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Common Native Forbs of the Northern Great Basin Important for Greater Sage-Grouse

Tara Luna • Mark R. Mousseaux • R. Kasten Dumroese

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Abstract: This field guide is a tool for the identification of 119 common forbs found in the sagebrush rangelands and grasslands of the northern Great Basin. These forbs are important because they are either browsed directly by Greater Sage-grouse or support invertebrates that are also consumed by the birds. Species are arranged alphabetically by genus and species within families. Each species has a botanical description and one or more color photographs to assist the user. Most descriptions mention the importance of the plant and how it is used by Greater Sage-grouse. A glossary and indices with common and scientific names are provided to facilitate use of the guide. This guide is not intended to be either an inclusive list of species found in the northern Great Basin or a list of species used by Greater Sage-grouse; some other important genera are presented in an appendix.

Keywords: diet, forbs, Great Basin, Greater Sage-grouse, identification guide

Cover photos: Upper left: *Balsamorhiza sagittata*, R. Kasten Dumroese; upper right: *Calochortus macrocarpus*, Gerald D. Carr; lower left: *Castilleja chromosa*, Mark Egger; lower right: Greater Sage-grouse, Steve Fairbairn, U.S. Fish & Wildlife Service. All photos in the field guide used with permission.

Acknowledgements

In 2016, Hannah Goodmuth, sponsored by Mark Mousseaux, compiled photos and line drawings and translated 49 technical species descriptions into layman's terms for a Bureau of Land Management, U.S. Department of the Interior, training document titled *Common Select Forbs Important for Greater Sage-Grouse*. We thank her for that work that served as inspiration for this effort.

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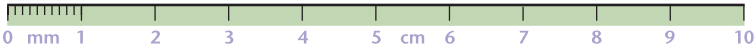


Introduction

Herbaceous plants (forbs) are important in the diet of hens and chicks of Greater Sage-grouse (*Centrocercus urophasianus*). Various lists have been organized, including those in the Oregon Greater Sage-grouse Resource Management Plan Amendment (DOI BLM 2015), the Sage Grouse Habitat Assessment Framework (Stiver et al. 2015), and in recent journal articles that summarize the literature about Greater Sage-grouse diets (Dumroese et. al. 2015, 2016). Another concept developed by Rosentreter (2016) places native plant genera into preference or palatability categories based on knowledge of plant chemical composition, plant family characteristics, and the perceived ability of Greater Sage-grouse to eat them. This guide includes 119 descriptions of some of these commonly seen forbs in sage-steppe and grasslands of the northern Great Basin within the range of the Greater Sage-grouse. While not inclusive of all of the common forbs of the region, our guide focuses on plants defined by the Rosentreter concept that are important in Greater Sage-grouse diet. Other genera also have benefits to Greater Sage-grouse; some of these are detailed in the appendix along with all of the species treated in this guide.

Greater Sage-grouse may consume the tender leaves of certain forbs, or consume the flower petals and nutrient rich stigmas and stamens of others, or both. Some species may only be eaten early in the spring, or later during the brood rearing season, but not consumed later in the summer and fall. Some species (the milky sap asters, tender legumes and tender herbaceous species) seem to have higher utility to the birds. Other groups (daisies and fleabanes, lilies, buckwheats, and others) seem to be only moderately important. Plant species (even if in a high value genus) that are overly resinous, gummy, hairy, or oily are not generally used, or perhaps only incidentally, because of the inability of the birds to consume them based on their beak morphology. Species such as toxic legumes (lupines); coarse, prickly, or hairy asters; oily mustards; or hairy borages are probably avoided because of low palatability. Forbs within preferred genera, e.g. *Lomatium* (desert parsley), *Agoseris* (mountain dandelion), *Erigeron* (daisies), within the range of Greater Sage-grouse may benefit the birds directly as food for chicks and hens and indirectly by hosting insects and other invertebrates consumed by the birds and by providing cover. See the References and Resources sections for publications describing forbs with high value to pollinators, and by extension, to other invertebrates.

Photos and descriptions of common native flowering plants are arranged by family and subsequently grouped alphabetically by genus and species. We intend to provide descriptive and diagnostic narratives for each species using standard botanical terms defined in the glossary.

Scientific names follow the most current nomenclature provided by the Oregon Flora Project (2018), the Flora of North America Editorial Committee (1993+), and/or the U.S. Department of Agriculture, Natural Resources Conservation Service PLANTS (Plant List of Accepted Nomenclature, Taxonomy, and Symbols) database (PLANTS Database 2018). Common names reflect those used in the northern Great Basin or found in the PLANTS database.

We intend this guide to assist people conducting Greater Sage-grouse habitat assessments and rangeland vegetation monitoring, as well as ranchers, farmers, native seed collectors, conservationists, tourists, and students.

Plant Families

Amaranthaceae

Micromonolepis pusilla
(Torr. ex S. Watson) Ulbr.

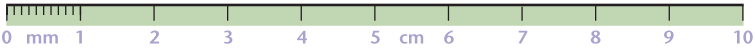
Dwarf monolepis is a minute, dichotomously branching erect annual that is 2–18 cm tall. Leaves and stems are often red-toned when young and become smooth and shiny with age. Leaves are alternate, narrow to broadly oval with rounded tips. There are several tiny flowers, usually 1–5 per axil with 1–3 petals each. Flattened capsules contain shiny black seeds that strongly adhere to the dry fruit wall. The tender leaves are eaten in the spring.

Gerald D. Carr

Monolepis nuttalliana
(Schult.) Greene

Patata is a succulent annual with reddish sprawling stems that are 10–30 cm long. Upper stem leaves are alternate and smooth and become reduced to bracts in the inflorescence. Lower stem leaves are shaped like a spearhead. Flowers are small, rosy-colored, and non-descript; borne in clusters in the leaf axils. Tiny fruits are 1–1.5 mm long with fruit walls that strongly adhere to the shiny black seeds. The tender leaves are eaten in the spring.

Gerald D. Carr



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Apiaceae

Lomatium cous

(S. Watson) J.M. Coult. & Rose

Cous biscuitroot is an early spring perennial with prostrate to slightly ascending leaves arising from a deep-seated, fleshy root. Leaves are blue-green, fern-like, and pinnately divided three times into small, crowded, elliptic segments. The inflorescence is a compound umbel with branches varying in length. The cluster of yellow flowers at the end of each umbel branch is subtended by oval-shaped bractlets. Stems of this plant often have a rosy cast. Seeds are ribbed, elliptical, without wings, and 5–9 mm long. The leaves of this species are eaten in early spring, and the flowers likely support invertebrates consumed by the birds.

Tara Luna

Gerald D. Carr

Lomatium macrocarpum

(Nutt. ex Torr. & A. Gray)

Bigseed biscuitroot is an early flowering perennial arising from a thick taproot. Flowering stalks are erect or decumbent, covered with appressed white hairs, and often purplish. Leaves are twice-pinnately lobed with leaflets that are pinnately lobed into lance to linear segments, giving the leaf a fern-like appearance. Leaves are silvery green to greyish and densely short-hairy. Flowers are borne in round to hemispheric umbels. Only one side of each flower cluster is subtended by reflexed bractlets. Flower color ranges from white to purplish to yellow. Seeds are lance to elliptical, ribbed, narrowly winged and 10–15 mm long. The leaves of this species are eaten in early spring, and the flowers likely support invertebrates consumed by the birds.

Apiaceae

Lomatium triternatum
(Pursh) J.M. Coult. & Rose

Nineleaf biscuitroot is an erect perennial arising from a slender taproot. Foliage is green to blue-green, sparsely covered with tiny appressed hairs or nearly hairless. Leaves and stems exude a pleasant celery-like scent. Basal leaves are pinnately divided or lobed 3 times into 9 linear leaf segments. Leaf segments are well separated and 1–12 cm long. Flower stems are of unequal length and topped with bright yellow flowers in a flat umbel. Mature seeds are elliptical, hairless, and with narrow, papery wings along the margins of the fruit. The leaves of this species are eaten in early spring, and the flowers likely support invertebrates consumed by the birds.

Gerald D. Carr

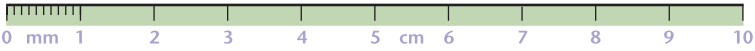
Asteraceae

Agoseris glauca
(Pursh) Raf.

Mountain dandelion is a taprooted perennial with milky sap. Erect or ascending stems range from 8–50 cm tall. Leaves form a rosette and are smooth or hairy. Leaves are lance-shaped and either entire or have a few teeth or lobes. Flowering stems have no leaves and bear a single flower head. Ray flowers are bright yellow, strap-like, and when fully open, lie flat. The pappus is 8–18 mm long surmounting a short-beaked achene that is 4–9 mm long. *Agoseris* is one of the more important genera; leaves of this species are eaten in the late spring and early summer during brood rearing.

Gerald D. Carr

Gerald D. Carr



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Asteraceae

Agoseris heterophylla
(Nutt) Greene

Annual agoseris is an upright, slender annual with milky sap. Leaves may have teeth, lobes, or can be smooth along the margins. The solitary flower head is made up of 2–3 sets of involucre bracts with 5 or more bright yellow ray flowers. Outer bracts are often purple-spotted, hairy, and with dark hairs. The flowers frequently close up by the afternoon. The achene has a long beak that is 7–10 mm long attached to a bristly pappus. *Agoseris* is one of the more important genera; leaves of this species are eaten in the late spring and early summer during brood rearing.

Gerald D. Carr

Agoseris parviflora
(Nutt.) D. Dietr.

Sagebrush agoseris is a taprooted perennial with milky sap that grows 5–25 cm tall. The narrow leaves are 3–15 cm long and pinnately divided into 5–8 pairs of linear lobes. The leafless stem (scape) is smooth to hairy and bears a single flowering head. The base of the inflorescence is hairy. Each ligule is 8–15 cm long. Flowers are borne in a hairless or hairy involucre with lance-shaped bracts borne in 2 series. Each bract typically has a purple mid-vein. Achenes are 5–7 mm long, ribbed with a narrow beak that is 4–9 mm long. The bristly pappus is 1–2 cm long. A*goseris* is one of the more important genera; leaves of this species are eaten in the late spring and early summer during brood rearing.

Asteraceae

Balsamorhiza hookeri

Nutt.

Hooker's balsamroot grows 10–30 cm tall from a woody taproot. Basal leaves are 8–25 cm long and covered with short, soft hairs. Leaves are pinnately divided into numerous, overlapping segments that are lobed, smooth, or with teeth along the margins. Flowering stems are leafless, often purplish, and bear a solitary yellow flower head that resembles a sunflower. The involucre is hemispheric, with lance-shaped, unequal bracts that have short hairs along the margins. Ray flowers are 2.5 cm long and the stems are often purplish. Achenes are 5–7 mm long and lack a pappus. While the leaves of *Balsamorhiza* are likely too coarse to be eaten, this species supports invertebrates likely consumed by the birds.

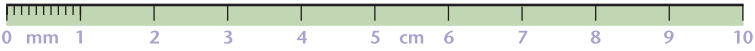
Gerald D. Carr

Balsamorhiza sagittata

(Pursh) Nutt.

Arrowleaf balsamroot is a common, large perennial with an erect cluster of basal leaves and upright stems reaching 20–80 cm tall. Leaves are entire, 10–30 cm long, and shaped like an arrowhead with long tips and rounded or pointed bases. Leaves and stems are velvety when young, but become rough and papery with age. The leafless flowering stems bear a solitary yellow flower head like that of a sunflower, subtended by conspicuous wooly bracts. Ray flowers are 2–5 cm long. Dark grey achenes are 7–9 mm long and lack a pappus. While the leaves of *Balsamorhiza* are likely too coarse to be eaten, this species supports invertebrates likely consumed by the birds.

Tara Luna



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Asteraceae

Chaenactis douglasii

(Hook.) Hook. & Arn.

Dustymaiden is a perennial or biennial with erect to ascending stems. Stems and leaves are short-hairy when young, but become less hairy with age. Basal leaves are oblong and twice pinnately dissected into small oblong lobes. Flowering heads are made up of disc flowers, borne in one to several open, flat-topped inflorescences. The involucre is bell-shaped with linear- to lance-shaped green bracts that are hairy and glandular. The corolla is white to pinkish, 5–7 mm long, with the throat longer than the tube. Achenes are 5–8 mm long with a pappus of 4–20 scales. Leaves and flowers are eaten.

Gerald D. Carr

Crepis acuminata

Nutt.

Tapertip hawksbeard is a taprooted perennial with milky sap arising from a swollen woody caudex. Stems are erect, 20–60 cm tall and usually branched near the middle of the stem. Basal leaves are alternate, sparsely hairy, 12–40 cm long, deeply pinnately lobed and have long tapering tips. Each leaf lobe is lance-shaped to narrowly triangular, greyish-green and sparsely hairy. Stem leaves are similar but are smaller. The inflorescence bears 30–80 heads borne in narrowly cylindrical involucres. Involucre bracts are lance-shaped and hairless or sometimes with short hairs. Each head contains 5–10 yellow ray flowers with ligules that are 5–9 mm long. Dry achenes are pale brown, 6–9 mm long and topped by white capillary bristles. *Crepis* is one of the more important genera; leaves of this species are eaten in the late spring and early summer during brood rearing.

Asteraceae

Crepis atribarba

A. Heller

Slender hawksbeard is a perennial with milky sap and branched, upright stems that are 15–60 cm tall. Younger plants have short wooly hairs, while older plants may become hairless. Leaf blades are deeply divided into slender, well-separated hook-like lobes. Basal leaves have a winged petiole and stem leaves clasp directly to the stem. Several flower heads occur per flowering stem. The involucre is turban-shaped, hairy, and often covered with segmented black hairs. There are 8–35 bright yellow ray flowers that are 7–12 mm long. Achenes are dark green and 3–10 mm long. *Crepis* is one of the more important genera; leaves and flowers of this species are eaten.

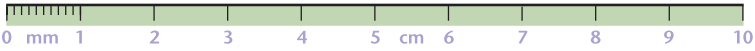
Gerald D. Carr

Crepis modocensis

Greene

Modoc hawksbeard is a taprooted perennial with milky sap that grows 10–35 cm tall. Leaves and stems are greyish and covered with tomentose hairs or are coarsely long-hairy. Stems are simple or branched and covered with yellowish glands, usually on the lower half of the stem. Leaves are lance- to oval-shaped, 3–10 cm long and pinnately lobed one-half to three-quarters of the way to the mid vein. Lobes are linear- to lance-shaped with forward pointed segments and square shaped teeth along the margins. Leaf petioles are covered with yellowish gland-tipped hairs. Each inflorescence has 1–9 heads. The involucre is turban-shaped, 9–16 mm long with linear, hairy bracts covered with black, fine bristles. Each head has 10–60 yellow ligulate flowers that are 7–10 mm long. Dry achenes are dark green to brown, 4–7 mm long, weakly ribbed, and slightly narrowed, but are not beaked. The pappus consists of numerous, dusty-white capillary bristles. *Crepis* is one of the more important genera; leaves and flowers of this species are eaten, as are insects the flowers attract.

Gerald D. Carr



Gerald D. Carr

Asteraceae

Crepis occidentalis

Nutt.

