. Several heads aggregate into flat clusters. Heads comprised solely of dull yellow disk flowers; bracts white-wooly. Achenes topped with pappus of fine hairs, indicating that wind wafts these parachute-type seeds.



Natural History—Forbs

Ragworts

Senecio species • Asteraceae

All of these species are weeds distributed throughout the temperate world, primarily in lowlands. Tansy ragwort (*S. jacobaea*, shown) is a biennial with a facultative upland ranking. Woodland ragwort (*S. sylvaticus*) and common groundsel (*S. vulgaris*) are annuals. Common groundsel has a facultative upland ranking. All of these species can occur along roads and in clear-cuts. The genus is readily recognized by the heads enclosed by a single series of bracts that are black or brown tipped, with bracts at the base of the head. Heads composed of rays and disk flowers; achenes topped by many white hairs, so seed dispersal is by parachute in each case. Tansy ragwort is common in the lowlands along roads and in clear cuts; it is scattered on the pyroclastic zone plain. Leaves are large at base and pinnatifid, and toxic to livestock; flowers are densely clustered. Woodland ragwort is a delicate annual with irregularly toothed leaves; rays are inconspicuous. It occurs on all primary surfaces, always in the uplands. Common groundsel lacks rays, but has large bracts, rather than inconspicuous bracts at the base of each flower head. It occurs sporadically on the Muddy River lahar and the pyroclastic zone.



Tall bluebells

Mertensia paniculata • Boraginaceae

This rhizomatous herbaceous perennial occurs in the Pacific Northwest and in the Great Lakes region. It is common along streams and in montane meadows. On Mount St. Helens, it is confined to blown-down areas, open meadows and some refugia. Plants display many stems up to 1 m tall. Leaves have prominent venation; basal leaves cordate; stem leaves ovate, 5-10 cm long; 2-5 cm broad with pointed tips. The floral inflorescence is open; the blue corolla forms a tube with 5 lobes. Fruit is 4 nutlets formed at base of flower. Nutlets drop to the ground and disperse by tumbling.



Silverleaf phacelia

Phacelia hastata • Boraginaceae

This small perennial herb is distributed throughout the western U.S., British Columbia and Alberta, typically in rocky and dry sites from the montane to the alpine. On Mount St. Helens, it is widespread, but never abundant. It occurs drier parts of the blown-down zone, in refugia, on pumice and pyroclastic deposits and, sporadically, on lahars. Plants arise from a taproot that supports several erect stems up to 40 cm tall, covered in fine-textured silver hairs. Leaves are alternate on ascending branches; they are lance-shaped, sometimes with basal lobes, covered in silver hairs that do not mask the prominent veins. Flowers generally white in dense inflorescences; small (7 mm) and bell-shaped with exerted stamens; arrayed like a scorpion tail (scorpioid). Fruits are small capsules with several seeds; dehisce to release seeds. Dispersal is by tumbling.



Hairy rockcress

Arabis hirsuta • Brassicaceae

Natural History—Forbs

This short-lived perennial from a taproot is ubiquitous in North America except for the Deep South. It is common in disturbed habitats from lowlands up to montane elevations. It is a facultative upland indicator confined to sandy, gravelly slopes affected by coarse tephra and on lahars on the south side of the mountain. Plant reaches 70 cm in height. Leaves alternate, up to 8 cm long; lower leaves hairy, upper ones lack hairs; lance-shaped, about 10 cm long. Flowers white to cream colored; under 1 cm long, formed in terminal clusters. Siliques lack hairs; 4-8 cm long; dehiscent, seeds tumble away.



Common harebell

Campanula rotundifolia • Campanulaceae

This rhizomatous perennial herb is common throughout North America (except the southeast) and occurs throughout the boreal regions. It is common in grassy meadows up to the alpine. It is a facultative upland species. On Mount St. Helens, it occurs in open habitats, refugia, scattered in the blown-down zone and occasionally on lahars. The leafy stem can be 60 cm tall, and smooth. Basal leaves are often cordate, up to 2 cm long. Stem leaves alternate upward, are up to 5 cm long and linear. All above-ground parts have a milky sap. Flowers are purple to blue and form a lovely, loose group, each flower on a long, nodding stalk; petals form a bell-shaped flower with 5 lobes about 2 cm long. Fruits are small 3-celled capsules that dehisce to disperse many tiny seeds that may tumble on the ground.