Western hawksbeard is a taprooted perennial with milky sap and leafy stems that are 8–30 cm tall. Stems and leaves are greyish and covered with dense hairs. Stems are covered with gland-tipped bristles on the upper half. Lobes are narrowly or widely lance-shaped, recurved, and with coarsely toothed segments. Leaf surfaces are covered with long greyish hairs. Stem leaves are similar, but are smaller. Each inflorescence has 2–25 heads per inflorescence borne in a loose, flat-topped cluster. The involucre is narrowly bell-shaped, 11–19 mm long, with linear, hairy bracts covered with gland-tipped black bristles. Each head has 10–40 yellow ligulate flowers that are 10–15 mm long. Dry achenes are brown, 3–7 mm long, ribbed, and beakless. The pappus is dusty-white and consists of numerous capillary bristles.

Gerald D. Carr

Dieteria canescens

(Pursh) Nutt.

Hoary aster, formerly *Machaeranthera canescens*, is a somewhat wiry perennial that grows 30–100 cm tall. Leaves and stems are coated in glands and fine hairs. The habit may be upright or spreading with much branching at the base. Leaves are minutely serrate, linear, and narrow in shape. Upper leaves may clasp directly to the stem or have very short petioles. Flower heads have 8–25 purple ray flowers that are 5–10 mm long, surrounding numerous yellow disc flowers. The involucre is made up of pointed or hook-like rows of bracts subtending the flower head. Achenes are 3–4 mm long and the pappus consists of slender and unequal capillary bristles. Subspecies may differ somewhat in appearance. The leaves of this species are too coarse and glandular to be eaten, but flowers support invertebrates likely eaten by the birds.

Asteraceae

Erigeron corymbosus
Nutt.

Foothill daisy is an upright perennial that grows up to 40 cm tall. Stems and leaves are covered with short, soft hairs and often have tiny, scattered glands. Stem and basal leaves are long and narrow with smooth margins and pointed tips. Stem leaves are similar, but are much smaller. Larger leaves often have three or more obvious parallel veins. Each flowering stem bears 1–15 heads. Numerous ray flowers are purplish-blue or occasionally pink and surround bright yellow disc flowers. Numerous involucre bracts are of equal length, in 2–3 series, short, hairy, and minutely glandular. Achenes are 2–3 mm long, sparsely hairy with a pappus of numerous capillary bristles with tiny barbs at the tips. Flowers are eaten.

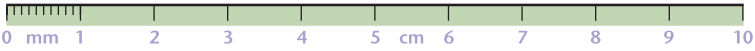

Gerald D. Carr

Gerald D. Carr

Erigeron filifolius
Nutt.

Threadleaf fleabane is a taprooted perennial with numerous slender and delicate stems that are 20–30 cm tall. Crowded stems give the plant a tufted appearance. Foliage is gray-green and finely hairy. Basal leaves are narrow, numerous, and 1–4 cm long. Stem leaves are fewer and become threadlike toward the tip. Flower heads can be solitary or borne in groups of up to 10 per stem. Ray flowers range from blue to pink to white and are 7–11 mm long, surrounding bright yellow disc flowers. The involucre consists of bracts of equal length in two series that are covered with spreading hairs and tiny glands. Tiny achenes are 1.5 mm long with a pappus of 20–30 capillary bristles.

Gerald D. Carr



Gerald D. Carr

Asteraceae

Erigeron linearis

(Hook.) Piper

Desert yellow daisy is a tufted, taprooted perennial with stems that are 3–60 cm tall. Leaves are very finely linear, narrow with smooth margins and are covered with pale greyish hairs. Basal leaves are 2.5–10 cm long. Stem leaves are fewer and smaller. Flower heads are solitary on each stem and held above leaves. Ray and disk flowers are bright yellow. The involucre is hemispheric with bracts in two or three series and is sparsely glandular and covered with short, stiff hairs. Achenes are 2 mm long and surmounted by 10–20 capillary pappus bristles. Flowers are eaten.

Gerald D. Carr

Erigeron pumilus

Nutt.

Shaggy daisy is a taprooted perennial from a simple or branched caudex. Stems are often borne in thickened clusters and are densely, long-hairy. Basal and stem leaves are linear to narrowly oblong with smooth margins, long-hairy and 15–40 mm long. Stem leaves are gradually reduced in size up the stem. Each stem has 1–15 flowering heads. There are 50–100 thin, white to pinkish or bluish ray flowers surrounding yellow disc flowers. The involucre consists of 2–4 series of bracts that are covered with tiny glands, long hairs, and a brownish mid-vein. Tiny achenes are 1–2 mm long with a pappus of 12–22 capillary bristles. The overall appearance of the plant is somewhat unkempt and white-hairy. Flowers are eaten.

Asteraceae

Eriophyllum lanatum

(Pursh) J. Forbes

Oregon sunshine is a taprooted perennial with erect stems arising from a branched and woody caudex. Stems and leaves are sparsely to densely covered with long-woolly hairs. Basal leaves are broadly oval with lobes near the tip. Stem leaves are lance- or spoon-shaped with smooth margins or pinnately divided into 3–7 linear lobes. Heads are solitary. There are 11–13 yellow ray flowers surrounding numerous disc flowers. Both ray and disc flowers are glandular. Achenes are 4-sided, 3–5 mm long, and have a pappus of 6–12 white scales. The leaves are too hairy and glandular to be eaten, however, Oregon sunshine supports invertebrates eaten by the birds and flower parts are likely eaten during late brood rearing and midsummer.

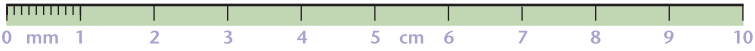
Gerald D. Carr

Malacothrix glabrata

(D.C. Eaton) A. Gray

Desert dandelion is an annual that grows up to 50 cm tall. Stems are simple or branched at or above the base and are smooth or covered with a waxy bloom. Basal leaves are oblong to spoon- shaped with widely spaced and deeply lobed segments. Leaf margins have 3–6 pairs of widely spaced teeth or narrow lobes. The inflorescence contains one to several heads borne on long peduncles. The receptacle is densely bristly. Flowers are pale yellow to almost white; the ligules of the outermost flowers are usually exerted. Ligule tips have 4–5 teeth. Achenes are 2 mm long surmounted by a pappus of numerous capillary bristles. Leaves and flowers are eaten.

Mark Egger



Ben Leggler

Asteraceae

Malacothrix torreyi
A. Gray

Torrey's desert dandelion is a taprooted annual with milky sap that grows 10–20 cm tall. Stems are branched at the base and in the inflorescence. Leaves and stems are sparsely covered with glandular hairs. Basal and stem leaves are glaucous, oblong to spoon-shaped with broad petioles and are pinnately divided into triangular shaped lobes. Usually each inflorescence has a few heads. The involucre is 8–14 mm long. The lance-shaped outer bracts are half the length of inner bracts and can be smooth or somewhat glandular. Flowers are a medium yellow. Ligules of the outermost flowers are usually exerted. Achenes are cylindrical, 3–4 mm long with 5 winged-like ribs. The pappus consists of deciduous capillary bristles and a few persistent thicker bristles. Leaves and flowers are eaten.

Matt Lavin

Microseris nutans
(Hook.) Sch. Bip

Nodding microseris is a taprooted perennial with milky sap. Stems are erect, branched, and leafy on the lower portions. Leaves are linear, 2–20 cm long, with smooth or remotely pinnately lobed margins. The cup-like involucre consists of two series of unequal lance-shaped bracts that are covered in black hairs. Flowers open during the morning hours. Flower heads appear flattened when open and contain few to many yellow ray flowers. The ligule of the ray flower is often purple-veined. The shape of the flower head is flattened when open, containing 13–50 yellow strap-like ray flowers. Immature flower buds are borne on drooping stems that straighten with maturity. There are 15–30 scale- like and silvery pappus bristles, each with a feathery capillary bristle. Pale brown to reddish achenes are linear, 3–8 mm long, with 10–15 ribs. *Microseris* is one of the more important genera; this species has tender leaves and flowers that are eaten.

Asteraceae

Mulgedium pulchellum

(Pursh) D. Donn.

Blue lettuce is a biennial or perennial that produces milky sap and spreads by rhizomes. Stems grow 14–100 cm tall, bearing numerous leaves with short or absent leaf stalks. Basal leaves have longer petioles. Leaf blades are oblong, elliptical to lance-shaped with smooth, lobed, or pinnately lobed margins. Leaf faces are coated with a waxy bloom giving the plant a bluish appearance. Each flower head contains few to numerous ray flowers. The involucre is narrowly cylinder-shaped with pointed bracts and with shorter bractlets. Achenes are cylindrical, ribbed, 7–13 mm long, with a pappus of 10–30 silvery, awn-like scales. Ray flowers are blue. Lance-shaped achenes are compressed and without a beak, 4–5 mm long, and reddish-brown to black. This species' tender leaves and flowers are eaten.

Gerald D. Carr

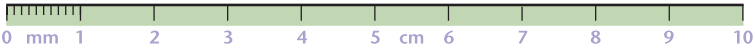
Nothocalais troximoides

(A. Gray) Greene

Sagebrush false dandelion is a perennial with milky sap and a deep, thickened taproot. Stems are 5–25 cm tall and simple. Leaves are linear- to long lance-shaped, 7–15 cm long with smooth and wavy margins. Leaves have tiny, sparse, short hairs. The involucre is 15–24 mm long, with lance-shaped bracts that are often purple spotted or purple on the midrib. Outer phyllary bracts are shorter or equal in length to the inner phyllary bracts and are smooth or with soft, white hairs on the margins or midrib. Each solitary head contains few to numerous ray flowers. Ligules are yellow and 10–20 mm long. Achenes are cylindrical, ribbed, 7–13 mm long, with a pappus of 10–30 silvery, awn-like scales. This species' leaves and flowers are eaten.

Gerald D. Carr

Gerald D. Carr



Gerald D. Carr

Asteraceae

Packera cana
Hook.

Woolly groundsel is a fibrous-rooted perennial from a branched rhizome or caudex. Plants often form tight mounds. Stems and leaves are densely covered in short-woolly, felt-like hairs. Leaves become somewhat less hairy to hairless on upper leaf surfaces. Basal leaves are linear to ovate with smooth or coarsely lobed margins. Stem leaves are lance-shaped and without petioles and often have lobes or teeth. The inflorescence is a branched flat-topped corymb, usually bearing numerous heads. Each head consist of 8–13 yellow ray flowers surrounding tightly packed disc flowers in a narrowly cylindrical involucre. Involucre bracts are of unequal lengths with a few hairs and usually purplish. A few shorter involucre bracts grow at the base. Achenes are 5-sided, dark grey, and have a pappus of numerous white capillary bristles. The leaves are too coarse and the flowers are likely too tall to be eaten, but the flowers likely support invertebrates consumed by the birds. Birds eat the flowers.

Gerald D. Carr

Solidago missouriensis
Nutt.

Missouri goldenrod is a common, rhizomatous perennial with clustered or single, erect to ascending stems that are 10–80 cm tall. Rhizomes are short or long but are thin. Leaves are hairless but can have tiny, short hairs along the leaf margins. Basal leaves have petioles but cauline leaves often clasp directly to the stem and are smaller. The upper leaf surface has 3 prominent leaf veins. Leaf blades are narrowly spoon-shaped with rounded tips and can have smooth margins or teeth. Fasicles of tiny leaves are often present in the leaf axils. The inflorescence is pyramidal to oval-shaped, with numerous branches that are erect or slightly arched. The involucre is narrowly bell-shaped with unequal bracts in 3–4 rows. There are 5–14 yellow ray flowers surrounding 8–20 yellow disc flowers. Achenes are 1–2 mm long, grey, with 8–10 tiny ribs and surmounted by a pappus of white, capillary bristles. Highly variable with 4–5 varieties. Flowers appear in late summer to fall and support invertebrates consumed by the birds.

Asteraceae

Senecio integerrimus

Nutt.

Western groundsel is a common fibrous-rooted perennial arising from a small caudex. Erect stems are up to 90 cm tall and are sparsely covered with long, tangled, web-like hairs at the base of stems and leaves. Basal and stem leaves are lance- to oval-shaped, 2–15 cm long, and can have smooth or toothed margins. Leaves are usually narrower and with petioles on the upper stems. The inflorescence is a corymb usually bearing numerous heads. The involucre bracts are unequal, sparsely hairy and often have black tips. Densely packed disc flowers are surrounded by 8–13 yellow ray flowers. Achenes are 2–4 mm long and have short hairs on the ribs. The pappus is off-white to light tan. This species provides good substrate for invertebrates eaten by birds.

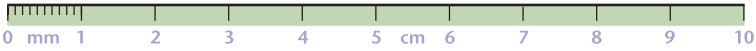
Gerald D. Carr

Stephanomeria exigua

Nutt.

Small wirelettuce is an annual with milky sap that grows up to 200 cm tall. Stems are simple and widely spreading with numerous heads. Basal leaves are usually withered during flowering. Stem leaves are greatly reduced to bract-like scales. Each head has 5–11 white to pale pink flowers. Numerous heads are borne in clusters at the nodes of branches or in open panicle-like clusters on peduncles that are 10–40 mm long. The involucre is 5–7 mm long, smooth or glandular with outer phyllaries that are reflexed or appressed. Achenes are 2–6 mm long, smooth or bumpy and grooved. Pappus bristles are feathery and white to tan. Flowers and leaves are eaten.

James Andre



Gerald D. Carr

Asteraceae

Stephanomeria tenuifolia
(Raf.) H.M. Hall

Bush wirelettuce is a perennial with milky sap. Plants can be taprooted or spread into clumps from short rhizomes. Stems are 30–75 cm tall and branched. Linear leaves can have smooth margins or widely spaced teeth. Basal leaves are usually absent during flowering. The inflorescence bears several heads. Each head contains 5–6 pink to white ray flowers with ligules that are 5–12 mm long. The involucre is 7–10 mm long, cylindrical with green phyllaries in 2 series. Outer phyllaries are shorter than the inner phyllaries. Achenes are cylindrical, 5-angled, smooth, and 3–6 mm long, surmounted by white, feathery pappus bristles. The leaves and flowers are eaten by the birds.

Gerald D. Carr

Symphyotrichum ascendens
(Lindl.) G.L. Nesom

Long-leaved aster is a slender, long-rhizomatous perennial with erect or somewhat spreading stems. Stems are up to 60 cm tall and usually have sparse, stiff hairs. Leafy shoots in the leaf axils are absent. Basal leaves are narrow and lance-shaped, 5–30 cm long, and with petioles. Stem leaves are much shorter and directly clasp to the stem. Basal leaves are often withered at flowering. The inflorescence has multiple branches that bear small flower heads, borne on sparsely and short-stiff hairy peduncles. There are 15–40 blue to pink ray flowers, 5–10 mm long, surrounding 15–40 yellow disc flowers. The tips of the disc flowers are often purple-tipped. The bell-shaped involucre consists of bracts in several series and of unequal lengths. Outer involucre bracts are oblong, finely stiff-hairy with green tips and white bases. Achenes are hairy and 2–3 mm long, surmounted by a pappus of barb-tipped capillary bristles. The flowers are eaten if within reach, and they provide good substrate for invertebrates.

Campanulaceae

Nemacladus rigidus

Curran

Gerald D. Carr

Stoutstem threadplant is a prostrate annual frequently found in sandy soils. Stems are spreading, branched from the base, 9–10 cm long, shiny and purple at the base. Leaves are alternate, 5–10 mm long, elliptical to spoon-shaped, fleshy, hairy, with smooth or scalloped margins. The inflorescence is strongly zigzag, with tiny, elliptical leafy bracts at the base of spreading or reflexed pedicels. The distinctive flower is white, 2-lipped, with 3 upper, oval-shaped petals that are maroon tipped or with maroon veins. Middle sepals are linear-elliptical and the 2 flanking sepals are widely triangular. Flowers are not inverted during anthesis. The fruit is 3–4 mm long with an oblique base and a pointed tip. There are wide zigzag ridges across pitted, longitudal rows on the seed surface. The small leaves and flowers are likely eaten.

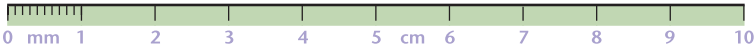
Caryophyllaceae

Cerastium arvense

L.

Mark Egger

Field chickweed is a loosely matted perennial with trailing stems that are branched near the upper half of the stem. Leaves are opposite, 1–3 cm long, lance to oblong with reduced, fasicled leaves on the lower stems and non-flowering stems. The inflorescence is covered with glands, bearing several flowers and thin, dry, papery margined bracts. Sepals are 4–7 mm long. The 5 white, 2-lobed and clawed petals are 6–10 mm long. There are 5 styles. Dry capsules are 7–11 mm long, cylindrical, with 10 teeth at the opened end. Seeds are 1–1.5 mm long and brown to reddish-brown. The small leaves and flowers are likely eaten.



Caryophyllaceae

Gerald D. Carr

Eremogone aculeata

(S. Watson) Ikonn.

Needleleaf sandwort is a mat-forming perennial from a branched caudex. Erect stems are 5–25 cm tall. Needle-like leaves are opposite, stiff, waxy blue-green, 10–25 mm long and shorter on the upper stem. The inflorescence is an open cyme that is covered with dark-tipped glands and hairs. The 5 sepals are oval with a pointed tip, sparsely or densely covered with stalked glands and have papery, dry margins. Petals are broadest and rounded at the tips, white, and 4–10 mm long. Flowering pedicels are covered with stalked glands. Dry capsules are smooth, 5–9 mm long, and bear numerous yellowish seeds. The flowers are eaten but the needle–like leaves are probably too sharp for the birds to consume.

Gerald D. Carr

Eremogone capillaris

Poir.

Mountain sandwort is a perennial forming dense or loose mats from a branched caudex. Stems are erect, 5–25 cm tall, green or waxy bluish-green, and often have a somewhat woody base. Needle-like leaves are opposite, thread-like and flexible, hairless, 10–40 mm long, and shorter on the upper stem. The inflorescence is a few-flowered or rarely congested cyme that is covered with gland-tipped hairs. The 5 sepals are oval-shaped with rounded or pointed tips. Petals are spatula-shaped, broadest at the tips, white, and 4–8 mm long. Flowering pedicels are covered with stalked glands or are glandless. Dry capsules are smooth or glandular, 5–8 mm long, and bear numerous brown to black seeds. The flowers are eaten but the needle-like leaves are too threadlike to be consumed.

Caryophyllaceae

Eremogone congesta
Nutt.

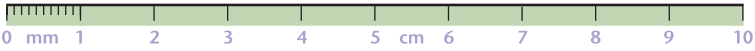
Dense-flowered sandwort is a perennial forming loose mats from a branched caudex. Stems are erect, 5–30 cm tall, green or waxy bluish-green and often have a somewhat woody base. Needle-like leaves are opposite, thread-like, rigid or flexible, hairless, 2–8 cm long, and shorter on the upper stem. The inflorescence bears flowers in a congested or open cyme that is without glands or hairs. The 5 sepals are oval to lance-shaped, with rounded or pointed tips, 3–6 mm long, hairless, and have papery, dry margins. Petals are oblong, 5–8 mm long, white with rounded or with shallowly notched tips. Flowering pedicels are often only 1–2 mm long, and are without glands and hairs. Dry capsules are smooth, 3–6 mm long, and bear numerous reddish-brown to black seeds. Highly variable with 9 recognized varieties. The glandless, hairless, and congested inflorescence distinguishes most varieties from *E. capillaris*. The flowers are eaten but the thread-like leaves are not.


Gerald D. Carr

Eremogone kingii
(S. Watson) M.E. Jones

King's sandwort is a perennial forming loose mats or tight cushions from a loosely branched, non-woody caudex. Erect stems are 10–30 cm tall. Needle-like leaves are opposite, thread-like, flexible or somewhat rigid, sparsely short-hairy or hairless and green to greyish-green. Leaves on the upper stems are shorter. There are several flowers in an open, sparsely gland-covered inflorescence. Sepals are smooth or with glands, narrowly oval to lance- shaped with sharp-pointed tips. Sepal margins are papery and dry with deep green centers and are 3–6 mm long. Petals are spatula-shaped and occasionally 2-lobed, white, and 5–7 mm long. Flowers pedicels can be covered with stalked glands or smooth. Smooth, dry capsules are 4–7 mm long bearing numerous tiny, brown to black seeds. The flowers are eaten but the needle-like leaves are too threadlike to be consumed.


Jean Pawek



Caryophyllaceae

Gerald D. Carr

Minuartia nuttallii

(Pax.) Briq.

Nuttall's sandwort is a mat-forming perennial from a branched caudex. Erect stems are 5–25 cm tall. Needle-like leaves are opposite, stiff, waxy blue-green, 10–25 mm long, and shorter on the upper stem. The inflorescence is an open cyme that is covered with dark-tipped glands and hairs. The 5 sepals are oval with a pointed tip, sparsely or densely covered with stalked glands and have papery, dry margins. Petals are broadest and rounded at the tips, white, and 4–10 mm long. Flowering pedicels are covered with stalked glands. Dry capsules are smooth, 5–9 mm long, and bear numerous yellowish seeds. The flowers are eaten but the stiff leaves are likely not consumed.

Gerald D. Carr

Silene douglasii

Hooker

Douglas' catchfly is a taprooted perennial from a finely branched caudex. Stems are single or several, 10–50 cm tall that are smooth to finely-short, greyish hairy below the inflorescence. Basal leaves are narrowly spoon-shaped and numerous. Stem leaves are linear to linear-spoon-shaped and 1–6 cm long. Each inflorescence usually has 1–5 flowers. The calyx is bell-shaped, 12–15 mm long, inflated at maturity, green or sometimes purplish, short-hairy and glandless, with 10 prominent nerves. White petals are clawed, 4–6 mm long, shallowly 2-lobed with 2 obvious appendages. There are 3–5 styles. Dry capsules are equal in length to the calyx and open by 3–5 slits. Seeds are brown and 1.5 mm long. Flowers are eaten and provide good substrate for invertebrates but the leaves are usually too glandular or finely hairy to be consumed.

Caryophyllaceae

Silene menziesii
Hook.

Menzies' catchfly is a rhizomatous perennial. Individual plants bear either all male or all female flowers. Stems are numerous, trailing or branched, and 5–40 cm long. Foliage is finely hairy or glandular. Numerous stem leaves are narrowly lance-shaped to elliptical and 2–5 cm long. There are fewer basal leaves. The inflorescence bears few to numerous flowers in a glandular-hairy, leafy cyme. The calyx is bell-shaped, 5–8 mm long and obscurely 10-veined. The calyx becomes swollen in fruit. White petals are clawed, 2-lobed and 1–1.5 times longer than the calyx. Petal lobes are 4–6 mm long. Female flowers have 3 styles. The dry capsule is slightly longer than the calyx and opens by 3 slits. Tiny, black seeds are 0.5–1 mm long. Flowers are eaten and provide good substrate for invertebrates but the leaves are usually too glandular or finely hairy to be consumed.


Gerald D. Carr


Gerald D. Carr

Stellaria longipes
Muhl. Ex Willd.

Long-stalked starwort is a hairless perennial with long trailing and 4-angled stems. Leaves are opposite, without petioles, and narrowly lance-shaped. The inflorescence is a few flowered cyme or occasionally with solitary flowers. Leafy bracts are lance-shaped, 2–10 mm long, with smooth margins or with fine short hairs. Sepals are narrowly oval, 3-veined, and 3–5 mm long. White, 2-lobed petals are 3–8 mm long. There are 5–10 stamens. Dry oval capsules are 3–6 mm long and open by 6 slits. Tiny seeds are reddish brown, slightly roughened, and 1 mm long. Flowers and leaves are eaten.


Gerald D. Carr

Crassulaceae

Sedum lanceolatum
Torr.

Gerald D. Carr

Spearleaf stonecrop is a succulent perennial with branched, creeping leafy stems. Flower bearing stems are erect, usually leafless during anthesis, and bear numerous 5-petaled, star-shaped yellow flowers in an open cyme. There are 5 lance- to oval-shaped sepals that are yellowish green and 5 yellow to reddish stamens. Non-flowering stems are leafy with lance-shaped, dull green to grey-green, rounded, fleshy leaves that are 5–20 mm long and alternately arranged. Dry follicles are 3–5 mm long. Seeds are thin, linear, and 1 mm long. Tender leaves are eaten.

Fabaceae

Astragalus conjunctus
S. Watson

Gerald D. Carr

Idaho milkvetch is a perennial with several upright stems arising from a branched caudex. Leaves and stems are finely greyish-green to green. Leaves can be hairless or finely stiff-hairy. Leaves are divided into 17–37 narrow leaflets that are up to 25 mm long with rounded tips. Stiff, thickened flowering stems bear 7–35 tight or loosely clustered flowers. Flowers are white to creamy white or are purplish tinged. The upright banner petal is longer than the lateral wing petals and keel petal. The calyx is covered with greyish to black hairs and is 8–12 mm long with free tips that are 2.5–5 mm long. The erect pod is smooth and 1.5–3 cm long with a pointed beak and prominent lower suture. Each pod contains several smooth seeds that are compressed and notched near the middle. The flowers and leaves are eaten and support invertebrates.

Fabaceae

Astragalus curvicarpus

(A. Heller) J.M. Macbr.

Sickle milkvetch is a perennial with decumbent or ascending stems that are 20–50 cm long. Leaves and stems are grayish and covered with finely appressed hairs. Leaves are 4–10 cm long, with 9–17 oblong leaflets with notched or rounded tips. Leaf penduncles are equal in length to the leaf blade, but elongate during flowering to twice the length of the leaf blade. Stipules are attached to the leaf petiole but are not fused. The inflorescence is a tight to loose raceme of 10–40 pea-shaped, pale yellow to whitish flowers. The banner petal is well reflexed and greater than 15 mm long. Wing petals are 2–7 mm longer than the keel petal. The calyx is slightly inflated with short teeth and is usually covered with fine hairs. The distinctive pods are 2–3.5 cm long and curved ¼ to a full circle, compressed, sparsely hairy and have a prominent suture. Dry pods are stiff-papery with one chamber. Each pod contains several smooth seeds that are compressed and notched near the middle. The flowers and leaves are eaten and support invertebrates.

Gerald D. Carr

Astragalus filipes

Torr. ex A. Gray

Basalt milkvetch is a loosely clumped perennial with multiple slender stems that are 30–45 cm tall. Leaves are alternate and pinnately divided into 9–25 widely spaced leaflets that are linear to linear-lance shaped, borne on petioles that are longer than the leaves. Stipules are triangular and fused below with free tips and are papery. The inflorescence is a raceme of 4–30 loosely packed and pendant cream to pale yellow flowers. The calyx is covered with black hairs or partially white hairs. The flower has an erect banner petal and rounded wing petals that are slightly longer than the keel petal. Pendulous pods are flattened, tapered at the ends, and have obvious suture lines. Pods become papery and split open at maturity. The flowers and leaves are eaten and support invertebrates.

Gerald D. Carr

Gerald D. Carr

Fabaceae

Gerald D. Carr

Astragalus lentiginosus

Douglas

Freckled milkvetch has many spreading or sprawling stems and grows 10–50 cm tall. Leaves are alternate, pinnately-divided and usually hairless. There are up to 19 oval-shaped leaflets with blunt, rounded, or indented tips. Stipules are lance-shaped and distinct. There are up to 50 flowers per inflorescence, which is often shorter than the leaves. Pea-shaped flowers are creamy-white or yellowish, sometimes with purplish tips. The banner petal is 8–13 mm long and the keel petal is 6–8 mm long. Calyx lobes covered with white hairs. Pods are freckled and inflated, with obvious grooves above and below and that narrow to a curved and flattened tip. Each pod contains few to several notched and compressed seeds. Highly variable with several distinct varieties. The flowers and leaves are eaten.

Gerald D. Carr

Astragalus malacus

A. Gray

Shaggy milkvetch is a perennial with a woody taproot with one to several erect to trailing stems. Stems and leaves are covered with fine, grey hairs. Leaves are pinnately divided into 11–19 oblong leaflets with notched or rounded tips. Leaves are crowded at the stem tips. The inflorescence is a congested raceme bearing 10–40 deep magenta flowers. Flowers are occasionally creamy white with purplish tips. Wing petals are shorter than the recurved banner and nearly equal in length to the keel petal. The pod is stalkless or nearly so, densely short-hairy and mottled. The lower suture is deeply intruded and almost divides the pod into partitions. The pod is more or less 3-sided with 2 chambers. Each chamber bears one to few, notched, and compressed seeds. The flowers are eaten and support invertebrates.

Fabaceae

Astragalus newberryi

A. Gray

Newberry's milkvetch is a tufted perennial with a long stout taproot and branched crown. Stems are almost lacking. Leaves are densely tufted, 3–12 cm long and pinnately divided into 5–13 oval leaflets. Leaves are densely soft hairy. Each raceme bears 2–6 flowers just above the leaves. Flowers are purple to rose-purple and 2–2.5 cm long with erect, upright banner petals and shorter wing petals. The calyx is 10–16 mm long, densely greyish and covered with black hairs. Pods are stalkless and almost completely concealed by dense, woolly hairs. Mature pods are woody, one-celled and slightly inflated. Seeds are solitary or few per pod. The flowers are eaten and support invertebrates.

Gerald D. Carr

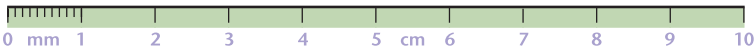
Astragalus obscurus

S. Watson

Arcane milkvetch is a perennial with prostrate to tufted stems that are widely branched and less than 15 cm long. Herbage is sparsely covered with stiff, straight, appressed hairs. Stipules are triangular and 3–4 mm long. Leaves are 2.5–10 cm long and consist of 5–15 thickened, elliptical to oblong leaflets that are widely spaced. Each leaflet has a rounded tip and is 5–10 mm long. The inflorescence is a dense raceme consisting of 5–15 dusty white to cream colored, pea-shaped flowers. Petals can be somewhat lavender tinged. The banner petal is recurved to a 45 degree angle, notched at the tip and 7–10.5 mm long. Wing petals are shorter. The keel petal is 6–10 mm long. The calyx is 4–6 mm long and covered with fine straight hairs. Erect, dry pods are 10–25 mm long, sub-sessile, bluntly 3-sided with a prominent, thick upper suture. Each pod contains few to several, notched, and compressed seeds. The leaves and flowers are eaten.