Spreading stonecrop

Sedum divergens • Crassulaceae

This succulent deciduous, mat-forming rhizomatous herb occurs throughout the western states and western Canada up to Alaska. It typically occupies rocky sites in the higher elevations. On Mount St. Helens, it occurs in rocky blown-down habitats and sporadically on the Pumice Plain, usually in gravelly, dry soil. Plants can reach 15 cm tall, and have many flowering stems, each capable of rooting. Leaves are fleshy, closely alternate, about 8 mm long and oval; they start out green, but soon become copper to bronze in color, and are covered in wax, further testimony to its drought adaptations. It produces masses of brilliant yellow flowers, drying out to pink, all parts in 5s; 10-15 are crowded together on top of most stems. Fruits are erect follicles; fruits and seeds are dispersed by tumbling along the surface.



Natural History—Forbs

Pink wintergreen

Pyrola asarifolia • Ericaceae

This low evergreen rhizomatous perennial occurs in moist forests throughout Canada, the Pacific Northwest, across the northern tier of the U.S., California and the northern Rockies. This is a facultative upland species. On Mount St. Helens, it is common in the tephra zone and some refugia, but requires shade and litter to develop. Leaves develop from rhizomes; blades nearly round and hairless, leathery, finely dentate; about 6 cm long with a petiole of equal length; shiny dark green on upper surface, lacking mottles. Flowers number 15 to 20 in a raceme; each flower hangs from a short stalk; drooping, pink to rose in color, each petal about 6 mm long, forming an open cup. Fruits are a capsule whose seeds disperse along the ground. Other wintergreens found in forests include White-veined wintergreen (*P. picta*) that can be identified by the prominent mottling on the leaves.



Broadleaf lupine

Lupinus latifolius • Fabaceae

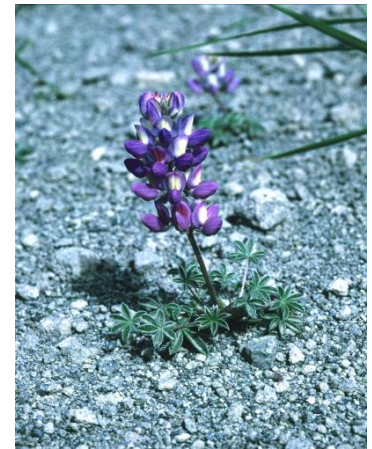
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Prairie lupine

Lupinus lepidus • Fabaceae

This small perennial is common in the Pacific Northwest, extending to Alaska, primarily in subalpine meadows. The most celebrated plant on Mount St. Helens is abundant in all primary habitats and on open tephra deposits. The short-lived nitrogen-fixing species can form dense masses of low, tap-rooted evergreen plants that grow up to about 30 cm. It occurs in all open meadows, rocky talus and sandy areas except refugia and wetlands, lacking any wetland indicator value. It improves soil through carbon and nitrogen additions and is subject to intense herbivory. Plants are evergreen and up to 10 cm tall. Leaves are divided into 5-9 leaflets about 3 cm in length and covered in fine hairs. Flowers form a dense, erect flowering stalk that extends above leaves; they are typical pea flower, petals shades of blue to purple, very rarely white, often with contrasting white to attract pollinators. Fruits a hairy pod that dries out and then dehisces explosively to toss the lentil-sized seeds up to 1 m from plant; also dispersed by ants.