Gerald D. Carr

Gerald D. Carr



Fabaceae

Astragalus purshii

Hook.

Gerald D. Carr

Woollypod milkvetch is a densely tufted perennial arising from a branched caudex. Herbage is densely covered with long, tangled, woolly-white hairs. Prostrate stems are 5–10 cm long. Stipules cloth the stem bases, are longer than the internodes, and are oval to broadly lance-shaped. Leaves are closely crowded, 2–15 cm long with 7–19 elliptic to nearly rounded leaflets, densely covered with long, white, tangled hairs. Racemes are short to elongated, bearing 3–10, yellowish-white to pale lavender or deep red, pea-shaped flowers. The banner petal is 9–26 mm long and recurved to a 40 degree angle. The keel petal is 8–21 mm long. The calyx is tubular, covered with black to greyish-hairs and is half the length of the corolla. Dry pods are stalkless, 7–27 mm long, densely white-hairy and straight or slightly curved. Several recognized varieties. Pods have 1 or 2 chambers, depending on variety, but usually contain one or more seeds. The flowers are eaten and support invertebrates.

Astragalus whitneyi

A. Gray

Gerald D. Carr

Balloon milkvetch is a perennial with a heavy taproot and woody, branched caudex. Stems and leaves are greyish-green to green and finely short-hairy. Stems are decumbent with more or less tufted leaves with 11–17 leaflets. Stipules are fused on the lower stem and purplish. Compact racemes contain 5–20 creamy white to lavender flowers that are 10 mm long. The banner petal is longer than the wings and keel. The calyx is half as long as the floral tube and finely stiff-hairy. One-chambered pods are pendulous, membranous, inflated, and strongly mottled with purple spots. Each pod usually has several, notched and compressed seeds per pod. Several recognized varieties. The flowers and leaves are eaten.

Fabaceae

Dalea ornata

(Douglas ex Hook.) Eaton & J. Wright

Western prairie clover is a perennial with erect and brittle stems that are 30–45 cm tall. Numerous stems arise from a small caudex. There are 5–7 oval-shaped leaflets that are covered with dotted glands. Flower heads are a cone-shaped spike and densely packed with thick, silky hairs. Pea-shaped flowers are rose to fuchsia to purple and have 5 stamens. The entire plant has a pleasant, minty aroma. The pod does not split open at maturity and contains one seed. Seeds are somewhat kidney-shaped, tan, and 1–2 mm long. Birds eat the flowers and leaves.

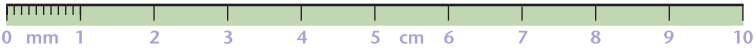
Gerald D. Carr

Hedysarum boreale

Nutt.

Boreal sweetvetch is a perennial with ascending to erect stems 10–40 cm tall. Herbage is sparsely to densely covered with fine, greyish-white hairs. Leaves are odd-pinnately compound with 7–15 lance-shaped leaflets with rounded tips. Each leaflet is 1–3 cm long. Stipules are long and fused into a tube around the stem. The inflorescence is a narrow raceme, bearing numerous pink to purple pea-shaped flowers. The keel petal is prow-like, 10–18 mm long, exceeding the length of the wing petals. The calyx lobes are linear and nearly equal in length. Dry pods are flattened loments, constricted around each seed. Each pod has 2–6 segments and is veined across the face of the fruit. Kidney-shaped seeds are red to reddish brown and 4–5 mm long. Birds eat the flowers and leaves.

Tara Luna



Gerald D. Carr

Fabaceae

Lathyrus pauciflorus

Fernald

Steppe sweetpea is a taprooted perennial with short, slender rootstocks. Leaves and stems are hairless. Stems are strongly 4-angled but not winged and 40–100 cm tall. Leaves are terminated by a leafy tendril. Leaves have 6–10 pairs of thick and somewhat fleshy linear to lance-shaped leaflets that are 8–10 cm long. Each raceme has 4–10, orchid to pinkish-lavender, pea-shaped flowers. Flowers fade to bluish with age and are 16–18 mm long. The banner petal is usually purplish on the back. Wing petals are equal in length to the banner and can be almost white to pale lavender. The keel petal is white to bluish with a strongly recurved tip. The calyx is 8–10 mm long, hairless or with short hairs on the teeth margins. Dry pods are 3–5 cm long and hairless. Seeds are brown and smooth.

Gerald D. Carr

Trifolium eriocephalum

Nutt.

Woollyhead clover is a thick-taprooted perennial with several stems arising from a branched root crown. Stems are 20–60 cm tall with oval to lance-shaped stipules. Stems and leaves are sparsely to densely hairy. There are 3 elliptical, oval to almost linear leaflets, 2–7 cm long with entire or finely toothed margins. Dense head like racemes arise from terminal or axillary stems above the leaves. Each head has 25–80 flowers, pinkish to red and 12–17 mm long. The corolla is slightly bent downwards. The calyx is covered with long, feathery hairs, slightly inflated and is at least half the length of the corolla. Calyx lobes are longer than the tube. Dry pods are hairy and 2–3 mm long with 1–4 seeds. Flowers and leaves are eaten by the birds.

Fabaceae

Trifolium macrocephalum
(Pursh) Poir.

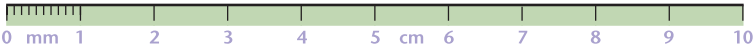
Big head clover is a rhizomatous perennial with thick stems up to 45 cm tall. Leaves and stems are softly hairy. Leaves are palmately divided into 7–9 lance-shaped, thick leaflets with rounded tips and a pale band across their width. The flower head is a rounded cone or tuft of flowers that can be 7 cm long when in fullest bloom. Flowers are often 2-toned; white with pink or purple. The entire corolla is 2–2.7 cm long. Calyx tubes have 10 veins and calyx lobes are longer than the tube. Pods are round to kidney-shaped containing 1–3 seeds. Leaves and flowers are eaten.

Gerald D. Carr

Vicia americana
Mulh. ex Willd.

American vetch is a vining perennial with prostrate to climbing stems 10–100 cm long. Leaves are odd-pinnately compound, with the terminal leaflet modified into a branched or unbranched tendril. Leaves have 6–14 oval to linear leaflets, 1–4 cm long, with rounded or short-sharply pointed tips. Leaves and stems are hairless or sparsely covered with short straight hairs. The inflorescence bears 2–8 flowers, arising from axillary stems that are usually borne on one side of the stem axis. Flowers are blue to purple, 14–22 mm long with a reflexed banner petal that is longer than the keel petal. The calyx is sparsely hairy or hairless with tips that are 1–3 mm long. Dry pods are narrowly elliptical and 2–3 cm long containing brown, round seeds. Flowers and leaves are eaten.

Gerald D. Carr



Gerald D. Carr

Geraniaceae

Geranium carolinianum

L.

Carolina geranium is an annual with branched erect stems that are 15–40 cm tall. Foliage is hairless or finely long-soft hairy and the inflorescence is covered with glands. Leaves are heart-shaped at the base and somewhat rounded, 2–7 cm wide, and divided nearly to the midvein into 3–5 lobed segments. There are 5 oval-shaped sepals that are 2–4 mm long. There are 5 light pink to pink petals that are 3–5 mm long that are slightly notched and 10 stamens. Dry capsules split at the base into 5 sections, with each segment curling upward to disperse the seed. Fruits and seeds are covered with long, stiff hairs.

Gerald D. Carr

Geranium viscosissimum

Fisch & C.A. Mey.

Sticky geranium is a stout perennial with erect stems that are 15–90 cm tall. Stems and leaves are covered with short to long, gland-tipped hairs. The inflorescence is usually more hairy and glandular than the leaves and lower stems. Leaves are heart-shaped at the base, rounded in outline, 5–14 cm wide and deeply cut into 5–7 lobed segments. There are 5 sepals, 8–12 mm long with bristles at the tips and 5 petals, 5–12 mm long that are rose to purple, surrounding 10 stamens. Dry capsules are 25–40 mm long and split into 5 sections, with each segment curling upward to disperse the oblong seed. Birds eat the flowers but the sticky, glandular leaves are likely avoided.

Hydrophyllaceae

Hesperochiron pumilus

(Griseb.) Porter

Dwarf hesperochiron is a perennial with 2–10 leaves forming a loose rosette from slender rhizomes. Leaves are somewhat fleshy, smooth, or slightly hairy along the margins, linear to oblong or spoon-shaped, 2–7 cm long and less than 2 cm wide. Each inflorescence usually has 1–8 flowers. Peduncles and flowering pedicels are covered with gland-tipped hairs. Flowers have 5 white to pink, broadly oval, widely spreading petals, 7–12 mm long with rounded tips, dark purple lines and a bright yellow base. There are 5 green, lance-shaped sepals that are sparsely hairy and have awn-like tips. Five stamens bear purplish-black anthers. Dry capsules are oval and covered with hairs and contain numerous angular seeds. Leaves and flowers of this "chick-sized" plant are eaten.

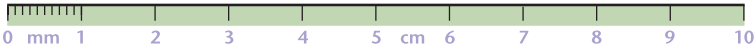
Tanya Harvey

Hydrophyllum capitatum

Douglas ex Benth.

Ballhead waterleaf is a fibrous-rooted perennial with erect to ascending stems that are 5–25 cm tall. Leaves and stems are sparsely covered with long, soft hairs or short, rigid, appressed hairs. Leaves are 3–10 cm long, pinnately divided into 7–11 stalkless, oval to lobed leaflets. Leaves are borne on long petioles. The inflorescence is a ball-shaped cyme that is borne below the subtending leaf. Flowers are funnel shaped. Five, fused, lavender to white petals surround 5, exerted, purple-tipped stamens and a 2-lobed style. The 5 sepals are usually long-hairy. Dry oval capsules contain 1–3 seeds. Leaves and flowers are eaten.

Tanya Harvey



Hydrophyllaceae

Gerald D. Carr

Phacelia glandulifera

Piper

Sticky phacelia is an aromatic annual with branched stems that are 5–25 cm tall. Leaves and stems are densely covered with short hairs and dark, sticky glands. Leaves are oblong to spoon-shaped, deeply divided or lobed into linear to narrowly oblong segments with rounded tips and coarsely toothed margins. The coiled inflorescence does not exceed the uppermost leaves and bears numerous, 5-lobed, funnel-shaped flowers that are white, blue, or lavender with yellow throats. The calyx is densely glandular-hairy with 5 free linear-shaped lobes. Small, dry capsules are partly enclosed in the sticky calyx and contain a single reddish, deeply pitted seed. Birds eat the leaves and flowers.

Gerald D. Carr

Phacelia hastata

Ex Lehm. v. *hastata*

Silverleaf phacelia is spreading perennial from a branched caudex. Stems are ascending to erect and 5–40 cm long. Leaves and stems are densely covered with long silvery hairs and somewhat sticky, thicker hairs. Basal and stem leaves are similar, 2–10 cm long, elliptical to oblong with smooth margins or more rarely, a pair of basal lobes. Leaf veins are prominent and deeply sunken on the upper leaf surface. The inflorescence is a terminal or axillary coiled cyme bearing numerous bell-shaped flowers with 5 spreading lobes. The corolla is white or slightly lavender, 4–7 mm long, with lobes that are 2–4 mm long. The calyx is covered with long and short, sticky hairs. Stamens are well exerted beyond the corolla lobes and are hairy. The style is exerted and deeply divided. Dry, stiff capsules are 2–4 mm long and bear 2 seeds. The flowers are eaten and provide good substrate for invertebrates; the leaves are too glandular and hairy to be eaten.

Hydrophyllaceae

Phacelia heterophylla

Pursh

Varileaf phacelia is a taprooted biennial or short lived perennial with erect, simple stems that are 20–80 cm tall. Basal and stem leaves are similar in appearance, 2–10 cm long, lance-shaped to narrowly spoon-shaped with smooth margins. Leaves and stems often with bristly or glandular hairs. Leaf veins are prominent and sunken on the upper leaf surface. Some or most of the basal leaves have one or more pairs of basal lobes. The inflorescence is a narrow, compact coiling cyme. The corolla is white to blue, bell-shaped with 5 widely spreading lobes. Five, hairy stamens are well exerted beyond the corolla lobes. The style is deeply divided and exerted. The calyx is covered with short hairs and is glandular. Dry capsules are 1.5–2.5 mm long and enclosed in the glandular and hairy calyx. Seeds are elliptical, deeply pitted and brown. The flowers are eaten and provide good substrate for invertebrates; the leaves are too glandular and hairy to be eaten.

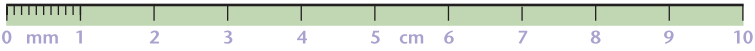
Tanya Harvey

Phacelia linearis

(Pursh) Holz

Threadleaf phacelia is an annual with simple or branched, erect stems that are 5–40 cm tall. Stems are sparsely, short hairy. Leaves are linear to lance-shaped with short petioles, 1–5 cm long and often have 1–2 pairs of basal lobes. Leaf blade surfaces are covered with short-stiff and longer-soft hairs. The inflorescence is a crowded, few-flowered cyme. The 5-lobed calyx is covered with short sticky hairs and is 5–7 mm long. The corolla is broadly bell-shaped, blue to lavender with white throats. The corolla is 8–12 mm long with lobes that are 4–6 mm long. The short-hairy, white to purple stamens and short-branched style are exerted beyond the corolla lobes. Dry capsules are sparsely short hairy and 5–8 mm long. Seeds are covered with net-like veins. The flowers are eaten and provide good substrate for invertebrates; the leaves are too glandular and hairy to be eaten.

Gerald D. Carr



James Morefield

Liliaceae

Allium anceps

Kellogg

Kellogg's onion produces single or clustered bulbs that are not attached to a rhizome. The outer bulb coat is brown, membranous with prominent rectangular-shaped netting in vertical rows. Leaves wither during flowering. Leaves are linear, solid in cross section, flat, somewhat sickle-shaped and 7–26 cm long. The inflorescence is hemispheric-shaped bearing 15–35 flowers. Pink flowers are star-shaped with 6 pinkish tepals with green mid-veins, surrounding 6 stamens and a 3-parted pistil. Seed capsules contain dull, blackish seeds. More common in Oregon. Leaves and flowers are eaten.

Allium tolmiei

Baker

Gerald D. Carr

Tolmei's onion produces new bulbs within the bulb coat of the parent bulb, which is often withered or absent at time of flowering. Outer bulb coats are brown, membranous, and lack any obvious netting except at the very base of the bulb. The 2 flat, thick leaves are sickle-shaped. The flowering stem is strongly flattened and often has narrow wings along the margins. The inflorescence is a tight to loose umbel bearing up to 50 flowers. Pink or white tepals are lance-shaped, have prominent midveins, and enrolled tips. Seed capsules contain dull black, wrinkled seeds that are 2 mm long. Mostly in Oregon and southeastern Idaho. The flowers and leaves are eaten.

Liliaceae

Calochortus macrocarpus
Douglas

Sagebrush mariposa lily is a slender perennial arising from a fibrous-coated bulb. Stems are slender, stiff, and grow 18–60 cm tall. Stems and the single leaf are coated with a waxy bloom, giving it a bluish-green color. The single leaf is usually withered at flowering. Showy flowers have 3 lavender petals and 3 sepals. The sepals appear petal-like, but are longer and narrower than the petals. Petals are marked by a band of deep purple and a fringe of hairs near the center of the flower. The undersurface of each petal has a green stripe. Dry capsules are erect, 3-sided, and somewhat angular. Seeds are light yellow to tan, flattened, and slightly inflated. Leaves and flowers are eaten.

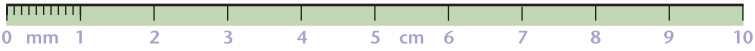
Gerald D. Carr

Loasaceae

Mentzelia albicaulis
Hook.

Whitestem blazingstar is a stout, branched annual that grows from 5–42 cm tall. Stems are distinctly white and can be hairy or smooth. Lower leaves are lobed while upper stem leaves can be lobed or smooth. Leaves, stems, and fruits are coated with tiny, barbed hairs. The inflorescence arises from leaf axils or from branched terminal stems. Subtending flower bracts are usually green, lance-shaped to oval, with smooth or 3-toothed margins. Petals are up to 8 mm long, pale yellow with a darker orange base. The 5 fused, densely barbed and hairy sepals form a long tube. Dry, tubular, woody-like capsules are strongly curved and 8–34 mm long. Seeds are tan to black, irregularly rounded to angular above the mid-section and are wingless. Seed coat surfaces have tiny raised points or bumps. Leaves and flowers are eaten.

Tanya Harvey



Loasaceae

Mentzelia dispersa
Wats.

Bushy blazingstar is an annual with erect hairy stems that are 7–48 cm tall. Leaves are less than 10 cm long and can be smooth or toothed. Inflorescence bracts are smooth or lobed, oval to round and green. Sepals are 1.5–3.5 mm long and fused into a long, hairy tube. Petals are yellow, 4–8 mm long, oval to broadly spoon-shaped with a darker yellow base. Dry capsules are erect to curved, 7–35 mm long and narrowly cylindrical. Seeds are prism-shaped or triangular in cross-section, tan to dark mottled, and have grooved edges. The flowers and leaves are eaten if within reach of the birds.

Gerald D. Carr

Gerald D. Carr

Mentzelia laevicaulis
(Douglas ex Hook.) Torr. & A. Gray

Giant blazingstar is a stout, branched biennial to perennial that grows from 22–100 cm tall. Stems are erect and hairy or smooth. Lower leaves are less than 24 cm long, narrowly spoon-shaped and pinnately lobed. Upper stem leaves are 2–10 cm long, lance-shaped with sharply or bluntly serrated leaf margins. The inflorescence arises from leaf axils or from branched terminal stems. Subtending flower bracts are usually green, lance-shaped, smooth or deeply 4–5 lobed. Showy petals are bright to pale yellow, 40–80 mm long, surrounding numerous stamens that are 15–55 mm long. The 5 fused, densely hairy sepals form a long tube that is 15–46 mm long. Dry, tubular, woody capsules are straight and 15–44 mm long. Seeds are winged around the edges, grey, 2–2.5 mm wide and lens shaped. Flowers and leaves are eaten.

Malvaceae

Sidalcea oregana

(Torr. A. Gray) A. Gray

Oregon checkermallow is a perennial with woody stem bases that are 50–100 cm tall. Stems and leaves are covered with either star-shaped, appressed hairs or are nearly hairless. Some plants may be covered with a waxy-bloom. Leaves are 4–10 cm wide and deeply palmately lobed into 5–9 narrow, sparsely toothed lobes. The inflorescence is a terminal raceme bearing numerous flowers. Flowers are dimorphic; the pistillate flowers with non-functional stamens are smaller than the perfect flowers. There are 5 rose to deep pink petals that are 1–2 cm long, surrounding groups of 2–6 fused stamens. The calyx is 3.5–9 mm long with lance-shaped lobes that are smooth, hairy, or bristly. The dry, hairy or sticky capsule consists of 5–10 segments. Each segment contains one seed. Brown seeds are smooth or finely net-veined, kidney-shaped and 2–3 mm long. Flowers and leaves are eaten.

Robert L. Carr

Sphaeralcea grossulariifolia

(Hook. & Arn.) Rydb.

Gooseberryleaf globemallow has numerous erect stems that are somewhat woody at the base. Stems are 60–100 cm tall. Stems and leaves are covered with white, star-shaped hairs. Leaves are palmately lobed, up to 5 cm long, with each lobe having smaller lobes or divisions. The inflorescence is a raceme of clustered red-orange flowers. Each flower consists of 5 red-orange petals and 5 fused sepals. Stamens join into one filament at their base and are hairy. Each dry fruit can have up to 12 segments per dry fruit, each containing a hairy or hairless grey seed. Flowers, as well as the young, less hairy leaves are eaten.

Gerald D. Carr

Gerald D. Carr

Gerald D. Carr

Malvaceae

Sphaeralacea munroana
(Douglas ex Lindl.) Spach ex A. Gray

Munro's globemallow is an erect perennial that grows 60–100 cm tall. The foliage is covered in white star-shaped hairs and the leaves are palmately veined. Leaves are 5 cm long and have 3–5 shallow-toothed lobes. The inflorescence is a raceme of clustered flowers. Each flower consists of orange to red-orange petals subtended by 5 fused sepals forming a bowl. Stamens join into one filament at their base and are hairy. Each dry fruit can have up to 12 segments, each segment containing a hairy seed. Found in shrub-steppe with sandy or rocky soil. Flowers, as well as the young, less hairy leaves are eaten.

Gerald D. Carr

Montiaceae

Claytonia parviflora
Hook.

Streambank springbeauty is a taprooted annual found in springs or vernally moist sites. Ascending stems are 5–10 cm long. Basal leaf blades are linear to narrowly oblong, 1–10 cm long, with rounded or slightly pointed tips. Stem leaves are fused into a broadly oval to rounded disc that is 1–3 cm wide. The inflorescence bears one to many flowers on spreading pedicels that are up to 7 mm long. The 2 green sepals are 1–2 mm long. Petals are white to pink and 2–4 mm long. Small, rounded, dry capsules are 2–4 mm long and contain 3 seeds. The tender leaves of this species are eaten in early spring.

Montiaceae

Claytonia perfoliata
Willd.

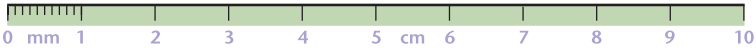
Miner's lettuce is a taprooted annual with ascending stems that are 3–10 cm long. Basal leaf blades are oval and 1–7 cm long, with rounded or slightly pointed tips and distinctly linear petioles. Stem leaves are fused into a broadly oval to rounded disc that is 1–3 cm wide. The inflorescence is open or dense, bearing 5 to numerous flowers on short or spreading pedicels that are up to 5 mm long. The 2 green sepals are 1.5–5 mm long. Petals are white to pink and 2–6 mm long. Small, rounded dry capsules are 1.5–4 mm long and contain 3 seeds. The tender leaves are eaten in early spring.

Gerald D. Carr

Claytonia rubra
(Howell) Tiedestr.

Red miner's lettuce is a taprooted annual or occasionally perennial, with ascending stems that are 2–20 cm long. Basal leaf blades are reddish, oval to roundly triangular, 5–20 mm long, with rounded tips and wedge-shaped bases on linear petioles. Stem leaves are somewhat fused or free on one side, into a broadly oval to rounded disc that is less than 4 cm wide. The dense inflorescence bears 3–30 flowers on short or spreading pedicels that are up to 5 mm long. The 2 green sepals are 1–2 mm long. Petals are white to pink and 2–3 mm long. Small, rounded dry capsules are 2–3 mm long and contain 3 seeds. The tender leaves of this species are eaten in the early spring.

Gerald D. Carr



Montiaceae

Mark Egger

Lewisia rediviva
Pursh

Bitterroot is a perennial with fleshy roots from a simple or branched caudex. Stems are leafless, erect, or ascending and 1–5 cm long with a whorl of papery bracts below the flower. Basal leaf blades are tubular, 1–5 cm long and emerge in early spring but are absent during anthesis. Solitary, showy flowers have 6–9 unequal, petal-like sepals, 8–25 mm long with entire margins. Flowers have 12–18 petals, deep rose to pink or occasionally white, that are 15–35 mm long. Petal bases are often paler to white. There are 5 stamens and 4–8 branches on the style. The fruit is a small, dry capsule surrounded by dry, papery bracts. Seeds are shiny black and round. The leaves are eaten while the flowers are eaten during early summer.

Gerald D. Carr

Montia linearis
(Dougl.) Greene

Narrowleaf miner's lettuce is a taprooted annual with erect to ascending stems that are 2–15 cm tall. Stem leaves are fleshy, alternate, linear, and 1–4 cm long. Basal leaves are absent. The inflorescence bears one or few flowers in a terminal or axillary raceme with linear fleshy bracts. There are 2 sepals, 3–4 mm long and 5 white petals, 4–6 mm long surrounding 5 stamens. The style has 3 distinct lobes. Dry capsules are 3-chambered containing shiny black seeds. Tender leaves are eaten in early spring.

Orobanchaceae

Castilleja chromosa
A. Nelson

Desert paintbrush is a common perennial with erect, brittle stems that are 30–75 cm tall. Stems and leaves have short, bristly hairs. Stems are usually branched. Basal leaves are entire and narrow, while upper leaves have deep divisions with 3–7 thin lobes. The calyx is more deeply incised on the back than the front and is hairy. Calyx lobes and the showy bracts are bright orange or red or yellow-orange on the outer half, hairy, and typically have 3–5 lobes that are rounded at the tips. Upper corolla lobes have thin pointed tips and are 2 times the length of the calyx. The lower corolla lip is 2–3 mm long and dark green. Dry capsules are 10–15 mm long containing numerous, tiny seeds. This species is good substrate for invertebrates and floral parts are likely eaten, whereas the somewhat hairy leaves are not likely consumed.

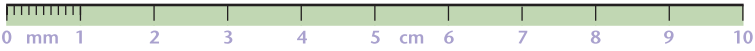
Mark Egger

Phrymaceae

Diplacus nanus
(Hook. & Arn.) G.L. Nesom

Dwarf monkeyflower is a taprooted annual with erect to ascending stems, 2–10 cm tall. Stems and leaves are covered with short, gland-tipped hairs. Basal and stem leaves are 5–17 mm long, lance-shaped with broader rounded tips. Basal leaves have petioles and stem leaves clasp directly to the stem. One to a few flowers are clustered at stem tips on pedicels that are 1–3 mm long. The calyx is 5–8 mm long with teeth of equal length. The corolla is magenta to rose-purple, distinctly 2-lipped with unequal length lobes. The raised palate ridges are yellow and covered with hairs. Lines of darker petal color often occur at the base of the palate and petals. Dry, oval, papery capsules are 7–11 mm long, containing tiny dust-like, brownish seeds. Two similar species grow in eastern Oregon, *D. cusickioides* and the narrow endemic *D. cusickii*. The tender leaves are eaten in spring.

Matt Lavin



Gerald D. Carr

Phrymaceae

Erythranthe suksdorfi
(A. Gray) N.S. Fraga

Suksdorf's monkeyflower is a taprooted annual with branched and erect stems that are 2–10 cm tall. Stems and leaves are smooth or covered with short, appressed hairs and glands. Leaves are stalkless, linear to lance-shaped, 5–15 mm long, with 1–3 nerves and sharply toothed margins. Lower stem leaves have short petioles. Flowers are borne on pedicels that are less than 1 cm long. The calyx is purplish, glandular-hairy, 3–5 mm long with teeth of equal length and sharply pointed tips. The corolla is yellow, faintly yellow-spotted, 4–6 mm long, and somewhat 2-lipped with unequal lobes. Each corolla lobe is slightly notched. The corolla throat is hairy within. Dry capsules are 4–5 mm long and borne on widely spreading pedicels. Each capsule contains numerous dust-like seeds. Tender leaves are eaten in spring.

Gerald D. Carr

Plantaginaceae

Penstemon speciosus
Lindl.

Royal penstemon is a perennial with several stems that are 5–60 cm tall. Stems are short-hairy. Uppermost stem leaves are smooth, lance-shaped with smooth margins, often folded length-wise and clasp directly to the stem. Lower stem leaves often have short petioles and rounded tips. The inflorescence is hairless or short hairy but is without glands. The calyx is 6–13 mm long with lance to oval-shaped lobes. The corolla 25–37 mm long and is abruptly expanded into a throat. The outer corolla tube is blue while the throat is white and hairless. Anther sacs are S-shaped, hairy on the sides, and split open along the upper two-thirds of the anther. The staminode is hairless or with a hairy tip. Dry capsules contain angular, brown seeds. The tender leaves are eaten in late winter and early spring.

Plantaginaceae

Collinsia grandiflora
Lindl.

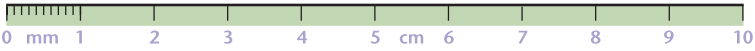
Giant blue-eyed Mary is an annual that is 10–40 cm tall. Leaves are opposite and rounded in shape on the lower stem and become longer and narrowly elliptic on the upper stem. Upper stem leaves are often whorled. Flowers are borne on short stalks arising from the leaf axils. The corolla tube is bent at an angle down from the calyx. The corolla throat is blue, strongly angled to the tube with a prominent pouch. Upper lip petals are notched and pale or white at the center. Lower lip petals are violet-blue. Calyx lobes have sharp points. Each dry capsule has 4 plump, roundish seeds per dry capsule. Leaves and flowers are eaten in spring.

Gerald D. Carr

Collinsia parviflora
Lindl.

Blue-eyed Mary is a delicate annual with erect or prostrate stems that are 5–13 cm tall. Leaves are opposite, linear, with rounded tips and slightly enrolled margins. Flowers are borne on hairy stalks arising from the leaf axils. The inflorescence is leafy, finely glandular and hairy. Flowers are 2-lipped with a broad spur at the base. Upper flower petals are erect and white with bluish tips, while the lower lip is 3-lobed and blue-violet. The calyx has sharp tipped lobes. Dry capsules are oval, 2–4 mm long with 2–4 seeds. The tender flowers and leaves are eaten during the spring.

Gerald D. Carr



Polemoniaceae

Aliciella leptomeria
(A. Gray) J.M. Porter

Gerald D. Carr

Gerald D. Carr

Great Basin gilia is a taprooted annual with ascending to erect branched stems that are 5–20 cm tall. Leaves and stems are covered with stalked yellow glands. Basal leaves are narrowly spoon-shaped, 1–5 cm long and coarsely lobed with spine-tipped teeth along the margins. There are fewer and smaller stem leaves. The inflorescence is an open branched cyme bearing solitary flowers on erect or ascending petioles. The calyx is 2 mm long, purplish, and covered with glands. The corolla is widely bell-shaped, 4–7 mm long, and pink with a yellow throat. Lower petal surfaces are white. Petal lobes are broad with long, pointed tips and a few jagged teeth. Stamens and styles are exerted. Dry capsules are 3-chambered, roundish, 3 mm long containing 3 to several seeds. The flowers and tender parts of the leaves are eaten in spring. Endangered in Columbia Basin in Washington.