Natural History—Forbs

Fireweed

Chamerion (Epilobium) angustifolium • Onagraceae

This rhizomatous perennial is cosmopolitan in the northern hemisphere, always in disturbed habitats from sea level to subalpine habitats. It is common in our region and often dominates young clear cuts and burned areas. This facultative upland species is common in the blown-down zone of Mount St. Helens where it often survived and was first common species to recover. It pioneered most dry open primary habitats. Its stem is leafy, erect and unbranched, up to 1 m tall; often in dense masses in relict sites; often stunted and copper-colored on barren sites; dies back annually. Leaves lack hairs; alternate, lacking stalks, lanceolate; up to 15 cm long with distinct venation on underside. Flowers found in dense terminal masses (hence fireweed), about 3 cm broad, parts in 4s; petals purple to rose in color. Fruits are narrow capsules up to 8 cm long, formed of 4 chambers; capsules split open to release seeds that have fluffy hairs; seeds released gradually; seeds are wind dispersed by parachute.



Broad-leaved willowherb

Chamerion (Epilobium) latifolium • Onagraceae

This short-lived, deciduous perennial is widespread in the mountain United States and across boreal Canada in disturbed habitats at higher elevations. This facultative wetland species is found in wetter sites in the blown-down zone, across the Pumice Plains and on lahars. Plant grows to 30 cm, often close to the ground; stems leafy. Leaves change from opposite to alternate up the stem; lance-shaped up to 6 cm long; margins finely toothed; veins not prominent. Flowers pink to purple, up to 5 cm broad, formed into a loose cluster. Pods 4 to 8 cm long, purple; seeds hairy. Dispersal is by wind.



Alpine willowherb

Epilobium anagallidifolium • Onagraceae

This low, short-lived perennial spreads by rhizomes. It occurs throughout western North America and across Canada in boreal habitats, where it frequents wetter habitats, but on Mount St. Helens is occurs on drier, barren habitats. This is a facultative upland indicator. On Mount St. Helens, it is widely scattered on open sites, including pumice, pyroclastic and lahar deposits. It can occur on dry, exposed tephra impacted sites. Leaves 1 cm long, oblong, with blunt tips, margins generally entire, lacking hairs. Flowers 5 mm, often nodding, parts in 4s, petals rose to pink, notched; pods linear, about 3 cm long, opening to release many tiny (1 mm) seeds with buoyant hairs. Another upland willowherb is the **tall annual willowherb** (*E. brachycarpum*). Dispersal is wind-aided by parachute.



Natural History—Forbs

Fringed willowherb

Epilobium ciliatum subsp. *ciliatum* • Onagraceae

This delicate herbaceous perennial occurs throughout North America in open, usually wet habitats, but also in disturbed habitats, from the lowlands to mid-elevations. It is a facultative wetland species. On Mount St. Helens, it occurs primarily on the fringes of newly formed open wetlands and refugia. The plant grows to 20 cm from a limited rhizome. Leaves are opposite (sometimes alternate), usually lance-shaped or elliptic; finely toothed margins and a pointed tip. Flowers are about 5 mm long, notched; white to rosy pink; numerous atop the erect stem. Seeds contained in dehiscent capsule; topped by white tufts of hair. Parachute dispersal is aided by wind.



Shasta buckwheat

Eriogonum pyrolifolium • Polygonaceae

This persistent evergreen herb is widely distributed at mid- to high elevations in the Pacific Northwest. It occupies volcanic terrain and other open, gravelly sites. On Mount St. Helens, it thrives in dry, unstable pumice, pyroclastic and lahar deposits. Perennial leaves emerge from a taproot that also sprouts leafless stems that help spread and anchor the plant; can reach 15 cm in height. Leaves form a basal rosette that hugs the ground; blades are 2-4 cm long, oval, pale green and hairless above, hairy and grey on the underside. Flowers grow in tight clusters of white or pink flowers with parts in 5s; cup-shaped and 4-5 mm long. Fruits are small, angled achenes that tumble along the open surface.