Collomia linearis
Nutt.

Gerald D. Carr

Tiny trumpet is an annual with simple and erect stems that are 7–50 cm tall. Stems and leaves are covered with glandular hairs. Leaves are stalkless, linear to narrowly lance-shaped, alternate, 1–10 cm long, and with smooth margins. The inflorescence is a dense terminal cluster of stalkless flowers. The calyx is 3–5 mm long with sharply pointed lobes. The pink corolla is fused into a tube that is 6–9 mm long with 5 free corolla lobes that are 1–3 mm long. Stamens are unequally attached to the corolla lobes and are shorter than the corolla lobes. Dry capsules are 3–4 mm long and contain one seed per chamber. The tender leaves and flowers are eaten in spring.

Polemoniaceae

Collomia tinctoria
Kell.

Gerald D. Carr

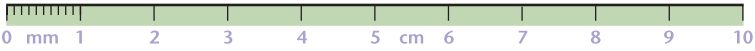
Yellow-staining collomia is an annual with erect, spreading to ascending, branched stems that are 2–8 cm tall. Internodes along the stems are long-hairy and have clear glands. Stem leaves are long-linear to narrowly lance-shaped, covered with glands and have smooth margins. The inflorescence is a terminal or axillary cluster of 2–5 flowers. The calyx is glandular, 5–7 mm long with long-tapered tips and awns at the tips. The tubular corolla is 8–14 mm long. The corolla tube is maroon to violet and the 5 corolla lobes are pink. Stamens are equally attached at one length within the corolla. The style is exerted beyond the corolla lobes. Dry capsules are 3–4 mm long with one seed per chamber. Tender leaves and flowers are eaten in spring.

Gilia inconspicua
(Smith) Sweet

Gerald D. Carr

Gerald D. Carr

Shy gilia is an annual with ascending or spreading, branched stems that are 8–32 cm long. Stems are tufted, woolly-hairy below the inflorescence and covered with black glands above. Basal leaves are borne in a rosette and are pinnately lobed, densely woolly-hairy with smooth or toothed margins. Leaf lobes are 2–10 mm long with rounded or pointed tips. The inflorescence is an open cyme bearing 2–4 flowers on pedicels of unequal lengths. The calyx is 2.6–4.6 mm long, smooth or gland-dotted. Early flowers often have woolly calyx lobes. The corolla is 6–11 mm long with lavender corolla lobes with a purple spot at the petal base. The corolla throat is white to yellowish. Stamens and style are exerted beyond the corolla lobes. Oval-shaped capsules are 5–8 mm long and contain 12–18 seeds. The tender leaves and flowers are eaten in spring.



Gerald D. Carr

Polemoniaceae

Gilia sinuata

Benth.

Rosy gilia is an annual with one to several spreading stems that are 13–34 cm long. Stems are hairless but are covered with a waxy bloom towards the middle. Lower stems are covered with loose, cottony hairs that are deciduous during later growth. Basal leaves are borne in a prostrate rosette and are pinnately lobed, densely woolly-hairy with toothed margins. Stem leaves are fewer, smaller, and clasp directly to the stem with free leaf bases and long tapering tips. Stem leaf margins are smooth or shallowly toothed. The inflorescence is an open, glandular cyme bearing 2–4 flowers on pedicels of unequal lengths. The calyx is 3–5 mm long. The corolla is 7–12 mm long with lavender, pink or white petals with white veins and a white to yellowish tubular throat. Stamens and style are just longer than the floral tube, but do not exceed the length of the corolla lobes. Capsules are 4–7 mm long with numerous yellow to brown seeds. The birds eat the flowers.

Matt Lavin

Gilia tweedyi

Rydb.

Tweedy's gilia is an annual with one to several spreading stems that are 5–25 cm long. Stems are slender and loosely hairy. Lower part of the stem is covered with loose, cottony hairs that are deciduous during later growth. Basal leaves are borne in a prostrate rosette and are pinnately lobed, densely woolly-hairy with toothed margins. The few stem leaves are usually covered with stalked glands. The inflorescence is an open, glandular cyme bearing 2–4 flowers on pedicels of unequal lengths. The calyx is 3–5 mm long and purple spotted. The corolla is 4–6 mm long, bluish with a yellow throat. The tube is 4–5 mm long and corolla lobes are only 1 mm long. Stamens and style are just longer than the floral tube but do not exceed the length of the corolla lobes. Capsules are 4–5 mm long with several seeds per chamber. The flowers are eaten in spring.

Polemoniaceae

Gymnosteris nudicaulis

(Hook. & Arn.) Greene

Nakedstem gymnosteris is an annual with erect stems and linear leaf-like bracts. The showy flowers are stalkless and borne in a terminal compact head. The inflorescence head is subtended by numerous, leaf-like bracts. The calyx is urn-shaped, thin, membranous with pointed awns at the tips. The slender corolla tube is 6–10 mm long and conspicuously exerted beyond the calyx lobes. Corolla lobes are up to 6 mm long, white with a bright yellow base at the corolla throat. Some plants have pure yellow flowers. Filaments are very short and inserted at the corolla throat. Slender capsules contain several angled seeds per chamber. In spring, flowers and leaves are eaten.

James Morefield

Ipomopsis aggregata

(Pursh) V.E. Grant

Scarlet gilia is a short-lived perennial or biennial with erect, hairy, and sometimes glandular stems that are 20–80 cm tall. Foliage is often malodorous and covered with long, soft hairs. Upper stems are often covered with glands. Basal leaves are oval, 2–10 cm long, and pinnately lobed into 9–11 linear lobes. Basal leaves are often withered at flowering. Stem leaves are simple or 5–7 lobed on the upper stems. The inflorescence is a terminal or axillary cyme that is densely branched with numerous simple, leafy bracts. The calyx is 4–8 mm long. The showy, tubular corolla is bright scarlet, with 5 spreading lobes that are 6–20 mm long. The corolla can be solid red or spotted with white or yellow in the throat and 2–3 cm long. Stamens are barely exerted beyond the corolla lobes. Dry capsules are 5–10 mm long containing sickle-shaped seeds. The flowers support invertebrates and are eaten.

Mark Egger

Gerald D. Carr

Gerald D. Carr

Gerald D. Carr

Polemoniaceae

Ipomposis congesta
(Hook.) V.E. Grant

White pollen skyrocket is a perennial from a branched woody caudex with prostrate to ascending stems that are 4–20 cm tall. Leaves and stems are densely hairy to glabrous. Leaves are simple or pinnately lobed into linear segments and are 5–60 mm long. The inflorescence is a terminal or axillary head like cyme with numerous, tiny, leaf-like bracts that are stiff-hairy. The calyx is 3–5 mm long and hairy. The corolla lobes are white with a yellow tube that is 3–5 mm long that is barely longer than the calyx. Corolla lobes are 2–5 mm long. Stamens are exerted beyond the corolla lobes. Filaments are 2–4 times the length of the anthers. The style is included within the corolla. Dry capsules are 2–4 mm long with1–2 seeds per chamber. The flowers are eaten and the plant provides good substrate for invertebrates.

Gerald D. Carr

Leptosiphon harknessii
J.M Porter & L.A. Johnson

Harkness gilia is an erect annual with a slender, thread-like appearance. Branched stems are 10–45 cm tall. Leaves are opposite, narrow, and divided into thin sections. The corolla lobes are white to blue, 1–2 mm long, and broadly bell-shaped. Stamens extend beyond the floral tube and are hairless. The corolla is usually included in the calyx, having 5 lobes that are longer than the calyx tube. The fruit is a tiny capsule bearing 2–6 seeds. Birds eat the leaves and flowers.

Polemoniaceae

Leptosiphon septentrionalis

(H. Mason) J.M. Porter & L.A. Johnson

Northern linanthus is a slender taprooted annual with thread-like, smooth or hairy stems that are 5–30 tall. Stems are occasionally branched above. Leaves are stalkless, palmately divided to the base into 3–7 linear lobes. Flowers are paired in the upper leaf axils and are borne on pedicels that are 4–20 mm long. The 5-lobed calyx is 2–3 mm long, with thin membrane-like edges in between the green raised ridges. The corolla lobes are white, 1–2 mm long, and broadly bell-shaped. The tube is 1.5–2 times the length of the calyx and the inner throat is usually yellow. Stamens are inserted at equal length at the top of the tube among lines or a ring of short hairs and are well exerted beyond the edge of the corolla lobes. Capsules are 2–3 mm long with 2–8 seeds per chamber. The leaves and flowers are eaten.

Gerald D. Carr

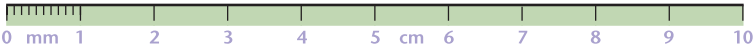
Gerald D. Carr

Linanthus pungens

(Torr.) J.M. Porter & L.A. Johnson

Granite prickly phlox is a sweetly aromatic and openly branched, perennial sub-shrub with numerous stems that are 10–60 cm. Leaves are numerous alternate on the upper stem and usually opposite on the lower stem. Leaves are rigid and prickly, palmately divided into 3–7 linear segments with spine-like tips and axillary fasicled leaves at the nodes. Flowers are stalkless and are borne in leaf axils or at the tips of short, leafy branches. Calyx lobes have spine-like tips and are joined into a membrane-like tube with raised ridges. The nocturnal, white to creamy white corolla is 15–25 mm long and often tinged with lavender on the outside. Corolla lobes are 6–10 mm long and remained contorted and closed during the day. Stamens are attached at the throat. Dry capsules are shorter than the calyx. Seeds are tan, elliptical, and 2–4 mm long.

Gerald D. Carr



Gerald D. Carr

Polemoniaceae

Microsteris gracilis
(Hook.) Greene

Annual phlox can have single upright or branched spreading stems that are 5–20 cm tall. Stems are covered with hairy glands especially on the uppermost stems. Leaves are lance-shaped and opposite on lower stems and alternate on the upper stems. Flowers are often clustered or paired, each with its own stem. The tubular portion is yellowish and there are 5 pink to purple corolla lobes, each with a deep cleft in the tip. The stamens and style do not extend beyond the floral tube. The fruit is a slender, dry capsule containing tiny oval seeds. In addition to be a good substrate for invertebrates, the flowers are eaten.

Gerald D. Carr

Gerald D. Carr

Phlox aculeata
A. Nelson

Sagebrush phlox is a perennial forming compact to loose mats from a short, woody, root crown. Leaves are needle-like and linear, 1.5–3 cm long and 1–2 mm wide, crowded and hairless below and glandular-hairy above. Flowering pedicels are glandular-hairy and 5 mm long. The calyx is 10 mm long, glandular-hairy, with long, pointed lobe tips that are 4–5 mm long. The calyx is fused into a membrane-like tube with raised ridges. The membrane-like tissue between the raised ridges is keeled. The corolla is lilac to bluish, 12 mm long and 12–15 mm wide across the lobes. Corolla lobes are blunt or slightly notched at the tips. Stamens and style are shorter than the corolla lobes. Dry capsules are elliptical, shorter than calyx lobes, and contain only 1–2 seeds per chamber. This species provides good substrate for invertebrates and the flowers are eaten.

Polemoniaceae

Phlox hoodii

Richardson

Gerald D. Carr

Hood's phlox is a taprooted perennial forming dense to loose mats. Stems are prostrate to slightly ascending and 1–6 mm long. Leaves are stiff, needle-like, thinly-white margined, and 4–12 mm long. Leaves are smooth or glandular with long tangled hairs at the leaf base and along the leaf margins. Solitary flowers are borne just above the dense leaves. The calyx is covered with long, tangled hairs and is sometimes glandular and 4–8 mm long. The calyx tube is fused into a ridged, membrane-like tube. Membranes are flat between the raised ridges. The corolla is white to bluish, with tubes that are 6–11 mm long and broadly, egg-shaped corolla lobes that are 3–7 mm long. The style is 2–5 mm long. Dry capsules are shorter than calyx lobes and often contain1–2 seeds. Birds eat the flowers.

Phlox longifolia

Nutt.

Gerald D. Carr

Longleaf phlox is a taprooted perennial with creeping subterranean branches. Stems are erect, simple, with well-developed internodes, loosely tufted and 8–35 cm tall. Stems are smooth below and glandular hairy above. Linear leaves are 2–10 cm long and hairless. Flowers are borne in clusters of 3 to several in a leafy-bracted cyme and are borne on pedicels that are 7–30 cm long. The calyx is 8–12 mm long. The calyx tube has keeled membranes in between the raised ridges. The corolla is white to pink, with dark pink markings at the base of each corolla lobe. The broad, egg-shaped corolla lobes are 6–12 mm long and notched or with jagged edges at the tips. The corolla tube is 12–15 mm long. The style is 6–15 mm long. Dry capsules are borne within the calyx lobes, thinly elliptical and bear 2 or more seeds per chamber. The flowers are eaten.

Gerald D. Carr

Polemoniaceae

Polemonium micranthum
Benth.

Annual polemonium is a taprooted annual with simple and erect stems that are 5–25 cm tall. Leaves and stems are covered with glandular hairs. Leaves are 1–5 cm long, pinnately compound, with 7–15 lance-shaped leaflets with smooth margins. The terminal leaflet is fused with the adjacent lateral pair. The 1–2 axillary flowers are borne on glandular-hairy pedicels that are 5–13 mm long. The calyx is 3–9 mm long with 5 lobes longer than the calyx tube. The corolla is no longer than the calyx, white to bluish, bell-shaped and with 5 corolla lobes that are 1–2 mm long. Stamens and style are included in the floral tube. Dry capsules are 4–5 mm long. Seeds are oval to elliptical, 1–3 mm long, and dark brown. Birds eat the flowers.

Gerald D. Carr

Gerald D. Carr

Polygonaceae

Eriogonum heracleoides
Nutt.

Creamy buckwheat is a perennial forming loose mats and is somewhat shrubby at the stem base. Most leaves occur on the lower stems. Leaves are narrow and finely hairy underneath. Flowers are borne in clusters and are cream colored but age to red. The 6 hairy tepals have a long tubular base. Stamens are exerted beyond the corolla lobes. Achenes are 2–3 mm long, 3-sided and enclosed in the dried, papery tepals. The species provides good substrate for invertebrates and the flowers are eaten if in reach.

Polygonaceae

Eriogonum ovalifolium

Nutt.

Cushion buckwheat is a cushion-like perennial that forms mounds from a branched caudex. Foliage is densely covered with fine white hairs, giving the plant a white to greyish appearance. Stems are densely hairy, 2–35 cm tall and clothed in old leaves at the base. Oblong to roundish leaves have long petioles. Flowers are tightly packed in a roundish cyme. Each cluster has one to several hairy involucres. Flowers are 2–5 mm long, white, creamy yellow or rose colored and cup-shaped. Dry achenes are 2–3 cm long, 3-sided and enclosed in the dry, papery tepals. This species provides good substrate for invertebrates and the flowers are eaten if in reach.

Gerald D. Carr

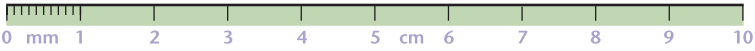
Eriogonum sphaerocephalum

Nutt.

Round-headed desert buckwheat is shrub-like forming rounded clumps. Leaves are covered in matted hairs especially underneath, spoon-shaped with flat or enrolled leaf margins. Flowering stems are 2.5–10 cm tall, smooth or hairy, with a whorl of 4–8 leaf-like bracts near the middle. Flowers are clustered into tight ball-shaped cymes. The 6 tepals that are united below are bright yellow to creamy yellow. Dry achenes are 3-sided and enclosed in the dry, papery tepals. The species provides good substrate for invertebrates and the flowers are eaten if in reach.

Gerald D. Carr

Gerald D. Carr



Gerald D. Carr

Rosaceae

Geum macrophyllum

Willd.

Largeleaf avens is a perennial with erect, leafy stems that are 20–100 cm tall. Stems are covered with long, soft hairs and are glandular on the upper surface. Leaves are oblong, sparsely long-hairy, 8–25 cm long, and divided into 4–8 oval-shaped leaflets with toothed margins. The terminal leaflet is broadly rounded, 3–5 lobed and larger than the lateral leaflets. The inflorescence is a glandular, leafy cyme, bearing erect, saucer-shaped flowers. Sepals are green, reflexed, 2–5 mm long, and hairy on the margins; 5 subtending small, leafy bracts occur beneath the calyx. The 5 yellow petals are 4–7 mm long. The numerous stamens are borne along the perimeter of densely packed pistils, forming a hemispheric, dome-like receptacle. Dry achenes are long, soft-hairy and glandular with a persistent style and are borne in dense clusters.

Robert L. Carr

Geum triflorum

Pursh

Prairie smoke is a perennial forming loose mats from branched, spreading root stocks. Erect stems are covered with dense, short, and soft hairs, 10–50 cm tall and have one pair of small, oppositely arranged leaves. Leaves are broadly spoon-shaped or oblong, 4–15 cm long, long-hairy and pinnately divided into numerous lobed divisions with toothed margins. The inflorescence is a glandular, leafy, 3-flowered cyme, bearing nodding, cup-shaped flowers on glandular and hairy pedicels. Sepals are erect, deep pink, 7–11 mm long, with slightly longer bracts that are simple or 2–3 cleft into narrow segments. Five erect petals are cream colored and as long as the sepals. Achenes are 2 mm long, short-hairy with a long, persistent, feathery style, and borne in clusters in the cup-shaped receptacle. This species provides good substrate for invertebrates and the flowers are eaten.

Rosaceae

Horkelia fusca

Lindl.

Tawny horkelia is a leafy, tufted perennial with stems that are 10–60 cm tall. Leaves are green to greyish-green, densely glandular-hairy and pinnately divided into 5–7 pairs of oval to roundish, deeply lobed and coarsely toothed leaflets. The terminal leaflet is broadly oval and larger than the lateral leaflets. Basal leaves have stipules with smooth margins that closely clasp the stem. The inflorescence is a head-like cyme bearing one to several flowers on short pedicels. The calyx is 2–3 mm long, purplish with numerous linear bracts. Five white or pink petals are wedge-shaped and widely spreading. There are 10 stamens borne on the outer edge of the cup-shaped receptacle and 10–25 pistils. Dry achenes are oval and smooth. Highly variable with several varieties. Provides good substrate for invertebrates and the flowers are eaten.

Robert L. Carr

Potentilla gracilis

Douglas ex Hook.

Five-finger cinquefoil is a leafy, tufted perennial arising from a branched caudex. Stems are erect to ascending and 10–60 cm tall. Leaves are green to greyish-green, hairless or hairy, palmately divided into 5–9 narrowly, spoon-shaped leaflets that are densely toothed or lobed. Leaflets are hairless or densely covered with felt-like hairs on the lower leaf surface and 2–8 cm long. The inflorescence bears numerous flowers on ascending branches in an open cyme that is silky, hairy, or sometimes glandular. The calyx is 3–8 mm long, lance-shaped with linear and shorter bracts. Flowers have 5 widely spreading, satiny yellow petals that are 5–10 mm long. There are 20 stamens on the outer edge of the disc-shaped receptacle and numerous pistils. Dry achenes are 1–1.5 mm long, tan, and smooth. Highly variable with numerous recognized varieties. Leaves and flowers of this tender species are eaten in spring.

Gerald D. Carr

Gerald D. Carr

Saxifragaceae

Lithophragma glabrum

Nutt.

Rocket star is a short-lived perennial with erect stems that are 5–30 cm tall. Purplish bulbils are borne in the upper leaves of the inflorescence. Leaf blades are sparsely hairy above and smooth below, 5–20 mm wide, roundish in outline and divided into 3 lobes that are further divided into smaller lobes. Each inflorescence has 1–6 flowers that are often replaced partly or entirely by vegetative bulbils. The calyx is cup-shaped, 2–4 mm long, with triangular lobes. The corolla is white to pink, 5–8 mm long, with each clawed petal deeply divided into 5 lobes. There are 10 stamens and 3 styles. Small, dry capsules are half-exposed above the receptacle and bear tiny, spiny seeds. Leaves and flowers of this tender species are eaten in spring.

Gerald D. Carr

Lithophragma parviflorum

(Hook.) Nutt.

Prairie star is a short-lived perennial with erect stems that are 10–50 cm tall. Leaf blades are white-hairy and glandular, 1–3 cm wide, roundish in outline and twice deeply 3-lobed or palmately lobed. Each leaf lobe has a sharp pointed tip. Each inflorescence has 4–12 flowers. The calyx is broadly cone-shaped and 4–6 mm long. Clawed petals are white to pink, 6–9 mm long, broadly spoon-shaped and 3-lobed. There are 10 stamens and 3 styles. Capsules are 5–7 mm long and completely enclosed in the receptacle and bear tiny, smooth seeds. An important species, the leaves and flowers of this tender forb are eaten in spring.

Saxifragaceae

Lithophragma tenellum
Nutt.

Slender woodland star is a short-lived perennial with erect stems that are 5–20 cm tall. Leaf blades are glandular-hairy, 1–2 cm wide, oval to roundish in outline and twice deeply 3-lobed. Each leaf lobe has rounded teeth. Each inflorescence has 3–9 flowers. The calyx is cup-shaped and 2–4 mm long. Petals are white to pink, clawed, oval-shaped, 3–7 mm long and 5–7 lobed. There are 10 stamens and 3 styles. Capsules are 5–7 mm long and half exposed above the receptacle and bears tiny, smooth seeds. The glabrous leaves and flowers of this tender forb are eaten in spring.

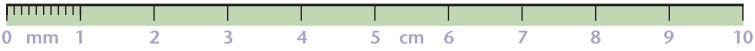
Robert L. Carr

Valerianaceae

Plectritis macrocera
Torr. & A. Gray

Longspur white plectritis is a fibrous rooted annual with erect stems that are 6–30 cm tall. Stems are simple or branched in the upper axils. Leaves and stems are hairless. Basal leaves are oblong with smooth margins on long petioles but are usually withered during flowering. Stem leaves are stalkless and clasp directly to the stem, oblong and 7–40 mm long. The inflorescence is a dense, glandular interrupted spike bearing numerous flowers that becomes expanded during fruit development. The calyx is absent. The corolla is white, slightly 2-lipped with a short, thick and blunt spur that is 2–4 mm long. The corolla is glandular with 5 lobes that are shorter than the tube. The stigma is 2-lobed and there are 3 exerted stamens. The fruit is a dry compressed, rounded achene with a beak and short, glandular-hairy wing. The tender leaves and flowers are eaten.

Gerald D. Carr



Tara Luna

Valerianaceae

Valeriana occidentalis

A. Heller

Western valerian is a short-rhizomatous perennial with erect stems that are 30–70 cm tall. Basal leaves have long petioles. Leaf blades are 2–6 cm long, ovate to elliptical with smooth margins or with a pair of basal lobes. Stem leaves have short petioles and leaf blades that are 6–15 cm long, with 1–4 pairs of lance- to oval-shaped lateral lobes with bluntly toothed margins. The terminal lobe is usually larger than the lateral lobes and has a blunt or pointed tip. The inflorescence is hemispheric, 2–6 cm wide, and covered with short, dense hairs and is sparsely glandular. The corolla is white to pink, 5–8 mm long with 5 spreading lobes and is sparsely hairy. Corolla lobes are half the length of the tube. Flowers can be perfect and bisexual or pistillate. The stigma is 3-lobed and there are 3 exerted stamens in perfect flowers. The fruit is a beaked, compressed, rounded achene with 6 longitudal veins and a feathery persistent calyx. Leaves and flowers are eaten.

Violaceae

Viola beckwithii

Torrey. & A. Gray

Gerald D. Carr

Beckwith's violet is a perennial, 2–22 cm tall, with hairless or short, appressed hairy stems and leaves. Aerial stems are erect to somewhat ascending. Up to half the stem length is below ground and attached to a deep-seated caudex. Leaves are divided into deeply dissected, linear segments borne on petioles that are 2–10.5 cm long. Leaf blades are oval to triangular in outline, fleshy, with numerous oblong to linear segments with rounded or pointed tips. Stem leaves are similar but are smaller. Flowers are borne on peduncles that are 2.5–15 cm long. Sepals are lance-shaped. The upper 2 petals are dark red-violet and often overlap. The lower 3 petals are lilac, violet, or white, with darker violet veins and a yellow to orange base. Lateral petals are bearded with cylinder-like hairs. Dry capsules are oval with 3 valves and 7–13 mm long. Seeds are 3–4 mm long and brown. Birds eat the flowers and leaves.

Violaceae

Viola praemorsa

Lindl.

Gerald D. Carr

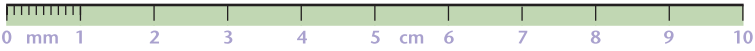
Upland yellow violet is a perennial 7–30 cm tall, hairless or short, appressed hairy stems and leaves. Stems are erect or prostrate, arising from a subterranean caudex on a woody rhizome. Leaf petioles are 4–19 cm long. Leaf blades are simple, 2–8.5 cm long, oval to elliptical, with smooth, wavy, or irregularly toothed margins. Leaf margin teeth can be blunt or pointed. The leaf blade base is oblique or blunt and leaf tips are rounded or pointed. Stem leaves are smaller. Flowers are borne on peduncles that are 2.7–26 cm long. Sepals are lance-shaped, hairless or with short hairs along the margins. Petals are a deep lemon-yellow. The upper 2 petals are often marked with brown to maroon lines. The lower 3 petals have dark brown to maroon veins. Lateral petals are bearded with cylinder-like hairs and are sometimes darkly veined. The fruit is an oval-shaped, 3-valved capsule that is 6–12 mm long. Seeds are 2–3 mm long, brown, and often covered with a white, spongy material. The leaves and flowers of this tender species are eaten.

Mark Egger

Viola purpurea

Kellogg

Goosefoot violet is a perennial with short, appressed hairy stems and leaves. The plant usually has several stems that are erect or prostrate, arising from a subterranean caudex on a woody rhizome. Leaf petioles are 1–12 cm long. Stem leaf blades are simple, thick, 5–20 mm wide, lance- to oval-shaped, shallowly lobed, and purple-tinged. Leaf blade bases are tapered, blunt or heart-shaped and are often oblique. Leaf margins are smooth or with a few teeth. Leaf tips are rounded with 3–5 prominent rounded to pointed lobes per side with margins that are bluntly or sharply toothed. Flowers are borne on peduncles that are 1–17 cm long. Sepals are lance-shaped and are hairless or with short hairs along the margins. Petals are a deep lemon-yellow. The upper 2 petals are often marked with brown to maroon lines. The lower 3 petals have dark brown veins. Lateral petals are bearded with club-shaped hairs and are sometimes have dark brown to purple veins. The fruit is an oval-shaped, short-hairy, 3-valved capsule that is 4–12 mm long. Seeds are 2–3 mm long, brown, dark brown or mottled grey. The leaves and flowers of this tender species are eaten.



Mark Egger

Violaceae

Viola vallicola

A. Nelson

Valley yellow violet is a tufted perennial with mostly subterranean stems. Stems are 2–8 cm tall. Leaves and stems are hairless or are sparsely hairy. Stipules are fused to the stems with free tips. Leaf blades are 1–10 cm long, narrowly to broadly lance-shaped on the upper stems. Basal and lower stem leaves are triangular to oval in outline with blunt leaf bases. Leaf margins are smooth or with widely spaced, blunt teeth. Yellow flowers are 8–15 mm long. The upper petals are brownish on the back. The lower 3 petals are marked with purple lines and have a tiny spur. The style tip is hairy. Tan seeds are 2 mm long and covered with white, spongy material that extends to the fruit wall. Capsules are 3-valved and 6–9 mm long. Leaves and flowers are eaten.

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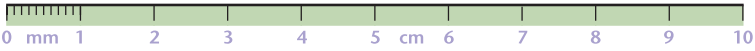
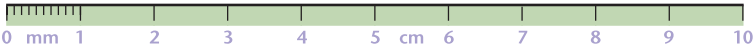


Appendix—Species groups, families, and genera (excluding grasses) thought to be important for Greater Sage-grouse, in general order of importance

Table A.1. Species groups, families, and genera (excluding grasses) thought to be important for Greater Sage-grouse, in general order of importance. List initially compiled by Roger Rosentreter (BLM botanist, retired) and amended by Mark Mousseaux.

Species group	Common name or type	Family and genera (predominately non-native weed genera are bolded)	Use
HIGH IMPORTANCE			
Sage shrubs	Sagebrush, rabbitbrush, horsebrush	Asteraceae: *Artemisia, Chrysothamnus, Ericameria, Tetradymia*	Food, cover
Other shrubs	Desert shrubs	Amaranthaceae: *Atriplex, Sarcobatus;* Rosaceae: *Cercocarpus, Purshia*	Cover
Composites with milky sap	Dandelion-type flowers	Asteraceae (Chicoriae tribe): *Agoseris,* ***Chondrilla, Cichorium****, Crepis,* ***Hypochaeris, Lactuca, Lapsana, Leontodon****, Lygodesmia, Malacothrix, Microseris, Mulgedium, Prenanthes,* ***Sonchus****, Stephanomeria,* ***Taraxacum, Tragopogon***	Food
Tender legumes	Vetches	Fabaceae: *Astragalus, Dalea, Hedysarum, Lathyrus, Lotus,* ***Medicago****, Oxytropis, Thermopsis, Trifolium, Vicia*	Food
Tender forbs	Chickweeds, waterleafs, mallows, phloxs	Amaranthaceae: *Monolepis;* Cactaceae: *Opuntia;* Caryophyllaceae: *Cerastium, Eremogone, Stellaria;* Hydrophyllaceae: *Phacelia;* Geraniaceae: ***Erodium****, Geranium;* Malvaceae: *Sphaeralcea;* Loasaceae: *Mentzelia;* Polemoniaceae: *Collomia, Gilia, Ipomopsis, Leptosiphon, Microsteris, Phlox;* Montiaceae: *Claytonia, Lewisia, Montia;* Saxifragaceae: *Geum, Lithophragma;* Valerianaceae: *Plectritis, Valeriana*	Food

Species group	Common name or type	Family and genera (predominately non-native weed genera are bolded)	Use
MODERATE IMPORTANCE			
Asters and other composites	Asters	Asteraceae: *Arnica, Aster (Symphyotrichum), Balsamorhiza, Bidens, Chaenactis, Conyza, Coreopsis, Crocidium, Dieteria, Enceliopsis, Erigeron, Eriophyllum, Gaillardia, Gutierrezia, Haplopappus, Helenium, Helianthella, Helianthus, Heterotheca, Hulsea, Hymenoxys, Iva, Ratibida, Rudbeckia, Senecio, Stenotus, Solidago, Townsendia, Xanthium, Wyethia*	Food
Lily	Lilies	Liliaceae: *Allium, Brodiaea, Calochortus, Camassia, Fritillaria*	Food
Desert parsley	Biscuitroots	Apiaceae: *Cymopterus, Lomatium, Perideridia*	Food
Figwort	Penstemon, old figworts, monkey-flowers	Plantaginaceae: *Collinsia, Penstemon, Synthyris;* Orobanchaceae: *Castilleja, Orthocarpus;* Phrymaceae: *Diplacus, Erythranthe*	Food
Buckwheat	Buckwheats	Polygonaceae: *Eriogonum*	Food



Glossary

Achene—A simple one-seeded indehiscent fruit, with the seed attached to the fruit wall at one point.