Davis' knotweed

Polygonum davisiae (*newberryi*) • Polygonaceae

This perennial forb growing annually from a woody base is widespread in dry, open slopes at higher elevations in the Pacific Northwest. On Mount St. Helens, it survived scours and tephra fall on the south side and colonized sandy lahars; only occasionally was it observed on pumice and pyroclastic slopes. Plants reach 40 cm in height. Leaves are deciduous; broadly oval to triangular and pointed; 5 cm long; generally yellow green, slightly waxy and hairless, turning deep red as they senesce in late summer; rootstocks can live for many decades. Flowers are 3 mm long, white to light green; several hidden together in leaf axils. Fruits are shiny 3-angled achenes that can tumble along the surface. Often, the shoot dislodges from its rootstalk and is tumbled along, slowing dispersing the fruit.



Leafy dwarf knotweed

Polygonum minimum • Polygonaceae

This tiny annual occurs in the Cascades-Sierra mountain complex and the northern Rockies in barren habitats of the high meadows. A facultative upland species, on Mount St. Helens, it occupies all habitats except wetlands, but only in open or disturbed sites. It does best in pumice and pyroclastic surfaces. Plants prostrate to slightly ascending; up to 20 cm; reddish leafy stems. Leaves alternate, oval, 1 cm long, lack stalk; concentrated near end of branch. Flowers are few; axillary; white to pink. Seeds green, shiny, angled achenes; dispersed by wind and by elk.



Natural History—Forbs

Common sheep sorrel

Rumex acetosella • Polygonaceae

This short-lived rhizomatous perennial is introduced from Europe. It is ubiquitous in disturbed habitats across North America and throughout the world. It is a facultative upland species. On Mount St. Helens, it occurs in the blown-down areas, all pumice, pyroclastic and lahar deposits and on the edges of wetlands; it is more likely to be found where elk are common. Plants are either male or female; have several hairless stems about 20 cm tall. Leaves generally shaped like an arrow with basal lobes; from 2 to 5 cm long; membranous sheath at base of each stem. Flowers small, reddish, parts in 3s; combine to form unmistakable floral stalk. Fruits are smooth; form 3-angled yellow to brown seeds, with small scales. Dispersed by wind, with assist from the scales; long-distance dispersal from elk who avidly consume the flower stalks.



Mt. Hood pussypaws

Cistanthe umbellata • Portulacaceae

The attractive, prostrate perennial occurs throughout western North America, but is characteristic of volcanic habitats in the Pacific Northwest and other dry habitats. It is typical of pine forests and reaches subalpine habitats. On Mount St. Helens, it occurs on dry, infertile and sandy soils; it remains common in the tree removal zone, especially on pumice and pyroclastic surfaces. It occurs on lahars and is a prominent member of meadows on coarse tephra. It is a glabrous, almost succulent, low perennial (sometimes an annual) that dies back each year to a thick taproot. Leaves form basal rosette, up to 3 cm long, spade-shaped and hug the ground; they emerge from the top of the root, forming a low-lying rosette. Flowers congregated into umbels, densely spherical about 1.5 cm in diameter; petals are white to pink, small, with red or yellow anthers. Fruits are tiny flattened capsules with a few tiny, shiny seeds; entire capsule can glide or tumble to disperse; elk consume plants and disperse the seeds.



Lance-leaf spring beauty

Claytonia (Montia) lanceolata • Portulacaceae

This delicate, somewhat succulent perennial forb is widespread at most elevations throughout western North America, usually where water is seasonally available. It is a facultative wetland species. On Mount St. Helens, it occurred in tephra impacted forests and refugia. This glabrous plant develops from a stout root to produce a stem reaching 20 cm in height. Basal leaves oblanceolate 10 cm long; 2 stem leaves are opposite, ovate and seem to clasp the stem. Inflorescence is an open one-sided raceme. Petals are white with distinct pink veins, about 1 cm long and variable in number (7 to 9). Fruits are small capsules that open at the base to dehisce the seeds; dispersed by tumbling, but gravity is more important than wind.