Alternate—Refers to leaves or buds that are positioned singly along the stem or axis, rather than in pairs opposite each other or in whorls.

Annual—A plant that completes its life cycle in one growing season or one year; it germinates grows, produces flowers, sets seeds, and then dies. Compare biennial and perennial.

Anther—The pollen bearing structure of the stamen that can be free or fused, and is usually born on a stalk (filament).

Anthesis—The period of time that a plant is flowering.

Ascending—Rising obliquely or curving upward from near the base, usually at an angle of 40–60°.

Awn—A long, bristle-like appendage on the summit of a seed or sepal tip.

Axil—The angle formed by the upper side of a leaf and the stem.

Axillary—Leaves, buds, or stems that originate in the axil of a leaf.

Banner (petal)—The broad, uppermost petal of a pea-shaped flower (Fabaceae).

Biennial—A plant that normally requires two years to complete its life cycle; vegetative growth occurs the first year, with flowering, fruiting, and death occurring the second year. Compare annual and perennial.

Bi-pinnate—A pinnate leaf with the primary leaflets divided again in a pinnate manner.

Bisexual (flower)—Refers to male and female reproductive structures present within the same flower.

Bloom—A waxy powder covering the leaf surface.

Botanical variety—A category in taxonomic hierarchy that is below the species and subspecies level.

Bract—A smaller, modified leaf that subtends a flower or inflorescence.

Bractlet—A small leaf-like organ often occurring between a true bract and the calyx.

Bulb—A short underground, modified stem, consisting of fleshy leaf scales that serve as a storage organ.

Bulbil—A small secondary bulb that develops in leaf axils or the inflorescence.

Bulblet—A small secondary bulb that develops at the base of a mature bulb.

Calyx—Collective term for all sepals, free or fused, in a flower.

Capillary (bristles)—Thin, hair- or thread-like bristles of a pappus.

Capsule—A dry, dehiscent fruit derived from a flower that splits open along sutures when seeds mature.

Caudex—A short thickened, often woody, perennial stem that is subterranean or just at ground level.

Cauline—Borne on the stem.

Claw—A long, narrow base of petals or sepals.

Corolla—Collective term for all petals, free or fused, in a flower.

Corymb—A flat topped raceme with the outermost pedicels being longest and opening their flowers first.

Crown—The persistent base of an herbaceous perennial; or the junction of the stem and root in a plant.

Cyme—A flat topped or round topped inflorescence in which the terminal flower blooms first.

Deciduous—Refers to the plants that drop their leaves or flowers during the growing season.

Decumbent—A growth habit where the stems lie close to the ground while the upper portion of the stem is usually erect or ascending.

Dehiscent—A dry fruit that splits open at maturity to release its seeds.

Dentate—A leaf margin with teeth or indentations pointing outwards at right angles to the mid-rib.

Dichotomous—Branching pattern by repeated forking in pairs.

Dimorphic (flowers)—A plant bearing two types of flowers, usually one type being functionally bisexual and the other type being either functionally staminate or pistillate.

Dioecious—Having male and female flowers on separate plants of the same species.

Disc (flower)—The central flowers in a flower head of the Asteraceae, that are bisexual or unisexual, functional or non-functional, and usually have a tiny fused corolla and without a conspicuous strap-shaped ray appendage. Compare ray (flower).

Elliptic (elliptical)—In the form of a flattened circle more than twice as long as broad.

Endemic—A plant or animal species that is found in a particular and usually limited geographical area and habitat and is found nowhere else.

Entire—Refers to a leaf margin without teeth. Same as smooth.

Even-pinnate—A pinnate leaf with two terminal leaflets. Compare odd-pinnate.

Exerted—Extending beyond the margins of the corolla lobes.

Fascicle—A close bundle of leaves that often occur in the leaf axil.

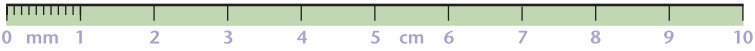
Fibrous (roots)—A root system with all the root branches of approximately equal thickness and resembling fibers.

Filament—The elongated stalk of a stamen that bears an anther at the tip.

Flowerhead—The inflorescence of members of the Asteraceae that consists of disk flowers surrounded by ray flowers to resemble one large functioning flower. Flower heads can also be composed of disk flowers only or ray flowers only. Same as head.

Follicle—A dry dehiscent fruit that splits open at maturity along a single side.

Forb—A flowering herbaceous plant usually with conspicuous flowers. Term is usually applied to all herbaceous plants other than grasses, sedges, rushes, bulrushes, reeds, and cattails.



Free—Refers to flower parts, leaves or other structures that are not fused. Compare fused.

Fruit—A ripened ovary, and any other structures that are attached to it and ripen with it.

Fused—Refers to leaves, petals, sepals or seeds that are coalesced together for all or part of their length.

Glabrous—Not-hairy or glandular

Gland—A secretory structure.

Glandular hair—A hair-like stalk with a gland at its apex.

Glaucous—A waxy-like bloom on the surface of leaves and stems that often give foliage a bluish-green cast.

Head—Densely packed cluster of flowers as seen in the Asteraceae.

Heart-shaped—Refers to a leaf that is broad with two rounded basal lobes and a rounded or pointed tip.

Hemispheric—Refers to a flower head or inflorescence that is broadly shaped as one-half of a circle with the highest point at the center.

Herbaceous (life form)—A non-woody plant whose stems and leaves die back to ground level at the end of the growing season; a plant without a persistent above ground woody stem.

Imperfect (flowers)—Flowers with ether stamens or pistils but not both; same as unisexual. Compare perfect (flowers) and bisexual (flowers).

Inflorescence—An arrangement of more than one or usually multiple flowers on a single stalk.

Internode—The area on a stem between leaf buds. See node.

Involucre—One or more whorls of small bracts (phyllaries) that subtend a flower or inflorescence, as seen in Asteraceae.

Keel (petal)—The two-united, lower petals of a pea-shaped flower of the Fabaceae.

Keeled—Having a raised ridge or crease above the tissue surface.

Lance—A leaf shape that is much longer than broad; widening above the base and tapering to the tip.

Lateral—Borne on or pertaining to the side of an organ or structure, as in lateral buds.

Leaflet—One of the distinct and separate leaf divisions of a compound leaf.

Legume—A member of the Fabaceae; or the dehiscent fruit of a legume species that splits opens along two lines at maturity; same as pod.

Ligule—A strap-shaped corolla as in the ray flowers of the Asteraceae.

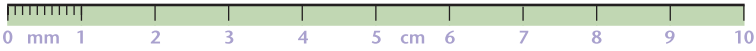
Linear—Long and narrow with the sides parallel and often more than 10 times as long as broad.

Locule—A compartment or chamber of the ovary.

Loment—Modified legume fruit having constrictions between the seeds.

Membranous—Refers to leaves, fruits, or other structures that are soft, flexible, and often translucent.

Nocturnal—Refers to flowers that open at twilight and nighttime.



Node—The point on the stem where leaves are attached or the point of branching on the stem.

Nutlet—A small nut; one of a group of small hard seeds.

Oblong—Refers to a shape that is much longer than broad.

Obtuse—Blunt or rounded at the apex.

Odd-pinnate—A pinnate leaf with one terminal leaflet.

Opposite—Having two leaves, buds, or flowers at a node, one on each side of the stem; or having one organ in front of another, such as stamens in front of the petals.

Palate—The raised, prominent ridges on the throat of a flower.

Palmate—Having lobes or divisions radiating from a common point.

Panicle—An indeterminate inflorescence that has a branched main axis with flowers borne on secondary branches and on individual pedicels.

Pappus—A modified outer perianth limb in the Asteraceae arising from the summit of the ovary and consists of hairs, bristles, scales, awns, or feather-like appendages.

Pedicel—The stalk of an individual flower.

Pendulous—Hanging or drooping.

Peduncle—The stalk of an inflorescence or the stalk of a solitary flower.

Perennial—A plant that lives 3+ years. Compare annual and biennial.

Perfect (flowers)—Having male and female reproductive structures (stamens and pistils) in the same flower; same as bisexual. Compare imperfect (flowers); unisexual.

Perianth—A collective term for the outer, non-reproductive parts of a flower.

Persistent—Remaining attached, not falling free.

Petal—A modified structure that is often colored that serves as a visual aid to attract pollinators; petals collectively form the corolla.

Petiole—The stem leaf; the stalk attaching the leaf blade to the stem.

Phyllary—One of the bracts that forms the involucre head or inflorescence in the Asteraceae.

Pinnate—A leaf having separate leaflets along each side of a common stalk.

Pinnatifid—Pinnately cleft or divided.

Pistil—The female reproductive structure in a flower that consists of a stigma, style, and ovary.

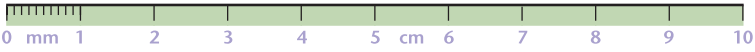
Pistillate (flower)—A flower bearing only female reproductive organs or sometimes with rudimentary, non-functional male organs.

Pod—A dry dehiscent fruit; usually refers to a legume fruit.

Prostrate—Refers to the plant habit where it grows flat on the ground; not matted or upright.

Puberulent—Minutely hairy.

Pubescent—Covered with short, soft hairs.



Raceme—An unbranched, elongated inflorescence on which the flowers are borne on stalks, maturing from the bottom of the inflorescence upwards. Compare spike.

Ray flower—A ligulate flower in the inflorescence (head) of many members of the Asteraceae. Ray flowers often superficially resemble petals of a flower. Compare disc flower.

Ray (hair)—Hairs that are forked into more than one appendage from a common axis; as seen in some members of the Brassicaceae.

Receptacle—The cup or disk-like portion of the axis of the flower stalk in which the flower is held.

Recurved—Bent or curved downward or backward.

Reflexed—A leaf, sepal, bract, petal, or stem that is curved outward.

Rhizomatous—Producing or having rhizomes.

Rhizome—A specialized stem in which the main axis of the plant grows horizontally or vertically at or below the soil surface, and can be either thickened or very slender and can be woody or non-woody.

Rosette—A dense radiating cluster of leaves usually at or near ground level.

Scale—A small, thin, or flat structure

Scape—A leafless flowering stalk.

Seed—A ripened ovule that consists of an embryo, seed coat, and usually nutritive tissue (endosperm in flowering plants).

Sepal—The leafy bract-like structure that subtends the petals and that normally encloses other floral parts in bud. See calyx.

Serrate—Refers to toothed leaf margins.

Sessile—Attached direct to the stalk without a petiole or peduncle.

Simple—Composed of one identical unit (leaf), not compound.

Smooth—Refers to leaf margins without teeth or indentations; or leaf or stem surfaces without hairs or glands. Same as entire.

Solitary—A flower or fruit that is borne singly.

Spatulate—Spoon-shaped leaves with a narrower base and a widened apex with a rounded tip.

Species—A group of individuals that usually breed only with one another and exhibit certain morphological characteristics.

Spike—An unbranched, elongated inflorescence having flowers without stalks that are borne directly on the main stem of the inflorescence, maturing from the bottom upwards. Compare raceme.

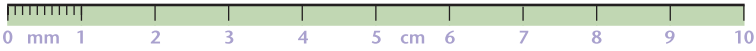
Spur—A hollow projection at the base of a corolla, sepal, or petal.

Stamen The male reproductive organ in flowers, consisting of an anther borne on a slender filament (stalk).

Staminate—Having or producing the male gametes; such as the male pollen cones in gymnosperms or male flowers in angiosperms.

Staminode—A sterile stamen that does not produce pollen and is often showy and petal-like.

Stigma—The portion of the pistil that is receptive to pollen.



Stipule—A small, modified leaf-like structure that subtends leaves. Stipules are variable and can appear as spines, glands, leaves, or scales.

Style—The usually narrowed portion of the pistil that connects the stigma to the ovary.

Subsessile—Flowers or leaves that are borne on barely discernable stalks usually less than 1 mm long.

Subshrub—A perennial with stems that are woody at the base; a suffrutescent perennial.

Subtend—Occurring beneath.

Succulent—A plant species that possesses thick stems, roots, and leaf storage tissue; or a species having thickened and often fat leaves.

Suffrutescent—Woody only at the base of the stem.

Suture—The seam at which dehiscence or splitting occurs along a mature fruit wall.

Taproot—The main root axis from which smaller root branches arise; a root system with a main root axis and smaller branches. Compare fibrous (roots).

Tendril—A long, slender, modified leaf or stem that aids a plant to climb for support.

Tepal—Perianth segments undifferentiated into distinct petals and sepals.

Tomentose—Covered with long or short soft hairs.

Tube—The elongated floral tube, or more rarely the elongated calyx.

Tubular—Refers to flowers that possess an elongated floral tube.

Tufted—Leaves, stems, or hairs arising from a common point.

Umbel—An umbrella shaped inflorescence arrangement as seen in members of the Apiaceae.

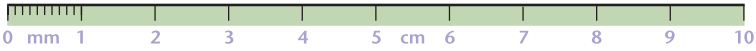
Unisexual (flower)—A flower with either male or female reproductive parts, but not both. See imperfect (flowers). Compare bisexual (flowers) and perfect (flowers).

Variety (botanical)—A subdivision of a species that differ as a group in some minor but definable characteristic(s) from the rest of the species.

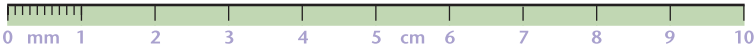
Whorled—A group of 3+ leaves or flowers at a node.

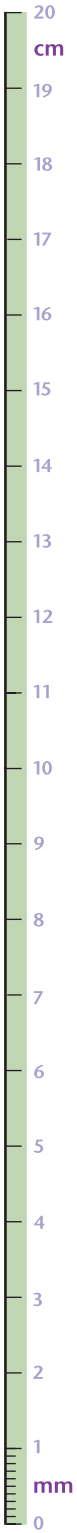
Wing—A papery, leathery, and usually flat appendage attached to a seed or fruit that aids in its dispersal; or a raised outgrowth along stem margins; or referring to lateral petals in flowers of the Fabaceae.

Index of Scientific Names



Index of Common Names

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