Natural History—Forbs

Siberian spring beauty

Claytonia (Montia) sibirica • Portulacaceae

This delicate, somewhat succulent perennial forb is widespread at most elevations throughout western North America, usually where water is seasonally available. It is a facultative wetland species. On Mount St. Helens, it occurred in tephra impacted forests and refugia. This glabrous plant develops from a stout root to produce a stem reaching 20 cm in height. Basal leaves oblanceolate 10 cm long; 2 stem leaves are opposite, ovate and seem to clasp the stem. Inflorescence is an open one-sided raceme. Petals are white with distinct pink veins, about 1 cm long and variable in number (7 to 9). Fruits are small capsules that open at the base to dehisce the seeds; dispersed by tumbling, but gravity is more important than wind.



Western star flower

Trientalis latifolia • Primulaceae

This deciduous, rhizomatous herb grows in the mountains from the Yukon Territory south to California. It is common in coniferous forests and some open grasslands. It is a facultative species that on Mount St. Helens, it is confined to protected sites in the blown-down zone, relict sites and tephra impacted forests. The plants can form dense colonies, forming a layer 20 cm above the ground. Leaves 4-8, usually 6, in a whorl; they are oval to obovate, 4-8 cm long, 2-4 cm wide. Flowers small from axils and slender stalks; corolla is pink to rose, petals almost separate; stamens longer than petals. Fruits are small dehiscent capsules; released seeds tumble from plant.



Western columbine

Aquilegia formosa • Ranunculaceae

This extremely attractive perennial herb is widespread throughout western North America, from Alaska to California and the Rocky Mountains. It occurs in wet seeps on rocky slopes, meadows, protected sites and in open, disturbed habitats. Nonetheless, it is a facultative upland species. On Mount St. Helens, it occurs in refugia and wet seeps and in the tephra fall zone. The plant can reach 1 m in height. Leaves are twice-divided, basal, generally glabrous, and somewhat waxy on under surface. Flowers are red and yellow with long red spurs; formed in small groups of drooping flowers that attract humming birds. Fruits are hairy follicles that dehisce to drop small seeds that disperse by tumbling under the force of wind, water or gravity.



Goat's beard

Aruncus dioicus • Rosaceae

This large perennial herb, emerging annually from a rhizome, is common from Alaska to California along the Pacific coast and throughout the eastern third of North America. Typically, it is found in moist woods, along moist road banks at low to moderate elevations. It is a facultative upland species. On Mount St. Helens, it occurs in all habitats, but best developed in disturbed sites and refugia; seedlings were found on pumice near refugia. Plants arise in stems up to 1.5 m tall. Leaves are pinnately compound; leaflets are oblong to lance-shaped, pointed, serrated and up to 12 cm long. Flowers clustered in prominent terminal inflorescence; 5 sepals and petals, 2 mm broad; petals white; male and female flowers on different plants. Fruits formed of three small follicles that dehisce to release small seeds that disperse by tumbling under force of gravity or water.



Natural History—Forbs

Wild strawberry

Fragaria virginiana • Rosaceae

This stoloniferous, trailing perennial herb is ubiquitous in North America, primarily in open woods and drier meadows at mid-elevations. It is a facultative upland species. On Mount St. Helens, it occurs in open habitats, in tephra meadows, along lahar margins and in refugia. The plant is hairy throughout. Leaves are trifoliate with long (15 cm) stalks; leaflets generally ovoid, thick and about 5 cm long; hairless and somewhat waxy, blue-green on the upper side, white, smooth hairs on lower surface. Several flowers form an open inflorescence; sepals and petals in 5s, petals white about 1 cm wide; stamens and pistils numerous. Fruit is a 1 cm broad red “strawberry,” with seeds (achenes) embedded in a fleshy receptacle. Dispersal is by birds, which avidly consume the fruit and eventually deposit the tiny seeds.



Russet-hair saxifrage

Saxifraga ferruginea • Saxifragaceae

This short-lived rhizomatous perennial occurs in the higher mountains from Alaska to California, and into the Rocky Mountains. It is a facultative species. On Mount St. Helens, it occurs throughout the tree removal zone and in open tephra-impacted meadows. It is often confined to rills, moist areas and erosion features. Plants form small rosettes of narrow spoon-shaped leaves about 6 cm long and 1 cm wide; margins wavy and hairy; often turning russet after flowering. Flower stalks rusty colored; diffuse, bearing small, white flowers only 5 mm long; petals of two sizes. Fruits are tiny (5 mm) capsules that disperse tiny seeds that may be dispersed by tumbling along the surface, and by water movements.



Giant red Indian paintbrush

Castilleja miniata • Scrophulariaceae

This semi-parasitic perennial herb is common and widespread throughout western North America, primarily in montane meadows, but also in coastal sites. It is a facultative species that, on Mount St. Helens, occurs in all open habitats except wetlands up to mid-elevations. It is common in maturing pumice and pyroclastic habitats. Adults reach 60 cm in height; stems are in small clusters. Leaves are simple and entire with pointed tips. The inflorescence includes leaves and bracts that form the attractive “flower.” Flowers are inconspicuous and green, surrounded by the red calyx. Fruits formed of capsules, with many tiny seeds that drop out when fruit ruptures. Dispersal is by tumbling along ground and possibly by rodents.



Purple monkeyflower

Mimulus lewisii • Scrophulariaceae

This rhizomatous perennial herb occurs from Alaska to northern California and east to the northern Rockies. In Washington, it occurs in all mountains from mid- to high elevations, always in wet meadows. It is a facultative wetland species. On Mount St. Helens, it occurs in refuges, but primarily it occurs along small streams and near springs where there is abundant sunlight. Plants can be 1 m tall; stems are very hairy. Leaves are opposite, with prominent veins, dentate or often entire; they are lanceolate with sharp tip, 4-6 cm long, 2-3 cm wide. Flowers arise singly from leaf axils; bilaterally symmetric; corolla prominent, purple to pink with yellow dots; 4-5 cm long. Fruit is a dehiscent capsule that drops seeds that are dispersed by water.



Natural History—Forbs

Sickletop lousewort

Pedicularis racemosa • Scrophulariaceae

This rhizomatous perennial herb occurs from Alaska to northern California and east to the northern Rockies. In Washington, it occurs in all mountains from mid- to high elevations, always in wet meadows. It is a facultative wetland species. On Mount St. Helens, it occurs in refuges, but primarily it occurs along small streams and near springs where there is abundant sunlight. Plants can be 1 m tall; stems are very hairy. Leaves are opposite, with prominent veins, dentate or often entire; they are lanceolate with sharp tip, 4-6 cm long, 2-3 cm wide. Flowers arise singly from leaf axils; bilaterally symmetric; corolla prominent, purple to pink with yellow dots; 4-5 cm long. Fruit is a dehiscent capsule that drops seeds that are dispersed by water.



Western valerian

Valeriana sitchensis • Valerianaceae

This deciduous, weakly rhizomatous herbaceous perennial is common in the Cascades and Sierra from Alaska to California and east into the Rockies. It is scattered in moist higher elevation meadows. It is a facultative species that on Mount St. Helens occurs in open wet meadows and in moist relict sites. Each single unbranched, glabrous stem can be 1 m tall, arising from a fibrous-rooted rhizome. The opposite leaves arrayed in up to 5 pairs of pinnatifid leaves up to 10 cm long and 4 cm wide. The inflorescence of white flowers is compact, 3 to 8 cm wide; the united corolla segments are 5-7 mm long with 3 exerted stamens. Fruit is an achene, 5 mm long, lacking hairs; pappus of small hairs. Dispersal is by a weak parachute system and by water.



Evergreen violet

Viola sempervirens • Violaceae

This small perennial, growing by stolons and by rhizomes, is common along the west Cascades slopes from British Columbia to northern California. Generally occurs in moist montane coniferous forests. On Mount St. Helens, it is found in the tephra fall zone and moist forests south of the cone, scattered in the blown-down zone and in refugia. Stems are slightly hairy; 5 cm long. Leaves roughly cordate, 2 cm broad, thick and leathery; may have purple markings. Flowers are bilaterally symmetric, 1 cm long; petals yellow, the lower ones with purple lines. Fruit is a capsule mottled with purple, producing brown seeds; dehiscence is explosive, ejecting seeds a short distance, after which they may be blown further.

